

Effective January 1, 2010

# MIDLAND METAL MFG

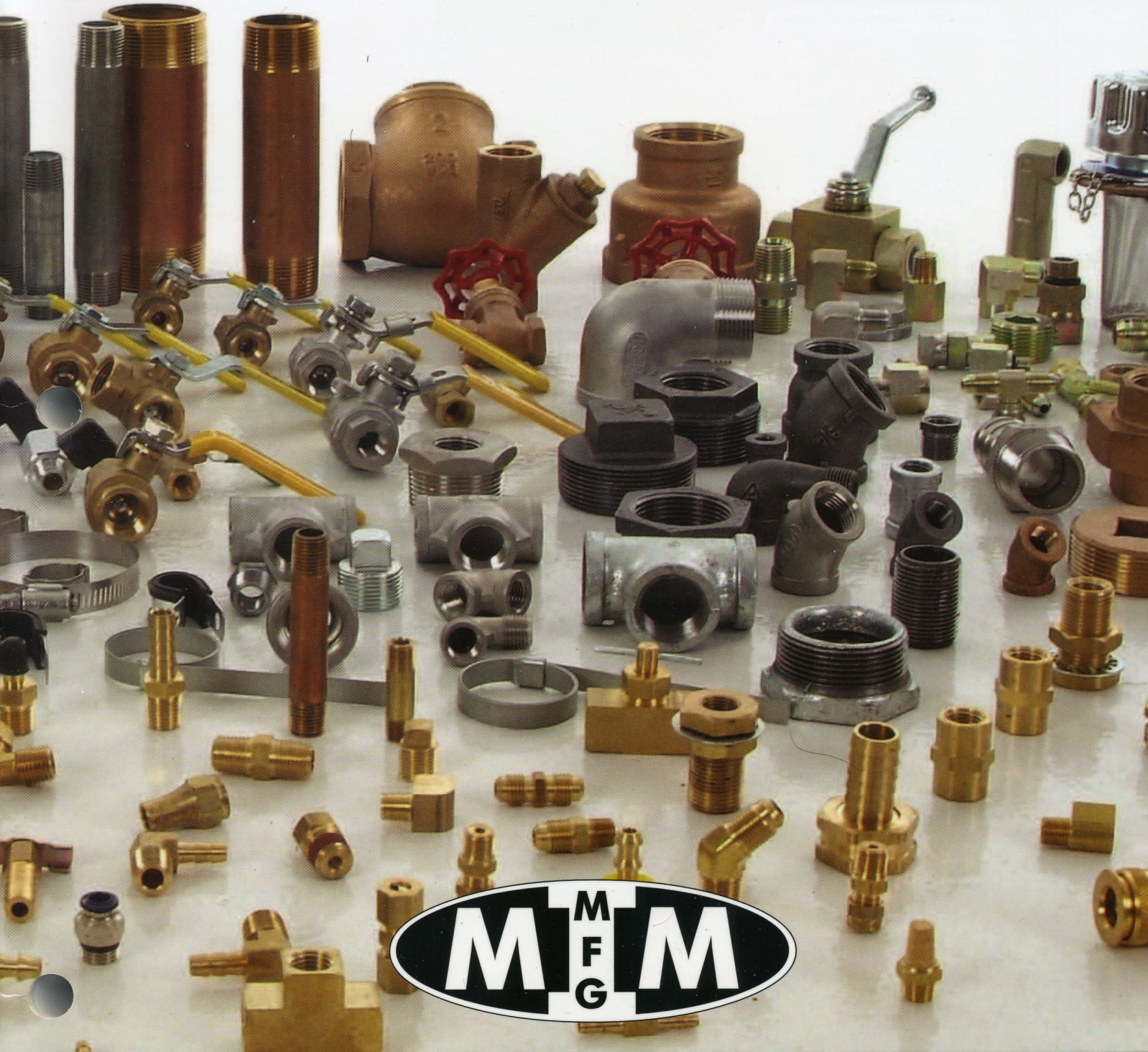
Fittings, Valves, Clamps & Accessories for Hose, Pipe and Tube



1980 -

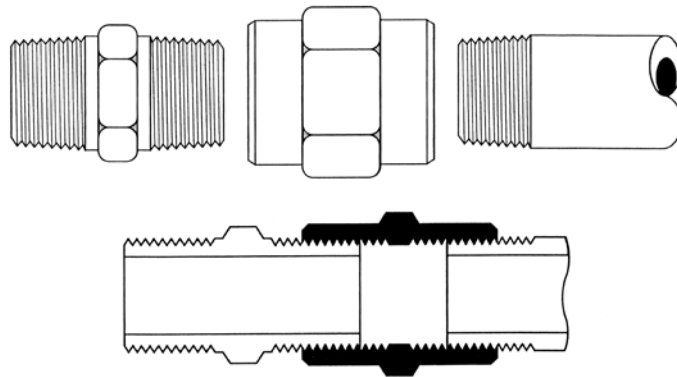


# 2010



[WWW.MIDLANDINDUSTRIAL.COM](http://WWW.MIDLANDINDUSTRIAL.COM)

**Pipe**



<b>Pipe Size</b>	<b>1/16</b>	<b>1/8</b>	<b>1/4</b>	<b>3/8</b>	<b>1/2</b>	<b>3/4</b>	<b>1</b>
<b>Thread Size</b>	<b>1/16-27</b>	<b>1/8-27</b>	<b>1/4-18</b>	<b>3/8-18</b>	<b>1/2-14</b>	<b>3/4-14</b>	<b>1-11<sup>1/2</sup></b>
<b>Working Pressure</b>	<b>1200</b>	<b>1200</b>	<b>1200</b>	<b>1200</b>	<b>1200</b>	<b>1000</b>	<b>1000</b>
<b>Thread OD</b>	<b>1/4</b>	<b>3/8</b>	<b>1/2</b>	<b>5/8</b>	<b>3/4</b>	<b>1</b>	<b>1-1/4</b>

**•Typical Application**

Grease, fuels, LP and Natural gas (available on special order), refrigeration, instrumentation and hydraulic systems.

**•Pressure**

Operating pressure up to 1200 PSI.

**•Vibration**

Fair resistance.

**•Temperature Range**

-65°F to +250°F (-53°C to +121°C).

**•Material**

CA360 Brass for Barstock fittings.  
CA377 Brass for forged fittings.

**•Used With**

Brass, bronze, copper, steel, aluminum and iron pipe.

**•Tolerance**

+/- .02 on all dimensions. Dimension Data can change without notice. Please call us when dimensions are critical.

**•Conformance**

Meets specifications and standards of ASA, ASME and SAE.

**•“L” at the end of a Part# means Light Pattern**

- these fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

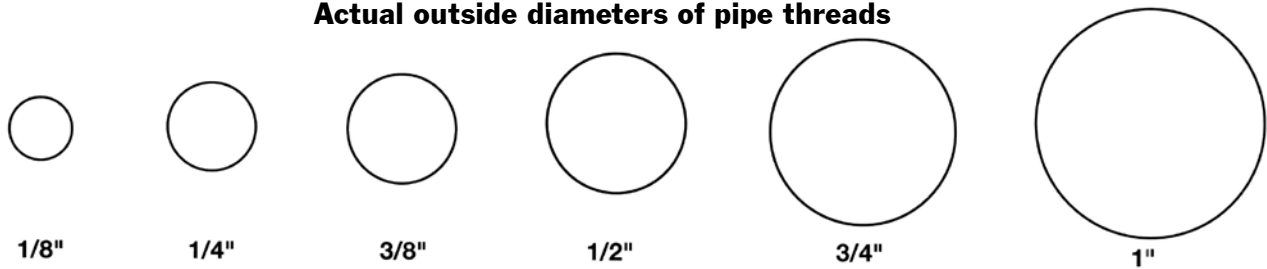
**•Assembly Instructions**

- 1- Tighten approximately 2-1/2 turns past hand tight.
- 2- Fittings with Everseal tighten two turns past hand tight. Brittle materials require special cautions.

**• for larger sizes see bronze fittings on page 190**

**• see page 240 for plastic pipe fittings.**

**Actual outside diameters of pipe threads**



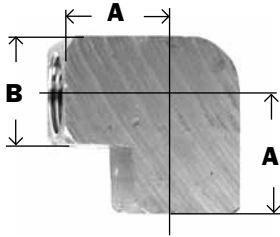
**Actual Male Thread Profiles**



**90° FEMALE ELBOW**

SAE# 130238

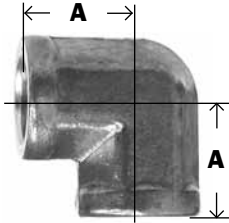
2200P  
3500  
302  
200



Part #	Thread Size NPTF	A	B	Approx. Wt. Lbs.	
28-001	1/8"	0.55	0.56	0.09	----
28-002	1/4"	0.78	0.68	0.13	----
28-003	3/8"	0.84	0.81	0.16	----
28-004	1/2"	1.09	1.00	0.34	----
28-005	3/4"	1.16	1.25	0.60	----

**90° FORGED FEMALE ELBOW**

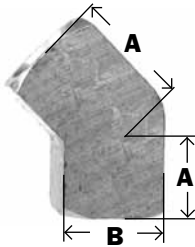
1200P  
E7  
100AF  
100B



Part #	Thread size NPTF	A	Body Width	Approx. Wt. Lbs.	
28-009	1/8"	0.57	0.50	0.04	----
28-010	1/4"	0.70	0.68	0.10	----
28-011	3/8"	0.81	0.81	0.12	----
28-012	1/2"	1.00	1.00	0.23	----
28-013	3/4"	1.13	1.25	0.42	----
28-014	1/4" x 1/8"	0.72	0.69	0.12	----
28-015	3/8" x 1/4"	0.81	0.81	0.15	----
28-016	1/2" x 3/8"	1.00	1.00	0.28	----

**45° FEMALE ELBOW**

129  
2201P  
205  
23355  
45EZ  
105  
100-45A

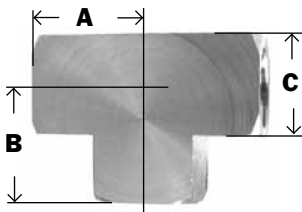


Part #	Thread size NPTF	A	B	Approx. Wt. Lbs.	
28-018	1/8"	0.45	0.56	0.06	----
28-019	1/4"	0.66	0.68	0.12	----

**UNION TEE**

SAE# 130438

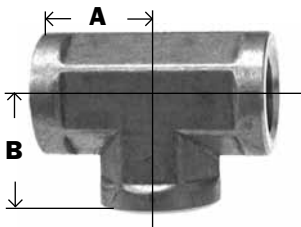
311  
101A  
322  
2203P  
3700  
203



Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.	
28-024	1/8"	0.55	0.55	0.56	0.08	----
28-025	1/4"	0.78	0.78	0.68	0.17	----
28-026	3/8"	0.84	0.84	0.81	0.22	----
28-027	1/2"	1.09	1.09	1.00	0.43	----
28-028	3/4"	1.16	1.16	1.25	0.64	----

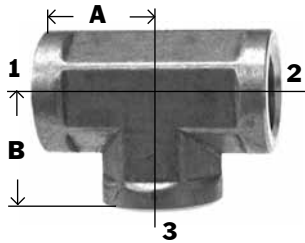
**UNION FORGED TEE**

1203P  
LT7  
101AF  
101B



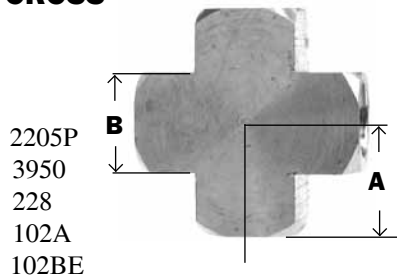
Part #	Thread size NPTF	A & B	Body Width	Approx. Wt. Lbs.	
28-032	1/8"	0.56	0.50	0.06	----
28-033	1/4"	0.71	0.68	0.13	----
28-034	3/8"	0.81	0.81	0.16	----
28-035	1/2"	1.00	1.00	0.27	----
28-036	3/4"	1.16	1.25	0.53	----

**REDUCING FORGED TEES**



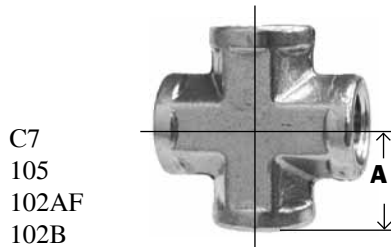
Part #	1 NPT	2 NPT	3 NPT	A & B	Body Width	Approx. Wt. Lbs.	
28-029	1/8"	1/8"	1/4"	0.72	0.69	0.16	----
28-030	1/4"	1/4"	1/8"	0.72	0.69	0.14	----
28-031	1/4"	1/4"	3/8"	0.81	0.81	0.21	----
28-037	3/8"	3/8"	1/8"	0.81	0.81	0.19	----
28-038	3/8"	1/4"	3/8"	0.81	0.81	0.18	----
28-039	3/8"	3/8"	1/4"	0.81	0.81	0.18	----
28-046	1/2"	1/2"	3/8"	1.00	1.00	0.30	----
28-047	3/4"	1/2"	3/4"	1.16	1.25	0.56	----
28-048	3/4"	3/4"	1/2"	1.16	1.25	0.59	----

**CROSS**



Part #	Thread size NPTF	A	B	Approx. Wt. Lbs.	
28-041	1/8"	0.50	0.50	0.10	----
28-042	1/4"	0.78	0.68	0.21	----
28-043	3/8"	0.84	0.81	0.25	----
28-044	1/2"	1.09	1.00	0.51	----
28-045	3/4"	1.16	1.25	0.75	----

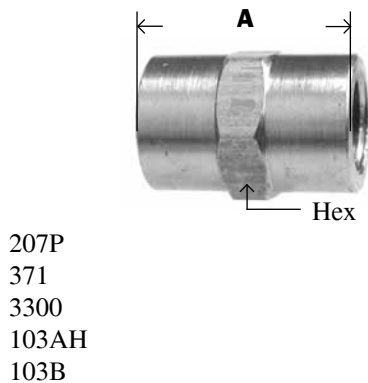
**FORGED CROSS**



Part #	Thread size NPTF	A	Body Width	Approx. Wt. Lbs.	
28-049	1/8"	0.56	0.50	0.06	----
28-050	1/4"	0.72	0.69	0.15	----
28-051	3/8"	0.81	0.81	0.18	----
28-052	1/2"	1.00	1.00	0.34	----

**COUPLING**

**SAE# 130238**



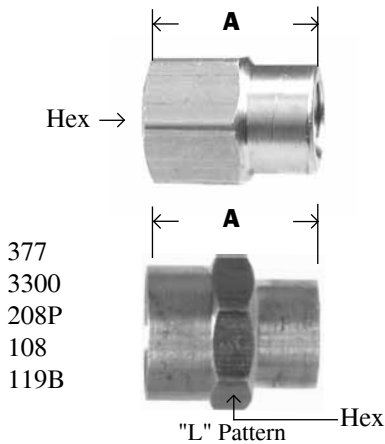
Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-058L	1/8"	0.75	0.50	0.02	----
28-058	1/8"	0.75	0.56	0.03	----
28-059L	1/4"	0.88	0.63	0.03	----
28-059	1/4"	1.12	0.75	0.09	----
28-060L	3/8"	1.00	0.81	0.06	----
28-060	3/8"	1.12	0.87	0.10	----
28-061L	1/2"	1.19	0.93	0.09	----
28-061	1/2"	1.50	1.06	0.19	----
28-062L	3/4"	1.19	1.25	0.18	----
28-062	3/4"	1.53	1.25	0.24	----

**\* For larger sizes, see bronze couplings on pg. 193**

Dimension data can change without notice.  
Please call us when dimensions are critical.

**REDUCING COUPLING**

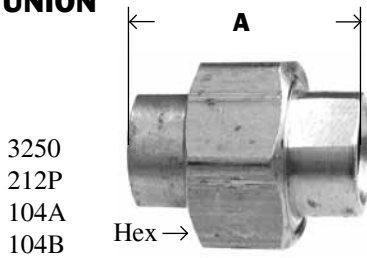
SAE# 130138



Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-181L	1/4" x 1/8"	0.83	0.62	0.04	----
28-181	1/4" x 1/8"	0.97	0.75	0.08	----
28-182	3/8" x 1/8"	0.94	0.87	0.10	----
28-183L	3/8" x 1/4"	1.00	0.81	0.06	----
28-183	3/8" x 1/4"	1.16	0.87	0.12	----
28-180*	1/2" x 1/8"	1.19	0.93	0.15	----
28-184L	1/2" x 1/4"	1.11	1.00	0.10	----
28-184	1/2" x 1/4"	1.28	1.06	0.20	----
28-185L	1/2" x 3/8"	1.19	0.93	0.10	----
28-185	1/2" x 3/8"	1.38	1.06	0.20	----
28-188*	3/4" x 3/8"	1.32	1.37	0.20	----
28-189*	3/4" x 1/2"	1.19	1.18	0.14	----

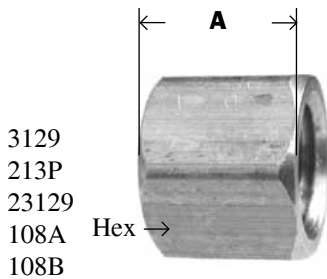
\*Not to SAE specs

**UNION**



Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-067	1/8"	1.19	0.94	0.13	----
28-068	1/4"	1.31	1.06	0.18	----
28-069	3/8"	1.75	1.25	0.33	----
28-070	1/2"	1.79	1.56	0.50	----

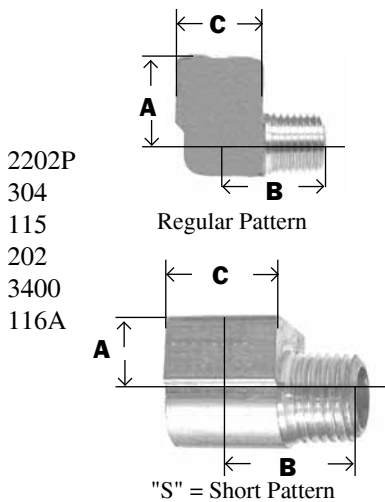
**CAP**



Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-075	1/8"	0.47	0.56	0.03	----
28-076	1/4"	0.60	0.68	0.04	----
28-077	3/8"	0.69	0.81	0.06	----
28-078	1/2"	0.78	0.93	0.08	----
28-079	3/4"	0.94	1.25	0.16	----

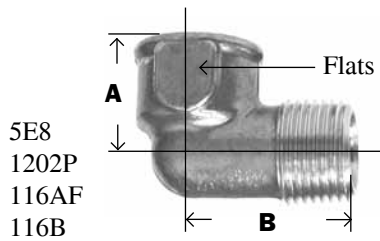
**90° STREET ELBOW**

SAE# 130239



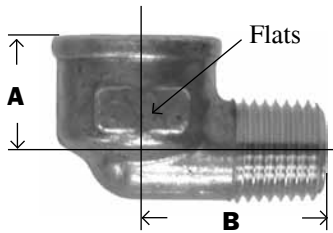
Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.	
28-156	1/8"	0.48	0.66	0.56	0.05	----
28-156S	1/8" short	0.34	0.57	0.50	0.03	----
28-157	1/4"	0.72	0.91	0.68	0.09	----
28-157S	1/4" short	0.45	0.78	0.68	0.07	----
28-158	3/8"	0.78	0.97	0.81	0.16	----
28-159	1/2"	1.03	1.25	1.00	0.33	----
28-160	3/4"	1.12	1.38	1.25	0.52	----

**FORGED 90° STREET ELBOW**



Part #	Thread size NPTF	A	B	Wrench Flats	Approx. Wt. Lbs.	
28-165	1/8"	0.61	0.85	0.62	0.06	----
28-166	1/4"	0.50	0.86	0.72	0.08	----
28-167	3/8"	0.70	1.00	0.88	0.10	----
28-168	1/2"	0.96	1.43	1.00	0.20	----
28-169	3/4"	0.90	1.40	1.25	0.25	----

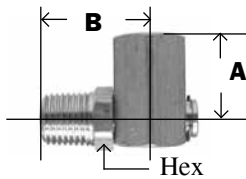
**FORGED REDUCING 90° STREET ELBOW**



Part #	Thread size NPTF FxM	A	B	Wrench flats	Approx. Wt. Lbs.	
28-260	1/8" x 1/4"	0.50	0.87	0.71	0.08	----
28-261B*	1/4" x 1/8"	0.53	0.72	0.69	0.07	----
28-261	1/4" x 1/8"	0.50	0.81	0.72	0.06	----
28-262	1/4" x 3/8"	0.93	1.06	0.59	0.12	----
28-263	3/8" x 1/4"	0.58	0.94	0.81	0.07	----
28-264	3/8" x 1/2"	0.97	1.36	1.00	0.28	----
28-265	1/2" x 3/8"	0.96	1.37	1.00	0.22	----

\*Barstock

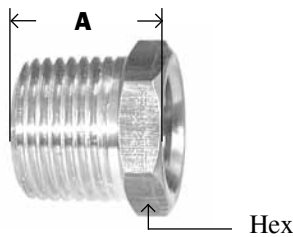
**PIPE SWIVEL 90° STEET ELBOW**



Part #	Thread size NPTF	A	B	Hex	Approx. Wt. Lbs.	
28-430	1/4"	1.18	1.25	.625	0.22	----

**HEX BUSHING**

**SAE# 130140**



Part #	Thread size NPTF MxF	A	Hex	Approx. Wt. Lbs.	
28-102L	1/4" x 1/8"	0.62	0.56	0.02	----
28-102	1/4" x 1/8"	0.75	0.56	0.04	----
28-103	3/8" x 1/8"	0.75	0.68	0.05	----
28-104L	3/8" x 1/4"	0.69	0.68	0.03	----
28-104	3/8" x 1/4"	0.75	0.75	0.05	----
28-105L	1/2" x 1/8"	0.81	0.81	0.08	----
28-105	1/2" x 1/8"	1.00	0.87	0.10	----
28-106L	1/2" x 1/4"	0.81	0.81	0.08	----
28-106	1/2" x 1/4"	1.00	0.87	0.11	----
28-107L	1/2" x 3/8"	0.81	0.81	0.05	----
28-107	1/2" x 3/8"	1.00	0.87	0.10	----
28-108	3/4" x 1/8"	0.94	1.06	0.20	----
28-109L	3/4" x 1/4"	0.94	1.06	0.18	----
28-110L	3/4" x 3/8"	0.94	1.06	0.15	----
28-111L	3/4" x 1/2"	0.94	1.06	0.11	----
28-111	3/4" x 1/2"	1.00	1.12	0.14	----
28-112	1" x 1/4"	1.15	1.37	0.32	----
28-113	1" x 3/8"	1.12	1.37	0.30	----
28-114	1" x 1/2"	1.31	1.44	0.29	----
28-115	1" x 3/4"	1.31	1.37	0.20	----

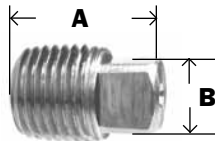
373  
3220  
209P  
110A  
110B

**FACE BUSHING**



Part #	Thread size NPTF MxF	A	Approx. Wt. Lbs.	
28-121	1/4" x 1/8"	0.45	0.01	----
28-122	3/8" x 1/8"	0.50	0.03	----
28-116	3/8" x 1/4"	0.50	0.02	----
28-090	1/2" x 1/8"	0.56	0.06	----
28-128	1/2" x 1/4"	0.56	0.05	----
28-117	1/2" x 3/8"	0.56	0.03	----
28-129	3/4" x 1/4"	0.62	0.11	----
28-130	3/4" x 3/8"	0.62	0.08	----
28-118	3/4" x 1/2"	0.64	0.03	----

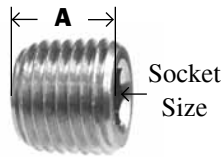
**SQUARE HEAD PLUG**



3151  
211P  
109A  
109B

Part #	Thread size NPTF	A	B	Approx. Wt. Lbs.	
28-084	1/8"	0.58	0.27	0.02	----
28-085	1/4"	0.80	0.37	0.03	----
28-086	3/8"	0.80	0.43	0.06	----
28-087	1/2"	1.07	0.55	0.13	----
28-088	3/4"	1.11	0.61	0.20	----
28-089	1"	1.24	0.81	0.35	----

**COUNTERSUNK HEX PLUG**

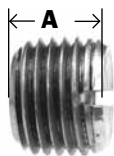


3155  
219P  
109CS  
118

SAE J531

Part #	Thread size NPTF	A	Socket size	Approx. Wt. Lbs.	
28-092	1/16"	0.30	0.12	0.01	----
28-093	1/8"	0.30	0.18	0.01	----
28-094	1/4"	0.45	0.26	0.02	----
28-095	3/8"	0.45	0.31	0.03	----
28-096	1/2"	0.61	0.39	0.05	----
28-097	3/4"	0.62	0.56	0.10	----

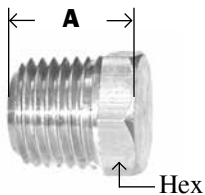
**SLOTTED-HEAD PLUG**



220P  
3150  
117A  
117B

Part #	Thread size NPTF	A	Approx. Wt. Lbs.	
28-174	1/8"	0.31	0.01	----
28-175	1/4"	0.42	0.02	----
28-176	3/8"	0.45	0.05	----

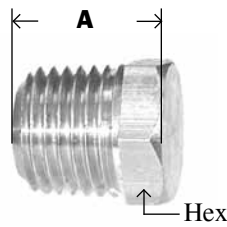
**CORED HEX PLUGS**



218P  
3152  
121A  
103  
121B  
PPH  
218P

Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-201	1/8"	0.55	0.43	0.01	----
28-202	1/4"	0.62	0.56	0.02	----
28-203	3/8"	0.72	0.68	0.06	----
28-204	1/2"	0.81	0.87	0.09	----
28-205	3/4"	0.94	1.06	0.16	----
28-206	1"	1.16	1.37	0.28	----

**SOLID HEX HEAD PLUGS**



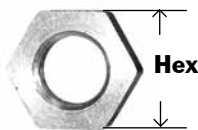
121AS

Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-201S	1/8"	0.55	0.43	0.02	----
28-202S	1/4"	0.62	0.56	0.05	----
28-203S	3/8"	0.66	0.68	0.07	----
28-204S	1/2"	0.81	0.87	0.12	----
28-205S	3/4"	0.92	1.06	0.24	----
28-206S	1"	1.00	1.31	0.38	----

**LOCKNUT**

- Jam Nuts
- Straight pipe thread

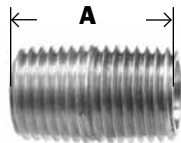
210P  
21102  
111A  
111B



Part #	Thread size NPSM	Hex	Thickness	Approx. Wt. Lbs.	
28-123	1/8"	0.68	0.19	0.02	----
28-124	1/4"	0.87	0.25	0.04	----
28-125	3/8"	1.00	0.31	0.04	----
28-126	1/2"	1.125	0.25	0.04	----

**CLOSE NIPPLE**

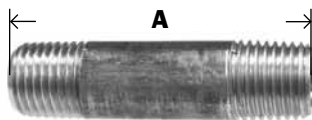
165  
215PN  
3326  
112A  
112B



Part #	Thread size NPTF	A	Approx. Wt. Lbs.	
28-131	1/8"	0.75	0.01	----
28-132	1/4"	0.88	0.02	----
28-133	3/8"	1.00	0.05	----
28-134	1/2"	1.12	0.06	----
28-135	3/4"	1.31	0.11	----

**LONG NIPPLE**

113B  
113A  
166  
3327  
3331  
215PNL



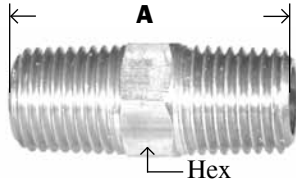
Part #	Thread size NPTF	A Length	Approx. Wt. Lbs.	
28-140	1/8"	1.50	0.03	----
28-141	1/8"	2.00	0.04	----
28-142	1/8"	2.50	0.06	----
28-143	1/8"	3.00	0.06	----
28-144	1/4"	1.50	0.03	----
28-145	1/4"	2.00	0.05	----
28-146	1/4"	2.50	0.08	----
28-147	1/4"	3.00	0.10	----
28-148	3/8"	1.50	0.06	----
28-149	3/8"	2.00	0.10	----
28-150	3/8"	2.50	0.10	----
28-151	3/8"	3.00	0.13	----
28-152	1/2"	1.50	0.08	----
28-153	1/2"	2.00	0.12	----
28-154	1/2"	2.50	0.16	----
28-155	1/2"	3.00	0.20	----

• NOTE: For longer lengths and larger diameters, see our red brass nipples section, pg. 184-185



**HEX NIPPLE**

SAE# 130137

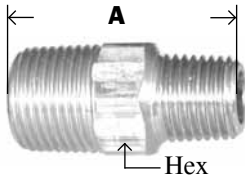


- 216P
- 3325
- 379
- 122AH
- 122B

Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-211L	1/8"	0.91	0.43	0.02	----
28-211	1/8"	0.97	0.43	0.03	----
28-212L	1/4"	1.12	0.56	0.04	----
28-212	1/4"	1.38	0.56	0.06	----
28-213L	3/8"	1.25	0.68	0.07	----
28-213	3/8"	1.41	0.68	0.07	----
28-214L	1/2"	1.50	0.87	0.11	----
28-214	1/2"	1.81	0.87	0.17	----
28-215	3/4"	1.96	1.13	0.23	----
28-216	1"	2.30	1.37	0.43	----

**REDUCING HEX NIPPLE**

SAE# 130137

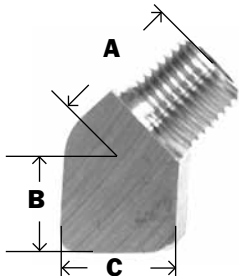


- 216P
- 3325
- 379
- 122AH
- 122B

Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-220L	1/4" x 1/8"	1.00	0.56	0.04	----
28-220	1/4" x 1/8"	1.19	0.56	0.04	----
28-221L	3/8" x 1/8"	1.11	0.68	0.06	----
28-221	3/8" x 1/8"	1.22	0.68	0.07	----
28-222L	3/8" x 1/4"	1.19	0.68	0.06	----
28-222	3/8" x 1/4"	1.41	0.68	0.07	----
28-223L	1/2" x 1/4"	1.34	0.87	0.09	----
28-223	1/2" x 1/4"	1.62	0.87	0.12	----
28-224L	1/2" x 3/8"	1.41	0.87	0.11	----
28-224	1/2" x 3/8"	1.62	0.87	0.12	----
28-225	3/4" x 1/2"	1.50	1.06	0.15	----

**45° STREET ELBOW**

SAE# 130339

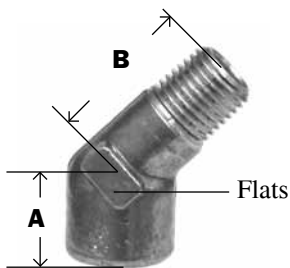


- 306
- 3350
- 2214P
- 224

Part #	Thread size NPTF	B	A	C	Approx. Wt. Lbs.	
28-230	1/8"	0.38	0.50	0.56	0.03	----
28-231	1/4"	0.56	0.72	0.68	0.09	----
28-232	3/8"	0.56	0.78	0.81	0.12	----
28-233	1/2"	0.75	1.00	1.00	0.20	----
28-234	3/4"	0.75	1.06	1.25	0.34	----

**45° FORGED STREET ELBOW**

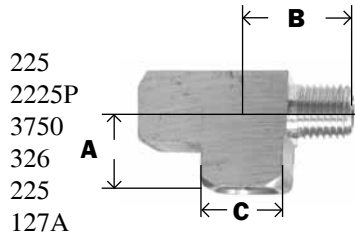
- 45E8
- 124B



Part #	Thread size NPTF	A	B	Wrench flats	Approx. Wt. Lbs.	
28-238	1/8"	0.63	0.81	0.56	0.05	----
28-239	1/4"	0.63	1.06	0.81	0.11	----
28-240	3/8"	0.72	1.06	0.93	0.17	----

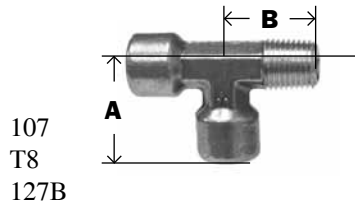
**STREET TEE/ SERVICE TEE**

SAE# 130424



Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.	
28-245	1/8"	0.55	0.66	0.56	0.08	----
28-246	1/4"	0.78	0.91	0.68	0.17	----
28-247	3/8"	0.84	0.97	0.81	0.22	----
28-248	1/2"	1.09	1.25	1.00	0.40	----
28-249	3/4"	1.16	1.39	1.25	0.60	----

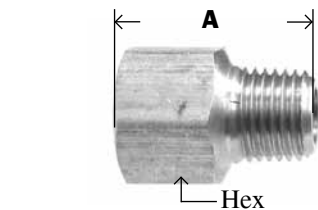
**FORGED STREET TEE**



Part #	Thread size NPTF	A	B	Body Width	Approx. Wt. Lbs.	
28-253	1/8"	0.56	0.75	0.50	0.05	----
28-254	1/4"	1.03	0.11	0.46	0.13	----
28-255	3/8"	1.19	1.09	0.68	0.24	----
28-256	1/2"	1.52	1.40	0.88	0.45	----
28-257	3/4"	1.34	1.73	1.25	0.65	----

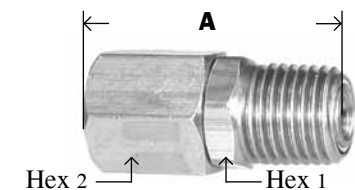
**EXTENDER ADAPTER**

SAE# 130139



Part #	Thread size NPTF FxM	A	Hex	Approx. Wt. Lbs.	
28-190L	1/8" x 1/8"	0.83	0.50	0.03	----
28-190	1/8" x 1/8"	0.88	0.56	0.04	----
28-191L	1/4" x 1/8"	0.94	0.62	0.04	----
28-191	1/4" x 1/8"	1.06	0.75	0.07	----
28-192L	1/4" x 1/4"	1.00	0.62	0.04	----
28-192	1/4" x 1/4"	1.25	0.75	0.07	----
28-198	3/8" x 1/8"	1.00	0.81	0.06	----
28-193L	3/8" x 1/4"	1.12	0.81	0.08	----
28-193	3/8" x 1/4"	1.25	0.87	0.09	----
28-194L	3/8" x 3/8"	1.24	0.81	0.10	----
28-194	3/8" x 3/8"	1.25	0.87	0.11	----
28-199	1/2" x 1/4"	1.46	1.06	0.08	----
28-195L	1/2" x 3/8"	1.19	0.93	0.09	----
28-195	1/2" x 3/8"	1.47	1.06	0.18	----
28-196	1/2" x 1/2"	1.66	1.06	0.12	----
28-207	3/4" x 3/8"	1.59	1.25	0.26	----
28-208	3/4" x 1/2"	1.69	1.37	0.14	----
28-209	3/4" x 3/4"	1.69	1.37	0.34	----

**PIPE SWIVEL ADAPTER**



Part #	Thread size NPTF FxM	A	Hex 1	Hex 2	Approx. Wt. Lbs.	
28-425	1/4"	1.34	0.56	0.62	0.06	----
28-426	3/8"	1.36	0.68	0.75	0.08	----

**SWIVEL FITTING**

- 360° Turning
- Swivels

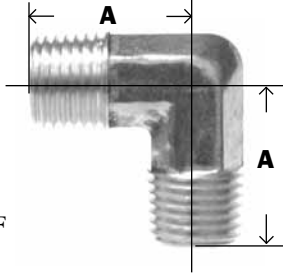


**Male NPT x Female NPT**

Part #	Size	
320-061	1/4	----

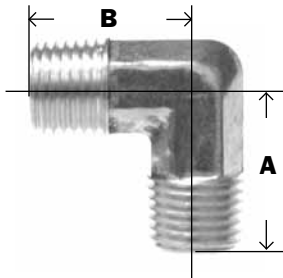
**FORGED 90° MALE ELBOW**

LE5  
3455  
116AMF



Part #	Thread size NPTF	A	Body Width	Approx. Wt. Lbs.	
28-266 <sup>3.5</sup>	1/8"	0.79	0.38	0.04	----
28-267 <sup>3.5</sup>	1/4"	0.87	0.45	0.06	----
28-268 <sup>3.5</sup>	3/8"	1.00	0.59	0.12	----
28-269 <sup>3.5</sup>	1/2"	1.38	0.78	0.21	----

**FORGED 90° MALE REDUCING ELBOW**

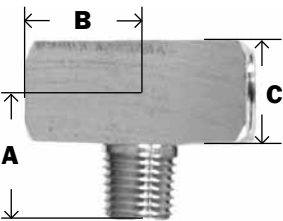


Part #	Thread size NPTF	A	B	Body Width	Approx. Wt. Lbs.	
28-274	1/4" x 1/8"	0.88	0.78	0.47	0.06	----
28-275	3/8" x 1/4"	0.90	0.90	0.46	0.06	----
28-276	1/2" x 3/8"	1.12	1.00	0.59	0.12	----

**MALE BRANCH TEE**

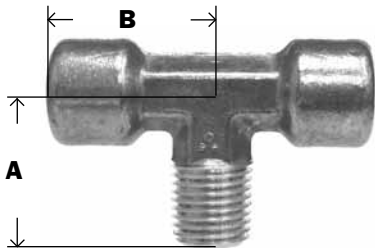
SAE# 130425

X106  
23601  
3600  
2224P  
226  
329  
128



Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.	
28-281 <sup>3.5</sup>	1/8"	0.66	0.55	0.56	0.08	----
28-282 <sup>3.5</sup>	1/4"	0.91	0.78	0.68	0.15	----
28-283 <sup>3</sup>	3/8"	0.97	0.84	0.81	0.22	----
28-284 <sup>3.5</sup>	1/2"	1.25	1.09	1.00	0.40	----
28-285 <sup>3.5</sup>	3/4"	1.38	1.16	1.25	0.62	----

**FORGED MALE BRANCH TEE**



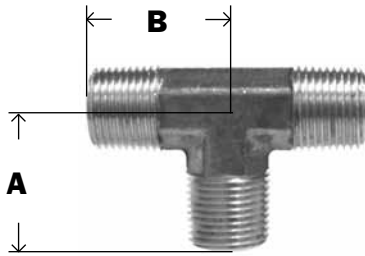
Part #	Thread size NPTF	A	B	Body Width	Approx. Wt. Lbs.	
28-281F	1/8"	0.75	0.56	0.50	0.06	----
28-282F	1/4"	1.00	1.03	0.46	0.12	----

T9

Logic will get you from A to B. Imagination will take you everywhere.

- Albert Einstein

**FORGED ALL MALE TEE**

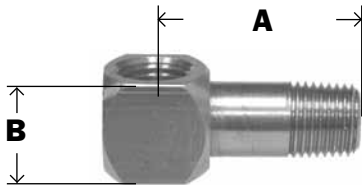


Part #	Thread size NPTF	A	B	Body Width	Approx. Wt. Lbs.	
28-290	1/8"	0.75	0.75	0.43	0.06	----
28-291	1/4"	0.86	0.86	0.43	0.08	----
28-292	3/8"	1.09	1.09	0.60	0.16	----
28-293	1/2"	1.22	1.22	0.68	0.22	----
28-294	3/4"	1.43	1.43	0.87	0.38	----

T12  
M101

**LONG STREET ELLS**

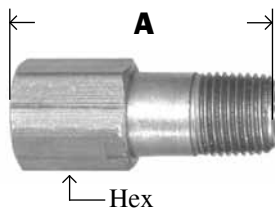
D.O.T. Approved



Part #	Thread size NPTF	A	B	Approx. Wt. Lbs.	
28-440	1/8"	1-3/16"	0.50	0.06	----
28-441	1/8"	1-7/16"	0.50	0.06	----
28-442	1/8"	1-11/16"	0.50	0.06	----
28-443	1/8"	1-7/8"	0.50	0.16	----
28-328	1/4"	1-3/16"	0.75	0.12	----
28-329	1/4"	1-7/16"	0.75	0.14	----
28-330	1/4"	1-11/16"	0.75	0.15	----
28-332	1/4"	2-1/4"	0.75	0.17	----
28-333	3/8"	1-3/4"	0.87	0.22	----

**LONG EXTENSION ADAPTERS**

D.O.T. Approved

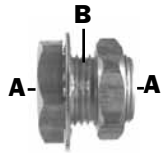


Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-335	1/8"	1-1/4"	0.50	0.04	----
28-336	1/8"	1-3/4"	0.50	0.05	----
28-337	1/8"	3"	0.50	0.09	----
28-338	1/4"	1-9/16"	0.62	0.07	----
28-339	1/4"	1-13/16"	0.62	0.08	----
28-340	1/4"	2-1/16"	0.62	0.10	----

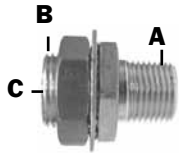
Dimension data can change without notice.  
Please call us when dimensions are critical.

**BULKHEAD / ANCHOR / FRAME COUPLINGS**

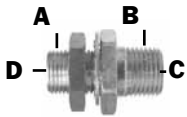
Part #	Terminal Bolts/ Frame				Length (in.)
	A	B	C	D	



28-300	1/8-27 NPTF	5/8-18 UNS	----	----	1-1/2	----	
28-303	3/8-18 NPTF	1-14 UNS	----	----	1-5/16	----	
28-301	1/4-18 NPTF	3/4-16 UNS	----	----	15/16	----	
28-302	1/4-18 NPTF	3/4-16 UNS	----	----	1-1/2	----	
28-315	1/4-18 NPTF	3/4-16 UNS	----	----	1-1/2	----	
		*(same as 28-302 except with larger mounting nut)					
28-304	1/2-14 NPTF	1-1/8-14 UNS	----	----	1-1/2	----	

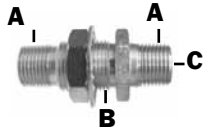


28-317	1/2-14 NPTF	1-14 UNS	1/4-18 NPTF	----	2-1/8	----
28-318	1/2-14 NPTF	1-14 UNS	3/8-18 NPTF	----	1-11/16	----
28-319	1/2-14 NPTF	1-14 UNS	3/8-18 NPTF	----	1-29/32	----

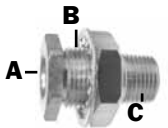


28-325	1/2-14 NPTF	3/4 - 16 UNS	1/4-18 NPTF	1/4-18 NPTF	1-11/16	----
28-345*	1/2-14 NPTF	3/4 - 16 UNS	1/4-18 NPTF	----	2-5/32	----

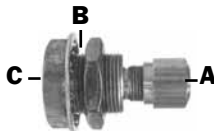
\* Steel



28-313	1/2-14 NPTF	1-14 UNS	1/4-18 NPTF	----	2-7/8	----
--------	-------------	----------	-------------	------	-------	------



28-346	3/8-18 NPTF	1-14 UNS	1/2-14 NPTF	----	1-7/8	----
28-347	1/2-14 NPTF	1-14 UNS	1/2-14 NPTF	----	2-3/8	----

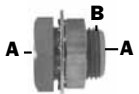


28-321	1/2-O.D. Tube	7/8-20 UNCF	3/8-18 NPTF	----	1-5/16	----
28-322	3/8-O.D. Tube	7/8-20 UNCF	3/8-18 NPTF	----	1-3/8	----

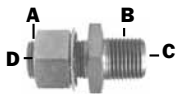


28-348	3/8-18 NPTF	7/8-20 UNCF	3/8-18 NPTF	----	2-5/16	----
--------	-------------	-------------	-------------	------	--------	------

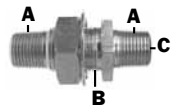
**STEEL BULKHEAD FITTINGS**



28-306	1/4-18 NPTF	3/4 - 16 UNS		----	0.94	----
28-307	1/4-18 NPTF	3/4 - 16 UNS		----	1.50	----



28-309	1/2-14 NPTF	3/4 - UNS	1/4-18 NPTF	1/4-18 NPTF	2.16	----
28-310	1/2-14 NPTF	3/4 - UNS	1/4-18 NPTF	----	2.53	----



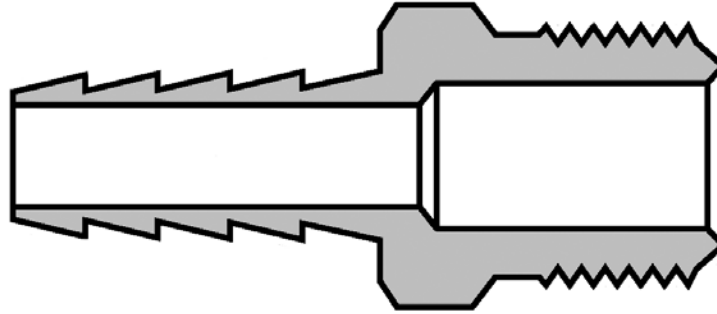
28-312	1/2-14 NPTF	1-14 UNS	1/4-18 NPTF	----	2.94	----
--------	-------------	----------	-------------	------	------	------

**MARINE BULKHEAD FITTINGS**



46-540	5/16 Hose ID	----	----	----	2.37	----
46-541	3/8 Hose ID	----	----	----	2.37	----

# Hose Barb Fittings



**•Temperature and Working Pressure Ranges**  
From -40°F to + 160°F at 150 PSI maximum.

**• Tolerance**  
+/- .02 on all dimensions. Dimension Data can change without notice. Please call us when dimensions are critical.

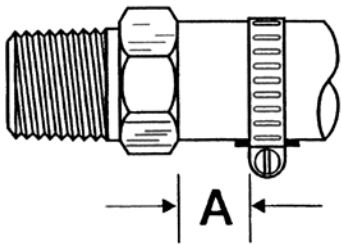
**•Material**  
CA360 Brass for Barstock fittings.  
CA377 Brass for Forged fittings.

**Note:** These fittings are intended for use with hose clamp, similar type clamp or a crimped ferrule.

**• Assembly Instructions**

- 1- Cut hose cleanly and squarely to length.
- 2- Slide clamp on hose.
- 3- Lubricate hose. Push hose on fitting until hose bottoms against stop ring or hex.
- 4- Position hose clamp as shown below and secure with a screwdriver or wrench. Maintain "A" dimension noted below for proper clamp positioning.

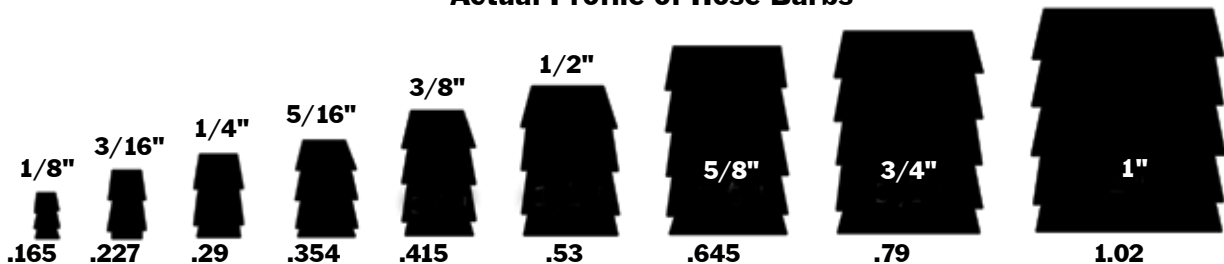
See page 255-269 for hose clamps  
See page 248-249 for plastic hose barb fittings  
See page 26 for stainless steel hose barbs



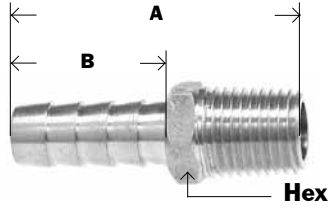
Hose Size	A
3/16"	1/4"
1/4"	1/4"
5/16"	1/4"
3/8"	1/8"
1/2"	1/8"
5/8"	1/8"
3/4"	1/8"

Stainless Steel hose barbs for beverage service available -  
See beverage fitting section, pg. 301

**Actual Profile of Hose Barbs**



**RIGID MALE ADAPTER**



PGH  
101  
102  
201A  
125HBL  
105B-1  
KF-PS  
MPB

Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-300	1/8" x 1/16"	1.13	0.60	0.31	0.02	----
32-001	1/8" x 1/8"	1.19	0.69	0.43	0.02	----
32-027	1/8" x 1/4"	1.16	0.46	0.56	0.02	----
32-002	3/16" x 1/8"	1.19	0.75	0.43	0.02	----
32-003	3/16" x 1/4"	1.37	0.69	0.56	0.04	----
32-301	1/4" x 1/16"	1.44	0.88	0.43	0.02	----
32-004	1/4" x 1/8"	1.47	0.97	0.43	0.02	----
32-005	1/4" x 1/4"	1.72	0.97	0.56	0.04	----
32-006	1/4" x 3/8"	1.72	0.97	0.68	0.05	----
32-007	1/4" x 1/2"	1.72	0.81	0.87	0.10	----
32-008	5/16" x 1/8"	1.47	0.97	0.43	0.02	----
32-009	5/16" x 1/4"	1.72	0.97	0.56	0.04	----
32-010	5/16" x 3/8"	1.76	0.97	0.68	0.06	----
32-390	5/16" x 1/2"	1.88	0.95	0.87	0.10	----
32-011	3/8" x 1/8"	1.53	0.97	0.56	0.03	----
32-012	3/8" x 1/4"	1.75	0.97	0.56	0.05	----
32-013	3/8" x 3/8"	1.72	0.96	0.68	0.06	----
32-014	3/8" x 1/2"	1.97	0.97	0.87	0.09	----
32-026	3/8" x 3/4"	1.97	0.97	1.06	0.16	----
32-333	7/16" x 1/4"	1.76	0.97	0.56	0.04	----
32-302	1/2" x 1/8"	1.57	0.95	0.56	0.06	----
32-015	1/2" x 1/4"	1.72	0.97	0.56	0.04	----
32-016	1/2" x 3/8"	1.76	0.97	0.68	0.07	----
32-017	1/2" x 1/2"	1.87	0.96	0.87	0.11	----
32-018	1/2" x 3/4"	1.94	0.97	1.06	0.16	----
32-303	1/2" x 1"	2.31	0.99	1.37	0.33	----
32-304	5/8" x 1/4"	1.67	0.92	0.68	0.06	----
32-019	5/8" x 3/8"	1.76	0.97	0.68	0.08	----
32-020	5/8" x 1/2"	1.87	0.96	0.87	0.11	----
32-021	5/8" x 3/4"	1.87	0.96	1.06	0.14	----
32-305	5/8" x 1"	2.31	0.96	1.37	0.36	----
32-306	3/4" x 3/8"	1.65	0.87	0.81	0.12	----
32-022	3/4" x 1/2"	1.87	0.96	0.87	0.14	----
32-023	3/4" x 3/4"	1.87	0.96	1.06	0.15	----
32-316	3/4" x 1"	2.55	1.15	1.37	0.38	----
32-307	1" x 1/2"	1.80	0.87	1.06	0.24	----
32-024	1" x 3/4"	2.19	1.19	1.06	0.32	----
32-025	1" x 1"	2.48	1.19	1.37	0.39	----
32-029	1-1/4" x 3/4"	2.37	1.19	1.37	0.35	----
32-028	1-1/4" x 1"	2.55	1.19	1.37	0.46	----

\* See Bronze insert fittings on page 300 for larger sizes.

For Stainless Barb Fittings see pg. 26 or beverage section, pg. 301  
For BSPT Barb Fittings see pg. 111

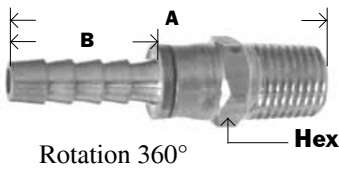
Dimension data can change without notice.  
Please call us when dimensions are critical.

**BRASS RIGID MALE BSPT BARB ADAPTER**



Part #	Hose I.D. x BSPT	
32-450	1/4" x 1/8"	----
32-451	1/4" x 1/4"	----
32-452	3/8" x 1/4"	----
32-453	3/8" x 3/8"	----
32-454	3/8" x 1/2"	----
32-455	1/2" x 3/8"	----
32-456	1/2" x 1/2"	----
32-457	3/4" x 3/4"	----
32-458	1" x 1"	----

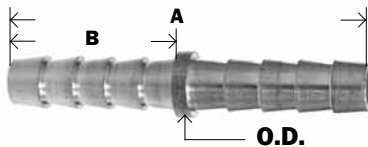
**SWIVEL MALE ADAPTER**



SMS  
103

Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-200	1/4" x 1/4"	2.12	0.97	0.56	0.04	----
32-201	3/8" x 1/4"	2.12	0.97	0.56	0.07	----
32-202	3/8" x 3/8"	2.12	0.97	0.68	0.08	----
32-355	1/2" x 3/8"	2.12	0.97	0.68	0.10	----
32-356	1/2" x 1/2"	2.33	0.97	0.87	0.14	----
32-357	3/4" x 3/4"	2.33	0.97	1.06	0.20	----

**MENDER/ SPLICER**



MSB  
122HBL  
HM  
129  
178  
73  
108

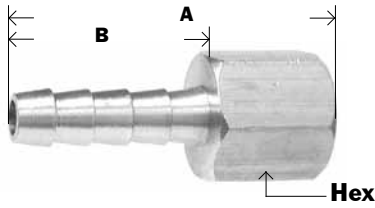
Part #	Hose I.D. x Hose I.D.	A	B	O.D.	Approx. Wt. Lbs.	
32-091	1/8"	0.98	0.45	0.31	0.01	----
32-092	3/16"	1.62	0.77	0.36	0.02	----
32-093	1/4"	2.00	0.96	0.37	0.02	----
32-079	1/4" x 1/8"	1.55	0.97	0.56		----
32-094	5/16"	2.00	0.96	0.39	0.02	----
32-095	3/8"	2.00	0.94	0.51	0.04	----
32-080	3/8" x 1/4"	2.06	0.97	0.56		----
32-096	1/2"	2.00	0.96	0.62	0.06	----
32-087	1/2" x 3/8"	2.06	0.97	0.71		----
32-097	5/8"	2.05	0.96	0.75	0.08	----
32-088	5/8" x 3/8"	2.06	0.97	0.75		----
32-098	3/4"	2.50	1.15	0.87	0.10	----
32-089	3/4" x 1/2"	2.28	1.19	0.87		----
32-099	1"	3.00	1.44		0.23	----

See Bronze insert fittings on page 300 for larger sizes.  
See Hose Clamps on page 255-269 .  
For Stainless Barb Fittings see pg. 26 or beverage section, pg. 301

Dimension data can change without notice.  
Please call us when dimensions are critical.



**RIGID FEMALE ADAPTER**



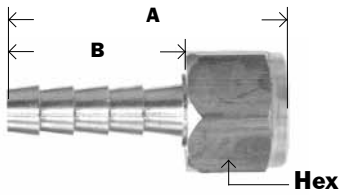
- 209A      FPB
- 128        105B-2
- 29A        KF-RS
- 29F        104
- 126HB
- 126

Part #	Hose I.D. x Female NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-050	1/8" x 1/8"	0.96	0.46	0.50	0.02	----
32-317	1/8" x 1/4"	1.15	0.46	0.62	0.04	----
32-051	3/16" x 1/8"	1.10	0.68	0.50	0.02	----
32-062	3/16" x 1/4"	1.44	0.75	0.62	0.04	----
32-052	1/4" x 1/8"	1.35	0.93	0.50	0.02	----
32-053	1/4" x 1/4"	1.60	0.97	0.62	0.06	----
32-054	1/4" x 3/8"	1.65	1.03	0.75	0.04	----
32-441	1/4" x 1/2"	1.66	0.97	0.93		----
32-055	5/16" x 1/8"	1.47	0.97	0.56	0.04	----
32-056	5/16" x 1/4"	1.66	0.97	0.62	0.04	----
32-318	5/16" x 3/8"	1.66	0.97	0.75	0.06	----
32-320	5/16" x 1/2"	1.67	0.96	0.93	0.08	----
32-057	3/8" x 1/8"	1.47	0.97	0.56	0.04	----
32-058	3/8" x 1/4"	1.61	0.97	0.62	0.06	----
32-059	3/8" x 3/8"	1.63	1.00	0.81	0.08	----
32-063	3/8" x 1/2"	1.72	0.94	0.93	0.12	----
32-442	3/8" x 3/4"	1.97	0.97	1.18		----
32-064	1/2" x 1/4"	1.66	0.69	0.62	0.08	----
32-060	1/2" x 3/8"	1.66	0.97	0.75	0.08	----
32-061	1/2" x 1/2"	1.76	0.96	0.93	0.12	----
32-443	1/2" x 3/4"	1.97	0.97	1.18		----
32-444	5/8" x 3/8"	1.66	0.97	0.75		----
32-445	5/8" x 1/2"	1.66	0.97	0.93		----
32-446	5/8" x 3/4"	1.97	0.97	1.18		----
32-447	3/4" x 1/2"	1.88	1.19	0.93		----
32-065	3/4" x 3/4"	2.19	1.21	1.18	0.22	----
32-049	1" x 3/4"	2.19	1.19	1.18	0.26	----
32-321	1" x 1"	2.32	1.19	1.18	0.35	----
32-448	1-1/4" x 1"	2.32	1.19	1.43		----

Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand.

**- Albert Einstein**

**SWIVEL FEMALE ADAPTER - With Gasket**

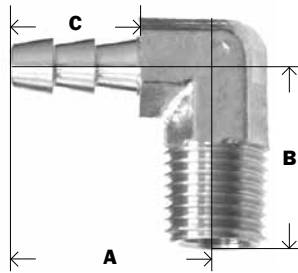


130  
126  
29FSG  
KF-RN  
NPSM Gasket

Part #	Hose I.D. x Female NPSM	A	B	Hex	Approx. Wt. Lbs.	
32-131	1/8" x 1/8"	0.90	0.46	0.50	0.02	----
32-132	3/16" x 1/8"	1.19	0.75	0.50	0.03	----
32-133	3/16" x 1/4"	1.28	0.75	0.62	0.04	----
32-120	1/4" x 1/8"	1.41	0.97	0.50	0.02	----
32-121	1/4" x 1/4"	1.50	0.97	0.62	0.02	----
32-129	1/4" x 3/8"	1.63	0.97	0.75	0.04	----
32-130	5/16" x 1/4"	1.50	0.97	0.62	0.04	----
32-122	3/8" x 1/4"	1.54	1.00	0.62	0.06	----
32-123	3/8" x 3/8"	1.60	0.97	0.75	0.06	----
32-354	3/8" x 1/2"	1.66	0.97	0.93	0.10	----
32-124	1/2" x 3/8"	1.60	0.97	0.75	0.08	----
32-125	1/2" x 1/2"	1.66	0.97	0.93	0.12	----
32-117	1/2" x 3/4"	1.82	1.19	1.18	0.16	----
32-118	5/8" x 3/4"	1.82	1.19	1.18	0.18	----
32-119	3/4" x 3/4"	1.82	1.19	1.18	0.14	----

**BRASS**

**FORGED HOSE BARB 90° ELBOW**



129  
HBE1  
KF-PS90  
HE-1  
29E  
139



Grooved End Barb



Square Body

Part #	Hose I.D. x Male NPTF	A	B	C	Body Size	Approx. Wt. Lbs.	
32-308	3/16" x 1/8"	0.95	0.70	0.66	0.37	0.02	----
32-391	3/16" x 1/4"	1.00	0.84	0.63	0.46	0.10	----
32-038	1/4" x 1/8"	1.01	0.81	0.71	0.47	0.06	----
32-039	1/4" x 1/4"	1.01	0.87	0.63	0.47	0.06	----
32-309*	1/4" x 3/8"	1.08	0.97	0.73	0.69	0.12	----
32-036	5/16" x 1/8"	1.01	0.81	0.63	0.47	0.04	----
32-040	5/16" x 1/4"	1.01	0.87	0.63	0.47	0.06	----
32-310	5/16" x 3/8"	1.06	0.94	0.63	0.50	0.06	----
32-046	3/8" x 1/8"	1.01	0.81	0.63	0.47	0.06	----
32-041	3/8" x 1/4"	1.02	0.88	0.65	0.47	0.06	----
32-042	3/8" x 3/8"	1.09	0.93	0.68	0.50	0.08	----
32-047	3/8" x 1/2"	1.11	1.09	0.63	0.59	0.10	----
32-048	1/2" x 1/4"	1.06	1.00	0.68	0.59	0.10	----
32-043	1/2" x 3/8"	1.06	1.09	0.69	0.59	0.10	----
32-311	1/2" x 1/2"	1.31	1.19	0.87	0.56	0.22	----
32-044**	5/8" x 3/8"	1.12	1.06	0.61	0.56	0.12	----
32-045**	5/8" x 1/2"	1.12	1.12	0.66	0.59	0.14	----
32-312	5/8" x 3/4"	1.46	1.26	0.93	1.06	0.32	----
32-313***	3/4" x 1/2"	1.31	1.28	0.87	0.85	0.22	----
32-314	3/4" x 3/4"	1.46	1.26	0.91	1.06	0.32	----
32-330***	3/4" x 1"	1.57	1.64	0.90	1.34	0.64	----
32-315	1" x 3/4"	1.60	1.40	0.95	1.06	0.32	----
32-319	1" x 1"	1.69		0.98		0.43	----

\* Barstock  
\*\* Grooved End Barbs  
\*\*\* Square Body

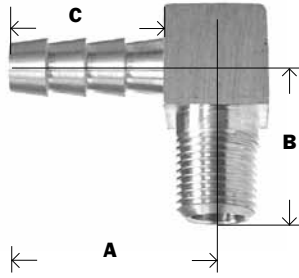
See Bronze insert fittings on page 300 for larger sizes.

Dimension data can change without notice.  
Please call us when dimensions are critical.

Science is organized knowledge. Wisdom is organized life.

- Immanuel Kant

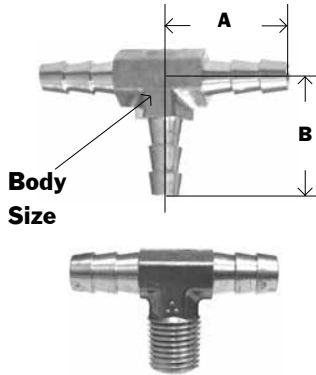
**BARSTOCK HOSE BARB 90° ELBOW**



129HB

Part #	Hose I.D. x Male NPTF	A	B	C	Body Size	Approx. Wt. Lbs.	
32-308B	3/16" X 1/8"	0.97	0.72	0.75	0.43	0.04	----
32-038B	1/4" X 1/8"	1.00	0.75	0.75	0.50	0.02	----
32-039B	1/4" X 1/4"	1.02	0.91	0.74	0.56	0.04	----
32-041B	3/8" X 1/4"	1.32	0.89	0.97	0.58	0.08	----
32-042B	3/8" X 3/8"	1.50	1.06	0.97	0.75	0.14	----
32-043B	1/2" X 3/8"	1.53	1.07	0.97	0.72	0.16	----

**HOSE BARB TEES**

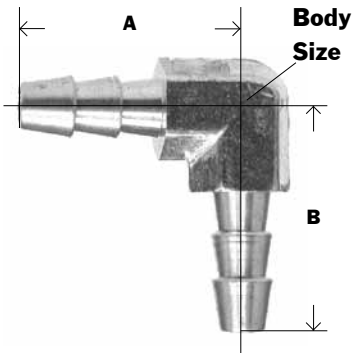


32-128

Part #	Hose Barb Size	A	B	Body Size	Approx. Wt. Lbs.	
32-367	1/8"	0.84	0.83	0.25	0.02	----
32-368	3/16"	1.02	1.02		0.03	----
32-365	1/4"	1.00	1.00	0.44	0.06	----
32-366	5/16"	1.00	1.00	0.44	0.06	----
32-126	3/8"	1.01	1.01	0.43	0.06	----
32-400	1/2"	1.02	1.00	0.43	0.08	----
32-361	5/8"	1.26	1.26		0.16	----
32-363	3/4"	1.26	1.26		0.18	----
32-128	3/8"HB x 1/4" MIP	1.00	0.94	0.43	0.06	----

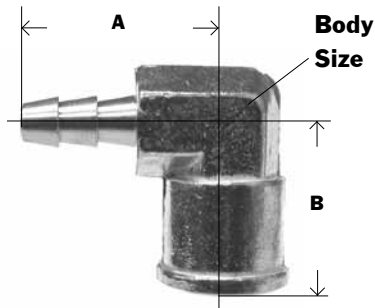
\* See Bronze insert fittings on page 300 for larger sizes.

**90° HOSE BARB ELBOW**



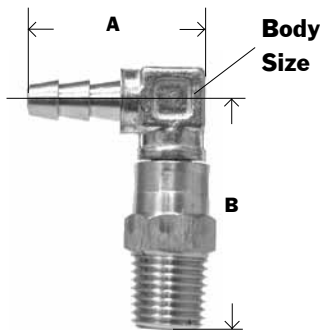
Part #	Hose I.D. x Hose I.D.	A	B	Body Size	Approx. Wt. Lbs.	
32-429	1/8" x 1/8"	0.55	0.55	0.37		----
32-433	3/16" x 3/16"	0.90	0.90	0.37		----
32-412	1/4" x 1/8"	1.02	1.02	0.44	0.04	----
32-413	1/4" x 1/4"	1.01	1.01	0.44	0.04	----
32-425	5/16" x 5/16"	1.15	1.15	0.48	0.05	----
32-414	3/8" x 1/8"	1.01	1.01	0.44	0.04	----
32-415	3/8" x 1/4"	1.00	1.00	0.44	0.04	----
32-416	3/8" x 3/8"	1.02	1.02	0.44	0.04	----
32-417	3/8" x 1/2"	1.24	1.10	0.50	0.06	----
32-418	1/2" x 1/4"	1.24	1.08	0.50	0.06	----
32-419	1/2" x 3/8"	1.22	1.09	0.50	0.06	----
32-420	1/2" x 1/2"	1.24	1.24	0.50	0.06	----
32-434	5/8" x 5/8"	1.20	1.20	0.75		----
32-435	3/4" x 1/2"			0.88		----
32-436	3/4" x 3/4"	1.28	1.28	0.88		----

**90° FEMALE HOSE BARB ELBOW**



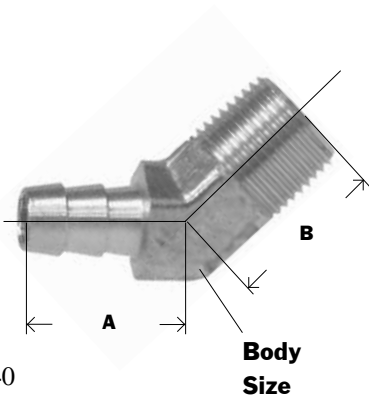
Part #	Hose I.D. x Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
32-401	1/4" x 1/8"	1.01	0.82	0.47	0.06	----
32-402	1/4" x 1/4"	1.13	0.91	0.56	0.10	----
32-403	3/8" x 1/8"	1.01	0.82	0.47	0.06	----
32-404	3/8" x 1/4"	1.15	0.91	0.56	0.10	----
32-405	3/8" x 3/8"	1.15	1.11	0.68	0.14	----
32-406	3/8" x 1/2"	1.26	1.39	0.75	0.20	----
32-407	1/2" x 1/4"	1.26	0.91	0.56	0.10	----
32-410	1/2" x 3/8"	1.24	1.11	0.68	0.14	----
32-411	1/2" x 1/2"	1.37	1.39	0.75	0.20	----
32-409	3/4" x 3/4"			0.81		----

**90° HOSE BARB x SWIVEL MALE PIPE**



Part #	Hose I.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
32-421	1/4" x 1/8"	1.00	1.53	0.47	0.08	----
32-422	1/4" x 1/4"	1.00	1.54	0.56	0.08	----
32-423	3/8" x 1/8"	1.00	1.53	0.47	0.08	----
32-424	3/8" x 1/4"	1.00	1.54	0.56	0.08	----
32-426	3/8" x 3/8"	0.98	1.46	0.68	0.12	----
32-427	3/8" x 1/2"	1.01	1.79	0.87	0.18	----
32-428	1/2" x 1/4"	1.07	1.61	0.56	0.12	----
32-431	1/2" x 3/8"	1.07	1.53	0.68	0.14	----
32-432	1/2" x 1/2"	1.07	1.79	0.87	0.16	----

**45° ELBOW**



Part #	Hose I.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
32-110	1/4" x 1/8"	0.91	0.62	0.53	0.04	----
32-109*	1/4" x 1/4"	1.00	0.62	0.57	0.06	----
32-111	3/8" x 1/8"	0.83	0.66	0.53	0.04	----
32-112	3/8" x 1/4"	0.82	0.84	0.53	0.06	----
32-113	3/8" x 3/8"	0.93	0.87	0.59	0.08	----
32-346	1/2" x 1/4"	1.00	0.84	0.59	0.08	----
32-114	1/2" x 3/8"	1.00	0.88	0.59	0.08	----
32-115	5/8" x 3/8"	0.97	0.88	0.59	0.10	----
32-345	3/4" x 1/2"			0.81		----

\* Barstock

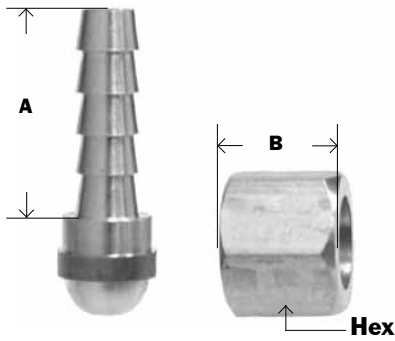
- 140
- HE145
- 139HB
- KF-PS45
- 139

If I have seen further it is by standing on the shoulders of giants.

- Isaac Newton

**BALL END SWIVEL**

NPSM - Ball seat type

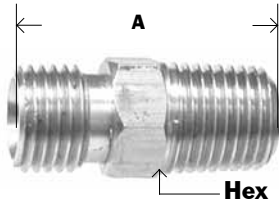


- 128HBLSV
- 29FS
- 209AS
- 124
- 131

Part #	Hose I.D. x NPSM	A	B	Hex	Approx. Wt. Lbs.	
32-066	1/8" x 1/8"	0.46	0.44	0.50	0.03	----
32-067	3/16" x 1/8"	0.75	0.44	0.50	0.03	----
32-068	3/16" x 1/4"	0.75	0.52	0.62	0.04	----
32-069	1/4" x 1/8"	0.97	0.44	0.50	0.04	----
32-070	1/4" x 1/4"	0.97	0.53	0.62	0.06	----
32-078	1/4" x 3/8"	0.97	0.63	0.75	0.06	----
32-071	5/16" x 1/4"	0.97	0.52	0.62	0.05	----
32-072	3/8" x 1/4"	0.97	0.53	0.62	0.06	----
32-073	3/8" x 3/8"	0.97	0.59	0.75	0.08	----
32-074	3/8" x 1/2"	0.97	0.69	0.94	0.14	----
32-075	1/2" x 3/8"	0.97	0.59	0.75	0.08	----
32-076	1/2" x 1/2"	0.97	0.69	0.94	0.10	----
32-077	3/4" x 3/4"	0.97	0.70	1.12	0.14	----

**BALLSEAT MALE ADAPTER**

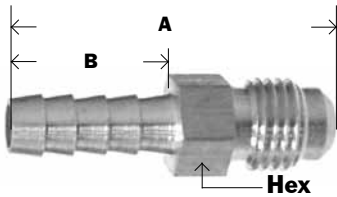
Beveled seat



- 172
- 134
- 127HB
- 122AS

Part #	NPSM x Male NPTF	A	Hex	Approx. Wt. Lbs.	
32-359	1/8" x 1/8"	0.94	0.43	0.03	----
32-034	1/4" x 1/8"	1.06	0.56	0.04	----
32-030	1/4" x 1/4"	1.25	0.56	0.06	----
32-362	3/8" x 1/4"	1.28	0.68	0.08	----
32-031	3/8" x 3/8"	1.30	0.68	0.08	----
32-364	1/2" x 3/8"	1.35	0.87	0.10	----
32-032	1/2" x 1/2"	1.53	0.87	0.14	----
32-033	3/4" x 3/4"	1.53	1.06	0.20	----

**45° FLARE ADAPTER**



- 142
- 201BF
- KF-MS

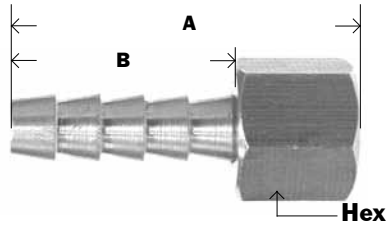
Part #	Hose I.D. x 45° Flare	A	B	Hex	Approx. Wt. Lbs.	
32-322	3/16" x 1/4"	1.5	0.75	0.43	0.03	----
32-081	1/4" x 1/4"	1.72	0.97	0.43	0.03	----
32-082	1/4" x 3/8"	1.82	0.97	0.62	0.07	----
32-083	5/16" x 5/16"	1.75	0.97	0.50	0.08	----
32-084	3/8" x 3/8"	1.82	0.97	0.62	0.08	----
32-085	3/8" x 1/2"	1.97	0.97	0.75	0.10	----
32-086	1/2" x 1/2"	1.97	0.97	0.75	0.10	----

Dimension data can change without notice. Please call us when dimensions are critical.

Some people make things happen, some people watch things happen, and some ask what happened.

- Casey Stengel

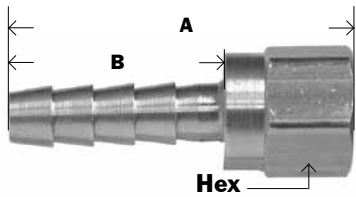
**FEMALE 45° FLARE SWIVEL**



29SAE      FSS  
 209ASF    146  
 146HBLFSV 144  
 KF-NS  
 128

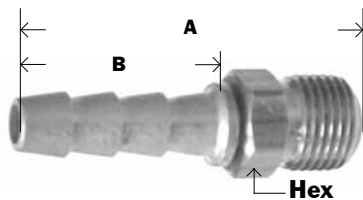
Part #	Hose I.D. x Female 45° Flare	A	B	Hex	Approx. Wt. Lbs.	
32-326	3/16" x 3/16"	1.19	0.75	0.43	0.04	----
32-107	3/16" x 1/4"	1.34	0.75	0.56	0.04	----
32-101	1/4" x 1/4"	1.57	0.97	0.56	0.04	----
32-102	1/4" x 5/16"	1.53	0.97	0.62	0.06	----
32-103	1/4" x 3/8"	1.64	0.97	0.75	0.08	----
32-104	5/16" x 5/16"	1.58	0.97	0.62	0.05	----
32-327	5/16" x 3/8"	1.64	0.97	0.75	0.08	----
32-105	3/8" x 3/8"	1.64	0.97	0.75	0.08	----
32-106	3/8" x 1/2"	1.81	0.97	0.87	0.10	----
32-100	1/2" x 1/2"	1.68	0.97	0.87	0.12	----
32-328	3/4" x 3/4"	2.00	0.97	1.25	0.20	----

**DUAL 45° / 37° FLARE SWIVEL**



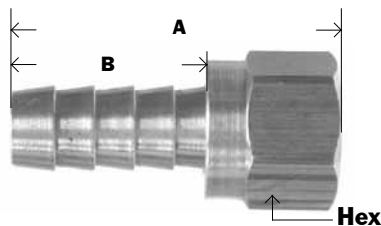
Part #	Hose I.D. x Dual Seat	A	B	Hex	Approx. Wt. Lbs.	
32-337	1/4" x 1/4"	1.56	0.97	0.56	0.04	----
32-339	5/16" x 5/16"	1.60	0.97	0.62	0.06	----
32-340	3/8" x 1/2"	1.68	0.97	0.87	0.10	----
32-341	1/2" x 1/2"	1.68	0.97	0.87	0.10	----
32-342	1/2" x 5/8"	1.76	0.97	1.00	0.12	----

**INVERTED FLARE SWIVEL**



Part #	Hose I.D. x Inverted Flare	A	B	Hex	Approx. Wt. Lbs.	
32-369	1/4" x 1/4"	1.56	0.95	0.43	0.04	----
32-371	3/8" x 3/8"	1.70	0.96	0.62	0.06	----
32-372	1/2" x 1/2"	1.80	0.96	0.75	0.08	----
32-373	5/8" x 5/8"	2.05	1.17	0.87	0.15	----

**FEMALE 37° J.I.C. FLARE SWIVEL**

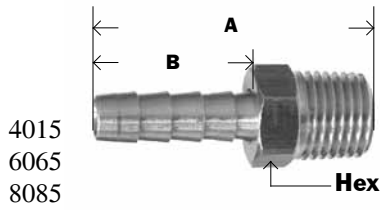


Part #	Hose I.D. x Female 37° JIC	A	B	Hex	Approx. Wt. Lbs.	
32-334	1/4" x 3/8"	1.60	0.97	0.68	0.06	----
32-335	5/16" x 3/8"	1.60	0.97	0.68	0.06	----
32-336	3/8" x 3/8"	1.60	0.97	0.68	0.10	----
32-338	3/4" x 3/4"	2.00	0.97	1.25	0.20	----

We learn something every day, and lots of times it's that what we learned the day before was wrong.

- Bill Vaughan

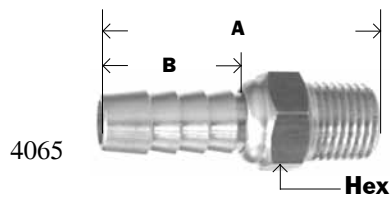
**MALE SWIVEL**



Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-765	1/4" x 1/4"	1.64	0.89	0.56	0.06	----
32-766	3/8" x 3/8"	1.77	1.00	0.68	0.08	----

See page 15 for more male swivels.

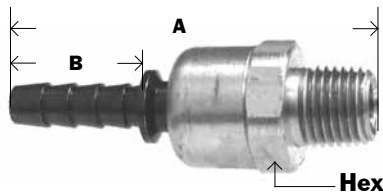
**HIGH PRESURE MALE SWIVEL**



Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-781	3/8" x 1/4"	1.83	0.87	0.62	0.07	----

**HOSE ID x MALE BALL SWIVEL**

**300 PSI. Max. Working Pressure**



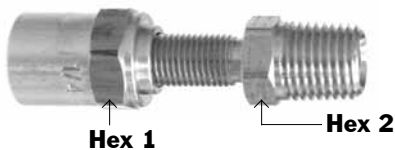
Part #	Hose I.D. x Male ball swivel	A	B	Hex	Approx. Wt. Lbs.	
28-415	1/4" x 1/4"	1.30	0.94	0.81	0.14	----
28-417	3/8" x 1/4"	1.30	1.00	0.81	0.14	----

Many more sizes available.

**1/4" MALE THREAD ID x OD**

**Reusable Hose Couplings**

183

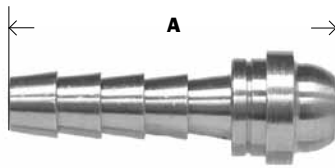


Part #	Size 1/4" Male Thread ID x OD	Length	Hex 1	Hex 2	Approx. Wt. Lbs.	
32-725	3/8" x 3/4"(23/32)	1.97	0.87	0.56	0.14	----
32-726	1/4" x 5/8"	1.86	0.81	0.56	0.13	----
32-727	1/4" x 1/2"	1.86	0.69	0.56	0.11	----
32-728	1/4" x 9/16"	1.86	0.75	0.56	0.12	----
32-741	5/16" x 5/8"	1.97	0.81	0.56	0.13	----
32-742	3/8" x 5/8"	1.97	0.81	0.56	0.14	----

Many more sizes and shapes available...just ask!

Dimension data can change without notice.  
Please call us when dimensions are critical.

**STEM ONLY - WELDING HOSE CONNECTOR**

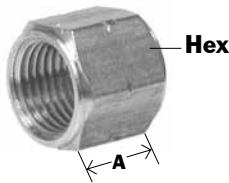


201RWA  
WRS  
WLS

Part #	Hose I.D.	A	Approx. Wt. Lbs.	
30-410	3/16"	1.43	0.02	----
30-411	1/4"	1.43	0.02	----
30-412	5/16"	1.43	0.03	----
30-413	3/8"	1.43	0.04	----

Assemble with nuts below.

**RIGHT HAND 9/16 - 18 FOR OXYGEN LINE - WELDING HOSE CONNECTOR**

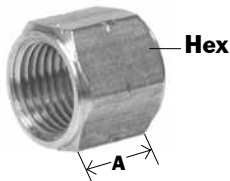


201RWA  
WRS  
KF-PE  
152

Part #	Size	A	Hex	Approx. Wt. Lbs.	
30-420	R.H. Nut only	0.63	0.68	0.04	----

Assemble with stem above.

**LEFT HAND 9/16 - 18 FOR ACETYLENE LINE - WELDING HOSE CONNECTOR**

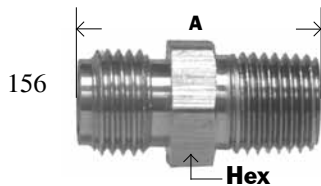


209LWA  
WLS  
154  
KF-RE

Part #	Size	A	Hex	Approx. Wt. Lbs.	
30-421	L.H. Nut only	0.63	0.68	0.04	----

Assemble with stem above.

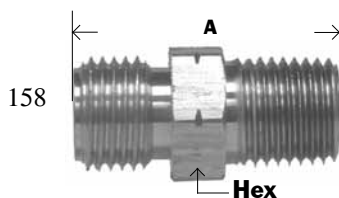
**RIGHT HAND 9/16 - 18 #122RWA - WELDING HOSE CONNECTOR**



156

Part #	Size	A	Hex	Approx. Wt. Lbs.	
30-401	1/4"-18	1.30	0.62	0.06	----

**LEFT HAND 9/16 - 18 #122LWA - WELDING HOSE CONNECTOR**



158

Part #	Size	A	Hex	Approx. Wt. Lbs.	
30-406	1/4"-18	1.30	0.62	0.06	----

Only the mediocre are always at their best.

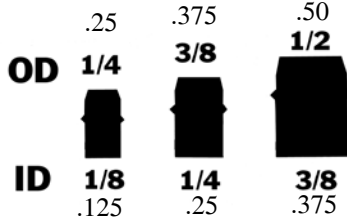
- Jean Giraudoux



**HOSE BARB**

**BRASS BARBS FOR POLYETHYLENE TUBING**

- Quick connecting fittings that do not require tube preparations for hand assembly. Inexpensive with excellent resistance to vibration.
- All sizes are tube O.D. (I.D.)



**UNION**



1062  
962

**TUBE O.D. (TUBE I.D.) X TUBE O.D. (TUBE I.D.)**

Part #	Size	
21-003	1/4(1/8) x 1/4(1/8)	----
21-007	3/8(1/4) x 1/4(1/8)	----
21-009	3/8(1/4) x 3/8(1/4)	----

**MALE ADAPTER**



1068  
968  
688

**TUBE O.D. (TUBE I.D.) X MALE PIPE**

Part #	Size	
21-021	1/4(1/8) x 1/16	----
21-025	1/4(1/8) x 1/4	----
21-027 <sup>+</sup>	3/8(1/4) x 1/8	----

**FEMALE ADAPTER**



1066  
966  
26  
668

**TUBE O.D. (TUBE I.D.) X FEMALE PIPE**

Part #	Size	
21-043	1/4(1/8) x 1/8	----
21-047	3/8(1/4) x 1/4	----

**BULKHEAD UNION**



1074

**TUBE O.D. (TUBE I.D.)**

Part #	Size	
21-083	3/8(1/4)	----

*More sizes and styles available  
...just ask!*

**BRASS FITTINGS**

**UNION ELBOW**



1065  
965

**TUBE O.D (I.D.)**

Part #	Size	
21-095	1/4(1/8)	----
21-097	3/8(1/4)	----
21-099	1/2(3/8)	----

**MALE 90° ELBOW**



1069  
969  
229

**TUBE O.D. (I.D.) X MALE PIPE**

Part #	Size	
21-111	1/4(1/8) x 1/16	----
21-113	1/4(1/8) x 1/8	----
21-115	1/4(1/8) x 1/4	----
21-117	3/8(1/4) x 1/8	----
21-119	3/8(1/4) x 1/4	----
21-121	1/2(3/8) x 3/8	----

**FEMALE 90° ELBOW**



1070  
970  
230

**TUBE O.D. (I.D.) X FEMALE PIPE**

Part #	Size	
21-133	1/4(1/8) x 1/8	----

**UNION TEE**

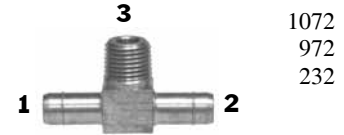


1064  
964  
224

**O.D. (I.D.) X O.D. (I.D.) X O.D. (I.D.)**

Part #	Size	
21-151	1/4(1/8)	----
21-153	3/8(1/4)X 3/8(1/4)X1/4(1/8)	----
21-155	3/8(1/4)	----
21-159	1/2(3/8)X1/2(3/8)X3/8(1/4)	----
21-161	1/2(3/8)	----

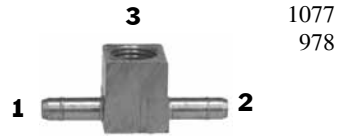
**MALE BRANCH TEE**



**O.D. (I.D.) X O.D. (I.D.) X MALE PIPE**

Part #	Size	
21-193	1/4(1/8) x 1/4(1/8) x 1/8	----
21-195	3/8(1/4) x 3/8(1/4) x 1/8	----
21-197	3/8(1/4) x 3/8(1/4) x 1/4	----

**FEMALE BRANCH TEE**

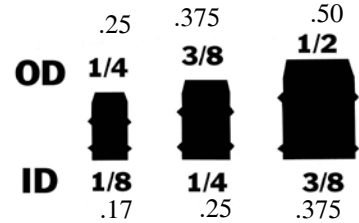


**O.D. (I.D.) X O.D. (I.D.) X FEMALE PIPE**

Part #	Size	
21-207	1/4(1/8) x 1/4(1/8) x 1/8	----

**TWO BARB FITTINGS**

More Sizes Available - Please Ask!



**MALE ADAPTER PIPE**



**TUBE O.D. (I.D.) X MALE PIPE**

Part #	Size	
32-150	1/4(1/8) x 1/8	----
32-151	1/4(1/8) x 1/4	----
32-153	3/8(1/4) x 1/4	----

**UNION TEE**



Part #	Tube O.D. (I.D.)	
32-159	1/4(1/8 ID)	----
32-160	3/8(1/4 ID)	----

**90° ELBOW**



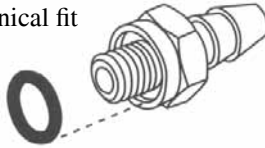
Part #	Tube O.D. (I.D.)	
32-170	1/4(1/8 ID)	----
32-171	3/8(1/4 ID)	----

# BRASS FITTINGS

# MINIATURE FITTINGS

## FEATURES: O-RING FITTINGS

- Reliability of a metal-to-metal mechanical fit
- Captured O-Ring for superior seal
- Precision machined barb design
- Electroless Nickel Plated Brass



This O-Ring fitting was designed with the superior static sealing qualities of an O-ring plus the reliability of a metal-to-metal mechanical fit.

When properly installed the skirt around the O-ring allows the fitting to mechanically seat on the rim of the female thread and hold the fitting tight. The high quality Buna-N O-ring is captured inside the skirt of the fitting, concealing

it from view and providing a clean looking connection. The result is superior sealing power - the Buna-N O-ring is not pinched but rather compressed within the fitting skirt which ensures a leakproof fit even when mated with a less than perfect sealing surface. When torqued down the mechanical fit keeps the fittings tight and retains its position even under constant vibration. Our captured O-ring design also eases installation, there is no need to replace or reposition the seal - we have eliminated the need for replacement gaskets or washers.

BRASS

## STRAIGHT CONNECTORS

Sizes are for Polyurethane Tubing w/ these additional inclusions.

Note	Exception
<b>A</b>	7/64 ID Nylon Tubing
<b>B</b>	9/64 ID Nylon Tubing
<b>C</b>	.170 ID Polyethylene



Part #	Thread x Hose ID	
99-250	10-32 x 1/16	----
99-251	10-32 x 1/16 w/ 1/4 Hex	----
99-252	10-32 x 1/16	----
99-253	10-32 x 5/64	----
99-254	10-32 x 5/64 w/ <b>A</b>	----
99-255	10-32 x 1/8 <b>A</b>	----
99-256	10-32 x .160 <b>B</b>	----
99-257	10-32 x .160 <b>C</b> w/ 1/4 Hex	----

## RUN TEES



Part #	Thread x Hose ID	
99-258	10-32 x 1/16	----
99-259	10-32 x 5/64	----
99-260	10-32 x 1/8 <b>A</b>	----

## BRANCH TEES



Part #	Thread x Hose ID	
99-261	10-32 x 1/16	----
99-262	10-32 x 5/64 <b>A</b>	----
99-263	10-32 x 1/8 <b>B</b>	----

## CROSSES

Note	Exception
<b>A</b>	7/64 ID Nylon Tubing
<b>B</b>	9/64 ID Nylon Tubing
<b>C</b>	.170 ID Polyethylene



Part #	Thread x Hose ID	
99-264	10-32 x 1/16	----
99-265	10-32 x 5/64	----
99-266	10-32 x 1/8 <b>A</b>	----

## ELBOWS



Part #	Thread x Hose ID	
99-267	10-32 x 1/16	----
99-268	10-32 x 5/64	----
99-269	10-32 x 1/8 <b>A</b>	----

## UNIONS



Part #	Hose ID x Hose ID	
99-270	1/16 x 1/16	----
99-271	.160 x 1/16 <b>C</b>	----
99-272	.160 x .160 <b>C</b>	----

More miniature fittings available, just ask!

## UNION ELBOWS

Note	Exception
<b>A</b>	7/64 ID Nylon Tubing
<b>B</b>	9/64 ID Nylon Tubing
<b>C</b>	.170 ID Polyethylene



Part #	Hose ID	
99-273	.160 x .160 <b>C</b>	----

## UNION CROSSES



Part #	Hose ID	
99-274	.160 <b>C</b>	----

## BARBED TEES



Part #	Hose ID	
99-275	5/64	----
99-277	1/16 <b>A</b>	----
99-278	.160 x .160 x .160 <b>C</b>	----

- All sizes are for polyurethane tubing with additions noted.

Laughing at our mistakes can lengthen our own life. Laughing at someone else's can shorten it.

- Cullen Hightower

**STAINLESS STEEL HOSE BARBS**



• Cast

**304 STAINLESS STEEL HOSE NIPPLES**

Part #	Hose I.D. x Male Pipe	
73-951	1/4"	----
73-952	3/8"	----
73-953	1/2"	----
73-954	3/4"	----
73-955	1"	----
73-956	1-1/4"	----
73-957	1-1/2"	----
73-958	2"	----
73-959	2-1/2"	----
73-960	3"	----

**304 STAINLESS STEEL REDUCING HOSE NIPPLES**

Part #	Hose I.D. x Male Pipe	
73-970	1/4" X 1/8"	----
73-971	3/8" X 1/4"	----
73-972	1/2" X 3/8"	----
73-973	1/2" X 1/4"	----
73-974	3/4" X 1/2"	----
73-975	1" X 3/4"	----
73-976	1" X 1/2"	----
73-977	1-1/4" X 1"	----
73-979	1-1/2" X 1-1/4"	----
73-980	1-1/2" X 1"	----
73-981	2" X 1-1/2"	----
73-982	2" X 1-1/4"	----

**316 STAINLESS STEEL HOSE NIPPLES**

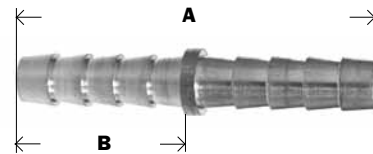
Part #	Hose I.D. x Male Pipe	
973-951	1/4"	----
973-952	3/8"	----
973-953	1/2"	----
973-954	3/4"	----
973-955	1"	----
973-956	1-1/4"	----
973-957	1-1/2"	----
973-958	2"	----
973-959	2-1/2"	----
973-990	3"	----
973-991	4"	----

Dimension data can change without notice. Please call us when dimensions are critical.



**316 STAINLESS STEEL MACHINED RIGID MALE ADAPTER**

Part #	Hose I.D. x NPT	
32-001SS	1/8" x 1/8"	----
32-002SS	3/16" x 1/8"	----
32-003SS	3/16" x 1/4"	----
32-004SS	1/4" x 1/8"	----
32-005SS	1/4" x 1/4"	----
32-006SS	1/4" x 3/8"	----
32-008SS	5/16" x 1/8"	----
32-009SS	5/16" x 1/4"	----
32-010SS	5/16" x 3/8"	----
32-011SS	3/8" x 1/8"	----
32-012SS	3/8" x 1/4"	----
32-013SS	3/8" x 3/8"	----
32-014SS	3/8" x 1/2"	----
32-015SS	1/2" x 1/4"	----
32-016SS	1/2" x 3/8"	----
32-017SS	1/2" x 1/2"	----
32-018SS	1/2" x 3/4"	----
32-019SS	5/8" x 3/8"	----
32-020SS	5/8" x 1/4"	----
32-021SS	5/8" x 3/4"	----
32-022SS	3/4" x 1/2"	----
32-023SS	3/4" x 3/4"	----
32-024SS	1" x 3/4"	----

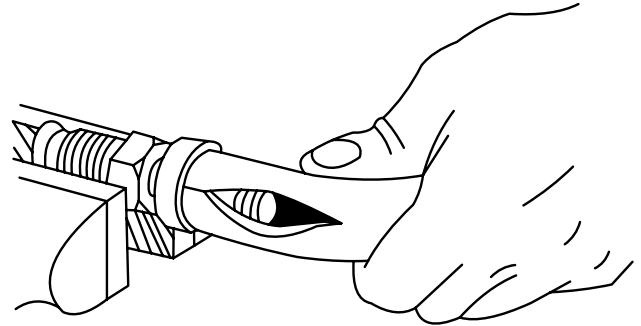
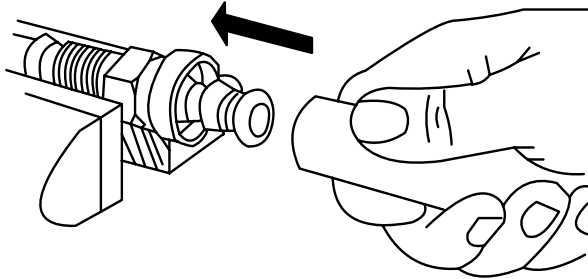


**316 STAINLESS STEEL SPLICER**

Part #	Hose I.D. x Hose I.D.	A	B	
32-093SS	1/4"	2.03	0.97	----
32-095SS	3/8"	2.06	0.97	----
32-096SS	1/2"	2.06	0.97	----
32-098SS	3/4"	2.50	1.19	----

• NOTE: See Stainless Steel Hose Barbs for beverage on pg. 301

# Push On Barb Fittings



**Typical Application:** Low Pressure Air, Fuel, Lube, and Oil Lines

**Material:** CA360 Brass

**Advantages:** Easy assembly. No clamps needed!!

• **Assembly Instructions**

1- Lubricate insert.

2- Hold hose at angle as shown & push on and up over first barb.

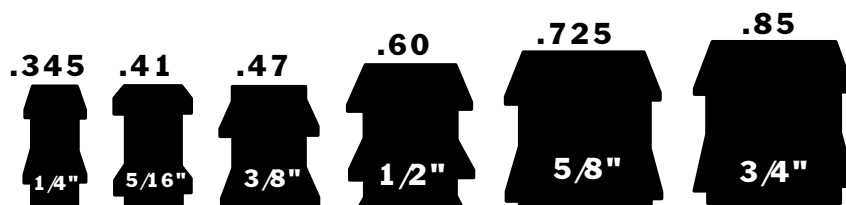
3- Continue to push straight on until hose is seated under protective plastic cap. Keep hands back from hose end area so that hose can expand.

• **Disassembling Instructions**

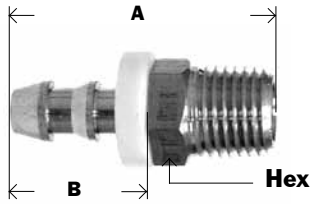
1- Split hose as shown above. Do not cut completely through hose. Sealing edge of barb could be damaged.

2- Bend hose and remove with a quick pull.

## Actual Profile of Push On Barbs



**MALE ADAPTER**

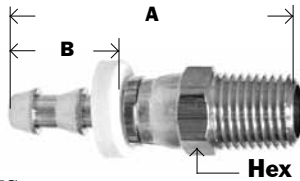


- 301
- P990A
- HLM
- 100B-1
- KA-MB
- 272
- 29PO
- 725
- 625

Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
30-200	1/4" x 1/8"	1.43	0.87	0.50	0.04	----
30-201	1/4" x 1/4"	1.66	0.87	0.56	0.06	----
30-211	1/4" x 3/8"	1.66	0.87	0.68	0.06	----
30-212	5/16" x 1/8"	1.42	0.77	0.43	0.04	----
30-213	5/16" x 1/4"	1.66	0.87	0.56	0.06	----
30-202	3/8" x 1/8"	1.53	0.97	0.50	0.04	----
30-203	3/8" x 1/4"	1.69	0.89	0.56	0.07	----
30-204	3/8" x 3/8"	1.76	0.97	0.68	0.08	----
30-205	3/8" x 1/2"	1.97	0.97	0.87	0.10	----
30-392	3/8" x 3/4"	1.97	0.92	1.06	0.16	----
30-216	1/2" x 1/4"	1.76	0.97	0.68	0.08	----
30-206	1/2" x 3/8"	1.76	0.97	0.68	0.09	----
30-207	1/2" x 1/2"	1.97	0.97	0.87	0.14	----
30-217	1/2" x 3/4"	1.97	0.97	1.06	0.16	----
30-219	5/8" x 3/8"	2.34	1.50	0.75	0.12	----
30-209	5/8" x 1/2"	2.45	1.45	0.87	0.16	----
30-214	5/8" x 3/4"	2.45	1.45	1.06	0.18	----
30-215	3/4" x 1/2"	2.45	1.45	0.87	0.21	----
30-210	3/4" x 3/4"	2.45	1.45	1.06	0.20	----
30-238	1" x 3/4"	2.93	1.50	1.25	0.43	----
30-239	1" x 1"	3.11	1.50	1.37	0.49	----

For STAINLESS PUSH ON FITTINGS see pg. 33

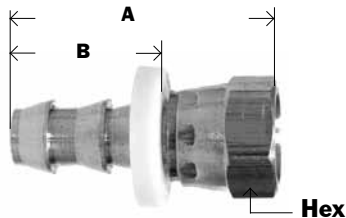
**MALE SWIVEL**



- HMS
- 285

Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
30-385 <sup>3.5</sup>	1/4" x 1/4"	2.02	0.87	0.56	0.06	----
30-386 <sup>3.5</sup>	3/8" x 1/4"	2.12	0.97	0.56	0.08	----
30-387 <sup>3.5</sup>	3/8" x 3/8"	2.12	0.97	0.68	0.08	----
30-388 <sup>3.5</sup>	1/2" x 3/8"	2.12	0.97	0.68	0.10	----
30-389 <sup>3.5</sup>	1/2" x 1/2"	2.33	0.97	0.87	0.14	----
30-390 <sup>3.5</sup>	3/4" x 3/4"	2.80	1.45	1.06	0.24	----

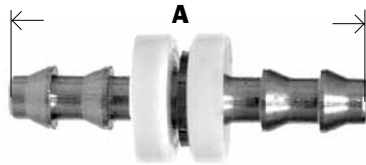
**FEMALE SWIVEL**



Part #	Hose I.D. x Gasket Swivel	A	B	Hex	Approx. Wt. Lbs.	
30-359	1/4" x 1/8"	1.39	0.77	0.50	0.03	----
30-358	1/4" x 1/4"	1.47	0.82	0.68	0.06	----
30-360	3/8" x 1/4"	1.61	1.00	0.68	0.06	----
30-361	3/8" x 3/8"	1.77	0.97	0.81	0.08	----
30-362	3/8" x 1/2"	1.80	0.92	0.93	0.09	----
30-365	5/8" x 3/4"	2.40	1.55	1.18	0.28	----
30-363	1/2" x 1/2"	1.88	1.02	0.93	0.11	----
30-366	3/4" x 3/4"	2.36	1.55	1.18	0.32	----

Dimension data can change without notice.  
Please call us when dimensions are critical.

**HOSE SPLICER**

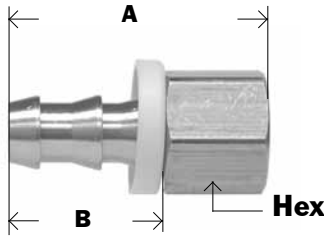


- 696 100B-Y
- 29SPO KA-RM
- 296 MHL
- 729 296

Part #	Hose I.D.	A	Approx. Wt. Lbs.	
30-300	1/4"	1.87	0.04	----
30-305	5/16"	1.80	0.04	----
30-301	3/8"	2.00	0.06	----
30-302	1/2"	2.01	0.08	----
30-303	5/8"	3.03	0.14	----
30-304	3/4"	3.03	0.14	----
30-306	1"			----

For STAINLESS see pg. 33

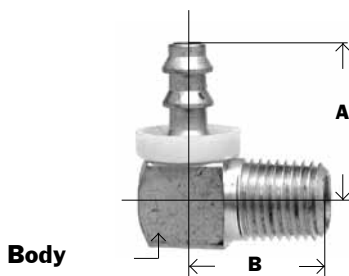
**RIGID FEMALE ADAPTER**



- 29FPO 274
- HLF 726
- 626

Part #	Hose I.D. x Female NPTF	A	B	Hex	Approx. Wt. Lbs.	
30-220	1/4" x 1/8"	1.35	0.87	0.50	0.02	----
30-221	1/4" x 1/4"	1.51	0.87	0.62	0.06	----
30-384	1/4" x 3/8"	1.51	0.77	0.75	0.06	----
30-391	5/16" x 1/8"	1.32	0.77	0.50	0.03	----
30-222	5/16" x 1/4"	1.51	0.87	0.62	0.06	----
30-393	3/8" x 1/8"	1.47	0.92	0.56	0.06	----
30-224	3/8" x 1/4"	1.61	0.97	0.62	0.06	----
30-225	3/8" x 3/8"	1.63	0.97	0.75	0.06	----
30-394	3/8" x 1/2"	1.66	0.92	0.93	0.12	----
30-397	3/8" x 3/4"	1.97	0.97	1.18		----
30-223	1/2" x 1/4"	1.76	1.02	0.68	0.08	----
30-226	1/2" x 3/8"	1.63	0.97	0.75	0.08	----
30-227	1/2" x 1/2"	1.77	0.97	0.93	0.14	----
30-396	1/2" x 3/4"	2.07	1.02	1.18	0.20	----
30-398	5/8" x 3/8"	2.24	1.55	0.75		----
30-229	5/8" x 1/2"	2.24	1.48	0.93	0.11	----
30-399	3/4" x 1/2"					----
30-395	3/4" x 3/4"	2.55	1.50	1.18	0.24	----
30-400	1" x 3/4"	2.55	1.55	1.18		----
30-402	1" x 1"	2.68	1.55	1.43		----

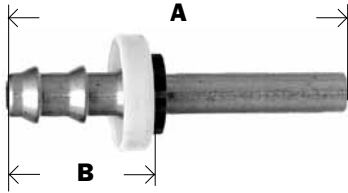
**MALE ELBOW**



- 100-C
- 29EPO

Part #	Hose I.D. x Male NPTF	A	B	Body Width	Approx. Wt. Lbs.	
30-372	1/4" x 1/8"	0.98	0.75	0.50	0.04	----
30-373	1/4" x 1/4"	1.04	0.95	0.56	0.06	----
30-374	5/16" x 1/8"	1.02	0.94	0.50	0.06	----
30-375	5/16" x 1/4"	1.09	0.94	0.56	0.08	----
30-370	3/8" x 1/8"	1.11	0.75	0.50	0.10	----
30-371	3/8" x 1/4"	1.13	0.90	0.56	0.10	----
30-376	3/8" x 3/8"	1.19	0.87	0.70	0.12	----
30-377	3/8" x 1/2"	1.30	1.19	0.87	0.22	----
30-382	1/2" x 3/8"	1.54			0.13	----
30-378	1/2" x 1/2"	1.50	1.19	0.87	0.22	----
30-379	5/8" x 1/2"	1.98	1.19	0.87	0.26	----
30-380	5/8" x 3/4"	2.07	1.28	1.06	0.32	----
30-383	3/4" x 1/2"	2.15			0.25	----
30-381	3/4" x 3/4"	2.07	1.28	1.06	0.34	----

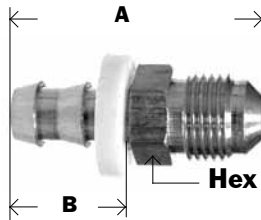
**RIGID TUBE ADAPTER**



294 303  
100B-X 732  
KA-RL 694

Part #	Hose I.D. x O.D Tube	A	B	Approx. Wt. Lbs.	
30-290	1/4" x 3/16"	1.68	0.77	0.04	----
30-291	1/4" x 1/4"	1.88	0.77	0.04	----
30-292	1/4" x 5/16"	1.88	0.77	0.04	----
30-293	5/16" x 5/16"	1.91	0.79	0.04	----
30-294	3/8" x 3/8"	2.03	0.92	0.06	----
30-297	1/2" x 1/2"	2.13	1.02	0.06	----
30-298	5/8" x 5/8"	2.61	1.50	0.10	----
30-299	3/4" x 3/4"	2.61	1.50	0.25	----

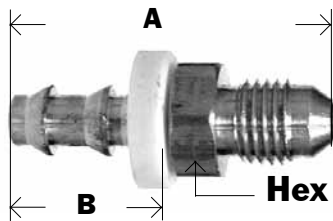
**MALE SAE FLARE ADAPTER**



100B-3 682  
KA-MS 302  
727 282

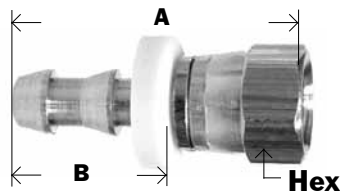
Part #	Hose I.D. x 45° Male Flare	A	B	Hex	Approx. Wt. Lbs.	
30-240	1/4" x 1/4"	1.45	0.84	0.43	0.04	----
30-241	1/4" x 5/16"	1.59	0.84	0.50	0.04	----
30-249	5/16" x 5/16"	1.60	0.80	0.50	0.06	----
30-271	3/8" x 5/16"	1.64	0.86	0.50	0.08	----
30-243	3/8" x 3/8"	1.83	0.92	0.62	0.08	----
30-245	1/2" x 1/2"	2.04	1.05	0.75	0.10	----
30-246	5/8" x 5/8"	2.73	1.50	0.87	0.19	----
30-247	3/4" x 3/4"	2.98	1.50	1.06	0.32	----

**MALE JIC FLARE ADAPTER**



Part #	Hose I.D. x Male JIC	A	B	Hex	Approx. Wt. Lbs.	
32-900	1/4" x 1/4"	1.57	0.84	0.50	0.04	----
32-901	1/4" x 5/16"	1.60	0.83	0.56	0.04	----
32-906	1/4" x 3/8"	1.63	0.77	0.62	0.05	----
32-902	3/8" x 3/8"	1.78	0.97	0.62	0.06	----
32-903	1/2" x 1/2"	1.97	0.97	0.75	0.10	----
32-907	5/8" x 5/8"	2.62	1.50	0.93	0.19	----
32-905	3/4" x 3/4"	2.79	1.50	1.12	0.29	----

**SAE/JIC DUAL 45°/37° FEMALE SWIVEL**



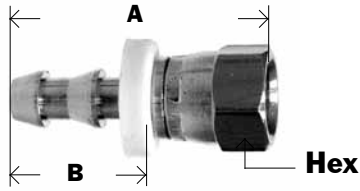
29FDS  
287  
HDF  
309  
735  
690  
P990-K  
305

Part #	Hose I.D. x Female 45°/37°	A	B	Hex	Approx. Wt. Lbs.	
30-230	1/4" x 1/4"	1.53	0.87	0.56	0.06	----
30-231	1/4" x 5/16"	1.57	0.87	0.62	0.04	----
30-232	5/16" x 5/16"	1.56	0.87	0.62	0.04	----
30-233	3/8" x 1/2"	1.79	0.97	0.87	0.10	----
30-234	1/2" x 1/2"	1.77	0.97	0.87	0.10	----
30-235	1/2" x 5/8"	1.84	0.97	1.00	0.12	----
30-236	5/8" x 1/2"	2.27	1.45	0.87	0.18	----
30-237	5/8" x 5/8"	2.33	1.45	1.00	0.14	----

For STAINLESS see pg. 33 or Beverage section, pg. 301

Dimension data can change without notice.  
Please call us when dimensions are critical.

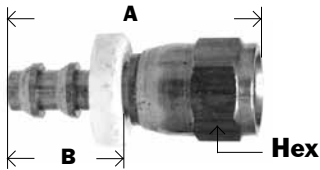
**45° SAE FLARE FEMALE SWIVEL**



Part #	Hose I.D. x 45° Female Flare	A	B	Hex	Approx. Wt. Lbs.	
30-250	1/4" x 1/4"	1.54	0.87	0.56	0.04	----
30-251	1/4" x 5/16"	1.57	0.87	0.62	0.04	----
30-253	1/4" x 3/8"	1.63	0.87	0.75	0.06	----
30-254	5/16" x 5/16"	1.58	0.87	0.68	0.06	----
30-260	5/16" x 3/8"	1.63	0.87	0.75	0.08	----
30-252	3/8" x 3/8"	1.73	0.97	0.75	0.10	----
30-257	3/8" x 1/2"	1.85	0.87	0.87	0.10	----
30-261	1/2" x 3/8"	1.92	1.05	0.75	0.10	----
30-255	1/2" x 1/2"	1.77	0.97	0.87	0.12	----
30-258	5/8" x 5/8"	2.35	1.45	1.00	0.14	----
30-259	3/4" x 3/4"	2.42	1.45	1.25	0.22	----

728 100S-4  
 P990-H KA-MB  
 29AEPO HSF  
 307 684  
 284

**FEMALE 37° JIC FLARE SWIVEL**

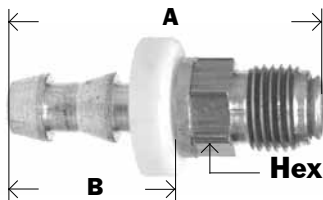


Part #	Hose I.D. x Female JIC	A	B	Hex	Approx. Wt. Lbs.	
30-265	1/4" x 1/4"	1.54	0.87	0.56	0.04	----
30-264	1/4" x 3/8"	1.60	0.87	0.68	0.06	----
30-270	5/16" x 3/8"	1.60	0.82	0.68	0.06	----
30-266	3/8" x 3/8"	1.70	0.97	0.68	0.08	----
30-267	1/2" x 1/2"	1.78	0.97	0.87	0.10	----
30-268	5/8" x 5/8"	2.33	1.45	1.00	0.14	----
30-269	3/4" x 3/4"	2.40	1.45	1.25	0.22	----

29J1CPO 288  
 HJF 100B-6  
 688 308  
 738 P990-F

For STAINLESS see pg. 33

**INVERTED FLARE MALE SWIVEL**

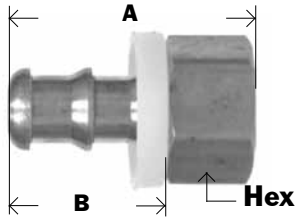


Part #	Hose I.D. x Male INV Flare	A	B	Hex	Approx. Wt. Lbs.	
30-275	1/4" x 3/16"	1.52	0.87	0.37	0.04	----
30-276	1/4" x 1/4"	1.56	0.87	0.43	0.04	----
30-277	1/4" x 5/16"	1.62	0.87	0.50	0.04	----
30-278	5/16" x 1/4"	1.56	0.87	0.43	0.06	----
30-280	5/16" x 5/16"	1.62	0.87	0.50	0.06	----
30-283	5/16" x 3/8"	1.63	0.87	0.62	0.06	----
30-284	3/8" x 5/16"	1.72	0.97	0.50	0.06	----
30-279	3/8" x 3/8"	1.76	0.97	0.62	0.06	----
30-281	1/2" x 3/8"	1.86	1.06	0.62	0.08	----
30-282	1/2" x 1/2"	1.84	0.97	0.75	0.10	----
30-286	5/8" x 5/8"	2.50	1.57	0.87	0.14	----

290  
 100B-B  
 KA-MF  
 1MS



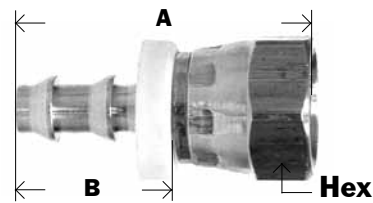
**INVERTED FLARE FEMALE ADAPTER**



306 P990-J  
 100B-A 736  
 KA-NG 692  
 292

Part #	Hose I.D. x Female INV Flare	A	B	Hex	Approx. Wt. Lbs.	
30-310	1/4" x 3/16"	1.12	0.84	0.50	0.02	----
30-311	1/4" x 1/4"	1.14	0.84	0.56	0.02	----
30-312	1/4" x 5/16"	1.18	0.84	0.62	0.02	----
30-316	5/16" x 5/16"	1.25	0.81	0.62	0.04	----
30-313	3/8" x 5/16"	1.32	0.87	0.62	0.04	----
30-314	3/8" x 3/8"	1.35	0.95	0.75	0.06	----
30-315	1/2" x 1/2"	1.73	1.04	0.87	0.12	----

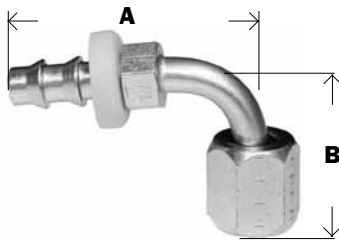
**FEMALE BALLSEAT SWIVEL**



628 731  
 278 NPSM  
 29SPO

Part #	Hose I.D. x Female NPSM	A	B	Hex	Approx. Wt. Lbs.	
30-340	1/4" X 1/8"	1.39	0.85	0.50	0.06	----
30-341	1/4" X 1/4"	1.47	0.80	0.68	0.06	----
30-342	1/4" x 3/8"	1.40	0.77	0.68	0.09	----
30-343	3/8" X 1/4"	1.61	0.97	0.68	0.08	----
30-344	3/8" X 3/8"	1.75	0.95	0.81	0.10	----
30-346	1/2" X 1/2"	1.88	1.09	0.93	0.12	----
30-345	1/2" x 3/4"	2.36	1.02	1.18	0.18	----
30-349	3/4" X 3/4"	2.36	1.55	1.18	0.22	----

**SAE/ JIC 37° / 45° FEMALE SWIVEL 90° ZINC PLATED STEEL**



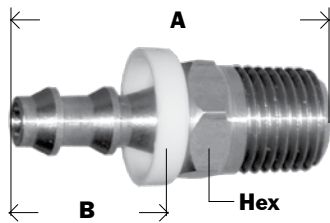
Part #	Hose I.D. x Female 37°/45°	A	B	Approx. Wt. Lbs.	
30-480	1/4"	1.55	0.83	.064	----
30-482	3/8"	1.85	0.91	.095	----
30-483*	3/8"	1.98	0.85	.095	----
30-484	1/2"	2.33	1.09	.171	----
30-486	3/4"	3.26	1.81	.281	----

\* SAE

Watch your thoughts; they become words.  
 Watch your words; they become actions.  
 Watch your actions; they become habits.  
 Watch your habits; they become character.  
 Watch your character; it becomes your destiny.

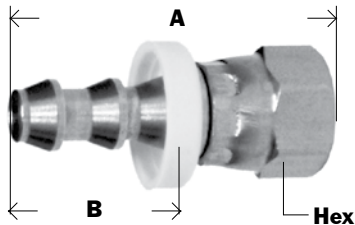
- Lao Tze

**STAINLESS STEEL MALE ADAPTERS**



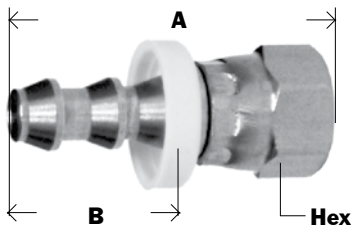
Part #	Hose I.D. x NPT	A	B	Hex	Approx. Wt. Lbs.	
30-200SS	1/8" x 1/8"	1.42	0.77	0.44	0.027	----
30-201SS	1/4" x 1/4"	1.61	0.77	0.56	0.043	----
30-203SS	3/8" x 1/4"	1.76	0.92	0.56	0.053	----
30-204SS	3/8" x 3/8"	1.76	0.92	0.69	0.067	----
30-206SS	1/2" x 3/8"	1.86	1.02	0.69	0.071	----
30-207SS	1/2" x 1/2"	2.07	1.02	0.88	0.119	----
30-215SS	3/4" x 1/2"	2.55	1.50	0.88	0.20	----
30-210SS	3/4" x 3/4"	2.55	1.50	1.06	0.194	----

**STAINLESS STEEL SAE/ JIC 45°/ 37° FEMALE SWIVEL**



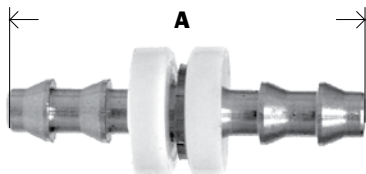
Part #	Hose I.D. x Female 45°/37°	A	B	Hex	Approx. Wt. Lbs.	
30-230SS	1/4" x 1/4"	2.03	0.97	0.56	0.023	----
30-234SS	1/2" x 1/2"	2.06	0.97	0.88	0.04	----

**STAINLESS STEEL FEMALE 37° JIC FLARE SWIVEL**



Part #	Hose I.D. x Female 37°	A	B	Hex	Approx. Wt. Lbs.	
30-266SS	3/8"	1.75	.92	1.06	0.065	----
30-269SS	3/4"	2.53	1.50	1.25	0.259	----

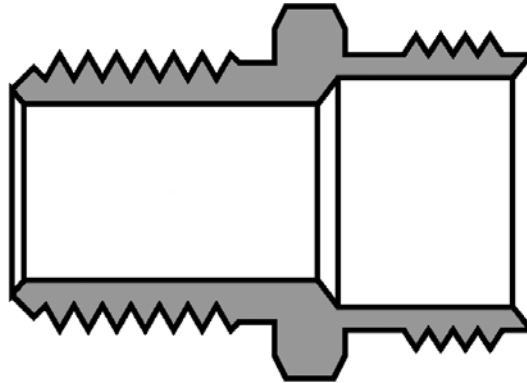
**STAINLESS STEEL HOSE SPLICER**



Part #	Hose I.D. x Tube O.D.	A	Approx. Wt. Lbs.	
30-300SS	1/4"	1.73	0.025	----
30-301SS	3/8"	2.05	0.051	----
30-302SS	1/2"	2.25	0.073	----

• NOTE: See Stainless Steel beverage fittings on pg. 301

# Garden Hose Fittings



Dimension data can change without notice.  
Please call us when dimensions are critical.



See page 250 for  
Plastic Garden Hose Fittings

## •Temperature and Working Pressure Ranges

From +35°F to +100°F at 75 PSI maximum or the recommended working pressure of the garden hose. (Not to exceed 150 PSI.)

**Note:** All female connector ends should have a rubber washer inserted prior to usage.

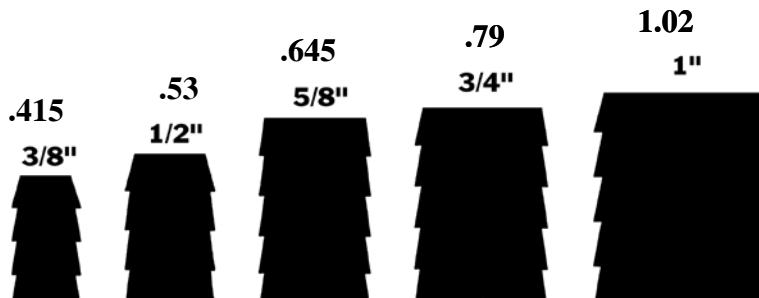
**FGH** = Female Garden Hose threads  
**MGH** = Male Garden Hose threads



## Male Garden Hose Profile

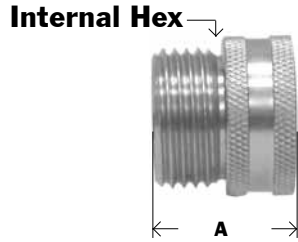
Male garden hose threads are all 3/4" with an outside diameter of 1.0625 and 11-1/2" threads per inch.

## Actual Profile of Garden Hose Barbs



**SWIVEL - MGH X FGH**

•WASHER INCLUDED

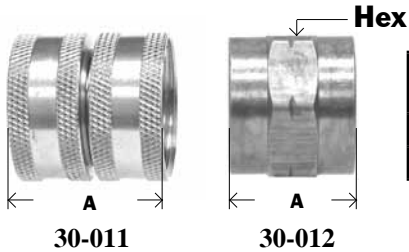


Part #	MGH X FGH	A	Hex	Approx. Wt. Lbs.	
30-000	3/4" x 3/4"	1.03	0.50*	0.26	----

\* Internal Hex

**SWIVEL - FGH X FGH**

•WASHER INCLUDED



Part #	FGH X FGH	A	Hex	Approx. Wt. Lbs.	
30-011	3/4" x 3/4"	1.03	1.18 O.D.	0.24	----
30-012	No Swivel	1.08	1.19	0.24	----

HUS      GSU  
 91      101GHSV    506  
 203W    22AS      FS66

**SWIVEL - FGH X FEMALE PIPE**

•WASHER INCLUDED



Part #	FGH x Female NPTF	A	Hex	Approx. Wt. Lbs.	
30-001	3/4" x 1/2"	1.05	0.87	0.11	----
30-006	3/4" x 3/4"	1.11	1.12	0.11	----

HSU11    5AS  
 91Z      21517  
 197S     502  
 98GHSV   F565

**RIGID - FGH X FEMALE PIPE**

•WASHER INCLUDED



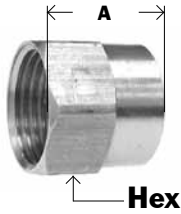
Part #	FGH x Female NPTF	A	Hex	Approx. Wt. Lbs.	
30-016	3/4" x 1/8"	1.02	1.18	0.08	----
30-017	3/4" x 1/4"	0.65	1.12	0.07	----
30-018	3/4" x 3/8"	1.19	1.18	0.11	----

95GH  
 501

I have never met a man so ignorant that I couldn't learn something from him.

- Galileo Galilei

**RIGID - FGH X FEMALE PIPE**

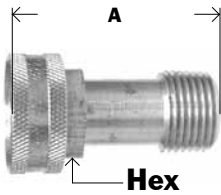


FS67  
198  
HU11  
21507  
502  
99GH  
5A  
H15PP

Part #	FGH x Female NPTF	A	Hex	Approx. Wt. Lbs.	
30-078	3/4" x 1/2"	1.06	1.18	0.10	----
30-083	3/4" x 3/4"	1.06	1.18	0.12	----

**SWIVEL - FGH X MALE PIPE**

•WASHER INCLUDED

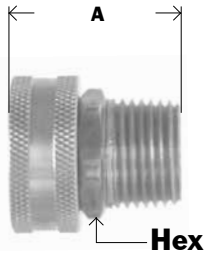


504  
89GH  
W1  
62H4  
88GH  
W1

Part #	FGH x Male NPTF	A	Hex	Approx. Wt. Lbs.	
30-047	3/4" x 1/4"	2.04	0.75	0.13	----
30-048	3/4" x 3/8"	2.06	0.75	0.14	----
30-049	3/4" x 1/2"	2.06	0.87	0.18	----

**SWIVEL - FGH X MALE PIPE**

•WASHER INCLUDED



Part #	FGH x Male NPTF	A	Hex	Approx. Wt. Lbs.	
30-183	3/4" x 1/2"	1.32	0.81	0.11	----

**RIGID - FGH X MALE PIPE**

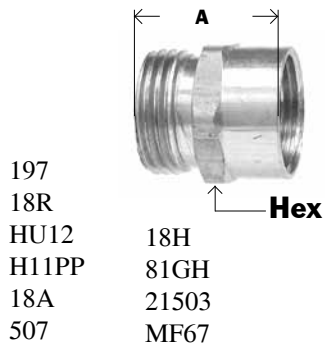


21505  
503  
83GH  
20A  
HU21  
199  
H7

Part #	FGH x Male NPTF	A	Hex	Approx. Wt. Lbs.	
30-088	3/4" x 1/2"(1/2"SWT)**	1.06	1.18	0.09	----
30-093	3/4" x 3/4"	1.06	1.18	0.11	----
30-094	3/4" x 3/4"(1/2" FIP)	1.17	1.18	0.11	----
30-093L*	3/4" x 3/4"	1.22	1.18	0.14	----

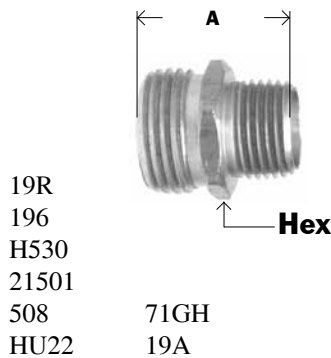
\* Long pattern  
\*\* 1/2 Swt = 5/8 O.D.

**RIGID - MGH X FEMALE PIPE**



Part #	MGH X Female NPTF	A	Hex	Approx. Wt. Lbs.	
30-066	3/4" x 1/4"	1.10	1.06	0.09	----
30-067	3/4" x 3/8"	1.09	1.06	0.12	----
30-068	3/4" x 1/2"	0.81	1.06	0.10	----
30-073	3/4" x 3/4"	1.12	1.18	0.10	----

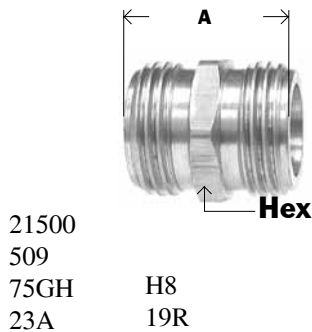
**RIGID - MGH X MALE PIPE**



Part #	MGH X Male NPTF	A	Hex	Approx. Wt. Lbs.	
30-053	3/4" x 3/8"	1.25	1.06	0.10	----
30-058*	3/4" x 1/2"	1.31	1.06	0.12	----
30-063**	3/4" x 3/4" x 1/2"	1.31	1.06	0.13	----
30-063BE****	3/4" x 3/4"	1.31	1.06	0.15	----
30-063L	Long Pattern	1.43	1.06	0.12	----
30-063S	3/4" x 3/4" Short	1.10	1.06	0.10	----

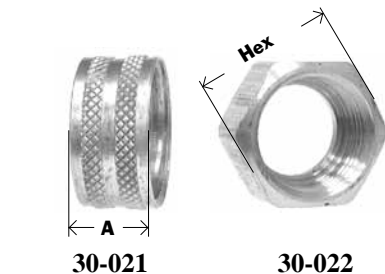
No Tap  
 \* (1/2 Swt = 5/8 O.D.)  
 \*\* (Tapped 1/2 FIP)  
 \*\*\*\* (Tapped 1/2 FIP Both ends)

**RIGID - MGH X MGH**



Part #	MGH X MGH	A	Hex	Approx. Wt. Lbs.	
30-098	3/4" x 3/4" (1/2" FIP)	1.22	1.06	0.13	----

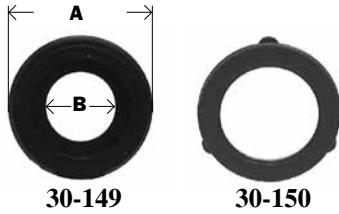
**GARDEN HOSE NUT**



Part #	Size	A	Hex	Approx. Wt. Lbs.	
30-021	Knurled	0.61	1.37 O.D.	0.08	----
30-022	Hex Nut	0.51	1.12	0.08	----

Dimension data can change without notice.  
 Please call us when dimensions are critical.

**GARDEN HOSE WASHERS**

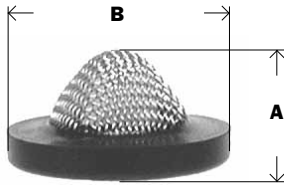


Part #	Size	A	B	Thickness	Approx. Wt. Lbs.	
30-149	recessed washer	1.02	0.49	0.18	0.01	----
30-150	black*	0.98	0.68	0.13	0.01	----
30-150R	red	1.00	0.68	0.13	0.01	----

\* plasticized rubber

GHW  
901GH

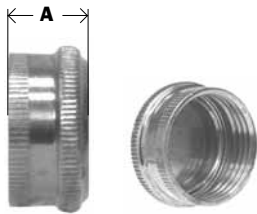
**GARDEN HOSE FILTER WASHER**



Part #	Size	A	B	Approx. Wt. Lbs.	
30-180	30 Mesh	0.52	1.00	0.02	----
30-180F	60 Mesh	0.52	1.00	0.02	----

LA662

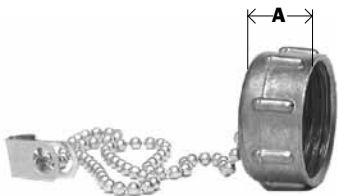
**GARDEN HOSE CAP - Die Cast Brass**



Part #	Size	A	Approx. Wt. Lbs.	
30-103	3/4" Die Cast	0.58	0.04	----

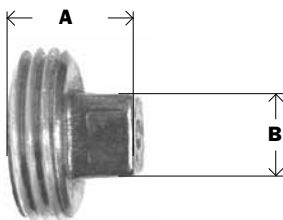
513  
96GH  
GHN5  
HC1      21518  
LA215    200-W

**GARDEN HOSE CAP WITH CHAIN**



Part #	Size	A	Approx. Wt. Lbs.	
30-142	3/4" w/ 8" Chain	0.58	0.06	----

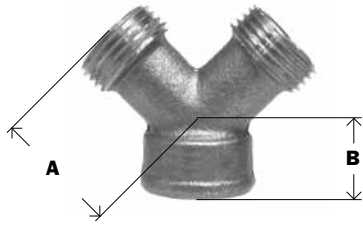
**GARDEN HOSE PLUG**



Part #	Size	A	B	Approx. Wt. Lbs.	
30-026	3/4"	0.69	0.61	0.12	----

**CAST BRASS HOSE - "Y" CONNECTOR**

•WASHER INCLUDED



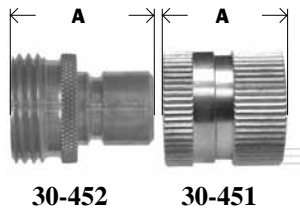
21A

Part #	Size	A	B	Approx. Wt. Lbs.	
30-140	3/4"	1.40	0.67	0.22	----

• See more Garden Hose "Y"'s on page 43

**QUICK DISCONNECT GARDEN HOSE COUPLERS**

•WASHER INCLUDED

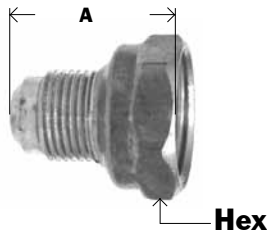


LA73C

Part #	Size	A	Approx. Wt. Lbs.	
30-450	Complete	----	0.24	----
30-451	Female end	1.14	0.12	----
30-452	Male end	1.26	0.12	----

**MALE FLARE X FEMALE HOSE RIGID**

190  
46WH  
HFU21

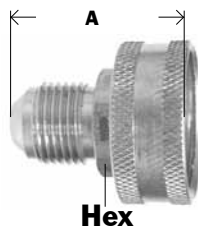


Part #	Male Flare x Female Hose	A	Hex	Approx. Wt. Lbs.	
30-123	3/8" x 3/4"	1.31	1.18	0.10	----
30-128	1/2" x 3/4"	1.38	1.18	0.12	----
30-133	5/8" x 3/4"	1.53	1.18	0.14	----

**MALE FLARE x FEMALE HOSE SWIVEL**

•WASHER INCLUDED

50GHSV  
51GHSV 68H  
W1 191

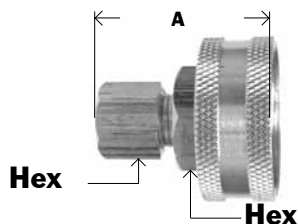


Part #	Male Flare x Female Hose	A	Hex	Approx. Wt. Lbs.	
30-052	1/4" x 3/4"	1.24	0.75	0.10	----
30-138	3/8" x 3/4"	1.25	0.25*	0.12	----
30-139	1/2" x 3/4"	1.49	0.81	0.14	----

\* Internal Hex

**COMPRESSION X FGH**

•WASHER INCLUDED



Part #	Compression x FGH	A	Hex 1	Hex 2	Approx. Wt. Lbs.	
30-050	1/4" x 3/4"	1.02	0.50	0.75	0.09	----
30-051	3/8" x 3/4"	1.04	0.62	0.75	0.12	----

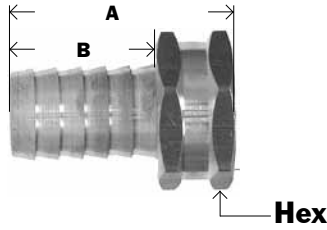


**BARSTOCK BRASS GARDEN HOSE COUPLINGS**

**BRASS**

**FEMALE SWIVEL ONLY**

•WASHER INCLUDED



22RF KF-RY  
591 HU126  
GHF 195



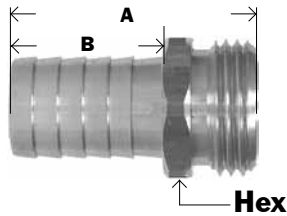
**BRASS**

Part #	Hose Barb x FGH	A	B	Hex	Approx. Wt. Lbs.	
30-031	3/8" x 3/4"	1.82	1.19	1.18	0.11	----
30-032	1/2" x 3/4"	1.82	1.19	1.18	0.12	----
30-033	5/8" x 3/4"	1.82	1.19	1.18	0.13	----
30-034	3/4" x 3/4"	1.82	1.19	1.18	0.15	----
30-035	1" x 1"	2.28	1.47	1.50	0.18	----

**STAINLESS STEEL 316**

30-032SS	1/2" x 3/4"	1.82	1.19	1.18	0.12	----
30-033SS	5/8" x 3/4"	1.82	1.19	1.18	0.13	----
30-034SS	3/4" x 3/4"	1.82	1.19	1.18	0.15	----

**MALE END ONLY**



22RM  
590 201GH  
GHM 193  
KF-PY HU125



**BRASS**

Part #	Hose Barb x MGH	A	B	Hex	Approx. Wt. Lbs.	
30-039	3/8" x 3/4"	1.88	1.19	1.06	0.12	----
30-040	1/2" x 3/4"	1.88	1.19	1.06	0.12	----
30-041	5/8" x 3/4"	1.88	1.19	1.06	0.12	----
30-042	3/4" x 3/4"	1.88	1.19	1.06	0.13	----
30-043	1" x 1"	2.34	1.47	1.37	0.26	----

**STAINLESS STEEL 316**

30-040SS	1/2" x 3/4"	1.88	1.19	1.06	0.12	----
30-041SS	5/8" x 3/4"	1.88	1.19	1.06	0.12	----
30-042SS	3/4" x 3/4"	1.88	1.19	1.06	0.13	----

**GARDEN HOSE COUPLING**

•WASHER INCLUDED



GHS  
92GH 22R  
936H 592  
202GHS



**BRASS**

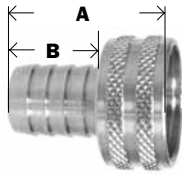
Part #	Hose Barb	
30-025	3/8"	----
30-027	1/2"	----
30-028	5/8"	----
30-029	3/4"	----
30-030	1"	----

**STAINLESS STEEL 316**

30-027SS	1/2"	----
30-028SS	5/8"	----
30-029SS	3/4"	----

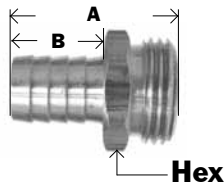
Dimension data can change without notice.  
Please call us when dimensions are critical.

**GARDEN HOSE COUPLING - Short Shank Knurled Nut**



Part #	Hose Barb x FGH	A	B	Approx. Wt. Lbs.	
30-466	1/2" x 3/4"	1.50	0.88	0.08	----
30-467	5/8" x 3/4"	1.50	0.88	0.09	----
30-468	3/4" x 3/4"	1.47	0.88	0.10	----

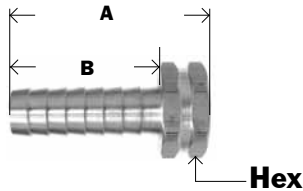
**GARDEN HOSE COUPLING - Short Shank**



Part #	Hose Barb x MGH	A	B	Hex	Approx. Wt. Lbs.	
30-471	1/2" x 3/4"	1.55	0.88	1.06	0.11	----
30-472	5/8" x 3/4"	1.56	0.88	1.06	0.12	----
30-473	3/4" x 3/4"	1.56	0.88	1.06	0.13	----

**ROD BRASS - 2" SHANK**

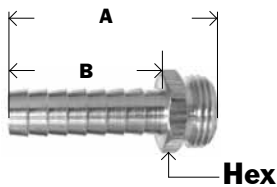
•WASHER INCLUDED



Part #	Hose Barb x FGH	A	B	Hex	Approx. Wt. Lbs.	
30-505	1/2" x 3/4"	2.55	2.04	1.18	0.13	----
30-506	5/8" x 3/4"	2.56	2.04	1.18	0.16	----
30-507	3/4" x 3/4"	2.56	2.04	1.18	0.17	----

GHFL  
594

**ROD BRASS - 2" SHANK**



Part #	Hose Barb x MGH	A	B	Hex	Approx. Wt. Lbs.	
30-510	1/2" x 3/4"	2.72	2.04	1.06	0.16	----
30-511	5/8" x 3/4"	2.72	2.04	1.06	0.17	----
30-512	3/4" x 3/4"	2.72	2.04	1.06	0.20	----

GHML  
593

**My friends tell me I have an intimacy problem. But they don't really know me.**

**- Garry Shandling**

# GARDEN HOSE

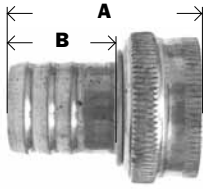
# BRASS FITTINGS

## WROUGHT BRASS

BRASS

### WROUGHT BRASS - Female end only

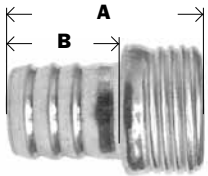
•WASHER INCLUDED



85L

Part #	Hose Barb x FGH	A	B	Approx. Wt. Lbs.	
30-526	5/8" x 3/4"	1.58	0.91	0.05	----
30-527	3/4" x 3/4"	1.50	0.84	0.06	----

### WROUGHT BRASS COUPLINGS - Male end only

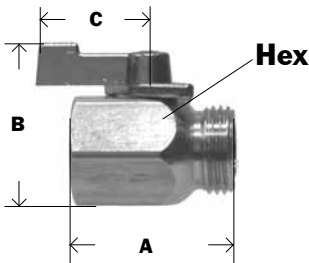


85M

Part #	Hose Barb x MGH	A	B	Approx. Wt. Lbs.	
30-530	1/2" x 3/4"	1.50	0.88	0.02	----
30-531	5/8" x 3/4"	1.50	0.88	0.02	----

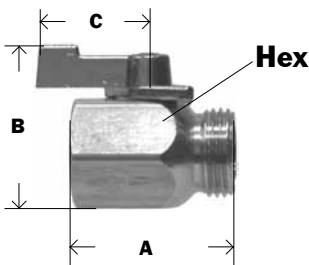
## GARDEN HOSE VALVES

### ONE WAY BRASS BALL VALVE - FGH x MGH



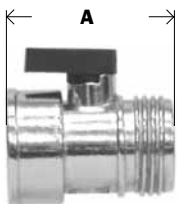
Part #	FGH x MGH	A	B	C	Hex	Approx. Wt. Lbs.	
30-161	3/4" x 3/4"	1.55	1.89	1.31	1.06	0.42	----

### ONE WAY BRASS BALL VALVE - Female x 3/4 MGH Pipe



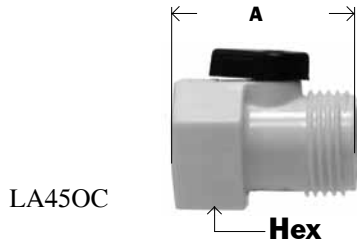
Part #	Female NPTF x MGH	A	B	C	Hex	Approx. Wt. Lbs.	
30-162	3/4" x 3/4"	1.55	1.89	1.31	1.06	0.42	----

### ZINC ALLOY HOSE SHUT-OFF W/ ONE LEVER



Part #	FGH x MGH	A	Approx. Wt. Lbs.	
30-631	3/4" x 3/4"	1.67	0.08	----

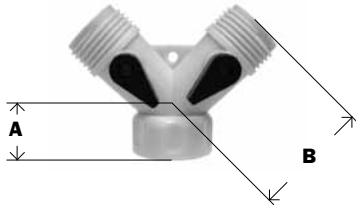
**PLASTIC GARDEN HOSE VALVE • CYCOLAC BODY & BALL**



LA450C

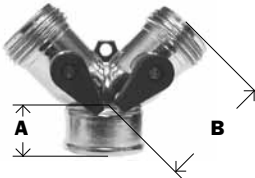
Part #	FGH x MGH	A	Hex	Approx. Wt. Lbs.	
30-163	3/4" x 3/4"	1.75	1.25	0.04	----

**PLASTIC, NON-CORROSIVE, 2-WAY HOSE SHUT-OFF "Y"**



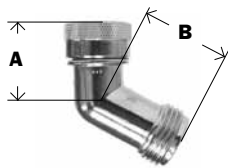
Part #	Size	A	B	Approx. Wt. Lbs.	
30-160	3/4"	0.74	1.87	0.08	----

**"Y" SHAPE ZINC ALLOY CONNECTOR W/ TWO LEVERS**



Part #	Size	A	B	Approx. Wt. Lbs.	
30-626	3/4"	0.60	1.66	0.10	----

**ZINC ALLOY SWIVEL HOSE CONNECTOR**



Part #	Size	A	B	Approx. Wt. Lbs.	
30-629	3/4"	1.31	1.50	0.08	----

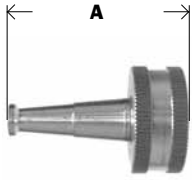
**"Y" SHAPE BRASS CONNECTOR W/ 2-WAY SHUT OFF**



Part #	Size	Description	Approx. Wt. Lbs.	
30-627	3/4"	3/4 Double Y valve, swivel inlet	0.56	----

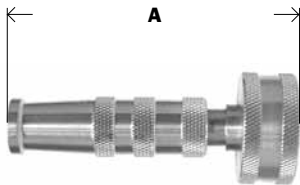
Dimension data can change without notice. Please call us when dimensions are critical.

**BRASS NOZZLE**



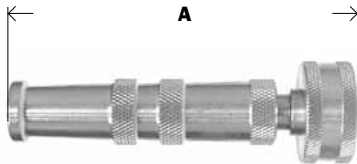
Part #	Size	A	Approx. Wt. Lbs.	
30-637	3/4"	1.87	0.14	----

**3" CROSSED PATTERN BRASS NOZZLE**



Part #	Size	A	Approx. Wt. Lbs.	
30-640	3/4"	2.89	0.25	----

**4" CROSSED PATTERN BRASS NOZZLE**



Part #	Size	A	Approx. Wt. Lbs.	
30-638	3/4"	3.80	0.50	----



Lead Free

Part #	Size	Zinc Alloy spray nozzle with insulated handle soft grip and front thread protector	
30-600	5-1/2"		----



Lead Free

Part #	Size	Zinc Alloy spray nozzle	
30-620	4-1/4"		----



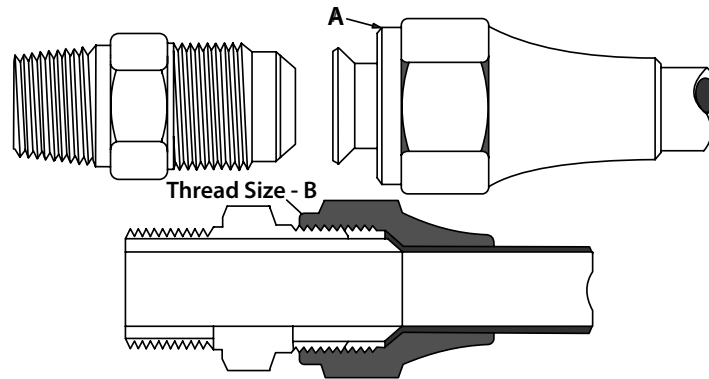
Lead Free

Part #	Size	Zinc Alloy spray nozzle with easily adjustable brass head and plastic grip	
30-609	5-1/4"		----



Part #	Size	Plastic spray nozzle	
30-630	4-1/2"		----

# SAE 45° Flare



<b>Tube O.D.</b>	<b>1/8</b>	<b>3/16</b>	<b>1/4</b>	<b>5/16</b>	<b>3/8</b>	<b>7/16</b>	<b>1/2</b>	<b>5/8</b>	<b>3/4</b>
<b>Thread Size-B</b>	<b>5/16-24</b>	<b>3/8-24</b>	<b>7/16-20</b>	<b>1/2-20</b>	<b>5/8-18</b>	<b>11/16-16</b>	<b>3/4-16</b>	<b>7/8-14</b>	<b>1-1/16-14</b>

**•Typical Application**

LP and natural gas, flammable liquids, instrumentation, refrigeration, power steering, hydraulic and pneumatic systems.

**•Working Pressure Ranges**

Temperature and type of tubing used are important factors. However, the following table is a good guide for proper selection. Temperature 73°F with copper tubing:

<b>PSI</b>	<b>Tube O.D. (in.)</b>	<b>Tube Wall (in.)</b>
<b>2800</b>	<b>1/8</b>	<b>.030</b>
<b>1900</b>	<b>3/16</b>	<b>.030</b>
<b>1400</b>	<b>1/4</b>	<b>.030</b>
<b>1200</b>	<b>5/16</b>	<b>.032</b>
<b>1000</b>	<b>3/8</b>	<b>.032</b>
<b>750</b>	<b>1/2</b>	<b>.032</b>
<b>650</b>	<b>5/8</b>	<b>.035</b>
<b>550</b>	<b>3/4</b>	<b>.035</b>
<b>450</b>	<b>7/8</b>	<b>.035</b>

**•Vibration**

Good resistance - use long nut when greater vibration resistance is required.

**•Temperature Range**

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures.

**•Material**

CA360 Brass for Barstock fittings.  
CA377 Brass for forged fittings.

**•Used With**

Copper, brass, aluminum and steel hydraulic tubing that can be flared.

**•Tolerance**

+/- .03 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

**•Conformance**

Meets specifications and standards of ASA, ASME, SAE and MS (Military standards).

**Assembly Instructions**

- 1- Cut tubing to desired length. Make sure all burrs are removed and ends are cut square.
- 2- Slide nut on tube. Threaded end "A" of nut must face out.
- 3- Flare end of tube with a 45° flaring tool.
  - a- Measure flare diameter.
  - b- Examine flare for excessive thin out.
- 4- Lubricate threads and assemble to fitting body. Nut should be turned hand tight.
- 5- Tighten assembly with wrench until a solid feeling is encountered. From that point, apply a one-sixth turn.

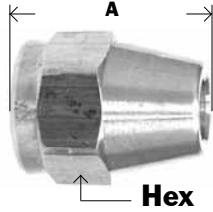
**Note:** Do not over-torque as it may damage the fitting or split the tubing at the flare.

**Actual O.D. of Flare Fittings**



**SHORT ROD NUT**

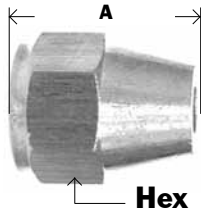
**SAE# 010110**



20910  
41FS  
1110  
N1  
41FX  
441S  
L'

Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-013	1/8"	0.50	0.37	0.01	----
10-014	3/16"	0.62	0.43	0.02	----
10-015	1/4"	0.75	0.56	0.03	----
10-015L	1/4"	0.75	0.50	0.03	----
10-016	5/16"	0.88	0.62	0.04	----
10-017L	3/8"	0.88	0.75	0.05	----
10-017	3/8"	1.00	0.75	0.04	----
10-018	7/16"	1.06	0.81	0.06	----
10-019L	1/2"	0.93	0.87	0.06	----
10-019	1/2"	1.12	0.87	0.09	----
10-020L	5/8"	1.08	1.00	0.10	----
10-020	5/8"	1.31	1.06	0.15	----
10-021	3/4"	1.50	1.25	0.24	----
10-022	7/8"	1.62	1.50	0.36	----
10-026	1"	1.81	1.62	0.44	----

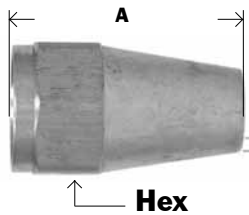
**REDUCING SHORT ROD NUT**



Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-023	3/8" x 1/4"	0.74	0.81	0.06	----
10-024	1/2" x 3/8"	0.86	0.94	0.10	----
10-025	5/8" x 1/2"	0.99	1.06	0.12	----

**LONG ROD NUT**

**SAE# 010111**



41FL  
N2  
241  
441  
41

Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-001	1/8"	0.75	0.37	0.01	----
10-002	3/16"	0.81	0.43	0.02	----
10-003	1/4"	0.94	0.56	0.03	----
10-004	5/16"	1.12	0.62	0.04	----
10-005	3/8"	1.31	0.75	0.06	----
10-006	1/2"	1.62	0.87	0.12	----
10-007	5/8"	1.88	1.06	0.20	----
10-008	3/4"	2.19	1.25	0.34	----



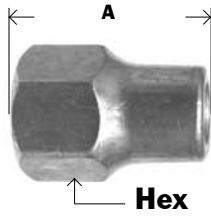
**"L" means light pattern.**

-These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

**LONG FORGED NUT**

**SAE# 010167**

41FF  
39  
N4  
14FL  
641

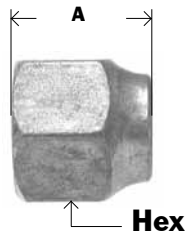


Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-028	1/4"	0.94	0.62	0.05	----
10-030	3/8"	1.06	0.81	0.08	----
10-031	1/2"	1.19	0.94	0.12	----
10-032	5/8"	1.44	1.06	0.26	----
10-033	3/4"	1.75	1.31	0.35	----

**SHORT FORGED NUT**

**SAE# 010166**

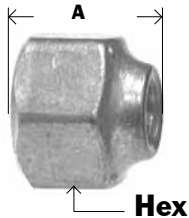
14FS  
41FFS  
40  
641-S  
1116  
NS4



Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-038	3/16"	0.56	0.50	0.02	----
10-039	1/4"	0.60	0.62	0.04	----
10-040	5/16"	0.66	0.69	0.04	----
10-041	3/8"	0.70	0.81	0.06	----
10-042	1/2"	0.82	0.94	0.08	----
10-043	5/8"	0.95	1.06	0.12	----
10-044	3/4"	1.16	1.31	0.22	----
10-045	7/8"	1.18	1.38	0.30	----

**EXTRA HEAVY SHORT FORGED NUT**

NSA



Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-046	1/4"	0.63	0.75	0.04	----
10-047	3/8"	0.72	0.88	0.06	----
10-048	1/2"	0.88	1.00	0.08	----
10-049	5/8"	0.98	1.12	0.12	----

**FORGED REDUCING NUT**

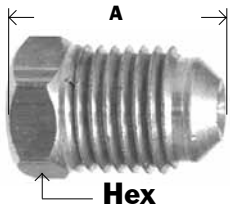
NSR4  
14FS  
41FRS  
40R  
662-S



Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-051	5/16" x 1/4"	0.66	0.75	0.06	----
10-052	3/8" x 1/4"	0.72	0.81	0.06	----
10-053	3/8" x 5/16"	0.72	0.81	0.08	----
10-054	1/2" x 3/8"	0.81	0.94	0.08	----
10-055	5/8" x 3/8"	0.96	1.12	0.15	----
10-056	5/8" x 1/2"	0.97	1.06	0.12	----
10-058	3/4" x 5/8"	1.17	1.31	0.30	----



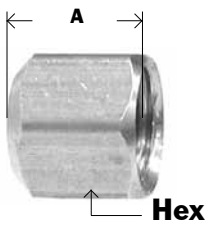
**FLARED PLUG**



58 57 439  
639F P2  
PF 2229

Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-063	3/16"	0.59	0.50	0.02	----
10-064	1/4"	0.69	0.43	0.02	----
10-065	5/16"	0.78	0.50	0.04	----
10-066	3/8"	0.88	0.62	0.06	----
10-067	1/2"	1.06	0.75	0.10	----
10-068	5/8"	1.19	0.87	0.14	----

**FLARED CAP**

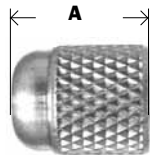


640F N5 440  
41FC 2129  
56 54

Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-074	3/16"	0.47	0.50	0.02	----
10-075	1/4"	0.48	0.50	0.02	----
10-076	5/16"	0.62	0.62	0.04	----
10-077	3/8"	0.58	0.75	0.03	----
10-078	1/2"	0.69	0.81	0.14	----
10-079	5/8"	0.81	0.94	0.20	----
10-080	3/4"	1.17	1.37	0.30	----

**FINGER TIGHTENING CAP**

• O-Ring Included

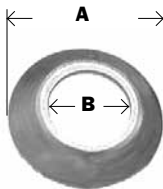


NFT5

Part #	Thread Size UNF	A	Approx. Wt. Lbs.	
10-081	1/4"	0.62	0.02	----

**COPPER GASKET**

SAE# 010113

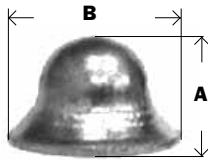


B2  
2GF  
6251  
FG  
157  
59  
463

Part #	Size	A	B	Approx. Wt. Lbs.	
10-084	3/16"	0.31	0.12	0.01	----
10-085	1/4"	0.36	0.19	0.01	----
10-086	5/16"	0.42	0.22	0.01	----
10-087	3/8"	0.55	0.28	0.01	----
10-088	1/2"	0.66	0.41	0.01	----
10-089	5/8"	0.77	0.50	0.01	----
10-090	3/4"	0.95	0.62	0.01	----

**COPPER BONNET**

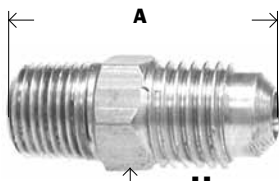
**SAE# 010114**



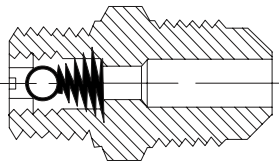
B1	156
3GF	FB
64C	695
57	464

Part #	Size	A	B	Approx. Wt. Lbs.	
10-094	3/16"	0.16	0.31	0.01	----
10-095	1/4"	0.22	0.36	0.01	----
10-097	3/8"	0.34	0.55	0.01	----
10-098	1/2"	0.41	0.66	0.01	----
10-099	5/8"	0.44	0.77	0.01	----
10-100	3/4"	0.56	0.95	0.01	----

**MALE BALL CHECK CONNECTOR**



43A

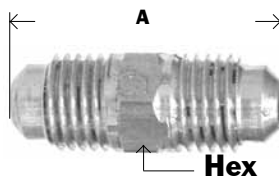


Part #	Male UNF x Male NPTF	A	Hex	Approx. Wt. Lbs.	
10-131	1/4" x 1/8"	1.06	0.43	0.04	----
10-133	3/8" x 1/4"	1.31	0.62	0.08	----

Note: Ball & Spring position may be reversed to change flow/check position. Min working pressure 3 PSI.

**UNION**

**SAE# 010101**



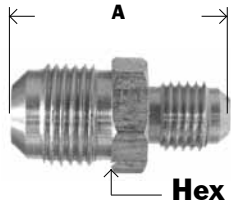
42F  
U2

Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-104	1/8"	0.91	0.31	0.02	----
10-105	3/16"	1.06	0.37	0.02	----
10-106L	1/4"	1.19	0.43	0.03	----
10-106	1/4"	1.19	0.43	0.03	----
10-107	5/16"	1.34	0.50	0.05	----
10-108L	3/8"	1.50	0.62	0.09	----
10-108	3/8"	1.50	0.62	0.09	----
10-109L	1/2"	1.67	0.75	0.12	----
10-109	1/2"	1.81	0.75	0.14	----
10-110L	5/8"	2.00	0.87	0.20	----
10-110	5/8"	2.12	0.87	0.20	----
10-111	3/4"	2.44	1.06	0.35	----
10-112	7/8"	2.72	1.25	0.52	----

"L" means light pattern.

-These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

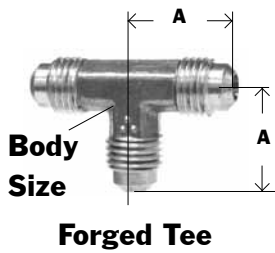
**REDUCING UNION**



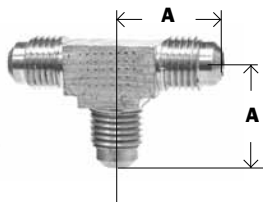
656F  
UR2  
42-R

Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-117	5/16" x 1/4"	1.28	0.50	0.04	----
10-118	3/8" x 1/4"	1.38	0.62	0.06	----
10-119	3/8" x 5/16"	1.44	0.62	0.08	----
10-120	1/2" x 1/4"	1.53	0.75	0.10	----
10-121	1/2" x 3/8"	1.69	0.75	0.10	----
10-122	5/8" x 3/8"	1.88	0.87	0.17	----
10-123	5/8" x 1/2"	1.75	0.87	0.14	----

**UNION TEE**



**Forged Tee**



**Barstock Tee**

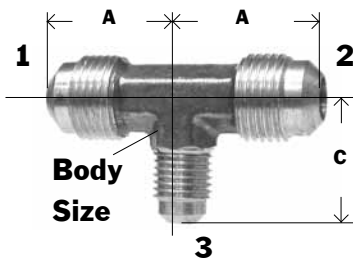
244F  
T2  
144F

**SAE# 010401**

Part #	Thread Size UNF	A	Body Size	Approx. Wt. Lbs.	
10-157	1/8"	0.67	0.36	0.04	----
10-158	3/16"	0.75	0.36	0.06	----
10-159	1/4"	0.78	0.36	0.06	----
10-159B*	1/4"	0.88	0.50	0.08	----
10-160	5/16"	0.91	0.44	0.10	----
10-161	3/8"	1.00	0.44	0.12	----
10-162	1/2"	1.16	0.59	0.19	----
10-163	5/8"	1.41	0.69	0.30	----
10-164	3/4"	1.64	0.88	0.53	----
10-165	7/8"	1.75	1.25	0.93	----

\* Barstock

**REDUCING TEE 1 x 2 x 3**

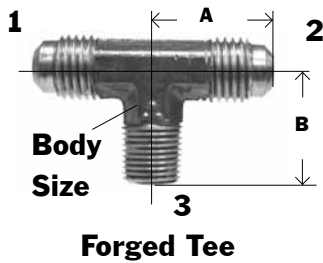


144F  
TR2  
659F  
684F  
44R

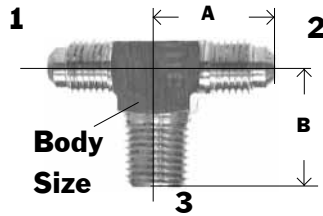
Part #	Thread Size UNF 1x2x3	A	C	Body Size	Approx. Wt. Lbs.	
10-170	1/4" x 1/4" x 3/8"	0.91	1.00	0.44	0.10	----
10-171	5/16" x 5/16" x 1/4"	0.94	0.94	0.44	0.12	----
10-172	3/8" x 1/4" x 1/4"	0.91	1.00	0.44	0.10	----
10-173	3/8" x 1/4" x 3/8"	1.00	0.91	0.44	0.12	----
10-174	3/8" x 3/8" x 1/4"	1.00	0.88	0.44	0.11	----
10-175	3/8" x 3/8" x 1/2"	1.00	1.19	0.59	0.14	----
10-176	3/8" x 3/8" x 5/8"	1.16	1.44	0.69	0.16	----
10-178	1/2" x 3/8" x 3/8"	1.16	1.12	0.59	0.18	----
10-179	1/2" x 3/8" x 1/2"	1.16	1.09	0.59	0.18	----
10-180	1/2" x 1/2" x 1/4"	1.16	0.97	0.59	0.18	----
10-181	1/2" x 1/2" x 3/8"	1.16	1.12	0.59	0.19	----
10-182	1/2" x 1/2" x 5/8"	1.28	1.41	0.69	0.28	----
10-187	5/8" x 1/2" x 5/8"	1.44	1.33	0.69	0.27	----
10-188	5/8" x 5/8" x 3/8"	1.38	1.16	0.69	0.30	----
10-189	5/8" x 5/8" x 1/2"	1.38	1.28	0.69	0.28	----
10-197	3/4" x 3/4" x 5/8"	1.66	1.50	0.88	0.36	----

**MALE BRANCH TEE**

**SAE# 010425**



**Forged Tee**



**Barstock Tee**

T1  
145F  
45

Part #	Male Flare x Male NPT (1&2)x3	A	B	Body Size	Approx. Wt. Lbs.	
10-203	3/16" x 1/8"	0.75	0.75	0.36	0.10	----
10-204	1/4" x 1/8"	0.78	0.75	0.36	0.05	----
10-204B*	1/4" x 1/8"	0.82	0.81	0.47	0.08	----
10-205	1/4" x 1/4"	0.88	0.88	0.44	0.08	----
10-205B*	1/4" x 1/4"	0.91	0.94	0.56	0.10	----
10-206	1/4" x 3/8"	0.92	1.00	0.47	0.10	----
10-207	5/16" x 1/8"	0.89	0.78	0.44	0.08	----
10-208	5/16" x 1/4"	0.94	0.94	0.44	0.08	----
10-209	3/8" x 1/8"	1.00	0.91	0.44	0.14	----
10-210	3/8" x 1/4"	1.00	0.94	0.44	0.12	----
10-211	3/8" x 3/8"	1.00	1.00	0.47	0.13	----
10-212	3/8" x 1/2"	1.12	1.22	0.69	0.22	----
10-213	1/2" x 1/4"	1.16	1.00	0.59	0.20	----
10-214	1/2" x 3/8"	1.16	1.14	0.59	0.19	----
10-215	1/2" x 1/2"	1.22	1.22	0.69	0.24	----
10-216	1/2" x 3/4"	1.38	1.41	0.88	0.22	----
10-217	5/8" x 3/8"	1.38	1.25	0.69	0.24	----
10-218	5/8" x 1/2"	1.41	1.31	0.69	0.29	----
10-219	5/8" x 3/4"	1.41	1.41	0.88	0.36	----
10-220	3/4" x 1/2"	1.63	1.59	0.88	0.49	----
10-221	3/4" x 3/4"	1.63	1.44	0.88	0.48	----

\* Barstock

**BRASS**

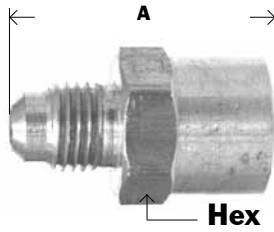
For having lived long, I have experienced many instances of being obliged, by better information or fuller consideration, to change opinions, even on important subjects, which I once thought right but found to be otherwise.

**- Benjamin Franklin**

Dimension data can change without notice.  
Please call us when dimensions are critical.

**FEMALE ADAPTER**

**SAE# 010103**



46  
U3

Part #	Male Flare x Female NPTF	A	Hex	Approx. Wt. Lbs.	
10-226	1/8" x 1/8"	0.91	0.56	0.03	----
10-227	3/16" x 1/8"	0.97	0.56	0.03	----
10-228L	1/4" x 1/8"	1.03	0.56	0.03	----
10-228	1/4" x 1/8"	1.03	0.56	0.04	----
10-229L	1/4" x 1/4"	1.06	0.68	0.06	----
10-229	1/4" x 1/4"	1.23	0.68	0.07	----
10-230	1/4" x 3/8"	1.18	0.75	0.08	----
10-231	1/4" x 1/2"	1.31	0.94	0.06	----
10-232	5/16" x 1/8"	1.06	0.56	0.05	----
10-233	5/16" x 1/4"	1.28	0.68	0.08	----
10-224	5/16" x 3/8"	1.34	0.81	0.09	----
10-234	3/8" x 1/8"	1.09	0.62	0.08	----
10-235L	3/8" x 1/4"	1.25	0.68	0.08	----
10-235	3/8" x 1/4"	1.31	0.81	0.08	----
10-236L	3/8" x 3/8"	1.25	0.81	0.08	----
10-236	3/8" x 3/8"	1.25	0.81	0.10	----
10-237L	3/8" x 1/2"	1.31	0.94	0.08	----
10-237	3/8" x 1/2"	1.60	1.00	0.16	----
10-238	3/8" x 3/4"	1.41	1.18	0.11	----
10-239	1/2" x 1/4"	1.37	0.75	0.10	----
10-240L	1/2" x 3/8"	1.38	0.81	0.12	----
10-240	1/2" x 3/8"	1.50	0.81	0.14	----
10-241L	1/2" x 1/2"	1.42	0.87	0.10	----
10-241	1/2" x 1/2"	1.75	1.00	0.12	----
10-242	1/2" x 3/4"	1.60	1.12	0.16	----
10-243	5/8" x 3/8"	1.24	0.87	0.12	----
10-244	5/8" x 1/2"	1.62	0.94	0.12	----
10-245	5/8" x 3/4"	1.65	1.12	0.17	----
10-246	3/4" x 1/2"	1.74	1.18	0.32	----
10-247	3/4" x 3/4"	1.75	1.18	0.22	----
10-248	7/8" x 3/4"	1.94	1.31	0.26	----

 **"L" means light pattern.**

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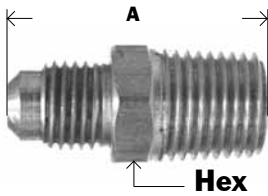
-These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

You know you're getting old when you stop to tie your shoelaces and wonder what else you could do while you're down there.

**- George Burns**

**MALE ADAPTER**

**SAE# 010102**



U1  
48

Part #	Male Flare x Male NPTF	A	Hex	Approx. Wt. Lbs.	
10-253	1/8" x 1/8"	0.92	0.43	0.02	----
10-254	3/16" x 1/8"	1.00	0.43	0.03	----
10-255L	1/4" x 1/8"	1.06	0.43	0.03	----
10-255	1/4" x 1/8"	1.06	0.43	0.04	----
10-256L	1/4" x 1/4"	1.15	0.56	0.03	----
10-256	1/4" x 1/4"	1.25	0.56	0.04	----
10-257	1/4" x 3/8"	1.31	0.68	0.06	----
10-258	1/4" x 1/2"	1.44	0.87	0.11	----
10-259L	5/16" x 1/8"	1.15	0.50	0.04	----
10-259	5/16" x 1/8"	1.16	0.50	0.04	----
10-260L	5/16" x 1/4"	1.31	0.56	0.06	----
10-260	5/16" x 1/4"	1.34	0.56	0.06	----
10-261	5/16" x 3/8"	1.38	0.68	0.08	----
10-262	3/8" x 1/8"	1.25	0.62	0.07	----
10-263L	3/8" x 1/4"	1.31	0.62	0.06	----
10-263	3/8" x 1/4"	1.44	0.62	0.08	----
10-264L	3/8" x 3/8"	1.37	0.68	0.09	----
10-264	3/8" x 3/8"	1.44	0.68	0.09	----
10-265L	3/8" x 1/2"	1.49	0.89	0.12	----
10-265	3/8" x 1/2"	1.69	0.87	0.14	----
10-266	3/8" x 3/4"	1.81	1.06	0.18	----
10-267	1/2" x 1/4"	1.60	0.75	0.11	----
10-268L	1/2" x 3/8"	1.46	0.75	0.10	----
10-268	1/2" x 3/8"	1.62	0.75	0.12	----
10-269L	1/2" x 1/2"	1.62	0.87	0.13	----
10-269	1/2" x 1/2"	1.79	0.87	0.15	----
10-270	1/2" x 3/4"	1.75	1.06	0.22	----
10-271	5/8" x 1/4"	1.81	0.87	0.14	----
10-272L	5/8" x 3/8"	1.67	0.87	0.14	----
10-272	5/8" x 3/8"	1.81	0.87	0.18	----
10-273L	5/8" x 1/2"	1.80	0.87	0.11	----
10-273	5/8" x 1/2"	2.00	0.87	0.20	----
10-274	5/8" x 3/4"	1.85	1.06	0.21	----
10-275	3/4" x 1/2"	2.19	1.06	0.28	----
10-276	3/4" x 3/4"	2.08	1.06	0.28	----
10-277	7/8" x 1/2"	2.22	1.25	0.52	----
10-278	7/8" x 3/4"	2.35	1.25	0.41	----
10-279	1" x 3/4"	2.44	1.43	0.53	----
10-280	1" x 1"	2.44	1.43	0.53	----

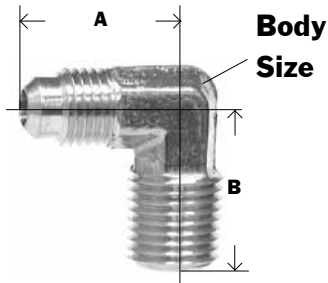
 **"L" means light pattern.**

-These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

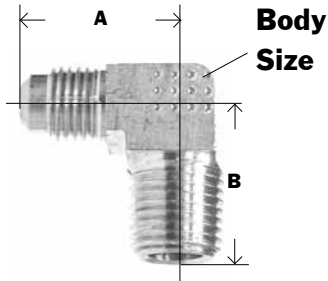
**90° MALE ELBOW**

**SAE# 010202**

**BRASS**



**Forged Elbow**



**Barstock Elbow**

249F  
49  
E1  
149F

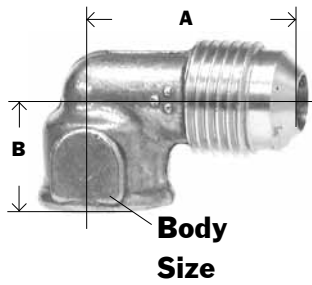
Part #	Male Flare x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
10-283	1/8" x 1/8"	0.63	0.73	0.37	0.04	----
10-283B*	1/8" x 1/8"	0.62	0.69	0.43	0.04	----
10-284	3/16" x 1/8"	0.75	0.75	0.44	0.04	----
10-284B*	3/16" x 1/8"	0.75	0.75	0.43	0.06	----
10-285	3/16" x 1/4"	0.81	0.88	0.44	0.08	----
10-286	1/4" x 1/8"	0.84	0.78	0.38	0.04	----
10-286B*	1/4" x 1/8"	0.81	0.78	0.47	0.05	----
10-287	1/4" x 1/4"	0.81	0.88	0.44	0.05	----
10-287B*	1/4" x 1/4"	0.91	0.93	0.59	0.08	----
10-288	1/4" x 3/8"	0.91	0.91	0.47	0.08	----
10-289	1/4" x 1/2"	1.03	1.09	0.59	0.10	----
10-290	5/16" x 1/8"	0.91	0.88	0.44	0.06	----
10-290B*	5/16" x 1/8"	0.91	0.78	0.52	0.06	----
10-291	5/16" x 1/4"	0.98	0.96	0.44	0.08	----
10-291B*	5/16" x 1/4"	0.95	0.92	0.62	0.08	----
10-292	5/16" x 3/8"	1.06	1.09	0.59	0.08	----
10-293	3/8" x 1/8"	1.00	0.91	0.53	0.08	----
10-293B*	3/8" x 1/8"	1.03	0.91	0.65	0.08	----
10-294	3/8" x 1/4"	1.01	0.89	0.48	0.08	----
10-294B*	3/8" x 1/4"	0.97	1.04	0.68	0.11	----
10-295	3/8" x 3/8"	1.00	0.88	0.47	0.10	----
10-295B*	3/8" x 3/8"	1.06	1.09	0.69	0.12	----
10-296	3/8" x 1/2"	1.10	1.09	0.59	0.12	----
10-297	3/8" x 3/4"	1.25	1.31	0.81	0.12	----
10-298	1/2" x 1/4"	1.19	1.00	0.59	0.12	----
10-298B*	1/2" x 1/4"	1.22	1.19	0.81	0.12	----
10-299	1/2" x 3/8"	1.10	1.00	0.59	0.13	----
10-299B*	1/2" x 3/8"	1.22	1.12	0.77	0.18	----
10-300	1/2" x 1/2"	1.16	1.13	0.59	0.14	----
10-300B*	1/2" x 1/2"	1.26	1.36	0.94	0.26	----
10-301	1/2" x 3/4"	1.42	1.25	0.81	0.24	----
10-311	5/8" x 1/4"	1.34	1.13	0.72	0.28	----
10-302	5/8" x 3/8"	1.35	1.22	0.72	0.20	----
10-302B*	5/8" x 3/8"	1.41	1.25	0.94	0.20	----
10-303	5/8" x 1/2"	1.35	1.22	0.72	0.20	----
10-303B*	5/8" x 1/2"	1.41	1.38	0.94	0.20	----
10-304	5/8" x 3/4"	1.44	1.31	0.81	0.25	----
10-305	3/4" x 1/2"	1.67	1.50	0.88	0.34	----
10-306	3/4" x 3/4"	1.67	1.63	0.88	0.30	----
10-306B*	3/4" x 3/4"	1.60	1.62	0.91	0.32	----
10-307	7/8" x 3/4"	1.75	1.68	1.00	0.44	----
10-308	1" x 3/4"	1.94	1.69	1.31	0.75	----
10-309	1" x 1"	1.94	1.75	1.25	0.78	----

\* Barstock

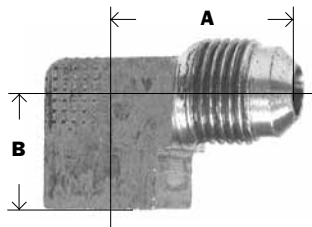
Dimension data can change without notice.  
Please call us when dimensions are critical.

**90° FEMALE ELBOW**

SAE# 010203



**Forged Elbow**



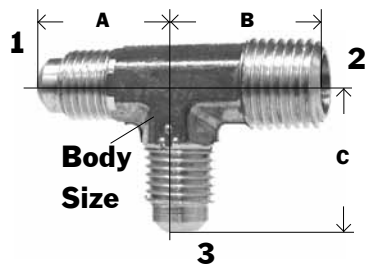
**Barstock Elbow**

E3  
50  
150F

Part #	Male Flare x Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
10-312	3/16" x 1/8"	0.81	0.44	0.56	0.05	----
10-313	1/4" x 1/8"	0.90	0.46	0.56	0.06	----
10-313B*	1/4" x 1/8"	0.88	0.47	0.56	0.06	----
10-314	1/4" x 1/4"	0.97	0.59	0.75	0.08	----
10-315	1/4" x 3/8"	1.03	0.57	0.81	0.09	----
10-333	1/4" x 1/2"	1.08	0.66	1.00	0.12	----
10-316	5/16" x 1/8"	0.94	0.88	0.45	0.08	----
10-317	5/16" x 1/4"	1.03	0.58	0.75	0.06	----
10-318	3/8" x 1/8"	1.00	0.88	0.47	0.10	----
10-319	3/8" x 1/4"	1.06	0.59	0.75	0.09	----
10-319B*	3/8" x 1/4"	1.09	0.69	0.75	0.10	----
10-320	3/8" x 3/8"	1.06	0.57	0.81	0.10	----
10-321	3/8" x 1/2"	1.16	0.66	1.00	0.14	----
10-322	3/8" x 3/4"	1.28	0.72	1.25	0.12	----
10-323	1/2" x 1/4"	1.25	0.70	0.88	0.13	----
10-324	1/2" x 3/8"	1.25	0.70	0.88	0.12	----
10-324B*	1/2" x 3/8"	1.28	0.75	0.81	0.19	----
10-325	1/2" x 1/2"	1.29	0.72	1.00	0.18	----
10-326	1/2" x 3/4"	1.41	0.72	1.25	0.20	----
10-327	5/8" x 3/8"	1.35	1.22	0.72	0.22	----
10-328	5/8" x 1/2"	1.38	0.75	1.00	0.20	----
10-329	5/8" x 3/4"	1.50	0.76	1.25	0.28	----
10-330	3/4" x 1/2"	1.63	1.06	1.06	0.42	----
10-331	3/4" x 3/4"	1.88	1.06	1.31	0.40	----

\* Barstock

**FORGED MALE RUN TEE**



T3  
151F  
51

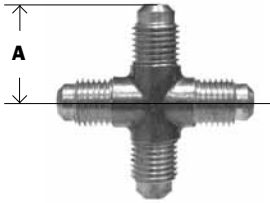
Part #	Male Flare x Male NPTF (1&3) x 2	A	B	C	Body Size	Approx. Wt. Lbs.	
10-361	3/16" x 5/16" x 1/8"	0.87	0.78	0.97	0.44	0.08	----
10-343	3/16" x 1/8"	0.75	0.75	0.75	0.37	0.05	----
10-344	1/4" x 1/8"	0.78	0.75	0.78	0.37	0.06	----
10-345	1/4" x 1/4"	0.88	0.88	0.88	0.44	0.08	----
10-347	5/16" x 1/8"	0.88	0.80	0.88	0.44	0.08	----
10-348	5/16" x 1/4"	0.94	0.94	0.94	0.44	0.08	----
10-350	3/8" x 1/4"	1.00	0.94	1.00	0.44	0.12	----
10-351	3/8" x 3/8"	1.00	1.00	1.00	0.47	0.10	----
10-340	3/8" x 1/2" x 3/8"	1.09	1.09	1.16	0.59	0.18	----
10-352	3/8" x 1/2"	1.12	1.22	1.12	0.69	0.12	----
10-353	1/2" x 3/8" x 1/2"	1.22	1.22	1.15	0.69	0.22	----
10-354	1/2" x 3/8"	1.16	1.09	1.16	0.59	0.18	----
10-355	1/2" x 1/2"	1.22	1.22	1.22	0.69	0.22	----
10-357	5/8" x 1/2"	1.41	1.31	1.41	0.69	0.28	----
10-359	3/4" x 1/2"	1.63	1.59	1.63	0.88	0.48	----
10-360	3/4" x 3/4"	1.62	1.44	1.62	0.88	0.48	----

Dimension data can change without notice.  
Please call us when dimensions are critical.



**FORGED FLARE CROSS**

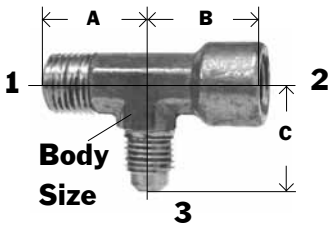
SAE# 010501



455  
C1  
147F  
52

Part #	Thread Size UNF	A	Body Size	Approx. Wt. Lbs.	
10-373	1/4"	0.88	0.44	0.10	----
10-374	5/16"	0.92	0.44	0.10	----
10-375	3/8"	1.00	0.44	0.16	----
10-376	1/2"	1.16	0.59	0.24	----

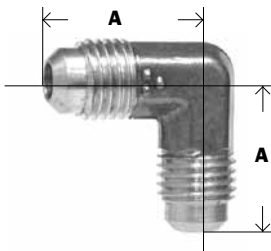
**FORGED ADAPTER TEE / SERVICE TEE**



T17  
53

Part #	Size 1 x 2 x 3	A	B	C	Body Size	Approx. Wt. Lbs.	
10-382	1/8" x 1/8" x 1/4"	0.72	0.53	0.80	0.47	0.08	----
10-383	1/4" x 1/4" x 1/4"	0.88	1.00	0.91	0.47	0.11	----

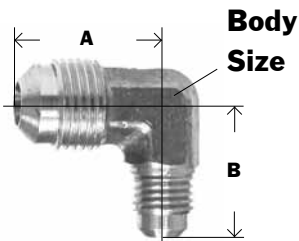
**FORGED 90° FLARE ELBOW**



E2  
155F

Part #	Thread Size UNF	A	Approx. Wt. Lbs.	
10-404	1/8"	0.64	0.04	----
10-405	3/16"	0.75	0.06	----
10-406	1/4"	0.81	0.08	----
10-407	5/16"	0.91	0.10	----
10-408	3/8"	1.00	0.10	----
10-409	1/2"	1.16	0.14	----
10-410	5/8"	1.41	0.22	----
10-411	3/4"	1.66	0.68	----
10-412	7/8"	1.81	0.82	----

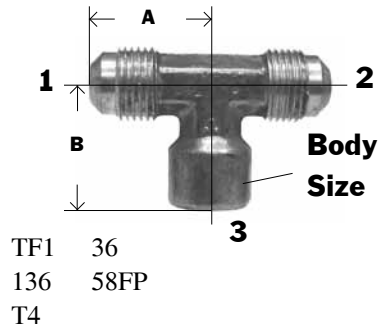
**FORGED REDUCING ELBOW**



ER2  
657F  
55R

Part #	Male Flare x Male Flare	A	B	Body Size	Approx. Wt. Lbs.	
10-416	3/8" x 1/4"	1.00	0.88	0.47	0.08	----
10-417	3/8" x 5/16"	1.00	0.94	0.44	0.08	----
10-419	1/2" x 3/8"	1.19	1.02	0.59	0.14	----
10-421	5/8" x 1/2"	1.34	1.23	0.72	0.21	----

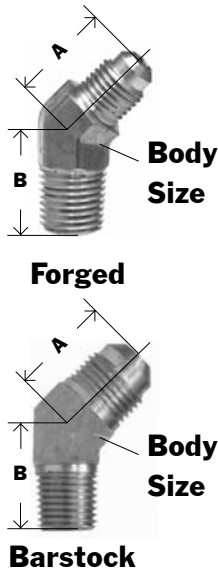
**FORGED FEMALE BRANCH TEE**



Part #	Male Flare x Female NPTF (1&2) x 3	A	B	Body Size	Approx. Wt. Lbs.	
10-429	1/4" x 1/4"	0.97	0.75	0.69	0.12	----
10-430	3/8" x 1/4"	1.00	1.03	0.47	0.14	----
10-431	3/8" x 3/8"	1.17	0.69	1.05	0.22	----
10-432	3/8" x 1/2"	1.16	0.69	1.05	0.19	----
10-434	1/2" x 1/2"	1.31	0.69	1.06	0.22	----
10-435	5/8" x 1/2"	1.38	0.76	1.06	0.24	----

**45° ELBOW**

**SAE# 010302**



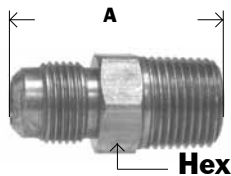
E145 654F 47  
54 59FF 4945  
159F 254

Part #	Male Flare x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
10-448	1/4" x 1/8"	0.67	0.64	0.41	0.04	----
10-448B*	1/4" x 1/8"	0.67	0.64	0.44	0.04	----
10-449	1/4" x 1/4"	0.75	0.86	0.53	0.07	----
10-450	5/16" x 1/8"	0.78	0.64	0.53	0.06	----
10-451	5/16" x 1/4"	0.81	0.86	0.53	0.07	----
10-452	3/8" x 1/4"	0.91	0.86	0.53	0.09	----
10-452B*	3/8" x 1/4"	0.89	0.86	0.64	0.12	----
10-453	3/8" x 3/8"	0.93	0.94	0.59	0.11	----
10-454	3/8" x 1/2"	0.99	1.17	0.75	0.19	----
10-455	1/2" x 3/8"	1.07	0.88	0.59	0.12	----
10-455B*	1/2" x 3/8"	1.06	0.94	0.76	0.18	----
10-456	1/2" x 1/2"	1.12	1.18	0.75	0.20	----
10-460	5/8" x 3/8"	1.13	0.95	0.81	0.22	----
10-457	5/8" x 1/2"	1.12	1.17	0.78	0.18	----
10-458	3/4" x 1/2"	1.28	1.16	0.88	0.26	----
10-459	3/4" x 3/4"	1.41	1.20	0.88	0.31	----

\* Barstock

**BRASS GAS RANGE FITTINGS**

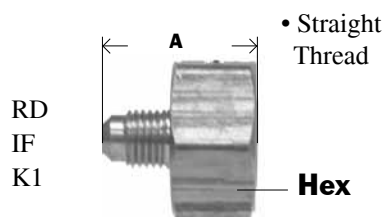
**BRASS MALE ADAPTERS**



Part #	Male Flare x Male NPTF	A	Hex	Approx. Wt. Lbs.	
35-132	1/2" x 1/2" (3/8" FIP TAP)	1.88	0.87	0.16	----
35-134	15/16" x 1/2"	1.90	0.94	0.14	----

**DRUM ADAPTERS**

**SAE# 010165**



RD  
IF  
K1

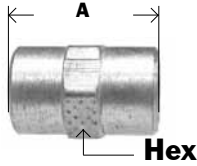
Part #	Male Flare x FIP	A	Hex	Approx. Wt. Lbs.	
50-011	1/4" x 1/2"	1.12	1.12	0.12	----
50-001	1/4" x 3/4"	1.16	1.25	0.14	----

**FEMALE 45° FLARE FITTINGS**

• Use with Copper Gasket

**UNION**

**SAE# 010107**

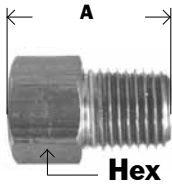


2310  
U4  
660HD  
32

Part #	Female Flare x Female Flare	A	Hex	Approx. Wt. Lbs.	
10-135	1/4"	1.00	0.62	0.06	----
10-136	3/8"	1.25	0.81	0.14	----
10-137	1/2"	1.43	0.94	0.18	----

**FEMALE FLARE ADAPTER**

**SAE# 010106**

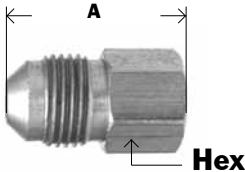


U5  
664FHD  
33  
48-FF

Part #	Female Flare x Male NPTF	A	Hex	Approx. Wt. Lbs.	
10-440	1/4" x 1/8"	0.91	0.62	0.05	----
10-441	1/4" x 1/4"	1.01	0.62	0.06	----
10-442	3/8" x 1/4"	1.28	0.81	0.10	----
10-443	1/2" x 3/8"	1.36	0.94	0.14	----
10-444	1/2" x 1/2"	1.46	0.94	0.14	----

**FLARE REDUCER**

**SAE# 010105**

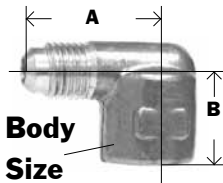


UR3  
661FHD  
227  
46-FF

Part #	Male Flare x Female Flare	A	Hex	Approx. Wt. Lbs.	
10-462	1/4" x 3/8"	1.22	0.81	0.10	----
10-461	1/4" x 1/2"	1.36	0.94	0.14	----
10-463	3/8" x 1/4"	1.12	0.62	0.06	----
10-464	3/8" x 1/2"	1.44	0.94	0.14	----
10-473	3/8" x 5/8"	1.63	1.12	0.16	----
10-467	1/2" x 3/8"	1.41	0.81	0.13	----
10-468	1/2" x 5/8"	1.68	1.06	0.20	----
10-469	5/8" x 1/2"	1.63	1.00	0.17	----
10-470	5/8" x 3/4"	1.97	1.31	0.31	----
10-471	3/4" x 5/8"	1.75	1.18	0.32	----

**90° ELBOW**

• Use with Copper Gasket



E4  
669F

Part #	Male Flare x Female Flare	A	B	Body Size	Approx. Wt. Lbs.	
10-500	1/4" x 1/4"	0.97	0.69	0.75	0.56	----
10-495	1/2" x 1/2"	1.41	1.12	0.81	0.72	----

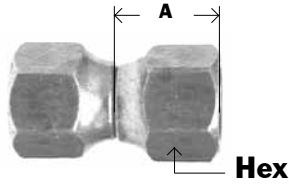
Dimension data can change without notice.  
Please call us when dimensions are critical.

**BRASS FLARE SWIVEL FITTINGS**

**FORGED SWIVEL**

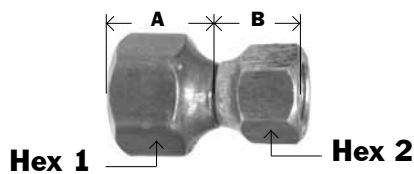
**SAE# 010108**

1350  
US4  
14FSV  
34



Part #	Female Flare UNF	A	Hex	Approx. Wt. Lbs.	
10-481	1/4"	0.59	0.62	0.04	----
10-482	5/16"	0.62	0.68	0.06	----
10-483	3/8"	0.69	0.81	0.10	----
10-484	1/2"	0.81	0.94	0.16	----
10-485	5/8"	0.94	1.06	0.24	----
10-486	3/4"	1.12	1.31	0.34	----

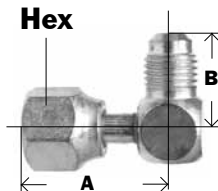
**REDUCING SWIVELS**



Part #	Female Flare UNF	A	B	Hex 1	Hex 2	Approx. Wt. Lbs.	
10-487	3/8" x 1/4"	0.72	0.60	0.81	0.62	0.08	----
10-488	1/2" x 3/8"	0.84	0.70	0.94	0.81	0.12	----
10-489	5/8" x 1/2"	0.98	0.82	1.03	0.94	0.22	----

**FORGED SWIVEL ELBOWS**

ES4



Part #	Male Flare x Female Flare	A	B	Hex	Approx. Wt. Lbs.	
10-493	1/4"	0.81	1.15	0.62	0.12	----
10-494*	3/8"	1.09	1.00	0.75	0.36	----

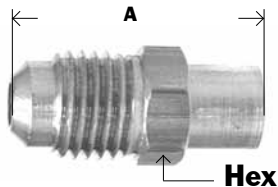
\* Steel

**BRASS SOLDER FITTINGS**

**FLARE TO SWT UNION**

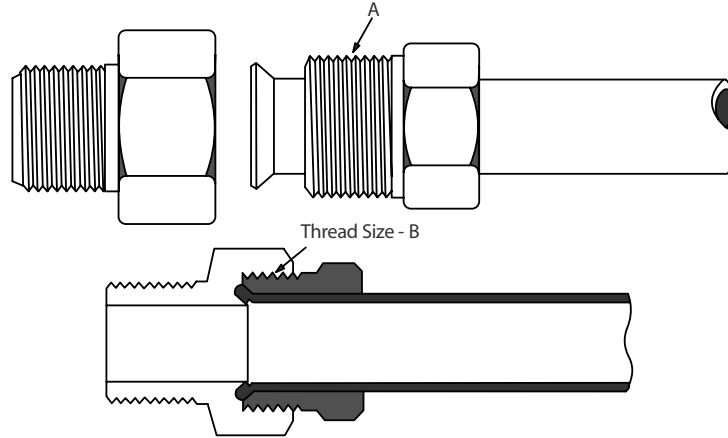
**SAE# 010104**

4085      46FS  
US3      277  
672FS



Part #	Male Flare x SWT	A	Hex	Approx. Wt. Lbs.	
10-602	1/4" x 3/8"	1.00	0.50	0.06	----
10-611	1/2" x 5/8"	1.56	0.75	0.12	----
10-615	3/4" x 3/4"	2.06	1.06	0.32	----

# Inverted Flare



<b>Tube O.D.</b>	<b>1/8</b>	<b>3/16</b>	<b>1/4</b>	<b>5/16</b>	<b>3/8</b>	<b>7/16</b>	<b>1/2</b>	<b>5/8</b>	<b>3/4</b>	<b>7/8</b>	<b>1</b>
<b>Thread Size-B</b>	<b>5/16-28</b>	<b>3/8-24</b>	<b>7/16-24</b>	<b>1/2-20</b>	<b>5/8-18</b>	<b>1 1/16-18</b>	<b>3/4-18</b>	<b>7/8-18</b>	<b>1-1/16-16</b>	<b>1-3/16-16</b>	<b>1-5/16-16</b>

**•Typical Application**

Hydraulic brake, power steering, fuel lines and transmission cooler lines, LP and natural gas.

**•Working Pressure Ranges**

Temperature and type of tubing used are important factors. However, the following table is a good guide for proper selection. Temperature 73°F with copper tubing:

<b>PSI</b>	<b>Tube O.D. (in.)</b>	<b>Tube Wall (in.)</b>
<b>2800</b>	<b>1/8</b>	<b>.030</b>
<b>1900</b>	<b>3/16</b>	<b>.030</b>
<b>1400</b>	<b>1/4</b>	<b>.030</b>
<b>1200</b>	<b>5/16</b>	<b>.032</b>
<b>1000</b>	<b>3/8</b>	<b>.032</b>
<b>750</b>	<b>1/2</b>	<b>.032</b>
<b>650</b>	<b>5/8</b>	<b>.035</b>
<b>550</b>	<b>3/4</b>	<b>.035</b>

**•Vibration**

Excellent resistance.

**•Temperature Range**

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures.

**•Material**

CA360 Brass.

**•Used With**

Copper, brass, aluminum and steel hydraulic tubing that can be flared.

**•Advantages**

Very low cost and reusable. Seats and threads are internal and protected. Compact, excellent vibration life. Short nut affords very close tube bends. Steel or brass tube nut.

**•Tolerance**

+/- .03 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical

**•Conformance**

Meets specifications and standards of ASA, ASME, SAE and MS (Military Standards).

**•Assembly Instructions**

- 1-Cut tubing to desired length. Make sure all burrs are removed and the ends are cut square.
- 2- Slide nut on tube. Threaded end "A" of nut must face out.
- 3- Flare end of tube with a 45° flaring tool.
  - a- Measure flare diameter.
  - b- Examine flare for excessive thin out.
  - c- On thin wall, welded or brazed tubing, use double flare to prevent pinch-off and cracked flares.
- 4- Lubricate threads and assemble to fitting body. Nut should be turned hand tight.
- 5- Tighten assembly with wrench until a solid feeling is encountered. From that point, apply a one-sixth turn.

**Note:** Do not over-torque as it may damage the fitting or split the tubing at the flare.

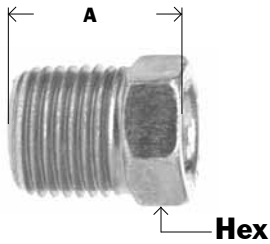
**Actual O.D. of male inverted flare threads**

<b>5/16"-28</b>	<b>3/8"-24</b>	<b>7/16"-24</b>	<b>1/2"-20</b>	<b>5/8"-18</b>	<b>3/4"-18</b>	<b>7/8"-18</b>	<b>1-1/16"-16</b>
<b>2800 PSI</b>	<b>1900 PSI</b>	<b>1400 PSI</b>	<b>1200 PSI</b>	<b>1000 PSI</b>	<b>750 PSI</b>	<b>650 PSI</b>	<b>550 PSI</b>



**ZINC CHROMATE STEEL NUT**

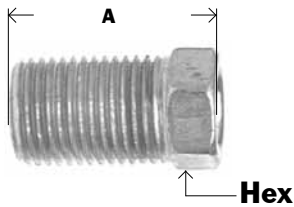
**SAE# 040110**



2105  
411FS  
105  
41W

Part #	Size	A	Hex	Approx. Wt. Lbs.	
12-001	1/8"	0.52	0.31	0.01	----
12-002	3/16"	0.56	0.37	0.02	----
12-003	1/4"	0.56	0.43	0.02	----
12-004	5/16"	0.62	0.50	0.02	----
12-005	3/8"	0.66	0.62	0.03	----
12-000	7/16"	0.68	0.68	0.04	----
12-011	3/8"(11/16-18)	0.66	0.68	0.05	----
12-006	1/2"	0.74	0.75	0.08	----
12-007	5/8"	0.80	0.87	0.10	----
12-008	3/4"	0.88	1.06	0.10	----

**LONG STEEL NUT**

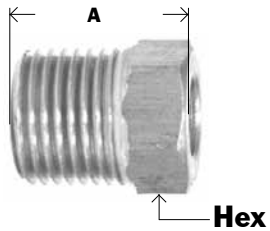


7896

Part #	Size	A	Hex	Approx. Wt. Lbs.	
12-009	3/16"	0.84	0.37	0.02	----
12-010	1/4"	0.81	0.43	0.02	----

**INVERTED FLARE BRASS NUT**

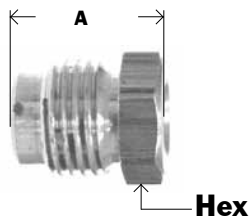
**SAE# 040110**



2100  
411F  
100  
411B

Part #	Size	A	Hex	Approx. Wt. Lbs.	
12-012	1/8"	0.52	0.31	0.01	----
12-013	3/16"	0.56	0.37	0.01	----
12-014	1/4"	0.56	0.43	0.02	----
12-015	5/16"	0.62	0.50	0.03	----
12-016	3/8"	0.66	0.62	0.04	----
12-017	1/2"	0.74	0.75	0.05	----

**SPECIAL FORD NUT**

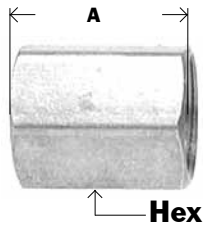


431F

Part #	Size	A	Hex	Approx. Wt. Lbs.	
12-020	1/4"	0.82	0.50	0.02	----

**UNION INTERNAL**

**SAE# 040101**

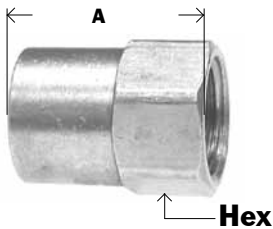


2300  
42IFHD

Part #	Inv. Flare X Inv. Flare	A	Hex	Approx. Wt. Lbs.	
12-022	1/8"	0.59	0.40	0.02	----
12-023	3/16"	0.62	0.47	0.02	----
12-024	1/4"	0.62	0.50	0.03	----
12-025	5/16"	0.70	0.56	0.04	----
12-026	3/8"	0.80	0.75	0.08	----
12-027	1/2"	0.91	0.90	0.10	----

**FEMALE ADAPTER**

**SAE# 040103**

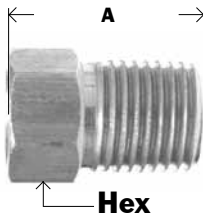


46IFHD  
252  
46W

Part #	Inv. Flare X Female NPTF	A	Hex	Approx. Wt. Lbs.	
12-032	3/16" x 1/8"	0.75	0.50	0.02	----
12-033	1/4" x 1/8"	0.75	0.53	0.02	----
12-034	5/16" x 1/8"	0.78	0.59	0.04	----
12-035	3/8" x 1/4"	1.03	0.75	0.08	----
12-036	1/2" x 3/8"	1.10	0.90	0.12	----

**MALE ADAPTER**

**SAE# 040102**



2200  
48IFHD  
202  
48W

Part #	Inv. Flare X Male NPTF	A	Hex	Approx. Wt. Lbs.	
12-041	1/8" x 1/8"	0.63	0.40	0.02	----
12-042	3/16" x 1/8"	0.70	0.43	0.02	----
12-043	1/4" x 1/8"	0.74	0.50	0.03	----
12-044	1/4" x 1/4"	0.89	0.56	0.04	----
12-045	5/16" x 1/8"	0.79	0.56	0.03	----
12-046	5/16" x 1/4"	0.98	0.56	0.05	----
12-047	3/8" x 1/8"	0.88	0.72	0.05	----
12-048	3/8" x 1/4"	1.02	0.75	0.06	----
12-049	3/8" x 3/8"	1.02	0.75	0.08	----
12-038	1/2" x 1/4"	0.97	0.87	0.10	----
12-050	1/2" x 3/8"	1.06	0.87	0.08	----
12-051	1/2" x 1/2"	1.06	0.87	0.11	----
12-052	5/8" x 1/2"	1.32	1.06	0.15	----
12-040	3/4" x 3/4"	1.39	1.25	0.24	----

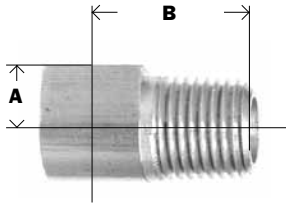
Dimension data can change without notice.  
Please call us when dimensions are critical.

The nice part about being a pessimist is that you are constantly being either proven right or pleasantly surprised.

- George F. Will

**ELBOW**

**SAE# 040202**



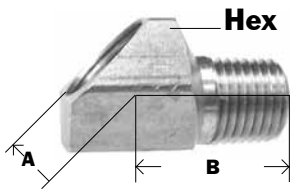
Part #	Inv. Flare X Male NPTF	A	B	Approx. Wt. Lbs.	
12-057	1/8" x 1/8"	0.26	0.59	0.03	----
12-058	3/16" x 1/8"	0.26	0.61	0.03	----
12-059	1/4" x 1/8"	0.33	0.65	0.04	----
12-054*	1/4" x 1/8"	0.33	0.65	0.04	----
12-060	1/4" x 1/4"	0.28	0.82	0.06	----
12-061	5/16" x 1/8"	0.47	0.68	0.05	----
12-062	5/16" x 1/4"	0.45	0.85	0.08	----
12-063	3/8" x 1/8"	0.54	0.76	0.14	----
12-064	3/8" x 1/4"	0.53	0.92	0.14	----
12-065	3/8" x 3/8"	0.50	0.94	0.12	----
12-066	1/2" x 3/8"	0.59	1.03	0.16	----
12-067	1/2" x 1/2"	0.66	1.22	0.25	----
12-056	5/8" x 3/8"	0.67	1.09	0.20	----
12-068	5/8" x 1/2"	0.67	1.29	0.18	----
12-069	3/4" x 1/2"	0.80	1.39	0.42	----
12-080	7/8" x 3/4"	0.94	1.43	0.48	----
12-081	1" x 1"	1.02	1.69	0.60	----

400  
2400  
249IFHD 249IF  
402 49W

\* Restricted pipe end .062

**45° ELBOW**

**SAE# 040302**

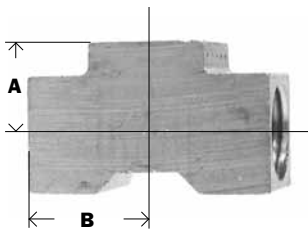


Part #	Inv. Flare X Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
12-072	3/16" x 1/8"	0.25	0.55	0.53	0.02	----
12-073	1/4" x 1/8"	0.27	0.58	0.56	0.04	----
12-074	5/16" x 1/8"	0.36	0.56	0.62	0.06	----
12-075	5/16" x 1/4"	0.23	0.83	0.62	0.06	----
12-076	3/8" x 1/4"	0.51	0.84	0.78	0.09	----
12-077	1/2" x 3/8"	0.38	0.91	0.84	0.11	----
12-079	5/8" x 1/2"	0.44	1.00	1.06	0.21	----

154  
2352  
259IFHD  
352 94W

**UNION TEE**

**SAE# 040401**



Part #	Size	A	B	Approx. Wt. Lbs.	
12-085	1/8"	0.33	0.47	0.04	----
12-086	3/16"	0.39	0.55	0.04	----
12-087	1/4"	0.42	0.56	0.08	----
12-088	5/16"	0.45	0.63	0.09	----
12-089	3/8"	0.56	0.74	0.17	----
12-090	1/2"	0.67	0.88	0.24	----

244IFHD  
702  
44I

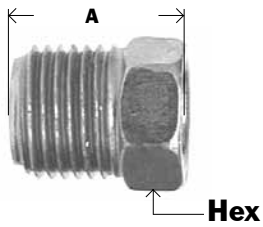


## INVERTED FLARE

## BRASS FITTINGS

## STEEL PLUG

• cored



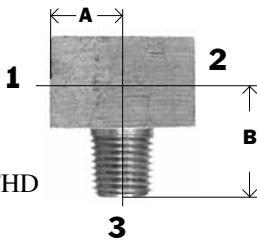
SAE# 040109

Part #	Size	A	Hex	Approx. Wt. Lbs.	
12-091	3/16"	0.53	0.37	0.01	----
12-092	1/4"	0.54	0.43	0.02	----
12-093	5/16"	0.59	0.50	0.03	----
12-094	3/8"	0.66	0.62	0.04	----

106  
411P  
131  
2131

## MALE BRANCH TEE

SAE# 040427

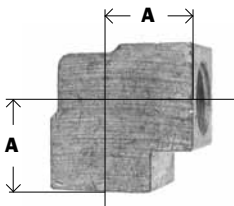


145  
245IFHD  
602  
2600  
600

Part #	Inv. Flare x Male NPTF (1&2)x3	A	B	Approx. Wt. Lbs.	
12-100	3/16" x 1/8"	0.41	0.60	0.04	----
12-101	1/4" x 1/8"	0.42	0.64	0.06	----
12-102	5/16" x 1/8"	0.47	0.68	0.07	----
12-103	3/8" x 1/4"	0.58	0.93	0.15	----

## FEMALE ELBOW

SAE# 040203

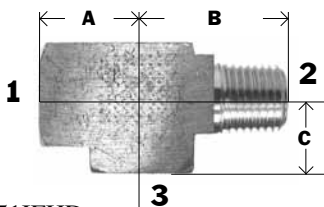


450

Part #	Inv. Flare x Female NPTF	A	Approx. Wt. Lbs.	
12-110	1/4" x 1/8"	0.55	0.07	----
12-111	5/16" x 1/8"	0.51	0.08	----
12-112	3/8" x 1/4"	0.68	0.10	----

## MALE RUN TEE

SAE# 040424

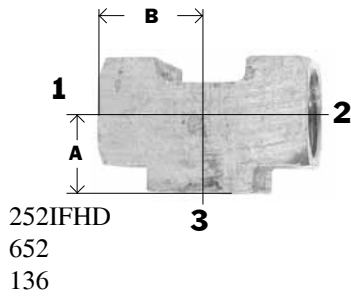


251IFHD  
752  
550  
151

Part #	Inv. Flare x Male NPTF (1&3)x2	A	B	C	Approx. Wt. Lbs.	
12-118	3/16" x 1/8"	0.53	0.72	0.39	0.06	----
12-119	1/4" x 1/8"	0.56	0.75	0.42	0.08	----
12-120	5/16" x 1/8"	0.62	0.85	0.45	0.10	----
12-121	3/8" x 1/4"	0.75	1.08	0.56	0.14	----

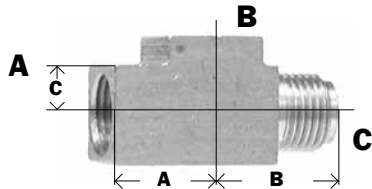
**FEMALE BRANCH TEE**

**SAE# 040427**



Part #	Inv. Flare x Female NPTF (1&2)x3	A	B	Approx. Wt. Lbs.	
12-127	3/16" x 1/8"	0.39	0.55	0.06	----
12-129	5/16" x 1/8"	0.45	0.63	0.12	----
12-130	3/8" x 1/4"	0.56	0.74	0.17	----

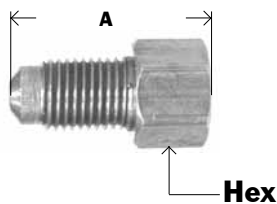
**TOWED TRAILER BRAKE TEE**



Part #	A	B	C	Reference #	Approx. Wt. Lbs.	
12-144	3/16" (9/16-20) 0.82	3/16" (3/8-24) 0.94	3/16" (9/16-20) 0.47	7905	0.18	----
12-145	3/16" (1/2-20) 0.68	3/16" (3/8-24) 0.94	3/16" (1/2-20) 0.47	7906	0.17	----
12-146	3/16" (7/16-24) 0.54	3/16" (3/8-24) 0.78	1/4" (7/16-24) 0.42	7914	0.08	----
12-147	3/16" 0.57	3/16" 0.76	3/16" 0.42	7900	0.08	----
12-149	1/4" (9/16-18) 0.81	3/16" (3/8-24) 0.93	1/4" (9/16-18) 0.50	7904	0.10	----
12-150	1/4" 0.56	3/16" 0.77	1/4" 0.43	7901	0.10	----
12-151	1/4" 0.56	1/4" 0.77	1/4" 0.43	7898	0.12	----

**INVERTED FLARE AUTO FITTINGS**

**DUAL MASTER CYLINDER ADAPTER**

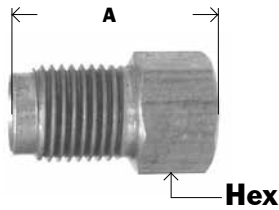


Part #	Male Flare x Female Inv.	A	Hex	Reference #	Approx. Wt. Lbs.	
12-200	3/16" x 3/16"	1.00	0.50	1441	0.03	----
12-202	5/16" x 3/16"	0.96	0.68	7897	0.07	----

Think like a man of action, act like a man of thought.

- Henri Bergson

**DUAL MASTER CYLINDER ADAPTER**

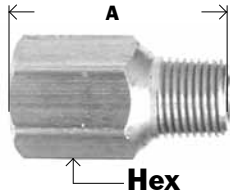


Part #	Male Inv. x Female Inv.	A	Hex	Reference #	Approx. Wt. Lbs.	
12-210	3/16" x 1/4"	0.84	0.56	7828	0.03	----
12-212	1/4" x 3/16"	0.84	0.50	7818	0.04	----
12-214*	7/16-20 x 1/4"	0.87	0.68	7732	0.06	----
12-216	5/16" x 3/16"	0.94	0.50	7909	0.04	----
12-218*	5/16" x 1/4"	0.93	0.62	7727	0.06	----
12-220	5/16" x 1/4"	0.95	0.68	7829	0.07	----
12-222*	5/16" x 5/16"	0.95	0.68	1074	0.06	----
12-224	3/8" MPT x 5/16"	0.87	0.75	7771	0.08	----

\* Seals on hex face

47W

**CARBURETOR TO FUEL LINE ADAPTER - FORD**

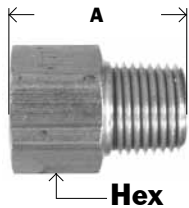


Part #	Size	A	Hex	Approx. Wt. Lbs.	
12-230	1/4" (1/2-20) x 1/8" MPT	1.06	0.56	0.04	----

1513

**RESTRICTION PIPE ADAPTER**

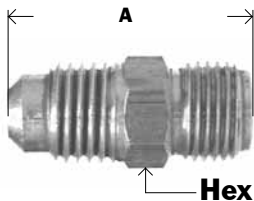
(.0625 ORIFICE)



Part #	Size	A	Hex	Approx. Wt. Lbs.	
12-310	1/8"	0.75	0.50	0.02	----

1510

**SAE FLARE X INVERTED FLARE**



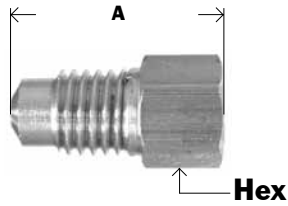
Part #	SAE Flare x Inv. Flare	A	Hex	Approx. Wt. Lbs.	
12-250	1/4" x 3/16"	1.03	0.43	0.02	----
12-252	1/4" x 1/4"	1.03	0.43	0.03	----
12-254	3/8" x 5/16"	1.34	0.63	0.08	----
12-256	3/8" x 3/8"	1.37	0.63	0.09	----
12-257	3/8" x 7/16"	1.40	0.68	0.10	----

4205

Dimension data can change without notice. Please call us when dimensions are critical.

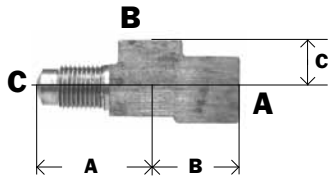
**METRIC HYDRAULIC BRAKE FITTINGS**

**METRIC ADAPTER**



Part #	Male	O.D.	A	Hex	Approx. Wt. Lbs.	
12-335	M10x1.0	3/16"(3/8-24)	1.02	0.50	0.02	----
12-326	M11x1.5	3/16"(M10x1.0)	1.06	0.50	0.02	----
12-327	M12x1.0	3/16"(M10x1.0)	1.02	0.53	0.04	----
12-328	M16x1.5	3/16"(M10x1.0)	1.02	0.56	0.06	----

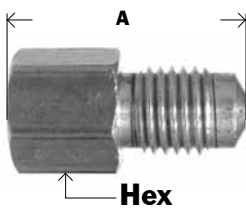
**METRIC TOWED TRAILER BRAKE TEE**



Part #	A	B	C	Approx. Wt. Lbs.	
12-333	3/16" (M12x1.0) 1.03	3/16" (3/8-24) 0.75	3/16" (M12x1.0) 0.49	0.16	----

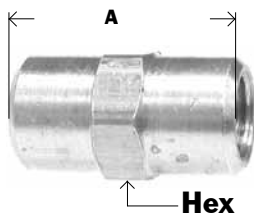
\* Bubble flare type

**ADAPTER STANDARD TO METRIC BUBBLE**



Part #	Female	Male	A	Hex	Reference #	Approx. Wt. Lbs.	
12-337	3/16" (3/8-24)	4.762(3/16") (10x1.25)	1.00	0.50	7970	0.02	----
12-339	3/16" (3/8-24)	13x1.5	1.03	0.56	7972	0.04	----
12-341	3/16" (3/8-24)	12x1.0	1.02	0.53	7974	0.04	----

**METRIC UNION**



Part #	Size	A	Hex	Reference #	Approx. Wt. Lbs.	
12-343	3/16"(10.0MM)	1.04	0.56	7975	0.04	----

**JIC 37° FLARE**

Thread Chart	
Size	JIC Thread
1/8	5/16-24
3/16	3/8-24
1/4	7/16-20
5/16	1/2-20
3/8	9/16-18
1/2	3/4-16
5/8	7/8-14
3/4	1-1/16-12
1	1-5/16-12

**STRAIGHT**



Part #	JIC Thread	Pipe Size	
28-701	7/16-20	1/8	----
28-702	7/16-20	1/4	----
28-703	7/16-20	3/8	----
28-704	1/2-20	1/8	----
28-705	1/2-20	1/4	----
28-706	9/16-18	1/8	----
28-707	9/16-18	1/4	----
28-708	9/16-18	3/8	----
28-709	9/16-18	1/2	----
28-710	3/4-16	1/4	----
28-711	3/4-16	3/8	----
28-712	3/4-16	1/2	----
28-713	3/4-16	3/4	----
28-714	7/8-14	3/8	----
28-715	7/8-14	1/2	----
28-716	7/8-14	3/4	----
28-717	1-1/16-12	3/4	----
28-718	1-5/16-12	1	----

**45° FORGED ELBOW**



Part #	JIC Thread	Pipe Size	
28-722F	7/16-20	1/8	----
28-724F	7/16-20	1/4	----
28-728F	1/2-20	1/4	----
28-729F <sup>1</sup>	9/16-18	1/8	----
28-731F	9/16-18	1/4	----
28-733F	9/16-18	3/8	----
28-734F	9/16-18	1/2	----
28-736F	3/4-16	3/8	----
28-738F	3/4-16	1/2	----
28-740F	7/8-14	1/2	----
28-742F	1-1/16-12	3/4	----

**BULKHEAD TUBE UNION**



Part #	JIC Thread	
28-797	9/16-18	----
28-955	1-1/16-12	----

**90° FORGED ELBOW**



Part #	JIC Thread	Pipe Size	
28-760F	7/16-20	1/8	----
28-762F	7/16-20	1/4	----
28-766F	1/2-20	1/4	----
28-768F	9/16-18	1/8	----
28-770F	9/16-18	1/4	----
28-772F	9/16-18	3/8	----
28-773F	9/16-18	1/2	----
28-774F	3/4-16	3/8	----
28-777F	3/4-16	1/2	----
28-778F	3/4-16	3/4	----
28-780F	7/8-14	1/2	----
28-781F	1-1/16-12	1/2	----
28-783F	1-1/16-12	3/4	----
28-784F	1-5/16-12	3/4	----
28-786F	1-5/16-12	1	----

**BRASS FITTINGS**

**STRAIGHT SWIVEL ADAPTER**



Part #	JIC Thread	Pipe Size	
28-753	9/16-18	1/4	----
28-754	9/16-18	3/8	----
28-756	3/4-16	1/2	----

**FEMALE STRAIGHT ADAPTER**



Part #	JIC Thread	Pipe Size	
28-957	7/16-20	1/8	----
28-958	7/16-20	1/4	----
28-959	9/16-18	1/4	----
28-960	9/16-18	3/8	----
28-961	3/4-16	3/8	----
28-962	3/4-16	1/2	----
28-963	7/8-14	1/2	----
28-964	1-1/16-12	3/4	----

**STRAIGHT TUBE UNION**



Part #	JIC Thread	
28-966	7/16-20	----
28-969	9/16-18	----
28-970	3/4-16	----
28-971	1-1/16-12	----
28-972	1-5/16-12	----

**TUBE TEE**



Part #	JIC Thread	List Price
28-981	7/16-20	----
28-982	9/16-18	----

**FEMALE ELBOW (FORGED BODY)**



Part #	JIC Thread	Pipe Size	
28-973	7/16-20	1/8	----
28-974	7/16-20	1/4	----
28-975	9/16-18	1/4	----

## BRASS FITTINGS

## POL ( BOTTLE GAS )

### POL BRASS FITTINGS (BOTTLE GAS)

Used for making connections in LP gas systems

POL Thread 880 - 14LH

Note: All bottle fittings are UL listed.

### TEE CHECK



POL-T1  
2000  
1000

Part #	Pipe Size	
34-001	M2000	----

### TAILPIECE WITH FLATS

1001AUL  
21605



POL-LPT  
POL-LTPH  
M-2001-A

Part #	Length	
34-011	2.34 w/ wrench Flats	----
34-012	2.13 w/ Hex	----

### STANDARD NUT

7/8" Hex



1001BUL  
POL-N  
21601  
M-2001-B

Part #	Pipe Size	
34-016	.880-14 LH	----

### TAILPIECE & NUT ASSEMBLY



2002AB

Part #	Pipe Size	
34-022	1/4	----

### POL CAP



POL-N5  
2004  
1004A  
M-2004

Part #	Pipe Size	
34-031	.880-14LH	----

### POL PLUG



1014A  
POL-P2  
2014  
M-2014

Part #	Pipe Size	
34-036	.880-14LH	----

### ADAPTERS

POL 2005  
POL 2006  
POL 2007



21607  
POL-U2  
1015

Part #	Pipe Size	
34-041	3/8 Flare x .880-14LH	----
34-046	1/2 Flare x .880-14LH	----
34-051	5/8 Flare x .880-14LH	----

### POL X 1/4 FPT



2008  
POL-U3B

Part #	Pipe Size	
34-056	.880-14LH POL x 1/4 FPT	----

### TAILPIECE & NUT ASSEMBLY



Part #	Size	
34-025	POL x 1/4 Barb	----

### CAP ORIFICE

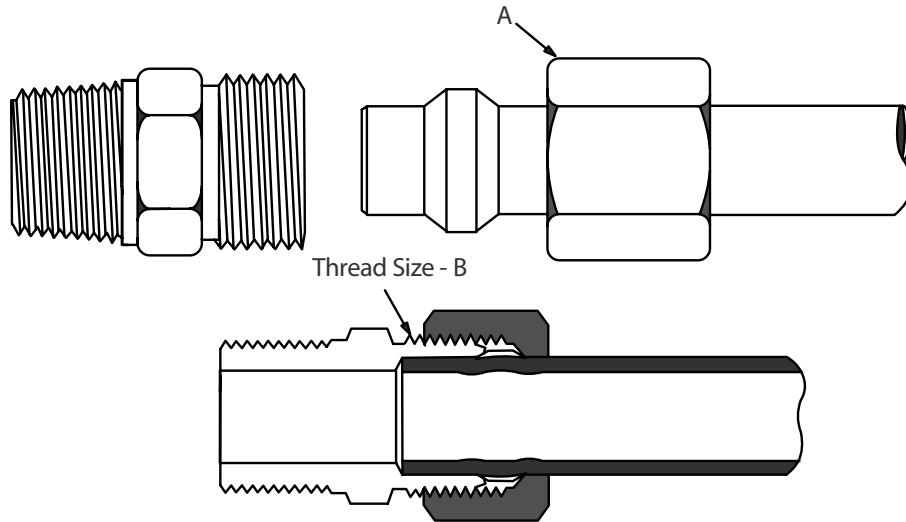


GF6  
OH

Part #	Size	
34-032	72	----

BRASS

# Compression Fittings



<b>Tube O.D.</b>	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1
<b>Thread Size-B</b>	5/16-24	3/8-24	7/16-24	1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	1-1/4-18

**•Typical Application**

Instrumentation, hydraulic and pneumatic systems.

**•Pressure**

Working pressure up to 2000 PSI with a 4:1 safety factor depending on tube size. When using plastic tubing, use the working pressure for type used.

**•Vibration**

Fair resistance - use long nut when greater vibration resistance is needed.

**•Temperature Range**

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures. (Refer to tubing temperature range.)

**•Material**

CA360 Brass for barstock fittings.  
CA377 Brass for forged fittings.

**•Used With**

Aluminum, copper, brass and plastic tubing. Plastic tubing requires insert. Not recommended for steel tubing.

**•Tolerance**

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

**• Conformance**

Meets specifications and standards of ASA, ASME and SAE.

**•Assembly Instructions**

- 1- Cut tubing to desired length.
- 2- Slide nut and then sleeve on tube. Threaded end "A" of nut must face toward fitting.
- 3- Insert tubing into fitting body. Be sure tubing is bottomed on fitting shoulder.
- 4- Lubricate threads and assemble nut to fitting body.
- 5- Tighten nut hand tight. From that point, tighten with a wrench the number of turns indicated in the chart below.

Tube Size	Additional Turns from Hand Tight
1/8" thru 1/4"	1-1/4"
5/16"	1-3/4"
3/8" thru 1"	2-1/4"

**•“L” at the end of a Part# means Light Pattern** -These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

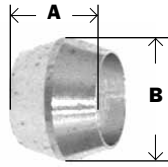
Actual Profile of Compression Threads



**BRASS SLEEVE**

**SAE# 060115**

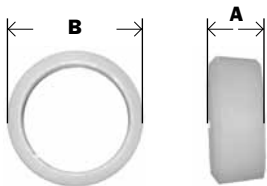
• FERRULES



60  
260

Part #	Size	A	B	Approx. Wt. Lbs.	
18-001	1/8"	0.19	0.19	0.01	----
18-002	3/16"	0.22	0.27	0.01	----
18-003	1/4"	0.25	0.34	0.01	----
18-004	5/16"	0.25	0.41	0.01	----
18-005	3/8"	0.25	0.47	0.02	----
18-006	7/16"	0.31	0.53	0.02	----
18-007	1/2"	0.38	0.59	0.02	----
18-008	5/8"	0.38	0.71	0.03	----
18-009	3/4"	0.44	0.87	0.03	----
18-010	7/8"	0.41	0.99	0.03	----

**DELTRIN SLEEVE**

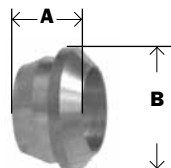


60-P

Part #	Size	A	B	Approx. Wt. Lbs.	
18-015	1/4"	0.19	0.37	0.01	----
18-016	5/16"	0.19	0.43	0.01	----
18-017	3/8"	0.19	0.50	0.02	----
18-018	1/2"	0.25	0.63	0.02	----
18-019	5/8"	0.22	0.74	0.02	----
18-020	3/4"	0.25	0.93	0.03	----

**SELF-ALIGN SLEEVE**

601



Part #	Size	A	B	Approx. Wt. Lbs.	
27-001	1/8"	0.19	0.25	0.01	----
27-002	3/16"	0.20	0.31	0.01	----
27-003	1/4"	0.21	0.37	0.02	----
27-005	3/8"	0.23	0.50	0.03	----
27-006	1/2"	0.35	0.62	0.03	----

\* Note: To buy compression fittings with self-align sleeve, simply delete the 18- prefix on the same size compression fitting and substitute 27- prefix. Pricing available upon request.

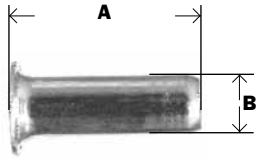
Dream as if you'll live forever. Live as if you'll die today.

- James Dean



**BRASS INSERT**

• SLEEVE

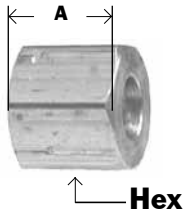


63-BI  
60AE  
2030  
63PT

Part #	Size	A	B	Approx. Wt. Lbs.	
22-008	1/8"	0.46	0.080	0.01	----
22-009	3/16"	0.45	0.135	0.01	----
22-009A	3/16"	0.52	0.095	0.01	----
22-010	1/4"	0.50	0.163	0.02	----
22-010A	1/4"	0.59	0.125	0.02	----
22-010B	1/4"	0.53	0.172	0.02	----
22-011A	5/16"	0.50	0.232	0.02	----
22-011	5/16"	0.53	0.187	0.02	----
22-012	3/8"	0.56	0.250	0.03	----
22-013	1/2"	0.72	0.372	0.03	----
22-014	5/8"	0.72	0.483	0.03	----
22-015	3/4"	1.03	0.563	0.03	----

**BRASS NUT**

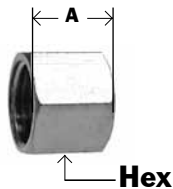
**SAE# 060110**



61  
261

Part #	Size	A	Hex	Approx. Wt. Lbs.	
18-033	1/8"	0.38	0.37	0.01	----
18-034	3/16"	0.41	0.43	0.01	----
18-035L	1/4"	0.44	0.50	0.02	----
18-035	1/4"	0.44	0.50	0.02	----
18-036	5/16"	0.44	0.56	0.02	----
18-037L	3/8"	0.47	0.62	0.04	----
18-037	3/8"	0.47	0.62	0.04	----
18-038	7/16"	0.50	0.68	0.04	----
18-039L	1/2"	0.56	0.75	0.04	----
18-039	1/2"	0.62	0.81	0.04	----
18-040L	5/8"	0.56	0.87	0.06	----
18-040	5/8"	0.62	0.94	0.06	----
18-041	3/4"	0.68	1.12	0.08	----
18-042	7/8"	0.62	1.25	0.10	----

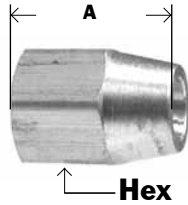
**NICKEL PLATED NUT**



Part #	Size	A	Hex	Approx. Wt. Lbs.	
18-054	1/4"	0.44	0.50	0.02	----
18-055	3/8"	0.45	0.62	0.02	----
18-056	1/2"	0.56	0.75	0.04	----
18-057	5/8"	0.56	0.94	0.04	----

**LONG NUT COMPRESSION**

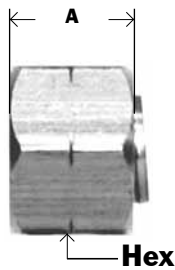
161



Part #	Size	A	Hex	Approx. Wt. Lbs.	
24-003	1/4"	0.75	0.50	0.02	----
24-004	5/16"	0.84	0.56	0.02	----
24-005	3/8"	0.97	0.62	0.04	----
24-006	1/2"	1.06	0.81	0.06	----

\* Note: To buy compression fittings with long nut, simply delete the 18- prefix on the same size compression fitting and substitute a 24- prefix. Pricing available upon request. 72 hour lead time.

**CAPTIVE SLEEVE NUT**

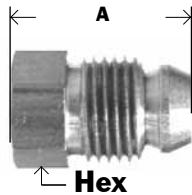


Part #	Size	A	Hex	Approx. Wt. Lbs.	
26-001	1/8"	0.38	0.37	0.02	----
26-002	3/16"	0.40	0.43	0.02	----
26-003	1/4"	0.40	0.50	0.04	----
26-004	5/16"	0.44	0.56	0.04	----
26-005	3/8"	0.46	0.62	0.06	----
26-007	1/2"	0.50	0.75	0.08	----
26-008	5/8"	0.51	0.87	0.10	----

\* Note: To buy compression fittings with captive sleeve, simply delete the 18- prefix on the same size compression fitting and substitute a 26- prefix. Pricing available upon request. 72 hour lead time.

**BREAK-AWAY NUT**

181-BA  
21604  
99LB  
81LB

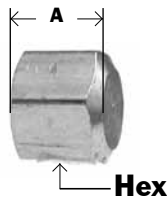


Part #	Size	A	Hex	Approx. Wt. Lbs.	
16-090	3/16"	0.57	0.37	0.02	----
16-010	1/4"	0.62	0.43	0.02	----

\* Threaded sleeve fittings on page 83.

**CAP**

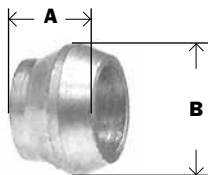
61-CC  
N5CT



Part #	Size	A	Hex	Approx. Wt. Lbs.	
18-047	1/4"	0.44	0.50	0.02	----
18-048	3/8"	0.40	0.62	0.04	----
18-049	1/2"	0.48	0.75	0.06	----
18-050	5/8"	0.56	0.94	0.10	----

**COMPRESSION PLUG**

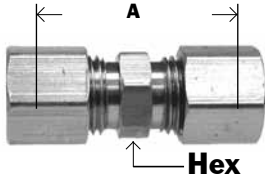
CSP



Part #	Size	A	B	Approx. Wt. Lbs.	
18-029	3/8"	0.31	0.47	0.04	----
18-030	1/2"	0.34	0.59	0.06	----

**UNION**

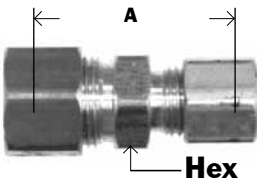
**SAE# 060101BA**



M-62

Part #	Size	A	Hex	Approx. Wt. Lbs.	
18-062	1/8"	0.64	0.31	0.03	----
18-063	3/16"	0.75	0.37	0.04	----
18-064L	1/4"	0.79	0.43	0.06	----
18-064	1/4"	0.81	0.43	0.06	----
18-065	5/16"	0.88	0.50	0.06	----
18-066L	3/8"	0.96	0.56	0.09	----
18-066	3/8"	0.98	0.56	0.10	----
18-067	7/16"	1.02	0.62	0.12	----
18-068L	1/2"	1.06	0.68	0.16	----
18-068	1/2"	1.25	0.68	0.16	----
18-069L	5/8"	1.43	0.81	0.24	----
18-069	5/8"	1.25	0.81	0.26	----
18-070	3/4"	1.41	1.00	0.35	----
18-071L	7/8"	1.03	1.12	0.34	----
18-071	7/8"	1.00	1.12	0.36	----

**REDUCING UNION**

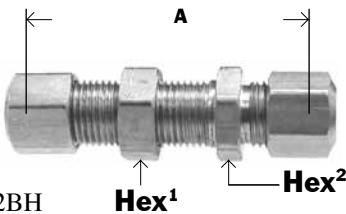


62-R

Part #	Size	A	Hex	Approx. Wt. Lbs.	
18-076	1/4" x 1/8"	0.73	0.44	0.04	----
18-077	1/4" x 3/16"	0.78	0.44	0.06	----
18-078	5/16" x 1/4"	0.81	0.50	0.06	----
18-079	3/8" x 1/4"	0.90	0.56	0.10	----
18-080	3/8" x 5/16"	0.94	0.56	0.10	----
18-081	1/2" x 3/8"	1.03	0.68	0.12	----
18-082	5/8" x 3/8"	1.03	0.81	0.15	----
18-083	5/8" x 1/2"	1.10	0.81	0.15	----
18-084	7/8" x 5/8"	1.23	1.18	0.20	----

**BULKHEAD UNIONS**

**SAE# 060101**



62BH  
75  
274

Part #	Size	A	Hex 1	Hex 2	Approx. Wt. Lbs.	
18-088	1/4"	1.58	0.56	0.56	0.10	----
18-090	3/8"	1.76	0.68	0.68	0.14	----

In mathematics you don't understand things. You just get used to them.

**- Johann von Neumann**

Dimension data can change without notice.  
Please call us when dimensions are critical.

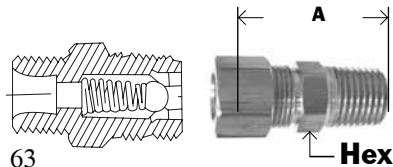
**BULKHEAD NUTS**



20102

Part #	Size	A	Hex	Approx. Wt. Lbs.	
18-097	1/4"	0.25	0.56	0.02	----
18-099	3/8"	0.25	0.68	0.04	----
18-100	1/2"	0.38	0.94	0.06	----

**BALL CHECK VALVE - Min. Working pressure 3 psi.**

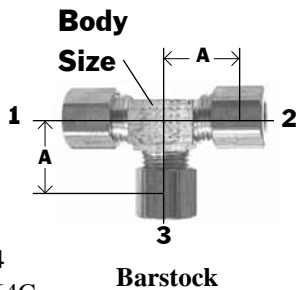
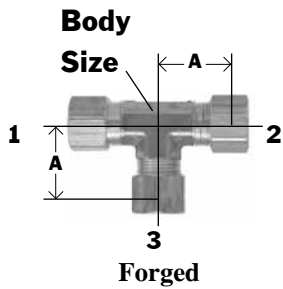


63  
263  
63A

Part #	Tube OD x Male NPTF	A	Hex	Approx. Wt. Lbs.	
18-092	1/8" x 1/8"	0.78	0.44	0.04	----
18-094	1/4" x 1/8"	0.88	0.44	0.04	----
18-096	3/8" x 1/4"	1.16	0.56	0.08	----

**TEE**

**SAE# 060401**

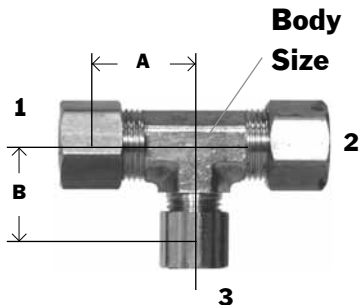


64  
264C

Part #	Size	A	Body Size	Approx. Wt. Lbs.	
18-101	1/8"	0.61	0.37	0.04	----
18-101B*	1/8"	0.62	0.33	0.04	----
18-102	3/16"	0.59	0.36	0.08	----
18-102B*	3/16"	0.60	0.38	0.08	----
18-103	1/4"	0.63	0.36	0.10	----
18-103B*	1/4"	0.62	0.49	0.10	----
18-104	5/16"	0.72	0.50	0.13	----
18-104B*	5/16"	0.60	0.50	0.14	----
18-105	3/8"	0.75	0.50	0.16	----
18-105B*	3/8"	0.73	0.59	0.16	----
18-106	1/2"	0.94	0.59	0.22	----
18-106B*	1/2"	0.94	0.69	0.24	----
18-107	5/8"	1.06	0.69	0.28	----
18-108	3/4"	1.22	0.88	0.32	----
18-109	7/8"	1.25	0.94	0.34	----

\* Barstock

**FORGED REDUCING TEE**

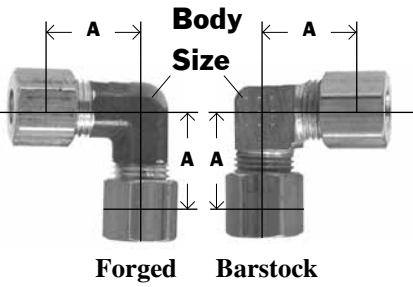


64-R

Part #	Size 1 x 2 x 3	A	B	Body Size	Approx. Wt. Lbs.	
18-114	1/4" x 1/4" x 1/8"	0.62	0.59	0.38	0.09	----
18-110	1/4" x 1/4" x 3/8"	0.69	0.75	0.50	0.14	----
18-111	3/8" x 1/4" x 1/4"	0.75	0.69	0.50	0.12	----
18-115	3/8" x 3/8" x 1/4"	0.75	0.69	0.50	0.14	----
18-116	1/2" x 1/2" x 1/4"	0.94	0.81	0.59	0.16	----
18-117	1/2" x 1/2" x 3/8"	0.94	0.81	0.59	0.24	----
18-118	5/8" x 5/8" x 3/8"	1.06	0.94	0.69	0.28	----
18-119	5/8" x 5/8" x 1/2"	1.06	1.06	0.69	0.30	----

**UNION ELBOW**

**SAE# 060201**

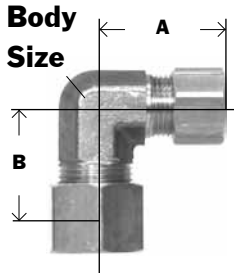


65  
BSE2  
165C  
265C

Part #	Size	A	Body Size	Approx. Wt. Lbs.	
18-122B*	1/8"	0.62	0.35	0.04	----
18-123	3/16"	0.61	0.37	0.06	----
18-123B*	3/16"	0.62	0.41	0.06	----
18-124	1/4"	0.66	0.38	0.08	----
18-124B*	1/4"	0.60	0.48	0.08	----
18-125	5/16"	0.69	0.47	0.09	----
18-125B*	5/16"	0.62	0.52	0.09	----
18-126	3/8"	0.72	0.43	0.12	----
18-127	1/2"	0.94	0.59	0.19	----
18-127B*	1/2"	0.94	0.71	0.19	----
18-128	5/8"	1.06	0.72	0.26	----
18-129	3/4"	1.19	0.94	0.48	----
18-130	7/8"	1.25	0.94	0.44	----

\* Barstock

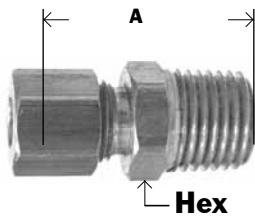
**REDUCING ELBOW - Forged**



65-R

Part #	Size	A	B	Body Size	Approx. Wt. Lbs.	
18-135	3/8" x 1/4"	0.69	0.75	0.47	0.12	----
18-136	1/2" x 3/8"	0.88	0.94	0.59	0.15	----
18-137	5/8" x 3/8"	0.88	0.97	0.56	0.18	----

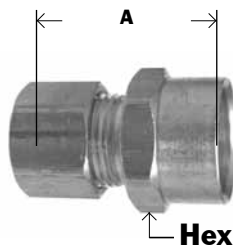
**TANK ADAPTER DRILLED THRU (NO STOP)**



68-T  
682C  
80F

Part #	Comp. X Male NPTF	A	Hex	Approx. Wt. Lbs.	
18-208	1/4" x 1/8"	0.88	0.43	0.04	----
18-209	1/4" x 1/4"	0.99	0.56	0.05	----
18-210	3/8" x 1/4"	1.16	0.56	0.05	----
18-211	3/8" x 3/8"	1.09	0.68	0.08	----
18-212	3/8" x 1/2"	1.19	0.87	0.10	----
18-213	1/2" x 3/8"	1.22	0.68	0.12	----
18-214	1/2" x 1/2"	1.09	0.81	0.14	----
18-215	5/8" x 1/2"	1.12	0.81	0.18	----

**COMP X SWEAT ADAPTER**

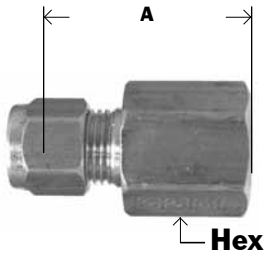


66-S

Part #	Comp. X Sweat Adapter	A	Hex	Approx. Wt. Lbs.	
18-171	3/8" x 1/2" nom.swt.	0.98	0.75	0.08	----

**FEMALE ADAPTER**

**SAE# 060103**



66

Part #	Comp. X Female NPTF	A	Hex	Approx. Wt. Lbs.	
18-142	1/8" x 1/8"	0.75	0.56	0.02	----
18-143	3/16" x 1/8"	0.78	0.56	0.04	----
18-144	3/16" x 1/4"	0.96	0.68	0.04	----
18-145L	1/4" x 1/8"	0.84	0.50	0.05	----
18-145	1/4" x 1/8"	0.78	0.56	0.05	----
18-146L	1/4" x 1/4"	0.88	0.62	0.09	----
18-146	1/4" x 1/4"	1.03	0.68	0.09	----
18-147	1/4" x 3/8"	1.00	0.81	0.10	----
18-148	1/4" x 1/2"	1.02	0.87	0.12	----
18-149	5/16" x 1/8"	0.81	0.56	0.05	----
18-150	5/16" x 1/4"	0.91	0.62	0.06	----
18-152	3/8" x 1/8"	0.88	0.56	0.06	----
18-153L	3/8" x 1/4"	0.97	0.62	0.08	----
18-153	3/8" x 1/4"	1.06	0.68	0.08	----
18-154L	3/8" x 3/8"	1.03	0.75	0.08	----
18-154	3/8" x 3/8"	1.06	0.81	0.10	----
18-155	3/8" x 1/2"	1.12	1.00	0.08	----
18-156	3/8" x 3/4"	1.19	1.16	0.14	----
18-157	1/2" x 1/4"	1.09	0.68	0.10	----
18-158L	1/2" x 3/8"	0.94	0.81	0.12	----
18-158	1/2" x 3/8"	1.12	0.81	0.12	----
18-159L	1/2" x 1/2"	1.19	1.00	0.12	----
18-159	1/2" x 1/2"	1.31	1.00	0.12	----
18-160	1/2" x 3/4"	1.25	1.16	0.18	----
18-161	5/8" x 3/8"	1.03	0.81	0.12	----
18-162L	5/8" x 1/2"	1.20	0.94	0.18	----
18-162	5/8" x 1/2"	1.38	1.00	0.18	----
18-163	5/8" x 3/4"	1.20	1.12	0.22	----
18-164	3/4" x 1/2"	1.25	1.06	0.26	----
18-165	3/4" x 3/4"	1.28	1.19	0.28	----
18-167	7/8" x 1/2"	1.28	1.19	0.32	----
18-166	7/8" x 3/4"	1.31	1.12	0.34	----

**BRASS**

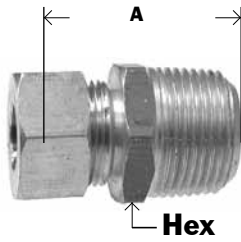
The fight is won or lost far away from witnesses - behind the lines, in the gym, and out there on the road, long before I dance under those lights.

- Muhammad Ali

Dimension data can change without notice.  
Please call us when dimensions are critical.

**MALE ADAPTER**

**SAE# 060102**



68

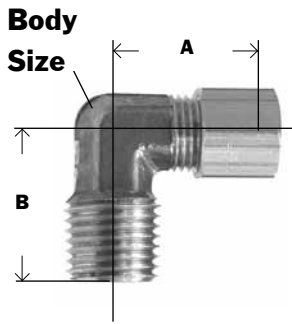
Part #	Comp. X Male NPTF	A	Hex	Approx. Wt. Lbs.	
18-175	1/8" x 1/16"	0.78	0.37	0.02	----
18-176	1/8" x 1/8"	0.78	0.43	0.04	----
18-177	3/16" x 1/8"	0.84	0.43	0.04	----
18-178	3/16" x 1/4"	0.94	0.56	0.06	----
18-179L	1/4" x 1/8"	0.88	0.56	0.04	----
18-179	1/4" x 1/8"	0.88	0.43	0.04	----
18-180L	1/4" x 1/4"	0.94	0.56	0.05	----
18-180	1/4" x 1/4"	1.06	0.56	0.06	----
18-181	1/4" x 3/8"	1.03	0.68	0.08	----
18-182	1/4" x 1/2"	1.09	0.81	0.10	----
18-183	5/16" x 1/8"	0.91	0.50	0.05	----
18-184L	5/16" x 1/4"	1.01	0.56	0.06	----
18-184	5/16" x 1/4"	1.09	0.56	0.06	----
18-185	5/16" x 3/8"	1.06	0.68	0.07	----
18-186	5/16" x 1/2"	1.14	0.87	0.10	----
18-187L	3/8" x 1/8"	0.94	0.56	0.06	----
18-187	3/8" x 1/8"	0.97	0.56	0.06	----
18-188L	3/8" x 1/4"	1.03	0.56	0.06	----
18-188	3/8" x 1/4"	1.16	0.56	0.07	----
18-189L	3/8" x 3/8"	1.09	0.68	0.08	----
18-189	3/8" x 3/8"	1.14	0.69	0.08	----
18-190L	3/8" x 1/2"	1.19	0.88	0.12	----
18-190	3/8" x 1/2"	1.34	0.87	0.13	----
18-191	3/8" x 3/4"	1.29	1.06	0.16	----
18-192	7/16" x 1/4"	1.06	0.62	0.10	----
18-204	7/16" x 3/8"	1.10	0.68	0.12	----
18-193L	1/2" x 1/4"	1.09	0.69	0.11	----
18-193	1/2" x 1/4"	1.22	0.68	0.11	----
18-194L	1/2" x 3/8"	1.16	0.68	0.12	----
18-194	1/2" x 3/8"	1.16	0.69	0.12	----
18-195L	1/2" x 1/2"	1.09	0.81	0.12	----
18-195	1/2" x 1/2"	1.41	0.87	0.19	----
18-196	1/2" x 3/4"	1.38	1.06	0.22	----
18-197	5/8" x 3/8"	1.22	0.81	0.24	----
18-198	5/8" x 1/2"	1.12	0.81	0.24	----
18-199	5/8" x 3/4"	1.31	1.06	0.26	----
18-200	3/4" x 1/2"	1.44	1.00	0.26	----
18-201	3/4" x 3/4"	1.50	1.06	0.26	----
18-202	7/8" x 1/2"	1.18	1.12	0.26	----
18-203	7/8" x 3/4"	1.22	1.12	0.28	----
18-205	7/8" x 1"	1.67	1.37	0.32	----

Always be a first-rate version of yourself, instead of a second-rate version of someone else.

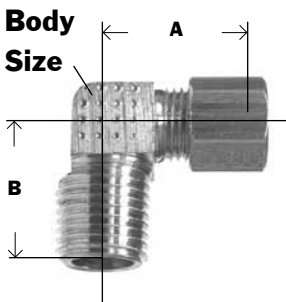
- Judy Garland

**MALE ELBOW**

**SAE# 060202**



**Forged**



**Barstock**

69  
269C  
BSE1  
169C

Part #	Comp. X Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
18-220	1/8" x 1/8"	0.59	0.75	0.34	0.02	----
18-220B*	1/8" x 1/8"	0.60	0.67	0.43	0.04	----
18-221	3/16" x 1/8"	0.63	0.72	0.34	0.04	----
18-221B*	3/16" x 1/8"	0.62	0.69	0.43	0.06	----
18-223	3/16" x 1/4"	0.60	0.81	0.39	0.05	----
18-224	1/4" x 1/8"	0.60	0.75	0.37	0.06	----
18-224B*	1/4" x 1/8"	0.62	0.75	0.43	0.06	----
18-225	1/4" x 1/4"	0.65	0.94	0.36	0.08	----
18-225B*	1/4" x 1/4"	0.61	0.81	0.56	0.08	----
18-226	1/4" x 3/8"	0.75	0.91	0.47	0.08	----
18-227	1/4" x 1/2"	0.81	1.13	0.56	0.12	----
18-228	5/16" x 1/8"	0.66	0.75	0.47	0.06	----
18-228B*	5/16" x 1/8"	0.62	0.75	0.42	0.06	----
18-229	5/16" x 1/4"	0.66	0.81	0.47	0.07	----
18-229B*	5/16" x 1/4"	0.69	0.84	0.57	0.08	----
18-230	5/16" x 3/8"	0.75	0.91	0.47	0.10	----
18-231	5/16" x 1/2"	0.84	1.12	0.56	0.12	----
18-232	3/8" x 1/8"	0.72	0.66	0.39	0.06	----
18-232B*	3/8" x 1/8"	0.69	0.69	0.57	0.06	----
18-233	3/8" x 1/4"	0.75	0.82	0.46	0.08	----
18-233B*	3/8" x 1/4"	0.75	0.94	0.57	0.08	----
18-234	3/8" x 3/8"	0.81	0.94	0.46	0.10	----
18-234B*	3/8" x 3/8"	0.71	0.83	0.69	0.10	----
18-235	3/8" x 1/2"	0.87	1.12	0.56	0.14	----
18-235B*	3/8" x 1/2"	0.88	1.16	0.94	0.14	----
18-248	3/8" x 3/4"	1.03	1.19	0.81	0.18	----
18-247	7/16" x 1/4"	0.84	1.00	0.56	0.14	----
18-236	1/2" x 1/4"	0.88	0.97	0.56	0.14	----
18-237	1/2" x 3/8"	0.88	1.03	0.56	0.19	----
18-237B*	1/2" x 3/8"	0.94	1.12	0.70	0.19	----
18-238	1/2" x 1/2"	0.94	1.13	0.59	0.17	----
18-238B*	1/2" x 1/2"	0.94	1.31	0.86	0.17	----
18-239	1/2" x 3/4"	1.16	1.25	0.81	0.18	----
18-240	5/8" x 3/8"	1.06	1.12	0.68	0.18	----
18-241	5/8" x 1/2"	1.06	1.16	0.68	0.20	----
18-241B*	5/8" x 1/2"	1.06	1.31	0.86	0.20	----
18-242	5/8" x 3/4"	1.16	1.31	0.81	0.24	----
18-243	3/4" x 1/2"	1.19	1.31	0.94	0.26	----
18-245	3/4" x 3/4"	1.19	1.38	0.94	0.30	----
18-246	7/8" x 3/4"	1.25	1.38	0.94	0.35	----

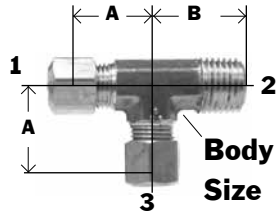
\* Barstock

Dimension data can change without notice.  
Please call us when dimensions are critical.

**BRASS**



**FORGED MALE RUN TEE**

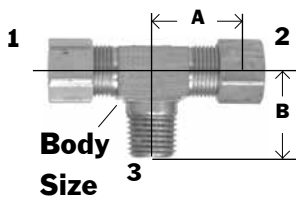
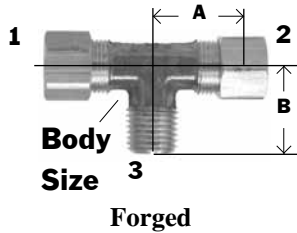


71  
171C  
BST3

Part #	Comp. X Male NPTF (1&3) X 2	A	B	Body Size	Approx. Wt. Lbs.	
18-272	1/8" x 1/8"	0.63	0.69	0.36	0.06	----
18-273	3/16" x 1/8"	0.63	0.69	0.36	0.07	----
18-274	1/4" x 1/8"	0.63	0.75	0.36	0.08	----
18-275	1/4" x 1/4"	0.69	0.88	0.44	0.10	----
18-276	5/16" x 1/8"	0.72	0.75	0.50	0.10	----
18-277	5/16" x 1/4"	0.75	0.88	0.44	0.10	----
18-278	3/8" x 1/8"	0.75	0.75	0.50	0.14	----
18-279	3/8" x 1/4"	0.79	0.87	0.44	0.18	----
18-280	3/8" x 3/8"	0.88	1.00	0.47	0.20	----
18-281	1/2" x 3/8"	0.94	1.09	0.59	0.24	----
18-282	1/2" x 1/2"	0.97	1.19	0.69	0.26	----
18-283	5/8" x 1/2"	1.06	1.31	0.69	0.28	----
18-284	3/4" x 1/2"	1.22	1.34	0.88	0.30	----

**MALE BRANCH TEE**

**SAE# 060203**



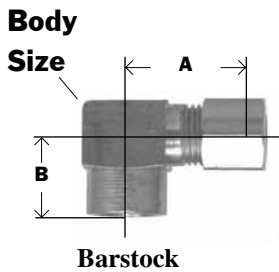
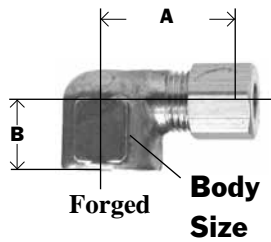
72  
BST1  
172C

Part #	Comp. X Male NPTF (1&2) X 3	A	B	Body Size	Approx. Wt. Lbs.	
18-290	3/16" x 1/8"	0.63	0.69	0.36	0.08	----
18-291	1/4" x 1/8"	0.62	0.75	0.36	0.10	----
18-291B*	1/4" x 1/8"	0.64	0.73	0.45	0.10	----
18-292	1/4" x 1/4"	0.69	0.86	0.44	0.10	----
18-293	5/16" x 1/8"	0.72	0.75	0.50	0.11	----
18-294	5/16" x 1/4"	0.75	0.88	0.44	0.12	----
18-295	3/8" x 1/8"	0.75	0.75	0.50	0.14	----
18-296	3/8" x 1/4"	0.78	0.88	0.44	0.16	----
18-296B*	3/8" x 1/4"	0.78	0.91	0.62	0.16	----
18-297	3/8" x 3/8"	0.78	0.97	0.47	0.18	----
18-298	3/8" x 1/2"	0.88	1.22	0.69	0.20	----
18-304	1/2" x 1/4"	0.94	0.97	0.59	0.22	----
18-299B*	1/2" x 3/8"	0.96	1.09	0.70	0.24	----
18-299	1/2" x 3/8"	0.94	1.12	0.59	0.24	----
18-300	1/2" x 1/2"	0.97	1.19	0.69	0.30	----
18-301	5/8" x 1/2"	1.06	1.31	0.69	0.32	----
18-302	3/4" x 1/2"	1.22	1.34	0.88	0.50	----
18-303	3/4" x 3/4"	1.25	1.50	0.88	0.54	----

\* Barstock

**FEMALE ELBOW**

**SAE# 060203**

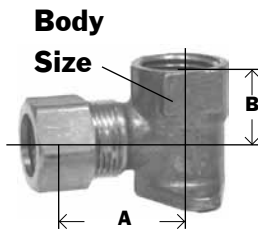


70  
270C  
BSE3  
170C

Part #	Comp. X Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
18-251	1/8" x 1/8"	0.69	0.56	0.56	0.04	----
18-252	3/16" x 1/8"	0.69	0.47	0.56	0.04	----
18-253	1/4" x 1/8"	0.69	0.47	0.56	0.06	----
18-253B*	1/4" x 1/8"	0.69	0.56	0.56	0.06	----
18-254	1/4" x 1/4"	0.75	0.50	0.72	0.08	----
18-267	1/4" x 3/8"	0.81	0.58	0.81	0.08	----
18-268	1/4" x 1/2"	0.89	0.66	1.00	0.10	----
18-255	5/16" x 1/8"	0.72	0.84	0.47	0.08	----
18-256	5/16" x 1/4"	0.78	0.50	0.72	0.09	----
18-257	3/8" x 1/8"	0.75	0.84	0.47	0.10	----
18-258	3/8" x 1/4"	0.84	0.59	0.75	0.10	----
18-259	3/8" x 3/8"	0.88	0.58	0.81	0.12	----
18-260	3/8" x 1/2"	0.97	0.66	1.00	0.14	----
18-250	3/8" x 3/4"	1.09	0.72	1.25	0.18	----
18-261	1/2" x 1/4"	1.06	0.70	0.88	0.18	----
18-262	1/2" x 3/8"	1.00	0.70	0.88	0.16	----
18-263	1/2" x 1/2"	1.03	0.72	1.00	0.20	----
18-270	1/2" x 3/4"	1.16	0.72	1.25	0.23	----
18-269	5/8" x 3/8"	1.09	0.77	1.00	0.20	----
18-264	5/8" x 1/2"	1.09	0.77	1.00	0.22	----
18-265	5/8" x 3/4"	1.22	0.77	1.25	0.24	----
18-266	3/4" x 1/2"	1.25	1.25	0.94	0.28	----

\* Barstock

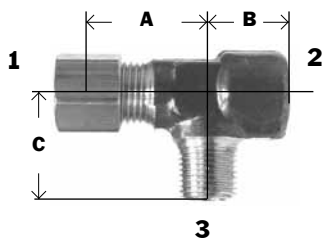
**FORGED DROP-EAR ELBOW**



BSE3-DE

Part #	Comp. X Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
18-271	5/8" x 1/2"	1.18	0.72	1.00	0.18	----

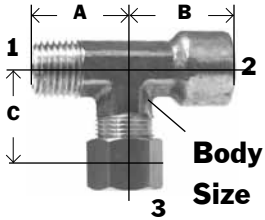
**FORGED TEE**



71  
171C  
BST3

Part #	Comp. X Female NPTF x Male NPTF 1x(2&3)	A	B	C	Approx. Wt. Lbs.	
18-307	1/4" x 1/8"	0.72	0.53	0.72	0.20	----

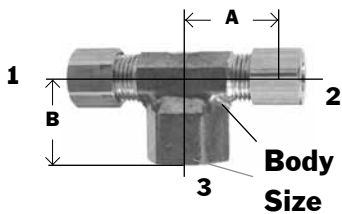
**ADAPTER TEE**



Part #	Male NPTF x Female NPTF x Comp. 3x (1&2)	A	B	C	Body Size	Approx. Wt. Lbs.	
18-314	1/8" x 1/4"	0.72	0.53	0.72	0.47	0.08	----
18-316	3/8" x 1/4"	0.84	0.97	0.81	0.47	0.10	----

76  
176C

**FORGED TEE**

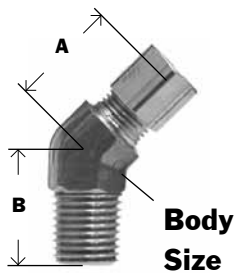


Part #	Comp. X Female NPTF (1&2)x3	A	B	Body Size	Approx. Wt. Lbs.	
18-321	1/4" x 1/8"	0.78	0.75	0.45	0.10	----
18-328	1/4" x 1/4"	0.78	0.75	0.44	0.12	----
18-325	3/8" x 1/8"	0.75	0.63	0.50	0.12	----
18-322	3/8" x 1/4"	0.81	0.97	0.47	0.14	----
18-323	3/8" x 3/8"	0.97	0.69	1.05	0.16	----
18-326	1/2" x 1/8"	0.94	0.75	0.59	0.20	----
18-324	1/2" x 3/8"	1.00	0.72	0.88	0.22	----
18-327	5/8" x 1/8"	1.06	0.81	0.69	0.26	----

78      2908  
BST4  
77  
177C

**45° ELBOW**

**SAE# 060302**



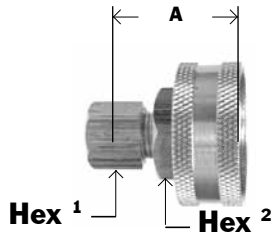
Part #	Comp. X Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
18-329	3/16" x 1/8"	0.40	0.63	0.41	0.04	----
18-330	1/4" x 1/8"	0.40	0.61	0.41	0.04	----
18-336	1/4" x 1/4"	0.59	0.84	0.53	0.06	----
18-331	5/16" x 1/8"	0.59	0.65	0.53	0.06	----
18-332	5/16" x 1/4"	0.59	0.83	0.53	0.08	----
18-333	3/8" x 1/4"	0.62	0.83	0.53	0.08	----
18-338	3/8" x 3/8"	0.75	0.95	0.59	0.10	----
18-334	1/2" x 3/8"	0.75	0.88	0.59	0.14	----
18-339	1/2" x 1/2"	0.94	1.14	0.75	0.14	----
18-335	5/8" x 1/2"	0.78	1.14	0.78	0.14	----

6945    273  
45BSE1 77  
74  
179C

Dimension data can change without notice.  
Please call us when dimensions are critical.

**GARDEN HOSE SWIVEL**

•WASHER INCLUDED



Part #	Compression x FGH	A	Hex 1	Hex 2	Approx. Wt. Lbs.	
30-050	1/4" x 3/4"	1.02	0.50	0.75	0.09	----
30-051	3/8" x 3/4"	1.04	0.62	0.75	0.12	----

**BRASS**

**DOUBLE COMPRESSION THREADED SLEEVE FITTINGS**

- Use with aluminum and copper tubing or plastic tubing with internal tube support. Not recommended for steel tubing.
- Easy to assemble, no flaring, two piece construction.
- For use on oil, air, water and grease lubrication systems.
- When design makes a dimension critical, contact us for information.

Tube OD	1/8	3/16	1/4	5/16	3/8
Thread	5/16-24	3/8-24	7/16-24	1/2-20	9/16-20
Working Pressure	500	500	500	250	250

\* For break away nut, see page 73.

**NUT**

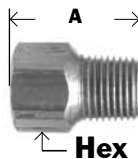
181  
6100  
11



Part #	Size	A	Hex	Approx. Wt. Lbs.	
16-001	1/8"	0.50	0.37	0.02	----
16-002	3/16"	0.53	0.43	0.02	----
16-003	1/4"	0.56	0.50	0.04	----
16-004	5/16"	0.61	0.56	0.04	----
16-005	3/8"	0.61	0.62	0.04	----

**MALE ADAPTER**

188  
6200  
12

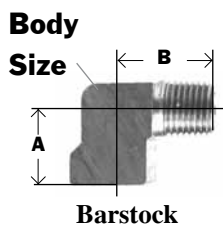


Part #	THRD Sleeve x Male NPTF	A	Hex	Approx. Wt. Lbs.	
16-117	1/8" x *	0.62	0.43	0.02	----
16-118	1/8" x 1/8"	0.62	0.43	0.02	----
16-119	3/16" x 1/8"	0.69	0.43	0.02	----
16-121	1/4" x 1/8"	0.75	0.50	0.04	----
16-122	5/16" x 1/8"	0.89	0.56	0.04	----
16-123	3/8" x 1/4"	0.84	0.62	0.06	----

\* 1/4 - 28 Male Thread Tapered.

**90° ELBOW**

189  
6400  
15

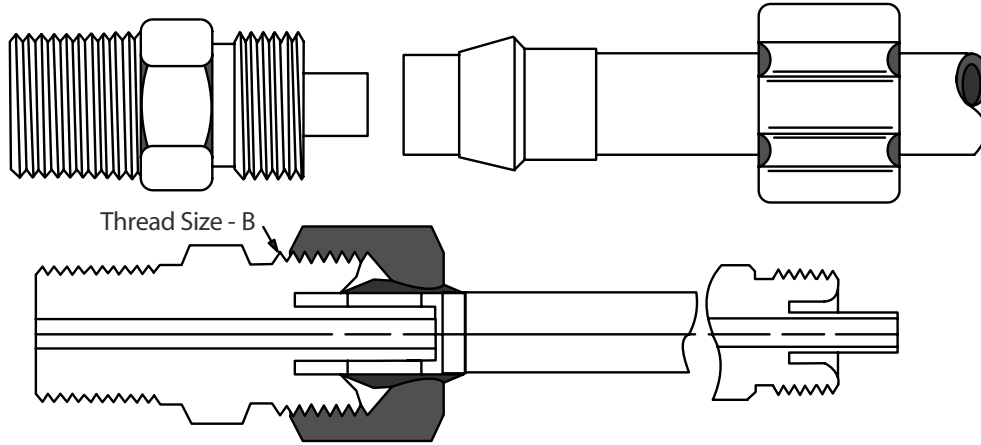


Part #	THRD Sleeve x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
16-127	1/8" x *	0.50	0.52	0.41	0.02	----
16-128	1/8" x 1/8"	0.50	0.66	0.43	0.02	----
16-129	3/16" x 1/8"	0.56	0.62	0.44	0.02	----
16-130	1/4" x 1/8"	0.52	0.62	0.50	0.04	----

\* 1/4 - 28 Male Thread Tapered

# Flareless

Flareless Brass Tube Fittings are Interchangeable with Poly-Flo®, Poly-Tite® and Poly-Line® and Poly-Fit®



Tube O.D.	1/8	3/16	1/4	1/4	5/16	3/8	1/2
Thread Size-B	5/16-24	3/8-24	3/8-24	3/8-24	7/16-24	1/2-24	11/16-20

**•Typical Application**

Pneumatic instrumentation circuits, lubricant and cooling lines.

**•Working Pressure and Temperature Ranges**

Up to 150 PSI from 0°F to + 150°F with thermoplastic tubing. Up to 300 PSI from 0°F to + 175°F with soft metal tubing.

**•Maximum allowable metal tube wall thickness for use with Poly-Tite fittings:**

1/8", 3/16" O.D. --no limitation,  
1/4" O.D.--.035 5/16", 3/8", 1/2" O.D.--.049

**•Vibration**

Excellent Resistance.

**•Temperature Range**

Depends on tubing used. -65°F to +250°F (-53°C to +121°C) with brass sleeve, -40°F to +150°F (-40°C to +66°C) with plastic sleeve. (Refer to tubing temperature range.)

**•Material**

CA360 Brass body, plastic or brass sleeve.

**•Used With**

Aluminum & copper tubing. Hard plastic tubing requires brass sleeve. Not recommended for steel tubing.

**• Tolerance**

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

**•Advantages**

No flaring of tubing required. Easy installation, captive sleeve, pre-assembled for installation and can be reassembled. Nuts rotate around the sleeve during tightening, preventing twisting of tubing.

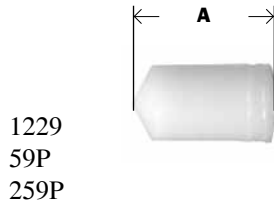
**•Assembly Instructions**

- 1- Cut tubing to desired length.
- 2- Slide nut/sleeve assembly on tube. Threaded end "A" of nut must face toward fitting.
- 3- Bottom tubing into fitting.
- 4- Plastic sleeve - Tighten nut hand tight.  
Brass Sleeve - Tighten nut hand tight, then an additional 3/4 turn.

Those who believe in telekinetics, raise my hand.

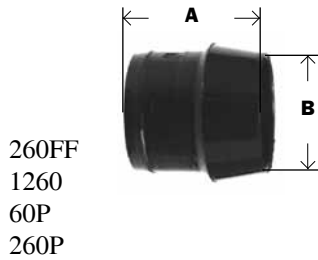
**- Kurt Vonnegut**

**PLASTIC CAP**



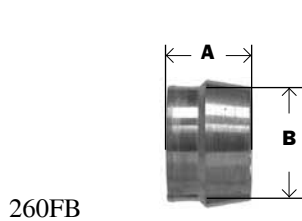
Part #	Tube O.D.	A	Approx. Wt. Lbs.	
20-201	1/4"	0.50	0.01	----
20-203	3/8"	0.56	0.01	----
20-204	1/2"	0.59	0.01	----

**PLASTIC SLEEVE**



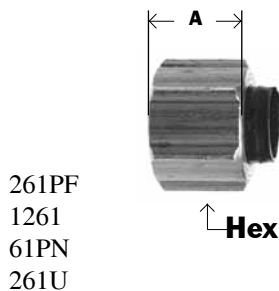
Part #	Tube O.D.	A	B	Approx. Wt. Lbs.	
20-205	1/4"	0.34	0.26	0.01	----
20-206	5/16"	0.39	0.32	0.01	----
20-207	3/8"	0.41	0.38	0.01	----
20-208	1/2"	0.44	0.51	0.01	----

**BRASS SLEEVE**



Part #	Tube O.D.	A	B	Approx. Wt. Lbs.	
20-380	1/8"	0.19	0.12	0.01	----
20-381	3/16"	0.30	0.19	0.01	----
20-382	1/4"	0.32	0.25	0.01	----
20-384	3/8"	0.37	0.38	0.02	----

**NUT AND PLASTIC SLEEVE ASSEMBLY**



Part #	Tube O.D.	A	Hex (Dia.)	Approx. Wt. Lbs.	
20-211	1/4"	0.43	0.43	0.02	----
20-212	5/16"	0.45	0.50	0.02	----
20-213	3/8"	0.49	0.56	0.04	----
20-214	1/2"	0.42	0.81	0.04	----

A journey of a thousand miles begins with a single step.

- Lao Tzu

**NUT**

61PN  
1261  
261FPN



Part #	Tube O.D.	A	Hex (Dia.)	Thread	Approx. Wt. Lbs.	
20-218	1/8"	0.37	0.37	5/16-24	0.01	----
20-219	3/16"	0.41	0.44	3/8-24	0.01	----
20-220	1/4"	0.34	0.44	3/8-24	0.02	----
20-221	5/16"	0.34	0.50	7/16-24	0.02	----
20-222	3/8"	0.38	0.56	1/2-24	0.04	----
20-223	1/2"	0.42	0.81	11/16-20	0.06	----

**UNIVERSAL NUT AND BRASS SLEEVE ASSEMBLY**

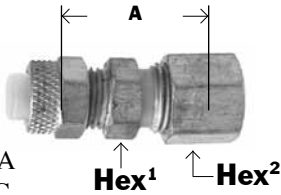
261PFB  
1261B  
61PB  
261UB



Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
20-227	1/8"	0.37	0.37	0.02	----
20-228	3/16"	0.41	0.44	0.02	----
20-229	1/4"	0.34	0.43	0.02	----
20-230	5/16"	0.34	0.50	0.02	----
20-231	3/8"	0.37	0.56	0.04	----
20-232	1/2"	0.42	0.81	0.04	----

**UNION TUBE #M62C**

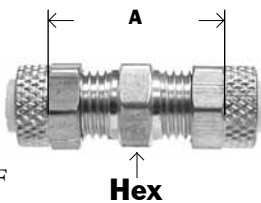
262S  
62PCA  
262PC



Part #	Tube O.D.	A	Hex 1	Hex 2	Approx. Wt. Lbs.	
20-235	1/4"	0.75	0.44	0.50	0.04	----
20-237	3/8"	0.84	0.62	0.62	0.08	----

**UNION**

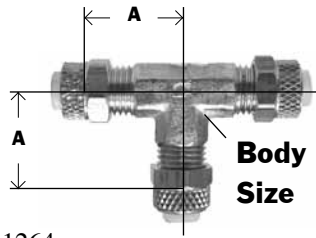
262PF  
1262  
62P  
262P



Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
20-240	1/8"	0.66	0.31	0.02	----
20-241	3/16"	0.75	0.37	0.04	----
20-242	1/4"	0.69	0.37	0.04	----
20-243	5/16"	0.69	0.44	0.04	----
20-244	3/8"	0.72	0.50	0.10	----
20-200	3/8" x 1/4"	0.72	0.50	0.08	----
20-245	1/2"	0.84	0.69	0.14	----

Dimension data can change without notice.  
Please call us when dimensions are critical.

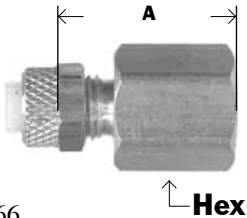
**UNION TEE**



1264  
164P  
264P

Part #	Tube O.D.	A	Body Size	Approx. Wt. Lbs.	
20-248	1/8"	0.62	0.31	0.02	----
20-249	3/16"	0.62	0.31	0.04	----
20-250	1/4"	0.73	0.44	0.06	----
20-251	5/16"	0.62	0.37	0.08	----
20-252	3/8"	0.86	0.56	0.08	----
20-330	3/8" x 1/4"	0.72	0.44	0.08	----
20-253	1/2"	0.81	0.62	0.24	----

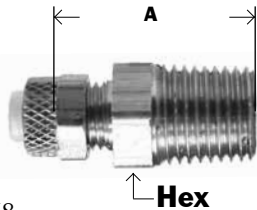
**FEMALE CONNECTOR**



1266  
66P  
266P

Part #	Tube O.D. x Female NPTF	A	Hex	Approx. Wt. Lbs.	
20-256	1/8" x 1/8"	0.75	0.56	0.03	----
20-257	3/16" x 1/8"	0.78	0.56	0.05	----
20-258	3/16" x 1/4"	0.97	0.69	0.05	----
20-259	1/4" x 1/8"	0.76	0.50	0.04	----
20-260	1/4" x 1/4"	1.08	0.62	0.05	----
20-261	5/16" x 1/8"	0.75	0.50	0.03	----
20-264	5/16" x 1/4"	0.90	0.62	0.04	----
20-265	3/8" x 1/8"	0.77	0.56	0.05	----
20-262	3/8" x 1/4"	0.94	0.62	0.05	----
20-263	1/2" x 3/8"	1.00	0.81	0.12	----

**MALE CONNECTOR**



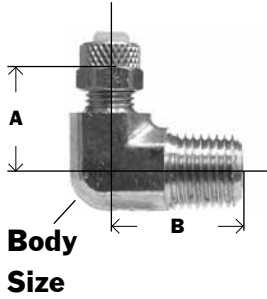
1268  
68P  
268P

Part #	Tube O.D. x Male NPTF	A	Hex	Approx. Wt. Lbs.	
20-266	1/8" x 1/16"	0.78	0.34	0.02	----
20-267	1/8" x 10-32*	0.59	0.37	0.02	----
20-268	1/8" x 1/8"	0.80	0.34	0.04	----
20-269	3/16" x 1/8"	0.86	0.44	0.04	----
20-280	1/4" x 1/16"	0.81	0.43	0.03	----
20-270	1/4" x 10-32*	0.75	0.37	0.02	----
20-271	1/4" x 1/8"	0.82	0.44	0.03	----
20-272	1/4" x 1/4"	1.00	0.56	0.05	----
20-273	1/4" x 3/8"	1.03	0.69	0.08	----
20-274	5/16" x 1/8"	0.81	0.44	0.04	----
20-275	5/16" x 1/4"	1.00	0.56	0.05	----
20-276	3/8" x 1/8"	0.84	0.50	0.06	----
20-277	3/8" x 1/4"	1.03	0.56	0.08	----
20-278	3/8" x 3/8"	1.03	0.69	0.10	----
20-279	1/2" x 3/8"	1.09	0.69	0.16	----
20-282	1/2" x 1/2"	1.33	0.88	0.18	----

\* Furnished with gasket.



**MALE ELBOW**

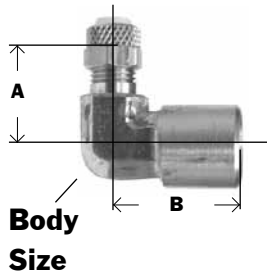


Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-287	1/8" x 1/8"	0.62	0.69	0.31	0.02	----
20-288	3/16" x 1/8"	0.62	0.69	0.37	0.04	----
20-289*	1/4" x 1/8"	0.53	0.73	0.50	0.04	----
20-290	1/4" x 1/4"	0.66	0.94	0.37	0.06	----
20-291	1/4" x 3/8"	0.75	1.03	0.50	0.10	----
20-292	5/16" x 1/8"	0.62	0.75	0.41	0.04	----
20-293	3/8" x 1/8"	0.91	0.81	0.56	0.08	----
20-294	3/8" x 1/4"	0.72	0.94	0.44	0.10	----
20-295	3/8" x 3/8"	0.78	1.03	0.50	0.14	----
20-296	1/2" x 3/8"	1.09	1.10	0.73	0.16	----

\* Barstock

1269  
169P  
269P

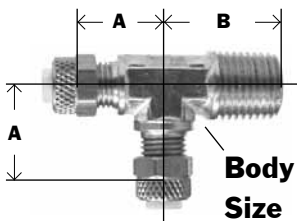
**FEMALE ELBOW**



Part #	Tube O.D. x Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-300	1/8" x 1/8"	0.69	0.55	0.56	0.02	----
20-301	3/16" x 1/8"	0.72	0.55	0.56	0.02	----
20-302	1/4" x 1/8"	0.62	0.75	0.37	0.08	----
20-303	1/4" x 1/4"	0.72	0.88	0.50	0.10	----
20-304	3/8" x 1/4"	0.72	0.88	0.50	0.12	----
20-305	1/2" x 3/8"	0.91	0.94	0.63	0.16	----

1270  
170P  
270P

**MALE RUN TEE**

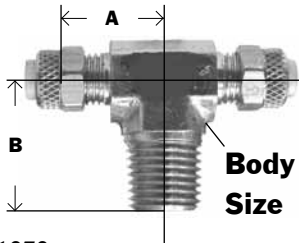


Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-308	1/8" x 1/8"	0.62	0.69	0.31	0.04	----
20-309	3/16" x 1/8"	0.62	0.69	0.31	0.04	----
20-310	1/4" x 1/8"	0.62	0.75	0.37	0.08	----
20-311	1/4" x 1/4"	0.66	0.94	0.37	0.10	----
20-312	5/16" x 1/8"	0.62	0.75	0.37	0.08	----
20-313	3/8" x 1/4"	0.66	0.94	0.44	0.10	----
20-314	1/2" x 3/8"	0.81	1.06	0.63	0.16	----

1271  
171P  
271P

Dimension data can change without notice.  
Please call us when dimensions are critical.

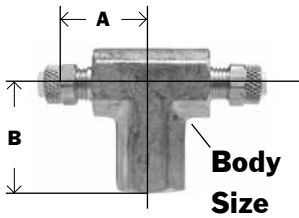
**MALE BRANCH TEE**



1272  
172P  
272P

Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-317	1/8" x 1/8"	0.63	0.69	0.31	0.04	----
20-318	3/16" x 1/8"	0.63	0.69	0.31	0.04	----
20-319	1/4" x 1/8"	0.63	0.75	0.37	0.07	----
20-320	1/4" x 1/4"	0.66	0.94	0.37	0.09	----
20-321	5/16" x 1/8"	0.63	0.75	0.37	0.10	----
20-322	3/8" x 1/8"	0.63	0.75	0.44	0.08	----
20-323	3/8" x 1/4"	0.66	0.94	0.44	0.11	----
20-324	1/2" x 3/8"	0.81	1.06	0.63	0.21	----

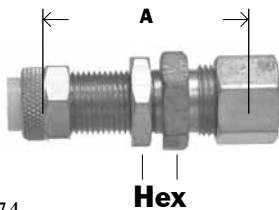
**FEMALE BRANCH TEE**



1277  
177P  
277P

Part #	Tube O.D. x Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-327	1/4" x 1/8"	0.66	0.94	0.37	0.12	----
20-328	1/4" x 1/4"	0.84	1.16	0.56	0.16	----

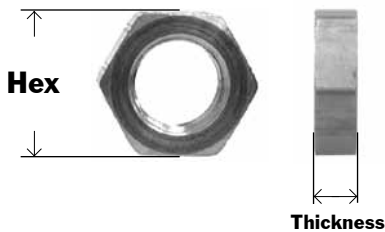
**BULKHEAD UNION - FLARELESS X COMPRESSION**



1274

Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
20-333	1/4"	1.31	0.56	0.07	----
20-334	3/8"	1.44	0.69	0.12	----

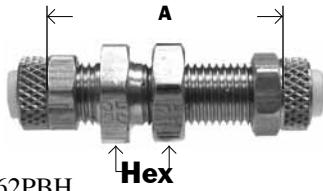
**BULKHEAD NUT**



Part #	Tube O.D.	Hex	Thickness	Approx. Wt. Lbs.	
20-370	1/8"	0.31	0.25	0.01	----
20-372	5/16"	0.62	0.19	0.02	----

Dimension data can change without notice.  
Please call us when dimensions are critical.

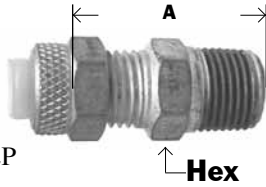
**BULKHEAD UNION**



62PBH  
329P  
282P

Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
20-337	1/4"	1.25	0.56	0.06	----
20-338	5/16"	1.25	0.62	0.08	----
20-339	3/8"	1.31	0.69	0.10	----

**QUICK DISCONNECT FITTING**

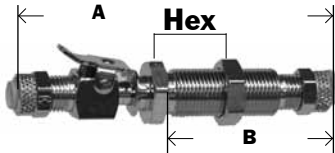


292P

Part #	Tube O.D. x Male NPTF	A	Hex	Approx. Wt. Lbs.	
20-344	1/4" x 1/8"	0.87	0.44	0.06	----

**QUICK DISCONNECT COUPLERS**

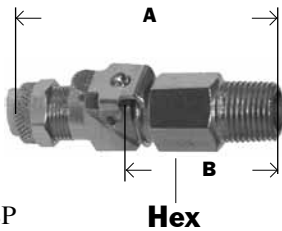
**TUBE X TUBE**



349P

Part #	Tube O.D.	A	B	Hex	Approx. Wt. Lbs.	
20-401	1/4"	3.00	1.72	0.62	0.06	----
20-403	3/8"	3.56	1.92	0.81	0.10	----

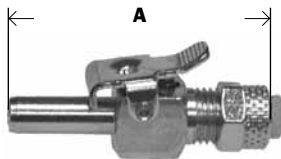
**TUBE TO MALE THREAD - Single end Shut-Off, Connector, Quick Coupler.**



398P  
391P + 393P

Part #	Tube O.D. x Male Pipe	A	B	Hex	Approx. Wt. Lbs.	
20-409	1/4" x 1/8"	2.31	1.28	0.50	0.12	----
20-411	1/4" x 1/4"	2.31	1.28	0.56	0.14	----
20-413	3/8" x 1/4"	2.63	1.42	0.62	0.18	----

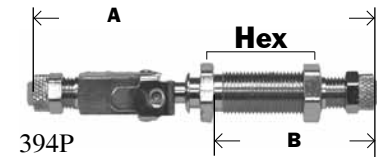
**INSERT ONLY - Thru type insert. No Shut-Off.**



393P

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
20-417	1/4"	1.69	0.04	----
20-419	3/8"	1.93	0.06	----

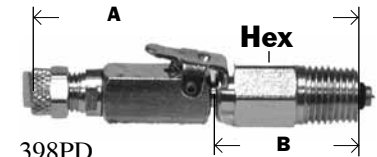
**TUBE TO TUBE - Double end Shut-Off Type.**



394P  
392P + 393PD

Part #	Tube O.D.	A	B	Hex	Approx. Wt. Lbs.	
20-425	1/4"	3.67	1.79	0.62	0.18	----
20-427	3/8"	3.82	1.97	0.81	0.26	----

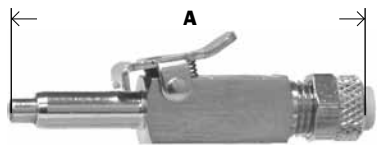
**TUBE X MALE PIPE - Double End Shut-Off, Connector, Quick coupler.**



398PD  
393PD + 391P

Part #	Tube O.D. x Male Pipe	A	B	Hex	Approx. Wt. Lbs.	
20-435	1/4" x 1/8"	2.89	1.28	0.50	0.14	----
20-437	1/4" x 1/4"	2.91	1.27	0.56	0.18	----
20-439	3/8" x 1/4"	3.02	1.40	0.62	0.24	----

**INSERT ONLY - Double End Shut-Off**



393PD

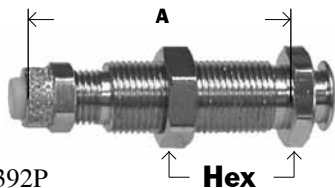
Part #	Tube O.D.	A	Approx. Wt. Lbs.	
20-445	1/4"	2.40	0.08	----

**CHROME PLATED NUT AND PLASTIC SLEEVE**



Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
20-451	1/4"	0.34	0.43	0.01	----
20-453	3/8"	0.38	0.56	0.01	----

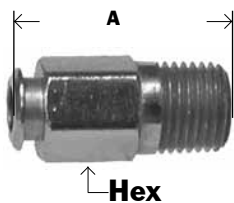
**TUBE CONNECTION - Single end or Double end Shut-Off Type body only.**



392P

Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
20-455	1/4"	1.79	0.62	0.10	----
20-457	3/8"	1.97	0.81	0.16	----

**MALE PIPE CONNECTION - Internal Shut-Off**



391P

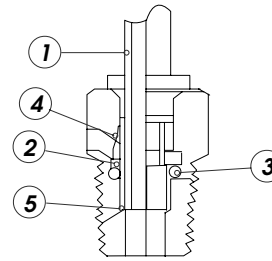
Part #	Tube O.D. x Male Pipe	A	Hex	Approx. Wt. Lbs.	
20-461	1/4" x 1/8"	1.28	0.50	0.06	----
20-463	1/4" x 1/4"	1.27	0.56	0.08	----
20-465	3/8" x 1/4"	1.40	0.62	0.08	----

**BRASS PUSH-IN FITTINGS**

**PAGES 93-98**

**ENGINEERING AND DESIGN**

- **QUICK CONNECT**, simply push tubing in, no tools. Saves up to 75% of assembly time of standard compression fittings.
- **QUICK DISCONNECT**, hold two fingers on insert and pull tubing out, no tools required.
- **REUSEABLE**, connect and disconnect numerous times.
- **FULL FLOW DESIGN**, provides up to 60% more flow area than conventional fittings with internal tube supports.
- **POSITIVE SEAL**, no leaks. After tubing is inserted, seal is made.
- **VERSATILE**, BunaN "O" rings standard. Other materials of "O" rings available.
- **SECURE TUBE RETENTION**, pulling on tubing only serves to tighten the connection.
- **SELF CONTAINED ASSEMBLY**, no loose parts, brass body and insert.
- **BRASS CONSTRUCTION**, elbows and tees are forged brass.
- **CHOICE** of convenient swivel of economical stationary elbows and tees.
- **STRAIGHT CONNECTORS** have interior hex for Allen key tightening where space is limited...no need to use a wrench.
- **PRE-APPLIED TEFLON®** based pipe sealant on all male pipe threads, saving customer additional labor.
- **METRIC SIZES AVAILABLE**: Metric tube sizes from 2mm through 12mm in both standard NPT and metric pipe sizes are available on a special order basis.
- **WORKING PRESSURE**:  
The fitting is suitable for use up to the maximum working pressure of the plastic tubing used. For soft copper tube, a maximum working pressure of 750 PSI is recommended. Also suitable for vacuum service.
- **WORKING TEMPERATURE**:  
-10°F to 200°F (other ranges available on request).
- **PIPE THREAD**: NPTF with Teflon® based sealant pre-applied.

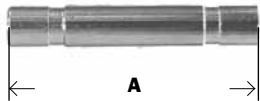


When tubing (1) is inserted into the fitting, it first passes through the gripping teeth (2). Just beyond the gripping teeth is the o-ring (3) which provides the leak proof seal against the OD of the tube. The gripping teeth grab the tube, which

expands the insert. Pulling back on the tube only tightens the grip as the insert moves onto the camming surface (4). Pressure through the tube also serves to tighten the grip. The tube bottoms against a positive tube stop (5) in a cavity providing tube support to prevent leakage.

- **Tolerance**  
+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical

**DOUBLE MALE UNION - NICKEL PLATED**

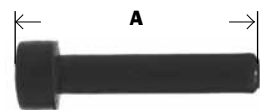


AQ34

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
20-004	1/8"	1.28	0.01	----
20-005	5/32"	1.28	0.01	----
20-006	1/4"	1.40	0.02	----
20-007	5/16"	1.59	0.02	----
20-008	3/8"	1.81	0.02	----
20-000	1/2"	1.89	0.03	----

( For polyurethane or other soft plastic tubing )

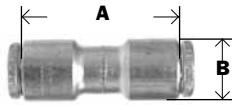
**PLASTIC PLUG**



- 284PP 6900
- AQ59 639PL
- 209-OF 12-004
- 1129 50-526

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
20-009	5/32"	1.16	0.01	----
20-010	1/4"	1.40	0.01	----
20-011	3/8"	1.40	0.02	----
20-013	1/2"	1.50	0.02	----

**UNION CONNECTOR**



AQ62    KQH    1162  
 6580    12-020    262PP  
 3106    50-562  
 62PL    262-OF

Part #	Tube O.D.	A	B	Approx. Wt. Lbs.	
20-017	1/8"	1.07	0.38	0.03	----
20-018	5/32"	1.07	0.38	0.03	----
20-019	1/4"	1.50	0.44	0.05	----
20-022	3/8" x 1/4"	1.46	0.56	0.05	----
20-020	3/8"	1.44	0.56	0.06	----
20-021	1/2"	1.63	0.81	0.18	----

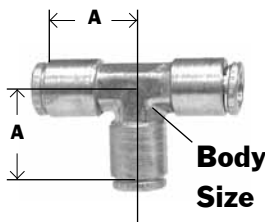
**REDUCER - NICKEL PLATED**



67PPL  
 286PP

Part #	Tube O.D. 1 X 2	A	B	Approx. Wt. Lbs.	
20-510	1/8" x 1/4"	1.38	0.39	0.02	----
20-511	5/32" x 1/4"	1.33	0.35	0.02	----
20-512	1/4" x 3/8"	1.50	0.51	0.04	----

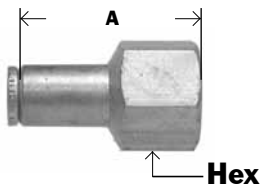
**UNION TEE**



KQT  
 12-060    AQ64  
 50-564    6540  
 264OF    3140  
 264PP    164PL

Part #	Tube O.D.	A	Body Size	Approx. Wt. Lbs.	
20-025	1/8"	0.65	0.31	0.04	----
20-026	5/32"	0.67	0.31	0.04	----
20-027	3/16"	0.75	0.37	0.06	----
20-028	1/4"	0.92	0.37	0.09	----
20-031	5/16"	0.89	0.49	0.10	----
20-029	3/8"	0.98	0.50	0.13	----
20-030	1/2"	1.16	0.62	0.24	----

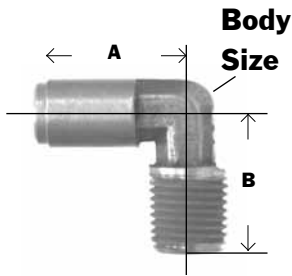
**FEMALE CONNECTOR**



266PP  
 AQ66    12-426  
 6463    50-566  
 3114    266-OF  
 66PL    1166

Part #	Tube O.D. x Female NPTF	A	Hex	Approx. Wt. Lbs.	
20-032	1/8" x 1/8"	0.96	0.56	0.04	----
20-038	1/8" x 1/4"	1.04	0.67	0.04	----
20-034	1/4" x 1/8"	1.23	0.56	0.06	----
20-035	1/4" x 1/4"	1.42	0.75	0.09	----
20-036	3/8" x 1/4"	1.32	0.75	0.09	----
20-037	3/8" x 3/8"	1.31	0.87	0.12	----

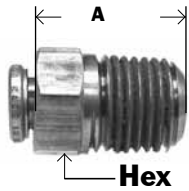
**FIXED MALE ELBOW**



269PP 12-445  
 AQ69-P 1169  
 6500  
 169PLNS

Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-065	1/8" x 1/8"	0.69	0.69	0.31	0.03	----
20-066	5/32" x 1/8"	0.68	0.68	0.31	0.03	----
20-067	3/16" x 1/8"	0.75	0.71	0.37	0.04	----
20-068	1/4" x 1/8"	0.89	0.75	0.37	0.06	----
20-069	1/4" x 1/4"	0.95	0.96	0.37	0.08	----
20-070	1/4" x 3/8"	1.00	0.98	0.50	0.10	----
20-071	3/8" x 1/8"	0.99	0.80	0.50	0.06	----
20-072	3/8" x 1/4"	0.98	0.98	0.50	0.09	----
20-073	3/8" x 3/8"	0.97	0.98	0.50	0.12	----
20-074	1/2" x 1/4"	1.15	1.05	0.62	0.15	----
20-075	1/2" x 3/8"	1.18	1.05	0.62	0.22	----
20-064	1/2" x 1/2"	1.16	1.66	0.62	0.20	----

**MALE CONNECTOR**



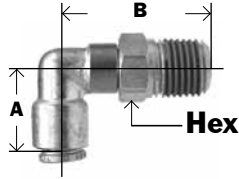
268PP KQH  
 AQ68 12-425  
 6510 50-568  
 3115 268-OF  
 68PL 1168

Part #	Tube O.D. x Male NPTF	A	Hex	Approx. Wt. Lbs.	
20-047	1/8" x 10-32"*	0.69	0.37	0.02	----
20-048	1/8" x 1/8"	0.61	0.43	0.02	----
20-023	1/8" x 1/4"	0.98	0.56	0.04	----
20-049	5/32" x 10-32"*	0.67	0.37	0.02	----
20-050	5/32" x 1/8"	0.67	0.43	0.03	----
20-046	5/32" x 1/4"	0.85	0.56	0.05	----
20-051	3/16" x 10-32"*	0.80	0.37	0.02	----
20-052	3/16" x 1/8"	0.93	0.43	0.03	----
20-053	1/4" x 10-32"*	0.87	0.43	0.03	----
20-054	1/4" x 1/8"	0.93	0.43	0.06	----
20-055	1/4" x 1/4"	0.93	0.56	0.10	----
20-056	1/4" x 3/8"	0.94	0.68	0.08	----
20-530	5/16" x 1/8"	1.07	0.56	0.05	----
20-531	5/16" x 1/4"	0.98	0.56	0.10	----
20-532	5/16" x 3/8"	1.06	0.75	0.08	----
20-057	3/8" x 1/8"	1.10	0.56	0.06	----
20-058	3/8" x 1/4"	1.11	0.56	0.05	----
20-059	3/8" x 3/8"	1.02	0.68	0.08	----
20-062	3/8" x 1/2"	1.02	0.87	0.08	----
20-060	1/2" x 1/4"	1.36	0.81	0.11	----
20-061	1/2" x 3/8"	1.30	0.81	0.12	----
20-063	1/2" x 1/2"	1.23	0.87	0.14	----

\* Furnished with gaskets

Dimension data can change without notice.  
 Please call us when dimensions are critical.

**SWIVEL MALE ELBOW**



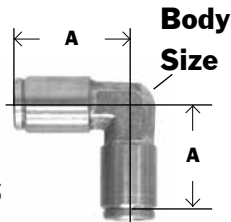
AQ69-PS 12-447  
 56520 50-579  
 3109 269-OFS  
 169PL 11695  
 KQL

Part #	Tube O.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
20-079	1/8" x 1/8"	0.69	0.98	0.43	0.07	----
20-535*	1/8" x 1/4"	0.76	0.87	0.56	0.06	----
20-080	5/32" x 1/8"	0.68	0.89	0.43	0.05	----
20-076	5/32" x 10-32"*	0.67	0.71	0.37	0.04	----
20-077	5/32" x 1/4"	0.68	1.08	0.56	0.07	----
20-081	1/4" x 1/8"	0.90	0.93	0.37	0.08	----
20-078	1/4" x 10-32"*	0.86	0.79	0.31	0.05	----
20-082	1/4" x 1/4"	0.90	0.99	0.56	0.10	----
20-086	1/4" x 3/8"	0.98	1.14	0.68	0.09	----
20-538*	5/16" x 1/4"	0.91	0.85	0.56	0.07	----
20-539*	5/16" x 3/8"	0.91	0.87	0.75	0.08	----
20-087	3/8" x 1/8"	0.94	1.08	0.50	0.09	----
20-083	3/8" x 1/4"	0.99	1.15	0.56	0.10	----
20-084	3/8" x 3/8"	1.00	1.24	0.68	0.20	----
20-088	3/8" x 1/2"	1.00	1.54	0.87	0.19	----
20-085	1/2" x 3/8"	1.16	1.34	0.62	0.18	----
20-092	1/2" x 1/2"	1.16	1.61	0.62	0.24	----

\* Nickel Plated

\* Furnished with gaskets

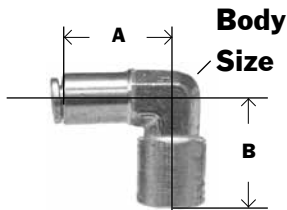
**UNION ELBOW**



AQ65  
 6550  
 3102 12-040  
 165PL 50-565  
 KQL 265-OF

Part #	Tube O.D.	A	Body Size	Approx. Wt. Lbs.	
20-150	1/8"	0.65	0.31	0.02	----
20-151	5/32"	0.67	0.31	0.04	----
20-152	1/4"	0.87	0.37	0.06	----
20-155	5/16"	0.91	0.47	0.08	----
20-153	3/8"	0.97	0.50	0.09	----
20-154	1/2"	1.15	0.62	0.18	----

**FEMALE ELBOW**

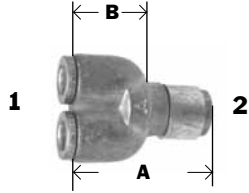


AQ70-P  
 3009

Part #	Tube O.D. x Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-094	5/32" x 1/8"	0.68	0.82	0.37	0.02	----
20-089	1/4" x 1/8"	0.91	0.75	0.37	0.06	----
20-090	1/4" x 1/4"	1.03	1.03	0.50	0.11	----
20-091	3/8" x 1/4"	0.98	0.95	0.50	0.16	----

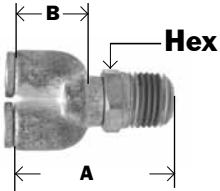


**UNION "Y"**



Part #	Tube O.D. 1 x 2	A	B	Approx. Wt. Lbs.	
20-552	1/4" x 1/8"	1.61	1.06	0.12	----
20-553	1/4" x 1/4"	1.81	1.06	0.14	----

**MALE "Y"**

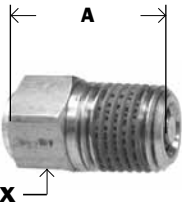


Part #	Tube O.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
20-557	1/4" x 1/4"	1.90	1.06	0.56	0.20	----

12-445  
50-569  
1169

**QUICK DISCONNECT**

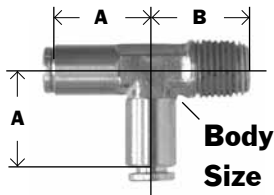
When tube is disconnected, flow shuts off automatically.



Part #	Tube O.D. x Male NPTF	A	Hex	Approx. Wt. Lbs.	
20-133	1/4" x 1/8"	0.92	0.43	0.10	----
20-134	1/4" x 1/4"	0.92	0.56	0.12	----

AQ92-P  
6500  
169PLNS

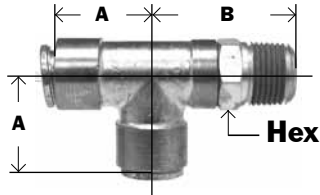
**FIXED MALE RUN TEE**



Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-095	1/8" x 1/8"	0.65	0.72	0.31	0.04	----
20-097	3/16" x 1/8"	0.75	0.73	0.37	0.06	----
20-098	1/4" x 1/8"	0.92	0.74	0.37	0.08	----
20-093	1/4" x 1/4"	0.92	0.92	0.43	0.10	----
20-099	3/8" x 1/8"	0.94	0.82	0.50	0.14	----
20-100	3/8" x 1/4"	0.98	0.98	0.50	0.12	----
20-101	3/8" x 3/8"	1.05	1.05	0.62	0.10	----
20-102	1/2" x 3/8"	1.14	1.05	0.62	0.18	----

AQ71-P

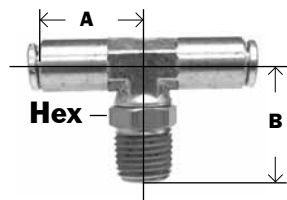
**SWIVEL MALE RUN TEE**



AQ71-PS 12-468  
 56440 50-571  
 3103 271-OFS  
 171PL 11715  
 KQY

Part #	Tube O.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
20-162	1/4" x 1/8"	0.92	1.04	0.44	0.09	----
20-163	1/4" x 1/4"	0.92	1.13	0.56	0.11	----
20-165	3/8" x 3/8"	0.96	1.24	0.50	0.12	----
20-174	1/2" x 1/4"	1.12	1.18	0.51	0.16	----
20-166	1/2" x 3/8"	1.14	1.31	0.68	0.14	----

**SWIVEL MALE BRANCH TEE**

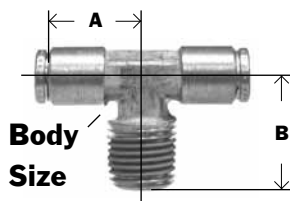


KQT AQ64  
 12-060 6540  
 50-564 3140  
 264OF 64PL

Part #	Tube O.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
20-103	1/8" x 1/8"	0.65	0.81	0.31	0.04	----
20-104	5/32" x 10-32"*	0.65	0.71	0.31	0.04	----
20-109	5/32" x 1/8"	0.67	0.94	0.37	0.06	----
20-105	1/4" x 1/8"	0.92	0.97	0.37	0.08	----
20-106	1/4" x 1/4"	0.92	1.09	0.37	0.10	----
20-107	3/8" x 1/4"	0.96	1.14	0.56	0.18	----
20-108	3/8" x 3/8"	0.96	1.23	0.69	0.16	----
20-110	1/2" x 3/8"	1.16	1.34	0.69	0.24	----
20-111	1/2" x 1/2"	1.16	1.64	0.87	0.28	----

\* Furnished with gaskets

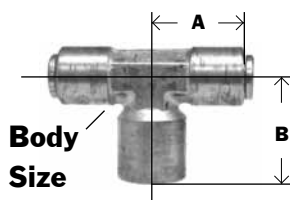
**FIXED MALE BRANCH TEE**



AQ72-P

Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-112	1/8" x 1/8"	0.69	0.72	0.31	0.04	----
20-113	5/32" x 1/8"	0.69	0.65	0.31	0.04	----
20-115	1/4" x 1/8"	0.92	0.74	0.37	0.12	----
20-116	1/4" x 1/4"	0.91	0.93	0.37	0.10	----
20-117	3/8" x 1/8"	0.98	0.80	0.50	0.08	----
20-118	3/8" x 1/4"	0.98	0.97	0.50	0.12	----
20-119	3/8" x 3/8"	0.98	0.97	0.50	0.14	----
20-120	1/2" x 3/8"	1.16	1.05	0.62	0.18	----

**FEMALE BRANCH TEE**



AQ77-P  
 3008  
 177PL

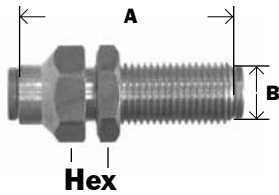
Part #	Tube O.D. x Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-130	1/4" x 1/8"	0.89	0.75	0.43	0.06	----
20-132	3/8" x 1/4"	0.96	0.98	0.50	0.12	----

# BRASS PUSH - IN FITTINGS

# BRASS FITTINGS

BRASS

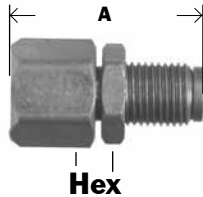
## BULKHEAD UNION



Part #	Tube O.D.	A	B	Hex	Approx. Wt. Lbs.	
20-126	3/16"	1.27	0.50	0.68	0.04	----
20-127	1/4"	1.69	0.50	0.68	0.06	----
20-128	3/8"	1.69	0.62	0.81	0.13	----
20-129	1/2"	1.85	0.75	1.12	0.16	----

AQ82-P 12-029  
 6590 50-582  
 62PLBH 282-OF  
 KQE 1174

## FEMALE BULKHEAD UNION



Part #	Tube O.D. x Female NPTF	A	Hex	Approx. Wt. Lbs.	
20-170	1/4" x 1/8"	1.19	0.68	0.08	----
20-171	1/4" x 1/4"	1.36	0.75	0.10	----
20-172	3/8" x 1/4"	1.71	0.75	0.14	----

AQ86-P

Dimension data can change without notice.  
 Please call us when dimensions are critical.

## NICKEL PLATED PUSH-IN FITTINGS

PAGES 99-106

Component Parts and Materials	
Body	Brass - Nickel Plated
Thrust Ring	Plastic
Sleeve	Brass - Nickel Plated
Gripper Collet	Stainless Steel
Safety Ring	PA66
Lip Seal ( 1/8 O-Ring Seal)	NBR 70
Thread Seal	NBR 70

**Max Operating Pressure: 0-250 psi (17 bar ) Vacuum service.**  
**Min Temperature: 0°F ( -18°C )**  
**Max Temperature: 160°F ( +70°C )**  
**Tubing: Nylon, Polyethylene, Polyurethane.**  
**- For best results use 95 Durometer**  
**Media: Compressed air, water.**

### • Tolerance

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

## GLOBAL THREAD

**Works With Inch or Metric Threads**



**Look for this**

**Logo**

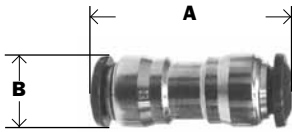
“Global Thread” fittings can be assembled with female threads produced to the following standards: **Tapered NPTF**

**Parallel (BSPP, BSP, ISO 7)**

**Tapered (BSPT, PT, ISO 7, ISO 228)**

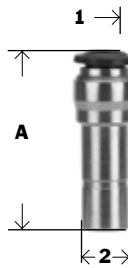
**NICKEL PLATED PUSH-IN FITTINGS**

**UNION CONNECTOR**



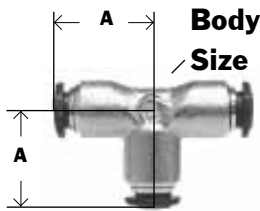
Part #	Tube O.D.	A	B	Approx. Wt. Lbs.	
20-017N	1/8"	1.06	0.34	0.03	----
20-018N	5/32"	1.20	0.41	0.03	----
<b>NEW</b> 20-016N	5/32" x 1/4"	1.20	0.40	0.04	----
20-019N	1/4"	1.38	0.49	0.05	----
20-020N	3/8"	1.69	0.69	0.06	----
<b>NEW</b> 20-022N	3/8" x 1/4"	1.69	0.68	0.06	----
20-021N	1/2"	1.93	0.81	0.18	----
<b>NEW</b> 20-024N	1/2" x 3/8"	1.84	0.80	0.17	----

**REDUCER**



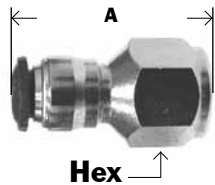
Part #	Tube O.D. 2	Tube O.D. 1	A	
20-510N	1/4"	1/8"	1.142	----
20-511N	1/4"	5/32"	1.181	----
20-512N	3/8"	1/4"	1.496	----
20-513N	1/2"	1/4"	1.693	----
20-514N	1/2"	3/8"	1.693	----

**UNION TEE**



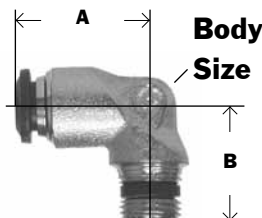
Part #	Tube O.D.	A	Body Size	Approx. Wt. Lbs.	
20-025N	1/8"	0.67	0.35	0.04	----
20-026N	5/32"	0.67	0.35	0.04	----
20-028N	1/4"	0.83	0.43	0.09	----
20-031N	5/16"	0.87	0.51	0.10	----
20-029N	3/8"	1.04	0.63	0.13	----
20-030N	1/2"	1.20	0.74	0.24	----

**FEMALE CONNECTOR**



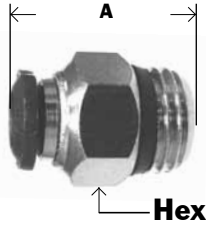
Part #	Tube O.D. x Female NPTF	A	Hex	Approx. Wt. Lbs.	
20-032N	1/8" x 1/8"	0.93	0.51	0.04	----
20-038N	1/8" x 1/4"	1.14	0.63	0.04	----
20-034N	1/4" x 1/8"	1.06	0.51	0.06	----
20-035N	1/4" x 1/4"	1.26	0.63	0.09	----
20-036N	3/8" x 1/4"	1.38	0.71	0.09	----
20-037N	3/8" x 3/8"	1.38	0.79	0.12	----

**FIXED MALE ELBOW**



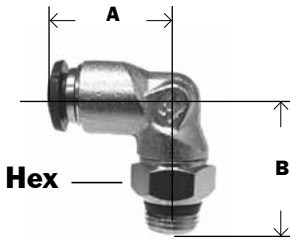
Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
20-068N	1/4" x 1/8"	0.83	0.73	0.43	0.06	----
20-069N	1/4" x 1/4"	0.83	0.91	0.43	0.08	----
20-072N	3/8" x 1/4"	1.04	1.04	0.63	0.09	----
20-073N	3/8" x 3/8"	1.04	1.00	0.63	0.12	----

**MALE CONNECTOR**



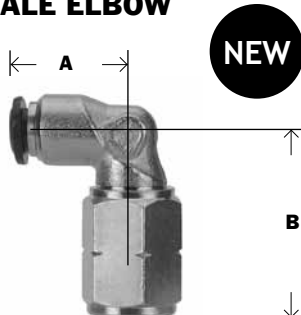
Part #	Tube O.D. x Male Global Thread	A	Hex	Approx. Wt. Lbs.	
20-047N	1/8" x 10-32"	0.75	0.31	0.02	----
20-048N	1/8" x 1/8"	0.77	0.43	0.02	----
20-023N	1/8" x 1/4"	0.97	0.55	0.04	----
20-049N	5/32" x 10-32"	0.83	0.39	0.02	----
20-050N	5/32" x 1/8"	0.83	0.43	0.03	----
20-046N	5/32" x 1/4"	0.98	0.55	0.05	----
20-053N	1/4" x 10-32"	0.97	0.51	0.03	----
20-054N	1/4" x 1/8"	0.98	0.51	0.06	----
20-055N	1/4" x 1/4"	0.98	0.55	0.10	----
20-056N	1/4" x 3/8"	0.98	0.71	0.08	----
20-530N	5/16" x 1/8"	0.98	0.55	0.05	----
20-531N	5/16" x 1/4"	1.08	0.55	0.10	----
20-532N	5/16" x 3/8"	1.08	0.71	0.08	----
20-057N	3/8" x 1/8"	1.38	0.67	0.06	----
20-058N	3/8" x 1/4"	1.32	0.67	0.05	----
20-059N	3/8" x 3/8"	1.32	0.71	0.08	----
20-062N	3/8" x 1/2"	1.32	0.87	0.08	----
20-060N	1/2" x 1/4"	1.54	0.79	0.11	----
20-061N	1/2" x 3/8"	1.42	0.79	0.12	----
20-063N	1/2" x 1/2"	1.58	0.87	0.14	----

**SWIVEL MALE ELBOW**



Part #	Tube O.D. x Male Global Thread	A	B	Hex	Approx. Wt. Lbs.	
20-079N	1/8" x 1/8"	0.67	0.78	0.51	0.07	----
20-535N	1/8" x 1/4"	0.67	0.95	0.59	0.06	----
20-080N	5/32" x 1/8"	0.67	0.79	0.51	0.05	----
20-076N	5/32" x 10-32"	0.67	0.95	0.59	0.04	----
20-081N	1/4" x 1/8"	0.83	0.87	0.51	0.08	----
20-082N	1/4" x 1/4"	0.83	0.98	0.59	0.10	----
20-086N	1/4" x 3/8"	0.83	1.10	0.67	0.09	----
20-538N	5/16" x 1/4"	0.89	1.02	0.59	0.07	----
20-539N	5/16" x 3/8"	0.87	1.10	0.67	0.08	----
20-087N	3/8" x 1/8"	1.04	1.02	0.51	0.09	----
20-083N	3/8" x 1/4"	1.04	1.10	0.59	0.10	----
20-084N	3/8" x 3/8"	1.04	1.18	0.67	0.20	----
20-088N	3/8" x 1/2"	1.04	1.30	0.83	0.19	----
20-085N	1/2" x 3/8"	1.20	1.24	0.59	0.18	----
20-092N	1/2" x 1/2"	1.20	1.42	0.83	0.24	----

**FEMALE ELBOW**



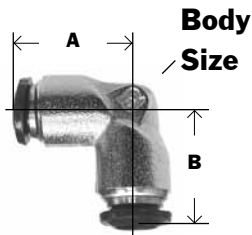
Part #	Tube O.D. x Female NPTF	A	B	Body Size	
20-094N	5/32" x 1/8"	0.669	0.994	0.354	----
20-761N	5/32" x 1/4"	0.669	1.161	0.354	----
20-089N	1/4" x 1/8"	0.826	1.023	0.433	----
20-090N	1/4" x 1/4"	0.826	1.200	0.433	----
20-762N	3/8" x 1/8"	0.885	1.082	0.511	----
20-091N	3/8" x 1/4"	0.885	1.240	0.511	----

# BRASS FITTINGS

# NICKEL PLATED PUSH - IN FITTINGS

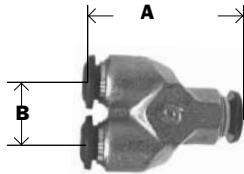
BRASS

## UNION ELBOW



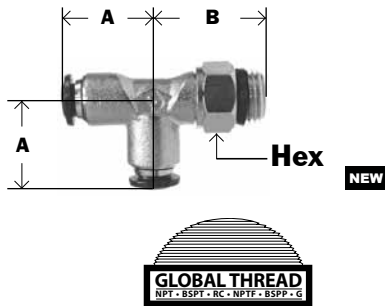
Part #	Tube O.D.	A	Body Size	Approx. Wt. Lbs.	
20-150N	1/8"	0.67	0.35	0.02	----
20-151N	5/32"	0.67	0.35	0.04	----
20-152N	1/4"	0.83	0.43	0.06	----
20-155N	5/16"	0.87	0.51	0.08	----
20-153N	3/8"	1.04	0.63	0.09	----
20-154N	1/2"	1.20	0.75	0.18	----

## UNION "Y"



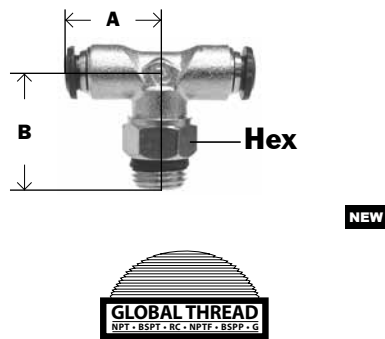
Part #	Tube O.D.	A	B	Approx. Wt. Lbs.	
20-553N	1/4" x 1/4"	1.44	0.53	0.14	----

## SWIVEL MALE RUN TEE



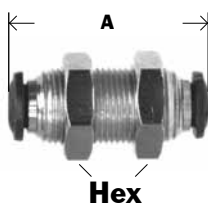
Part #	Tube O.D. x Male Global Thread	A	B	Hex	Approx. Wt. Lbs.	
20-162N	1/4" x 1/8"	0.83	0.87	0.51	0.09	----
20-163N	1/4" x 1/4"	0.83	0.98	0.59	0.11	----
20-164N	1/4" x 3/8"	0.83	1.10	0.59	0.11	----
20-165N	3/8" x 3/8"	1.04	1.18	0.67	0.12	----
20-174N	1/2" x 1/4"	1.20	1.24	0.59	0.16	----
20-166N	1/2" x 3/8"	1.20	1.30	0.67	0.14	----

## SWIVEL MALE BRANCH TEE



Part #	Tube O.D. x Male Global Thread	A	B	Hex	Approx. Wt. Lbs.	
20-103N	1/8" x 1/8"	0.67	0.78	0.51	0.04	----
20-104N	5/32" x 10-32"	0.67	0.79	0.31	0.04	----
20-109N	5/32" x 1/8"	0.67	0.78	0.51	0.06	----
20-105N	1/4" x 1/8"	0.83	0.87	0.51	0.08	----
20-106N	1/4" x 1/4"	0.83	0.98	0.59	0.10	----
20-156N	1/4" x 3/8"	1.043	1.10	0.59	0.18	----
20-107N	3/8" x 1/4"	1.04	1.10	0.59	0.18	----
20-108N	3/8" x 3/8"	1.04	1.18	0.67	0.16	----
20-110N	1/2" x 3/8"	1.20	1.30	0.67	0.24	----
20-111N	1/2" x 1/2"	1.20	1.42	0.82	0.28	----

## BULKHEAD UNION



Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	List Price
20-127N	1/4"	1.38	0.67	0.06	----
20-123N	5/16"	1.45	0.74	0.08	----
20-128N	3/8"	1.69	0.94	0.13	----

**Push-In Ball Valves**

**Pressure Range:**  
 0-250 PSI ( 17 bar )  
 Vacuum service

**Temperatures:**  
**Minimum:** 0°F ( -18°C )  
**Maximum:** 160°F ( +70°C )

**Media:**  
 Air, Oil, Water, Gas  
 (Consult factory for seal compatibility)

POS	Components	Materials
1	Body	Chrome plated brass
2	Ball Seats	Teflon
3	Stem Seal	NBR 70 (Viton & other compounds on request)
4	Stem	Chrome plated brass
5	Handle	Glass filled nylon
6	Color Plate	Nylon (Std. Blue, optional, green, yellow, red, white)
7	Handle Screw	Steel - Plated for corrosion resistance
8	Ball Retainer Seal	NBR 70 (Viton & other compounds on request)
9	Ball Retainer	Chrome plated brass
10	Ball	Chrome plated brass



**BALL VALVE WITH PUSH-FIT CONNECTIONS**

Part #	Tube	
28-400	1/8"	----
28-401	1/4"	----
28-402	3/8"	----



**BALL VALVE MALE NPTF  
 PUSH-FIT CONNECTIONS**

Part #	NPTF	Tube	
28-403	1/8"	5/32"	----
28-404	1/4"	1/4"	----
28-405	3/8"	3/8"	----

Security is mostly a superstition. It does not exist in nature, nor do the children of men as a whole experience it. Avoiding danger is no safer in the long run than outright exposure. Life is either a daring adventure, or nothing.

**- Helen Keller**

Men of age object too much, consult too long, adventure too little, repent too soon, and seldom drive business home to the full period, but content themselves with a mediocrity of success.

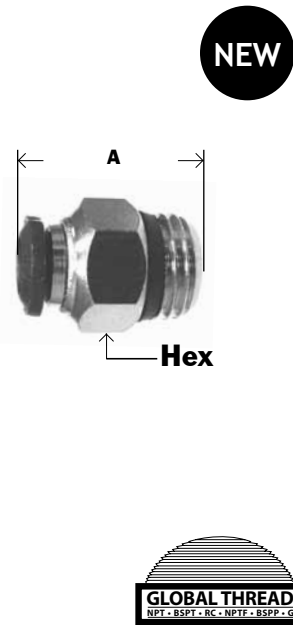
**- Dale Carnegie**

Don't worry about your heart, it will last you as long as you live.

**- W. C. Fields**

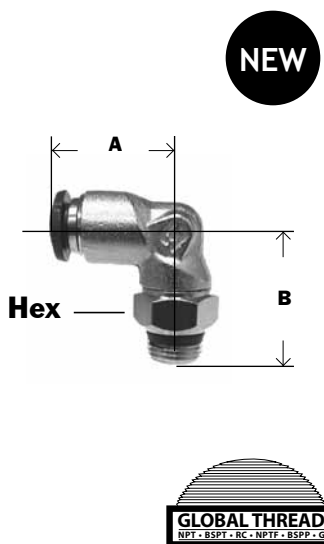
**NICKEL PLATED METRIC PUSH-IN FITTINGS**

**METRIC TUBE STRAIGHT MALE**



Part #	Tube O.D. (mm)	Global Thread	A	Hex	
20-630N	4	1/8"	0.702	0.429	----
20-631N	4	1/4"	0.760	0.546	----
20-700N	5	1/8"	0.78	0.429	----
20-701N	5	1/4"	0.78	0.546	----
20-632N	6	1/8"	0.78	0.546	----
20-633N	6	1/4"	0.819	0.546	----
20-702N	8	1/8"	0.955	0.546	----
20-634N	8	1/4"	0.858	0.546	----
20-635N	8	3/8"	0.897	0.663	----
20-703N	8	1/2"	0.897	0.663	----
20-636N	10	1/4"	1.092	0.663	----
20-637N	10	3/8"	1.092	0.663	----
20-704N	10	1/2"	1.014	0.663	----
20-801N	12	1/4"	1.267	0.78	----
20-638N	12	3/8"	1.267	0.78	----
20-705N	12	1/2"	1.209	0.78	----
20-706N	14	3/8"	1.287	0.858	----
20-707N	14	1/2"	1.248	0.858	----

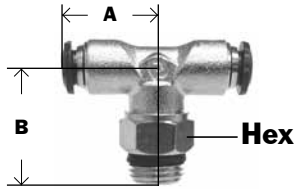
**METRIC TUBE SWIVEL MALE ELBOW**



Part #	Tube O.D. (mm)	Global Thread	A	B	Hex	
20-708N	4	1/8"	0.663	0.780	0.507	----
20-709N	4	1/4"	0.663	0.936	0.585	----
20-710N	5	1/8"	0.780	0.858	0.507	----
20-642N	6	1/8"	0.819	0.858	0.507	----
20-803N	6	1/4"	0.819	0.975	0.585	----
20-711N	8	1/8"	0.878	0.917	0.507	----
20-805N	8	1/4"	0.878	1.014	0.585	----
20-655N	8	3/8"	0.878	1.092	0.663	----
20-712N	8	1/2"	0.878	1.404	0.819	----
20-656N	10	1/4"	1.034	1.092	0.585	----
20-657N	10	3/8"	1.034	1.170	0.663	----
20-713N	10	1/2"	1.034	1.287	0.819	----
20-658N	12	3/8"	1.190	1.287	0.663	----
20-659N	12	1/2"	1.190	1.404	0.819	----
20-714N	14	3/8"	1.268	1.404	0.663	----
20-715N	14	1/2"	1.268	1.443	0.819	----

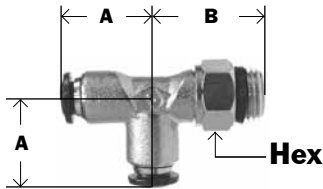


## METRIC TUBE SWIVEL MALE BRANCH TEE



Part #	Tube O.D. (mm)	Global Thread	A	B	Hex	
20-680N	4	1/8"	0.663	0.780	0.507	----
20-716N	4	1/4"	0.663	0.936	0.585	----
20-717N	5	1/8"	0.78	0.858	0.507	----
20-682N	6	1/8"	0.819	0.858	0.507	----
20-683N	6	1/4"	0.819	0.975	0.585	----
20-809N	8	1/8"	0.877	0.917	0.507	----
20-684N	8	1/4"	0.877	1.014	0.585	----
20-686N	10	1/4"	1.033	1.092	0.585	----
20-687N	10	3/8"	1.033	1.170	0.663	----
20-810N	10	1/2"	1.033	1.287	0.819	----
20-688N	12	3/8"	1.189	1.287	0.663	----
20-689N	12	1/2"	1.189	1.404	0.819	----
20-718N	14	3/8"	1.267	1.404	0.663	----
20-719N	14	1/2"	1.267	1.443	0.819	----

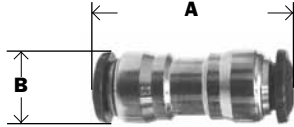
## METRIC TUBE SWIVEL MALE RUN TEE



Part #	Tube O.D. (mm)	Global Thread	A	B	Hex	
20-670N	4	1/8"	0.663	0.780	0.507	----
20-720N	4	1/4"	0.663	0.936	0.585	----
20-721N	5	1/8"	0.780	0.858	0.507	----
20-672N	6	1/8"	0.819	0.858	0.507	----
20-673N	6	1/4"	0.819	0.975	0.585	----
20-811N	8	1/8"	0.819	0.917	0.507	----
20-674N	8	1/4"	0.878	1.014	0.585	----
20-676N	10	1/4"	0.878	1.092	0.585	----
20-677N	10	3/8"	1.034	1.170	0.663	----
20-722N	10	1/2"	1.034	1.287	0.819	----
20-678N	12	3/8"	1.190	1.287	0.663	----
20-679N	12	1/2"	1.190	1.404	0.819	----

**UNION**

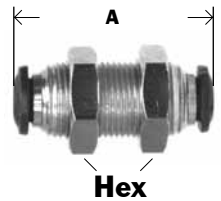
**NEW**



Part #	Tube O.D. (mm)	Tube O.D. (mm)	A	B	
20-723N	3		1.014	0.332	----
20-600N	4		1.190	0.410	----
20-724N	5		1.287	0.449	----
20-725N	6	4	1.248	0.488	----
20-601N	6		1.326	0.488	----
20-726N	8	6	1.365	0.566	----
20-727N	8		1.404	0.566	----
20-728N	10	8	1.638	0.683	----
20-603N	10		1.638	0.683	----
20-729N	12	10	1.833	0.800	----
20-604N	12		1.833	0.800	----
20-730N	14		1.911	0.839	----

**BULKHEAD**

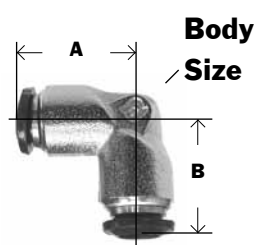
**NEW**



Part #	Tube O.D. (mm)	M	A	Hex	
20-731N	3	M10x1	1.014	0.546	----
20-732N	4	M12x1	1.229	0.663	----
20-733N	5	M14x1	1.287	0.663	----
20-734N	6	M14x1	1.365	0.663	----
20-735N	8	M16x1	1.443	0.741	----
20-736N	10	M20x1	1.677	0.936	----
20-737N	12	M22x1	1.872	1.014	----

**UNION ELBOW**

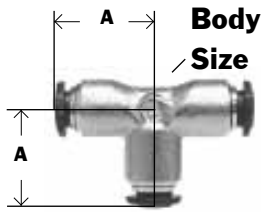
**NEW**



Part #	Tube O.D. (mm)	A	Body Size	
20-738N	3	0.663	0.51	----
20-206N	4	0.663	0.351	----
20-739N	5	0.780	0.429	----
20-660N	6	0.780	0.429	----
20-661N	8	0.878	0.507	----
20-807N	10	1.034	0.624	----
20-808N	12	1.190	0.741	----
20-740N	14	1.268	0.741	----

**UNION TEE**

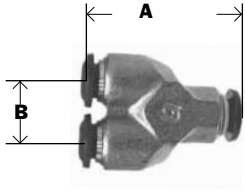
**NEW**



Part #	Tube O.D. (mm)	A	B	Body Size	
20-741N	3	1.326	0.663	0.351	----
20-610N	4	1.326	0.663	0.351	----
20-742N	5	1.560	0.780	0.429	----
20-611N	6	1.638	0.819	0.429	----
20-612N	8	1.755	0.878	0.507	----
20-613N	10	2.067	1.034	0.624	----
20-614N	12	2.379	1.190	0.741	----
20-743N	14	2.379	2.535	0.741	----

**UNION Y**

**NEW**



Part #	Tube O.D. (mm)	B	A	
20-744N	3	0.390	1.131	----
20-813N	4	0.429	1.248	----
20-745N	5	0.527	1.365	----
20-814N	6	0.527	1.424	----
20-815N	8	0.605	1.599	----
20-746N	10	0.728	1.890	----

**PLUG**

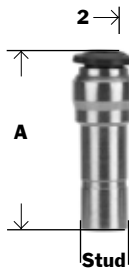
**NEW**



Part #	Tube O.D. (mm)	A	
20-748N	4	0.917	----
20-749N	5	0.956	----
20-750N	6	0.956	----
20-751N	8	1.014	----
20-752N	10	1.112	----
20-753N	12	1.190	----

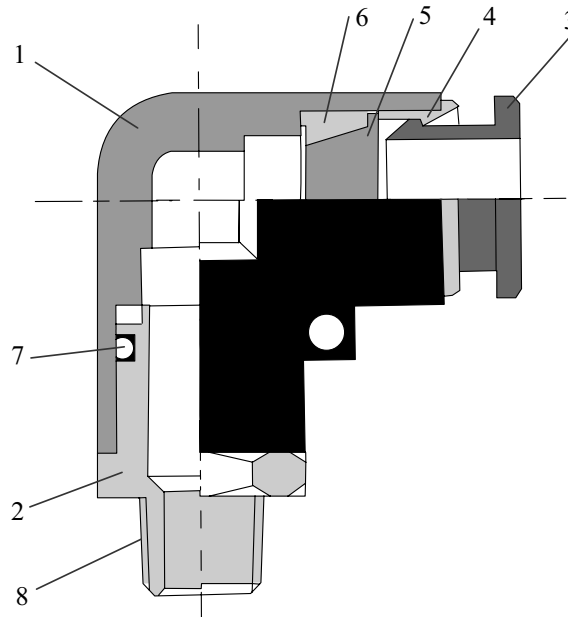
**REDUCER**

**NEW**



Part #	Stud	Tube O.D. 2	A	
20-754N	4	3	1.053	----
20-755N	5	4	1.131	----
20-756N	6	4	1.170	----
20-757N	6	5	1.248	----
20-758N	8	6	1.326	----
20-759N	10	8	1.482	----
20-760N	12	8	1.521	----

# Composite Body Push-In Fittings



**Specifications**

Fluid admitted	Air
Working pressure range	0-150 PSI (10BAR)
Min. Burst pressure	340PSI (23BAR)
Working Temperature range	-104°F ~180°F

The latest generation of composite material is used in the body construction in addition to brass on threaded components and stainless steel on the tube gripper.

**• Tolerance**

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

**Materials of Construction:**

1	Body	Composite Polyacetal (hemopolymer,copolymer)
2	Body	Brass
3	Tube Release	Acetal Resin
4	Retainer	Brass
5	Gripper Ring	Stainless Steel
6	Spacer	Brass
7	O-Ring	NBR 70
8	Threads	Brass w/ white sealant

The third-rate mind is only happy when it is thinking with the majority. The second-rate mind is only happy when it is thinking with the minority. The first-rate mind is only happy when it is thinking.

**- A.A. Milne**

**UNION**



PQ62P

Part #	Tube O.D.	Approx. Wt. Lbs.	
20-019C	1/4"	0.01	----
20-020C	3/8"	0.02	----

**UNION TEE**



PQ64P

Part #	Tube O.D.	Approx. Wt. Lbs.	
20-028C	1/4"	0.02	----
20-029C	3/8"	0.02	----

**FEMALE CONNECTOR**



PQ66P

Part #	Tube O.D. x Female NPT	Approx. Wt. Lbs.	
20-034C	1/4" x 1/8"	0.02	----
20-035C	1/4" x 1/4"	0.04	----
20-036C	3/8" x 1/4"	0.04	----
20-037C	3/8" x 3/8"	0.06	----

**MALE CONNECTOR**



PQ68P

Part #	Tube O.D. x Male NPT	Approx. Wt. Lbs.	
20-054C	1/4" x 1/8"	0.02	----
20-055C	1/4" x 1/4"	0.02	----
20-056C	1/4" x 3/8"	0.04	----
20-058C	3/8" x 1/4"	0.06	----
20-059C	3/8" x 3/8"	0.06	----
20-062C	3/8" x 1/2"	0.08	----
20-060C	1/2" x 1/4"	0.06	----
20-061C	1/2" x 3/8"	0.08	----
20-063C	1/2" x 1/2"	0.10	----

**SWIVEL MALE ELBOW**

- Swivels for installation only.
  - Not Free Swiveling



PQ69PS

Part #	Tube O.D. x Male NPT	Approx. Wt. Lbs.	
20-081C	1/4" x 1/8"	0.02	----
20-082C	1/4" x 1/4"	0.04	----
20-086C	1/4" x 3/8"	0.06	----
20-087C	3/8" x 1/8"	0.04	----
20-083C	3/8" x 1/4"	0.08	----
20-084C	3/8" x 3/8"	0.10	----
20-088C	3/8" x 1/2"	0.12	----

**BRASS FITTINGS****COMPOSITE BODY PUSH-IN FITTINGS****BRASS****SWIVEL MALE BRANCH TEE**

- Swivels for installation only.
- Not Free Swiveling

PQ72PS



Part #	Tube O.D. x Male NPT	Approx. Wt. Lbs.	
20-105C	1/4" x 1/8"	0.04	----
20-106C	1/4" x 1/4"	0.06	----
20-121C	1/4" x 3/8"	0.08	----
20-107C	3/8" x 1/4"	0.10	----
20-108C	3/8" x 3/8"	0.12	----

**BULKHEAD UNION**

PQ82P



Part #	Tube O.D.	Approx. Wt. Lbs.	
20-127C	1/4"	0.04	----
20-128C	3/8"	0.06	----

**90° UNION ELBOW**

PQ65P



Part #	Tube O.D.	Approx. Wt. Lbs.	
20-152C	1/4"	0.02	----
20-153C	3/8"	0.02	----

**SWIVEL MALE RUN TEE**

- Swivels for installation only.
- Not Free Swiveling

PQ71PS



Part #	Tube O.D. x Male NPT	Approx. Wt. Lbs.	
20-162C	1/4" x 1/8"	0.04	----
20-163C	1/4" x 1/4"	0.04	----
20-099C	3/8" x 1/8"	0.06	----
20-100C	3/8" x 1/4"	0.08	----
20-165C	3/8" x 3/8"	0.10	----

**UNION "Y" CONNECTOR**

PQ89P



Part #	Tube O.D.	Approx. Wt. Lbs.	
20-553C	1/4"	0.02	----
20-555C	3/8"	0.02	----

**SWIVEL "Y" CONNECTOR** • Swivels for installation only. • Not Free Swiveling

PQ88PS



Part #	Tube O.D. x Male NPT	Approx. Wt. Lbs.	
20-557C	1/4" x 1/4"	0.02	----

**IN-LINE NEEDLE VALVE**

PQ310C



Part #	Tube O.D.	Approx. Wt. Lbs.	
20-487C	1/4"	0.04	----

**RIGHT ANGLE FLOW CONTROL METER IN**

JPQ

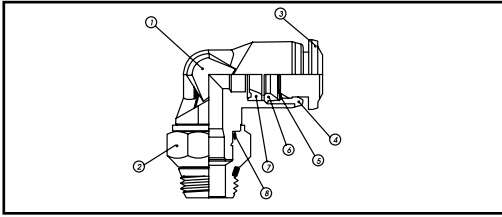


Part #	Tube O.D. x Male NPT	Approx. Wt. Lbs.	
20-728C	1/4" x 1/4"	0.04	----

## METRIC PUSH - INS

## BRASS FITTINGS

## Technical Characteristics



<b>PART 1</b>	BODY	COMPOSITE
<b>PART 2</b>	BODY	NICKEL PLATED BRASS
<b>PART 3</b>	TUBE RELEASE	ACETAL RESIN
<b>PART 4</b>	RETAINER	NICKEL PLATED BRASS
<b>PART 5</b>	GRIPPER RING	STAINLESS STEEL
<b>PART 6</b>	SPACER	COMPOSITE
<b>PART 7</b>	THREAD PACKING	NBR 70
<b>PART 8</b>	O-RING	NBR 70

## Operating Range

Pressure: 0 to 220 PSI (15 bar)

Vacuum: 0 to 29hg (-.99 bar)

## Temperature

-5° F to + 175° F (-20° C to + 80° C)

## Media

Compressed air.

Non-toxic fluids (water)

## Materials

The latest generation of composite material is used in the body construction in addition to nickel-plated brass on threaded components and stainless steel on the tube gripper.

## MALE ADAPTER



## Nickel Plated

Part #	Tube OD (mm)	BSPT Thread	
20-630	4	1/8"	----
20-631	4	1/4"	----
20-632	6	1/8"	----
20-633	6	1/4"	----
20-634	8	1/4"	----
20-635	8	3/8"	----
20-636	10	1/4"	----
20-637	10	3/8"	----
20-801	12	1/4"	----
20-638	12	3/8"	----

## UNION



Part #	Tube O.D. (mm)	
20-600	4	----
20-601	6	----
20-602	8	----
20-603	10	----
20-604	12	----

## SWIVEL MALE 90° ELBOW



Part #	Tube OD (mm)	BSPT Thread	
20-642	6	1/8"	----
20-803	6	1/4"	----
20-805	8	1/4"	----
20-655	8	3/8"	----
20-656	10	1/4"	----
20-657	10	3/8"	----
20-658	12	3/8"	----
20-659	12	1/2"	----

## UNION 90° ELBOW



Part #	Tube O.D. (mm)	
20-806	4	----
20-660	6	----
20-661	8	----
20-807	10	----
20-808	12	----

## SWIVEL MALE BRANCH TEE



Part #	Tube OD (mm)	BSPT Thread	
20-680	4	1/8"	----
20-682	6	1/8"	----
20-683	6	1/4"	----
20-809	8	1/8"	----
20-684	8	1/4"	----
20-685	8	3/8"	----
20-686	10	1/4"	----
20-687	10	3/8"	----
20-810	10	1/2"	----
20-688	12	3/8"	----
20-689	12	1/2"	----

## UNION TEE



Part #	Tube O.D. (mm)	
20-610	4	----
20-611	6	----
20-612	8	----
20-613	10	----
20-614	12	----

## SWIVEL MALE RUN TEE



Part #	Tube OD (mm)	BSPT Thread	
20-670	4	1/8"	----
20-672	6	1/8"	----
20-673	6	1/4"	----
20-811	8	1/8"	----
20-674	8	1/4"	----
20-675	8	3/8"	----
20-676	10	1/4"	----
20-677	10	3/8"	----
20-678	12	3/8"	----
20-679	12	1/2"	----

## UNION Y CONNECTOR



Part #	Tube OD (mm)	
20-813	4	----
20-814	6	----
20-815	8	----

## BRASS FITTINGS

## BSPT/BSPP FITTINGS

BRASS

### MALE BSPP NIPPLE



Part #	Size	
28-800	1/8 X 1/8	----
28-801	1/4 X 1/8	----
28-802	1/4 X 1/4	----
28-803	3/8 X 1/8	----
28-804	3/8 X 1/4	----
28-805	3/8 X 3/8	----
28-806	1/2 X 1/4	----
28-807	1/2 X 3/8	----
28-808	1/2 X 1/2	----
28-810	3/4 X 1/2	----
28-811	3/4 X 3/4	----

### MALE NIPPLE



### BSPT X MALE NPT

Part #	Size	
28-815*	1/8 X 1/8	----
28-816*	1/4 X 1/4	----
28-817*	3/8 X 3/8	----
28-818*	1/2 X 1/2	----
28-819*	3/4 X 3/4	----

### MALE BSPT NIPPLE



Part #	Size	
28-820	1/8 X 1/8	----
28-821	1/4 X 1/8	----
28-822	1/4 X 1/4	----
28-823	3/8 X 1/8	----
28-824	3/8 X 1/4	----
28-825	3/8 X 3/8	----
28-826	1/2 X 1/8	----
28-827	1/2 X 1/4	----
28-828	1/2 X 3/8	----
28-829	1/2 X 1/2	----
28-830	3/4 X 1/4	----
28-832	3/4 X 1/2	----
28-833	3/4 X 3/4	----

### BSPP COUNTERSUNK SEALED PLUG



Part #	Size	
28-835	1/8	----
28-836	1/4	----
28-837	3/8	----
28-838	1/2	----

### BSPT HEX COUNTERSUNK PLUG



Part #	Size	
28-840*	1/8	----
28-841*	1/4	----
28-842*	3/8	----
28-843*	1/2	----
28-844*	3/4	----

### FEMALE BSPP CAP



Part #	Size	
28-855	1/8	----
28-856	1/4	----
28-857	3/8	----
28-858	1/2	----

Good judgment comes from experience, and experience comes from bad judgment.

- Barry LePatner

### BSPT MALE X FEMALE NPT



Part #	Size	
28-860*	1/8 X 1/8	----
28-861*	1/4 X 1/4	----
28-862*	3/8 X 3/8	----
28-863*	1/2 X 1/2	----
28-864*	3/4 X 3/4	----

### NPT MALE X FEMALE BSPP



Part #	Size	
28-867*	1/8 X 1/8	----
28-868*	1/4 X 1/4	----
28-869*	3/8 X 3/8	----
28-870*	1/2 X 1/2	----
28-871*	3/4 X 3/4	----

### BUSHING

### BSPT MALE X BSPP FEMALE



Part #	Size	
28-873	1/4 X 1/8	----
28-874	3/8 X 1/8	----
28-875	3/8 X 1/4	----
28-876	1/2 X 1/4	----
28-877	1/2 X 3/8	----
28-878	3/4 X 1/2	----

All Fittings are Nickel Plated except (\*) which are Yellow Brass  
**BRASS RIGID MALE BARB**

### ADAPTER



NEW

Part #	Hose I.D. x BSPT	
32-450*	1/4" x 1/8"	----
32-451*	1/4" x 1/4"	----
32-452*	3/8" x 1/4"	----
32-453*	3/8" x 3/8"	----
32-454*	3/8" x 1/2"	----
32-455*	1/2" x 3/8"	----
32-456*	1/2" x 1/2"	----
32-457*	3/4" x 3/4"	----
32-458*	1" x 1"	----



# BSPT/BSPP FITTINGS

# BRASS FITTINGS

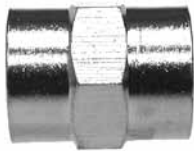
BRASS

## MALE BSPP X FEMALE BSPP ADAPTER



Part #	Size	
28-880	1/8 X 1/8	----
28-881	1/8 X 1/4	----
28-882	1/4 X 1/8	----
28-883	1/4 X 1/4	----
28-884	1/4 X 3/8	----
28-885	3/8 X 1/8	----
28-886	3/8 X 1/4	----
28-887	3/8 X 3/8	----
28-888	3/8 X 1/2	----
28-889	1/2 X 1/4	----
28-890	1/2 X 3/8	----
28-891	1/2 X 1/2	----

## FEMALE BSPP COUPLING



Part #	Size	
28-894	1/8 X 1/8	----
28-895	1/4 X 1/8	----
28-896	1/4 X 1/4	----
28-897	3/8 X 1/8	----
28-898	3/8 X 1/4	----
28-899	3/8 X 3/8	----
28-900	1/2 X 1/4	----
28-901	1/2 X 3/8	----
28-902	1/2 X 1/2	----

All Fittings are Nickel Plated

I don't know the key to success, but the key to failure is trying to please everybody.

- Bill Cosby

## 90° BSPT MALE ELBOW



Part #	Size	
28-905	1/8 X 1/8	----
28-906	1/4 X 1/4	----
28-907	3/8 X 3/8	----
28-908	1/2 X 1/2	----

## MALE BSPT X FEMALE BSPP 90° ELBOW



Part #	Size	
28-911	1/8 X 1/8	----
28-912	1/4 X 1/4	----
28-913	3/8 X 3/8	----
28-914	1/2 X 1/2	----

## BSPP FEMALE 90° ELBOW



Part #	Size	
28-917	1/8 X 1/8	----
28-918	1/4 X 1/4	----
28-919	3/8 X 3/8	----
28-920	1/2 X 1/2	----

## MALE BSPT TEE



Part #	Size	
28-924	1/8	----
28-925	1/4	----
28-926	3/8	----

## BSPP FEMALE TEE



Part #	Size	
28-930	1/8	----
28-931	1/4	----
28-932	3/8	----
28-933	1/2	----

## BSPP FEMALE X BSPT MALE BRANCH TEE



Part #	Size	
28-940	1/8	----
28-941	1/4	----
28-942	3/8	----
28-943	1/2	----

## BSPP MALE RUN TEE



Part #	Size	
28-947	1/8	----
28-948	1/4	----
28-949	3/8	----
28-950	1/2	----

## FEMALE BSPP CROSS



Part #	Size	
28-952	1/8	----
28-953	1/4	----
28-954	3/8	----

# BRASS FITTINGS

# STEEL GREASE FITTINGS

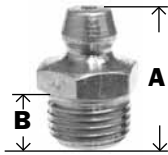
Meets SAE #J-534C

Many types available on special order.

BRASS

## PIPE THREAD BALL CHECK

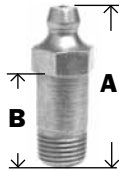
#610  
1610  
2800  
1720



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-110	1/8" -27 NPT	0.68	0.29	0.43	0.01	----
36-111	Thread Forming	0.62	0.23	0.43	0.01	----

## PIPE THREAD BALL CHECK

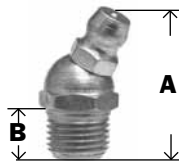
#607  
1607  
2800  
1669



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-112	1/8" -27 NPT	1.25	0.78	0.43	0.02	----
36-113	1/8" -27 NPT	1.75	1.26	0.43	0.02	----

## PIPE THREAD 30° ANGLE BALL CHECK

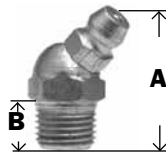
#611  
1611  
2830



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-114	1/8" -27 NPT	0.90	0.29	0.43	0.01	----

## PIPE THREAD 45° ANGLE BALL CHECK

#688  
1688  
2845



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-116	1/8" -27 NPT	0.89	0.29	0.43	0.01	----

## PIPE THREAD 65° ANGLE BALL CHECK

#612  
1612  
2865



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-118	1/8" -27 NPT	0.84	0.29	0.43	0.01	----

## PIPE THREAD 90° ANGLE BALL CHECK

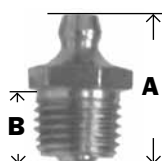
#613  
1613  
2890



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-120	1/8" -27 NPT	0.84	0.29	0.43	0.01	----
36-121	1/8" -27 NPT	1.81	1.25	0.43	0.01	----

## PIPE THREAD BALL CHECK

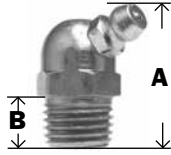
#627  
1627  
2900K



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-130	1/4" -18 NPT	0.87	0.42	0.56	0.02	----

**PIPE THREAD**

#629  
1629  
2965

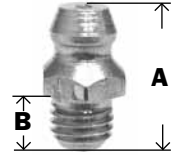


**65° ANGLE BALL CHECK**

Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-132	1/4"-18 NPT	0.96	0.34	0.56	0.02	----

**1/4-28 TAPER THREAD**

#641  
1641  
2400  
3038

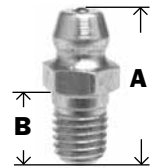


**SHORT BALL CHECK**

Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-140	1/4"-28 NPT	0.54	0.18	0.31	0.01	----
36-141	Thread Forming	0.57	0.20	0.31	0.01	----

**1/4-28 TAPER THREAD**

#652  
1652  
2400

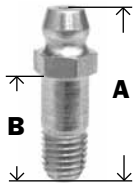


**LONG BALL CHECK**

Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-142	1/4"-28 Taper Thread	0.90	0.29	0.43	0.01	----

**1/4-28 TAPER THREAD**

#680  
1680  
2400

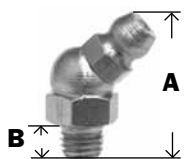


**EXTRA LONG BALL CHECK**

Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-144	1/4"-28 Taper Thread	0.96	0.62	0.31	0.02	----

**1/4-28 TAPER THREAD**

#637  
1637  
2445  
1665  
2465  
3010

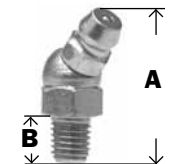


**SHORT 45° BALL CHECK**

Part #	Size	Angle	A	B	Hex	Approx. Wt. Lbs.	
36-146	1/4"-28 Taper Thread	45°	0.81	0.20	0.37	0.02	----
36-147	1/4"-28 Taper Thread	65°	0.78	0.20	0.37	0.02	----

**1/4-28 TAPER THREAD**

#636  
1630  
2445

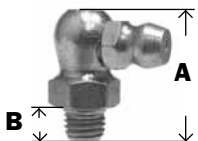


**LONG 45° BALL CHECK**

Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-148	1/4"-28 Taper Thread	0.90	0.29	0.37	0.02	----

**1/4-28 TAPER THREAD**

#911  
1911  
2490  
3054



**90° ANGLE BALL CHECK**

Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-150	1/4"-28 Taper Thread	0.75	0.20	0.37	0.02	----
36-152	Thread Forming	0.75	0.20	0.37	0.02	----

# BRASS FITTINGS

# STEEL GREASE FITTINGS

BRASS

## DRIVE TYPE

## BALL CHECK

#608  
1608

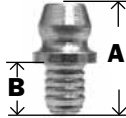


Part #	Size	A	B	Approx. Wt. Lbs.	
36-160	5/16"	0.54	0.25	0.01	----

## DRIVE TYPE

## BALL CHECK

#728  
1728  
2316



Part #	Size	A	B	Approx. Wt. Lbs.	
36-164	3/16"	0.51	0.25	0.01	----

## DRIVE TYPE

## BALL CHECK

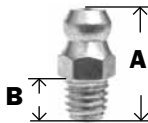
#743  
1743  
214



Part #	Size	A	B	Approx. Wt. Lbs.	
36-166	1/4"	0.55	0.23	0.01	----

## METRIC

#711  
6000  
2106  
2M6



Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-168	6MM x 1	16	6	7	0.01	----

## METRIC

## 45° ANGLE

#712  
6045  
2107

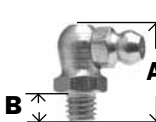


Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-170	6MM x 1	21	5.5	9	0.02	----

## METRIC

## 90° ANGLE

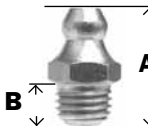
#713  
6090  
2108  
ZM906



Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-172	6MM x 1	18	5.5	9	0.02	----

## METRIC

#811  
8000  
2103  
ZM58

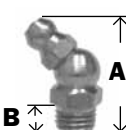


Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-174	8MM x 1	17	6	9	0.02	----

## METRIC

## 45° ANGLE

#812  
8045  
2104  
ZM458

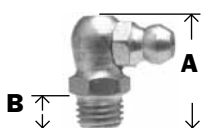


Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-176	8MM x 1	21	5.5	9	0.02	----

## METRIC

## 90° ANGLE

#813  
8090  
2105  
ZM908



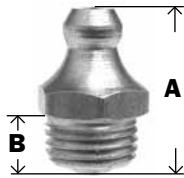
Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-178	8MM x 1	18	5.5	9	0.02	----

## STEEL GREASE FITTINGS

## BRASS FITTINGS

## METRIC

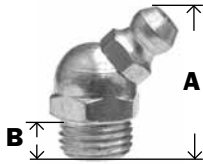
#911  
9000  
2109  
ZM510



Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-180	10MM x 1	18	6	11	0.02	----

## METRIC

#912  
9045  
2110  
ZM4510

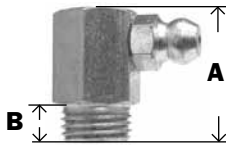


## 45° ANGLE

Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-182	10MM x 1	21	5.5	11	0.02	----

## METRIC

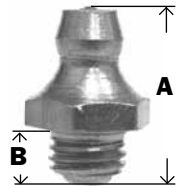
#913  
9090  
2111  
ZM9010



## 90° ANGLE

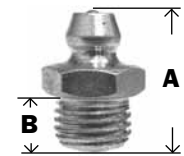
Part #	Size	A (mm)	B (mm)	Hex (mm)	Approx. Wt. Lbs.	
36-184	10MM x 1	18	5.5	11	0.02	----

#711-B  
1711  
2500



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-186	5/16"-24	0.65	0.25	0.37	0.02	----

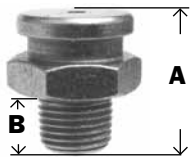
#710-B  
1710  
2600



Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-188	3/8"-24	0.65	0.25	0.43	0.01	----

## BUTTON HEAD

1184  
1186



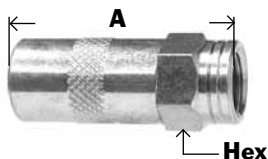
Part #	Size	A	B	Hex	Approx. Wt. Lbs.	
36-200	1/8"-27 PTF	0.75	0.34	0.62	0.03	----
36-205	1/4"-18 NPT	0.82	0.42	0.62	0.03	----

## WHIP HOSE



Part #	Length	
36-210	12" RUBBER	----
36-212	18" RUBBER	----
36-214	24" RUBBER	----
36-216	36" RUBBER	----

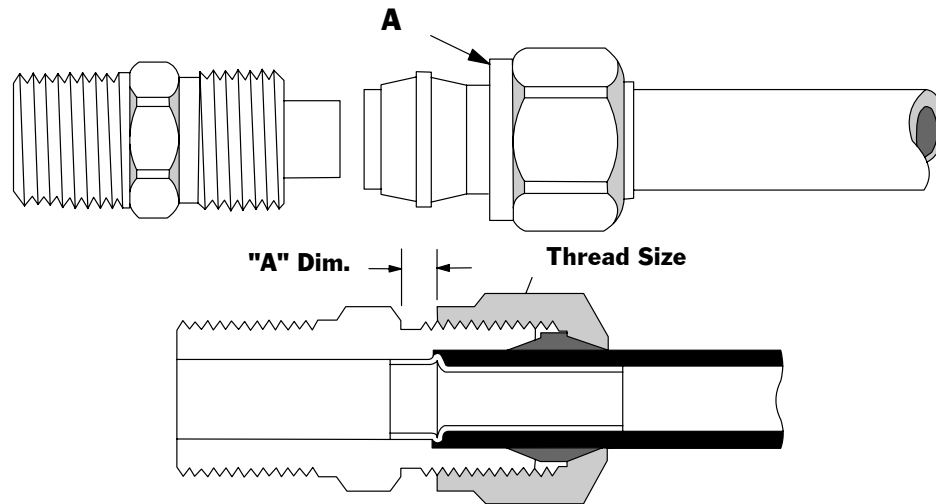
## 4 JAW GREASE GUN COUPLER



Part #	A	Hex	Approx. Wt. Lbs.	
36-220	1.50	0.56	0.05	----

# D.O.T. Air Brake - Nylon Tubing

**BRASS**



<b>Tube O.D</b>	<b>1/4</b>	<b>3/8</b>	<b>1/2</b>	<b>5/8</b>	<b>3/4</b>
<b>Thread Size-B</b>	<b>7/16-24</b>	<b>17/32-24</b>	<b>11/16-20</b>	<b>13/16-18</b>	<b>1-18</b>

**•Typical Application**

Air brake systems except where temperatures exceed +200°F or where battery acid can drip on tubing.

**•Pressure**

Maximum operating pressure of 150 PSI.

**•Vibration**

Fair resistance.

**•Temperature Range**

-40°F to +200°F (-40°C to +93°C).

**•Material**

CA360 Brass

**•Used With**

NT Nylon Tubing - SAE J844 Type A and B.

**•Tolerance**

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical

**•Advantages**

Easy to assemble (no tube preparation or flaring required.) Built in tube support. May be used with copper tubing by replacing nut, sleeve and insert with long nut and spherical sleeve. Insert should be removed for copper tubing use.

**•Conformance**

Meets specifications and standards of SAE and DOT FMVSS 571,106.

**•Assembly Instructions**

- 1- Cut tubing to desired length.
- 2-Slide nut and then sleeve on tubing. Threaded end of nut "A" must face toward fitting body.
- 3-Insert tubing into the preassembled fitting. Be sure tubing is bottomed in fitting.
- 4- Tighten nut to required torque as indicated on chart.

**Disassembling:** Remove nut and pull tubing out of fitting body. Insert will remain in tubing.

**Reassembly:** Push tubing and insert into fitting body until it bottoms. Thread nut onto fitting body and torque as in step 4.

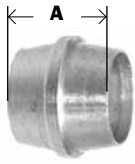
<b>Tube Size</b>	<b>Additional Number of Turns from Hand-Tight</b>
<b>1/4</b>	<b>3</b>
<b>3/8, 1/2</b>	<b>4</b>
<b>5/8, 3/4</b>	<b>3-1/2</b>

You don't get anything clean without getting something else dirty.

- Cecil Baxter

**SLEEVE**

**SAE# 100115**

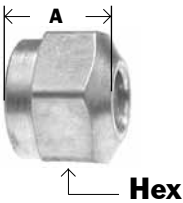


60NAB  
60NTA  
1460

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
38-001	1/4"	0.30	0.01	----
38-002	3/8"	0.39	0.02	----
38-003	1/2"	0.43	0.02	----
38-004	5/8"	0.48	0.03	----
38-005	3/4"	0.53	0.04	----

**NUT**

**SAE# 100110**

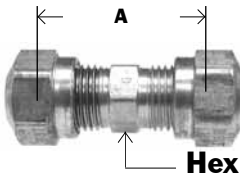


61NAB  
61NTA  
1461

Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
38-010	1/4"	0.45	0.56	0.02	----
38-011	3/8"	0.63	0.62	0.02	----
38-012	1/2"	0.72	0.81	0.04	----
38-013	5/8"	0.77	0.94	0.04	----
38-014	3/4"	0.81	1.12	0.06	----

**UNION**

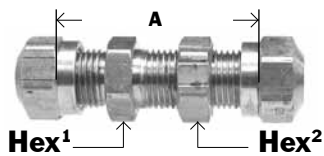
**SAE# 100101BA**



62NAB  
62NTA  
1462

Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
38-019	1/4"	0.85	0.43	0.08	----
38-020	3/8"	1.10	0.56	0.18	----
38-021	1/2"	1.31	0.68	0.20	----
38-022	5/8"	1.43	0.81	0.26	----
38-023	3/4"	1.60	1.00	0.48	----

**BULKHEAD UNION**

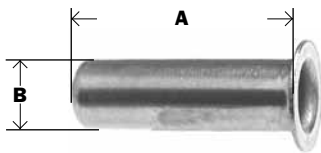


62NBH  
1474  
475

Part #	Tube O.D.	A	Hex 1	Hex 2	Approx. Wt. Lbs.	
38-028	1/4"	1.38	0.56	0.56	0.11	----
38-029	3/8"	1.61	0.69	0.75	0.16	----
38-030	1/2"	1.88	0.81	0.87	0.26	----

**STAINLESS STEEL INSERT**

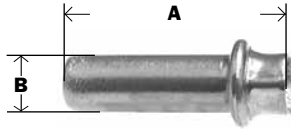
**• For SAE# J844 TUBING**



59A  
63NTA

Part #	Tube O.D.	A	B	Approx. Wt. Lbs.	
38-035	1/4"	0.53	0.16	0.01	----
38-036	3/8"	0.64	0.24	0.02	----
38-037	1/2"	0.81	0.37	0.02	----
38-038	5/8"	0.86	0.43	0.03	----
38-039	3/4"	1.04	0.56	0.03	----

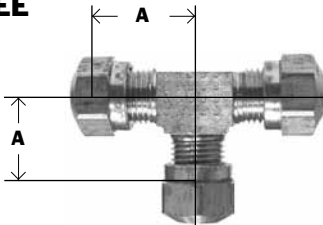
**BRASS INSERT**



1484  
463

Part #	Tube O.D.	A	B	Approx. Wt. Lbs.	
38-040	1/4"	0.64	0.16	0.01	----
38-041	3/8"	0.76	0.24	0.02	----
38-042	1/2"	0.94	0.37	0.02	----
38-043	5/8"	1.06	0.43	0.02	----
38-048	3/4"	1.21	0.56	0.04	----

**TEE**

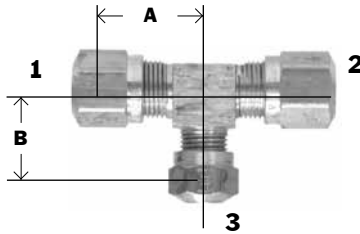


64NAB  
264NTA  
1464

**SAE# 100401BA**

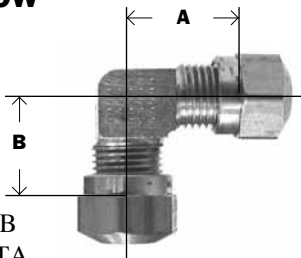
Part #	Tube O.D.	A	Approx. Wt. Lbs.	
38-044	1/4"	0.61	0.14	----
38-045	3/8"	0.78	0.18	----
38-046	1/2"	0.92	0.36	----
38-047	5/8"	1.09	0.46	----

**REDUCING TEE**



Part #	Tube O.D. (1&2) x 3	A	B	Approx. Wt. Lbs.	
38-049	3/8" x 1/4"	0.72	0.69	0.24	----
38-057	1/2" x 3/8"	0.92	0.85	0.30	----

**ELBOW**

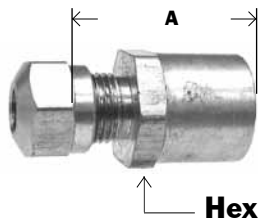


65NAB  
265NTA  
1465

**SAE# 100201BA**

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
38-052	1/4"	0.61	0.10	----
38-053	3/8"	0.78	0.12	----
38-054	1/2"	0.92	0.26	----
38-055	5/8"	1.09	0.34	----

**FEMALE ADAPTER**



66NAB  
66NTA  
1466  
66NBH

**SAE# 100103BA**

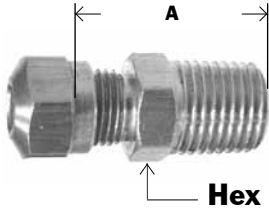
Part #	Tube O.D. x Female NPT	A	Hex	Approx. Wt. Lbs.	
38-060	1/4" x 1/8"	0.83	0.56	0.07	----
38-061	1/4" x 1/4"	1.06	0.68	0.08	----
38-062	3/8" x 1/8"	1.00	0.56	0.10	----
38-063	3/8" x 1/4"	1.18	0.68	0.10	----
38-064	3/8" x 3/8"	1.18	0.87	0.12	----
38-065	1/2" x 3/8"	1.27	0.87	0.16	----
38-066	1/2" x 1/2"	1.43	1.06	0.26	----
38-067	5/8" x 3/8"	1.31	0.87	0.28	----
38-068	5/8" x 1/2"	1.50	1.06	0.28	----

Dimension data can change without notice.  
Please call us when dimensions are critical.



**MALE ADAPTER**

**SAE# 100102BA**

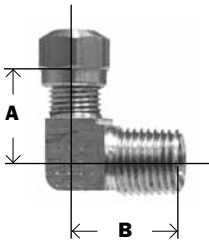


68NAB  
68NTA  
1468

Part #	Tube O.D. x Male NPTF	A	Hex	Approx. Wt. Lbs.	
38-072	1/4" x 1/16"	0.90	0.43	0.05	----
38-073	1/4" x 1/8"	0.88	0.43	0.05	----
38-074	1/4" x 1/4"	1.09	0.56	0.07	----
38-075	1/4" x 3/8"	1.13	0.68	0.09	----
38-076	3/8" x 1/8"	1.03	0.56	0.08	----
38-077	3/8" x 1/4"	1.20	0.56	0.10	----
38-078	3/8" x 3/8"	1.24	0.68	0.10	----
38-079	3/8" x 1/2"	1.43	0.87	0.16	----
38-080	1/2" x 1/4"	1.32	0.68	0.13	----
38-081	1/2" x 3/8"	1.32	0.68	0.14	----
38-082	1/2" x 1/2"	1.51	0.87	0.21	----
38-087	1/2" x 3/4"	1.57	1.06	0.23	----
38-083	5/8" x 3/8"	1.39	0.81	0.17	----
38-084	5/8" x 1/2"	1.57	0.87	0.20	----
38-088	5/8" x 3/4"	1.71	1.06	0.25	----
38-085	3/4" x 1/2"	1.68	1.00	0.28	----
38-086	3/4" x 3/4"	1.71	1.06	0.33	----

**MALE ELBOW**

**SAE# 100202BA**

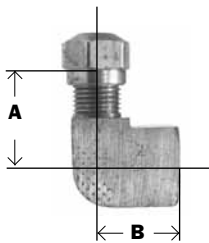


1469

Part #	Tube O.D. x Male NPTF	A	B	Approx. Wt. Lbs.	
38-091	1/4" x 1/8"	0.61	0.65	0.06	----
38-092	1/4" x 1/4"	0.67	0.86	0.09	----
38-093	1/4" x 3/8"	0.72	0.85	0.12	----
38-094	3/8" x 1/8"	0.72	0.73	0.09	----
38-095	3/8" x 1/4"	0.80	0.93	0.11	----
38-090	3/8" x 1/4" LONG	0.80	1.44	0.14	----
38-101	3/8" x 3/8"	0.83	0.90	0.14	----
38-102	3/8" x 1/2"	0.93	1.09	0.21	----
38-103	1/2" x 1/4"	0.85	0.98	0.18	----
38-104	1/2" x 3/8"	0.92	0.98	0.19	----
38-109	1/2" x 3/8" LONG	0.94	1.38	0.26	----
38-105	1/2" x 1/2"	1.02	1.17	0.28	----
38-106	5/8" x 3/8"	1.00	1.05	0.24	----
38-107	5/8" x 1/2"	1.10	1.25	0.28	----
38-110	5/8" x 3/4"	1.09	1.24	0.38	----
38-108	3/4" x 1/2"	1.19	1.33	0.41	----

**FEMALE ELBOW**

**SAE# 100203BA**

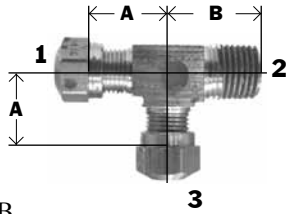


70NAB  
1470  
270NTA

Part #	Tube O.D. x Female NPTF	A	B	Approx. Wt. Lbs.	
38-113	1/4" x 1/8"	0.68	0.52	0.08	----
38-114	1/4" x 1/4"	0.77	0.70	0.12	----
38-115	3/8" x 1/8"	0.82	0.58	0.14	----
38-116	3/8" x 1/4"	0.88	0.76	0.10	----
38-117	3/8" x 3/8"	0.93	0.76	0.12	----
38-118	1/2" x 3/8"	1.02	0.81	0.23	----
38-119	1/2" x 1/2"	1.13	1.01	0.36	----
38-120	5/8" x 1/2"	1.19	1.07	0.38	----

**MALE RUN TEE**

**SAE# 100424BA**

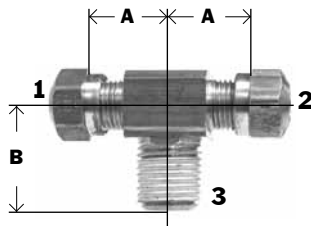


71NAB  
271NTA  
1471

Part #	Tube O.D. x Male NPTF x Tube O.D. 1x2x3	A	B	Approx. Wt. Lbs.	
38-125	1/4" x 1/8" x 1/4"	0.61	0.65	0.10	----
38-126	1/4" x 1/4" x 1/4"	0.68	0.86	0.14	----
38-124	3/8" x 1/4" x 1/4"	0.72	0.69	0.14	----
38-127	3/8" x 1/4" x 3/8"	0.78	0.91	0.16	----
38-128	3/8" x 3/8" x 3/8"	0.83	0.90	0.20	----
38-129	1/2" x 3/8" x 1/2"	0.92	0.98	0.30	----

**MALE BRANCH TEE**

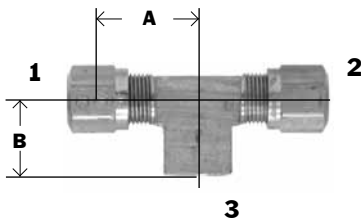
**SAE# 100425BA**



72NAB  
272NTA  
1472

Part #	Tube O.D. x Tube O.D. x Male NPTF 1x2x3	A	B	Approx. Wt. Lbs.	
38-136	1/4" x 1/4" x 1/8"	0.61	0.65	0.10	----
38-137	1/4" x 1/4" x 1/4"	0.67	0.86	0.13	----
38-138	3/8" x 3/8" x 1/8"	0.71	0.73	0.14	----
38-132	3/8" x 1/4" x 1/4"	0.80	0.93	0.15	----
38-139	3/8" x 3/8" x 1/4"	0.78	0.91	0.16	----
38-133	1/2" x 1/2" x 1/4"	0.87	1.00	0.26	----
38-140	3/8" x 3/8" x 3/8"	0.83	0.90	0.20	----
38-134	1/2" x 3/8" x 3/8"	0.94	1.00	0.26	----
38-141	1/2" x 1/2" x 3/8"	0.92	0.98	0.30	----
38-142	1/2" x 1/2" x 1/2"	1.02	1.17	0.38	----
38-143	5/8" x 5/8" x 1/2"	1.09	1.24	0.44	----

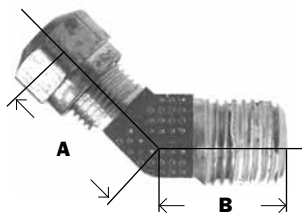
**SPECIAL TEES**



Part #	Tube O.D. x Tube O.D. x Female NPTF 1x2x3	A	B	Approx. Wt. Lbs.	
38-144	3/8" x 3/8" x 1/4"	0.90	0.78	0.21	----
38-146	5/8" x 5/8" x 1/4"	1.04	0.89	0.48	----

**45° ELBOW**

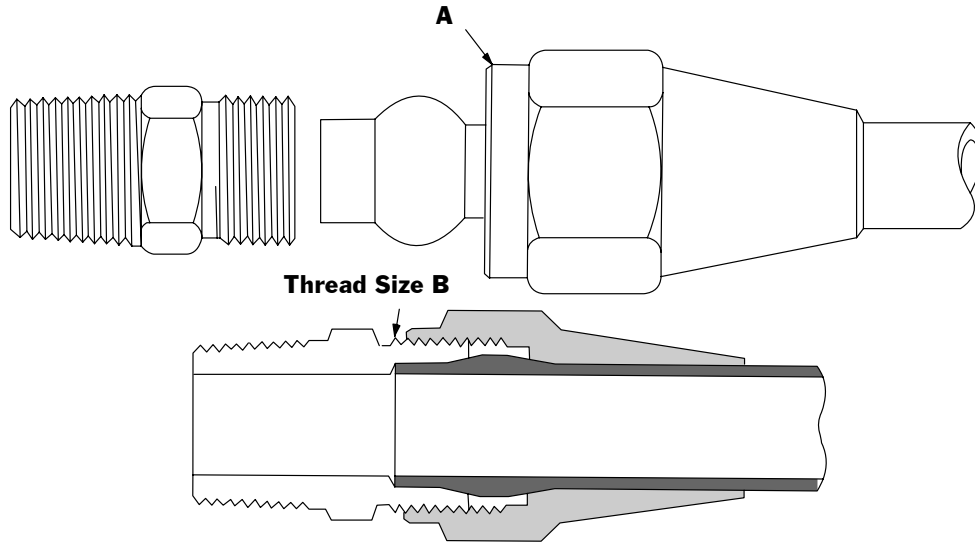
**SAE# 100302BA**



6945NAB  
279NTA  
1480

Part #	Tube O.D. x Male NPTF	A	B	Approx. Wt. Lbs.	
38-148	1/4" x 1/8"	0.49	0.63	0.06	----
38-149	1/4" x 1/4"	0.60	0.85	0.08	----
38-150	3/8" x 1/8"	0.71	0.67	0.10	----
38-151	3/8" x 1/4"	0.72	0.86	0.10	----
38-152	3/8" x 3/8"	0.76	0.95	0.14	----
38-153	3/8" x 1/2"	0.78	1.20	0.24	----
38-157	1/2" x 1/4"	0.85	0.95	0.20	----
38-154	1/2" x 3/8"	0.84	0.94	0.20	----
38-155	1/2" x 1/2"	0.87	1.16	0.24	----
38-156	5/8" x 1/2"	1.00	1.20	0.28	----
38-158	3/4" x 1/2"	1.10	1.18	0.38	----

# D.O.T. Air Brake - Copper Tubing



<b>Tube O.D.</b>	<b>1/4</b>	<b>3/8</b>	<b>1/2</b>	<b>5/8</b>	<b>3/4</b>
<b>Thread Size-B</b>	<b>7/16-24</b>	<b>17/32-24</b>	<b>11/16-20</b>	<b>13/16-18</b>	<b>1-18</b>

**•Typical Application**  
Air brake systems.

**•Pressure**  
Maximum operating pressure of 150 PSI.

**•Vibration**  
Fair resistance.

**•Temperature Range**  
-65°F to +250°F (-53°C to +121°C) with copper tubing.

**•Material**  
CA360 Brass.

**•Used With**  
Copper tubing in air brake systems.

**•Tolerance**  
+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

**•Advantages**  
Easy to assemble (no flaring). May be used with nylon tubing by replacing long nut and spherical sleeve with insert, rigid sleeve and nut.

**•Conformance**  
Meets specifications and standards of SAE and DOT.

**•Assembly Instructions**

- 1- Cut tubing to desired length. Make sure all burrs are removed and the ends are cut square.
- 2- Slide nut and then sleeve on tubing. Threaded end "A" must face toward fitting body.
- 3- Insert tubing into fitting. Be sure tubing is bottomed on fitting shoulder.
- 4- Thread nut onto fitting body until it is hand tight.
- 5- From that point, tighten with a wrench the number of turns indicated in the chart below:

<b>Tube Size</b>	<b>Additional Number of Turns from Hand Tight</b>
<b>1/4, 3/8</b>	<b>1-3/4</b>
<b>1/2, 5/8, 3/4</b>	<b>3-1/4</b>

**SLEEVE**

**SAE# 120115BA**

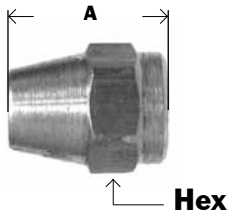


60AB  
1360

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
38-161	1/4"	0.25	0.01	----
38-162	3/8"	0.31	0.02	----
38-163	1/2"	0.38	0.02	----
38-164	5/8"	0.44	0.02	----
38-165	3/4"	0.50	0.04	----

**NUT**

**SAE# 120111BA**

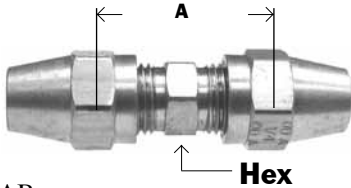


20961  
61AB  
1361

Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
38-170	1/4"	0.75	0.56	0.02	----
38-171	3/8"	1.13	0.62	0.04	----
38-172	1/2"	1.25	0.81	0.08	----
38-173	5/8"	1.38	0.94	0.12	----
38-174	3/4"	1.56	1.12	0.18	----

**UNION**

**SAE# 120101BA**

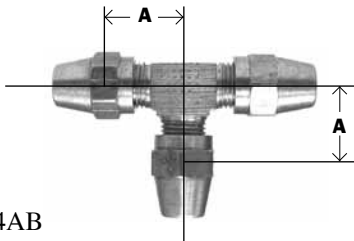


62AB  
1362

Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
38-179	1/4"	0.81	0.44	0.08	----
38-180	3/8"	1.10	0.56	0.14	----
38-181	1/2"	1.07	0.69	0.24	----
38-182	5/8"	1.41	0.81	0.34	----
38-183	3/4"	1.59	1.00	0.54	----

**TEE**

**SAE# 120401BA**



264AB  
1364

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
38-188	1/4"	0.62	0.16	----
38-189	3/8"	0.82	0.24	----
38-190	1/2"	0.94	0.48	----
38-191	5/8"	1.09	0.60	----

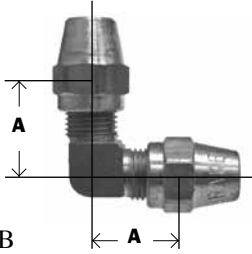
Do not condemn the judgement of another because it differs from your own. You may both be wrong.

Dimension data can change without notice.  
Please call us when dimensions are critical.

**- Dandemis**

**ELBOW**

**SAE# 120201BA**



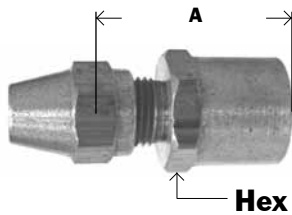
265AB  
1365

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
38-196	1/4"	0.62	0.10	----
38-197*	3/8"	0.78	0.16	----
38-198	1/2"	0.92	0.28	----
38-199	5/8"	1.10	0.42	----

\* Forged

**FEMALE ADAPTER**

**SAE# 120103BA**

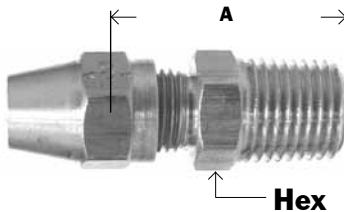


66AB  
1366

Part #	Tube O.D. x Female NPTF	A	Hex	Approx. Wt. Lbs.	
38-204	1/4" x 1/8"	0.84	0.56	0.08	----
38-205	1/4" x 1/4"	1.07	0.68	0.10	----
38-206	3/8" x 1/8"	1.00	0.56	0.10	----
38-207	3/8" x 1/4"	1.19	0.68	0.12	----
38-208	3/8" x 3/8"	1.18	0.87	0.16	----
38-209	1/2" x 3/8"	1.27	0.87	0.18	----
38-210	1/2" x 1/2"	1.44	1.06	0.20	----
38-211	5/8" x 3/8"	1.31	0.87	0.24	----
38-212	5/8" x 1/2"	1.50	1.06	0.26	----

**MALE ADAPTER**

**SAE# 120102BA**

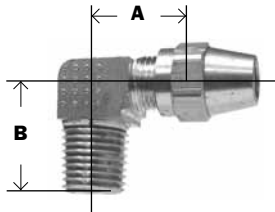


68AB  
1368

Part #	Tube O.D. x Male NPTF	A	Hex	Approx. Wt. Lbs.	
38-217	1/4" x 1/8"	0.88	0.43	0.06	----
38-218	1/4" x 1/4"	0.97	0.56	0.08	----
38-219	1/4" x 3/8"	1.14	0.68	0.10	----
38-220	3/8" x 1/8"	1.02	0.56	0.08	----
38-221	3/8" x 1/4"	1.09	0.56	0.10	----
38-222	3/8" x 3/8"	1.19	0.69	0.12	----
38-223	3/8" x 1/2"	1.45	0.87	0.18	----
38-224	1/2" x 1/4"	1.32	0.69	0.16	----
38-225	1/2" x 3/8"	1.35	0.69	0.18	----
38-226	1/2" x 1/2"	1.51	0.87	0.24	----
38-227	5/8" x 3/8"	1.39	0.81	0.22	----
38-228	5/8" x 1/2"	1.57	0.87	0.24	----
38-229	3/4" x 1/2"	1.67	1.00	0.34	----
38-230	3/4" x 3/4"	1.71	1.06	0.40	----

**90° MALE ELBOW**

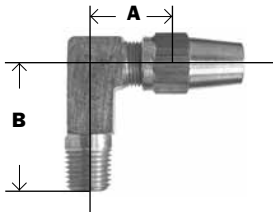
**SAE# 120202BA**



269AB  
1369

Part #	Tube O.D. x Male NPTF	A	B	Approx. Wt. Lbs.	
38-235	1/4" x 1/8"	0.64	0.76	0.08	----
38-236	1/4" x 1/4"	0.69	0.88	0.10	----
38-237	1/4" x 3/8"	0.73	0.86	0.14	----
38-238	3/8" x 1/8"	0.73	0.75	0.12	----
38-239	3/8" x 1/4"	0.80	0.93	0.12	----
38-240	3/8" x 3/8"	0.83	0.90	0.16	----
38-241	3/8" x 1/2"	0.95	1.11	0.24	----
38-242	1/2" x 1/4"	0.85	0.98	0.24	----
38-243	1/2" x 3/8"	0.92	0.98	0.22	----
38-244	1/2" x 1/2"	1.04	1.19	0.30	----
38-245	5/8" x 3/8"	1.01	1.06	0.34	----
38-246	5/8" x 1/2"	1.10	1.25	0.36	----
38-247	3/4" x 1/2"	1.19	1.32	0.44	----

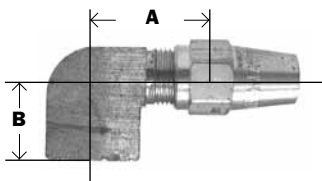
**LONG PATTERN ELBOW**



Part #	Tube O.D. x Male NPTF	A	B	Approx. Wt. Lbs.	
38-249	3/8" x 1/4"	0.81	1.44	0.16	----

**90° FEMALE ELBOW**

**SAE# 120203BA**

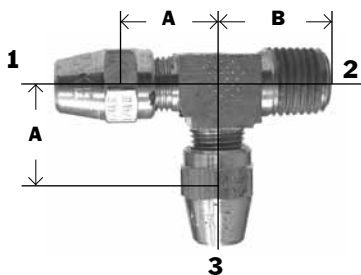


270AB  
1370

Part #	Tube O.D. x Female NPTF	A	B	Approx. Wt. Lbs.	
38-252	1/4" x 1/8"	0.69	0.52	0.10	----
38-253	1/4" x 1/4"	0.78	0.71	0.14	----
38-255	3/8" x 1/4"	0.84	0.78	0.16	----
38-256	3/8" x 3/8"	0.93	0.77	0.18	----
38-257	1/2" x 3/8"	1.03	0.82	0.26	----
38-259	5/8" x 1/2"	1.19	1.07	0.44	----

**MALE RUN TEE**

**SAE# 120424BA**



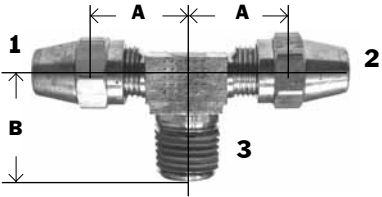
271AB  
1371

Part #	Tube O.D. x Male NPTF (1&3)x2	A	B	Approx. Wt. Lbs.	
38-264	1/4" x 1/8"	0.62	0.66	0.12	----
38-265	1/4" x 1/4"	0.68	0.87	0.16	----
38-266	3/8" x 1/4"	0.79	0.92	0.20	----
38-267	3/8" x 3/8"	0.83	0.90	0.24	----
38-269	1/2" x 1/2"	1.03	1.18	0.42	----

**BRASS**

**MALE BRANCH TEE**

**SAE# 120425BA**

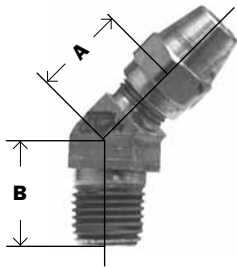


Part #	Tube O.D. x Male NPTF (1&2)x3	A	B	Approx. Wt. Lbs.	
38-278	3/8" x 1/4"	0.78	0.91	0.18	----
38-279	3/8" x 3/8"	0.85	0.92	0.24	----
38-280	1/2" x 3/8"	0.91	0.98	0.36	----
38-281	1/2" x 1/2"	1.03	1.18	0.42	----

272AB  
1372

**45° MALE ELBOW**

**SAE# 120302BA**



Part #	Tube O.D. x Male NPTF	A	B	Approx. Wt. Lbs.	
38-287	1/4" x 1/8"	0.49	0.63	0.08	----
38-288	1/4" x 1/4"	0.60	0.85	0.10	----
38-290	3/8" x 1/4"	0.72	0.86	0.18	----
38-291	3/8" x 3/8"	0.75	0.94	0.20	----
38-292	3/8" x 1/2"	0.78	1.16	0.22	----
38-293*	1/2" x 3/8"	0.82	0.94	0.18	----
38-294	1/2" x 1/2"	0.87	1.16	0.24	----

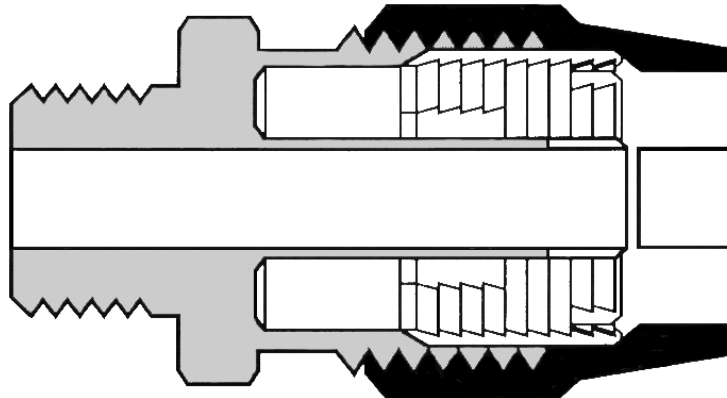
\* Forged

279AB  
1380

Life is based on perception,  
 Perception is based on opinion,  
 Opinion is based on thought,  
 Thought comes from the mind.  
 Change your mind , change your life.

- Author Unknown

## D.O.T. Air Brake - Hose/ Ends



### •Typical Application

Air Brake hose connections.  
Meets SAE & DOT specifications  
(FMVCS 10 GAL)

### •Pressure

Determined by maximum working pressure for hose size.  
Up to 125 psi

### •Material

CA360 Brass.  
Temperature: -40°F to + 120° F ( -40°C to +48°C )

### •Advantages

Can be used for nearly any brake line. Easy to assemble with a good selection of hose end configurations. Brass material offers excellent resistance against corrosion.

### •Tolerance

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

### •Assembly Instructions

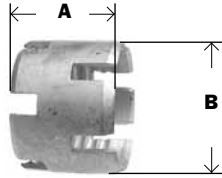
- 1- Slide nut and sleeve onto hose. Make sure bevel edge of sleeve faces out toward fitting.
- 2- Push hose into fitting until it bottoms.
- 3- Screw nut until contact is made with body hex.

NOTE: When reassembling fitting, body and nut should be inspected. Only reuse if in proper condition. Sleeves should never be reused.



**SLEEVE**

#60HC  
3380-A  
0903610  
367



Part #	Hose I.D. Size	A	B	Approx. Wt. Lbs.	
38-300	3/8"	0.69	0.90	0.02	----
38-301	1/2"	0.64	1.03	0.02	----

**NUT**

#61HC  
369  
3380-B  
0903624



Part #	Hose I.D. Size	A	Hex	Approx. Wt. Lbs.	
38-306	3/8"	1.26	1.03	0.04	----
38-307	1/2"	1.20	1.25	0.06	----

**NUT**

#61HCS  
0903613  
3380-D  
31RBSG

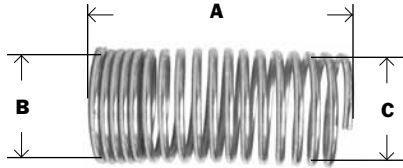


Part #	Hose I.D. Size	Thread	A	Hex	Approx. Wt. Lbs.	
38-312	3/8"	31/32-20	1.25	1.03	0.04	----
38-313	1/2"	1-3/32-20	1.20	1.25	0.06	----

We should be taught not to wait for inspiration to start a thing. Action always generates inspiration. Inspiration seldom generates action.

- Frank Tibolt

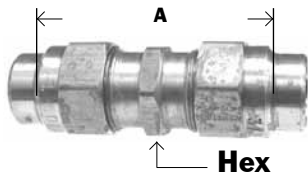
**SPRING**



Part #	Hose I.D.	A	B	C	Approx. Wt. Lbs.	
38-351	3/8"	2.75	0.84	0.78	0.20	----
38-352	1/2"	2.75	1.10	1.10	0.22	----

#60SG      3380-C  
0901045    377

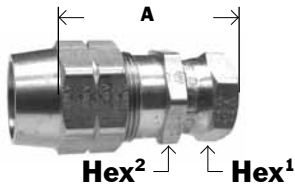
**UNION**



Part #	Hose I.D.	Thread	A	Hex	Approx. Wt. Lbs.	
38-318	3/8"	31/32-30	2.55	0.97	0.32	----
38-319	1/2"	1-1/8-20	2.55	1.12	0.48	----

#62HC      362  
3380B-Y0

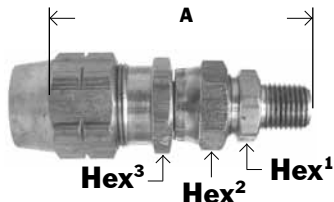
**FEMALE CONNECTOR HOSE**



Part #	Hose I.D. x Female ABS	A	Hex 1	Hex 2	Approx. Wt. Lbs.	
38-357	3/8" x 3/4-20	1.96	0.87	0.97	0.24	----
38-358	1/2" x 7/8-20	2.1	1.06	1.12	0.38	----

#66ABS      3380B-Y7  
66RBSV     386

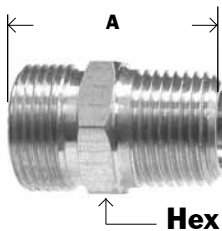
**MALE CONNECTOR**



Part #	Hose I.D. x Male Pipe	A	Hex 1	Hex 2	Hex 3	Approx. Wt. Lbs.	
38-363	3/8" x 1/4"	2.90	0.75	0.87	0.97	0.38	----
38-364	1/2" x 3/8"	2.96	0.87	1.06	1.12	0.46	----

#68ABS      3380B-Y8  
09155      387

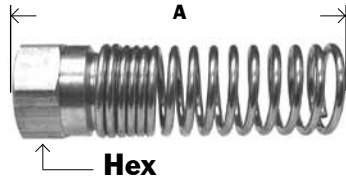
**ADAPTER**



Part #	Male ABS x Male Pipe	ABS Thread	A	Hex	Approx. Wt. Lbs.	
38-369	3/8" x 1/4"	3/4-20	1.14	0.75	0.06	----
38-368	3/8" x 3/8"	3/4-20	1.14	0.75	0.08	----
38-372	3/8" x 1/2"	3/4-20	1.37	0.87	0.12	----
38-370	1/2" x 3/8"	7/8-20	1.18	0.87	0.10	----
38-371	1/2" x 1/2"	7/8-20	1.38	0.87	0.12	----

#68ABS      76RB  
1390      388

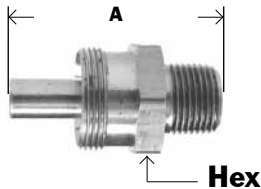
**NUT AND SPRING ASSEMBLY**



Part #	Hose I.D. Size	A	Hex	Approx. Wt. Lbs.	
38-015	3/8"	3.55	1.03	0.18	----
38-016	1/2"	3.50	1.25	0.24	----

379  
67RBSG  
0999999

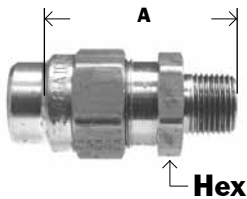
**ADAPTER BODY**



#68B  
W1391Z

Part #	Hose I.D. x Male Pipe	A	Hex	Approx. Wt. Lbs.	
38-324	3/8" x 1/4"	1.93	0.97	0.12	----
38-325	3/8" x 3/8"	1.92	0.97	0.14	----
38-326	3/8" x 1/2"	2.02	1.00	0.20	----
38-327	1/2" x 3/8"	2.07	1.12	0.18	----
38-328	1/2" x 1/2"	2.06	1.12	0.20	----

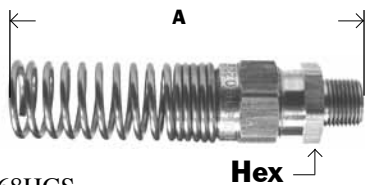
**MALE ADAPTER**



#68HC  
368  
3380B-Y2  
68RB

Part #	Hose I.D. x Male Pipe	A	Hex	Approx. Wt. Lbs.	
38-333	3/8" x 1/4"	1.91	0.97	0.22	----
38-334	3/8" x 3/8"	1.94	0.97	0.24	----
38-335	3/8" x 1/2"	2.12	0.97	0.26	----
38-336	1/2" x 3/8"	2.07	1.12	0.33	----
38-337	1/2" x 1/2"	2.07	1.12	0.36	----

**MALE ADAPTER**



#68HCS  
3380B-Y3  
68RBGS  
378

Part #	Hose I.D. x Male Pipe	A	Hex	Approx. Wt. Lbs.	
38-342	3/8" x 1/4"	4.91	1.00	0.32	----
38-343	3/8" x 3/8"	4.96	1.00	0.34	----
38-344	3/8" x 1/2"	5.53	1.00	0.38	----
38-345	1/2" x 3/8"	4.75	1.12	0.48	----
38-346	1/2" x 1/2"	4.88	1.12	0.52	----

**D.O.T. PUSH-IN TUBE FITTINGS**

Meets D.O.T. FMVSS 571.106 SAE J1131 Air Brake System Requirements

**Benefits for Cost Savings & Engineering Project**

- **Fast assembly:** No tools required. Simply push tubing in. Saves up to 75% of assembly time compared to standard air compression fittings. No loose parts to handle.
- **Fast disconnect:** Hold the collet collar with two fingers and pull out tube. No tools required.
- **Reusable:** Can be connected and disconnected several times.
- **Reliable sealing:** Using recommended tubing, full sealing is guaranteed.
- **Versatility:** Buna N O'ring standard. Viton and others available per request. Secure Tube Retention. Pulling on tubing only serves to tighten the connection.
- **Pre-Applied Teflon®** based pipe sealant on all male pipe threads, saving customer additional labor.
- **Full Flow Design,** provides more flow area than conventional fittings with internal tube supports even in the swivels.

DOT Fittings are constructed with an all brass captive eyelet which allows for maximum flow. The brass captive eyelet with extended length is floating and has a machined top end radius for easy instal-

lation of tubing. All male threads have a pre-applied Teflon® based pipe sealant to provide for easy assembly and leak proof seal.

• **Materials:**

CA360 Brass - Barstock CA377 - Forged  
"O" Ring: Buna - Nitrile (90 Durometer)  
EP (Ethylene Propylene)

• **Working Pressures & Temperature Ranges**

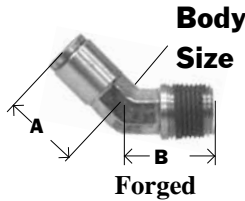
Vacuum to 150 PSI  
-40°F to 200° F ( -40°C to +93°C )

• **Ordering Options**

The following options are **available only by customer request** and may be subject to minimum run quantities for ordering.

- Viton "O" Ring seals
- Metric DQ DOT "One-Push" tube fittings with BSPT threads.
- Manifolds with DQ DOT One Push Cartridges.

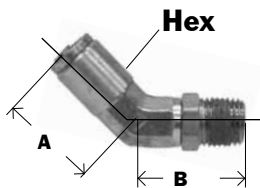
**MALE 45° ELBOW**



AQ54DOT  
179MTNS  
1880  
DQ54DOT

Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
540402	1/4" x 1/8"	0.83	0.89	0.37	0.06	----
540404	1/4" x 1/4"	0.91	0.89	0.37	0.06	----
540602	3/8" x 1/8"	0.75	0.89	0.51	0.08	----
540604	3/8" x 1/4"	0.95	0.98	0.49	0.10	----
540606	3/8" x 3/8"	0.89	0.98	0.50	0.10	----
540608	3/8" x 1/2"	1.14	1.30	0.87	0.15	----
540804	1/2" x 1/4"	1.00	1.24	0.82	0.13	----
540806	1/2" x 3/8"	1.05	1.10	0.62	0.16	----
540808	1/2" x 1/2"	1.20	1.10	0.62	0.18	----
541006	5/8" x 3/8"	1.46	1.02	1.06	0.22	----
541008	5/8" x 1/2"	0.98	0.98	0.72	0.21	----
541208	3/4" x 1/2"	1.36	1.08	0.93	0.28	----
541212	3/4" x 3/4"	1.36	1.08	0.94	0.32	----

**MALE 45° SWIVEL ELBOW**



AQ54DOTS  
179PMT  
1880  
DQ54DOTS

Part #	Tube O.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
540402S	1/4" x 1/8"	0.60	0.72	0.43	0.06	----
540404S	1/4" x 1/4"	1.10	0.89	0.56	0.09	----
540602S	3/8" x 1/8"	1.07	0.98	0.43	0.10	----
540604S	3/8" x 1/4"	1.07	0.98	0.56	0.11	----
540606S	3/8" x 3/8"	1.23	0.97	0.68	0.14	----
540804S	1/2" x 1/4"	1.22	1.12	0.56	0.14	----
540806S	1/2" x 3/8"	1.32	1.10	0.68	0.16	----
540808S	1/2" x 1/2"	1.61	1.10	0.88	0.18	----
541008S	5/8" x 1/2"	1.69	1.23	0.87	0.24	----

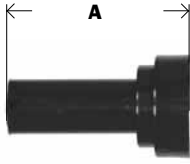
Dimension data can change without notice.  
Please call us when dimensions are critical.

# D.O.T. PUSH-IN

# BRASS FITTINGS

**BRASS**

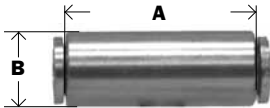
## PLUG



1829  
DQ59DOT  
639PMT

Part #	Tube O.D.	A	Approx. Wt. Lbs.	
595320	5/32"	1.16	0.01	----
590400	1/4"	0.81	0.02	----
590600	3/8"	0.99	0.02	----
590800	1/2"	0.99	0.04	----

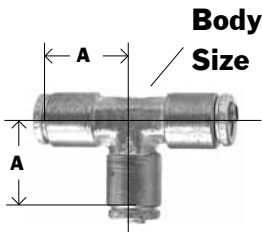
## UNION



AQ62DOT  
62PMT  
1862  
DQ62DOT

Part #	Tube O.D.	A	B	Approx. Wt. Lbs.	
620532	5/32"	1.18	.37	0.06	----
620400	1/4"	1.40	.51	0.08	----
620600	3/8"	1.54	.67	0.14	----
620800	1/2"	1.81	.81	0.19	----
621000	5/8"	1.84	.94	0.30	----
621200	3/4"	2.38	1.18	0.44	----

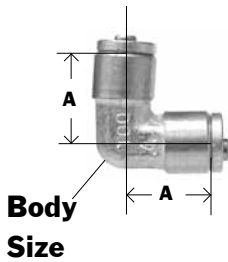
## UNION TEE



AQ64DOT  
164 PMT  
1864  
DQ64DOT

Part #	Tube O.D.	A	Body Size	Approx. Wt. Lbs.	
640400	1/4"	0.73	0.37	0.11	----
640600	3/8"	0.97	0.52	0.22	----
640800	1/2"	1.16	0.62	0.25	----
641200	3/4"	1.34	0.94	0.50	----

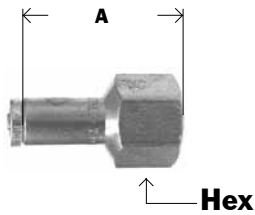
## UNION ELBOW



AQ65DOT  
165 PMT  
1865  
DQ65DOT

Part #	Tube O.D.	A	Body Size	Approx. Wt. Lbs.	
655320	5/32"	0.59	0.29	0.03	----
650400	1/4"	0.83	0.37	0.06	----
650600	3/8"	0.98	0.50	0.10	----
650800	1/2"	1.26	0.62	0.18	----

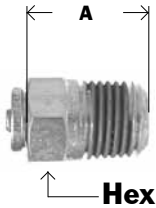
**FEMALE CONNECTOR**



AQ66DOT  
66PMT  
1866  
DQ66DOT

Part #	Tube O.D. x Female NPTF	A	Hex	Approx. Wt. Lbs.	
660402	1/4" x 1/8"	1.23	0.56	0.06	----
660404	1/4" x 1/4"	1.42	0.75	0.10	----
660602	3/8" x 1/8"	1.37	0.68	0.09	----
660604	3/8" x 1/4"	1.30	0.75	0.11	----
660606	3/8" x 3/8"	1.41	0.87	0.14	----
660804	1/2" x 1/4"	1.56	0.81	0.14	----
660806	1/2" x 3/8"	1.51	0.87	0.16	----
660808	1/2" x 1/2"	2.01	0.68	0.25	----

**MALE CONNECTOR**



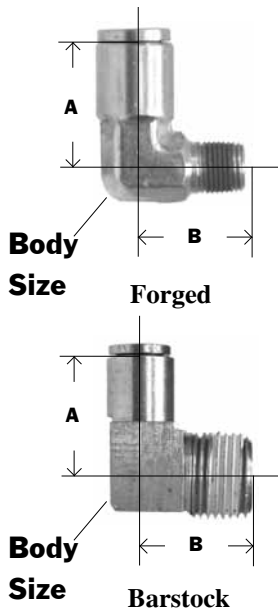
AQ68DOT  
68PM  
1868  
DQ68DOT  
68PMT

Part #	Tube O.D. x Male NPTF	A	Hex	Approx. Wt. Lbs.	
685320	5/32" x 10/32"	0.69	0.37	0.02	----
685321	5/32" x 1/16"	0.67	0.37	0.02	----
685322	5/32" x 1/8"	0.67	0.43	0.02	----
680302	3/16" x 1/8"	1.82	0.50	0.02	----
680402	1/4" x 1/8"	0.94	0.50	0.04	----
680404	1/4" x 1/4"	1.08	0.56	0.05	----
680406	1/4" x 3/8"	1.10	0.68	0.08	----
680602	3/8" x 1/8"	1.22	0.68	0.04	----
680604	3/8" x 1/4"	1.38	0.68	0.08	----
680606	3/8" x 3/8"	1.32	0.68	0.08	----
680608	3/8" x 1/2"	1.02	0.87	0.14	----
680804	1/2" x 1/4"	1.36	0.81	0.11	----
680806	1/2" x 3/8"	1.54	0.87	0.12	----
680808	1/2" x 1/2"	1.62	0.87	0.14	----
681006	5/8" x 3/8"	1.34	.94	0.18	----
681008	5/8" x 1/2"	1.50	.94	0.18	----
681208	3/4" x 1/2"	1.28	1.06	0.20	----
681212	3/4" x 3/4"	1.93	1.18	0.20	----

Those are my principles. If you don't like them I have others.

**- Groucho Marx**

**MALE ELBOW**

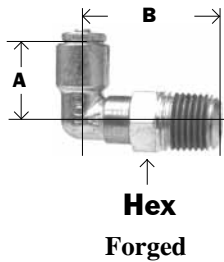


Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
695302*	5/32" x 1/16"	0.65	0.59	0.32	0.03	----
695322*	5/32" x 1/8"	0.65	0.59	0.32	0.03	----
690302	3/16" x 1/8"	0.71	0.75	0.47	0.03	----
690402	1/4" x 1/8"	0.91	0.75	0.37	0.05	----
690404	1/4" x 1/4"	0.77	1.02	0.71	0.06	----
690406	1/4" x 3/8"	1.00	0.98	0.50	0.11	----
690602	3/8" x 1/8"	0.97	0.80	0.49	0.14	----
690604	3/8" x 1/4"	0.96	1.02	0.71	0.14	----
690606	3/8" x 3/8"	1.04	1.10	0.87	0.15	----
690608	3/8" x 1/2"	1.04	1.19	0.62	0.20	----
690804	1/2" x 1/4"	1.15	1.05	0.62	0.22	----
690806	1/2" x 3/8"	1.15	1.05	0.62	0.22	----
690808	1/2" x 1/2"	1.16	1.12	0.87	0.24	----
691006	5/8" x 3/8"	1.34	1.10	0.95	0.30	----
691008	5/8" x 1/2"	1.44	1.42	1.18	0.32	----
691208	3/4" x 1/2"	1.42	1.48	0.94	0.32	----
691212	3/4" x 3/4"	1.22	1.40	0.93	0.34	----

\* Barstock

AQ69DOT  
169 PMTNS  
1869  
DQ69DOT

**MALE SWIVEL ELBOW**



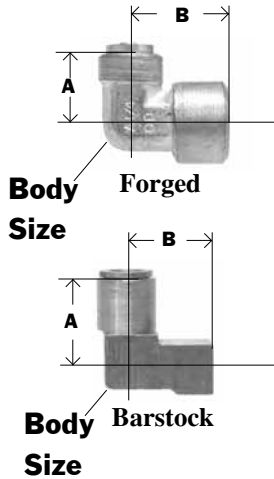
Part #	Tube O.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
690402S	1/4" x 1/8"	0.89	0.88	0.43	0.07	----
690404S	1/4" x 1/4"	0.73	1.12	0.56	0.10	----
690406S	1/4" x 3/8"	0.75	1.25	0.75	0.10	----
690602S	3/8" x 1/8"	0.98	1.08	0.43	0.10	----
690604S	3/8" x 1/4"	0.98	1.14	0.56	0.10	----
690606S	3/8" x 3/8"	0.98	1.19	0.68	0.14	----
690608S	3/8" x 1/2"	0.98	1.52	0.87	0.19	----
690804S	1/2" x 1/4"	1.16	1.26	0.56	0.16	----
690806S	1/2" x 3/8"	1.16	1.34	0.68	0.18	----
690808S	1/2" x 1/2"	1.16	1.61	0.62	0.26	----
691006S	5/8" x 3/8"	1.23	1.41	0.68	0.28	----
691008S	5/8" x 1/2"	1.23	1.71	0.87	0.30	----
691208S	3/4" x 1/2"	1.42	1.77	0.87	0.50	----
691212S	3/4" x 3/4"	1.22	2.30	1.06	0.56	----

AQ69DOTS  
169PMT  
1869  
DQ69DOTS

Laziness is nothing more than the habit of resting before you get tired.

- Jules Renard

**FEMALE ELBOW**

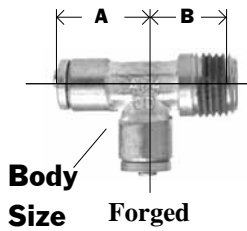


Part #	Tube O.D. x Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	
700402	1/4" x 1/8"	0.92	0.83	0.37	0.06	----
700404	1/4" x 1/4"	1.02	1.02	0.50	0.10	----
700406	1/4" x 3/8"	1.11	0.98	0.62	0.16	----
700602	3/8" x 1/8"	0.96	0.67	0.71	0.15	----
700604	3/8" x 1/4"	0.96	0.94	0.48	0.12	----
700606	3/8" x 3/8"	0.98	0.91	0.68	0.17	----
700804*	1/2" x 1/4"	1.15	1.11	0.82	0.22	----
700806*	1/2" x 3/8"	1.12	1.11	0.82	0.26	----
700808	1/2" x 1/2"	1.05	1.22	1.06	0.30	----

\* Barstock

AQ70DOTS  
1870  
DQ70DOTS  
170PMTNS

**MALE RUN TEE**



Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
710402	1/4" x 1/8"	0.74	0.92	0.37	0.06	----
710404	1/4" x 1/4"	0.92	1.24	0.37	0.08	----
710604	3/8" x 1/4"	1.00	1.14	0.50	0.20	----
710606	3/8" x 3/8"	0.98	0.98	0.49	0.12	----
710608	3/8" x 1/2"	1.12	1.42	0.94	0.14	----
710806	1/2" x 3/8"	1.14	1.05	0.62	0.28	----

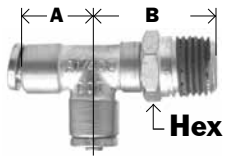
AQ71DOT  
171PMTNS  
1871  
DQ71DOT

Originality is the fine art of remembering what you hear but forgetting where you heard it.

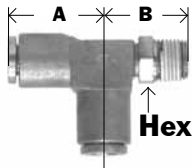
- Laurence J. Peter



**MALE SWIVEL RUN TEE**



**Forged**



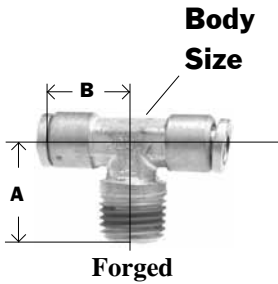
**Barstock**

AQ71DOTS  
171PMT  
1871  
DQ71DOTS

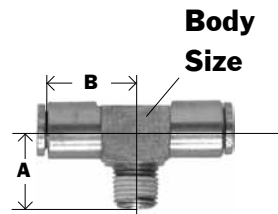
Part #	Tube O.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
710402S	1/4" x 1/8"	0.92	0.82	0.43	0.10	----
710404S	1/4" x 1/4"	0.92	1.24	0.56	0.11	----
710604S	3/8" x 1/4"	1.00	1.14	0.56	0.15	----
710606S	3/8" x 3/8"	0.98	1.18	0.68	0.14	----
710804S*	1/2" x 1/4"	1.18	1.22	0.56	0.24	----
710806S	1/2" x 3/8"	1.14	1.31	0.68	0.24	----
710808S	1/2" x 1/2"	1.14	1.61	0.62	0.30	----

\* Barstock

**MALE BRANCH TEE**



**Forged**



**Barstock**

AQ72DOT  
172PMTNS  
1872  
DQ72DOT

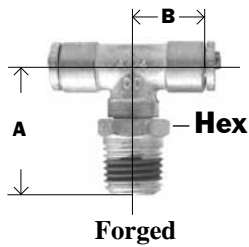
Part #	Tube O.D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
720302*	3/16" x 1/8"	0.64	0.75	0.41	0.07	----
720402	1/4" x 1/8"	0.74	0.92	0.37	0.10	----
720404	1/4" x 1/4"	0.92	0.92	0.43	0.10	----
720604	3/8" x 1/4"	1.00	0.99	0.50	0.20	----
720606	3/8" x 3/8"	0.98	0.99	0.50	0.10	----
720804	1/2" x 1/4"	1.14	1.12	0.87	0.20	----
720806	1/2" x 3/8"	1.05	1.16	0.62	0.24	----
720808	1/2" x 1/2"	1.42	1.24	0.94	0.32	----

\* Barstock

Most conversations are simply monologues delivered in the presence of witnesses.

- Margaret Millar

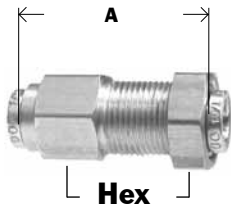
**MALE SWIVEL BRANCH TEE**



Part #	Tube O.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
720402S	1/4" x 1/8"	1.04	0.92	0.43	0.12	----
720404S	1/4" x 1/4"	1.16	0.92	0.56	0.14	----
720602S	3/8" x 1/8"	1.06	0.96	0.43	0.19	----
720604S	3/8" x 1/4"	1.16	0.99	0.56	0.20	----
720606S	3/8" x 3/8"	1.21	0.98	0.68	0.18	----
720804S	1/2" x 1/4"	1.26	1.16	0.56	0.30	----
720806S	1/2" x 3/8"	1.34	1.16	0.68	0.34	----
720808S	1/2" x 1/2"	1.64	1.16	0.87	0.22	----

AQ72DOTS  
172PMT  
1872  
DQ72DOTS

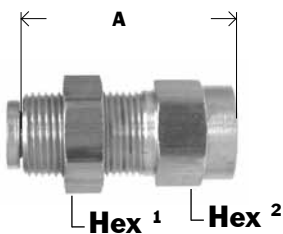
**BULKHEAD UNION**



Part #	Tube O.D.	A	Hex	Approx. Wt. Lbs.	
820400	1/4"	1.69	0.62	0.16	----
820600	3/8"	1.55	1.06	0.21	----
820800	1/2"	1.82	1.18	0.14	----
821000	5/8"	1.85	1.25	0.30	----

AQ82DOT  
62PMTBH  
1874  
DQ82DOT

**FEMALE BULKHEAD UNION**



Part #	Tube O.D. x Female NPTF	A	Hex 1	Hex 2	Approx. Wt. Lbs.	
860402	1/4" x 1/8"	1.30	0.68	0.68	0.08	----
860404	1/4" x 1/4"	1.53	0.68	0.75	0.10	----
860604	3/8" x 1/4"	2.10	1.12	0.94	0.14	----
860606	3/8" x 3/8"	1.84	0.81	0.87	0.16	----
860808	1/2" x 1/2"	2.54	1.31	1.06	0.32	----

AQ86DOT  
1873  
DQ86DOT  
66PMTBH

## AIR BRAKE - ACCESSORIES

## BRASS FITTINGS

BRASS SPLIT SLEEVE D.O.T.  
FITTINGS (5/32 O.D.)

## COLLET



Part #	Tube O.D.	
38-711	5/32"	----

## NUT



Part #	Tube O.D.	
38-732	5/32"	----

## DOUBLE END UNION



Part #	Tube O.D.	
38-761	5/32"	----

## CONNECTOR



Part #	Tube O.D.	Pipe Thread	
38-769	5/32"	1/16	----
38-770	5/32"	1/8	----

## ELBOW



Part #	Tube	Pipe Thread	
38-718	5/32"	1/8	----

## AIR BRAKE TUBING

- SAE J844, Type 3 A & B & DOT FMVSS 106
- Nylon inner tube with open ply nylon fiber reinforcement and nylon cover.
- 40° F to +200° F temperature range.
- 150 P.S.I. max. working pressure.
- More colors available.



Part #	Type A	Color	Length	
38-950	1/8"	Black	100'	----
38-952	1/4"	Black	100'	----
38-952R	1/4"	Red	100'	----
38-952U	1/4"	Blue	100'	----
38-952-2	1/4"	Black	500'	----

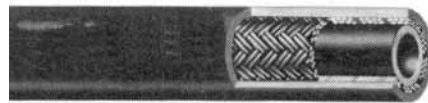
## AIR BRAKE TUBING

Part #	Type B	Color	Length	
38-960	3/8"	Black	100'	----
38-960U	3/8"	Blue	100'	----
38-960Y	3/8"	Yellow	100'	----
38-960B5	3/8"	Black	500'	----
38-965	1/2"	Black	100'	----
38-965R	1/2"	Red	100'	----
38-965B5	1/2"	Black	500'	----
38-970	5/8"	Black	100'	----
38-975	3/4"	Black	100'	----

NOTE: The Synflex, Parker and Eaton tubing must be torqued at 47 in. pounds.

Any other 5/32 DOT tubing used, tubing or fitting manufacturer should be contacted for proper torque requirements.

## FUEL LINE AND VAPOR EMISSION



- SAE 30R7
- Nitrile tube w/ spiral synthetic cord, hypalon cover.
- 50 p.s.i. working pressure. 1/2 -35 PSI
- 40° F to + 257° F temperature range.
- Low pressure/ high temperature fuel for cars, light trucks, and small engines.
- Meets SAE J1402

Part #	ID	OD	Length	
38-920	3/16	13/32	25'	----
38-926	5/16	9/16	25'	----
38-923	1/4	1/2	25'	----
38-927	3/8	5/8	50'	----



**STEEL BRAKE LINES FOR DOMESTIC VEHICLES**

Length	Catalog Number 3/16" O.D.		Catalog Number 1/4" O.D.		Catalog Number 5/16" O.D.		Catalog Number 3/8" O.D.	
6"	38-930	----						
8"	38-931	----						
10"	38-932	----						
12"	38-933	----					38-985	----
20"	38-934	----					38-986	----
30"	38-935	----	38-943	----				
40"	38-936	----	38-944	----			38-988	----
51"	38-937	----	38-945	----	38-984	----	38-989	----
60"	38-938	----	38-946	----			38-990	----
72"	38-939	----						

NOTE: 3/16" and 1/4" tube assemblies have one long and one short inverted flare nut.

**AIR BRAKE ACCESSORIES  
GLADHAND COUPLINGS**

- Die Cast Aluminum Body
- Conforms to SAE J318
- Connects to 1/2" pipe



**SERVICE (Signal) Blue**  
connects only to service

<b>Part #</b>		
38-712		----

**EMERGENCY (Supply Line) Red**

<b>Part #</b>	connects only to emergency	
38-714		----

**UNIVERSAL - Gold**  
connects to both styles

<b>Part #</b>		
38-716		----

**GLADHAND SEAL**



<b>Part #</b>	Full Face	
38-720		----

**HEX BALL FOOT CHUCK**



<b>Part #</b>	1/4" Female Pipe	
46-600		----

**BALL FOOT CHUCK WITH  
1/4 I.D. HOSE BARB**



<b>Part #</b>	1/4" I.D. Hex	
46-607		----

**DUAL FOOT CHUCKS**

6999		99941
693		50-065
108		6569
DFG-1		

Standard straight-on chuck with 30° reverse angle chuck.

<b>Part #</b>	1/4" NPT Female Thread	
320-000		----

**ANGLE CHUCK**



		690
		6172

For inner dual wheels with tilted valves.  
Has 6" extension and 1/4" NPT female thread.

<b>Part #</b>	1/4" NPT Female Thread	
320-005		----

**AIR BRAKE - ACCESSORIES**

**BRASS FITTINGS**

**AIR BRAKE HOSES**

**AIR BRAKE HOSE**



- Spiral synthetic cord reinforcement with neoprene cover.
- 40° F to +200° F temperature range.
- Max operating pressure 255 psi
- Max burst pressure 900 psi
- Meets SAE J1402

Part #	ID	OD	Length	
38-910	3/8	3/4	50'	----
38-915	1/2	7/8	50'	----

**REMOTE CONTROL DRAIN VALVES**

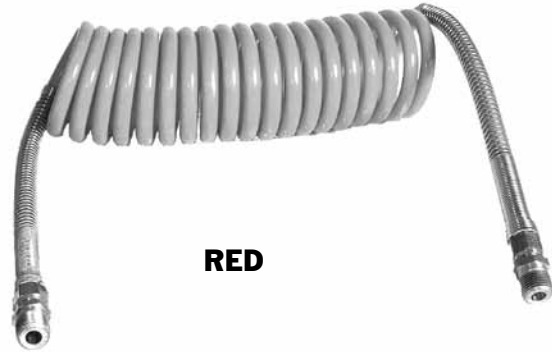
**REMOTE CONTROL DRAIN VALVES**



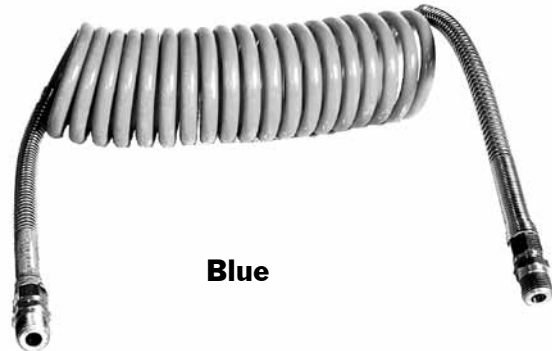
- Brass Body and stainless steel spring.
- Steel cable, nylon coated, certified to 200lbs pull test.
- Low profile to minimize accidental hits and damages.
- Pipe thread 1/4" NPTF.

Part #	Length	
46-492	Standard 48"	----
46-493	Standard 60"	----

**COILED AIRBRAKE TUBE ASSEMBLIES**



**RED**



**Blue**

- Conforms to SAE J844 Type B and SAE J1131.
- Conforms to DOT FMVSS 571. 106.
- Maximum Working Pressure 150 PSI,
- Minimum Burst 950 PSI.
- Temperature Range -40° F to 200° F.
- Brass end with spring guards and 1/2" male pipe connectors.
- Spring guards zinc plated for maximum corrosion resistance.
- Color coding, red for emergency and blue for service, provides you with error free installation.
- Preassembled for immediate installation.
- 1/2" O.D. with 1/2" fitting.

**Each contains 1 red, 1 blue.**

Part #	Working Length	Pigtail Length	
38-700	12'	6"	----
38-705	12'	12"	----
38-710	15'	12"	----

You don't stop laughing because you grow old.  
You grow old because you stop laughing.

- Michael Pritchard

**BRASS FUEL HOSE FITTINGS**

**Typical Application:** Low pressure air, fuel and oil applications. Generally used for automotive, light truck, and small engine fuel lines. Use with fuel hose SAE 30R7 & SAE 30R9.

**Advantages:** Easy to assemble, just push the fitting into the hose & clamp. Good selection of configurations at reasonable cost.

**MALE CONNECTOR**



**HOSE BARB X MALE PIPE**

Part #	Hose ID	Size	Ind #	
38-800	3/16	1/8	1541	----
38-802	1/4	1/8	1537	----
32-377	1/4	1/4	1581	----
38-806	5/16	1/8	1551	----
38-808	5/16	1/4	1555	----
38-810	3/8	1/8	1565	----
32-381	3/8	1/4	1564	----
32-382	3/8	3/8	1566	----
32-383	1/2	3/8		----
32-384	1/2	1/2		----
32-182	5/8	3/8	1411	----
32-385	5/8	1/2	1431	----
32-387	3/4	1/2	1430	----
32-388	3/4	3/4		----
32-185	1	3/4		----

**INVERTED FLARE MALE CONNECTOR**



**HOSE BARB X INVERTED FLARE**

Part #	Hose ID	Inv. Flare	Ind #	
38-828	5/16	1/4	1598	----
38-830	5/16	5/16	1560	----
38-832	5/16	3/8	1561	----
38-834	3/8	5/16	1568	----
38-836	3/8	3/8	1570	----

*See Hose Clamps starting on page 237*

**90° MALE ELBOW**



**HOSE BARB X MALE PIPE**

Part #	Hose ID	Size	Ind #	
38-860	1/4	1/8	1582	----
38-862	5/16	1/8	1556	----
38-864	5/16	1/4	1557	----
38-866	3/8	1/8	1572	----
38-868	3/8	1/4	1571	----
32-186	3/8	3/8		----
32-187	1/2	3/8		----
32-191	1/2	1/2		----
32-188	5/8	3/8		----
32-189	5/8	1/2		----
32-190	3/4	1/2		----

**INVERTED FLARE MALE SWIVEL 90° ELBOW**



**HOSE BARB X TUBE O.D.**

Part #	Hose ID	Tube	Ind #	
38-873	5/16	5/16	1405	----
38-874	3/8	3/8	1407	----

**LONG STREET ELLS**



Part #	Size	Length	
28-440	1/8	1-3/16"	----
28-441	1/8	1-7/16"	----
28-442	1/8	1-11/16"	----
28-443	1/8	1-7/8"	----
28-328	1/4	1-3/16"	----
28-329	1/4	1-7/16"	----
28-330	1/4	1-11/16"	----
28-332	1/4	2-1/4"	----
28-333	3/8	1-3/4"	----

**EXTENSION ADAPTERS D.O.T.**



Part #	Size	Length	
28-335	1/8	1-1/4"	----
28-336	1/8	1-3/4"	----
28-338	1/4	1-9/16"	----
28-339	1/4	1-13/16"	----
28-340	1/4	2-1/16"	----

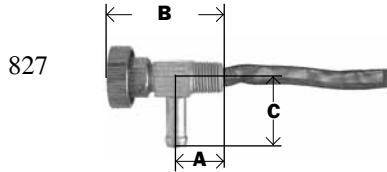
## DRAIN COCKS

## BRASS FITTINGS

## DRAIN COCKS

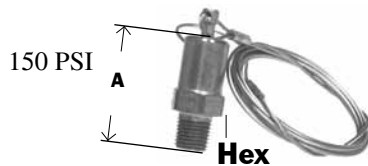
- For use with low pressure air, water and fluids.
- Designed for a working pressure of 150 PSI.
- Hand-tightening provides a metal-to-metal seal.
- Not intended for natural gas, LPG, nuclear or aircraft applications.

## GASOLINE SHUT OFF w/ SCREEN FILTER



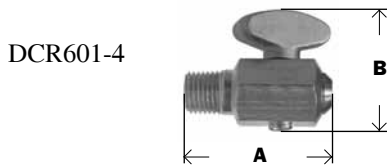
Part #	Barb X Male Pipe	A	B	C	Approx. Wt. Lbs.	
46-064	1/4" x 1/8"	0.55	1.34	0.66	0.06	----

## AIR TANK DRAIN VALVE - Self Sealing w/ 5ft. remote cable



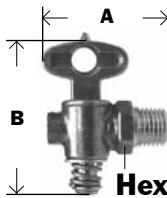
Part #	Male Pipe	A	Hex	Approx. Wt. Lbs.	
46-065	1/4"	1.74	0.75	0.16	----

## DRAIN COCK 150 PSI - Trunk Air Tank



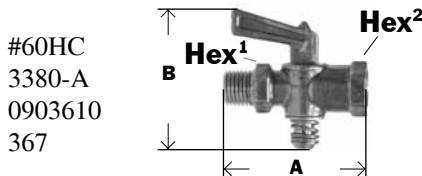
Part #	Male Pipe	A	B	Approx. Wt. Lbs.	
46-066	1/4"	1.73	1.41	0.22	----

## TRUCK DRAIN - 125 P.S.I.G



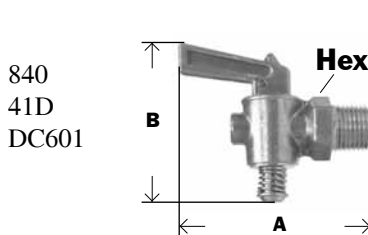
Part #	Male Pipe	Industry Number	A	B	Hex	Approx. Wt. Lbs.	
46-067	1/8"		1.53	1.95	0.62	0.14	----
46-068	1/4"	W15310	1.53	1.95	0.62	0.18	----

## SHUT OFF - 150 P.S.I max.



Part #	Male Pipe x Female Pipe	Industry Number	A	B	Hex 1	Hex 2	Approx. Wt. Lbs.	
46-069	1/4"	W20332	1.96	1.96	0.75	0.62	0.20	----

## LEVER HANDLE



Part #	Male Pipe	Industry Number	A	B	Hex	Approx. Wt. Lbs.	
46-070	1/8"	M-41-P	1.99	1.80	0.62	0.04	----
46-071	1/4"	M-42-P	2.06	1.81	0.62	0.06	----
46-072	3/8"	M-43-P	2.30	2.29	0.81	0.08	----
46-073	1/2"	M-44-P	3.00	2.50	0.87	0.16	----

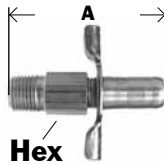
## BRASS FITTINGS

## DRAIN COCKS

BRASS

### INTERNAL SEAT

DC602  
808  
400A  
1800A



Part #	Male Pipe	Industry Number	A	Hex	Approx. Wt. Lbs.	
46-079	1/8"	6783	1.63	0.40	0.02	----

### INTERNAL SEAT

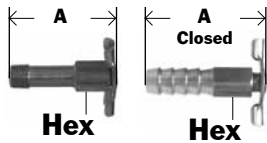
HB - 5/16  
803  
305A



Part #	Male Pipe	Industry Number	A	Hex	Approx. Wt. Lbs.	
46-074	1/8"	130	0.92	0.40	0.04	----
46-075	1/4"	140	0.94	0.56	0.06	----
46-077	3/8"	230	1.34	0.68	0.08	----

### LONG INTERNAL SEAT

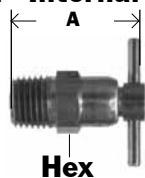
809



Part #	Size	Ind #	A	Hex	Approx. Wt. Lbs.	
46-078	1/8" MIP	185	1.72	0.43	0.02	----
46-076	3/8" Hose I.D.		1.65	0.43	0.02	----

### TEE HANDLE - Internal Seat

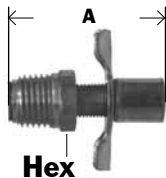
DC603  
802



Part #	Male Pipe	Industry Number	A	Hex	Approx. Wt. Lbs.	
46-080	1/8"	M-200-P	1.22	0.50	0.04	----
46-081	1/4"	M-201-P	1.31	0.56	0.06	----
46-082	3/8"	M-202-P	1.69	0.68	0.12	----

### EXTERNAL SEAT w/ SPOUT

200A  
239  
DC606  
807

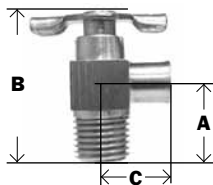


Part #	Male Pipe	Industry Number	A	Hex	Approx. Wt. Lbs.	
46-084*	1/4"	6788	1.56	0.56	0.02	----

\* Replaces GM # 511771 & Chrysler #836015

### BIBB NEEDLE VALVE - .38 Hose ID

804  
DC607  
2019  
201DH



Part #	Male Pipe	Industry Number	A	B	C	Approx. Wt. Lbs.	
46-088	1/8"	150	0.55	1.19	0.38	0.04	----
46-089	1/4"	120	0.82	1.76	0.66	0.06	----
46-089A	1/4"	6660	0.55	1.34	0.66	0.06	----

### RADIATOR TYPE - External Seat

320D  
240  
DC604  
801



Part #	Male Pipe	Industry Number	A	Hex	Approx. Wt. Lbs.	
46-085	1/8"	M-320-P	0.90	0.43	0.02	----
46-086	1/4"	M-321-P	1.00	0.56	0.04	----
46-087	3/8"	M-322-P	1.25	0.68	0.08	----
46-083	1/2"		1.52	0.87	0.12	----



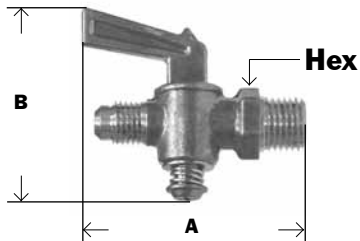
## SHUT-OFF COCKS

## BRASS FITTINGS

• Designed for automotive or industrial use. **AGA** approved shut-off cocks approved for **LPG** and natural gas applications. Lubricant may wash out at higher pressures or with some exotic fluids.

- Designed for working pressure of 30 PSI.
- Forged brass bodies and brass handles.
- Instantaneous off-on operation with 360° rotation.

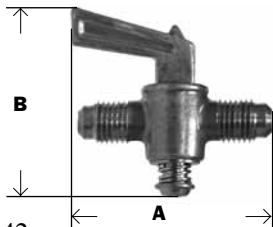
## FLARE X MALE PIPE



V402F  
848

Part #	Male Flare X Male Pipe	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-100	1/4" x 1/8"	27SAE	2.16	1.88	0.50	0.14	----
46-101	1/4" x 1/4"	227SAE	2.19	1.84	0.62	0.16	----
46-102	5/16" x 1/8"	29SAE	2.06	1.88	0.50	0.14	----
46-103	5/16" x 1/4"	229SAE	2.12	1.82	0.69	0.16	----
46-104	3/8" x 1/4"	57SAE	2.27	1.84	0.62	0.17	----
46-107	1/2" x 3/8"	67SAE	2.36	2.27	0.82	0.20	----

## FLARE X FLARE

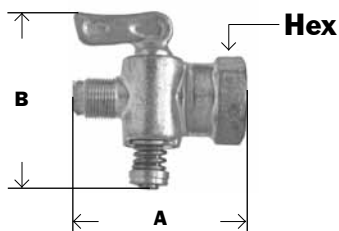


842  
V203F  
136C

Part #	Male Flare X Male Flare	Ind. #	A	B	Approx. Wt. Lbs.	
46-115	1/4"	28SAE	1.94	1.87	0.13	----
46-116	5/16"	30SAE	2.00	1.90	0.16	----
46-117	3/8"	58SAE	2.20	1.83	0.18	----
46-118	1/2"	68SAE	2.50	2.31	0.50	----
46-119	5/8"	1010SAE	3.05	2.59	0.70	----

\* Please request AGA valves

## FLARE X FEMALE PIPE



138C  
2046

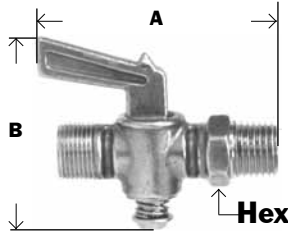
Part #	Male Flare X Female Pipe	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-127	3/8" x 3/8"	163SAE	2.28	2.38	1.03	0.40	----
46-125	3/8" x 1/2"	161SAE	2.45	2.31	1.03	0.32	----
46-126*	3/8" x 1/2"	161SAE	2.26	2.32	1.03	0.28	----
46-128	1/2" x 1/2"	164SAE	2.52	2.19	1.03	0.34	----
46-123	5/8" x 1/2"	164SAE	2.61	2.12	1.25	0.54	----

\* Heater Valve

Dimension data can change without notice.  
Please call us when dimensions are critical.

**COMPRESSION X MALE PIPE**

\* See pg. 71 & 72 to order nut and sleeve separately.

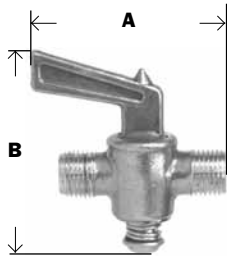


868 133C  
V304C VC206  
2068

Part #	Comp X Male Pipe	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-130	1/4" x 1/8"	27-C	1.87	1.81	0.51	0.14	----
46-131	1/4" x 1/4"	227-C	2.05	1.86	0.62	0.15	----
46-132	5/16" x 1/8"	29-C	2.05	1.90	0.50	0.16	----
46-134	3/8" x 1/4"	57-C	2.05	1.83	0.62	0.15	----

**COMPRESSION X COMPRESSION**

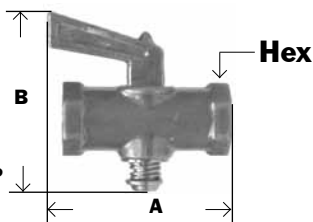
\* See pg. 71 & 72 to order nut and sleeve separately.



V3030F  
2062  
134C

Part #	Comp X Comp	Ind. #	A	B	Approx. Wt. Lbs.	
46-140	1/4"	28-C	1.82	1.84	0.12	----
46-141	5/16"	30-C	1.84	1.88	0.14	----
46-142	3/8"	58-C	1.87	1.80	0.14	----
46-143	1/2"	68-C	2.21	2.32	0.22	----

**FEMALE X FEMALE PIPE**

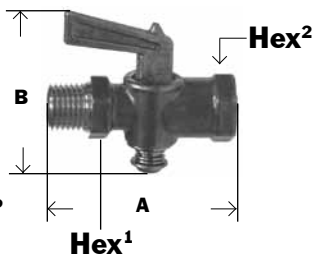


V403P  
132C  
875

Part #	Female Pipe X Female Pipe	A	B	Hex	Approx. Wt. Lbs.	
46-151	1/8"	1.77	1.79	0.56	0.12	----
46-152	1/4"	2.28	1.82	0.69	0.20	----
46-152T*	1/4"	2.28	2.00	0.68	0.20	----
46-153	3/8"	2.44	2.28	0.81	0.30	----

\* 150 PSI

**MALE PIPE X FEMALE**

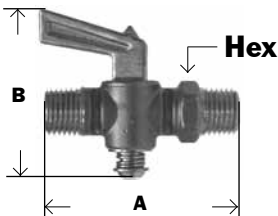


880  
V402P  
130C

Part #	Male Pipe X Female Pipe	Ind. #	A	B	Hex 1	Hex 2	Approx. Wt. Lbs.	
46-160	1/8"	48-P	2.03	1.84	0.50	0.56	0.14	----
46-161	1/4"	49-P	2.26	1.84	0.69	0.69	0.18	----
46-161T*	1/4"		2.26	1.98	0.69	0.69	0.20	----
46-162	3/8"	50-P	2.33	2.28	0.82	0.82	0.28	----

\* 150 PSI

**MALE PIPE X MALE PIPE**



1V401P  
890

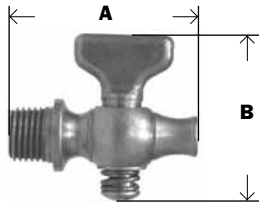
Part #	Male Pipe X Male Pipe	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-165	1/8"	76-P	2.09	1.77	0.50	0.12	----
46-166	1/4"	77-P	2.22	1.84	0.70	0.17	----
46-166T*	1/4"		2.23	2.00	0.68	0.18	----
46-167	3/8"	78-P	2.43	2.24	0.82	0.22	----

\* 150 PSI

- For use on low pressure air systems.
- Designed for working pressure of 80 PSI at moderate temperatures.
- Spring-key type cocks of all brass construction with stainless steel springs.
- Machine finish is standard. Polished or plated finish available at extra cost.

**MIP X BIBB**

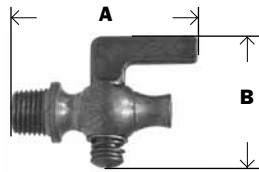
- tee handle
- no hex



Part #	MIP x BIBB	Ind. #	A	B	Approx. Wt. Lbs.	
46-300	1/8"	6	1.53	1.55	0.12	----
46-301	1/4"	7	1.61	1.54	0.14	----

**MIP X BIBB**

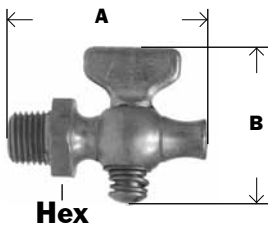
- lever handle
- no hex



Part #	MIP x BIBB	Ind. #	A	B	Approx. Wt. Lbs.	
46-305	1/8"	12	2.01	1.71	0.14	----
46-306	1/4"	13	2.09	1.66	0.14	----

**MIP X BIBB**

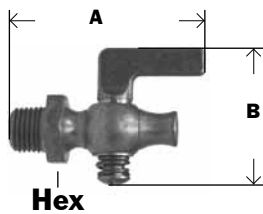
- tee handle
- hex



Part #	MIP x BIBB	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-310	1/8"	63	1.64	1.51	0.56	0.14	----
46-311	1/4"	64	1.69	1.54	0.62	0.14	----
46-312	3/8"	8	1.75	1.48	0.75	0.17	----

**MIP X BIBB**

- lever handle
- hex

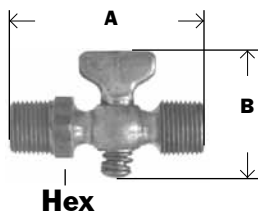


Part #	MIP x BIBB	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-315	1/8"	65	2.11	1.71	0.62	0.14	----
46-316	1/4"	66	2.16	1.71	0.62	0.16	----
46-317	3/8"	14	2.26	1.71	0.75	0.18	----
46-318	1/2"	15	2.32	1.46	0.87	0.26	----

Dimension data can change without notice. Please call us when dimensions are critical.

**MIP X MIP**

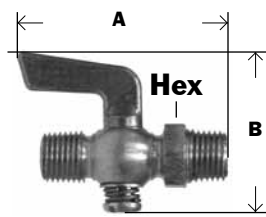
- tee handle
- hex



Part #	MIP X MIP	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-320	1/8"	18	1.81	1.51	0.75	0.14	----
46-321	1/4"	19	1.92	1.55	0.62	0.16	----
46-322	3/8"	20	2.34	1.55	0.75	0.19	----
46-323	1/2"	21	2.18	1.50	0.87	0.26	----

**MIP X MIP**

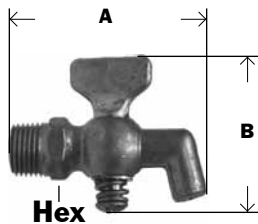
- lever handle
- hex



Part #	MIP X MIP	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-324	1/8"	22	2.09	1.69	0.56	0.14	----
46-325	1/4"	23	2.18	1.69	0.62	0.16	----
46-326	3/8"	24	2.26	1.72	0.75	0.20	----
46-327	1/2"	25	2.57	1.81	0.91	0.36	----

**MIP X BIBB NOSE**

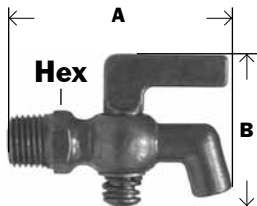
- tee handle
- hex



Part #	MIP X BIBB NOSE	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-330	1/8"	26	2.18	1.75	0.56	0.14	----
46-331	1/4"	27	2.11	1.57	0.56	0.16	----

**MIP X BIBB NOSE**

- lever handle
- hex



Part #	MIP X BIBB NOSE	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-335	1/8"	29	2.25	1.68	0.56	0.14	----
46-336	1/4"	30	2.20	1.67	0.56	0.17	----
46-337	3/8"	31	2.25	1.72	0.87	0.20	----
46-338	1/2"	32	2.31	1.71	0.87	0.22	----

What the world needs is more geniuses with humility, there are so few of us left.

- Oscar Levant

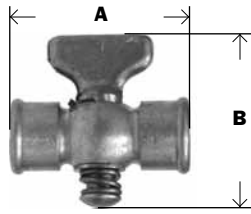
# BRASS AIR COCKS

# BRASS FITTINGS

BRASS

## FIP X FIP

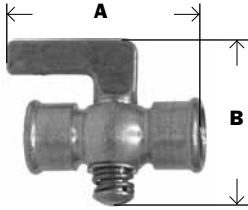
- tee handle
- no hex



Part #	FIP X FIP	Ind. #	A	B	Approx. Wt. Lbs.	
46-340	1/8"	37	1.62	1.50	0.14	----
46-341	1/4"	38	1.93	1.56	0.16	----
46-342	3/8"	39	2.00	1.55	0.20	----

## FIP X FIP

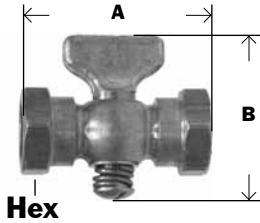
- lever handle
- no hex



Part #	FIP X FIP	Ind. #	A	B	Approx. Wt. Lbs.	
46-345	1/8"	43	1.94	1.68	0.14	----
46-346	1/4"	44	2.10	1.71	0.16	----
46-347	3/8"	45	2.14	1.69	0.20	----

## FIP X FIP

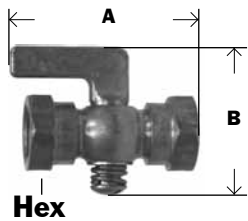
- tee handle
- hex



Part #	FIP X FIP	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-350	1/8"	55	1.62	1.54	0.75	0.17	----
46-351	1/4"	56	1.94	1.55	0.75	0.18	----
46-352	3/8"	57	1.99	1.58	0.81	0.20	----

## FIP X FIP

- lever handle
- hex



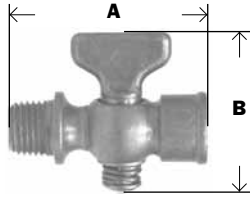
Part #	FIP X FIP	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-355	1/8"	58	1.97	1.70	0.56	0.15	----
46-356	1/4"	59	2.10	1.71	0.75	0.18	----
46-357	3/8"	60	2.10	1.69	0.81	0.20	----
46-358	1/2"	60A	2.50	2.02	1.00	0.36	----

Wise men talk because they have something to say; fools, because they have to say something.

- Plato

**MIP X FIP**

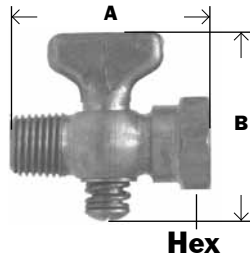
- tee handle
- no hex



Part #	MIP X FIP	Ind. #	A	B	Approx. Wt. Lbs.	
46-360	1/8"	40	1.70	1.55	0.14	----
46-361	1/4"	41	1.94	1.55	0.16	----
46-362	3/8"	42	2.06	1.50	0.20	----

**MIP X FIP**

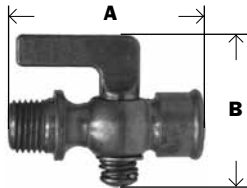
- tee handle
- hex



Part #	MIP X FIP	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-370	1/8"	49	1.81	1.55	0.56	0.14	----
46-371	1/4"	50	2.06	1.55	0.75	0.20	----
46-372	3/8"	51	2.12	1.53	0.81	0.22	----
46-373	1/2"	51A	2.13	1.62	1.00	0.30	----

**MIP X FIP**

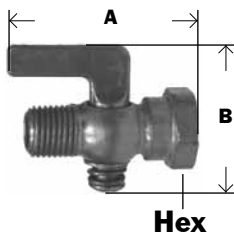
- lever handle
- no hex



Part #	MIP X FIP	Ind. #	A	B	Approx. Wt. Lbs.	
46-365	1/8"	46	1.94	1.72	0.14	----
46-366	1/4"	47	2.10	1.65	0.16	----
46-367	3/8"	48	2.20	1.81	0.24	----
46-368	1/2"	48A	2.50	1.95	0.42	----

**MIP X FIP**

- lever handle
- hex



Part #	MIP X FIP	Ind. #	A	B	Hex	Approx. Wt. Lbs.	
46-375	1/8"	52	1.93	1.69	0.56	0.16	----
46-376	1/4"	53	2.06	1.76	0.75	0.20	----
46-377	3/8"	54	2.13	1.71	0.81	0.22	----
46-378	1/2"	54A	2.65	1.96	1.00	0.28	----

Dimension data can change without notice.  
Please call us when dimensions are critical.

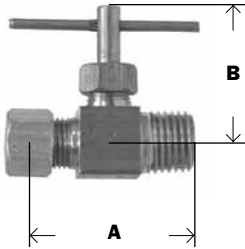
**NEEDLE VALVES**

Made with either pin handle or pressed on handle. Please specify if you have a preference.

- Used on instrumentation, hydraulic, and pneumatic systems.
- Designed for a maximum working pressure of 150 PSI.

- Provided with steel handles and metal-to-metal seats with fine-thread screwdown.
- Not designed for natural gas, LPG, nuclear or aircraft applications.
- Always install with pressure against the seat.

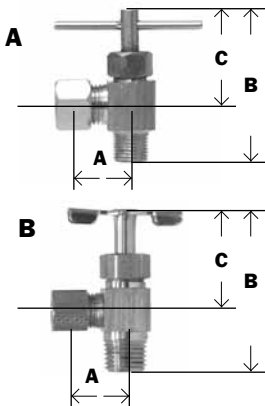
**COMP X MALE PIPE**



NV106C 820  
2205 3068

Part #	Comp X Male Pipe	Ind. #	A	B	Approx. Wt. Lbs.	
46-001	3/16" x 1/8"	M-133-C	1.16	0.88	0.06	----
46-002	1/4" x 1/8"	M-101-C	1.29	1.12	0.07	----
46-002X	Heavy Pattern	M-101-C	1.19	0.88	0.09	----
46-003	1/4" x 1/4"	M-101-C	1.27	1.14	0.10	----
46-004	5/16" x 1/8"	M-102-C	1.50	1.25	0.14	----
46-005	3/8" x 1/4"	M-143-C	1.53	1.22	0.18	----

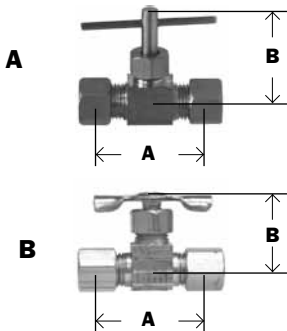
**COMP X MALE PIPE-ANGLE**



NV104C 821  
2203 3069

Part #	Comp X Male Pipe	Handle	Ind. #	A	B	C	Approx. Wt. Lbs.	
46-010	3/16" x 1/8"	B	M-33-C	0.50	1.50	0.82	0.07	----
46-011	1/4" x 1/8"	A	M-103-C	0.56	1.48	0.93	0.08	----
46-011X	Heavy Pattern	B	M-103-C	0.53	1.53	0.83	0.08	----
46-012	1/4" x 1/4"	B	M-104-C	0.62	1.67	0.90	0.13	----
46-013	5/16" x 1/8"	B	M-104-C	0.63	1.63	0.95	0.10	----
46-014	5/16" x 1/4"	B	M-104-C	0.69	1.73	0.92	0.14	----
46-016	3/8" x 1/4"	A	M-303-C	0.69	1.81	0.92	0.16	----

**COMP X COMP**



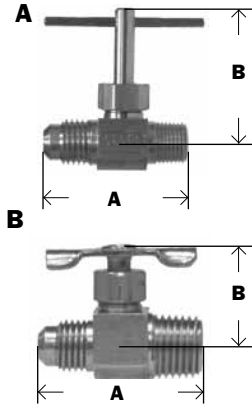
NV105C 2201  
3062 822

Part #	Comp X Comp	Handle	Ind. #	A	B	Approx. Wt. Lbs.	
46-020	3/16"	B	M-105-C	1.06	0.88	0.08	----
46-021	1/4"	A	M-106-C	1.17	1.12	0.10	----
46-022	5/16"	A	M-107-C	1.22	1.08	0.12	----
46-023	3/8"	A	M-113-C	1.31	1.15	0.13	----

One of the keys to happiness is a bad memory.

- Rita Mae Brown

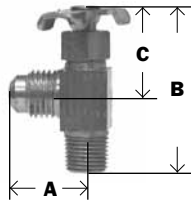
**FLARE X MALE PIPE**



Part #	Male Flare X Male Pipe	Handle	Ind. #	A	B	Approx. Wt. Lbs.	
46-028	1/4" x 1/8"	A	M-104-SAE	1.35	1.12	0.07	----
46-029	1/4" x 1/4"	B	M-1040-SAE	1.38	0.88	0.09	----
46-031	3/8" x 1/4"	B	M-108-SAE	1.73	1.22	0.18	----

NV103F  
2405  
823  
3048

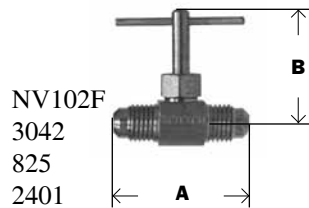
**FLARE X MALE PIPE**



Part #	Male Flare X Male Pipe	Ind. #	A	B	C	Approx. Wt. Lbs.	
46-036	1/4" x 1/8"	M-103-SAE	0.68	1.54	0.86	0.08	----
46-038	5/16" x 1/8"	M-203-SAE	0.88	1.59	0.94	0.11	----
46-039	5/16" x 1/4"	M-204-SAE	0.90	1.94	1.00	0.14	----
46-040	3/8" x 1/4"	M-303-SAE	0.97	1.84	0.90	0.17	----

NV101F 824  
2403 3049

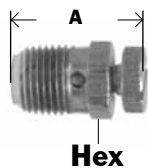
**FLARE X FLARE**



NV102F  
3042  
825  
2401

Part #	Male Flare X Male Flare	Ind. #	A	B	Approx. Wt. Lbs.	
46-045	1/4"	M-110-SAE	1.48	1.20	0.18	----
46-046	3/8"	M-115-SAE	1.79	1.19	0.20	----

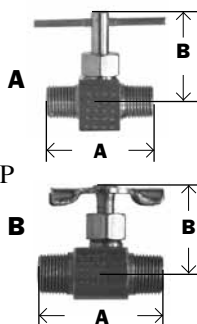
**MULTI-PURPOSE AIR VENT**



705

Part #	Male Pipe	A	Hex	Approx. Wt. Lbs.	
46-048	1/8"	0.78	0.43	0.02	----

**MALE PIPE TO MALE PIPE**



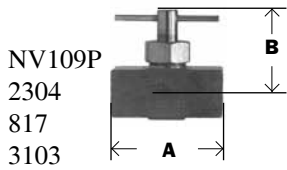
NV107P  
2301  
826  
3122

Part #	Male Pipe X Male Pipe	Handle	Ind. #	A	B	Approx. Wt. Lbs.	
46-050	1/8"	A	M-108-P	1.25	1.09	0.08	----
46-050X	1/8"	B	M-108-P	1.38	0.66	0.08	----
46-051	1/4"	A	M-110-P	1.69	1.00	0.16	----

Nobody believes the official spokesman... but everybody trusts an unidentified source.

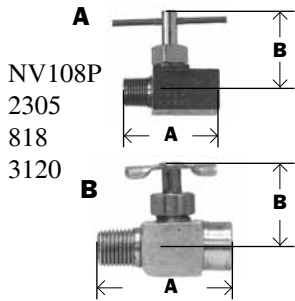
- Ron Nesen





Part #	Female Pipe X Female Pipe	Ind. #	A	B	Approx. Wt. Lbs.	
46-055	1/8"	M-304-P	1.12	0.88	0.18	----
46-056	1/4"	M-3044-P	1.60	1.24	0.21	----
46-056P	1/4" Heavy	M-3044-P	1.60	1.12	0.20	----

**MALE X FEMALE PIPE**

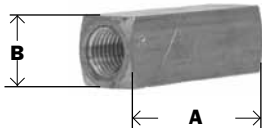


Part #	Male Pipe X Female Pipe	Handle	Ind. #	A	B	Approx. Wt. Lbs.	
46-060	1/8"	A	M-305-P	1.18	1.09	0.10	----
46-061	1/4"	A	M-3055-P	1.60	1.14	0.18	----
46-061L	1/4" Light Pattern	B	M-3055-P	1.88	1.09	0.21	----

**FLOW CONTROL NEEDLE & CHECK VALVES**

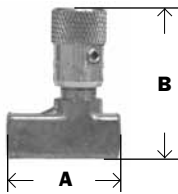
- Precision calibrated dial to determine and allow a return to required flow settings.
- Safe positive stop for needle travel.
- Positive no-leak stem seal.
- 2PSI cracking pressure.
- 1000 PSI maximum operating pressure.
- One piece forged housing.
- Nickel Plated available.
- Suitable for natural gas.

**CHECK VALVE**



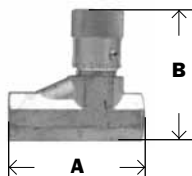
Part #	Size	A	B	Approx. Wt. Lbs.	
20-473	1/4"	1.94	0.68	0.20	----

**FLOW CONTROL**



Part #	Size	A	B	Approx. Wt. Lbs.	
20-485	1/8"	1.47	1.48	0.18	----
20-487	1/4"	1.94	1.92	0.27	----

**NEEDLE VALVE**



Part #	Size	A	B	Approx. Wt. Lbs.	
20-501	1/8"	1.47	1.80	0.18	----
20-503	1/4"	1.94	2.00	0.28	----

## BRASS FITTINGS

### SCREW STEM SHUT-OFF VALVES NEEDLE VALVES

**NEEDLE VALVES** are constructed to meter fluids and gases. They are **O-RING SEALED** to eliminate valve maintenance. The O-ring is positioned between the actuating threads and the seat, and seals the closely fitted cylinder to give the lowest possible internal volume and protect threads from contamination.

**NEEDLE VALVES** have a medium tipped stem (37°) to offer **RAPID SHUT OFF, FULL FLOW** and a **SEMI-METERING FUNCTION**.

The standard construction is a forged brass body, brass stem, thrust washer, cap and a BUNA "N" 'O' - RING seal. This valve is rated for 1,000 p.s.i.g. service from -40° to 250° F.

**FACTORY MUST BE CONSULTED WHEN VALVES ARE TO BE USED WITH FLAMMABLE FLUIDS IN ORDER TO DETERMINE WORKING PRESSURE AND O-RING COMPATIBILITY.**

COMPRESSION AND FLARE ENDS CAN BE SUBSTITUTED FOR PIPE ENDS IN MOST CASES.

( Price on application )



#### MIP X FIP STRAIGHT

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-768	1/8 Male x 1/8 Female	Regular	0.141	----
46-769	1/8 Male x 1/8 Female	Panel	0.141	----
46-770	1/4 Male x 1/4 Female	Regular	0.188	----
46-771	1/4 Male x 1/4 Female	Panel	0.188	----

#### MIP X MIP STRAIGHT

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-774	1/8 Male x 1/8 Male	Regular	0.141	----
46-775	1/8 Male x 1/8 Male	Panel	0.141	----
46-776	1/4 Male x 1/4 Male	Regular	0.188	----
46-777	1/4 Male x 1/4 Male	Panel	0.188	----

#### FIP X FIP STRAIGHT

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-780	1/8 Female x 1/8 Female	Regular	0.172	----
46-781	1/8 Female x 1/8 Female	Panel	0.172	----
46-782	1/4 Female x 1/4 Female	Regular	0.188	----
46-783	1/4 Female x 1/4 Female	Panel	0.188	----

## NEEDLE VALVES



#### MIP X FIP ANGLE

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-786	1/8 Male x 1/8 Female	Regular	0.188	----
46-787	1/8 Male x 1/8 Female	Panel	0.188	----
46-788	1/4 Male x 1/4 Female	Regular	0.281	----

#### MIP X MIP ANGLE

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-792	1/8 Male x 1/8 Male	Regular	0.188	----
46-793	1/8 Male x 1/8 Male	Panel	0.188	----
46-794	1/4 Male x 1/4 Male	Regular	0.281	----
46-795	1/4 Male x 1/4 Male	Panel	0.281	----

#### FIP X FIP ANGLE

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-798	1/8 Female x 1/8 Female	Regular	0.188	----
46-799	1/8 Female x 1/8 Female	Panel	0.188	----
46-800	1/4 Female x 1/8 Female	Regular	0.281	----
46-801	1/4 Female x 1/4 Female	Panel	0.281	----

### SELF PIERCING SADDLE VALVES



FITS 3/8" OD  
THRU 3/4" OD

#### SELF PIERCING

#### NEEDLE VALVE KIT #M-104-VSP

- INDIVIDUALLY BAGGED WITH NEEDLE VALVE
- SADDLE CLAMP
- 2 NUTS
- 2 BOLTS & WASHERS

Has brass sleeve for copper tube installation & delrin sleeve & brass insert for plastic tube installation.

Part #	Tube O.D.	Min Pkg Qty	List Price
46-090A	1/4	1	----

#### SPECIAL VERSIONS

Many special versions of these valves have been produced for other services. If your application is not described here or covered by our recommendations, please contact us. It is quite possible that one of these valve types can be economically adapted to your requirements.

**MICRO-METERING VALVES****MICRO-METERING VALVES**

**MICRO-METERING VALVES** offer PRECISE FLUID CONTROL through a full metering tip ( 5° ) and lubricated micrometer threads. Our O-ring seal arrangement eliminates contamination of system media by the thread lubricant.

The standard construction is forged brass body, brass stem and cap, a CELCON® thrust bearing and a BUNA "N" 'O'-RING seal. It is rated for 3,500 p.s.i.g. service from -40° to 150° F.

Many variations and modifications have been made in these valves to accommodate customer applications. It is quite possible they can be economically adapted to your requirements.

**MIP X FIP STRAIGHT**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-741	1/8 Male x 1/8 Female	Regular	0.102	----
46-742	1/8 Male x 1/8 Female	Panel	0.102	----
46-743	1/4 Male x 1/4 Female	Regular	0.172	----
46-744	1/4 Male x 1/4 Female	Panel	0.175	----

**MIP X MIP STRAIGHT**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-745	1/8 Male x 1/8 Male	Regular	0.102	----
46-746	1/8 Male x 1/8 Male	Panel	0.102	----
46-747	1/4 Male x 1/4 Male	Regular	0.172	----
46-748	1/4 Male x 1/4 Male	Panel	0.172	----

**FIP X FIP STRAIGHT**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-752	1/8 Female x 1/8 Female	Regular	0.141	----
46-753	1/8 Female x 1/8 Female	Panel	0.141	----
46-754	1/4 Female x 1/4 Female	Regular	0.172	----
46-755	1/4 Female x 1/4 Female	Panel	0.172	----

Dimension data can change without notice. Please call us when dimensions are critical.

**BRASS FITTINGS****MIP X FIP ANGLE**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-756	1/8 Male x 1/8 Female	Regular	0.182	----
46-757	1/8 Male x 1/8 Female	Panel	0.182	----
46-758	1/4 Male x 1/4 Female	Regular	0.182	----

**MIP X MIP ANGLE**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-760	1/8 Male x 1/8 Male	Regular	0.182	----
46-761	1/8 Male x 1/8 Male	Panel	0.182	----
46-762	1/4 Male x 1/4 Male	Regular	0.182	----
46-763	1/4 Male x 1/4 Male	Panel	0.182	----

**FIP X FIP ANGLE**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-765	1/8 Female x 1/8 Female	Panel	0.182	----
46-766	1/4 Female x 1/4 Female	Regular	0.182	----
46-767	1/4 Female x 1/4 Female	Panel	0.182	----

COMPRESSION AND FLARE ENDS CAN BE SUBSTITUTED FOR PIPE ENDS IN MOST CASES

*Some valves only available on made-to-order basis.*

We don't see the things the way they are. We see things the way WE are.

- Talmund

**TOGGLE VALVES**

**TOGGLE SHUT OFF VALVES** are constructed to INSTANTANEOUSLY OPEN and CLOSE the flow of fluids and gases. It is ideally suited for use in gas sampling and analysis systems as well as test equipment.

This valve is O-RING SEALED to eliminate leakage and maintenance. The O-ring is positioned between the operating mechanism and the seat, and seals the closely fitted cylinder to give the lowest possible internal volume and protect the mechanism from contamination.

The standard construction is forged brass body, brass cylinder, cap and lever, Viton seat, BUNA "N" 'O' RING seal, steel spring, and stainless steel lever pin.

This valve is rated for 200 p.s.i.g. service from -40° to 250° F and is available in the angle and straight pattern, both of which are available for panel or bracket mounting.



**MIP X FIP STRAIGHT**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-804	1/8 Male x 1/8 Female	Regular	0.102	----
46-805	1/8 Male x 1/8 Female	Panel	0.102	----

**MIP X MIP STRAIGHT**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-809	1/8 Male x 1/8 Male	Panel	0.102	----
46-810	1/4 Male x 1/4 Male	Regular	0.172	----
46-811	1/4 Male x 1/4 Male	Panel	0.172	----

**FIP X FIP STRAIGHT**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-812	1/8 Female x 1/8 Female	Regular	0.141	----
46-813	1/8 Female x 1/8 Female	Panel	0.141	----
46-814	1/4 Female x 1/4 Female	Regular	0.172	----
46-815	1/4 Female x 1/4 Female	Panel	0.172	----



**MIP X FIP ANGLE**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-816	1/8 Male x 1/8 Female	Regular	0.182	----
46-817	1/8 Male x 1/8 Female	Panel	0.182	----
46-818	1/4 Male x 1/4 Female	Regular	0.182	----
46-819	1/4 Male x 1/4 Female	Panel	0.182	----

**MIP X MIP ANGLE**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-820	1/8 Male x 1/8 Male	Regular	0.182	----
46-822	1/4 Male x 1/4 Male	Regular	0.182	----
46-823	1/4 Male x 1/4 Male	Panel	0.182	----

**FIP X FIP ANGLE**

Part #	Pipe Thread Inlet Outlet	Style	Maximum Orifice	
46-824	1/8 Female x 1/8 Female	Regular	0.182	----
46-825	1/8 Female x 1/8 Female	Panel	0.182	----
46-826	1/4 Female x 1/4 Female	Regular	0.182	----

COMPRESSION AND FLARE ENDS CAN BE SUBSTITUTED FOR PIPE ENDS IN MOST CASES

*Some valves only available on made-to-order basis*

If you don't know where you're going, you don't know when you're lost.

- Unknown Author

## INDUSTRIAL INSTRUMENTATION BALL VALVES

INDUSTRIAL  
INSTRUMENTATION  
BALL VALVES

• With Double O-RING STEM SEALS provide 20,000 leak-free performance cycles without leakage. Valves also have an exclusive stem seal design that never needs tightening and can be panel mounted for instrumentation applications. For systems with working pressures up to 1,500 p.s.i.g.

- TEFLON ® Ball Seats
- Blow Out Proof Stem Seal
- Double O-Ring
- Up to 1,500 P.S.I.



## FEMALE X FEMALE

Part #	Size	
46-830	1/8 x 1/8	----
46-832	1/4 x 1/4	----
46-833	3/8 x 3/8	----
46-834	1/2 x 1/2	----

## FEMALE X MALE

Part #	Size	
46-835	1/8 x 1/8	----
46-838	1/4 x 1/4	----
46-840	1/2 x 1/2	----

## MALE X MALE

Part #	Size	
46-841	1/8 x 1/8	----
46-843	1/4 x 1/4	----
46-845	3/8 x 3/8	----
46-846	1/2 x 1/2	----

## HOSE BARB X MALE PIPE THREAD

Part #                  Size                  List

Part #	Size	
46-849	1/4 x 1/4	----
46-850	3/8 x 1/4	----

INDUSTRIAL  
INSTRUMENTATION  
ANGLE BALL VALVES

## FEMALE X FEMALE

Part #	Size	
46-875	1/8 x 1/8	----
46-876	1/8 x 1/4	----
46-877	1/4 x 1/8	----
46-878	1/4 x 1/4	----

## FEMALE X MALE (Bottom)

Part #	Size	
46-880	1/8 x 1/8	----
46-881	1/8 x 1/4	----
46-882	1/4 x 1/8	----
46-883	1/4 x 1/4	----
46-884	1/4 x 3/8	----
46-885	3/8 x 1/2	----

## MALE X MALE PIPE THREADS

Part #	Size	
46-886	1/8 x 1/8	----
46-887	1/8 x 1/4	----
46-888	1/4 x 1/8	----
46-889	1/4 x 1/4	----
46-891	3/8 x 1/4	----

## HOSE BIB X MALE PIPE THREAD

Part #                  Size                  List

Part #	Size	
46-893	1/4 x 1/8	----
46-894	1/4 x 1/4	----
46-895	3/8 x 1/8	----
46-896	3/8 x 1/4	----

## BRASS FITTINGS

INDUSTRIAL  
INSTRUMENTATION  
3-WAY BALL VALVES

Part #	Size	
46-951	1/8 FPT	----
46-956	1/4 FPT	----
46-959	3/8 FPT	----
46-960	1/2 FPT	----

Any size and Any combination of male pipe, female pipe, hose barb, compression or flare connections are available...just ask!

*Some valves only available on made-to-order basis*

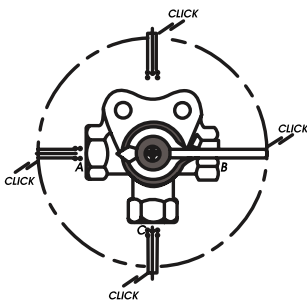
Research is what I'm doing when I don't know what I'm doing.

**- Wernher von Braun**

**THREE AND FOUR-WAY  
SELECTOR VALVES**

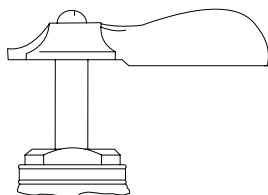
NON-LUBRICATED PLUG VALVES are designed to operate in systems where INSTANTANEOUS PORT SELECTION is desired. Since LUBRICANTS ARE NOT USED, relubrication is not required. There is no lubricant to freeze and lock the valve or to contaminate fine fluids. The O-RING SEALED CAP and STEM eliminate leakage to atmosphere. The mating BRASS BODY and CELCON PLUG produce a fine seal that WILL NOT SEIZE OR GALL.

Designed for PANEL or BRACKET MOUNTING. They are generally recommended for operation in GASOLINE, OIL, AIR, WATER and DETERGENT systems from minus 40° to 180°F, at a maximum operating pressure of 30 p.s.i.g. The fluid port size is 9/32 (.281) diameter for 1/8 and 1/4 sizes, 5/16 (.312) diameter for the 3/8 size. (Consult factory for applications requiring a higher pressure).



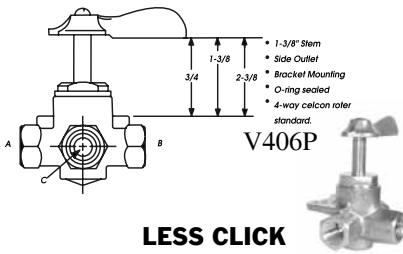
**Type 1 (Standard)**

A pronounced "click" may be felt at each position. Handle travel is not restricted.



**PANEL MOUNTING AVAILABLE**

**THREE-WAY VALVES  
(Side Outlet)**



**LESS CLICK**

Part #	A-B-C Female Pipe Thread	Length of Stem	
46-247	1/4	1-3/8"	----
46-248	3/8	1-3/8"	----

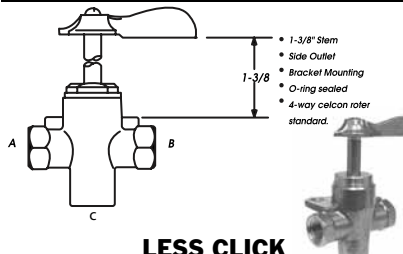
**M-108-MID WITH CLICK 360°**

Part #	A-B-C Female Pipe Thread	Length of Stem	
46-250	1/8	1-3/8"	----
46-251	1/4	1-3/8"	----
46-252	3/8	1-3/8"	----

Openings:

- Handle Pointer over A.....Valve Open A-C
- Handle Pointer over C.....Valve Open B-C
- Handle Pointer over B.....Valve "OFF"
- Handle Pointer over Bracket.....Valve "OFF"

**THREE-WAY VALVES  
(Bottom Outlet)**



**LESS CLICK**

Part #	A-B-C Female Pipe Thread	Length of Stem	
46-241	1/4	1-3/8"	----

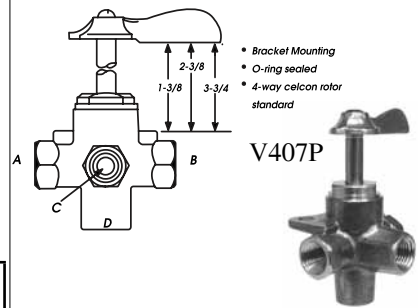
**WITH CLICK 360°**

Part #	A-B-C Female Pipe Thread	Length of Stem	
46-243	1/8	1-3/8"	----
46-244	1/4	1-3/8"	----

Openings:

- Handle Pointer over A.....Valve Open A-C
- Handle Pointer over C.....Valve Open B-C

**FOUR-WAY VALVES**



**LESS CLICK**

Part #	A-B-C-D Female Pipe Thread	Length of Stem	
46-257	1/4	1-3/8"	----

**M-114-MID WITH CLICK (360°)**

Part #	A-B-C-D Female Pipe Thread	Length of Stem	
46-255	1/4	1-3/8"	----
46-256	3/8	1-3/8"	----

**WITH 2-3/8" LONG STEM M-115-MID**

Part #	A-B-C-D Female Pipe Thread	Length of Stem	
46-260	1/4	2-3/8"	----

Direction of Flow on four way valves pointer at:

- a) A, D open
- b) C, D open
- c) B, D open
- bracket open

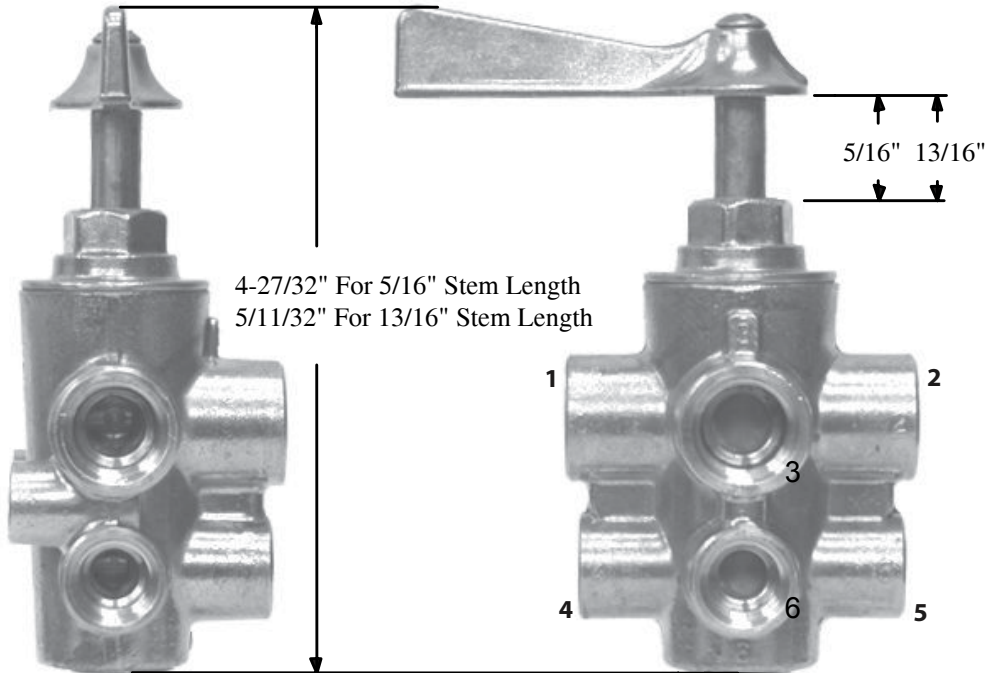
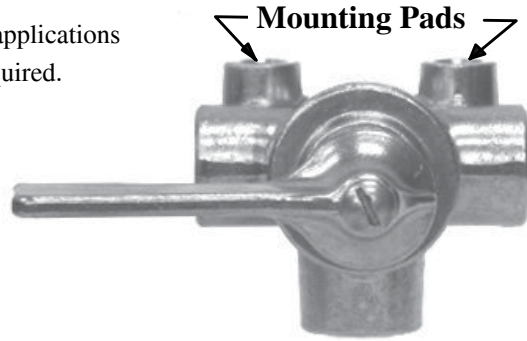
Openings:

- Handle Pointer over A.....Valve Open A-D
- Handle Pointer over C.....Valve Open C-D
- Handle Pointer over B.....Valve Open B-D
- Handle Pointer over Bracket.....Valve "OFF"

**SIX PORT VALVES**

**BRASS**

- Designed primarily for diesel engine applications where a fuel return or spill back is required.



Maximum Handle Travel 180° Mounting Pads for Bolt Mounting

**Openings**

With Handle Lever over 1:  
(All Ports Closed)

With Handle Lever over 2:  
(Open: 2-3 and 5-6, Closed: 1 and 4)

With Handle Lever over 3:  
(Open: 1-3 and 4-6, Closed: 2 and 5)

Part #	Ind. #	Female Pipe Thread of 1-2-3 4-5-6	Stem	Length Type	
46-238	SK-1036	1/2 x 3/8	13/16	1	----

*More sizes available...just ask!*

# BRASS FITTINGS

# SPECIALTY VALVES

**BRASS**

## BRASS TRUCK VALVES



404V

### HOSE TO MALE PIPE

Part #	Size	
46-450	3/8 x 3/8	----
46-451	5/8 x 3/8	----



404V

### HOSE TO MALE PIPE

Part #	Size	
46-455	5/8 x 1/2	----
46-457	3/4 x 3/8	----
46-456	3/4 x 1/2	----



405V

### FEMALE TO MALE PIPE

Part #	Size	
46-465	3/8 x 3/8	----
46-466	3/8 x 1/2	----
46-467	1/2 x 1/2	----



409V

### FLARE TO MALE PIPE

Part #	Size	
46-475	1/2 x 1/2	----
46-476	5/8 x 1/2	----



412V

### MALE PIPE TO FLARE

Part #	Size	List Price
46-485	1/2 x 5/8	----

## SOLID BOTTOM VALVES

- Designed for instantaneous on-off operation.
- 360° rotation standard.
- 30 PSI
- Packed with grease.

1035D

M-70-SBV



### O-RING SEALED MIP X FIP

Part #	Size	
46-400	1/8	----
46-401	1/4	----
46-402	3/8	----



8875

### #M-72-SBV FIP x FIP

Part #	Size	
46-411	1/4	----



### #M-75-SBV MIP x FLARE

Part #	Size	
46-429	1/4 x 3/8	----

## SOLID BOTTOM FUEL VALVES

- Approved for use on Motorcraft fuel lines.
- Pointer lever.
- 90° turn stop mechanism to assure positive location of the on and off positions.
- Corrosion proofed internal construction assures maximum salt atmosphere protection.
- Port hole is 1/4 (.250) diameter.
- UL listed for use in fuel oils no. 1 & no. 2, LP gas and utility gas.



8980

### PIPE MALE X FEMALE

Part #	Size	
46-400M	1/8 x 1/8	----
46-401M	1/4 x 1/4	----
46-402M	3/8 x 3/8	----



8990

### PIPE MALE x MALE

Part #	Size	
46-406M	1/4 x 1/4	----



8975

### PIPE FEMALE X FEMALE

Part #	Size	
46-411M	1/4 x 1/4	----



8948

### MALE PIPE X FLARE

Part #	Size	
46-429M	1/4 x 3/8	----
46-430M	3/8 x 3/8	----



**MINIATURE BALL VALVES**

**BRASS DOMESTIC  
MINIATURE BALL VALVES**

- Working Pressure up to 1000 P.S.I.G.
- ASTM B-16 Corrosion Resistant Brass Body.
- Non-Adjusting Viton O-Ring Stem Seal Design Never Needs Tightening.
- Highly Inert Teflon Seats.
- Long Life Nickel Plated Brass Ball.
- Blow-Out Proof Stem for Safety.
- Temperature: -40°F to 300°F
- 1/4 Turn Instantaneous On-Off Operation.
- Quarter Turn Handle Design.
- Water, Oil, and Air Pressure Systems.
- Ideal for tight, confined areas, or when routing aesthetics are desired. Applications include instrumentation, gas sampling systems, high pressure gauges, test stands, hydraulic and pneumatic service lines on capital equipment.



**MALE X FEMALE**

Part #	Size	
46-900	1/8 x 1/8	----
46-903	1/4 x 1/4	----



**MALE X MALE**

Part #	Size	
46-910	1/8 x 1/8	----
46-912	1/4 x 1/4	----



**MALE PIPE X HOSE BARB**

Part #	Size	
47-042	1/8 x 1/4	----
46-980	1/4 x 1/4	----
46-981	1/4 x 3/8	----

46-920  
46-921  
46-922



46-922A  
46-923



46-924



46-925



**FEMALE X FEMALE**

Part #	Size	
46-920	1/8 x 1/8	----
46-921	1/8 x 1/4	----
46-922	1/4 x 1/4	----
46-922A	1/4 x 1/4	----
46-923	3/8 x 3/8	----
46-924	1/2 x 1/2	----
46-925	3/4 x 3/4	----

**U.L. TWO WAY VALVES**

- Buna-N Seal, Teflon Seat
- Plated metal handle, plated brass ball.
- 250 PSI Working Pressure



**U.L. TWO WAY VALVES  
FNPT X FNPT**

Part #	Size	
46-440	1/4 x 1/4	----



**U.L. TWO WAY VALVES  
MNPT X FNPT**

Part #	Size	
46-443	1/4 x 1/4	----

**BRASS FITTINGS**

**MINI BALL VALVES**

• See p. 166 for specifications



**FEMALE X FEMALE**

Part #	Size	
46-920 I	1/8	----
46-922 I	1/4	----
46-923 I	3/8	----
46-924 I	1/2	----

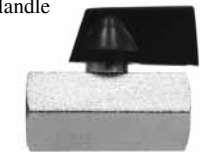


**MALE X FEMALE**

Part #	Size	
46-900 I	1/8	----
46-903 I	1/4	----
46-904 I	3/8	----
46-905 I	1/2	----

**ECONOMY MINI BALL VALVES**

- Max Working Pressure: 450psi
- Maximum Temperatures: 356°F at 142 psi  
212°F at 355 psi
- 1/4 Turn Handle



**FEMALE X FEMALE**

Part #	Size	
46-935	1/4	----
46-936	3/8	----



**MALE X FEMALE**

Part #	Size	
46-931	1/4	----
46-932	3/8	----

*See more mini valves on page 170*

# BRASS FITTINGS

# CHECK VALVES/ MARINE FITTINGS

BRASS

## BRASS CHECK VALVES

MAX. 2500 PSI  
Cracking Pressure 1/3-3 PSI

- Opening diameter .187
- 180° max operating temp.



•SS ball and spring

### MNPT X MNPT

Part #	Size	Opening Dia.	
46-500	1/4 x 1/4	0.187	----

MAX. 2500 PSI

- Opening diameter .187
- 180° max operating temp.



•SS ball and spring

### MNPT X FNPT

Part #	Size	Opening Dia.	
46-505	1/4 x 1/4	0.187	----

MAX. 1200 PSI

- O-Ring poppet seal Bubble tight operation
- 180°F max operating temp.



### FNPT X FNPT

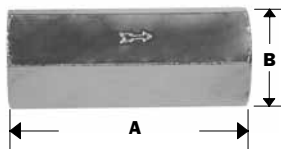
Part #	Size	Opening Dia.	
46-510	1/4 x 1/4	0.25	----
46-511	3/8 x 3/8	0.375	----
46-512	1/2 x 1/2	0.437	----

## PNEUMATIC CHECK VALVES

- Max Operating Pressure: 220 psi
- Working Pressure: 14.5-145 psi
- Cracking Pressure: 2.8 psi
- Maximum Temperatures: 140° F

### Materials

Body	Chrome plated Brass
Spring	Steel
O-Ring	NBR Rubber



NPT- Inlet NPSM - Outlet

Part #	Size	Dimensions (In.)		
		A	B	
46-200	1/4	1.97	0.67	----
46-201	3/8	1.97	0.83	----
46-202	1/2	2.48	0.98	----

## HIGH PRESSURE CHECK VALVES

- Operates in any position, and is available in mixed or matched end combinations.
- Standard cracking pressure 1 p.s.i (optional 3 or 7 p.s.i. available) with a maximum operating pressure of 3000 p.s.i. and a maximum operating temperature of 180°F using Buna-N seals.
- Buna-N seals standard, other seals available.
- Guided 316 stainless steel ball + spring.
- Fixed ringed seat prevents extrusion of seal.
- Opening diameter .28
- Approximate CV 1.2
- Water G.P.M. @ 10 p.s.i. is 4.0



### FEMALE X FEMALE

Part #	Size	
46-513	1/4	----
46-517	3/8	----



### FEMALE X MALE

Part #	Size	
46-514	1/4	----
46-518	3/8	----



### MALE X FEMALE

Part #	Size	
46-516	1/4	----
46-539	3/8	----



### MALE X MALE

Part #	Size	
46-515	1/4	----
46-519	3/8	----

## MARINE FITTINGS

- Calibrated to support 30" column of gasoline.



### ANTI-SIPHON VALVES

#### NPT X NPT

Part #	Size	
46-520	1/4 x 1/4	----
46-521	3/8 x 3/8	----



### ANTI-SIPHON VALVES

#### BARB X NPT

Part #	Size	
46-530	5/16 x 1/4	----
46-531	3/8 x 1/4	----
46-532	3/8 x 3/8	----
46-533	1/2 x 3/8	----



### BULKHEAD FITTINGS

Part #	Size	
46-540	5/16	----
46-541	3/8	----

If you're not failing every now and again, it's a sign you're not doing anything very innovative.

- Woody Allen

**BALL VALVE PRIVATE LABEL PROGRAM**

**BRASS**



We will put your company name and logo on our ball valve handle for FREE. Simply place a minimum blanket order of 10 cases per size and we will stock them under a special part # for your access only. Please allow 90-120 days for delivery on the first shipment only: Then have them delivered as you need them!

**\*For Italian valves only.**

We will change the handles out for you if ordered through our Kansas City warehouse. Please request this service if needed.

**TEE HANDLES**



Part #	Valve Size	
43-200T	1/4" - 3/4"	----
43-204T	1"	----

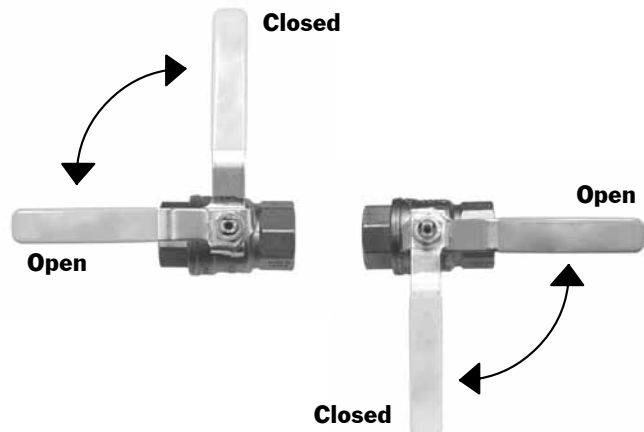
**LOCKING HANDLES**



Part #	Valve Size	
43-200L	1/4" - 3/4"	----
43-204L	1" - 1 1/4"	----
43-206L	1 1/2" - 2"	----

**Reversible Handles:**

All regular ball valve handles are now reversible. You can take the handle off and “reverse” it, so it turns and opens over the opposite end of the valve in the opposite direction. Please let us know if this is a requirement when you order as some older stock may not have this feature.



**FULL PORT 600WOG FORGED BRASS BALL VALVE**

1/2" - 2" Sizes Gas Approved



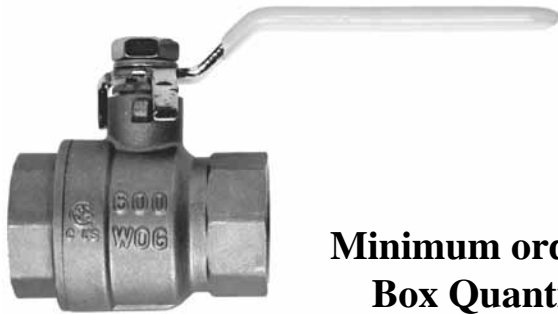
**ISO 9002 Manufacturer FEATURES**

1/4-2" 600 PSI non-shock cold water, gas, oil  
- 150 PSI saturated steam

2-1/2" - 4" 400 PSI non-shock cold water, gas, oil

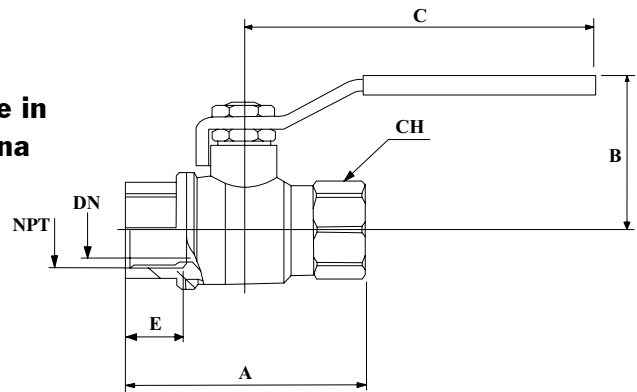
- Suitable for full range of liquids and gases
- Minimal pressure drop due to large full size ports
- Bottom loaded, pressure retaining stem
- Pressure rated for 1/4"-2" at 600psi (42 bars) and 2-1/2"-4" at 400 psi WOG (non-shock) and 150 WSP (10.34 bars) saturated steam. Virgin PTFE stem packing seal, thrust washer and seats
- Yellow vinyl insulator on heavy duty plated carbon steel handles
- Fast 1/4 turn open or close operation

- Low operating torque
- Adjustable stem packing gland
- Maximum operating temperature: 302°F (150° C)
- Minimum operating temperature: -22°F (-30°C)
- Each valve individually tested
- Forged Brass - for more strength
- Threaded ends to ANSI B1.20.1
- Hard chromium plated solid ball
- Bottom entry, blow-out proof stem
- Deeper threads - for better connections



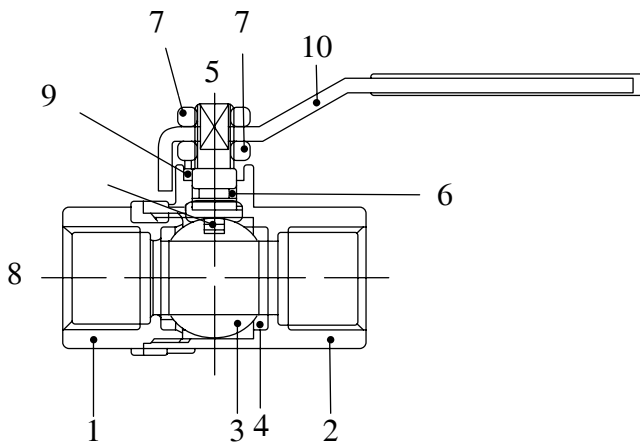
**Made in China**

**Minimum order is Box Quantity**



Part#	Size NPT	Dimension Inches						Min. Order		
		DN	A	B	C	E	CH	Box	Case	
940-171	1/4"	0.39	1.75	1.27	3.54	0.46	0.78	70	140	----
940-172	3/8"	0.41	1.75	1.27	3.54	0.46	0.78	70	140	----
940-173	1/2"	0.58	2.05	1.92	3.54	0.52	0.98	50	100	----
940-174	3/4"	0.75	2.36	2.08	3.78	0.56	1.20	30	60	----
940-175	1"	0.94	2.75	2.56	4.52	0.66	1.50	20	40	----
940-176	1-1/4"	1.26	3.30	2.95	4.52	0.70	1.82	12	24	----
940-177	1-1/2"	1.57	3.66	3.34	5.51	0.72	2.09	9	18	----
940-178	2"	1.97	4.18	3.68	5.51	0.74	2.62	6	12	----
940-179	2-1/2"	2.52	5.38	4.76	8.66	1.01	3.36	4	8	----
940-180	3"	2.95	6.04	5.08	8.66	1.11	3.86	2	4	----
940-181	4"	3.89	7.38	5.86	9.00	1.22	4.89	1	2	----

• Minimum order quantity is Box Quantity



POS	Components	Materials	N
1	Body	Forged Brass	1
2	End Connection	Forged Brass	1
3	Ball	CP Brass	1
4	Ball Seat	P.T.F.E.	2
5	Stem	Brass	1
6	Gland	Brass	1
7	Nut	Steel	1
8	Spring Inseat	Steel	1
9	Stem Seal	P.T.F.E.	1
10	Handle	Steel	1

**FULL PORT 600WOG FORGED BRASS BALL VALVE**



**ISO 9002 Manufacturer FEATURES**

600 PSI non-shock cold water, gas, oil  
- 150 PSI saturated steam

CSA AGA 3.88 5 PSIG IAMPO IGC 157 - 2004b

- **SOLID CHROME PLATED BRASS BALL**
- Suitable for full range of liquids and gases
- Minimal pressure drop due to large full size ports
- Bottom loaded, pressure retaining stem
- Pressure rated at 600psi (42 bars) WOG (non-shock) and 150 WSP (10.34 bars) saturated steam. Virgin TFE stem packing seal, thrust washer and seats.
- Yellow vinyl insulator on heavy duty plated carbon steel handles.
- Fast 1/4 turn open or close operation
- Low operating torque
- Flow can go both directions

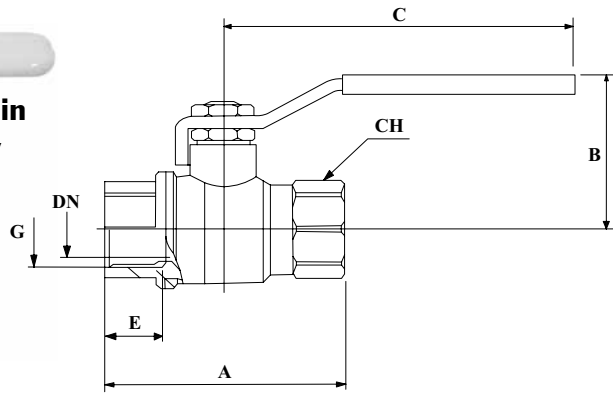
- Adjustable stem packing gland
- Maximum operating temperature: 248°F (120° C) at 600 PSI
- Minimum operating temperature: -20°F (-40°C)
- Each valve individually tested
- Forged Brass - for more strength
- Threaded ends to ANSI B1.20.1
- Hard chromium plated solid ball
- Bottom entry, blow-out proof stem
- Deeper threads - for better connections

**VALVES**



**Female x Female**

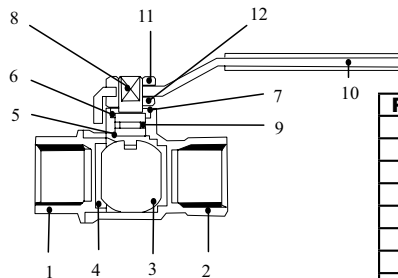
**Made in Italy**



Part#	Size	Dimension Inches						Box	Case	
		G	DN	A	B	C	E			
943-200	1/4"	.31	1.96	1.57	3.43	.43	.74	24	96	----
943-201	3/8"	.39	1.96	1.57	3.43	.43	.86	24	96	----
943-202	1/2"	.59	2.28	1.77	3.35	.61	.94	20	80	----
943-203	3/4"	.78	2.44	1.89	3.35	.64	1.22	14	56	----
943-204	1"	.98	3.03	2.20	4.61	.75	1.50	6	24	----
943-205	1-1/4"	1.26	3.46	2.36	4.61	.77	1.89	4	16	----
943-206	1-1/2"	1.57	3.94	3.15	6.30	.77	2.12	2	8	----
943-207	2"	1.97	4.45	3.15	6.30	.79	2.63	1	4	----
942-208	2-1/2"	2.48	5.94	4.17	7.48	1.06	3.30	---	5	----
942-209	3"	2.99	6.85	5.47	9.84	1.14	3.89	---	3	----
942-210	4"	3.54	7.67	5.88	9.84	1.50	4.80	---	2	----

See additional handle options on page 162.

- Nickel plated body available upon special request.
- Optional stainless steel parts available upon special request.



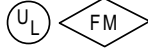
POS	Components	Materials	N
1	Body	Forged Brass	1
2	End Connection	Forged Brass	1
3	Ball	CP Brass	1
4	Ball Stems	P.T.F.E.	2
5	Stem Antif. Seat	P.T.F.E.	1
6	Stem Seat	P.T.F.E.	1
7	Brass Ring	Brass	1
8	Stem	Brass	1
9	O-Ring	NBR 80	1
10	Handle	Steel	1
11	Nut	Steel	1
12	Nut	Brass	1

**NSF 61 FULL PORT 600WOG FORGED BRASS BALL VALVE**

**ISO 9002 Manufacturer  
FEATURES**



1/4" - 2" Gas Approved



UL842, UL258, UL125, FM

**NSF 61** CSA AGA 3.88 5 PSIG

**• NSF approved for drinking water applications**

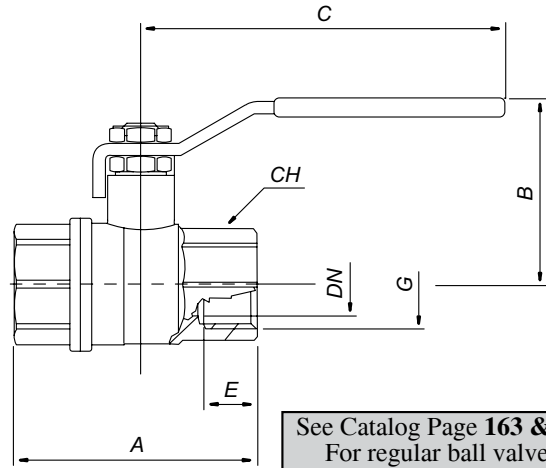
- 600 PSI non-shock cold water, gas, oil 150 PSI saturated steam
- Suitable for full range of liquids and gases.
- Virgin TFE stem packing seal, thrust washer and seats
- Blue vinyl handle cover

- Solid chrome plated brass ball
- Adjustable stem packing gland
- Threaded ends to ANSI B1.20.1
- Bottom entry, blow-out proof stem



**Female x Female**

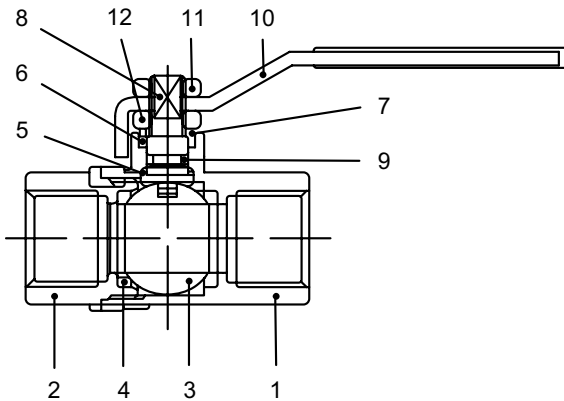
**Made in Italy**



See Catalog Page 163 & 164 For regular ball valves!

NSF 61 Approved Part#	Size	Dimension Inches						Box	Case	NSF 61
	G	DN	A	B	C	E	CH			
943-220	1/4"	.31	1.96	1.57	3.43	.43	.74	24	96	----
943-221	3/8"	.39	1.96	1.57	3.43	.43	.86	24	96	----
943-222	1/2"	.59	2.40	1.77	3.43	.59	1.06	20	80	----
943-223	3/4"	.78	2.72	1.77	3.43	.64	1.26	14	56	----
943-224	1"	.98	3.28	2.20	4.72	.75	1.59	6	24	----
943-225	1-1/4"	1.25	3.86	2.36	4.72	.84	1.96	4	16	----
943-226	1-1/2"	1.57	4.25	3.12	6.33	.84	2.16	2	8	----
943-227	2"	1.96	5.03	3.12	6.33	1.01	2.76	1	4	----

See additional handle options on page 162



POS	Components	Materials	N
1	Body	Forged Brass	1
2	End Connection	Forged Brass	1
3	Ball	CP Brass	1
4	Ball Stems	P.T.F.E.	2
5	Stem Antif. Seat	P.T.F.E.	1
6	Stem Seat	P.T.F.E.	1
7	Brass Ring	Brass	1
8	Stem	Brass	1
9	O-Ring	NBR 80	1
10	Handle	Steel	1
11	Nut	Steel	1
12	Nut	Brass	1

Gas Approved

**FULL PORT 600WOG FORGED BRASS BALL VALVE**



UL842, UL258, UL125, FM

CSA AGA 3.88 5 PSIG

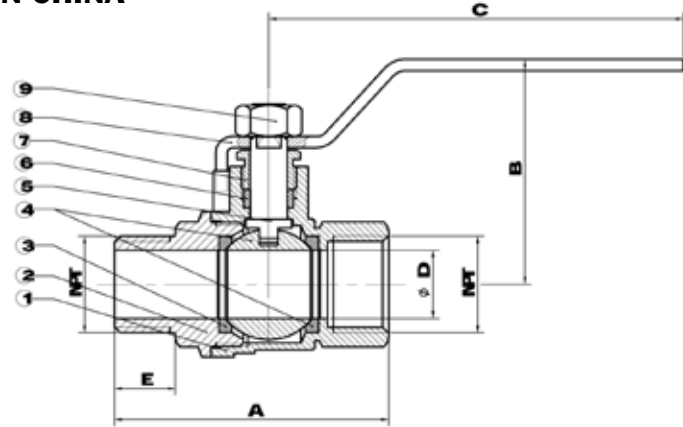
- Solid chrome plated brass ball
- Suitable for full range of liquids and gases.
- Minimal pressure drop due to large full size ports.
- Bottom loaded, pressure retaining stem.
- Pressure rated at 600psi (42 bars) WOG ( non-shock) and 150psi (10.34 bars) saturated steam. Virgin TFE stem packing seal, thrust washer and seats.
- Yellow vinyl insulator on heavy duty plated carbon steel handles.
- Fast 1/4 turn open or close operation.
- Flow both directions.
- Low operating torque.
- Adjustable stem packing gland.

- Maximum operating temperature: 248°F (120°C)
- Minimum operating temperature: -20°F (-40°C)
- Each valve individually tested.
- Forged Brass - for more strength.
- Threaded ends to ANSI B1.20.1
- Hard chromium plated solid ball
- Bottom entry, blow-out proof stem.

POS	Components	Materials
1	Body	C37700
2	End Cap	CS7700
3	Ball Seat	PTFE
4	Ball	CS7700
5	Stem	CS7700
6	Stem Reducing	PTFE
7	Reducing Nut	CS7700
8	Lever Handle	1008
9	Stem Nut	A570 Gr.A

**VALVES**

**MADE IN CHINA**



Part#	Size	NPT	A	B	C	D	E	Box	Case	
948-170	1/4	1/4 - 18	2.016	1.689	2.756	0.315	0.457	70	140	----
948-171	3/8	3/8 - 18	2.094	1.732	3.543	0.394	0.457	70	140	----
948-172	1/2	1/2 - 14	2.343	1.941	3.543	0.583	0.520	50	100	----
948-173	3/4	3/4 - 14	2.618	2.106	3.780	0.748	0.563	30	60	----
948-174	1	1 - 11.5	3.000	2.579	4.528	0.945	0.630	20	40	----
948-175	1-1/4	1-1/4 - 11.5	3.563	2.953	4.528	1.260	0.709	12	24	----
948-176	1-1/2	1-1/2 - 11.5	3.965	3.346	5.512	1.575	0.717	9	18	----
948-177	2	2 - 11.5	4.496	3.681	5.512	1.969	0.748	6	12	----

**ITALIAN M X F - \*CLOSE-OUT ONCE STOCK IS GONE\***

Part#	Size	DN	A	B	C	E	E1	CH1	CH2	Box	Case	
948-101	1/4	.31	2.28	1.49	3.35	.46	.51	.55	.74	24	96	----
948-102	3/8	.39	2.37	1.57	3.35	.46	.51	.71	.86	24	96	----
948-103	1/2	.59	2.28	1.49	3.35	.61	.59	.85	.96	14	56	----
948-104	3/4	.78	2.87	1.57	3.35	.66	.63	1.10	1.22	12	48	----
948-105	1	.98	3.42	1.93	5.20	.77	.75	1.36	1.50	6	24	----
948-106	1-1/4	1.26	3.94	2.36	4.72	.79	.76	1.69	1.89	4	16	----
948-107	1-1/2	1.57	4.25	3.00	6.34	.81	.76	2.12	2.12	2	8	----
948-108	2	1.97	4.96	2.95	6.34	.84	.76	2.40	2.63	1	4	----

**FULL PORT 600WOG FORGED BRASS BALL VALVE**

- 600 PSI non-shock cold water, gas, oil
- 150 PSI saturated steam (WSP)

**ISO 9002 Manufacturer  
FEATURES**

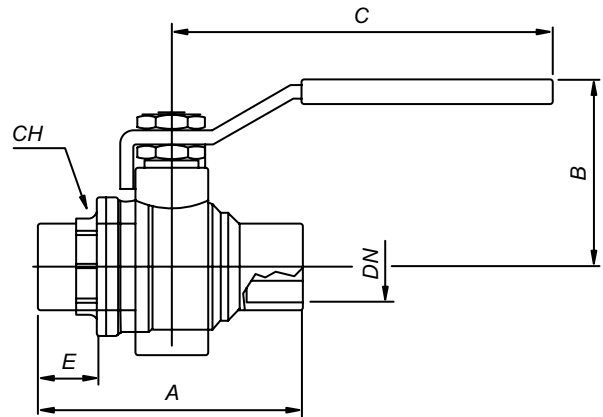


- Minimal pressure drop due to large full size ports.
- Bottom loaded, pressure retaining stem.
- Pressure rated at 600psi (42 bars) WOG (non-shock) and 150psi (10.34 bars) saturated steam. Virgin TFE stem packing seal, thrust washer and seats.
- Vinyl insulator on heavy duty plated carbon steel handles.
- Fast 1/4 turn open or close operation
- Low operating torque
- Adjustable stem packing gland.

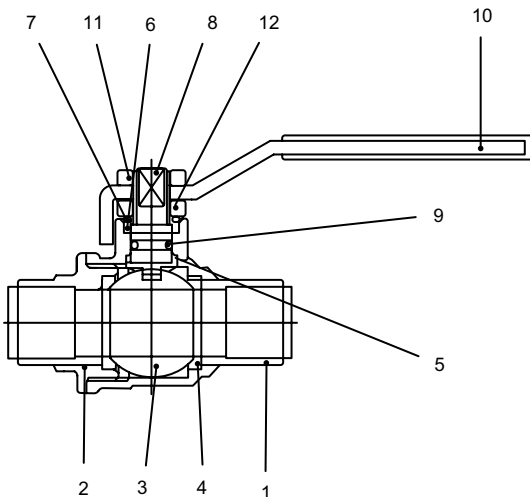
- Maximum operating temperature: 248°F (120° C) at 600 psi.
- Minimum operating temperature: -20°F (-40°C)
- Each valve individually tested.
- Forged Brass - for more strength.
- Tube ends to ANSI B16.22.
- Hard chromium plated solid ball.
- Bottom entry, blow-out proof stem.
- Use with ASTM B88 copper water tubing.



**SWT x SWT**



Part#	Size	Dimension Inches						Box	Case	
	SWT	DN	A	B	C	E	CH			
940-212	1/2	0.58	2.04	1.84	3.54	0.43	0.80	50	100	----
940-213	3/4	0.74	2.74	1.99	3.78	0.63	1.05	30	60	----
940-214	1	0.94	3.22	2.44	4.52	0.75	1.33	20	40	----
940-215	1-1/4	1.26	3.81	2.85	4.52	0.83	1.60	12	24	----
940-216	1-1/2	1.57	4.42	3.16	5.51	0.90	1.90	9	18	----
940-217	2	1.97	5.31	3.44	5.51	1.30	2.37	6	12	----



POS	Components	Materials	N
1	Body	Forged Brass	1
2	End Connection	Forged Brass	1
3	Ball	CP Brass	1
4	Ball Seats	P.T.F.E.	2
5	Stem	Brass	1
6	O-Ring	NBR 80	1
7	Brass Ring	Brass	1
8	Nut	UNI 5771 Steel	1
9	Stem Seat	P.T.F.E.	1
10	Handle	Steel	1
11	Stem Seat	P.T.F.E.	1
12	Nut	Brass	1



**FORGED BRASS BALL VALVE - STANDARD PORT**

1/2" Gas Approved



CSA AGA 3.88 5 PSIG



UL842, UL258, UL125, FM

**ISO 9002 Manufacturer FEATURES**

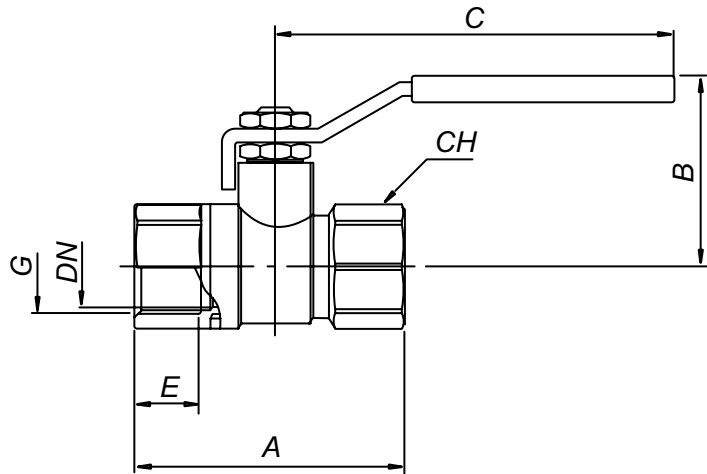
- 400 PSI non-shock cold water, gas, oil
- 150 PSI saturated steam (WSP)
- Solid chrome plated brass ball
- Threaded ends to ANSI B1.20.1
- Each valve individually tested
- Hard chromium plated solid ball
- Bottom entry, blow-out proof stem
- Double stem packing, Teflon seats.

**VALVES**

Yellow Handle



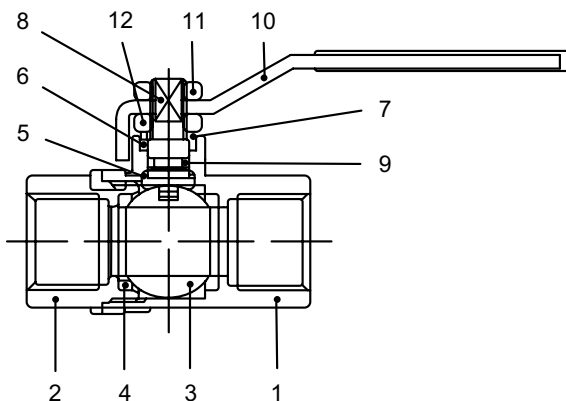
**FIP x FIP**



**FORGED BRASS BALL VALVE IPS SCREWED ENDS**

Part#	Size	Dimension Inches						Box	Case	
	G	DN	A	B	C	E	CH			
940-241	1/2	0.47	2.26	1.51	3.27	0.61	0.98	20	80	----
940-242	3/4	0.59	2.50	1.59	3.27	0.63	1.22	14	56	----
940-243	1	0.78	2.87	1.88	3.74	0.75	1.49	10	40	----
940-244	1-1/4	0.98	3.46	2.08	4.61	0.77	1.89	4	16	----
940-245	1-1/2	1.26	3.52	2.45	4.61	0.77	2.13	4	16	----
940-246	2	1.57	4.05	2.65	4.61	0.79	2.64	1	4	----

See additional handle options on page 158



POS	Components	Materials	N
1	Body	Forged Brass	1
2	End Connection	Forged Brass	1
3	Ball	CP Brass	1
4	Ball Stems	P.T.F.E.	2
5	Stem Antif. Seat	P.T.F.E.	1
6	Stem Seat	P.T.F.E.	1
7	Brass Ring	Brass	1
8	Stem	Brass	1
9	O-Ring	NBR 80	1
10	Handle	Steel	1
11	Nut	Steel	1
12	Nut	Brass	1

**GAS BALL VALVES**

**ISO 9002 Manufacturer FEATURES**

**CSA** 5 PSIG  
C US  
CSA AGA 3.88 5 PSIG

**UL** LISTED  
Manual Valve  
Threaded NPT  
UL 842, UL 258, UL 125

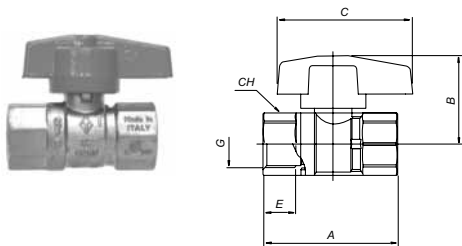
**Made in Italy**

- Solid chrome plated brass ball
- Bottom entry
- Blow out proof design.
- Double viton o-rings stem seals
- Teflon seats for durability.
- Forged construction for greater strength.
- Larger ports for increased flow capacity.
- For use with natural, manufactured, mixed liquified, petroleum and LP gas-air mixtures.

- Deeper thread connections. Smooth quarter-turn.
- Manufactured to ANSI Z21.15, C.G.A. 9.1-M81, 9.2-M88, 1/2 psig. 372 also to A.G.A. 3-8, C.G.A. CR91-002, 2 psig.
- Red Reversible handle.
- May be used with water 400 WOG.

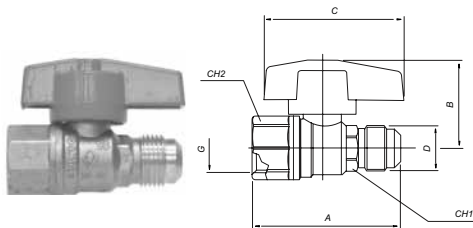
**VALVES**

**GAS BALL VALVES FEMALE x FEMALE**



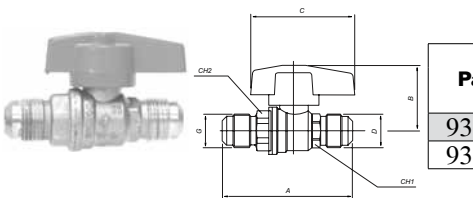
Part#	Size	Dimension Inches							PN in psi	Box	Case	List Price
	G	DN	A	B	C	E	CH					
943-212	1/2"	.31	1.96	1.57	3.43	.43	.98	600	20	80	----	
943-213	3/4"	.39	1.96	1.57	3.43	.43	1.22	600	14	56	----	

**APPLIANCE CONNECTOR VALVES FEMALE X FLARE**

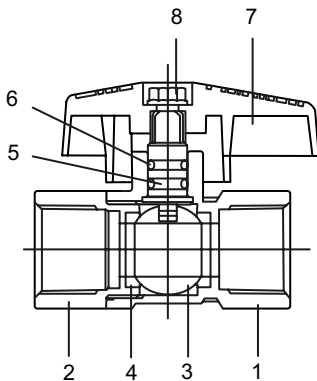


Part#	Size	Dimension Inches							Box	Case	List Price
	G	DN	A	B	C	CH1	CH2				
935-122	1/2 x 3/8	0.27	2.41	1.45	2.28	0.67	0.98	20	80	----	
935-123	1/2 x 1/2	0.39	2.44	1.45	2.28	0.67	0.98	20	80	----	
935-124	3/4 x 5/8	0.47	2.50	1.48	2.28	-	1.22	20	80	----	

**FLARE x FLARE**



Part#	Size	Dimension Inches							PN in psi	Box	Case	List Price
	G	DN	A	B	C	CH1	CH2					
935-129	3/8 x 3/8	0.27	2.79	1.45	2.28	0.67	0.83	363	20	80	----	
935-130	1/2 x 1/2	0.39	2.87	1.45	2.28	0.67	0.83	363	20	80	----	



	Components	Materials
1	Body	Forged Brass
2	End Connection	Forged Brass
3	Ball	Forged Brass
4	Ball Seats	P.T.F.E.
5	Stem	Brass
6	O-Ring	NBR
7	Butterfly	Steel
8	Screw	UNI 5771 Steel

# CHROME PLATED BRASS MINI BALL VALVES

# BRASS VALVES

## CHROME PLATED BRASS MINI BALL VALUE

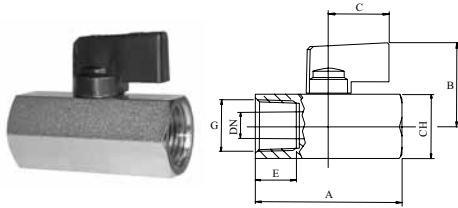
Made in Italy

ISO 9002 Manufacturer

### FEATURES

- Solid chrome plated brass ball
- Max working pressure 235 psi will handle 300psi@75° F
- Longer body style for longer, deeper thread connections
- One piece drawn sand blasted chrome plated body.
- Each valve is seal tested for maximum safety.
- Double seal system allows valve to be operated in both directions making installation easier.
- Blowout-proof brass stem.
- NPT taper ANSI B1.20.1 threads.
- 32°F to +176°F temperature.
- 1/4 Turn Nylon handle with mechanical stop.
- NSF Approved valves available upon request!

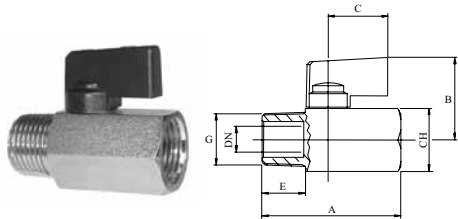
VALVES



### Female x Female

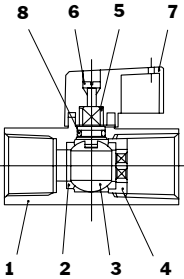
Part#	Size		Dimension Inches							
	G	DN	A	B	C	E	CH	BOX	CASE	
46-920 I	1/8"	0.24	1.51	1.2	0.9	0.31	0.83	50	200	----
46-922 I	1/4"	0.31	1.88	1.2	0.9	0.51	0.83	50	200	----
46-923 I	3/8"	0.31	1.88	1.2	0.9	0.51	0.83	50	200	----
46-924 I	1/2"	0.39	2.18	1.28	0.9	0.61	0.96	40	160	----

Made in Italy

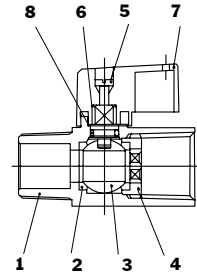


### Male x Female

Part#	Size		Dimension Inches							
	G	DN	A	B	C	E	CH	BOX	CASE	
46-900 I	1/8"	0.24	1.5	1.2	0.9	0.34	0.83	50	200	----
46-903 I	1/4"	0.31	1.77	1.2	0.9	0.48	0.83	50	200	----
46-904 I	3/8"	0.31	1.81	1.2	0.9	0.49	0.83	50	200	----
46-905 I	1/2"	0.39	2.15	1.28	0.9	0.65	0.96	40	160	----



POS	Components	Materials	N
1	Body	CW517N Forged Brass	1
2	Ball Seats	P.T.F.E	2
3	Ball	CW517N CP Brass	1
4	Ring Unit	CW614N Brass	1
5	Stem	CW614N Brass	1
6	Screw	UNI 5771 Steel	1
7	Handle	Nylon	1
8	O-Ring	NBR 80	1



## ECONOMY MINI BALL VALVES

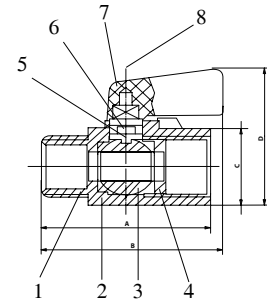
- Max Working Pressure: 450psi
- Maximum Temperatures: 356°F at 142 psi  
212°F at 355 psi
- 1/4 Turn Handle

### FEMALE X FEMALE

Part #	Size	Dimensions (In)				
		A	B	C	D	
46-935	1/4	1.57	1.69	0.78	1.46	----
46-936	3/8	1.57	1.69	0.78	1.46	----

### MALE X FEMALE

Part #	Size	Dimensions (In)				
		A	B	C	D	
46-931	1/4	1.57	1.69	0.78	1.46	----
46-932	3/8	1.57	1.69	0.78	1.46	----



Pos	Components	Materials	N
1	Body	CP Forged Brass	1
2	Ball Seats	P.T.F.E	2
3	Ball	CP Brass	1
4	Ring Unit	Brass	1
5	Stern	Brass	1
6	O-Ring	NBR 80	1
7	Handle	ABS	1
8	Screw	Steel	1

## BRASS VALVES

### Forged brass Mini-Ball Valves

- 180° operational handle, blow out proof stem. Stem with double “O” Rings - \* 90° Operational handle.
- 200 WOG
- 125SWSP

NO	Part Name	Material	QTY
1	Nut	Steel	1
2	Handle	Steel	1
3	Cover	PVC	1
4	O-Ring	NBR	2
5	Stem	Brass	1
6	Body	Brass	1
7	Seat	Teflon	2
8	Ball Disc	Brass	1
9	End Plug	Brass	1

### FEMALE X FEMALE



Part #	Size	
* 944-116	1/4X1/4	----
944-118	1/4X1/2	----

\* 90° Operational handle.

### MALE X FEMALE



Part #	Size	
944-106	1/8X1/8	----
944-100	1/8X1/4	----
944-101	1/4X1/4	----
944-102	1/4X3/8	----

### MALE X MALE



Part #	Size	
944-108	1/8X1/4	----
944-111	1/4X1/2	----
944-112	1/2X1/2	----

*Private label handle available on volume purchases.*

## MINI BALL VALVE

### HOSE BARB X MALE



Part #	Size	
944-126	3/8X1/8	----
* 944-138	1/4X1/4	----
944-128	3/8X1/4	----

\* 90° Operational handle.

### HOSE BARB X HOSE BARB



Part #	Size	
* 944-142	1/4X1/4	----
* 944-134	3/8X3/8	----

\* 90° Operational handle.

### FEMALE X HOSE BARB



Part #	Size	
944-135	1/8X1/8	----
944-121	1/4X5/16	----
944-136	1/4X1/4	----

Everyone is entitled to be stupid, but some abuse the privilege.

- Unknown Author

# 3 WAY BALL VALVES

# 3 WAY BALL VALVES

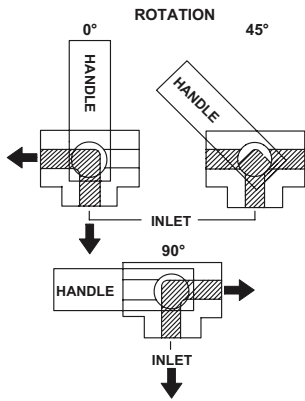
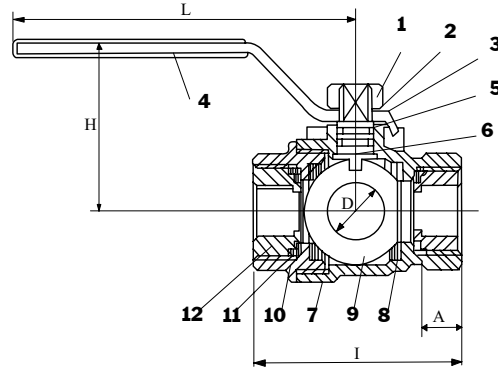
## SIDE OUTLET 3 WAY BALL VALVE

VALVES



- Forged Brass
- 200 WOG
- 125 WSP

• Side outlet



- Full Port
- Blow-out proof stem
- double o-ring stem packing
- PTFE Seal

### Nomenclature & Materials

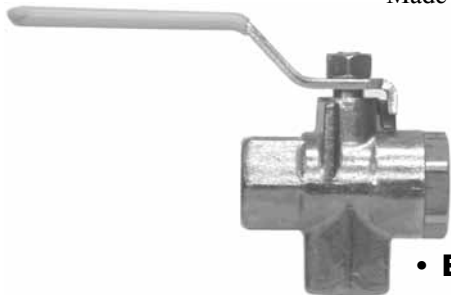
NO	Part Name	Material	Qty
1	Nut	Steel	1
2	Spring Washer	Steel	1
3	Handle	Steel	1
4	Cover	PVC	1
5	O-Ring	NBR	2
6	Stem	Brass	1
7	Body	Forged Brass	1
8	Seat	Teflon	2
9	Ball Disc	Brass	1
10	End Plug	Brass	1
11	O-Ring	NBR	3
12	Socket	Brass	3

Part#	Size	I	H	D	L	A	Box	Case	
940-464	1/4"	1.89	1.73	0.39	3.35	0.47	50	100	----
940-465	3/8"	1.89	1.73	0.39	3.35	0.47	25	100	----
940-461	1/2"	2.11	1.80	0.50	3.35	0.51	30	60	----
940-462	3/4"	2.56	2.16	0.74	4.41	0.55	20	40	----

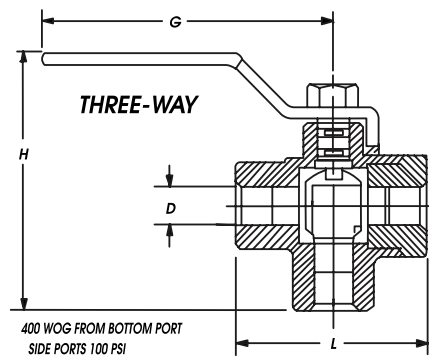
## BOTTOM OUTLET 3 WAY BALL VALVE

- Forged Brass
- Bottom Port is inlet 400 psi
- Side Ports are inlet 100 psi

- Double O-Ring Seal
- Blow out proof stem
- Made in USA



• Bottom outlet



Part#	Size	D	G	H	L	Cv	
940-121	1/4"	.44	3.50	3.12	2.25	5.2	----
940-122	3/8"	.50	3.50	3.12	2.25	5.5	----
940-123	1/2"	.50	3.50	3.12	2.25	5.5	----

## MISC. VALVES

### STAINLESS TRIM BALL VALVES

Full Port 600 WOG Forged Brass Ball Valves

- Nickel plated body.
- Stainless steel tee handle and nut.



CSA AGA 3.88 5 PSIG



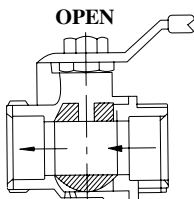
Also with lever handle option

### FEMALE X FEMALE

Part #	Size	
948-154ST	3/4	----
948-154STL	3/4 Lever Handle	----
948-155STL	1 Lever Handle	----

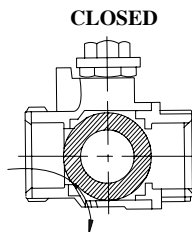
More options available ... just ask!  
Ask us about OSHA Valves

### FULL PORT AUTOMATIC DRAIN & LATCH LOCK HANDLE



Valve - open position.  
Drain vent shut off.

200 PSI



Valve - closed and draining occurs. Upstream seat prevents air flow.  
Downstream system is vented to atmosphere.

Part#	Size	
948-131	1/4"	----
948-132	3/8"	----
948-133	1/2"	----
948-134	3/4"	----
948-135	1"	----

## MISC. VALVES

### ANGLE SILLCOCKS 3/4" Hose Thread Outlet

- Notched flange for convenient installation.
- Heavy brass construction.
- Cast Iron handle.



FEMALE IPS

Part #	Size	Box	
942-142	1/2	12	----

### HOSE BIBBS 3/4" Hose Thread Outlet



IPS

Part #	Size	Box	
942-170	1/2 (1/2"C)	12	----
942-171	3/4	12	----

### DRUM & BARREL FAUCET VALVE

- Die cast body w/ nylon seat and steel spring.
- For use with all petroleum products except trichlorethylene.
- Lockable handle.

G261N



Not suitable for potable water.

### SELF-CLOSING DRUM & BARREL FAUCET

Part #	Size	
46-270	3/4	----

VALVES

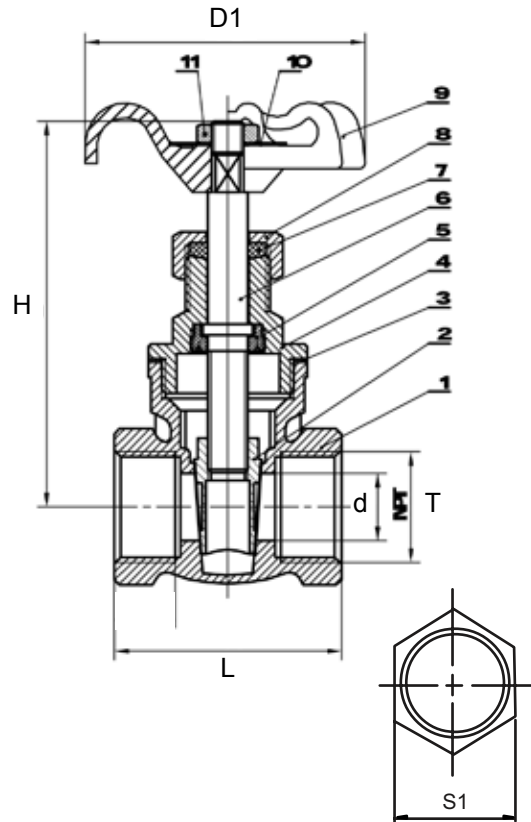
**FULL PORT BRASS GATE VALVE**

- 200 WOG (cold water, oil, gas).
- 125 WSP (Saturated Steam).
- Full-port design for a better water flow.
- Screw-in Bonnet - Non-Rising Stem - Solid Wedge
- NPT Threaded ends to ANSI B1.20.1
- Cast iron handle.
- Forged Brass Body for 1/2" - 1"
- Cast brass body for 1-1/4" - 4".
- Each valve individually air tested under water.

**VALVES**



"New dimensions for 1/2 thru 4"



NO	Description	Material
1	Body	C37700
2	Disk	C37700
3	Seat	PTFE
4	Cap	C37700
5	Packing	C37700
6	Stem	C37700
7	Rubber Seat	NBR
8	Packing Nut	C37700
9	Handle	HT200
10	Nameplate	AL
11	Stem Nut	A570 Gr.A

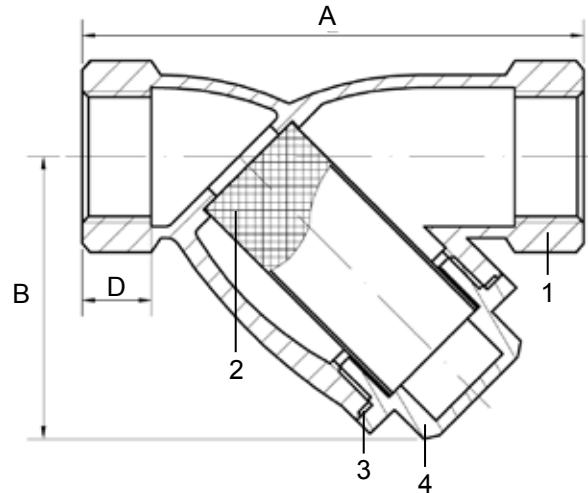
**BRASS GATE VALVES IPS**

Part#	Size	L	H	D1	d	T	S1	Box	Case	
940-130	1/4	1.57	2.91	2.09	.24	1/4-18 NPT	.85	10	120	----
940-131	3/8	1.61	2.91	2.09	.39	3/8-18 NPT	.85	10	120	----
940-132	1/2	1.575	2.874	2.087	0.50	1/2-14 NPT	1.03	10	100	----
940-133	3/4	1.752	3.228	2.087	0.748	3/4-14 NPT	1.26	5	60	----
940-134	1	1.984	3.661	2.283	0.984	1-11.5 NPT	1.51	5	40	----
940-135	1-1/4	2.165	4.567	2.835	1.22	1-1/4-11.5 NPT	1.89	5	30	----
940-136	1-1/2	2.283	4.98	3.11	2.496	1-1/2-11.5 NPT	2.17	4	24	----
940-137	2	2.677	5.846	3.819	1.85	2-11.5 NPT	2.60	2	16	----
940-138	2-1/2	3.661	7.638	4.252	2.48	2-1/2-8 NPT	3.27	2	8	----
940-139	3	3.819	8.839	4.961	2.835	3-8 NPT	3.86	1	6	----
940-140	4	4.567	10.189	4.961	3.661	4-8 NPT	4.88	1	3	----

**CLASS 150 BRONZE Y-PATTERN STRAINER**

- Casting bronze body, size 1/2"-3".
- Pressure rating: 300 WOG (water, oil, gas)/PN25  
150 WSP (Saturated Stem)
- NPT Threaded ends to ANSI B1.20.1
- Protects regulators, pumps, meters and other controls from damage due to sediment scale, metal chips or other foreign materials.

- Screwed cap is threaded & gasketed.
- Tapped drain plug opening in cap.
- 304 stainless steel screen #20 mesh.
- Self cleaning.
- Self cleaning can be accomplished by opening the valve or plug connected to the blow-off outlet.



**REPLACEMENT SCREENS**

**304 S.S. #20 Mesh**

Part #	Size	OAL	
940-521S	1/4	1.5	----
940-522S	3/8	1.5	----
940-523S	1/2	1.57	----
940-524S	3/4	1.97	----
940-525S	1	2.44	----
940-526S	1-1/4	2.76	----
940-527S	1-1/2	3.31	----
940-528S	2	4.06	----
940-529S	2-1/2	5.25	----
940-530S	3	5.90	----

NO	Description	Material
1	Body	C84400
2	Filter	304
3	Gasket	PTFE
4	Cap	C84400

**"New dimensions for 1/2 thru 2"**

Part#	Size	A	B	D	Box	Case	
940-521	1/4"	2.60	1.89	0.41	10	80	----
940-522	3/8"	2.60	1.89	0.41	10	80	----
940-523	1/2"	2.992	1.811	0.498	10	100	----
940-524	3/4"	3.583	2.205	0.531	10	60	----
940-525	1"	4.252	2.677	0.63	5	40	----
940-526	1-1/4"	4.882	3.15	0.669	4	24	----
940-527	1-1/2"	5.669	3.583	0.709	4	16	----
940-528	2"	6.772	4.37	0.827	2	8	----
940-529	2-1/2"	8.39	5.83	0.93	1	6	----
940-530	3"	9.06	6.69	1.12	1	4	----

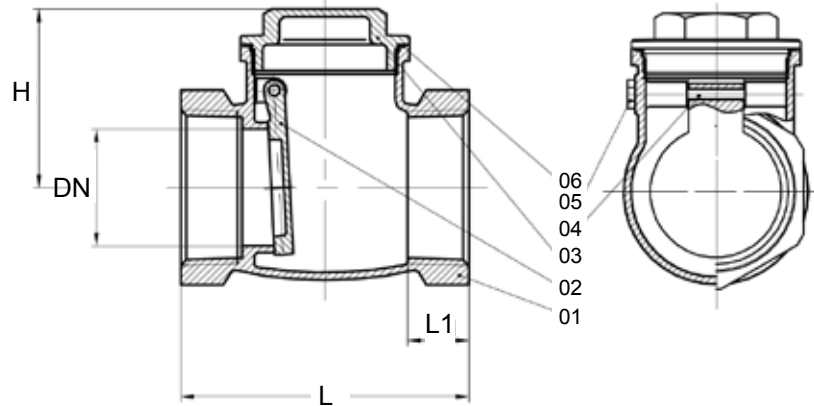


**BRASS SWING CHECK VALVES**

- Working pressure non-shock: 200 psi W.O.G. (cold water, oil, gas) 125 psi WSP (saturated steam)
- Swing type disc.
- Screwed Cap.
- Hard Seat.
- 90° Straight Pattern.
- Used to prevent reverse flow in commercial and industrial applications.
- Threaded ends to ANSI B1.20.1
- Integral seat.

**VALVES**

"New dimensions for 1/2 thru 4"



NO	Description	Material
1	Body	C37700
2	Disc	C37700
3	Cap	C37700
4	Brass Bar	C37700
5	Screw	C37700
6	Gasket	PTFE

**CAST BRASS SWING CHECK VALVES IPS SCREWED ENDS**

Part #	Size	L	H	L1	DN	Box	Case	
940-352	1/2	2.071	1.299	0.531	0.512	10	120	----
940-353	3/4	2.382	1.417	0.579	0.728	10	80	----
940-354	1	2.835	1.614	0.748	0.925	5	60	----
940-355	1-1/4	3.228	1.969	0.748	1.201	4	36	----
940-356	1-1/2	3.740	2.244	0.846	1.417	4	24	----
940-357	2	4.212	2.638	0.886	1.772	4	16	----
940-358	2-1/2	5.591	3.346	1.063	2.224	2	8	----
940-359	3	6.024	3.504	1.102	2.579	1	6	----
940-360	4	7.008	4.212	1.102	3.602	1	4	----

**BRASS CHECK VALVES**

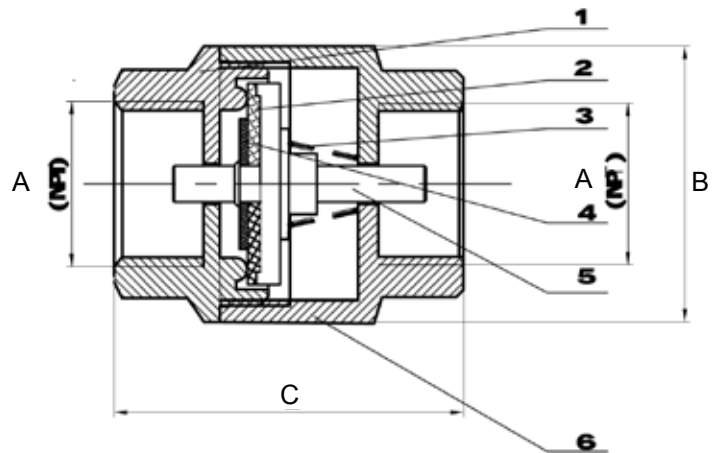
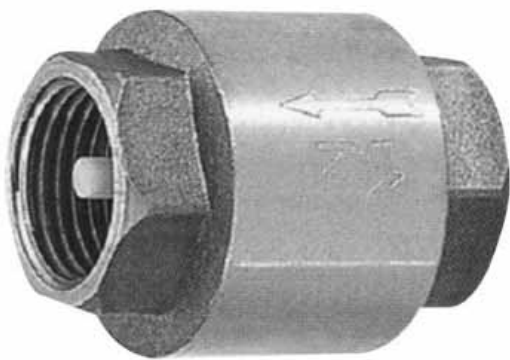
S.S. SPRING LOADED BRONZE POPPET  
 For positive sealing & self-cleaning.  
 Insures against leakage.

- Inline Lift Type - Resilient Discs - Spring Actuated - Threaded.
- Pressure rating: 200 WOG (water, oil, gas)  
 125 WSP (Saturated Steam)
- Spring in stainless steel AISI 304.
- Resilient washer hold/ disc in brass.
- Forged Brass Body for 1/2"-2"
- Corrosion resistant material.
- Can be used vertically or horizontally.
- Opens & Closes with flow of media.
- No cracking pressure.

**Temp Range**  
 -10°C - 110°C  
 -4°F - 248°F

**VALVES**

**"New dimensions for 1/2 thru 2"**



**Brass Check Valve (Inches)**

Part#	Size	Enters Pipe Size	A NPT	B	C	Box	Case	
944-428	1/4"	-	1/4"	1.26	2.28	24	192	----
944-429	3/8"	-	3/8"	1.50	2.28	21	168	----
944-430	1/2"	1-1/4"	1/2"	1.299	1.89	10	100	----
944-431	3/4"	1-1/4"	3/4"	1.594	2.126	10	100	----
944-432	1"	2"	1"	1.85	2.303	10	60	----
944-433	1-1/4"	2-1/2"	1-1/4"	2.205	2.52	10	40	----
944-434	1-1/2"	3"	1-1/2"	2.618	2.717	5	30	----
944-435	2"	3-1/2"	2"	3.091	3.071	2	20	----

*See more Check Valves on page 161*

NO	Part	Material
1	Cap	C37700
2	Gasket	PTFE
3	Spring	Stainless Steel
4	Positioning Seat	ABS
5	Screw	ABS
6	Body	C37700

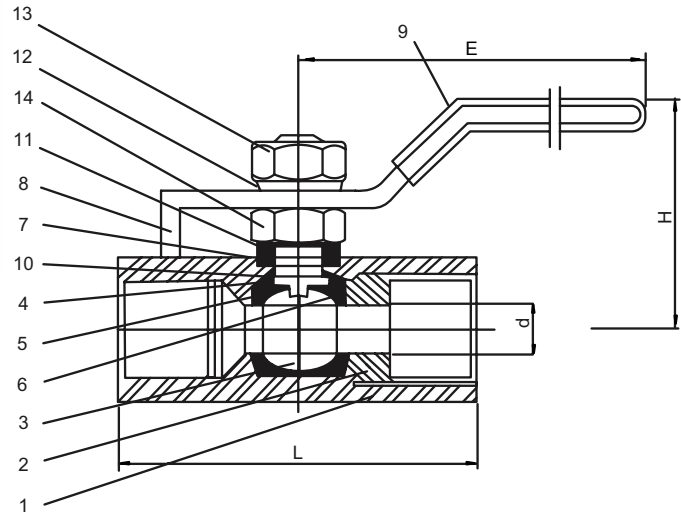
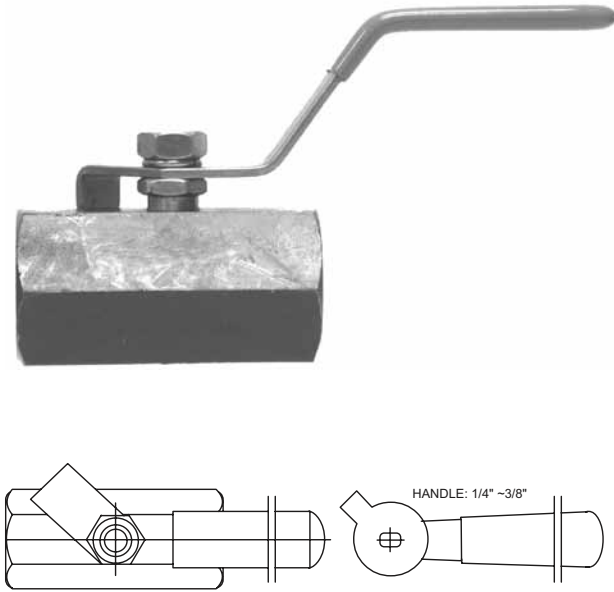
**STANDARD PORT CARBON STEEL BALL VALVE**

- For chemical and industrial applications.
- Blow-out proof stem design.
- 100% air tested under water, at 100 psi, open and closed positions.

**SPECIFICATIONS**

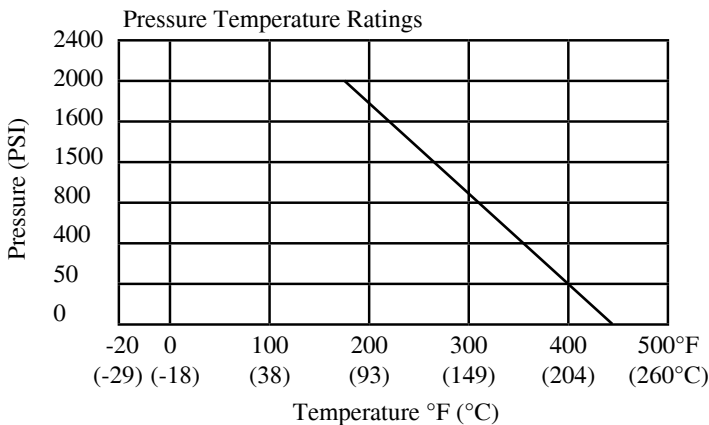
- Working Pressure: 1/4" ~ 1" 2000 psi WOG,  
1-1/4" ~ 2" 1500 psi WOG,
- Temperature Range: -60<sup>o</sup> to 450<sup>o</sup>F
- End types: Threaded
- 1 piece ball valve reducing bore
- Reinforced PTFE seat

**VALVES**



**2000 PSI STANDARD PORT**

Part #	Size	d	H	E	L	Box	Case	
949-121	1/4	.20	1.14	2.40	1.71	10	100	----
949-122	3/8	.28	1.38	3.55	1.87	10	100	----
949-123	1/2	.36	2.60	4.08	2.20	5	75	----
949-124	3/4	.49	2.72	4.21	2.58	5	60	----
949-125	1	.59	2.95	4.65	3.19	6	36	----
949-126	1-1/4	.78	3.07	5.83	3.62	4	20	----
949-127	1-1/2	1.02	3.39	5.83	3.78	3	15	----
949-128	2	1.26	3.86	5.90	4.49	3	12	----



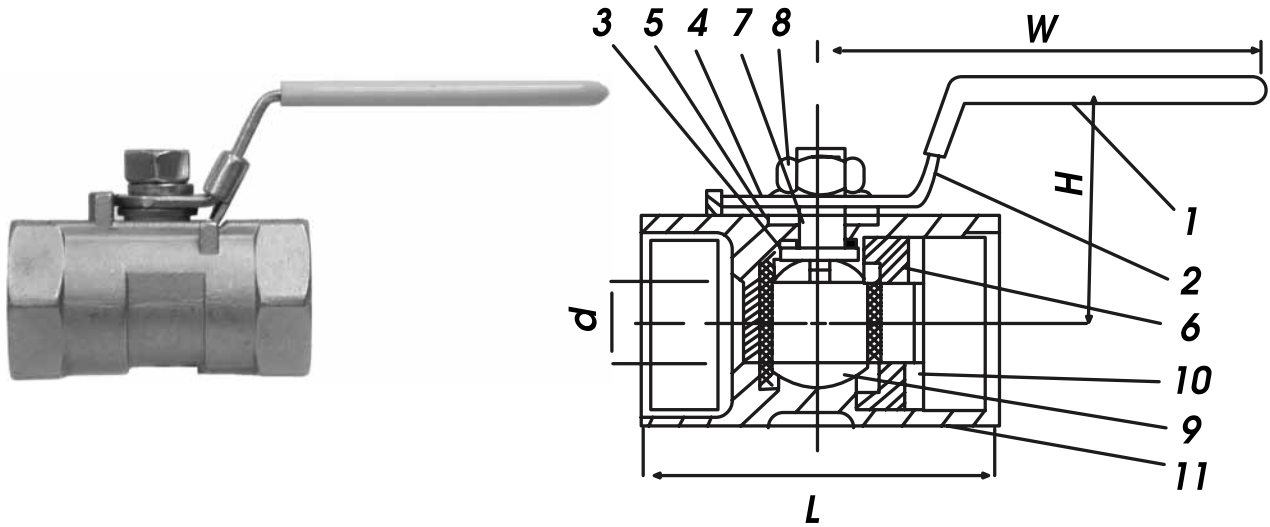
Item	Parts	Material
1	Body	ASTM A108 CL. 1018 or AISI 1021 C.S.
2	Unscrewed Seat Retainer	
3	Ball	SS304
4	Stem	SS316
5	Ball Seat	RPTFE
6	Cap Seal	PTFE
7	Packing	PTFE
8	Handle	SS304
9	Handle Sleeve	Vinyl Grip
10	Thrust Washer	PTFE
11	Gland	SS304
12	Washer	SS304
13	Handle Nut	SS304
14	Stem Nut	SS304

**ONE PIECE STANDARD PORT BALL VALVE**

316 Stainless Steel

**1000 PSI**

Yellow locking handle now standard



**VALVES**

Valves will accept a pad-lock on the handle.

dimensions (inches)

Part#	Size	D	L	H	W	
949-101	1/4"	.18	2.24	1.54	3.15	----
949-102	3/8"	.27	2.24	1.73	3.15	----
949-103	1/2"	.36	2.48	2.20	3.62	----
949-104	3/4"	.49	2.95	2.32	3.62	----
949-105	1"	.59	3.50	2.80	4.13	----
949-106	1-1/4"	.79	4.13	3.07	4.13	----
949-107	1-1/2"	.98	4.65	3.27	5.08	----
949-108	2"	1.26	5.35	3.94	5.08	----

Larger sizes available on special order basis

*Private Label handles available.  
See Page 162 for details*

Item	Parts	Material
1	Plastic Cover	Plastic
2	Handle	AISI 304 SS
3	Thrust Washer	PTFE
4	Packing Ring	AISI 304 SS
5	Stem Packing	PTFE
6	Seat	PTFE
7	Seat	AISI 316 SS
8	Stem Nut	AISI 304 SS
9	Ball	316SS ASTM-A351 CF8M
10	Cap	316SS ASTM-A351 CF8M
11	Body	316SS ASTM-A351 CF8M

SS = Stainless Steel

**1000 PSI 2 PC FULL PORT STAINLESS STEEL VALVE**

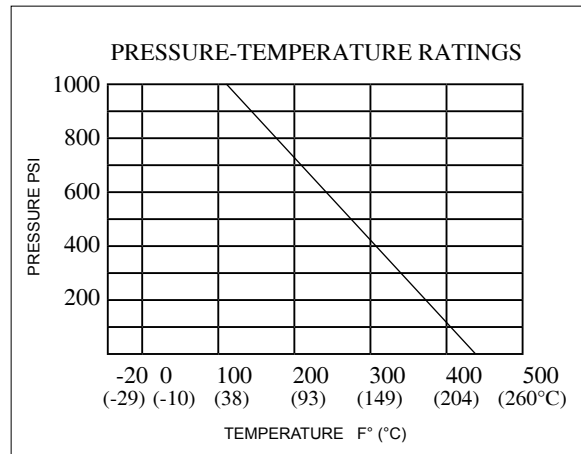
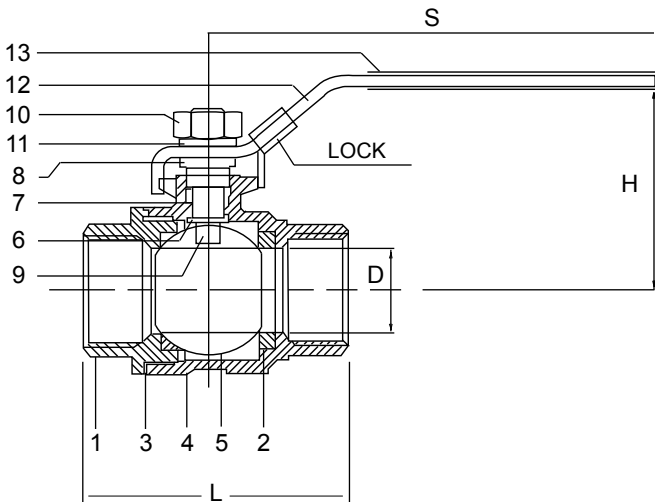
Materials: CFM8M (SS316), DIN 1.4408

Features:

- Investment Casting body
- Working pressure 1000 psi for W.O.G.
- Adjustable stem packing
- Pure teflon seals and seats
- Temperature range: -60 to 450°F
- Blow-out proof stem and safe pressure-reducing hole
- 100% leakage tested at 100 psi air under water
- Hydrostatic test pressure: 1500 psi
- Locking handle w/ yellow generic sleeve



**VALVES**



Valves will accept a pad-lock on the handle.

NO.	NAME	MATERIAL	QTY
1	CAP	316 SS	1
2	BALL SEAT	PTFE	2
3	JOINT GASKET	PTFE	1
4	BODY	316 SS	1
5	BALL	316 SS	1
6	THRUST WASHER	PTFE	1
7	STEM PACKING	PTFE	1
8	GLAND NUT	304 SS	1
9	STEM	316 SS	1
10	STEM NUT	304 SS	1
11	SPRING WASHER	304 SS	1
12	HANDLE	304 SS	1
13	PLASTIC SLEEVE	PVC	1

Part #	Size	D	L	H	S	Approx. Wt. Lbs.	
949-181	1/4"	0.46	1.84	1.89	4.06	0.44	----
949-182	3/8"	0.46	1.91	1.89	4.06	0.55	----
949-183	1/2"	0.59	2.28	1.89	4.06	0.66	----
949-184	3/4"	0.79	2.56	2.05	4.84	0.77	----
949-185	1"	0.98	3.03	2.45	4.84	1.43	----

The true measure of a man is how he treats someone who can do him absolutely no good.

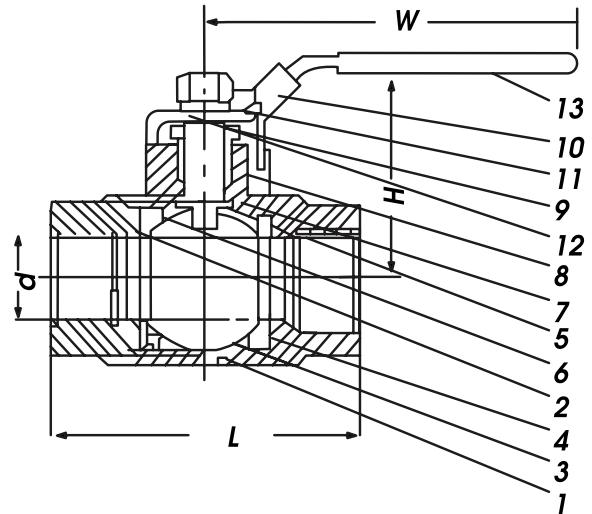
- Samuel Johnson

**TWO PIECE FULL PORT BALL VALVE**

316 Stainless Steel

**1000 PSI**

Yellow locking handle now standard!



**VALVES**

Valves will accept a pad-lock on the handle.

dimensions (inches)

Part#	Size	D	L	H	W	
949-161	1/4"	.46	2.24	1.93	4.13	----
949-162	3/8"	.50	2.24	1.93	4.13	----
949-163	1/2"	.59	2.48	2.01	4.13	----
949-164	3/4"	.78	2.95	2.28	5.12	----
949-165	1"	.98	3.50	2.76	5.71	----
949-166	1-1/4"	1.26	4.13	2.87	5.71	----
949-167	1-1/2"	1.50	4.65	3.29	7.48	----
949-168	2"	2	5.35	3.62	7.48	----

Larger sizes available on special order basis

Dimensions may change without notice. Please contact us if they are critical.

*Private Label handles available.  
See Page 162 for details*

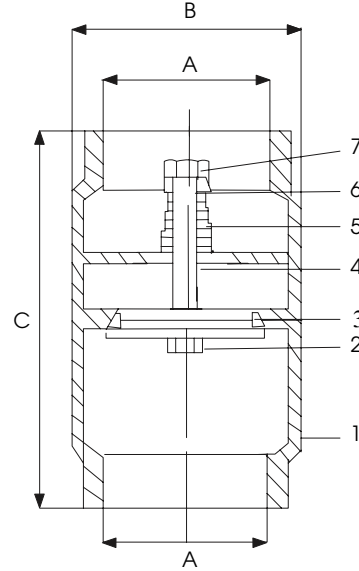
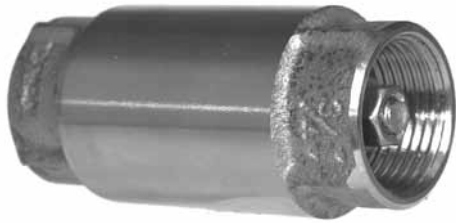
Item	Parts	Material
1	Body	316SS ASTM-A351 CF8M
2	Body Cap	316SS ASTM-A351 CF8M
3	Ball	316SS ASTM-A351 CF8M
4	Seat	Reinforced PTFE
5	Stem	AISI 316 SS
6	Seal	Reinforced PTFE
7	Thrust Washer	Reinforced PTFE
8	Packing	Reinforced PTFE
9	Gland Nut	AISI 304SS
10/11	Nut & Washer	AISI 304SS
12	Handle	AISI 304SS
13	Plastic Cover	Plastic

SS = Stainless Steel

**STAINLESS STEEL  
Check Valve**

- No Lead.
- Water wells need a check valve installed above the pumps between lengths of drop pipes.
- Opens & Closes with flow of media.
- No cracking pressure.
- Working pressure unavailable.

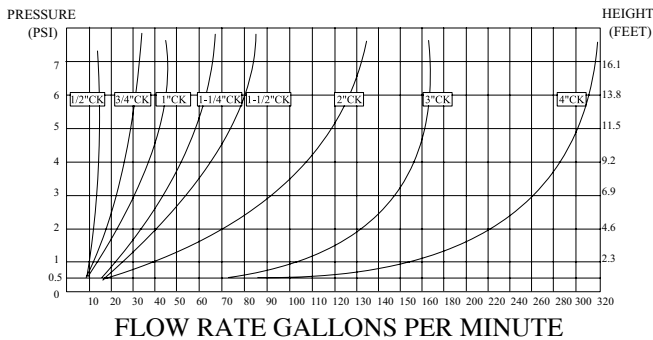
**VALVES**



**Dimensions (Inches)**

Part#	Size	A NPT	B	C	Box	Case	
949-430	1/2"	1/2"	1.26	2.43	10	100	----
949-431	3/4"	3/4"	1.50	2.72	10	80	----
949-432	1"	1"	1.77	3.23	10	60	----

More sizes available on a special order basis.



NO	Part	Material
1	Body	S.S 304
2	Stopper	S.S 304
3	O-Ring	Viton
4	Washer	PE
5	Spring	S.S 304
6	Cap	S.S 304
7	Nut	S.S 304

*See more Check Valves on page 162*

**WHITE PVC BALL VALVES**

- Quarter turn
- Solvent ends comply with ASTM D2466
- Designed for use in residential, commercial & industrial system as well as waste water, chemical, agricultural applications, marine, food processing, swimming pools.
- Corrosion resistant
- EPDM seal
- EPDM O-ring
- Fits both Sch. 40 & 80 pipe
- NSF approved
- Rated for 150 PSI at 73°F
- Threaded ends comply with ANSI B1.20.1

**MOLDED IN PLACE  
WHITE PIPE THREADS**



Part#	Size	Box	Case	
940-284	1/2	10	100	----
940-285	3/4	5	60	----
940-286	1	5	40	----
940-287	1-1/4	5	30	----
940-288	1-1/2	4	24	----
940-289	2	4	16	----
940-291	3	3	12	----
940-292	4	2	8	----

**WHITE SOCKET  
SLIP X SLIP**



Part #	Size	Box	Case	
940-294	1/2	10	100	----
940-295	3/4	5	60	----
940-296	1	5	40	----
940-297	1-1/4	5	30	----
940-298	1-1/2	4	24	----
940-299	2	4	16	----

*Grey also available in some sizes. Just change prefix to 941 instead of 940. Same Price.*

**PLASTIC DRUM FAUCETS**

- Pipe threads to ANSI B1.20.1
- Hose threads to ANSI B 1.20.7



The FLO-RITE faucet has been engineered to meet the demand for greater chemical resistance, using linear polyethylene for the stem.

**SPECIFICATION DATA**

- Body made of high-density polyethylene for greater strength and more positive thread engagement. Stem made of low density for more positive seal.
- Not affected by most acids, caustics or oils. Will eliminate chemical reaction and contamination of products in drums.
- Lightweight yet strong and rugged two-piece construction. Eliminates mechanical difficulty.

**“FLO-RITE” DRUM FAUCET**

Part #	Size	
46-277	3/4	----



The FLO-KING faucet made of virgin polyethylene easily handles viscous materials. The faucet shoulder and gasket - made of EPDM material - provide a leakproof seal.

**SPECIFICATION DATA**

- Constructed of highest quality virgin polyethylene.
- Molded of attractive metallic gold plastic.
- Not affected by most acids, caustics or petroleum products.

**“FLO-KING” DRUM FAUCET**

Part #	Size	
46-278	2	----

**CAUTION:** Never use this product in temperatures exceeding 140° F or with a heated container. Failure to follow these instructions can lead to a hazardous condition.



# BRASS NIPPLES

# BRASS NIPPLES

We hereby certify that to the best of our knowledge and belief the CDA 230 alloy Red Brass Pipe from which our nipples are produced meet the requirements of ASTM Specifications B43-91 and is free of mercury contamination. The chemical analysis is 85% copper, 15% Zinc and conforms to federal Specifications WVN-35LA.

Our brass nipples meet ASTM B687-88 and MS51846 for standard brass and copper nipples, and MS51872 for extra heavy brass nipples and extra heavy copper nipples.

Threads: Nipples are threaded with American Standard taper pipe threads (NPT) in accordance with screw-thread standard for Federal Services Handbook H-28.

## STANDARD RED BRASS 85% PIPE WITH THREADED ENDS SPECIFICATIONS:

Pipe Size in Inches	Dimension in Inches			Allowable Pressure POUNDS PER SQUARE INCH				
	O.D.	I.D.	Wall Thickness	Standard Size (Inches)	@ 100° F	@ 200° F	@ 300° F	@ 400° F
1/8"	.405	.281	.062	1/8"	370	370	320	140
1/4"	.540	.376	.082	1/4"	870	870	760	330
3/8"	.675	.495	.090	3/8"	890	890	780	340
1/2"	.840	.626	.107	1/2"	900	900	790	340
3/4"	1.050	.822	.114	3/4"	810	810	710	310
1"	1.315	1.063	.126	1"	630	630	560	240
1-1/4"	1.660	1.368	.146	1-1/4"	690	690	610	260
1-1/2"	1.900	1.600	.150	1-1/2"	630	630	560	240
2"	2.375	2.063	.156	2"	540	540	480	210
2-1/2"	2.875	2.501	.187	2-1/2"	450	450	390	170
3"	3.500	3.062	.219	3"	510	510	450	190
3-1/2"	4.000	3.500	.250	3-1/2"	570	570	500	220
4"	4.500	4.000	.250	4"	510	510	440	190
4-1/2"	5.000	4.500	.250	5"	410	410	360	160
5"	5.563	5.063	.250	6"	340	340	300	130
6"	6.625	6.125	.250					

## EXTRA HEAVY RED BRASS 85% PIPE WITH THREADED ENDS SPECIFICATIONS:

Pipe Size in Inches	Dimension in Inches			Allowable Pressure POUNDS PER SQUARE INCH				
	O.D.	I.D.	Wall Thickness	Standard Size (Inches)	@ 100° F	@ 200° F	@ 300° F	@ 400° F
1/8"	.405	.205	.100	1/8"	1960	1960	1960	1240
1/4"	.540	.294	.123	1/4"	2210	2210	2210	1340
3/8"	.675	.421	.127	3/8"	1840	1840	1840	1150
1/2"	.840	.542	.149	1/2"	1760	1760	1760	1100
3/4"	1.050	.736	.157	3/4"	1510	1510	1510	950
1"	1.315	.951	.182	1"	1340	1340	1340	850
1-1/4"	1.660	1.272	.194	1-1/4"	1160	1160	1160	730
1-1/2"	1.900	1.494	.203	1-1/2"	1090	1090	1090	680
2"	2.375	1.933	.221	2"	1000	1000	1000	630
3"	2.875	2.315	.280	2-1/2"	970	970	970	620
3-1/2"	3.500	2.892	.304	3"	910	910	910	570
4"	4.000	3.358	.321	3-1/2"	860	860	860	550
4-1/2"	4.500	3.818	.341	4"	840	840	840	530
5"	5.562	4.812	.375	5"	770	770	770	480
6"	6.625	5.751	.437	6"	800	800	800	500

NIPPLE WEIGHT CHART												
Diameter	Length of Close	Close	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"
1/8"	3/4"	1.4	3.0	3.8	5.2	6.2	7.2	8.4	9.2	11.0	12.2	13.2
1/4"	7/8"	2.4	4.8	6.4	8.2	10.4	12.2	14.0	16.0	18.0	20.2	22.0
3/8"	1"	3.8	6.2	8.6	11.0	13.4	16.2	18.4	20.4	23.4	25.6	28.0
1/2"	1-1/8"	5.6	8.6	11.6	16.2	19.4	22.4	27.4	29.6	33.0	37.4	40.4
3/4"	1-3/8"	10.2	11.8	16.2	21.4	22.6	31.0	35.6	40.2	45.6	50.0	55.0
1"	1-1/2"	15.6		23.4	29.6	37.0	44.2	52.6	59.2	68.4	74.8	76.8
1-1/4"	1-5/8"	26.5		36.0	45.0	56.5	68.0	81.0	92.0	98.5	110.5	125.0
1-1/2"	1-3/4"	35.0		42.0	55.5	67.0	81.0	95.5	108.0	121.5	131.0	144.0
2"	2"	54.5			72.0	88.5	107.0	125.0	143.5	155.0	179.0	190.0
2-1/2"	2-1/2"	90.0				116.5	148.5	168.5	180.0	218.5	239.5	262.0
3"	2-5/8"	134.5				170.0	210.0	239.0	268.5	314.0	349.0	390.0
4"	2-7/8"	226.3				253.1	307.0	357.5	422.5	450.0	516.3	563.8

Approximate weight per 100 pieces.

Standard Brass Nipples.

For Extra Heavy Brass multiply above weight by 1.37

## FOR THREAD CHARTS PLEASE SEE PAGE 410

## BRASS NIPPLES

## BRASS NIPPLES

### 1/8" Diameter



Part #	Size	
40-001	Close ( 3/4" )	----
40-002	x 1-1/2"	----
40-003	x 2"	----
40-004	x 2-1/2"	----
40-005	x 3"	----
40-006	x 3-1/2"	----
40-007	x 4"	----
40-008	x 4-1/2"	----
40-009	x 5"	----
40-010	x 5-1/2"	----
40-011	x 6"	----
40-012	x 7"	----
40-013	x 8"	----
40-014	x 9"	----
40-015	x 10"	----
40-016	x 11"	----
40-017	x 12"	----

### 3/8" Diameter



Part #	Size	
40-040	Close ( 1" )	----
40-041	x 1-1/2"	----
40-042	x 2"	----
40-043	x 2-1/2"	----
40-044	x 3"	----
40-045	x 3-1/2"	----
40-046	x 4"	----
40-047	x 4-1/2"	----
40-048	x 5"	----
40-049	x 5-1/2"	----
40-050	x 6"	----
40-051	x 7"	----
40-052	x 8"	----
40-053	x 9"	----
40-054	x 10"	----
40-055	x 11"	----
40-056	x 12"	----

### 1/4" Diameter



Part #	Size	
40-020	Close ( 7/8" )	----
40-021	x 1-1/2"	----
40-022	x 2"	----
40-023	x 2-1/2"	----
40-024	x 3"	----
40-025	x 3-1/2"	----
40-026	x 4"	----
40-027	x 4-1/2"	----
40-028	x 5"	----
40-029	x 5-1/2"	----
40-030	x 6"	----
40-031	x 7"	----
40-032	x 8"	----
40-033	x 9"	----
40-034	x 10"	----
40-035	x 11"	----
40-036	x 12"	----

### 1/2" Diameter



Part #	Size	
40-060	Close ( 1-1/8" )	----
40-061	x 1-1/2"	----
40-062	x 2"	----
40-063	x 2-1/2"	----
40-064	x 3"	----
40-065	x 3-1/2"	----
40-066	x 4"	----
40-067	x 4-1/2"	----
40-068	x 5"	----
40-069	x 5-1/2"	----
40-070	x 6"	----
40-071	x 7"	----
40-072	x 8"	----
40-073	x 9"	----
40-074	x 10"	----
40-075	x 11"	----
40-076	x 12"	----

*Extra Heavy Schedule 80 Red Brass Nipples page 188  
Chrome Plated Brass Nipples Available upon request*

## BRASS NIPPLES

### 3/4" Diameter



Part #	Length	
40-080	Close (1- 3/8" )	----
40-081	x 1-1/2"	----
40-082	x 2"	----
40-083	x 2-1/2"	----
40-084	x 3"	----
40-085	x 3-1/2"	----
40-086	x 4"	----
40-087	x 4-1/2"	----
40-088	x 5"	----
40-089	x 5-1/2"	----
40-090	x 6"	----
40-091	x 7"	----
40-092	x 8"	----
40-093	x 9"	----
40-094	x 10"	----
40-095	x 11"	----
40-096	x 12"	----

### 1" Diameter



Part #	Length	
40-100 <sup>5</sup>	Close ( 1-1/2" )	----
40-101	x 2"	----
40-102	x 2-1/2"	----
40-103	x 3"	----
40-104	x 3-1/2"	----
40-105	x 4"	----
40-106	x 4-1/2"	----
40-107	x 5"	----
40-108	x 5-1/2"	----
40-109	x 6"	----
40-110	x 7"	----
40-111	x 8"	----
40-112	x 9"	----
40-113	x 10"	----
40-114	x 11"	----
40-115	x 12"	----

## BRASS NIPPLES

### 1-1/4" Diameter



Part #	Length	
40-120	Close ( 1-5/8" )	----
40-121	x 2"	----
40-122	x 2-1/2"	----
40-123	x 3"	----
40-124	x 3-1/2"	----
40-125	x 4"	----
40-126	x 4-1/2"	----
40-127	x 5"	----
40-128	x 5-1/2"	----
40-129	x 6"	----
40-130	x 7"	----
40-131	x 8"	----
40-132	x 9"	----
40-133	x 10"	----
40-134	x 11"	----
40-135	x 12"	----

### 1-1/2" Diameter



Part #	Length	
40-140	Close ( 1-3/4" )	----
40-141	x 2"	----
40-142	x 2-1/2"	----
40-143	x 3"	----
40-144	x 3-1/2"	----
40-145	x 4"	----
40-146	x 4-1/2"	----
40-147	x 5"	----
40-148	x 5-1/2"	----
40-149	x 6"	----
40-150	x 7"	----
40-151	x 8"	----
40-152	x 9"	----
40-153	x 10"	----
40-154	x 11"	----
40-155	x 12"	----

*Extra Heavy Schedule 80 Red Brass Nipples page 188  
Chrome Plated Brass Nipples Available upon request*

## BRASS NIPPLES

## BRASS NIPPLES

### 2" Diameter



Part #	Length	
40-160	Close ( 2" )	----
40-161	x 2-1/2"	----
40-162	x 3"	----
40-163	x 3-1/2"	----
40-164	x 4"	----
40-165	x 4-1/2"	----
40-166	x 5"	----
40-167	x 5-1/2"	----
40-168	x 6"	----
40-169	x 7"	----
40-170	x 8"	----
40-171	x 9"	----
40-172	x 10"	----
40-173	x 11"	----
40-174	x 12"	----

### 2-1/2" Diameter



Part #	Length	
40-180	Close ( 2-1/2" )	----
40-181	x 3"	----
40-182	x 3-1/2"	----
40-183	x 4"	----
40-184	x 4-1/2"	----
40-185	x 5"	----
40-186	x 5-1/2"	----
40-187	x 6"	----
40-188	x 7"	----
40-189	x 8"	----
40-190	x 9"	----
40-191	x 10"	----
40-192	x 11"	----
40-193	x 12"	----

### 3" Diameter



Part #	Length	
40-200	Close ( 2-5/8" )	----
40-201	x 3"	----
40-202	x 3-1/2"	----
40-203	x 4"	----
40-204	x 4-1/2"	----
40-205	x 5"	----
40-206	x 5-1/2"	----
40-207	x 6"	----
40-208	x 7"	----
40-209	x 8"	----
40-210	x 9"	----
40-211	x 10"	----
40-212	x 11"	----
40-213	x 12"	----

### 4" Diameter



Part #	Length	
40-220	Close ( 2-7/8" )	----
40-221	x 3"	----
40-222	x 3-1/2"	----
40-223	x 4"	----
40-224	x 4-1/2"	----
40-225	x 5"	----
40-226	x 5-1/2"	----
40-234	x 6"	----
40-229	x 8"	----
40-233	x 12"	----

*Extra Heavy Schedule 80 Red Brass Nipples page 188  
Chrome Plated Brass Nipples Available upon request*

Eighty percent of success is showing up.

**- Woody Allen**

# EXTRA HEAVY RED BRASS NIPPLES

# BRASS NIPPLES

## 1/8" Diameter



Part #	Length	
42-001	Close (3/4")	----
42-002	1-1/2"	----
42-003	2"	----
42-004	2-1/2"	----
42-005	3"	----
42-006	3-1/2"	----
42-007	4"	----
42-008	4-1/2"	----
42-009	5"	----
42-010	5-1/2"	----

## 1/4" Diameter



Part #	Length	
42-020	Close (7/8")	----
42-021	1-1/2"	----
42-022	2"	----
42-023	2-1/2"	----
42-024	3"	----
42-025	3-1/2"	----
42-026	4"	----
42-027	4-1/2"	----
42-028	5"	----
42-029	5-1/2"	----
42-030	6"	----

## 3/8" Diameter



Part #	Length	
42-040	Close (1")	----
42-041	1-1/2"	----
42-042	2"	----
42-043	2-1/2"	----
42-044	3"	----
42-045	3-1/2"	----
42-046	4"	----
42-047	4-1/2"	----
42-048	5"	----
42-049	5-1/2"	----
42-050	6"	----

## 1/2" Diameter



Part #	Length	
42-060	Close (1-1/8")	----
42-061	1-1/2"	----
42-062	2"	----
42-063	2-1/2"	----
42-064	3"	----
42-065	3-1/2"	----
42-066	4"	----
42-067	4-1/2"	----
42-068	5"	----
42-069	5-1/2"	----
42-070	6"	----

## 3/4" Diameter



Part #	Length	
42-080	Close (1-3/8")	----
42-082	2"	----
42-083	2-1/2"	----
42-084	3"	----
42-085	3-1/2"	----
42-086	4"	----
42-087	4-1/2"	----
42-088	5"	----
42-089	5-1/2"	----
42-090	6"	----

## 1" Diameter



Part #	Length	
42-100	Close (1-1/2")	----
42-101	2"	----
42-102	2-1/2"	----
42-103	3"	----
42-104	3-1/2"	----
42-105	4"	----
42-106	4-1/2"	----
42-107	5"	----
42-108	5-1/2"	----
42-109	6"	----

## BRASS NIPPLES

## EXTRA HEAVY RED BRASS NIPPLES

### 1-1/4" Diameter



Part #	Length	
42-120	Close (1-5/8")	----
42-121	2"	----
42-122	2-1/2"	----
42-123	3"	----
42-124	3-1/2"	----
42-125	4"	----
42-126	4-1/2"	----
42-127	5"	----
42-128	5-1/2"	----
42-129	6"	----

### 1-1/2" Diameter



Part #	Length	
42-140	Close (1-3/4")	----
42-141	2"	----
42-142	2-1/2"	----
42-143	3"	----
42-144	3-1/2"	----
42-145	4"	----
42-146	4-1/2"	----
42-147	5"	----
42-148	5-1/2"	----
42-149	6"	----

### 2" Diameter



Part #	Length	
42-160	Close (2")	----
42-161	2-1/2"	----
42-162	3"	----
42-163	3-1/2"	----
42-164	4"	----
42-165	4-1/2"	----
42-166	5"	----
42-167	5-1/2"	----
42-168	6"	----

### 2-1/2" Diameter



Part #	Length	
42-180	Close (2-1/2")	----
42-181	3"	----
42-182	3-1/2"	----
42-183	4"	----
42-184	4-1/2"	----
42-185	5"	----
42-186	5-1/2"	----
42-187	6"	----

### 3" Diameter



Part #	Length	
42-200	Close (2-5/8")	----
42-201	3"	----
42-202	3-1/2"	----
42-203	4"	----
42-204	4-1/2"	----
42-205	5"	----
42-206	5-1/2"	----
42-207	6"	----

### 4" Diameter



Part #	Length	
42-220	Close (2-3/4")	----
42-221	3"	----
42-222	3-1/2"	----
42-223	4"	----
42-224	4-1/2"	----
42-225	5"	----
42-226	5-1/2"	----
42-227	6"	----

Never judge a book by its movie.

- J. W. Eagan

**Class 125 (150) For steam, water, gas, oil and air service**

Standard specifications

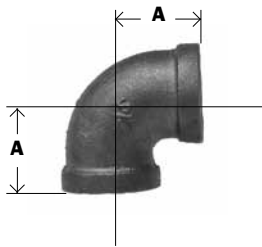
Materials - ASTM B62-82 (85,5,5,5) C83600

Dimensions - ANSI B 16.15

Threads - ANSI B2.1 or BA 21 and Fed. WW-P-460

Bronze threaded fittings are manufactured from smooth-cored castings, designed to provide full flow with minimum restriction. All threads are accurately machined and gauged to ensure a perfect fit with the pipe. All fittings are individually tested under water to ensure quality.

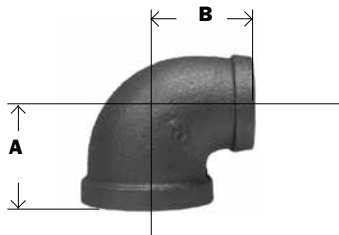
**90° ELBOWS**



X101

Part #	Size	A	Approx. Wt. Lbs.	
44-100	1/8"	0.55	0.08	----
44-101	1/4"	0.72	0.10	----
44-102	3/8"	0.83	0.17	----
44-103	1/2"	1.03	0.24	----
44-104	3/4"	1.19	0.35	----
44-105	1"	1.43	0.59	----
44-106	1-1/4"	1.71	0.96	----
44-107	1-1/2"	1.87	1.33	----
44-108	2"	2.14	2.34	----
44-109	2-1/2"	2.74	3.79	----
44-110	3"	3.10	5.21	----
44-112	4"	3.80	8.59	----

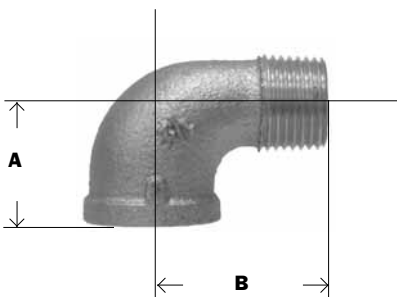
**90° REDUCING ELBOWS**



X101

Part #	Size	A	B	Approx. Wt. Lbs.	
44-120	1/4" x 1/8"	0.67	0.60	0.10	----
44-124	1/2" x 3/8"	0.93	0.90	0.22	----
44-127	3/4" x 1/2"	1.08	1.11	0.31	----
44-131	1" x 3/4"	1.30	1.31	0.56	----
44-134	1-1/4" x 1"	1.52	1.60	0.81	----
44-137	1-1/2" x 1"	1.56	1.72	1.02	----
44-140	2" x 1"	1.72	2.02	1.30	----
44-142	2" x 1-1/2"	1.89	2.07	1.65	----

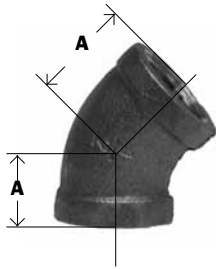
**90° STREET ELLS**



X103

Part #	Size	A	B	Approx. Wt. Lbs.	
44-160	1/8"	0.55	0.92	0.07	----
44-161	1/4"	0.72	1.11	0.11	----
44-162	3/8"	0.83	1.24	0.16	----
44-163	1/2"	1.03	1.51	0.21	----
44-164	3/4"	1.19	1.66	0.34	----
44-165	1"	1.43	1.98	0.65	----
44-166	1-1/4"	1.71	2.26	1.11	----
44-167	1-1/2"	1.87	2.46	1.16	----
44-168	2"	2.14	2.98	2.09	----
44-169	2-1/2"	2.74	3.92	3.79	----
44-170	3"	3.10	4.45	6.38	----

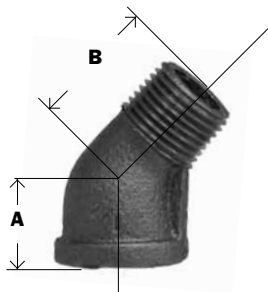
**45° ELBOWS**



X102

Part #	Size	A	Approx. Wt. Lbs.	
44-180	1/8"	0.43	0.05	----
44-181	1/4"	0.55	0.08	----
44-182	3/8"	0.63	0.12	----
44-183	1/2"	0.79	0.22	----
44-184	3/4"	0.91	0.34	----
44-185	1"	1.07	0.57	----
44-186	1-1/4"	1.23	0.90	----
44-187	1-1/2"	1.31	1.08	----
44-188	2"	1.47	1.54	----

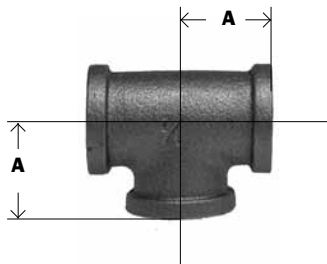
**45° STREET ELBOWS**



X103A

Part #	Size	A	B	Approx. Wt. Lbs.	
44-200	1/8"	0.26	0.43	0.06	----
44-201	1/4"	0.35	0.56	0.11	----
44-202	3/8"	0.37	0.63	0.13	----
44-203	1/2"	0.45	0.79	0.18	----
44-204	3/4"	0.52	0.91	0.28	----
44-205	1"	0.60	1.07	0.52	----
44-206	1-1/4"	0.67	1.23	0.77	----
44-207	1-1/2"	0.70	1.31	0.97	----
44-208	2"	0.76	1.47	2.04	----

**TEES**



X106

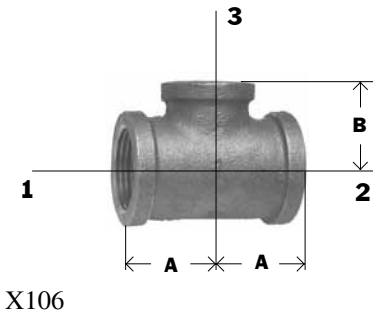
Part #	Size	A	Approx. Wt. Lbs.	
44-250	1/8"	0.55	0.09	----
44-251	1/4"	0.72	0.16	----
44-252	3/8"	0.83	0.25	----
44-253	1/2"	1.03	0.31	----
44-254	3/4"	1.19	0.48	----
44-255	1"	1.43	0.84	----
44-256	1-1/4"	1.71	1.18	----
44-257	1-1/2"	1.87	1.69	----
44-258	2"	2.14	2.69	----
44-259	2-1/2"	2.74	4.70	----
44-260	3"	3.10	6.69	----

Tomorrow is often the busiest day of the week.

- Spanish Proverb



**REDUCING TEES**

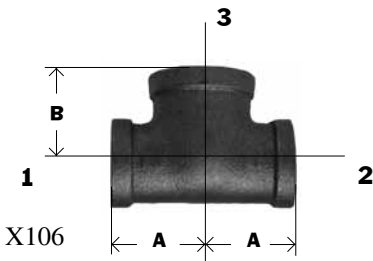


X106

**REDUCING ON THE BRANCH**

Part #	Size (1 & 2) x 3	A	B	Approx. Wt. Lbs.	
44-276	1/2" x 1/4"	0.87	0.87	0.28	----
44-279	1/2" x 3/8"	0.93	0.90	0.40	----
44-282	3/4" x 1/4"	1.05	1.08	0.38	----
44-283	3/4" x 3/8"	1.00	1.00	0.46	----
44-286	3/4" x 1/2"	1.08	1.11	0.40	----
44-291	1" x 1/2"	1.20	1.24	0.73	----
44-298	1" x 3/4"	1.30	1.31	0.71	----
44-301	1-1/4" x 1/2"	1.34	1.53	1.18	----
44-303	1-1/4" x 3/4"	1.30	1.31	1.08	----
44-306	1-1/4" x 1"	1.58	1.67	1.23	----

**BULLHEAD TEES**



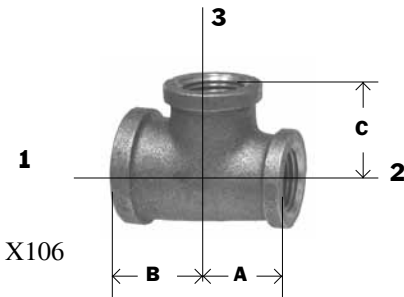
X106

**LARGER BRANCH**

Part #	Size 1x2x3	A	B	Approx. Wt. Lbs.	
44-280	1/2" x 1/2" x 3/4"	1.22	1.20	0.48	----

\* Many sizes available...just ask!

**REDUCING TEES**



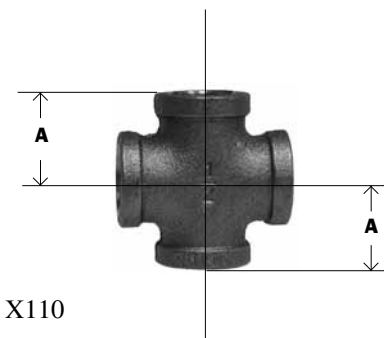
X106

**REDUCING ON THE RUN**

Part #	Size 1x2x3	A	B	C	Approx. Wt. Lbs.	
44-287	3/4" x 1/2" x 1/2"	1.12	1.20	1.22	0.37	----
44-296	1" x 3/4" x 3/4"	1.31	1.37	1.45	0.71	----

\* Many sizes available...just ask!

**CROSSES**



X110

Part #	Size	A	Approx. Wt. Lbs.	
44-391	1/4"	0.72	0.20	----
44-392	3/8"	0.83	0.29	----
44-393	1/2"	1.03	0.43	----
44-394	3/4"	1.19	0.59	----
44-395	1"	1.19	1.15	----
44-396	1-1/4"	1.71	1.70	----
44-397	1-1/2"	1.87	1.97	----
44-398	2"	2.14	2.52	----

I never apologize. I'm sorry, but that's just the way I am.

- Homer Simpson

**COUPLINGS**



X111

Part #	Size	A	Approx. Wt. Lbs.	
44-410	1/8"	0.80	0.06	----
44-411	1/4"	0.80	0.08	----
44-412	3/8"	1.05	0.14	----
44-413	1/2"	1.29	0.21	----
44-414	3/4"	1.43	0.29	----
44-415	1"	1.68	0.45	----
44-416	1-1/4"	1.86	0.80	----
44-417	1-1/2"	1.92	0.98	----
44-418	2"	2.20	1.56	----
44-420	3"	3.18	3.63	----

**REDUCING COUPLINGS**



X112

Part #	Size	A	Approx. Wt. Lbs.	
44-430	1/4" x 1/8"	0.88	0.08	----
44-431	3/8" x 1/8"	0.92	0.10	----
44-432	3/8" x 1/4"	0.92	0.12	----
44-433	1/2" x 1/8"	1.17	0.14	----
44-434	1/2" x 1/4"	1.17	0.17	----
44-435	1/2" x 3/8"	1.17	0.17	----
44-436	3/4" x 1/4"	1.35	0.24	----
44-437	3/4" x 3/8"	1.35	0.24	----
44-438	3/4" x 1/2"	1.35	0.27	----
44-440	1" x 3/8"	1.56	0.40	----
44-441	1" x 1/2"	1.56	0.36	----
44-442	1" x 3/4"	1.56	0.45	----
44-444	1-1/4" x 1/2"	1.77	0.60	----
44-445	1-1/4" x 3/4"	1.77	0.67	----
44-446	1-1/4" x 1"	1.77	0.65	----
44-447	1-1/2" x 1/2"	1.80	0.77	----
44-448	1-1/2" x 3/4"	1.80	0.70	----
44-449	1-1/2" x 1"	1.80	0.74	----
44-450	1-1/2" x 1-1/4"	1.80	0.83	----
44-458	2" x 1/2"	2.03	1.07	----
44-451	2" x 3/4"	2.03	1.25	----
44-452	2" x 1"	2.03	1.32	----
44-453	2" x 1-1/4"	2.03	1.37	----
44-454	2" x 1-1/2"	2.03	1.74	----
44-461	2-1/2" x 1-1/2"	3.15	1.94	----
44-462	2-1/2" x 2"	3.15	2.37	----
44-456	3" x 2"	3.69	2.40	----
44-463	3" x 2-1/2"	3.69	3.82	----

Time you enjoy wasting is not wasted.

- John Lennon

**CAPS**



X116

Part #	Size	A	Approx. Wt. Lbs.	
44-470	1/8"	0.53	0.03	----
44-471	1/4"	0.58	0.06	----
44-472	3/8"	0.66	0.09	----
44-473	1/2"	0.75	0.13	----
44-474	3/4"	0.87	0.20	----
44-475	1"	1.03	0.29	----
44-476	1-1/4"	1.10	0.47	----
44-477	1-1/2"	1.12	0.61	----
44-478	2"	1.35	1.10	----
44-480	3"	1.83	2.64	----

**UNIONS**



X187

Part #	Size	A	Approx. Wt. Lbs.	
44-600	1/8"	1.18	0.13	----
44-601	1/4"	1.26	0.22	----
44-602	3/8"	1.50	0.39	----
44-603	1/2"	1.57	0.47	----
44-604	3/4"	1.89	0.69	----
44-605	1"	2.13	1.01	----
44-606	1-1/4"	2.36	1.48	----
44-607	1-1/2"	2.68	1.92	----
44-608	2"	2.99	3.04	----
44-609	2-1/2"	3.35	4.80	----
44-610	3"	3.74	6.49	----

I hope that while so many people are out smelling the flowers, someone is taking the time to plant some.

**- Herbert Rappaport**

**HEX BUSHINGS**



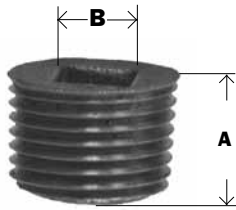
X114

Part #	Size	A	Hex	Approx. Wt. Lbs.	
44-500	1/4" x 1/8"	0.58	0.66	0.03	----
44-501	3/8" x 1/8"	0.64	0.72	0.06	----
44-502	3/8" x 1/4"	0.64	0.75	0.06	----
44-503	1/2" x 1/8"	0.75	0.92	0.11	----
44-504	1/2" x 1/4"	0.75	0.93	0.10	----
44-505	1/2" x 3/8"	0.75	0.92	0.09	----
44-506	3/4" x 1/8"	0.87	1.15	0.17	----
44-507	3/4" x 1/4"	0.85	1.14	0.17	----
44-508	3/4" x 3/8"	0.85	1.14	0.16	----
44-509	3/4" x 1/2"	0.85	1.15	0.14	----
44-510	1" x 1/4"	1.05	1.43	0.30	----
44-511	1" x 3/8"	1.05	1.50	0.26	----
44-512	1" x 1/2"	1.00	1.40	0.27	----
44-513	1" x 3/4"	1.00	1.43	0.22	----
44-514	1-1/4" x 1/4"	1.22	1.10	0.34	----
44-515	1-1/4" x 3/8"	1.19	1.84	0.29	----
44-516	1-1/4" x 1/2"	1.14	1.33	0.47	----
44-517	1-1/4" x 3/4"	1.08	1.75	0.46	----
44-518	1-1/4" x 1"	1.08	1.76	0.33	----
44-519	1-1/2" x 1/4"	1.09	2.12	0.29	----
44-520	1-1/2" x 3/8"	1.35	2.16	0.44	----
44-521	1-1/2" x 1/2"	1.20	2.10	0.51	----
44-522	1-1/2" x 3/4"	1.20	2.12	0.51	----
44-523	1-1/2" x 1"	1.14	2.08	0.61	----
44-524	1-1/2" x 1-1/4"	1.14	2.12	0.40	----
44-527	2" x 1/2"	1.27	1.32	1.10	----
44-528	2" x 3/4"	1.27	1.62	0.77	----
44-529	2" x 1"	1.29	1.95	0.88	----
44-530	2" x 1-1/4"	1.22	2.47	0.97	----
44-531	2" x 1-1/2"	1.22	2.50	0.77	----
44-532	2-1/2" x 1"	1.53	1.94	1.19	----
44-534	2-1/2" x 1-1/2"	1.50	2.38	1.15	----
44-535	2-1/2" x 2"	1.43	2.97	1.12	----
44-537	3" x 1-1/2"	1.61	2.68	2.44	----
44-538	3" x 2"	1.61	3.70	1.82	----
44-539	3" x 2-1/2"	1.53	3.70	2.11	----

A man is but the product of his thoughts; what he thinks, he becomes.

- Gandhi

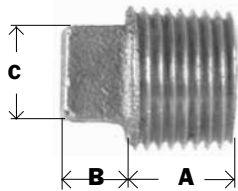
**BRONZE COUNTERSUNK PLUGS**



Part #	Size	A	Socket Size	Approx. Wt. Lbs.	
44-633	1/2"	0.57	0.43	0.06	----
44-634	3/4"	0.58	0.47	0.11	----
44-635	1"	0.75	0.59	0.22	----
44-636	1-1/4"	0.74	0.72	0.33	----
44-637	1-1/2"	0.79	0.72	0.50	----
44-638	2"	0.80	0.85	0.88	----
44-639	2-1/2"	1.06	1.12	1.56	----

**NIPPLES & FITTINGS**

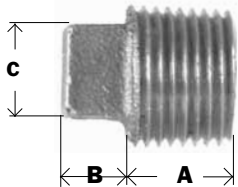
**CORED SQUARE HEAD PLUGS**



X117

Part #	Size	A	B	C	Approx. Wt. Lbs.	
44-650	1/8"	0.27	0.24	0.28	0.02	----
44-651	1/4"	0.41	0.28	0.37	0.04	----
44-652	3/8"	0.41	0.31	0.43	0.07	----
44-653	1/2"	0.54	0.38	0.56	0.11	----
44-654	3/4"	0.55	0.44	0.62	0.17	----
44-655	1"	0.69	0.50	0.81	0.25	----
44-656	1-1/4"	0.71	0.56	0.93	0.39	----
44-657	1-1/2"	0.73	0.62	1.12	0.51	----
44-658	2"	0.76	0.68	1.31	0.83	----
44-659	2-1/2"	1.07	0.74	1.50	1.26	----
44-660	3"	1.13	0.80	1.68	1.49	----
44-662	4"	1.22	0.92	2.25	3.20	----

**SOLID SQUARE HEAD PLUGS**



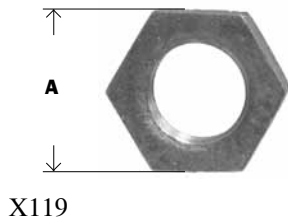
X117A

Part #	Size	A	B	C	Approx. Wt. Lbs.	
44-670	1/8"	0.27	0.24	0.28	0.04	----
44-671	1/4"	0.41	0.28	0.37	0.05	----
44-672	3/8"	0.41	0.31	0.43	0.08	----
44-673	1/2"	0.54	0.38	0.56	0.12	----
44-674	3/4"	0.55	0.44	0.62	0.18	----
44-675	1"	0.69	0.50	0.81	0.28	----
44-676	1-1/4"	0.71	0.56	0.93	0.40	----
44-677	1-1/2"	0.73	0.62	1.12	0.56	----
44-678	2"	0.76	0.68	1.31	0.90	----

The secret of life is honesty and fair dealing. If you can fake that, you've got it made.

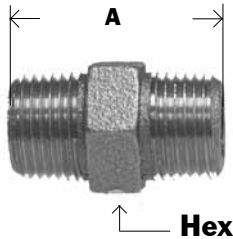
- Groucho Marx

**HEX LOCKNUTS**



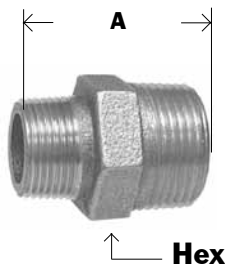
Part #	Size	A	Thickness	Approx. Wt. Lbs.	
44-700	1/8"	0.50	0.19	0.02	----
44-701	1/4"	0.66	0.25	0.03	----
44-702	3/8"	0.77	0.28	0.04	----
44-703	1/2"	0.97	0.31	0.10	----
44-704	3/4"	1.23	0.34	0.13	----
44-705	1"	1.50	0.38	0.20	----
44-706	1-1/4"	1.86	0.42	0.28	----
44-707	1-1/2"	2.12	0.47	0.52	----
44-708	2"	2.63	0.53	0.64	----

**HEX NIPPLES**



Part #	Size	A	Hex	Approx. Wt. Lbs.	
44-720	1/8"	1.25	0.50	0.05	----
44-721	1/4"	1.25	0.61	0.06	----
44-723	1/2"	1.65	1.03	0.18	----
44-724	3/4"	1.77	1.21	0.24	----
44-725	1"	2.06	1.46	0.36	----
44-726	1-1/4"	2.12	1.81	0.47	----
44-727	1-1/2"	2.25	2.07	0.76	----
44-728	2"	2.50	2.41	1.50	----
44-729	2-1/2"	2.80	3.10	2.10	----

**REDUCING NIPPLES**



Part #	Size	A	Hex	Approx. Wt. Lbs.	
44-740	1/4" x 1/8"	1.22	0.68	0.06	----
44-742	1/2" x 3/8"	1.49	0.97	0.20	----
44-743	3/4" x 1/2"	1.65	1.18	0.26	----
44-744	1" x 1/2"	1.87	1.41	0.32	----
44-745	1" x 3/4"	1.95	1.50	0.37	----
44-748	1-1/4" x 1"	2.48	1.75	0.69	----
44-750	1-1/2" x 1"	2.28	2.10	0.70	----
44-753	1-1/2" x 1-1/4"	2.47	1.96	1.10	----
44-760	2" x 1-1/2"	2.83	2.43	1.36	----

**Floor Flanges and Companion Flanges available upon request.**

# SCH 40 STAINLESS STEEL NIPPLES

# STAINLESS STEEL

Schedule 40 Welded  
NPT threaded both ends

Stainless steel pipe nipples are manufactured from stainless steel pipe that conforms to specification ASTM A312/SA312.

All stainless steel nipples conform to specification ASTM A733. Threads conform to the requirements of ANSI B1.20.1.



**1/8" Diameter**

Part # 304 S.S.	Length	Part # 316 S.S.
48-001	X Close (3/4")	49-001
48-002	x 1-1/2"	49-002
48-003	x 2"	49-003
48-004	x 2-1/2"	49-004
48-005	x 3"	49-005
48-006	x 3-1/2"	49-006
48-007	x 4"	49-007
48-008	x 4-1/2"	49-008
48-009	x 5"	49-009
48-010	x 5-1/2"	49-010
48-011	x 6"	49-011
48-015	x 10"	



**1/4" Diameter**

Part # 304 S.S.	Length	Part # 316 S.S.
48-020	X Close (7/8")	49-020
48-021	x 1-1/2"	49-021
48-022	x 2"	49-022
48-023	x 2-1/2"	49-023
48-024	x 3"	49-024
48-025	x 3-1/2"	49-025
48-026	x 4"	49-026
48-027	x 4-1/2"	49-027
48-028	x 5"	49-028
48-029	x 5-1/2"	49-029
48-030	x 6"	49-030
48-032	x 8"	
48-034	x 10"	
48-036	x 12"	



**3/8" Diameter**

Part # 304 S.S.	Length	Part # 316 S.S.
48-040	X Close (1")	49-040
48-041	x 1-1/2"	49-041
48-042	x 2"	49-042
48-043	x 2-1/2"	49-043
48-044	x 3"	49-044
48-045	x 3-1/2"	49-045
48-046	x 4"	49-046
48-047	x 4-1/2"	49-047
48-048	x 5"	49-048
48-049	x 5-1/2"	49-049
48-050	x 6"	49-050
48-052	x 8"	
48-054	x 10"	



**1/2" Diameter**

Part # 304 S.S.	Length	Part # 316 S.S.
48-060	X Close (1")	49-060
48-061	x 1-1/2"	49-061
48-062	x 2"	49-062
48-063	x 2-1/2"	49-063
48-064	x 3"	49-064
48-065	x 3-1/2"	49-065
48-066	x 4"	49-066
48-067	x 4-1/2"	49-067
48-068	x 5"	49-068
48-069	x 5-1/2"	49-069
48-070	x 6"	49-070
48-071	x 7"	
48-072	x 8"	
48-073	x 9"	
48-074	10"	
48-075	x 11"	
48-076	x 12"	

\* Stainless Steel Nipples available in SCH80 seamless beginning on page 201

NIPPLES & FITTINGS

**STAINLESS STEEL**

**SCH 40 STAINLESS STEEL NIPPLES**



**3/4" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
48-080	----	X Close (1-3/8")	49-080	----
48-081	----	x 1-1/2"	49-081	----
48-082	----	x 2"	49-082	----
48-083	----	x 2-1/2"	49-083	----
48-084	----	x 3"	49-084	----
48-085	----	x 3-1/2"	49-085	----
48-086	----	x 4"	49-086	----
48-087	----	x 4-1/2"	49-087	----
48-088	----	x 5"	49-088	----
48-089	----	x 5-1/2"	49-089	----
48-090	----	x 6"	49-090	----
48-091	----	x 7"		
48-092	----	x 8"		
48-094	----	x 10"	49-094	----
48-096	----	x 12"		



**1" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
48-100	----	X Close (1-1/2")	49-100	----
48-101	----	x 2"	49-101	----
48-102	----	x 2-1/2"	49-102	----
48-103	----	x 3"	49-103	----
48-104	----	x 3-1/2"	49-104	----
48-105	----	x 4"	49-105	----
48-106	----	x 4-1/2"	49-106	----
48-107	----	x 5"	49-107	----
48-108	----	x 5-1/2"	49-108	----
48-109	----	x 6"	49-109	----
48-110	----	x 7"		
48-111	----	x 8"		
48-113	----	x 10"		

\* Stainless Steel Nipples available in SCH80 seamless beginning on page 201



**1-1/4" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
48-120	----	X Close (1-5/8")	49-120	----
48-121	----	x 2"	49-121	----
48-122	----	x 2-1/2"	49-122	----
48-123	----	x 3"	49-123	----
48-124	----	x 3-1/2"	49-124	----
48-125	----	x 4"	49-125	----
48-126	----	x 4-1/2"	49-126	----
48-127	----	x 5"	49-127	----
48-128	----	x 5-1/2"	49-128	----
48-129	----	x 6"	49-129	----
48-131	----	x 8"		
48-135	----	x 12"		



**1-1/2" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
48-140	----	x 1-3/4"	49-140	----
48-141	----	x 2"	49-141	----
48-142	----	x 2-1/2"	49-142	----
48-143	----	x 3"	49-143	----
48-144	----	x 3-1/2"	49-144	----
48-145	----	x 4"	49-145	----
48-146	----	x 4-1/2"	49-146	----
48-147	----	x 5"	49-147	----
48-148	----	x 5-1/2"	49-148	----
48-149	----	x 6"	49-149	----
48-151	----	x 8"		
48-152	----	x 9"		

Other Stainless Steel Nipples Available

- Schedule 40 & 80 seamless

Laughter is the shortest distance between two people.

**- Victor Borge**

**NIPPLES & FITTINGS**



# SCH 40 STAINLESS STEEL NIPPLES

# STAINLESS STEEL



**2" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
48-160	----	X Close (2")	49-160	----
48-161	----	x 2-1/2"	49-161	----
48-162	----	x 3"	49-162	----
48-163	----	x 3-1/2"	49-163	----
48-164	----	x 4"	49-164	----
48-165	----	x 4-1/2"	49-165	----
48-166	----	x 5"	49-166	----
48-167	----	x 5-1/2"	49-167	----
48-168	----	x 6"	49-168	----
48-169	----	x 7"	49-169	----
48-170	----	x 8"		
48-171	----	x 9"		
48-172	----	x 10"		



**2-1/2" Diameter**

Part # 304 S.S.	List Price	Length	Part # 316 S.S.	
48-180	----	X Close (2-1/2")		
48-193	----	x 12"		
		x 5-1/2"	49-186	----



**3" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
48-200	----	X Close (2-5/8")		
48-201	----	x 3"		
48-203	----	x 4"	49-203	----
48-205	----	x 5"		
48-207	----	x 6"		
		x 7"	49-208	----
48-209	----	x 8"		
48-213	----	x 12"		



**4" Diameter**

Part # 304 S.S.	List Price	Length	Part # 316 S.S.	
48-220	----	X Close (2-7/8")		
		x 5"	49-225	----
48-227	----	x 6"		

\* Stainless Steel Nipples available in SCH80 seamless beginning on page 201

I can picture in my mind a world without war, a world without hate. And I can picture us attacking that world, because they'd never expect it.

- Jack Handey

**STAINLESS STEEL**

**SCH 80 SEAMLESS SS NIPPLES**



**1/8" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-001	----	X Close (3/4")	52-001	----
51-002	----	X 1-1/2"	52-002	----
51-003	----	X 2"	52-003	----
51-004	----	X 2-1/2"	52-004	----
51-005	----	X 3"	52-005	----
51-006	----	X 3-1/2"	52-006	----
51-007	----	X 4"	52-007	----
51-008	----	X 4-1/2"	52-008	----
51-009	----	X 5"	52-009	----
51-010	----	X 5-1/2"	52-010	----
51-011	----	X 6"	52-011	----

**1/4" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-020	----	X Close (7/8")	52-020	----
51-021	----	X 1-1/2"	52-021	----
51-022	----	X 2"	52-022	----
51-023	----	X 2-1/2"	52-023	----
51-024	----	X 3"	52-024	----
51-025	----	X 3-1/2"	52-025	----
51-026	----	X 4"	52-026	----
51-027	----	X 4-1/2"	52-027	----
51-028	----	X 5"	52-028	----
51-029	----	X 5-1/2"	52-029	----
51-030	----	X 6"	52-030	----

**3/8" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-040	----	X CLOSE (1")	52-040	----
51-041	----	X 1-1/2"	52-041	----
51-042	----	X 2"	52-042	----
51-043	----	X 2-1/2"	52-043	----
51-044	----	X 3"	52-044	----
51-045	----	X 3-1/2"	52-045	----
51-046	----	X 4"	52-046	----
51-047	----	X 4-1/2"	52-047	----
51-048	----	X 5"	52-048	----
51-049	----	X 5-1/2"	52-049	----
51-050	----	X 6"	52-050	----



**1/2" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-060	----	X Close (1-1/8)	52-060	----
51-061	----	X 1-1/2"	52-061	----
51-062	----	X 2"	52-062	----
51-063	----	X 2-1/2"	52-063	----
51-064	----	X 3"	52-064	----
51-065	----	X 3-1/2"	52-065	----
51-066	----	X 4"	52-066	----
51-067	----	X 4-1/2"	52-067	----
51-068	----	X 5"	52-068	----
51-069	----	X 5-1/2"	52-069	----
51-070	----	X 6"	52-070	----

**3/4" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-080	----	X Close (1-3/8")	52-080	----
51-081	----	X 1-1/2"	52-081	----
51-082	----	X 2"	52-082	----
51-083	----	X 2-1/2"	52-083	----
51-084	----	X 3"	52-084	----
51-085	----	X 3-1/2"	52-085	----
51-086	----	X 4"	52-086	----
51-087	----	X 4-1/2"	52-087	----
51-088	----	X 5"	52-088	----
51-089	----	X 5-1/2"	52-089	----
51-090	----	X 6"	52-090	----

**1" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-100	----	X Close (1-1/2")	52-100	----
51-101	----	X 2"	52-101	----
51-102	----	X 2-1/2"	52-102	----
51-103	----	X 3"	52-103	----
51-104	----	X 3-1/2"	52-104	----
51-105	----	X 4"	52-105	----
51-106	----	X 4-1/2"	52-106	----
51-107	----	X 5"	52-107	----
51-108	----	X 5-1/2"	52-108	----
51-109	----	X 6"	52-109	----

# SCH 80 SEAMLESS SS NIPPLES

# STAINLESS STEEL



**1-1/4" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-120	----	X Close (1-5/8")	52-120	----
51-121	----	X 2"	52-121	----
51-122	----	X 2-1/2"	52-122	----
51-123	----	X 3"	52-123	----
51-124	----	X 3-1/2"	52-124	----
51-125	----	X 4"	52-125	----
51-126	----	X 4-1/2"	52-126	----
51-127	----	X 5"	52-127	----
51-128	----	X 5-1/2"	52-128	----
51-129	----	X 6"	52-129	----

**1-1/2" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-140	----	X Close (1-3/4")	52-140	----
51-141	----	X 2"	52-141	----
51-142	----	X 2-1/2"	52-142	----
51-143	----	X 3"	52-143	----
51-144	----	X 3-1/2"	52-144	----
51-145	----	X 4"	52-145	----
51-146	----	X 4-1/2"	52-146	----
51-147	----	X 5"	52-147	----
51-148	----	X 5-1/2"	52-148	----
51-149	----	X 6"	52-150	----

**2" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-160	----	X Close (2")	52-160	----
51-161	----	X 2-1/2"	52-161	----
51-162	----	X 3"	52-162	----
51-163	----	X 3-1/2"	52-163	----
51-164	----	X 4"	52-164	----
51-165	----	X 4-1/2"	52-165	----
51-166	----	X 5"	52-166	----
51-167	----	X 5-1/2"	52-167	----
51-168	----	X 6"	52-168	----



**2-1/2" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-180	----	X Close (2-1/2")	52-180	----
51-181	----	X 3"	52-181	----
51-182	----	X 3-1/2"	52-182	----
51-183	----	X 4"	52-183	----
51-184	----	X 4-1/2"	52-184	----
51-185	----	X 5"	52-185	----
51-186	----	X 5-1/2"	52-186	----
51-187	----	X 6"	52-187	----

**3" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-200	----	X Close (2-5/8")	52-200	----
51-201	----	X 3"	52-201	----
51-202	----	X 3-1/2"	52-202	----
51-203	----	X 4"	52-203	----
51-204	----	X 4-1/2"	52-204	----
51-205	----	X 5"	52-205	----
51-206	----	X 5-1/2"	52-206	----
51-207	----	X 6"	52-207	----

**4" Diameter**

Part # 304 S.S.		Length	Part # 316 S.S.	
51-220	----	X Close (2-7/8")	52-220	----
51-223	----	X 4"	52-223	----
51-224	----	X 4-1/2"	52-224	----
51-225	----	X 5"	52-225	----
51-226	----	X 5-1/2"	52-226	----
51-227	----	X 6"	52-227	----

**NIPPLES & FITTINGS**

## STAINLESS STEEL

## 304 AND 316 150# STAINLESS STEEL FITTINGS

- Stainless Casting conform to ASTM A351
- NPT Threads conform to ASME B1.20.1

### 90° ELBOWS



Part # 304 S.S.	Size	Part # 316 S.S.
62-100	1/8"	63-100
62-101	1/4"	63-101
62-102	3/8"	63-102
62-103	1/2"	63-103
62-104	3/4"	63-104
62-105	1"	63-105
62-106	1-1/4"	63-106
62-107	1-1/2"	63-107
62-108	2"	63-108
62-109	2-1/2"	
62-110	3"	
62-112	4"	63-112

### 90° STREET ELLS



Part # 304 S.S.	Size	Part # 316 S.S.
62-160	1/8"	63-160
62-161	1/4"	63-161
62-162	3/8"	63-162
62-163	1/2"	63-163
62-164	3/4"	63-164
62-165	1"	63-165
62-166	1-1/4"	63-166
62-167	1-1/2"	63-167
62-168	2"	63-168

### 45° ELBOWS



Part # 304 S.S.	List Price	Size	Part # 316 S.S.
62-180	----	1/8"	63-180
62-181	----	1/4"	63-181
62-182	----	3/8"	63-182
62-183	----	1/2"	63-183
62-184	----	3/4"	63-184
62-185	----	1"	63-185
62-186	----	1-1/4"	63-186
62-187	----	1-1/2"	63-187
62-188	----	2"	63-188

### TEES



Part # 304 S.S.	Size	Part # 316 S.S.
62-250	1/8"	63-250
62-251	1/4"	63-251
62-252	3/8"	63-252
62-253	1/2"	63-253
62-254	3/4"	63-254
62-255	1"	63-255
62-256	1-1/4"	63-256
62-257	1-1/2"	63-257
62-258	2"	63-258
62-260	3"	

### CROSSES



Part # 304 S.S.	Size	Part # 316 S.S.
	1/8"	63-390
62-391	1/4"	63-391
62-392	3/8"	63-392
62-393	1/2"	63-393
62-394	3/4"	63-394
62-395	1"	63-395
62-396	1-1/4"	63-396
62-397	1-1/2"	63-397
62-398	2"	63-398

### STAINLESS STEEL OD MACHINED COUPLINGS



Part # 304 S.S.	List Price	Size	Part # 316 S.S.
62-410B	----	1/8"	63-410B
62-411B	----	1/4"	63-411B
62-412B	----	3/8"	63-412B
62-413B	----	1/2"	63-413B
62-414B	----	3/4"	63-414B
62-415B	----	1"	63-415B
62-416B	----	1-1/4"	63-416B
62-417B	----	1-1/2"	63-417B
62-418B	----	2"	63-418B

\* 3000 LB Forged Stainless Steel Fittings available

**COUPLINGS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-413	----	1/2"	63-413	----
62-414	----	3/4"	63-414	----
62-415	----	1"	63-415	----
62-416	----	1-1/4"	63-416	----
62-417	----	1-1/2"	63-417	----
62-418	----	2"	63-418	----
62-419	----	2-1/2"	63-419	----
62-420	----	3"	63-420	----
62-421	----	4"	63-421	----

**REDUCING COUPLINGS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-430	----	1/4" x 1/8"	63-430	----
62-431	----	3/8" x 1/8"		
62-432	----	3/8" x 1/4"	63-432	----
62-433	----	1/2" x 1/8"		
62-434	----	1/2" x 1/4"	63-434	----
62-435	----	1/2" x 3/8"	63-435	----
62-455	----	3/4" x 1/8"		
62-436	----	3/4" x 1/4"	63-436	----
62-437	----	3/4" x 3/8"	63-437	----
62-438	----	3/4" x 1/2"	63-438	----
62-440	----	1" x 3/8"		
62-441	----	1" x 1/2"	63-441	----
62-442	----	1" x 3/4"	63-442	----
62-445	----	1-1/4" x 3/4"	63-445	----
62-446	----	1-1/4" x 1"	63-446	----
62-447	----	1-1/2" x 1/2"	63-447	----
62-448	----	1-1/2" x 3/4"	63-448	----
62-449	----	1-1/2" x 1"	63-449	----
62-450	----	1-1/2" x 1-1/4"	63-450	----
62-452	----	2" x 1"	63-452	----
62-453	----	2" x 1-1/4"	63-453	----
62-454	----	2" x 1-1/2"	63-454	----

**CAPS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-470	----	1/8"	63-470	----
62-471	----	1/4"	63-471	----
62-472	----	3/8"	63-472	----
62-473	----	1/2"	63-473	----
62-474	----	3/4"	63-474	----
62-475	----	1"	63-475	----
62-476	----	1-1/4"	63-476	----
62-477	----	1-1/2"	63-477	----
62-478	----	2"	63-478	----
62-480	----	3"		

**HEX CAPS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-075	----	1/8"	63-075	----
62-076	----	1/4"	63-076	----
62-077	----	3/8"	63-077	----
62-078	----	1/2"	63-078	----
62-079	----	3/4"	63-079	----
62-080	----	1"	63-080	----
62-081	----	1-1/4"	63-081	----
62-082	----	1-1/2"	63-082	----
62-083	----	2"		----

\* 3000 LB Forged Stainless Steel Fittings available

**HEX SOCKET PLUGS**



Part # 316 S.S.	Size	
63-759	1/16"	----
63-760	1/8 "	----
63-761	1/4 "	----
63-762	3/8 "	----
63-763	1/2 "	----
63-764	3/4 "	----

**HEX BUSHINGS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-500	----	1/4" x 1/8"	63-500	----
		3/8" x 1/8"	63-501	----
62-502	----	3/8" x 1/4"	63-502	----
62-503	----	1/2" x 1/8"		
62-504	----	1/2" x 1/4"	63-504	----
62-505	----	1/2" x 3/8"	63-505	----
		3/4" x 1/4"	63-507	----
62-508	----	3/4" x 3/8"	63-508	----
62-509	----	3/4" x 1/2"	63-509	----
62-512	----	1" x 1/2"	63-512	----
62-513	----	1" x 3/4"	63-513	----
		1-1/4" x 1/2"	63-516	----
62-517	----	1-1/4" x 3/4"	63-517	----
62-518	----	1-1/4" x 1"	63-518	----
62-521	----	1-1/2" x 1/2"	63-521	----
62-522	----	1-1/2" x 3/4"	63-522	----
62-532	----	1-1/2" x 1"	63-523	----
62-524	----	1-1/2" x 1-1/4"	63-524	----
62-527	----	2" x 1/2"		
62-528	----	2" x 3/4"	63-528	----
62-529	----	2" x 1"	63-529	----
62-530	----	2" x 1-1/4"	63-530	----
62-531	----	2" x 1-1/2"	63-531	----
62-534	----	2-1/2" x 1-1/2"	63-534	----
62-535	----	2-1/2" x 2"	63-535	----
62-538	----	3" x 2"	63-538	----
62-539	----	3" x 2-1/2"		
62-543	----	4" x 3"		

**UNIONS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-600	----	1/8"	63-600	----
62-601	----	1/4"	63-601	----
62-602	----	3/8"	63-602	----
62-603	----	1/2"	63-603	----
62-604	----	3/4"	63-604	----
62-605	----	1"	63-605	----
62-606	----	1-1/4"	63-606	----
62-607	----	1-1/2"	63-607	----
62-608	----	2"	63-608	----
62-610	----	3"	63-610	----

**HEX HEAD PLUGS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-630	----	1/8"	63-630	----
62-631	----	1/4"	63-631	----
62-632	----	3/8"	63-632	----
62-633	----	1/2"	63-633	----
62-634	----	3/4"	63-634	----
62-635	----	1"	63-635	----
62-636	----	1-1/4"	63-636	----
62-637	----	1-1/2"	63-637	----
62-638	----	2"	63-638	----

**SOLID HEX HEAD PLUGS**



Part # 316 S.S.	Size	
63-660	1/8"	----
63-661	1/4"	----
63-662	3/8"	----
63-663	1/2"	----

**HEX NIPPLES**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-720	----	1/8"	63-720	----
62-721	----	1/4"	63-721	----
62-722	----	3/8"	63-722	----
62-723	----	1/2"	63-723	----
62-724	----	3/4"	63-724	----
62-725	----	1"	63-725	----
62-726	----	1-1/4"	63-726	----
62-727	----	1-1/2"	63-727	----
62-728	----	2"	63-728	----

\* 3000 LB Forged Stainless Steel Fittings available

**SQUARE HEAD PLUGS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-670	----	1/8"	63-670	----
62-671	----	1/4"	63-671	----
62-672	----	3/8"	63-672	----
62-653	----	1/2"	63-653	----
62-654	----	3/4"	63-654	----
62-655	----	1"	63-655	----
62-656	----	1-1/4"	63-656	----
62-657	----	1-1/2"	63-657	----
62-658	----	2"	63-658	----
62-660	----	3"		

**SOLID SQUARE HEAD PLUGS**



Part # 316 S.S.	Size	
63-680	1/8"	----
63-681	1/4"	----
63-682	3/8"	----
63-683	1/2"	----
63-684	3/4"	----

**HEX LOCKNUTS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-701	----	1/4"	63-701	----
62-702	----	3/8"	63-702	----
62-703	----	1/2"	63-703	----
62-704	----	3/4"	63-704	----
62-705	----	1"	63-705	----
62-706	----	1-1/4"	63-706	----
62-707	----	1-1/2"	63-707	----
62-708	----	2"	63-708	----

Can't find it here? Ask us for price & availability.

**STAINLESS STEEL HALF COUPLINGS**



Part # 304 S.S.		Size	Part # 316 S.S.	
62-771	----	1/4"	63-771	----
62-772	----	3/8"	63-772	----
62-773	----	1/2"	63-773	----
62-774	----	3/4"	63-774	----
62-775	----	1"	63-775	----
62-776	----	1-1/4"	63-776	----
62-777	----	1-1/2"	63-777	----
62-778	----	2"	63-778	----

**HOSE NIPPLES**



Part # 304 S.S.		Hose I.D. x Male Pipe	Part # 316 S.S.	
73-951	----	1/4"	973-951	----
73-952	----	3/8"	973-952	----
73-953	----	1/2"	973-953	----
73-954	----	3/4"	973-954	----
73-955	----	1"	973-955	----
73-956	----	1-1/4"	973-956	----
73-957	----	1-1/2"	973-957	----
73-958	----	2"	973-958	----
73-959	----	2-1/2"	973-959	----
73-960	----	3"	973-990	----
73-961	----	4"	973-991	----

**REDUCING HOSE NIPPLES - 304 S.S.**



Part # 304 S.S.	Hose I.D. x Male Pipe	
73-970	1/4" x 1/8"	----
73-971	3/8" x 1/4"	----
73-972	1/2" x 3/8"	----
73-973	1/2" x 1/4"	----
73-974	3/4" x 1/2"	----
73-975	1" x 3/4"	----
73-976	1" x 1/2"	----
73-977	1-1/4" x 1"	----
73-979	1-1/2" x 1-1/4"	----
73-980	1-1/2" x 1"	----
73-981	2" x 1-1/2"	----
73-982	2" x 1-1/4"	----

\* 3000 LB Forged Stainless Steel Fittings available.  
See our website.

# Black and Galvanized Steel Nipples

## Product Specifications

Welded steel pipe nipples both galvanized and black in diameters ranging from 1/8" up to 4" in lengths from close to 12" and cut-pipe up to 120".

## Technical Specifications

**Standards:** Product complies with ASTM A-53, A-733 and ANSI B1.20.1 for threading, dimensions and pipe specifications.

**Pipe:** Complies with ASTM A-53 mill tested schedule 40 and 80 for both Welded & Seamless Meets ANSI B36.1. All pipe is hydrostatic tested.

**Galvanized:** Zinc coating applied by hot dipped. Galvanized complying with ASTM A-123.

**Black:** Protected against oxidation with varnish coating.

### Cutting Procedure:

All pipe is roller cut. A visual inspection of seams, excessive galvanizing, mid-welds, poor galvanizing, bends, roundness, under and over weight of the pipe is made at the time it is cut. This is done for every length of pipe. Pipe lengths are cut to a tolerance of + or - 1/16" of the actual length.

### Threading Procedure:

All pipe is chaser thread cut to American Standard Tapered Pipe Thread standards. This is 3/4" taper per foot. Pipe is visually inspected for roundness of threads and other visual faults as it is removed from the threading machine.

## Steel and Wrought Iron Welded

Nominal Size	Outside Diameter	Schedule 40 Standard			Schedule 80 Extra Heavy		
		Wall Thickness	Inside Diameter	Weight per Foot P.E.	Wall Thickness	Inside Diameter	Weight per Foot P.E.
1/8"	.405	.068	.269	.24	.095	.215	.31
1/4"	.540	.088	.364	.42	.119	.302	.54
3/8"	.675	.091	.493	.57	.126	.423	.74
1/2"	.840	.109	.622	.85	.147	.546	1.09
3/4"	1.050	.113	.824	1.13	.154	.742	1.47
1"	1.315	.133	1.049	1.68	.179	.957	2.17
1-1/4"	1.660	.140	1.380	2.27	.191	1.278	3.00
1-1/2"	1.900	.145	1.610	2.72	.200	1.500	3.63
2"	2.375	.154	2.067	3.65	.218	1.939	5.02
2-1/2"	2.875	.203	2.469	5.79	.276	2.323	7.66
3"	3.500	.216	3.068	7.58	.300	2.900	10.25
3-1/2"	4.000	.226	3.548	9.11	.318	3.364	12.51
4"	4.500	.237	4.026	10.79	.337	3.826	14.98
5"	5.563	.258	5.047	14.62	.375	4.813	20.78
6"	6.625	.280	6.065	18.97	.432	5.761	28.57

## Chemical Composition

Maximum%

C	0.25
Mn	0.95

## Tensile Requirements

	Kg/Mm2	PSI	MPA
Tensile Strength Min.	33.7	48000	331
Tensile Strength Min.	20.0	28500	196

## Pounds per 100 pcs. approximate

Diam	Length close/RC	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	7"	8"	9"	10"	11"	12"
1/8"	1.3	2.4	3.5	4.4	5.4	6.8	7.4	8.5	9.5	11.2	11.4	13.4	15.4	17.4	19.1	20.8	23.1
1/4"	2.4	4.3	6.1	8.3	9.0	11.8	13.5	16.1	16.8	19.1	19.9	24.7	28.7	32.0	35.1	38.1	41.4
3/8"	3.6	6.0	7.8	9.9	13.4	15.4	17.8	20.3	22.7	24.9	28.4	32.6	36.6	40.8	44.8	48.7	52.9
1/2"	6.1	8.7	12.7	15.9	19.3	24.2	26.0	31.6	34.5	39.2	43.1	50.0	58.0	66.1	74.5	82.3	89.0
3/4"	11.0	12.2	21.8	23.1	26.1	31.6	37.0	41.6	47.1	52.6	55.9	65.4	79.1	79.6	94.9	111.9	116.9
1"	15.3		22.0	28.4	37.0	44.2	52.1	59.4	66.6	76.5	79.7	94.8	111.6	124.5	136.3	153.6	175.0
1-1/4"	22.7		32.0	41.9	51.3	61.9	68.1	81.9	90.7	98.2	115.1	133.4	149.3	174.8	199.2	219.3	236.6
1-1/2"	29.9		37.9	46.8	80.6	72.6	85.8	99.1	112.7	120.3	134.5	162.1	184.9	208.5	219.4	247.5	277.8
2"	51.8			63.1	82.1	97.1	110.0	128.4	142.0	165.0	166.9	208.5	246.7	276.9	303.2	334.4	369.2
2-1/2"	82.6				109.0	133.5	156.2	172.9	209.9	232.8	253.4	318.9	337.3	408.1	457.6	514.2	554.4
3"	116.5				147.2	181.6	210.4	247.7	274.1	213.6	338.0	389.2	469.4	555.1	599.2	649.4	747.1
4"	172.7						265.3	326.2	344.4	405.7	451.7	547.3	632.2	721.8	832.7	927.1	1057.0
6"																	

Available Upon Request



**1/8" DIAMETER**



Part # Galv		Length	Part # Black	
56-001	----	X Close (3/4")	57-001	----
56-002	----	x 1-1/2"	57-002	----
56-003	----	x 2"	57-003	----
56-004	----	x 2-1/2"	57-004	----
56-005	----	x 3"	57-005	----
56-006	----	x 3-1/2"	57-006	----
56-007	----	x 4"	57-007	----
56-008	----	x 4-1/2"	57-008	----
56-009	----	x 5"	57-009	----
56-010	----	x 5-1/2"	57-010	----
56-011	----	x 6"	57-011	----
56-012	----	x 7"	57-012	----
56-013	----	x 8"	57-013	----
56-014	----	x 9"	57-014	----
56-015	----	x 10"	57-015	----
56-016	----	x 11"	57-016	----
56-017	----	x 12"	57-017	----

**1/4" Diameter**



Part # Galv		Length	Part # Black	
56-020	----	X Close (7/8")	57-020	----
56-021	----	x 1-1/2"	57-021	----
56-022	----	x 2"	57-022	----
56-023	----	x 2-1/2"	57-023	----
56-024	----	x 3"	57-024	----
56-025	----	x 3-1/2"	57-025	----
56-026	----	x 4"	57-026	----
56-027	----	x 4-1/2"	57-027	----
56-028	----	x 5"	57-028	----
56-029	----	x 5-1/2"	57-029	----
56-030	----	x 6"	57-030	----
56-031	----	x 7"	57-031	----
56-032	----	x 8"	57-032	----
56-033	----	x 9"	57-033	----
56-034	----	x 10"	57-034	----
56-035	----	x 11"	57-035	----
56-036	----	x 12"	57-036	----
56-038	----	x 18"		
56-037	----	x 24"		

*More sizes available*

**3/8" DIAMETER**



Part # Galv		Length	Part # Black	
56-040	----	X Close (1")	57-040	----
56-041	----	x 1-1/2"	57-041	----
56-042	----	x 2"	57-042	----
56-043	----	x 2-1/2"	57-043	----
56-044	----	x 3"	57-044	----
56-045	----	x 3-1/2"	57-045	----
56-046	----	x 4"	57-046	----
56-047	----	x 4-1/2"	57-047	----
56-048	----	x 5"	57-048	----
56-049	----	x 5-1/2"	57-049	----
56-050	----	x 6"	57-050	----
56-051	----	x 7"	57-051	----
56-052	----	x 8"	57-052	----
56-053	----	x 9"	57-053	----
56-054	----	x 10"	57-054	----
56-055	----	x 11"	57-055	----
56-056	----	x 12"	57-056	----
56-430	----	x 18"	57-430	----
56-431	----	x 24"	57-431	----
56-432	----	x 30"	57-432	----
56-433	----	x 36"	57-433	----
56-234	----	x 42"	57-234	----
56-235	----	x 48"	57-235	----
56-236	----	x 60"	57-236	----
56-237	----	x 72"	57-237	----

Black Steel Nipples available in Schedule 40 Seamless beginning on page 213.

Black Steel Nipples available in Schedule 80 beginning on page 226.

Other Steel Nipples available upon request:

- Toe Nipples
- L&R Nipples
- Di-electric Nipples
- Nipple Assortments
- Nipples cut to any lengths

**STEEL NIPPLES****BLACK AND GALVANIZED SCHEDULE 40****1/2" DIAMETER**

Part # Galv		Length	Part # Black	
56-060	----	X Close (1-1/8")	57-060	----
56-061	----	x 1-1/2"	57-061	----
56-062	----	x 2"	57-062	----
56-063	----	x 2-1/2"	57-063	----
56-064	----	x 3"	57-064	----
56-065	----	x 3-1/2"	57-065	----
56-066	----	x 4"	57-066	----
56-067	----	x 4-1/2"	57-067	----
56-068	----	x 5"	57-068	----
56-069	----	x 5-1/2"	57-069	----
56-070	----	x 6"	57-070	----
56-071	----	x 7"	57-071	----
56-072	----	x 8"	57-072	----
56-073	----	x 9"	57-073	----
56-074	----	x 10"	57-074	----
56-075	----	x 11"	57-075	----
56-076	----	x 12"	57-076	----
56-240	----	x 18"	57-240	----
56-241	----	x 24"	57-241	----
56-242	----	x 30"	57-242	----
56-243	----	x 36"	57-243	----
56-244	----	x 42"	57-244	----
56-245	----	x 48"	57-245	----
56-246	----	x 60"	57-246	----
56-247	----	x 72"	57-247	----

**3/4" DIAMETER**

Part # Galv		Length	Part # Black	
56-080 <sup>3</sup>	----	X Close (1-3/8")	57-080	----
56-081	----	x 1-1/2"	57-081	----
56-082	----	x 2"	57-082	----
56-083	----	x 2-1/2"	57-083	----
56-084	----	x 3"	57-084	----
56-085	----	x 3-1/2"	57-085	----
56-086	----	x 4"	57-086	----
56-087	----	x 4-1/2"	57-087	----
56-088	----	x 5"	57-088	----
56-089	----	x 5-1/2"	57-089	----
56-090	----	x 6"	57-090	----
56-091	----	x 7"	57-091	----
56-092	----	x 8"	57-092	----
56-093	----	x 9"	57-093	----
56-094	----	x 10"	57-094	----
56-095	----	x 11"	57-095	----
56-096	----	x 12"	57-096	----
56-250	----	x 18"	57-250	----
56-251	----	x 24"	57-251	----
56-252	----	x 30"	57-252	----
56-253	----	x 36"	57-253	----
56-254	----	x 42"	57-254	----
56-255	----	x 48"	57-255	----
56-256	----	x 60"	57-256	----
56-257	----	x 72"	57-257	----

If you have built castles in the air, your work need not be lost; that is where they should be. Now put foundations under them.

- Henry David Thoreau

**1" DIAMETER**



Part # Galv	Length	Part # Black
56-100	X Close (1-1/2")	57-100
56-101	x 2"	57-101
56-102	x 2-1/2"	57-102
56-103	x 3"	57-103
56-104	x 3-1/2"	57-104
56-105	x 4"	57-105
56-106	x 4-1/2"	57-106
56-107	x 5"	57-107
56-108	x 5-1/2"	57-108
56-109	x 6"	57-109
56-110	x 7"	57-110
56-111	x 8"	57-111
56-112	x 9"	57-112
56-113	x 10"	57-113
56-114	x 11"	57-114
56-115	x 12"	57-115
56-260	x 18"	57-260
56-261	x 24"	57-261
56-262	x 30"	57-262
56-263	x 36"	57-263
56-264	x 42"	57-264
56-265	x 48"	57-265
56-266	x 60"	57-266
56-267	x 72"	57-267

**1-1/4" DIAMETER**



Part # Galv	Length	Part # Black
56-120	X Close (1-5/8")	57-120
56-121	x 2"	57-121
56-122	x 2-1/2"	57-122
56-123	x 3"	57-123
56-124	x 3-1/2"	57-124
56-125	x 4"	57-125
56-126	x 4-1/2"	57-126
56-127	x 5"	57-127
56-128	x 5-1/2"	57-128
56-129	x 6"	57-129
56-130	x 7"	57-130
56-131	x 8"	57-131
56-132	x 9"	57-132
56-133	x 10"	57-133
56-134	x 11"	57-134
56-135	x 12"	57-135
56-270	x 18"	57-270
56-271	x 24"	57-271
56-272	x 30"	57-272
56-273	x 36"	57-273
56-274	x 42"	57-274
56-275	x 48"	57-275
56-276	x 60"	57-276
56-277	x 72"	57-277

**NIPPLES & FITTINGS**

**Golf Quotes - Part One...**

These greens are so fast I have to hold my putter over the ball and hit it with the shadow.

**- Sam Snead**

I was three over. One over a house, one over a patio, and one over a swimming pool.

**- George Brett**

Actually, the only time I ever took out a one-iron was to kill a tarantula. And I took a 7 to do that.

**- Jim Murray**

**STEEL NIPPLES****BLACK AND GALVANIZED SCHEDULE 40****1-1/2" DIAMETER**

Part # Galv		Length	Part # Black	
56-140	----	X Close (1-3/4")	57-140	----
56-141	----	x 2"	57-141	----
56-142	----	x 2-1/2"	57-142	----
56-143	----	x 3"	57-143	----
56-144	----	x 3-1/2"	57-144	----
56-145	----	x 4"	57-145	----
56-146	----	x 4-1/2"	57-146	----
56-147	----	x 5"	57-147	----
56-148	----	x 5-1/2"	57-148	----
56-149	----	x 6"	57-149	----
56-150	----	x 7"	57-150	----
56-151	----	x 8"	57-151	----
56-152	----	x 9"	57-152	----
56-153	----	x 10"	57-153	----
56-154	----	x 11"	57-154	----
56-155	----	x 12"	57-155	----
56-280	----	x 18"	57-280	----
56-281	----	x 24"	57-281	----
56-282	----	x 30"	57-282	----
56-283	----	x 36"	57-283	----
56-284	----	x 42"	57-284	----
56-285	----	x 48"	57-285	----
56-286	----	x 60"	57-286	----
56-287	----	x 72"	57-287	----

**2" DIAMETER**

Part # Galv		Length	Part # Black	
56-160	----	X Close (2")	57-160	----
56-161	----	x 2-1/2"	57-161	----
56-162	----	x 3"	57-162	----
56-163	----	x 3-1/2"	57-163	----
56-164	----	x 4"	57-164	----
56-165	----	x 4-1/2"	57-165	----
56-166	----	x 5"	57-166	----
56-167	----	x 5-1/2"	57-167	----
56-168	----	x 6"	57-168	----
56-169	----	x 7"	57-169	----
56-170	----	x 8"	57-170	----
56-171	----	x 9"	57-171	----
56-172	----	x 10"	57-172	----
56-173	----	x 11"	57-173	----
56-174	----	x 12"	57-174	----
56-290	----	x 18"	57-290	----
56-291	----	x 24"	57-291	----
56-292	----	x 30"	57-292	----
56-293	----	x 36"	57-293	----
56-294	----	x 42"	57-294	----
56-295	----	x 48"	57-295	----
56-296	----	x 60"	57-296	----
56-297	----	x 72"	57-297	----

**Golf Quotes - Part Two...**

The only sure rule in golf is - he who has the fastest cart never has to play the bad lie.

- Mickey Mantle

Sex and golf are the two things you can enjoy even if you're not good at them.

- Kevin Costner

I don't fear death, but I sure don't like those three-footers for par.

- Chi Chi Rodriguez

**2-1/2" DIAMETER**



Part # Galv		Length	Part # Black	
56-180	----	X Close (2-1/2")	57-180	----
56-181	----	x 3"	57-181	----
56-182	----	x 3-1/2"	57-182	----
56-183	----	x 4"	57-183 <sup>3</sup>	----
56-184	----	x 4-1/2"	57-184	----
56-185	----	x 5"	57-185	----
56-186	----	x 5-1/2"	57-186	----
56-187	----	x 6"	57-187	----
56-188	----	x 7"	57-188	----
56-189	----	x 8"	57-189	----
56-190	----	x 9"	57-190	----
56-191	----	x 10"	57-191	----
56-192	----	x 11"	57-192	----
56-193	----	x 12"	57-193	----



**4" DIAMETER**

Part # Galv		Length	Part # Black	
56-220	----	X Close (2-7/8")	57-220	----
56-223	----	x 4"	57-223	----
56-224	----	x 4-1/2"	57-224	----
56-225	----	x 5"	57-225	----
56-226	----	x 5-1/2"	57-226	----
56-227	----	x 6"	57-227	----
56-330	----	x 7"	57-330	----
56-229	----	x 8"	57-229	----
56-331	----	x 9"	57-331	----
56-332	----	x 10"	57-332	----
56-228	----	x 12"		

**3" DIAMETER**



Part # Galv		Length	Part # Black	
56-200	----	X Close (2-5/8")	57-200	----
56-201	----	x 3"	57-201	----
56-202	----	x 3-1/2"	57-202	----
56-203	----	x 4"	57-203	----
56-204	----	x 4-1/2"	57-204	----
56-205	----	x 5"	57-205	----
56-206	----	x 5-1/2"	57-206	----
56-207	----	x 6"	57-207	----
56-208	----	x 7"	57-208	----
56-209	----	x 8"	57-209	----
56-210	----	x 9"	57-210	----
56-211	----	x 10"	57-211	----
56-212	----	x 11"	57-212	----
56-213	----	x 12"	57-213	----
		x 24"	57-311	----



**6" DIAMETER**

Part # Galv		6" Dia.	Part # Black	
56-300	----	Close (3-1/8")	57-300	----

TOE - Threaded one end.

Nipples - ask for our price list!

What shapes our lives are the questions we ask,  
refuse to ask, or never think to ask.

- Sam Keen

**SCHEDULE 40 SEAMLESS NIPPLES  
1/8" DIAMETER**



Part #	Length	List Price
71-001	X Close (3/4")	----
71-002	x 1-1/2"	----
71-003	x 2"	----
71-004	x 2-1/2"	----
71-005	x 3"	----
71-006	x 3-1/2"	----
71-007	x 4"	----
71-008	x 4-1/2"	----
71-009	x 5"	----
71-010	x 5-1/2"	----
71-011	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
1/4" DIAMETER**



Part #	Length	List Price
71-020	X Close (7/8")	----
71-021	x 1-1/2"	----
71-022	x 2"	----
71-023	x 2-1/2"	----
71-024	x 3"	----
71-025	x 3-1/2"	----
71-026	x 4"	----
71-027	x 4-1/2"	----
71-028	x 5"	----
71-029	x 5-1/2"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
3/8" DIAMETER**



Part #	Length	List Price
71-040	X Close (1")	----
71-041	x 1-1/2"	----
71-042	x 2"	----
71-043	x 2-1/2"	----
71-044	x 3"	----
71-045	x 3-1/2"	----
71-046	x 4"	----
71-047	x 4-1/2"	----
71-048	x 5"	----
71-049	x 5-1/2"	----
71-050	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
1/2" DIAMETER**



Part #	Length	List Price
71-060	X Close (1-1/8")	----
71-061	x 1-1/2"	----
71-062	x 2"	----
71-063	x 2-1/2"	----
71-064	x 3"	----
71-065	x 3-1/2"	----
71-066	x 4"	----
71-067	x 4-1/2"	----
71-068	x 5"	----
71-069	x 5-1/2"	----
71-070	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
3/4" DIAMETER**



Part #	Length	List Price
71-080	X Close (1-3/8")	----
71-081	x 1-1/2"	----
71-082	x 2"	----
71-083	x 2-1/2"	----
71-084	x 3"	----
71-085	x 3-1/2"	----
71-086	x 4"	----
71-087	x 4-1/2"	----
71-088	x 5"	----
71-089	x 5-1/2"	----
71-090	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
1" DIAMETER**



Part #	Length	List Price
71-100	X Close (1-1/2")	----
71-101	x 2"	----
71-102	x 2-1/2"	----
71-103	x 3"	----
71-104	x 3-1/2"	----
71-105	x 4"	----
71-106	x 4-1/2"	----
71-107	x 5"	----
71-108	x 5-1/2"	----
71-109	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
1-1/4" DIAMETER**



Part #	Length	List Price
71-120	X Close (1-5/8")	----
71-121	x 2"	----
71-122	x 2-1/2"	----
71-123	x 3"	----
71-124	x 3-1/2"	----
71-125	x 4"	----
71-126	x 4-1/2"	----
71-127	x 5"	----
71-128	x 5-1/2"	----
71-129	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
1-1/2" DIAMETER**



Part #	Length	List Price
71-140	X Close (1-3/4")	----
71-141	x 2"	----
71-142	x 2-1/2"	----
71-143	x 3"	----
71-144	x 3-1/2"	----
71-145	x 4"	----
71-146	x 4-1/2"	----
71-147	x 5"	----
71-148	x 5-1/2"	----
71-149	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
2" DIAMETER**



Part #	Length	List Price
71-160	X Close (2")	----
71-161	x 2-1/2"	----
71-162	x 3"	----
71-163	x 3-1/2"	----
71-164	x 4"	----
71-165	x 4-1/2"	----
71-166	x 5"	----
71-167	x 5-1/2"	----
71-168	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
2-1/2" DIAMETER**



Part #	Length	List Price
71-180	X Close (2-1/2")	----
71-181	x 3"	----
71-182	x 3-1/2"	----
71-183	x 4"	----
71-184	x 4-1/2"	----
71-185	x 5"	----
71-186	x 5-1/2"	----
71-187	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
3" DIAMETER**



Part #	Length	List Price
71-200	X Close (2-5/8")	----
71-201	x 3"	----
71-202	x 3-1/2"	----
71-203	x 4"	----
71-204	x 4-1/2"	----
71-205	x 5"	----
71-206	x 5-1/2"	----
71-207	x 6"	----

**SCHEDULE 40 SEAMLESS NIPPLES  
4" DIAMETER**



Part #	Length	List Price
71-220	X Close (2-7/8")	----
71-223	x 4"	----
71-224	x 4-1/2"	----
71-225	x 5"	----
71-226	x 5-1/2"	----
71-227	x 6"	----

**Product Specifications**

Welded steel couplings both galvanized and black in diameters from 1/8" up to 4".

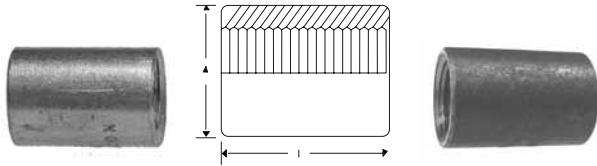
**Technical Specifications**

**Standards:** Product complies with ASTM A-53, A-733 and ANSI B1.20.1 for threading, dimensions and pipe specifications.

**Pipe:** Complies with ASTM A-53 milltested schedule 40 and 80. Meets ANSI B36.1. All pipe is hydrostatic tested.

**Galvanized:** Zinc coating applied by hot dipping. Galvanized complying with ASTM-A-123.

**MERCHANT COUPLINGS**



Part # Galv	Size	Part # Black
64-770	1/8"	65-770
64-771	1/4"	65-771
64-772	3/8"	65-772
64-773	1/2"	65-773
64-774	3/4"	65-774
64-775	1"	65-775
64-776	1-1/4"	65-776
64-777	1-1/2"	65-777
64-778	2"	65-778
64-779	2-1/2"	65-779
64-780	3"	65-780
64-781	4"	65-781

**HALF MERCHANT COUPLINGS**



Part # Galv	Size	Part # Black
	1/4"	65-771H
	3/8"	65-772H
64-773H	1/2"	65-773H
64-774H	3/4"	65-774H
64-775H	1"	65-775H
64-776H	1-1/4"	65-776H
64-777H	1-1/2"	65-777H
64-778H	2"	65-778H
	2-1/2"	65-779H
	3"	65-780H
	4"	65-781H

**Also available:**  
**API Line Couplings**  
**L&R Merchant Coupling**

**MERCHANT COUPLINGS SPECIFICATIONS**

Size	Outside Diam.	Length	Weight 100 pcs approx.	Quantity per box	Threads per Inch	Threads
		Inches	Pounds			Type
1/8"	.59"	.78	3.5	1000	27	Straight
1/4"	.73"	1.18	7.5	500	18	Straight
3/8"	.86"	1.18"	9	600	18	Straight
1/2"	1.063"	1-9/16"	13.0	100	14	Straight
3/4"	1.313"	1-5/8"	28.3	50	14	Straight
1"	1.576"	2"	40.1	30	11-1/2	Straight
1-1/4"	1.900"	2-1/16"	49.5	25	11-1/2	Straight
1-1/2"	2.200"	2-1/16"	71.48	25	11-1/2	Straight
2"	2.750"	2-1/8"	112.0	20	11-1/2	Straight
2-1/2"	3.250"	3-1/8"	231.2	8	8	Taper Tapped
3"	4.000"	3-1/4"	353.8	5	8	Taper Tapped
4"	5.000"	3-1/2"	471.8	4	8	Taper Tapped



**Standard Specifications**

**Material:** ASTM A 197 Cupola Malleable Iron. ASTM A 153 Zinc Coating. ANSI B16.3 Malleable Iron Fittings

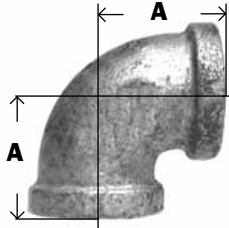
**Dimension:** ANSI B 16.14 Ferrous Pipe, Plugs, Bushings, Etc. ANSI B 16.39 Malleable Iron Threaded Pipe Unions

**Thread:** ANSI B 2.1 or BS 21

**Operating Temp. -20°F - +150°F**

**ISO 9002 Manufacturer**

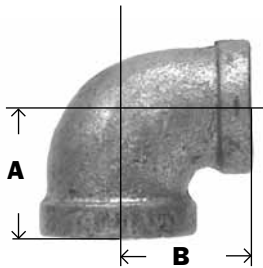
**ELBOWS 90°**



Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-100	----	1/8"	0.69	50/600	0.06	65-100	----
64-101	----	1/4"	0.81	35/420	0.11	65-101	----
64-102	----	3/8"	0.95	90/360	0.16	65-102	----
64-103	----	1/2"	1.12	50/200	0.24	65-103	----
64-104	----	3/4"	1.31	35/105	0.37	65-104	----
64-105	----	1"	1.50	20/60	0.59	65-105	----
64-106	----	1-1/4"	1.75	20/40	0.94	65-106	----
64-107	----	1-1/2"	1.94	15/30	1.15	65-107	----
64-108	----	2"	2.25	8/16	1.76	65-108	----
64-109	----	2-1/2"	2.70	12	2.90	65-109	----
64-110	----	3"	3.08	8	5.41	65-110	----
64-112	----	4"	3.79	2	9.07	65-112	----
64-114	----	6"	5.13	1	18.92	65-114	----

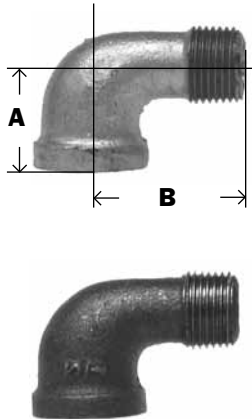
**NIPPLES & FITTINGS**

**REDUCING ELBOWS 90°**



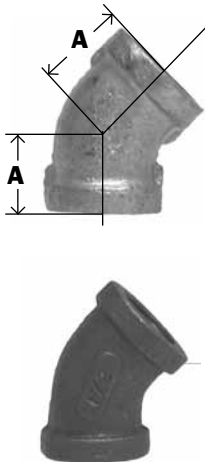
Part # Galvanized		Size	A	B	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-121	----	3/8" x 1/8"	0.81	0.85	105/420	0.13	65-121	----
64-122	----	3/8" x 1/4"	0.88	0.90	90/360	0.14	65-122	----
64-123	----	1/2" x 1/4"	0.97	0.98	60/240	0.18	65-123	----
64-124	----	1/2" x 3/8"	1.04	1.03	60/240	0.21	65-124	----
64-126	----	3/4" x 3/8"	1.12	1.13	40/160	0.28	65-126	----
64-127	----	3/4" x 1/2"	1.20	1.22	40/160	0.32	65-127	----
64-130	----	1" x 1/2"	1.26	1.40	25/100	0.44	65-130	----
64-131	----	1" x 3/4"	1.37	1.45	50/100	0.52	65-131	----
64-133	----	1-1/4" x 3/4"	1.45	1.62	15/60	0.70	65-133	----
64-134	----	1-1/4" x 1"	1.58	1.67	10/40	0.81	65-134	----
64-136	----	1-1/2" x 3/4"	1.52	1.75	10/40	0.74	65-136	----
64-137	----	1-1/2" x 1"	1.65	1.80	10/40	0.66	65-137	----
64-138	----	1-1/2" x 1-1/4"	1.82	1.88	15/30	1.27	65-138	----
64-139	----	2" x 3/4"	1.60	1.97	9/36	1.21	65-139	----
64-140	----	2" x 1"	1.73	2.02	14/28	1.22	65-140	----
64-141	----	2" x 1-1/4"	1.90	2.10	10/20	1.43	65-141	----
64-142	----	2" x 1-1/2"	2.02	2.16	10/20	1.38	65-142	----
64-145	----	2-1/2" x 1-1/2"	2.16	2.51	6/12	2.20	65-145	----
64-146	----	2-1/2" x 2"	2.39	2.60	6/12	2.70	65-146	----
64-148	----	3" x 1-1/2"	2.28	2.83	6/18	4.50	65-148	----
		3" x 2-1/2"	2.83	2.99	8/16	5.00	65-151	----
		4" x 2"	2.72	3.43	1/12	8.00	65-152	----
		4" x 2-1/2"	3.03	3.50	1/8	8.00	65-153	----
		4" x 3"	3.27	3.58	1/9	9.00	65-154	----

**90° STREET ELBOWS**



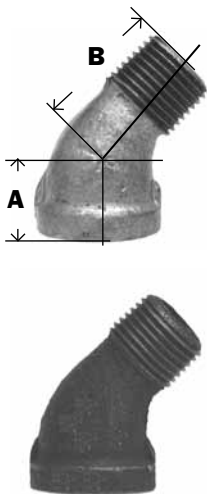
Part # Galvanized		Size	A	B	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-160	----	1/8"	0.69	1.00	60/720	0.06	65-160	----
64-161	----	1/4"	0.80	1.17	35/420	0.10	65-161	----
64-162	----	3/8"	0.95	1.48	40/260	0.17	65-162	----
64-163	----	1/2"	1.10	1.59	60/180	0.25	65-163	----
64-164	----	3/4"	1.28	1.85	35/105	0.42	65-164	----
64-165	----	1"	1.47	2.10	45/90	0.57	65-165	----
64-166	----	1-1/4"	1.75	2.57	25/50	1.01	65-166	----
64-167	----	1-1/2"	1.90	2.63	9/27	1.32	65-167	----
64-168	----	2"	2.21	3.19	8/16	2.22	65-168	----
64-169	----	2-1/2"	2.65	3.78	5/10	2.83	65-169	----
64-170	----	3"	3.02	4.42	8	5.71	65-170	----
64-171	----	4"	3.72	5.57	4	10.47	65-171	----

**ELBOWS 45°**



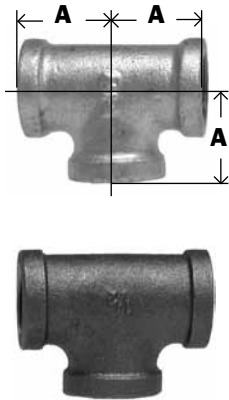
Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-180	----	1/8"	0.63	50/600	0.07	65-180	----
64-181	----	1/4"	0.73	30/360	0.11	65-181	----
64-182	----	3/8"	0.80	75/300	0.16	65-182	----
64-183	----	1/2"	0.88	50/200	0.24	65-183	----
64-184	----	3/4"	0.98	40/120	0.56	65-184	----
64-185	----	1"	1.12	20/60	0.35	65-185	----
64-186	----	1-1/4"	1.29	20/40	0.85	65-186	----
64-187	----	1-1/2"	1.43	10/30	1.11	65-187	----
64-188	----	2"	1.68	12/24	1.80	65-188	----
64-189	----	2-1/2"	1.95	12	2.68	65-189	----
64-190	----	3"	2.17	10	4.33	65-190	----
64-191	----	4"	2.61	4	7.54	65-191	----
64-192	----	6"	3.46	1	12.76	65-192	----

**45° STREET ELBOWS**



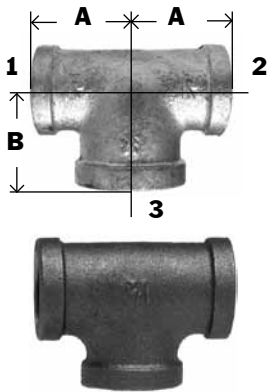
Part # Galvanized		Size	A	B	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-200	----	1/8"	0.63	0.83	70/840	0.05	65-200	----
64-201	----	1/4"	0.73	0.94	40/480	0.13	65-201	----
64-202	----	3/8"	0.80	1.03	100/400	0.13	65-202	----
64-203	----	1/2"	0.86	1.30	75/225	0.23	65-203	----
64-204	----	3/4"	0.96	1.48	40/120	0.33	65-204	----
64-205	----	1"	1.10	1.69	25/75	0.55	65-205	----
64-206	----	1-1/4"	1.26	1.87	10/40	0.76	65-206	----
64-207	----	1-1/2"	1.40	2.05	10/30	1.13	65-207	----
64-208	----	2"	1.65	2.38	12/24	1.76	65-208	----
64-209	----	2-1/2"	1.95	2.72	12/24	2.57	65-209	----
64-210	----	3"	2.17	3.16	3/6	3.52	65-210	----
64-211	----	4"	2.61	3.90	4	8.29	65-211	----

**TEES**



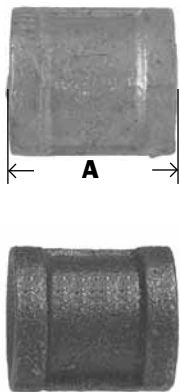
Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-250	----	1/8"	0.69	120/480	0.09	65-250	----
64-251	----	1/4"	0.81	75/300	0.16	65-251	----
64-252	----	3/8"	0.95	45/180	0.24	65-252	----
64-253	----	1/2"	1.12	40/120	0.35	65-253 <sup>5</sup>	----
64-254	----	3/4"	1.31	35/70	0.55	65-254	----
64-255	----	1"	1.50	20/40	0.84	65-255	----
64-256	----	1-1/4"	1.75	14/28	1.37	65-256	----
64-257	----	1-1/2"	1.94	12/24	1.74	65-257	----
64-258	----	2"	2.26	8/16	2.54	65-258	----
64-259	----	2-1/2"	2.70	4/8	3.76	65-259	----
64-260	----	3"	3.08	6	6.36	65-260	----
64-261	----	4"	3.79	1/2	11.69	65-261	----
64-262	----	6"	5.13	1	24.55	65-262	----

**BULLHEAD TEES**



Part # Galvanized		Size (1&2) x 3	A	B	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-280	----	1/2" x 3/4"	1.22	1.20	30/120	0.43	65-280	----
64-733	----	1/2" x 1"	1.36	1.26	40/160	0.48	65-733	----
64-289	----	3/4" x 1"	1.45	1.37	40/80	0.67	65-289	----
64-299	----	1" x 1-1/4"	1.67	1.58	11/44	0.91	65-299	----
64-300	----	1" x 1-1/2"	1.80	1.65	9/36	1.16	65-300	----
64-317	----	1-1/4" x 1-1/2"	1.88	1.82	12/24	1.45	65-317	----
64-319	----	1-1/2" x 2"	2.12	1.98	16	1.98	65-319	----

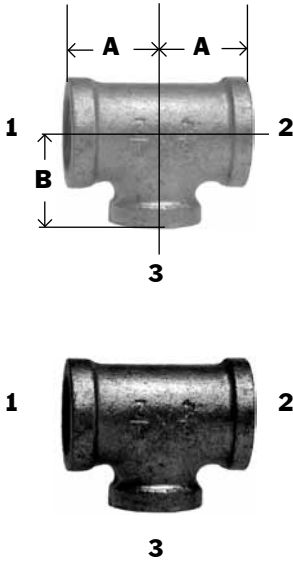
**COUPLINGS**



Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-410	----	1/8"	0.96	70/840	0.06	65-410	----
64-411	----	1/4"	1.06	40/480	0.09	65-411	----
64-412	----	3/8"	1.16	40/480	0.06	65-412	----
64-413	----	1/2"	1.34	60/240	0.19	65-413	----
64-414	----	3/4"	1.52	50/150	0.30	65-414	----
64-415	----	1"	1.67	25/100	0.45	65-415	----
64-416	----	1-1/4"	1.93	16/64	0.65	65-416	----
64-417	----	1-1/2"	2.15	18/36	0.90	65-417	----
64-418	----	2"	2.54	12/24	1.39	65-418	----
64-419	----	2-1/2"	2.88	8/16	2.42	65-419	----
64-420	----	3"	3.18	12	3.40	65-420	----
64-421	----	4"	3.69	3/6	6.23	65-421	----
64-422	----	6"	4.23	2	11.22	65-422	----

**REDUCING TEES**

(SAME SIZE ON RUN, REDUCING ON BRANCH)

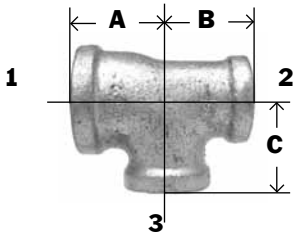


Part # Galvanized		Size (1&2) x 3	A	B	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-273	----	3/8" x 1/4"	0.81	0.90	25	0.20	65-273	----
64-276	----	1/2" x 1/4"	0.97	0.98	40/160	0.26	65-276	----
64-279	----	1/2" x 3/8"	1.04	1.03	40/160	0.29	65-279	----
64-282	----	3/4" x 1/4"	1.05	1.08	125	0.35	65-282	----
64-283	----	3/4" x 3/8"	1.12	1.13	55/110	0.40	65-283	----
64-286	----	3/4" x 1/2"	1.20	1.18	50/100	0.47	65-286	----
64-268	----	1" x 1/4"	1.11	1.22	20/80	0.52	65-268	----
64-269	----	1" x 3/8"	1.18	1.27	15/60	0.60	65-269	----
64-291	----	1" x 1/2"	1.26	1.40	15/60	0.70	65-291	----
64-298	----	1" x 3/4"	1.37	1.45	12/48	0.77	65-298	----
64-301	----	1-1/4" x 1/2"	1.34	1.45	20/40	0.97	65-301	----
64-303	----	1-1/4" x 3/4"	1.45	1.62	20/40	1.00	65-303	----
64-306	----	1-1/4" x 1"	1.58	1.66	20/40	1.10	65-306	----
64-316	----	1-1/2" x 3/4"	1.41	1.75	15/30	1.25	65-316	----
64-318	----	1-1/2" x 1"	1.65	1.88	10/30	1.41	65-318	----
64-322	----	1-1/2" x 1-1/4"	1.65	1.88	12/24	1.58	65-322	----
		2" x 1/2"	1.49	1.88	10/20	1.61	65-327	----
64-328	----	2" x 3/4"	1.60	1.97	10/20	1.77	65-328	----
64-330	----	2" x 1"	1.73	2.02	10/20	1.97	65-330	----
64-334	----	2" x 1-1/4"	1.86	2.06	8/16	1.92	65-334	----
64-336	----	2" x 1-1/2"	1.98	2.12	8/16	2.08	65-336	----
64-343	----	2-1/2" x 1-1/2"	2.16	2.51	5/10	3.38	65-343	----
64-351	----	3" x 2"	2.52	2.89	3/6	4.54	65-351	----

**NIPLLES & FITTINGS**

**REDUCING TEES**

(REDUCING ON RUN)



Part # Galvanized		Size 1 x 2 x 3	A	B	C	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-287	----	3/4" x 1/2" x 1/2"	1.18	1.18	1.20	30/180	0.45	65-287	----
64-288	----	3/4" x 1/2" x 3/4"	1.28	1.20	1.28	20/80	0.52	65-288	----
		1" x 1/2" x 1/2"	1.31	1.22	1.31	20/120	0.60	65-292	----
		1" x 3/4" x 3/4"	1.34	1.28	1.42	15/60	0.66	65-296	----
		1-1/4" x 1" x 1"	1.55	1.47	1.63	18/72	0.98	65-309	----

**LOCKNUTS**



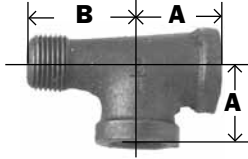
Part # Galvanized	Size	Hex	Thickness	Box/Case	Approx. Wt. Lbs.	
64-703	1/2"	1.18	0.32	150/600	0.08	----
64-704	3/4"	1.43	0.35	90/360	0.13	----
64-705	1"	1.75	0.39	60/240	0.19	----
64-706	1-1/4"	2.10	0.43	45/180	0.27	----
64-707	1-1/2"	2.35	0.48	45/135	0.47	----
64-708	2"	2.88	0.54	25/75	0.56	----

\* Black locknuts available on special order basis.

# BLACK & GALVANIZED MALLEABLE IRON 150#

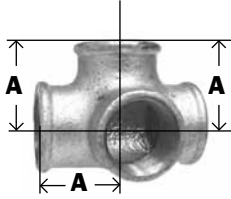
# MALLEABLE FITTINGS

## MALLEABLE SERVICE TEE (STREET TEE)



Part # Galvanized		Size	A	B	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-363	----	1/2"	1.12	1.62	40/120	0.31	65-363	----
64-364	----	3/4"	1.31	1.89	25/75	0.55	65-364	----

## SIDE OUTLET TEES



Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-383	----	1/2"	1.12	25/100	0.38	65-383	----
64-384	----	3/4"	1.31	15/60	0.58	65-384	----
64-385	----	1"	1.50	20/40	0.89	65-385	----
64-386	----	1-1/4"	1.75	12/24	1.39	65-386	----

## REDUCING COUPLINGS



Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-430	----	1/4" x 1/8"	1.00	50/600	0.08	65-430	----
64-431	----	3/8" x 1/8"	1.13	35/420	0.10	65-431	----
64-432	----	3/8" x 1/4"	1.13	30/360	0.12	65-432	----
64-433	----	1/2" x 1/8"	1.25	75/300	0.17	65-433	----
64-434	----	1/2" x 1/4"	1.25	75/300	0.15	65-434	----
64-435	----	1/2" x 3/8"	1.25	60/240	0.16	65-435	----
64-439	----	3/4" x 1/8"	1.44	70/210	0.20	65-439	----
64-436	----	3/4" x 1/4"	1.44	45/180	0.21	65-436	----
64-437	----	3/4" x 3/8"	1.44	45/180	0.22	65-437	----
64-438	----	3/4" x 1/2"	1.44	60/180	0.29	65-438	----
64-459	----	1" x 1/4"	1.69	45/135	0.32	65-459	----
64-440	----	1" x 3/8"	1.69	30/120	0.35	65-440	----
64-441	----	1" x 1/2"	1.69	30/120	0.37	65-441	----
64-442	----	1" x 3/4"	1.69	25/100	0.40	65-442	----
64-460	----	1-1/4" x 3/8"	2.06	25/75	0.49	65-460	----
64-444	----	1-1/4" x 1/2"	2.06	25/75	0.55	65-444	----
64-445	----	1-1/4" x 3/4"	2.06	25/75	0.60	65-445	----
64-446	----	1-1/4" x 1"	2.06	15/60	0.66	65-446	----
64-443	----	1-1/2" x 3/8"	2.31	15/120	0.61	65-443	----
64-447	----	1-1/2" x 1/2"	2.31	20/60	0.77	65-447	----
64-448	----	1-1/2" x 3/4"	2.31	15/60	0.77	65-448	----
64-449	----	1-1/2" x 1"	2.31	25/50	0.84	65-449	----
64-450	----	1-1/2" x 1-1/4"	2.31	12/48	0.86	65-450	----
64-458	----	2" x 1/2"	2.81	12/36	1.12	65-458	----
64-451	----	2" x 3/4"	2.81	12/36	1.11	65-451	----
64-452	----	2" x 1"	2.81	12/36	1.28	65-452	----
64-453	----	2" x 1-1/4"	2.81	9/27	1.30	65-453	----
64-454	----	2" x 1-1/2"	2.81	9/27	1.41	65-454	----
64-461	----	2-1/2" x 1-1/2"	3.25	7/14	1.74	65-461	----
64-462	----	2-1/2" x 2"	3.25	7/14	1.79	65-462	----
64-486	----	3" x 1-1/2"	3.69	16/32	2.18	65-486	----
64-456	----	3" x 2"	3.69	6/12	2.26	65-456	----
64-463	----	3" x 2-1/2"	3.69	5/10	3.52	65-463	----
64-464	----	4" x 2"	4.38	3/6	4.96	65-464	----
		4" x 2-1/2"	4.38	3/6	4.00	65-465	----
64-457	----	4" x 3"	4.38	3/6	4.07	65-457	----
		6" x 4"	4.24	1/8	9.84	65-491	----

# MALLEABLE FITTINGS

# BLACK & GALVANIZED MALLEABLE IRON 150#

## HEX BUSHING



Part #	Galvanized	Size M x F	A	Hex	Box/ Case	Approx. Wt. Lbs.	Part # Black	
		*1/4" x 1/8"	} Use steel fittings for smaller sizes - See page 224					
		*3/8" x 1/8"						
		*3/8" x 1/4"						
64-503	----	1/2" x 1/8"	0.84	1.03	150/600	0.10	65-503	----
		*1/2" x 1/4"						
64-505	----	1/2" x 3/8"	0.75	1.03	150/600	0.07	65-505	----
64-506	----	3/4" x 1/8"	0.85	1.15	75/300	0.17	65-506	----
64-507	----	3/4" x 1/4"	0.85	1.15	75/300	0.16	65-507	----
64-508	----	3/4" x 3/8"	0.85	1.15	75/300	0.14	65-508	----
64-509	----	3/4" x 1/2"	0.93	1.15	75/300	0.10	65-509	----
64-510	----	1" x 1/4"	1.13	1.12	50/200	0.19	65-510	----
64-511	----	1" x 3/8"	1.13	1.12	50/200	0.24	65-511	----
64-512	----	1" x 1/2"	1.10	1.42	50/200	0.21	65-512	----
64-513	----	1" x 3/4"	1.10	1.42	50/200	0.17	65-513	----
64-514	----	1-1/4" x 1/4"	1.24	1.12	30/120	0.31	65-514	----
64-515	----	1-1/4" x 3/8"	1.24	1.12	30/120	0.43	65-515	----
64-516	----	1-1/4" x 1/2"	1.24	1.24	30/120	0.29	65-516	----
64-517	----	1-1/4" x 3/4"	1.08	1.76	30/120	0.35	65-517	----
64-518	----	1-1/4" x 1"	1.08	1.76	30/120	0.29	65-518	----
64-519	----	1-1/2" x 1/4"	1.30	1.12	25/75	0.64	65-519	----
64-520	----	1-1/2" x 3/8"	1.30	1.12	25/75	0.64	65-520	----
64-521	----	1-1/2" x 1/2"	1.30	1.34	25/75	0.40	65-521	----
64-522	----	1-1/2" x 3/4"	1.30	1.44	25/75	0.39	65-522	----
64-523	----	1-1/2" x 1"	1.23	2.00	25/75	0.46	65-523	----
64-524	----	1-1/2" x 1-1/4"	1.23	2.00	25/75	0.32	65-524	----
64-525	----	2" x 3/8"	1.28	1.12	20/60	0.95	65-525	----
64-527	----	2" x 1/2"	1.39	1.34	20/60	0.84	65-527	----
64-528	----	2" x 3/4"	1.39	1.63	20/60	0.63	65-528	----
64-529	----	2" x 1"	1.39	1.77	20/60	0.67	65-529	----
64-530	----	2" x 1-1/4"	1.50	2.48	20/60	0.73	65-530	----
64-531	----	2" x 1-1/2"	1.50	2.48	20/60	0.70	65-531	----
64-546	----	2-1/2" x 1/2"	1.51	1.34	15/30	1.57	65-546	----
64-547	----	2-1/2" x 3/4"	1.51	1.63	15/30	1.54	65-547	----
64-532	----	2-1/2" x 1"	1.51	1.95	15/30	1.51	65-532	----
64-533	----	2-1/2" x 1-1/4"	1.51	2.39	15/30	1.41	65-533	----
64-534	----	2-1/2" x 1-1/2"	1.51	2.98	15/30	1.37	65-534	----
64-535	----	2-1/2" x 2"	1.54	2.98	15/30	1.11	65-535	----
64-550	----	3" x 1"	1.61	1.95	12/24	1.46	65-550	----
64-549	----	3" x 1-1/4"	1.61	2.39	12/24	2.22	65-549	----
64-537	----	3" x 1-1/2"	1.61	2.68	12/24	1.96	65-537	----
64-538	----	3" x 2"	1.61	3.86	12/24	1.91	65-538	----
64-539	----	3" x 2-1/2"	1.61	3.86	12/24	1.50	65-539	----
64-551	----	4" x 3/4"	2.15	4.90	5/10	4.50	65-551	----
64-553	----	4" x 1"	2.00	4.75	5/10	4.00	65-553	----
64-540	----	4" x 1-1/2"	1.82	2.68	5/10	3.91	65-540	----
64-541	----	4" x 2"	1.82	3.31	5/10	2.89	65-541	----
64-542	----	4" x 2-1/2"	2.06	3.87	5/10	2.77	65-542	----
64-543	----	4" x 3"	2.17	4.96	5/10	3.03	65-543	----
64-545	----	6" x 4"	2.33	5.79	2/4	5.69	65-545	----

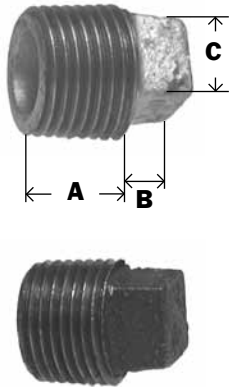
**UNIONS**



Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-600	----	1/8"	1.26	60/240	0.19	65-600	----
64-601	----	1/4"	1.44	20/240	0.20	65-601	----
64-602	----	3/8"	1.61	40/160	0.35	65-602	----
64-603	----	1/2"	1.72	50/100	0.43	65-603	----
64-604	----	3/4"	1.94	35/70	0.63	65-604	----
64-605	----	1"	2.06	20/40	0.91	65-605	----
64-606	----	1-1/4"	2.26	15/30	1.35	65-606	----
64-607	----	1-1/2"	2.41	10/20	1.75	65-607	----
64-608	----	2"	2.75	6/12	2.62	65-608	----
64-609	----	2-1/2"	3.22	4/8	4.40	65-609	----
64-610	----	3"	3.50	4/8	5.63	65-610	----
64-611	----	4"	3.85	2/4	10.31	65-611	----

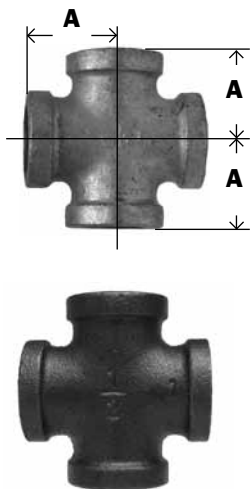
**NIPPLES & FITTINGS**

**SQUARE HEAD PLUGS**



Part # Galvanized		Size	A	B	C	Box/Case	Approx. Wt. Lbs.	Part # Black	
		*1/8"	} Use steel fittings for smaller sizes - see p. 224						
		*1/4"							
		*3/8"							
64-653	----	1/2"	0.58	0.38	0.56	50/600	0.09	65-653	----
64-654	----	3/4"	0.65	0.44	0.63	30/360	0.13	65-654	----
64-655	----	1"	0.75	0.50	0.82	20/240	0.22	65-655	----
64-656	----	1-1/4"	0.82	0.56	0.94	40/120	0.40	65-656	----
64-657	----	1-1/2"	0.85	0.62	1.13	30/90	0.46	65-657	----
64-658	----	2"	0.91	0.68	1.31	20/60	0.74	65-658	----
64-659	----	2-1/2"	1.26	0.74	1.50	16/32	1.24	65-659	----
64-660	----	3"	1.16	0.80	1.69	16/32	1.69	65-660	----
64-661	----	4"	1.22	1.00	2.28	6/12	2.70	65-661	----

**CROSSES**



Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-390	----	1/8"	0.65	---	0.12	65-390	----
64-391	----	1/4"	0.80	60/240	0.18	65-391	----
64-392	----	3/8"	0.95	50/150	0.27	65-392	----
64-393	----	1/2"	1.12	30/90	0.45	65-393	----
64-394	----	3/4"	1.31	20/60	0.69	65-394	----
64-395	----	1"	1.50	15/30	1.06	65-395	----
64-396	----	1-1/4"	1.75	10/20	1.56	65-396	----
64-397	----	1-1/2"	1.94	8/16	1.91	65-397	----
64-398	----	2"	2.25	5/10	3.24	65-398	----
64-399	----	2-1/2"	2.71	3/6	5.55	65-399	----
64-400	----	3"	3.06	1/8	8.00	65-400	----

**Don't see what your looking for? Hex Nipples, Wyes, etc... Just call us for availability.**

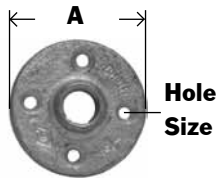
**CAPS**



Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
		1/4"	0.62	80/960	0.05	65-471	----
64-472	----	3/8"	0.74	60/720	0.08	65-472	----
64-473	----	1/2"	0.87	75/300	0.13	65-473	----
64-474	----	3/4"	0.97	40/160	0.22	65-474	----
64-475	----	1"	1.16	25/100	0.37	65-475	----
64-476	----	1-1/4"	1.28	20/80	0.49	65-476	----
64-477	----	1-1/2"	1.33	18/54	0.64	65-477	----
64-478	----	2"	1.45	12/36	1.00	65-478	----
64-479	----	2-1/2"	1.70	20/40	1.45	65-479	----
64-480	----	3"	1.80	24	2.20	65-480	----
64-481	----	4"	2.08	6/12	3.75	65-481	----
64-482	----	6"	2.55	2/4	8.86	65-482	----

\* Use steel fittings for smaller sizes. See page 224 for Galvanized and Black Steel Fittings.

**FLOOR FLANGES**



Part # Galvanized		Size	A	Thickness	Hole Size	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-692	----	1/2"	3.50	0.50	0.25	25/50	0.63	65-692	----
64-693	----	3/4"	3.50	0.63	0.25	15/45	0.75	65-693	----
64-694	----	1"	4.00	0.69	0.25	15/30	1.06	65-694	----
64-695	----	1-1/4"	4.00	0.75	0.25	10/30	1.08	65-695	----
64-696	----	1-1/2"	4.50	0.87	0.31	8/24	1.43	65-696	----
64-697	----	2"	5.50	1.00	0.31	8/16	2.23	65-697	----

**STEEL MAGNETIC PLUGS**

**Magnetic Plugs**

**Steel Magnetic Drain Plugs - NPT Threaded**

**Magnetic Drain Plugs** are similar to standard pipe or straight thread drain plugs with one important difference - a permanent magnet is fastened to the plug body. This magnet attracts and holds abrasive, ferrous metal particles preventing their circulation through the lubrication or hydraulic system.

These abrasive, ferrous metal particles appear in lubricating or hydraulic systems as a result of the following conditions:

- The constant flaking effect of normal wear of moving parts.
- Particles not removed by flushing operations after boring or machining.
- Chipping due to sub-surface casting flaws.
- Minute component breakdown caused by stress usage.

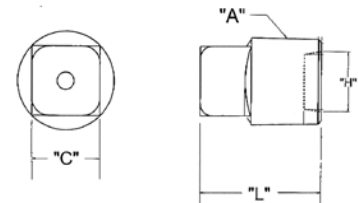


**Magnetic Drain Plugs** prevent excessive wear to the system's components.

**Magnetic Plugs** are used by numerous manufacturers of gear boxes, transmissions, engines, and hydraulic systems for the automotive, aircraft, agricultural and machinery industries. Typical applications include:

- Outbound Engines
- Earthmoving Equipment
- Combines
- Balers
- Crawler Tractors
- Lift Trucks
- Mining Equipment
- Military Vehicles
- Turbine Engines
- Truck Axles
- Heavy-Duty Transmissions

Part	Size "A"	Head Width "C"	Recess Dia. "H"	O/L Length "L"	
28-996	3/8 - 18	.428 - .440	.435 - .445	.805 - .860	----
28-997	1/2 - 14	.553 - .565	.560 - .570	.970 - 1.04	----
28-998	3/4 - 14	.615 - .627	.725 - .735	1.120 - 1.170	----
28-999	1-11 1/2	.803 - .815	.895 - .905	1.25 - 1.33	----

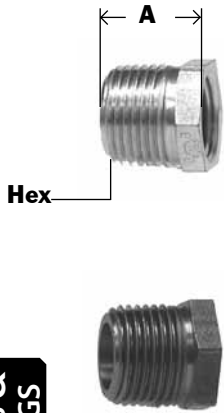




# BLACK & GALVANIZED STEEL FITTINGS

# STEEL FITTINGS

## HEX BUSHINGS



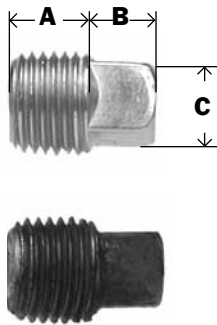
Part # Galvanized		Size M x F	A	Hex	Approx. Wt. Lbs.	Part # Black	
66-500	----	1/4" x 1/8"	0.63	0.62	0.02	67-500	----
66-501	----	3/8" x 1/8"	0.66	0.68	0.04	67-501	----
66-502	----	3/8" x 1/4"	0.66	0.68	0.02	67-502	----
66-503	----	1/2" x 1/8"	0.80	0.87	0.10	67-503	----
66-504	----	1/2" x 1/4"	0.80	0.87	0.08	67-504	----
66-505	----	1/2" x 3/8"	0.80	0.87	0.06	67-505	----
66-506	----	3/4" x 1/8"	0.94	1.06	0.18	67-506	----
66-507	----	3/4" x 1/4"	0.94	1.06	0.14	67-507	----
66-508	----	3/4" x 3/8"	0.94	1.06	0.14	67-508	----
66-509	----	3/4" x 1/2"	0.94	1.06	0.10	67-509	----
66-510	----	1" x 1/4"	1.00	1.31	0.16	67-510	----
66-511	----	1" x 3/8"	1.00	1.31	0.26	67-511	----
66-512	----	1" x 1/2"	1.00	1.31	0.22	67-512	----
66-513	----	1" x 3/4"	1.00	1.31	0.14	67-513	----

## CAPS



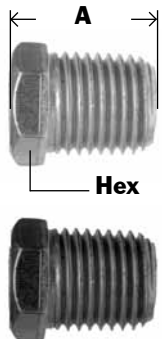
Part # Galvanized		Size	A	Hex	Approx. Wt. Lbs.	Part # Black	
66-470	----	1/8"	0.53	0.56	0.02	67-470	----
66-471	----	1/4"	0.63	0.62	0.04	67-471	----
66-472	----	3/8"	0.69	0.81	0.06	67-472	----
66-473	----	1/2"	0.87	1.00	0.12	67-473	----
66-474	----	3/4"	0.97	1.18	0.16	67-474	----
66-475	----	1"	1.16	1.50	0.30	67-475	----
66-476	----	1-1/4"	1.28	2.00	0.68	67-476	----
66-477	----	1-1/2"	1.35	2.25	0.83	67-477	----
66-478	----	2"	1.45	2.625	1.36		

## SQUARE HEAD PLUGS



Part # Galvanized		Size	A	B	C	Approx. Wt. Lbs.	Part # Black	
		1/16"	0.33	0.18	0.22	0.01	67-669	----
66-670	----	1/8"	0.33	0.24	0.28	0.01	67-670	----
66-671	----	1/4"	0.45	0.28	0.37	0.02	67-671	----
66-672	----	3/8"	0.50	0.31	0.43	0.04	67-672	----
66-653	----	1/2"	0.59	0.38	0.55	0.12	67-653	----
66-654	----	3/4"	0.63	0.44	0.62	0.18	67-654	----
66-655	----	1"	0.75	0.5	0.81	0.34	67-655	----
66-656	----	1-1/4"	0.80	0.56	0.93	0.62	67-656	----
66-657	----	1-1/2"	0.83	0.62	1.12	0.82	67-657	----
66-658	----	2"	0.88	0.68	1.31	1.36	67-658	----

## HEX HEAD PLUGS



Part # Galvanized		Size	A	Hex	Approx. Wt. Lbs.	Part # Black	
66-770	----	1/8"	0.55	0.43	0.01	67-770	----
66-771	----	1/4"	0.74	0.56	0.04	67-771	----
66-772	----	3/8"	0.67	0.68	0.06	67-772	----
66-773	----	1/2"	0.80	0.70	0.12	67-773	----
66-774	----	3/4"	0.94	1.06	0.18	67-774	----
66-775	----	1"	1.00	1.31	0.22	67-775	----
66-776	----	1-1/4"	1.17	1.75	0.7	67-776	----
66-777	----	1-1/2"	1.51	2.00	1.2	67-777	----
66-778	----	2"	1.65	2.50	2.06	67-778	----

**COUNTERSUNK PLUG - Square Socket**



Galvanized						Black	
Part #		Size	A	Socket Size	Approx. Wt. Lbs.	Part #	
66-630	----	1/8"	0.29	0.19	0.01	67-630	----
66-631	----	1/4"	0.45	0.25	0.02	67-631	----
66-632	----	3/8"	0.45	0.31	0.04	67-632	----
66-633	----	1/2"	0.59	0.38	0.08	67-633	----
66-634	----	3/4"	0.60	0.50	0.12	67-634	----
66-635	----	1"	0.75	0.50	0.16	67-635	----
66-636	----	1-1/4"	0.80	0.75	0.32	67-636	----
66-637	----	1-1/2"	0.83	0.75	0.45	67-637	----
66-638	----	2"	0.88	0.875	2.06	67-638	----

**COUNTERSUNK PLUG - Hex Socket**



Galvanized						Black	
Part #		Size	A	Socket Size	Approx. Wt. Lbs.	Part #	
66-760	----	1/16"	0.29	0.15	0.01	67-760	----
66-761	----	1/8"	0.29	0.18	0.01	67-761	----
66-762	----	1/4"	0.44	0.25	0.02	67-762	----
66-763	----	3/8"	0.44	0.31	0.04	67-763	----
66-764	----	1/2"	0.59	0.37	0.08	67-764	----
66-765	----	3/4"	0.60	0.56	0.14	67-765	----
66-766	----	1"	0.75	0.625	0.22	67-766	----
66-767	----	1-1/4"	0.80	0.75	0.37	67-767	----
66-768	----	1-1/2"	0.83	1.0	0.45	67-768	----
66-769	----	2"	0.88	1.0	0.86	67-769	----

**FACE BUSHING**



Galvanized					Black	
Part #		Size M x F	A	Approx. Wt. Lbs.	Part #	
66-700	----	1/4" x 1/8"	0.44	0.01	67-700	----
66-701	----	3/8" x 1/8"	0.48	0.02	67-701	----
66-702	----	3/8" x 1/4"	0.48	0.02	67-702	----
		1/2" x 1/8"	0.56	0.04	67-703	----
66-704	----	1/2" x 1/4"	0.56	0.04	67-704	----
66-705	----	1/2" x 3/8"	0.56	0.04	67-705	----
		3/4" x 1/4"	0.62	0.12	67-707	----
66-708	----	3/4" x 3/8"	0.62	0.10	67-708	----
66-709	----	3/4" x 1/2"	0.62	0.10	67-709	----
		1" x 3/8"	0.75	0.18	67-711	----
66-712	----	1" x 1/2"	0.75	0.16	67-712	----
66-713	----	1" x 3/4"	0.75	0.16	67-713	----

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
1/8" DIAMETER**



Galvanized Black

Part #	Length	Part #
58-001	Close (3/4")	59-001
58-002	1-1/2"	59-002
58-003	2"	59-003
58-004	2-1/2"	59-004
58-005	3"	59-005
58-006	3-1/2"	59-006
58-007	4"	59-007
58-008	4-1/2"	59-008
58-009	5"	59-009
58-010	5-1/2"	59-010
58-011	6"	59-011
58-012	7"	59-012
58-013	8"	59-013
58-014	9"	59-014
58-015	10"	59-015
58-016	11"	59-016
58-017	12"	59-017

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
3/8" DIAMETER**



Galvanized Black

Part #	Length	Part #
58-040	Close (1")	59-040
58-041	1-1/2"	59-041
58-042	2"	59-042
58-043	2-1/2"	59-043
58-044	3"	59-044
58-045	3-1/2"	59-045
58-046	4"	59-046
58-047	4-1/2"	59-047
58-048	5"	59-048
58-049	5-1/2"	59-049
58-050	6"	59-050
58-051	7"	59-051
58-052	8"	59-052
58-053	9"	59-053
58-054	10"	59-054
58-055	11"	59-055
58-056	12"	59-056

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
1/4" DIAMETER**



Galvanized Black

Part #	Length	Part #
58-020	Close (3/4")	59-020
58-021	1-1/2"	59-021
58-022	2"	59-022
58-023	2-1/2"	59-023
58-024	3"	59-024
58-025	3-1/2"	59-025
58-026	4"	59-026
58-027	4-1/2"	59-027
58-028	5"	59-028
58-029	5-1/2"	59-029
58-030	6"	59-030
58-031	7"	59-031
58-032	8"	59-032
58-033	9"	59-033
58-034	10"	59-034
58-035	11"	59-035
58-036	12"	59-036

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
1/2" DIAMETER**



Galvanized Black

Part #	Length	Part #
58-060	Close (1-1/8")	59-060
58-061	1-1/2"	59-061
58-062	2"	59-062
58-063	2-1/2"	59-063
58-064	3"	59-064
58-065	3-1/2"	59-065
58-066	4"	59-066
58-067	4-1/2"	59-067
58-068	5"	59-068
58-069	5-1/2"	59-069
58-070	6"	59-070
58-071	7"	59-071
58-072	8"	59-072
58-073	9"	59-073
58-074	10"	59-074
58-075	11"	59-075
58-076	12"	59-076

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
3/4" DIAMETER**



Galvanized		Black	
Part #	Length	Part #	Length
58-080	Close (1-3/8")	59-080	Close (1-3/8")
58-081	1-1/2"	59-081	1-1/2"
58-082	2"	59-082	2"
58-083	2-1/2"	59-083	2-1/2"
58-084	3"	59-084	3"
58-085	3-1/2"	59-085	3-1/2"
58-086	4"	59-086	4"
58-087	4-1/2"	59-087	4-1/2"
58-088	5"	59-088	5"
58-089	5-1/2"	59-089	5-1/2"
58-090	6"	59-090	6"
58-091	7"	59-091	7"
58-092	8"	59-092	8"
58-093	9"	59-093	9"
58-094	10"	59-094	10"
58-095	11"	59-095	11"
58-096	12"	59-096	12"

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
1-1/4" DIAMETER**



Galvanized		Black	
Part #	Length	Part #	Length
58-120	Close (1-5/8")	59-120	Close (1-5/8")
58-121	2"	59-121	2"
58-122	2-1/2"	59-122	2-1/2"
58-123	3"	59-123	3"
58-124	3-1/2"	59-124	3-1/2"
58-125	4"	59-125	4"
58-126	4-1/2"	59-126	4-1/2"
58-127	5"	59-127	5"
58-128	5-1/2"	59-128	5-1/2"
58-129	6"	59-129	6"
58-130	7"	59-130	7"
58-131	8"	59-131	8"
58-132	9"	59-132	9"
58-133	10"	59-133	10"
58-134	11"	59-134	11"
58-135	12"	59-135	12"

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
1" DIAMETER**



Galvanized		Black	
Part #	Length	Part #	Length
58-100	Close (1-1/2")	59-100	Close (1-1/2")
58-101	2"	59-101	2"
58-102	2-1/2"	59-102	2-1/2"
58-103	3"	59-103	3"
58-104	3-1/2"	59-104	3-1/2"
58-105	4"	59-105	4"
58-106	4-1/2"	59-106	4-1/2"
58-107	5"	59-107	5"
58-108	5-1/2"	59-108	5-1/2"
58-109	6"	59-109	6"
58-110	7"	59-110	7"
58-111	8"	59-111	8"
58-112	9"	59-112	9"
58-113	10"	59-113	10"
58-114	11"	59-114	11"
58-115	12"	59-115	12"

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
1-1/2" DIAMETER**



Galvanized		Black	
Part #	Length	Part #	Length
58-140	Close (1-3/4")	59-140	Close (1-3/4")
58-141	2"	59-141	2"
58-142	2-1/2"	59-142	2-1/2"
58-143	3"	59-143	3"
58-144	3-1/2"	59-144	3-1/2"
58-145	4"	59-145	4"
58-146	4-1/2"	59-146	4-1/2"
58-147	5"	59-147	5"
58-148	5-1/2"	59-148	5-1/2"
58-149	6"	59-149	6"
58-150	7"	59-150	7"
58-151	8"	59-151	8"
58-152	9"	59-152	9"
58-153	10"	59-153	10"
58-154	11"	59-154	11"
58-155	12"	59-155	12"

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
2" DIAMETER**



Galvanized		Black	
Part #	Length	Part #	Length
58-160	Close (2")	59-160	Close (2")
58-161	2-1/2"	59-161	2-1/2"
58-162	3"	59-162	3"
58-163	3-1/2"	59-163	3-1/2"
58-164	4"	59-164	4"
58-165	4-1/2"	59-165	4-1/2"
58-166	5"	59-166	5"
58-167	5-1/2"	59-167	5-1/2"
58-168	6"	59-168	6"
58-169	7"	59-169	7"
58-170	8"	59-170	8"
58-171	9"	59-171	9"
58-172	10"	59-172	10"
58-173	11"	59-173	11"
58-174	12"	59-174	12"

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
3" DIAMETER**



Galvanized		Black	
Part #	Length	Part #	Length
58-200	Close (2-5/8")	59-200	Close (2-5/8")
58-201	3"	59-201	3"
58-202	3-1/2"	59-202	3-1/2"
58-203	4"	59-203	4"
58-204	4-1/2"	59-204	4-1/2"
58-205	5"	59-205	5"
58-206	5-1/2"	59-206	5-1/2"
58-207	6"	59-207	6"
58-208	7"	59-208	7"
58-209	8"	59-209	8"
58-210	9"	59-210	9"
58-211	10"	59-211	10"
58-212	11"	59-212	11"
58-213	12"	59-213	12"

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
2-1/2" DIAMETER**



Galvanized		Black	
Part #	Length	Part #	Length
58-180	Close (2-1/2")	59-180	Close (2-1/2")
58-181	3"	59-181	3"
58-182	3-1/2"	59-182	3-1/2"
58-183	4"	59-183	4"
58-184	4-1/2"	59-184	4-1/2"
58-185	5"	59-185	5"
58-186	5-1/2"	59-186	5-1/2"
58-187	6"	59-187	6"
58-188	7"	59-188	7"
58-189	8"	59-189	8"
58-190	9"	59-190	9"
58-191	10"	59-191	10"
58-192	11"	59-192	11"
58-193	12"	59-193	12"

**SCHEDULE 80 EXTRA HEAVY NIPPLES  
4" DIAMETER**



Galvanized		Black	
Part #	Length	Part #	Length
58-220	Close (2-7/8")	59-220	Close (2-7/8")
58-221	4"	59-221	4"
58-222	4-1/2"	59-222	4-1/2"
58-223	5"	59-223	5"
58-224	5-1/2"	59-224	5-1/2"
58-225	6"	59-225	6"
58-226	7"	59-226	7"
58-227	8"	59-227	8"
58-228	9"	59-228	9"
58-229	10"	59-229	10"
58-230	11"	59-230	11"
58-231	12"	59-231	12"

**STEEL NIPPLES****BLACK EXTRA HEAVY SCH80 SEAMLESS****SCHEDULE 80 SEAMLESS NIPPLES  
1/8" DIAMETER**

Part #	Length	List Price
72-001	X Close (3/4")	----
72-002	x 1-1/2"	----
72-003	x 2"	----
72-004	x 2-1/2"	----
72-005	x 3"	----
72-006	x 3-1/2"	----
72-007	x 4"	----
72-008	x 4-1/2"	----
72-009	x 5"	----
72-010	x 5-1/2"	----
72-011	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
1/4" DIAMETER**

Part #	Length	List Price
72-020	X Close (7/8")	----
72-021	x 1-1/2"	----
72-022	x 2"	----
72-023	x 2-1/2"	----
72-024	x 3"	----
72-025	x 3-1/2"	----
72-026	x 4"	----
72-027	x 4-1/2"	----
72-028	x 5"	----
72-029	x 5-1/2"	----
72-030	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
3/8" DIAMETER**

Part #	Length	List Price
72-040	X Close (1")	----
72-041	x 1-1/2"	----
72-042	x 2"	----
72-043	x 2-1/2"	----
72-044	x 3"	----
72-045	x 3-1/2"	----
72-046	x 4"	----
72-047	x 4-1/2"	----
72-048	x 5"	----
72-049	x 5-1/2"	----
72-050	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
1/2" DIAMETER**

Part #	Length	List Price
72-060	X Close (1-1/8")	----
72-061	x 1-1/2"	----
72-062	x 2"	----
72-063	x 2-1/2"	----
72-064	x 3"	----
72-065	x 3-1/2"	----
72-066	x 4"	----
72-067	x 4-1/2"	----
72-068	x 5"	----
72-069	x 5-1/2"	----
72-070	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
3/4" DIAMETER**

Part #	Length	List Price
72-080	X Close (1-3/8")	----
72-081	x 1-1/2"	----
72-082	x 2"	----
72-083	x 2-1/2"	----
72-084	x 3"	----
72-085	x 3-1/2"	----
72-086	x 4"	----
72-087	x 4-1/2"	----
72-088	x 5"	----
72-089	x 5-1/2"	----
72-090	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
1" DIAMETER**

Part #	Length	List Price
72-100	X Close (1-1/2")	----
72-101	x 2"	----
72-102	x 2-1/2"	----
72-103	x 3"	----
72-104	x 3-1/2"	----
72-105	x 4"	----
72-106	x 4-1/2"	----
72-107	x 5"	----
72-108	x 5-1/2"	----
72-109	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
1-1/4" DIAMETER**



Part #	Length	List Price
72-120	X Close (1-5/8")	----
72-121	x 2"	----
72-122	x 2-1/2"	----
72-123	x 3"	----
72-124	x 3-1/2"	----
72-125	x 4"	----
72-126	x 4-1/2"	----
72-127	x 5"	----
72-128	x 5-1/2"	----
72-129	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
1-1/2" DIAMETER**



Part #	Length	List Price
72-140	X Close (1-3/4")	----
72-141	x 2"	----
72-142	x 2-1/2"	----
72-143	x 3"	----
72-144	x 3-1/2"	----
72-145	x 4"	----
72-146	x 4-1/2"	----
72-147	x 5"	----
72-148	x 5-1/2"	----
72-149	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
2" DIAMETER**



Part #	Length	List Price
72-160	X Close (2")	----
72-161	x 2-1/2"	----
72-162	x 3"	----
72-163	x 3-1/2"	----
72-164	x 4"	----
72-165	x 4-1/2"	----
72-166	x 5"	----
72-167	x 5-1/2"	----
72-168	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
2-1/2" DIAMETER**



Part #	Length	List Price
72-180	X Close (2-1/2")	----
72-181	x 3"	----
72-182	x 3-1/2"	----
72-183	x 4"	----
72-184	x 4-1/2"	----
72-185	x 5"	----
72-186	x 5-1/2"	----
72-187	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
3" DIAMETER**



Part #	Length	List Price
72-200	X Close (2-5/8")	----
72-201	x 3"	----
72-202	x 3-1/2"	----
72-203	x 4"	----
72-204	x 4-1/2"	----
72-205	x 5"	----
72-206	x 5-1/2"	----
72-207	x 6"	----

**SCHEDULE 80 SEAMLESS NIPPLES  
4" DIAMETER**



Part #	Length	List Price
72-220	X Close (2-7/8")	----
72-223	x 4"	----
72-224	x 4-1/2"	----
72-225	x 5"	----
72-226	x 5-1/2"	----
72-227	x 6"	----

## MALLEABLE FITTINGS

## EXTRA HEAVY 300# MALLEABLE IRON

300 LB Fittings ASTM: A197 ANSI: B16.3, B16.4  
**90° ELBOWS**



Galvanized

Black

Part #	Size	Part #	Size
68-101	1/4"	69-101	1/4"
68-102	3/8"	69-102	3/8"
68-103	1/2"	69-103	1/2"
68-104	3/4"	69-104	3/4"
68-105	1"	69-105	1"
68-106	1-1/4"	69-106	1-1/4"
68-107	1-1/2"	69-107	1-1/2"
68-108	2"	69-108	2"

### 45° ELBOWS



Galvanized

Black

Part #	Size	Part #	Size
68-181	1/4"	69-181	1/4"
68-182	3/8"	69-182	3/8"
68-183	1/2"	69-183	1/2"
68-184	3/4"	69-184	3/4"
68-185	1"	69-185	1"
68-186	1-1/4"	69-186	1-1/4"
68-187	1-1/2"	69-187	1-1/2"
68-188	2"	69-188	2"

### 90° STREET ELBOWS



Galvanized

Black

Part #	Size	Part #	Size
68-161	1/4"	69-161	1/4"
68-162	3/8"	69-162	3/8"
68-163	1/2"	69-163	1/2"
68-164	3/4"	69-164	3/4"
68-165	1"	69-165	1"
68-166	1-1/4"	69-166	1-1/4"
68-167	1-1/2"	69-167	1-1/2"
68-168	2"	69-168	2"

### TEES



Galvanized

Black

Part #	Size	Part #	Size
68-252	3/8"	69-252	3/8"
68-253	1/2"	69-253	1/2"
68-254	3/4"	69-254	3/4"
68-255	1"	69-255	1"
68-256	1-1/4"	69-256	1-1/4"
68-257	1-1/2"	69-257	1-1/2"
68-258	2"	69-258	2"

300 LB Fittings ASTM: A197 ANSI: B16.3, B16.4  
**COUPLINGS**



Galvanized

Black

Part #	Size	Part #	Size
68-411	1/4"	69-411	1/4"
68-412	3/8"	69-412	3/8"
68-413	1/2"	69-413	1/2"
68-414	3/4"	69-414	3/4"
68-415	1"	69-415	1"
68-416	1-1/4"	69-416	1-1/4"
68-417	1-1/2"	69-417	1-1/2"
68-418	2"	69-418	2"

### REDUCING COUPLING



Galvanized

Black

Part #	Size	Part #	Size
68-432	3/8 x 1/4"	69-432	3/8 x 1/4"
68-434	1/2 x 1/4"	69-434	1/2 x 1/4"
68-435	1/2 x 3/8"	69-435	1/2 x 3/8"
68-438	3/4 x 1/2"	69-438	3/4 x 1/2"
68-441	1 x 1/2"	69-441	1 x 1/2"
68-442	1 x 3/4"	69-442	1 x 3/4"

### CAPS



Galvanized

Black

Part #	Size	Part #	Size
68-471	1/4"	69-471	1/4"
68-472	3/8"	69-472	3/8"
68-473	1/2"	69-473	1/2"
68-474	3/4"	69-474	3/4"
68-475	1"	69-475	1"
68-476	1-1/4"	69-476	1-1/4"
68-477	1-1/2"	69-477	1-1/2"
68-478	2"	69-478	2"

### UNIONS



Galvanized

Black

Part #	Size	Part #	Size
68-600	1/8"	69-600	1/8"
68-601	1/4"	69-601	1/4"
68-602	3/8"	69-602	3/8"
68-603	1/2"	69-603	1/2"
68-604	3/4"	69-604	3/4"
68-605	1"	69-605	1"
68-606	1-1/4"	69-606	1-1/4"
68-607	1-1/2"	69-607	1-1/2"
68-608	2"	69-608	2"

More sizes available...just ask!

NIPPLES & FITTINGS



**3000 LB FORGED STEEL THREADED FITTINGS**

**ASTM: A105 ANSI: B16.11**

**90° ELBOWS**



Part #	Size	
101-103	1/2"	----
101-104	3/4"	----
101-105	1"	----
101-106	1-1/4"	----
101-107	1-1/2"	----
101-108	2"	----

**CROSS**



Part #	Size	
101-393	1/2"	----
101-394	3/4"	----
101-395	1"	----
101-396	1-1/4"	----
101-397	1-1/2"	----
101-398	2"	----

**COUPLINGS**



Part #	Size	
101-413	1/2"	----
101-414	3/4"	----
101-415	1"	----
101-416	1-1/4"	----
101-417	1-1/2"	----
101-418	2"	----

**STREET ELBOWS**



Part #	Size	
101-163	1/2"	----
101-164	3/4"	----
101-165	1"	----
101-166	1-1/4"	----
101-167	1-1/2"	----
101-168	2"	----

**HALF COUPLINGS**



Part #	Size	
101-773	1/2"	----
101-774	3/4"	----
101-775	1"	----
101-776	1-1/4"	----
101-777	1-1/2"	----
101-778	2"	----

**REDUCING COUPLINGS**

Part #	Size	
101-435	1/2" x 3/8"	----
101-434	1/2" x 1/4"	----
101-438	3/4" x 1/2"	----
101-437	3/4" x 3/8"	----
101-442	1" x 3/4"	----
101-441	1" x 1/2"	----
101-440	1" x 3/8"	----
101-446	1-1/4" x 1"	----
101-445	1-1/4" x 3/4"	----
101-444	1-1/4" x 1/2"	----
101-443	1-1/4" x 3/8"	----
101-450	1-1/2" x 1-1/4"	----
101-449	1-1/2" x 1"	----
101-447	1-1/2" x 1/2"	----
101-454	2" x 1-1/2"	----
101-453	2" x 1-1/4"	----
101-452	2" x 1"	----
101-451	2" x 3/4"	----
101-458	2" x 1/2"	----

**45° ELBOWS**



Part #	Size	
101-183	1/2"	----
101-184	3/4"	----
101-185	1"	----
101-186	1-1/4"	----
101-187	1-1/2"	----
101-188	2"	----

**CAPS**



Part #	Size	
101-473	1/2"	----
101-474	3/4"	----
101-475	1"	----
101-476	1-1/4"	----
101-477	1-1/2"	----
101-478	2"	----

**TEES**



Part #	Size	
101-253	1/2"	----
101-254	3/4"	----
101-255	1"	----
101-256	1-1/4"	----
101-257	1-1/2"	----
101-258	2"	----

3000lb socket weld fittings available on special basis. See our website.

2000 and 6000 lb threaded and socketweld fittings available on special order basis. See our website.

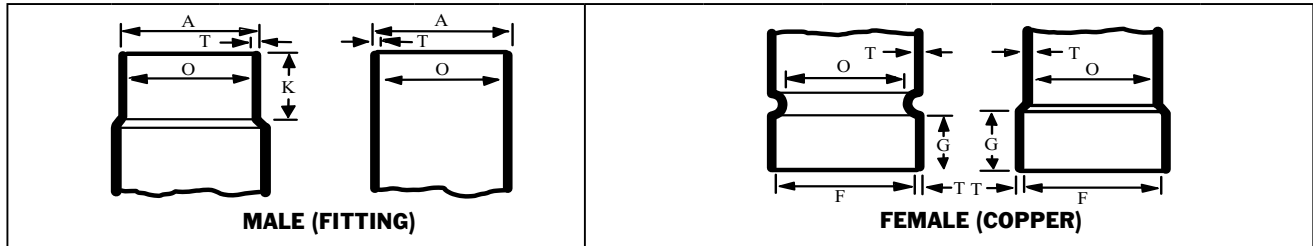
**UNIONS**



Part #	Size	
101-603	1/2"	----
101-604	3/4"	----
101-605	1"	----
101-606	1-1/4"	----
101-607	1-1/2"	----
101-608	2"	----

*More sizes available...just ask!*

**NIPPLES & FITTINGS**



Nominal Size	Joint Ends										Metal Thickness T (in)	Inside Diameter O (in)
	Male End					Female End						
	Outside Diameter (A) in	Average Tolerance (mm)	Actual MIN in	O.D. MAX in	Length (Min) H (in)	Inside Diameter F (in)	Average Tolerance (mm)	Actual MIN in	O.D. MAX in	Length (Min) G (in)		
1/8	2/8	0.03	2/8	2/8	3/8	2/8	0.03	2/8	2/8	3/8	0	2/8
1/4	3/8		3/8	3/8	3/8	3/8		3/8	3/8	3/8	0	2/8
3/8	4/8		4/8	4/8	3/8	4/8		4/8	4/8	3/8	0	3/8
1/2	5/8		5/8	5/8	4/8	5/8		5/8	5/8	3/8	0	4/8
5/8	6/8		6/8	6/8	5/8	6/8		6/8	6/8	5/8	0	4/8
3/4	7/8		7/8	7/8	6/8	7/8		7/8	7/8	5/8	0	5/8
1	1-1/8	0.04	1-1/8	1-1/8	7/8	1-1/8	0.04	1-1/8	1-1/8	7/8	0	7/8
1-1/4	1-3/8		1-3/8	1-3/8	1	1-3/8		1-3/8	1-3/8	1	0	1-1/8
1-1/2	1-5/8	0.05	1-5/8	1-5/8	1-1/8	1-5/8	0.05	1-5/8	1-5/8	1-1/8	0	1-3/8
2	2-1/8		2-1/8	2-1/8	1-3/8	2-1/8		2-1/8	2-1/8	1-2/8	0	1-6/8
2-1/2	2-5/8		2-5/8	2-5/8	1-4/8	2-5/8		2-5/8	2-5/8	1-4/8	1/8	2-1/8
3	3-1/8		3-1/8	2-1/8	1-6/8	3-1/8		3-1/8	3-1/8	1-5/8	1/8	2-5/8
4	4-1/8	0.08	4-1/8	4-1/8	2-1/8	4-1/8	0.08	4-1/8	4-1/8	2-1/8	1/8	3-4/8
5	5-1/8		1-1/8	5-1/8	2-6/8	5-1/8		5-1/8	5-1/8	2-5/8	1/8	4-5/8
6	6-1/8		6-1/8	6-1/8	3-2/8	6-1/8		6-1/8	6-1/8	3-1/8	1/8	5-6/8
8	8-1/8		8-1/8	8-1/8	4-1/8	8-1/8		8-1/8	8-1/8	3-7/8	1/8	7-4/8
10	10-1/8	0.35	10-1/8	10-1/8	4-4/8	10-2/8	0.35	10-1/8	10-2/8	4-3/8	2/8	9-2/8

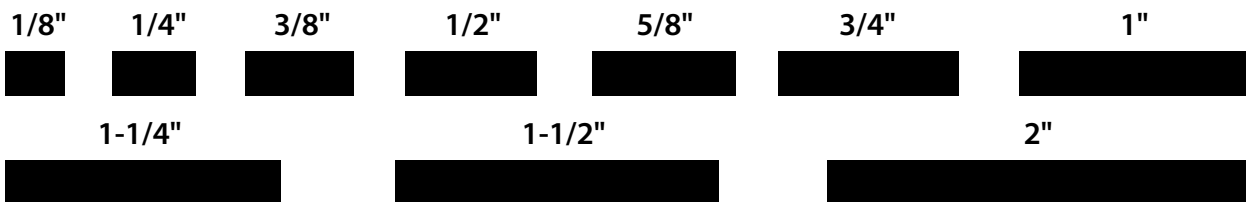
**NIPPLES & FITTINGS**

**Symbol of Joint Ends**

- C** Solder joint fitting end made to receive copper tube diameter
- Ftg.** Solder joint fitting end made to copper tube diameter
- F** Internal ANSI Standard Taper Pipe Thread-Female
- M** External ANSI Standard Taper Pipe Thread-Male

**The above conforms to ASTM B 88 & ASTM B 306**

**Warranty:** Seller warrants that all fittings will be free from defects in materials and construction that will impair their usefulness, provided they are used as recommended. Any fitting that proves to be defective will be replaced or a credit issued but no incidental labor charges, expenses or damages will be allowed.



**90° Ell C x C**



WE-500-R  
607-R  
107-C

Part#	Nominal	Approx Net Wt.	
77-100	1/8"	0.01	----
77-101	1/4"	0.01	----
77-102	3/8"	0.03	----
77-103	3/8" x 1/4"	0.03	----
77-104	1/2"	0.04	----
77-105	1/2"x3/8"	-	----
77-107	5/8"	0.07	----
77-108	3/4"	0.09	----
77-109	3/4" x 1/2"	0.12	----
77-110	1"	0.17	----
77-111	1"x3/4"	0.23	----
77-112	1"x1/2"	0.23	----
77-113	1-1/4"	0.27	----
77-114	1-1/2"	0.41	----
77-116	2"	0.73	----
77-117	2"x1 -1/2"	0.73	----
77-118	2-1/2"	1.16	----
77-119	3"	1.87	----
77-120	4"	3.79	----

**90° Street Ell  
Ftg. x C**



77-124	1/4"	0.01	----
77-125	3/8"	0.03	----
77-126	1/2"	0.05	----
77-127	5/8"	0.07	----
77-128	3/4"	0.12	----
77-129	1"	0.22	----
77-130	1-1/4"	0.33	----
77-131	1-1/2"	0.45	----
77-132	2"	0.87	----
77-134	3"	1.93	----

**90° Long Turn Ell  
C x C**



WE-500-L  
607-LT  
107-L

77-139	1/8"	0.01	----
77-140	1/4"	0.02	----
77-141	5/16"	0.03	----
77-142	3/8"	0.04	----
77-143	1/2"	0.06	----
77-144	5/8"	0.10	----
77-145	3/4"	0.15	----

**90° Long Turn  
Street Ell  
Ftg. x C**



WE-503-L  
607-2LT

77-152	1/8"	0.01	----
77-153	1/4"	0.22	----
77-154	3/8"	0.04	----
77-155	1/2"	0.06	----
77-156	5/8"	0.11	----
77-157	3/4"	0.15	----

See copper fitting brushes on page 294.

# COPPER FITTINGS

# WROT SOLDER JOINT

## 45° ELL C x C

WE-504  
606  
106



Part#	Nominal	Approx Net Wt.	
77-161	1/8"	0.01	----
77-162	1/4"	0.01	----
77-163	3/8"	0.02	----
77-164	1/2"	0.04	----
77-165	5/8"	0.06	----
77-166	3/4"	0.10	----
77-167	1"	0.19	----
77-168	1-1/4"	0.27	----
77-169	1-1/2"	0.39	----
77-170	2"	0.75	----
77-171	2-1/2"	1.23	----

## Street 45° Ftg. x C

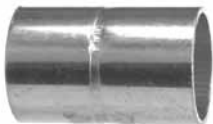
WE-505  
606-2



77-177	1/4"	0.01	----
77-178	3/8"	0.02	----
77-179	1/2"	0.06	----
77-180	5/8"	0.06	----
77-181	3/4"	0.10	----
77-182	1"	0.18	----
77-183	1-1/4"	0.27	----
77-184	1-1/2"	0.38	----
77-185	2"	0.75	----

## Coupling (Socket) w/Rolled Tube Stop

C x C  
WC-400  
100



77-201	1/8"	0.01	----
77-202	1/4"	0.01	----
77-203	3/8"	0.02	----
77-204	1/2"	0.03	----
77-205	5/8"	0.04	----
77-206	3/4"	0.06	----
77-207	1"	0.10	----
77-208	1-1/4"	0.15	----
77-209	1-1/2"	0.22	----
77-210	2"	0.39	----
77-211	2-1/2"	0.71	----
77-212	3"	0.98	----
77-214	4"	2.01	----

## Coupling (Socket) Less Tube Stop

C x C  
WC-400NS  
601



77-219	1/8"	0.01	----
77-220	1/4"	0.01	----
77-222	1/2"	0.03	----
77-223	3/4"	0.06	----
77-224	1"	0.10	----
77-225	1-1/4"	0.15	----
77-226	1-1/2"	0.22	----
77-227	2"	0.39	----

# WROT SOLDER JOINT

# COPPER FITTINGS

**Coupling (Socket)  
w/Dimpled Tube Stop  
C x C**



WC-400S

Part#	Nominal	Approx Net Wt.	
77-238	1/2"	0.03	----
77-240	3/4"	0.06	----
77-241	1"	0.10	----
77-242	1-1/4"	0.15	----
77-244	2"	0.39	----
77-247	4"	2.01	----

**Reducer Coupling  
w/ Stop  
C x C**



WC-400R  
600-R

77-252	1/4" x 1/8"	0.01	----
77-253	3/8" x 1/4"	0.02	----
77-255	1/2" x 3/8"	0.03	----
77-256	1/2" x 1/4"	0.03	----
77-258	5/8" x 1/2"	0.04	----
77-262	3/4" x 1/2"	0.06	----
77-263	3/4" x 3/8"	0.06	----
77-264	3/4" x 1/4"	0.06	----
77-265	1"x3/4"	0.12	----
77-267	1"x1/2"	0.10	----
77-268	1-1/4" x 1"	0.17	----
77-269	1 -1/4" x 3/4"	0.17	----
77-270	1 -1/4" x 1/2"	0.14	----
77-271	1-1/2" x 1-1/4"	0.24	----
77-272	1-1/2" x1"	0.24	----
77-273	1 -1/2" x 3/4"	0.25	----
77-274	1-1/2" x 1/2"	0.19	----
77-275	2" x 1-1/2"	0.42	----
77-276	2 x 1-1/4"	0.46	----
77-277	2" x 1"	0.48	----
77-280	2-1/2"x2"	0.79	----
77-284	3" x 2-1/2"	1.15	----

**Fitting Reducer**

**Ftg. x C**



WC-403  
600-2

77-291	3/8" x 1/4"	0.02	----
77-292	3/8" x 1/8"	0.01	----
77-294	1/2" x 1/4"	0.03	----
77-295	5/8" X 1/2"	0.03	----
77-296	3/4" x 5/8"	0.08	----
77-297	3/4" x 1/2"	0.06	----
77-298	3/4" x 3/8"	0.05	----
77-299	3/4" X 1/4"	0.05	----
77-300	1"x3/4"	0.11	----
77-352	1" x 1/2"	0.10	----
77-354	1-1/4" x1"	0.17	----
77-355	1 -1/4" x 3/4"	0.15	----
77-356	1 -1/4" x 1/2"	0.14	----
77-357	1 -1/2" X 1-1/4"	0.21	----
77-358	1-1/2"x1"	0.22	----
77-359	1 -1/2" x 3/4"	0.21	----
77-360	1 -1/2" x 1/2"	0.21	----
77-361	2" x 1-1/2"	0.39	----
77-362	2" x 1 -1/4"	0.38	----
77-363	2" x 1"	0.40	----
77-364	2" x 3/4"	0.39	----
77-365	2" x 1/2"	0.44	----
77-370	3" x 2-1/2"	0.93	----

NIPPLES & FITTINGS

**Flush Bushing**  
Ftg. x C  
WC-106  
618



Part#	Nominal	Approx Net Wt.	
77-382	3/4" x 1/2"	0.08	----
77-383	3/4" x 5/8"	0.04	----
77-385	1" x 3/4"	0.13	----
77-387	1" x 1/2"	0.22	----
77-389	1-1/4" x 3/4"	0.30	----
77-391	1-1/2" x 1-1/4"	0.22	----
77-392	2" x 1-1/2"	0.68	----

**Male Adapter**  
C x M  
WC-401  
604



77-393	1/8"	0.02	----
77-394	1/4"	0.03	----
77-395	1/4" x 1/2"	0.09	----
77-396	1/4"x3/8"	0.06	----
77-397	1/4" x 1/8"	0.02	----
77-398	3/8"	0.06	----
77-401	1/2"	0.08	----
77-303	1/2"x3/4"	0.16	----
77-306	3/4"	0.14	----
77-307	3/4" x 1"	0.29	----
77-309	1"	0.24	----
77-312	1"x3/4"	0.18	----
77-314	1-1/4"	0.41	----
77-318	1-1/2"	0.50	----
77-320	1-1/2" x 1-1/4"	0.44	----
77-322	2"	0.87	----

**Fitting Male Adapters**  
Ftg. x M

WC-404  
604-2



77-331	1/2"	0.09	----
77-332	1/2" x 3/4"	0.15	----
77-333	3/4"	0.15	----
77-335	1-1/4"	0.41	----
77-337	2"	0.86	----

Can't find it here? Ask us for price & availability.

The way to succeed is to double your error rate.

- Thomas J. Watson

# WROT SOLDER JOINT

# COPPER FITTINGS

Part#	Nominal	Approx Net Wt.	
77-338	1/8"	0.03	----
77-339	1/4"	0.04	----
77-340	3/8"	0.06	----
77-341	3/8" x 1/2"	0.10	----
77-343	1/2"	0.10	----
77-345	1/2" x 3/4"	0.15	----
77-346	1/2"x3/8"	0.70	----
77-347	1/2" x 1/4"	0.05	----
77-349	3/4"	0.14	----
77-351	3/4" x 1/2"	0.11	----
77-402	1"	0.24	----
77-404	1"x3/4"	0.22	----
77-405	1"x 1/2"	0.29	----
77-406	1-1/4"	0.43	----
77-407	1-1/4" x 1-1/2"	0.52	----
77-409	1 -1/4" x 3/4"	0.26	----
77-410	1-1/2"	0.58	----
77-413	2"	0.74	----
77-416	3"	1.83	----

**Female Adapters**  
**C x F**  
 WC402  
 603  
 WC402R  
 603R



**NIPPLES & FITTINGS**

**Fitting Female Adapt.**  
**Ftg. x F**



WC405  
603-2

WC405R  
603R

77-419	3/8"	0.05	----
77-420	1/2"	0.11	----
77-423	3/4"	0.19	----
77-424	1"	0.25	----
77-426	1-1/2"	0.55	----
77-427	2"	0.68	----

**Cap**

WC-415  
617



77-428	1/8"	0.003	----
77-429	1/4"	0.01	----
77-430	3/8"	0.01	----
77-431	1/2"	0.02	----
77-432	5/8"	0.03	----
77-433	3/4"	0.04	----
77-434	1"	0.08	----
77-435	1-1/4"	0.11	----
77-436	1-1/2"	0.18	----
77-437	2"	0.30	----

**Unions C x C**  
 WC-407



77-452	1/8"	0.13	----
77-453	1/4"	0.11	----
77-454	3/8"	0.11	----
77-455	1/2"	0.17	----
77-456	3/4"	0.37	----
77-457	1"	0.51	----

**U-Type Strap**  
 WS-1100



77-458	1/8"	0.01	----
77-459	1/4"	0.02	----
77-460	3/8"	0.02	----
77-461	1/2"	0.03	----
77-462	3/4"	0.03	----
77-463	1"	0.04	----
77-464	1-1/4"	0.04	----
77-465	1-1/2"	0.05	----
77-466	2"	0.06	----



Part#	Nominal	Approx Net Wt.	
77-467	1/8"	0.02	----
77-468	1/4"	0.03	----
77-470	3/8"	0.05	----
77-473	1/2"	0.08	----
77-474	1/2"x1/2"x1"	-	----
77-481	5/8"	-	----
77-483	3/4"	0.18	----
77-485	3/4"x3/4"x1"	0.25	----
77-486	3/4" x 3/4" x 1/2"	0.15	----
77-488	3/4" x 1/2" x 3/4"	0.19	----
77-489	3/4"x1/2"x1/2"	0.15	----
77-490	1"	0.35	----
77-492	1"x1"x 1-1/4"	0.64	----
77-493	1"x1"x3/4"	0.29	----
77-496	1"x1"x1/2"	0.24	----
77-498	1"x3/4"x1"	0.38	----
77-499	1"x3/4"x3/4"	0.31	----
77-500	1"x3/4"x1/2"	0.27	----
77-501	1"x1/2"x1"	0.34	----
77-502	1"x1/2"x3/4"	0.34	----
77-504	1-1/4"	0.58	----
77-506	1 -1/4" x1 -1/4" x 1-1/2"	0.79	----
77-507	1-1/4"x1-1/4"x1"	0.47	----
77-508	1-1/4" x 1-1/4" x 3/4"	0.39	----
77-509	1-1/4"x1-1/4"x1/2"	0.33	----
77-510	1-1/4" x 1" x 1-1/4"	-	----
77-511	1-1/4" x 1"x1"	0.50	----
77-514	1 -1/4" x 3/4" x 1-1/4"	0.63	----
77-516	1-1/4"x3/4"x3/4"	-	----
77-518	1 -1/4"x 1/2" x 1-1/4"	-	----
77-519	1-1/2"	-	----
77-521	1-1/2"x1-1/2"x 1-1/4"	-	----
77-522	1-1/2" x 1-1/2" x1"	-	----
77-523	1 -1/2" x 1-1/2" x 3/4"	0.51	----
77-524	1 -1/2" x 1 -1/2" x 1/2"	0.46	----
77-543	2"	1.35	----
77-545	2" x 2" x 1-1/2"	1.17	----
77-546	2" x 2" x 1-1/4"	1.01	----
77-547	2"x2"x1"	0.99	----
77-548	2" x 2" x 3/4"	0.90	----
77-549	2"x2"x1/2"	0.77	----
77-554	2" x 1 -1/2" x 3/4"	1.40	----
77-556	2" x 1-1/4" x 1-1/4"	1.14	----
77-559	2"x1"x2"	1.34	----
77-560	2"x1"x1"	0.98	----
77-563	2-1/2"	2.21	----
77-585	3"x 3" x 2"	2.53	----
77-587	3" x 3" x 1-1/4"	2.18	----
77-588	3"x3"x1"	2.14	----



Machined Schedule 80 PVC nipples comply fully with ASTM D2464, threads conform to ASTM F1498, and the pipe is extruded from PVC 1120-1220 meeting ASTM D1784 and meets ASTM D1785, products standard 21-70



**1/2" DIAMETER**

Part #	Length	
55-060	X Close (1-1/8")	----
55-061	1-1/2"	----
55-062	2"	----
55-063	2-1/2"	----
55-064	3"	----
55-065	3-1/2"	----
55-066	4"	----
55-067	4-1/2"	----
55-068	5"	----
55-069	5-1/2"	----
55-070	6"	----
55-072	8"	----
55-076	12"	----
55-241	24"	----
55-243	36"	----

**3/4" DIAMETER**

Part #	Length	
55-080	X Close (1-3/8")	----
55-081	1-1/2"	----
55-082	2"	----
55-083	2-1/2"	----
55-084	3"	----
55-085	3-1/2"	----
55-086	4"	----
55-087	4-1/2"	----
55-088	5"	----
55-089	5-1/2"	----
55-090	6"	----
55-253	36"	----

**1" DIAMETER**

Part #	Length	
55-100	X Close (1-1/2")	----
55-101	2"	----
55-102	2-1/2"	----
55-103	3"	----
55-104	3-1/2"	----
55-105	4"	----
55-106	4-1/2"	----
55-107	5"	----
55-108	5-1/2"	----
55-109	6"	----
55-111	8"	----
55-115	12"	----

**1-1/4" DIAMETER**

Part #	Length	
55-120	X Close (1-5/8")	----
55-121	2"	----
55-122	2-1/2"	----
55-123	3"	----
55-124	3-1/2"	----
55-125	4"	----
55-126	4-1/2"	----
55-127	5"	----
55-128	5-1/2"	----
55-129	6"	----

**1-1/2" DIAMETER**

Part #	Length	
55-140	X Close (1-5/8")	----
55-141	2"	----
55-142	2-1/2"	----
55-143	3"	----
55-144	3-1/2"	----
55-145	4"	----
55-146	4-1/2"	----
55-147	5"	----
55-148	5-1/2"	----
55-149	6"	----

**2" DIAMETER**

Part #	Length	
55-160	X Close (2")	----
55-161	2-1/2"	----
55-162	3"	----
55-163	3-1/2"	----
55-164	4"	----
55-165	4-1/2"	----
55-166	5"	----
55-167	5-1/2"	----
55-168	6"	----
55-174	12"	----

*More sizes available...just ask!*

Action is the foundational key to all success.

**- Pablo Picasso**

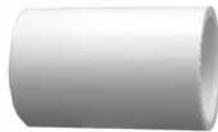
**PLASTIC FITTINGS**

**SLIP TEES**



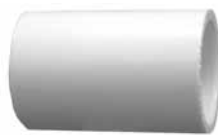
Part #	Size	List Price
55-710	1/2"	----
55-711	3/4"	----
55-712	3/4" x 3/4" x 1/2"	----
55-713	1"	----
55-714	1" x 1" x 1/2"	----
55-715	1" x 1" x 3/4"	----
55-716	1-1/4"	----
55-717	1-1/2"	----
55-718	2"	----
55-719	2-1/2"	----

**SLIP COUPLING**



Part #	Size	List Price
55-736	1/2"	----
55-737	3/4"	----
55-738	1"	----
55-739	1-1/4"	----
55-740	1-1/2"	----
55-741	2"	----
55-742	2-1/2"	----
55-743	3"	----

**THREADED COUPLING**



Part #	Size	List Price
55-950	1/2"	----
55-951	3/4"	----

History is the version of past events that people have decided to agree upon.

- Napoleon Bonaparte

**SLIP X FEMALE ADAPTER**



Part #	Size	List Price
55-744	1/2"	----
55-812	1/2" x 1/4"	----
55-813	1/2" x 3/8"	----
55-745	3/4"	----
55-746	1"	----
55-747	1-1/4"	----
55-748	1-1/2"	----
55-749	2"	----
55-807	2-1/2"	----
55-804	3"	----

**MIP X ADAPTER**



Part #	Size	List Price
55-750	1/2"	----
55-751	3/4"	----
55-752	1"	----
55-753	1-1/4"	----
55-754	1-1/2"	----
55-755	2"	----
55-808	2-1/2"	----
55-811	3"	----

**90° SLIP ELBOW**



Part #	Size	List Price
55-720	1/2"	----
55-721	3/4"	----
55-722	1"	----
55-723	1-1/4"	----
55-725	2"	----
55-726	2-1/2"	----
55-727	3"	----

# PVC SCHEDULE 40 FITTINGS

# PLASTIC FITTINGS

## SLIP CAP



Part #	Size	List Price
55-756	1/2"	----
55-757	3/4"	----
55-758	1"	----
55-759	1-1/4"	----
55-760	1-1/2"	----
55-761	2"	----
55-762	2-1/2"	----
55-801	3"	----

## THREADED PIPE CAP



Part #	Size	List Price
55-763	1/2"	----
55-764	3/4"	----

## SLIP X FIP BUSHING



Part #	Size	List Price
55-805	1/2" x 1/4"	----
55-806	1/2" x 3/8"	----
55-781	3/4" x 1/2"	----
55-782	1" x 1/2"	----
55-783	1" x 3/4"	----
55-784	1-1/4" x 1/2"	----
55-785	1-1/4" x 3/4"	----
55-786	1-1/4" x 1"	----
55-803	1-1/2" x 1/2"	----
55-787	1-1/2" x 3/4"	----
55-788	1-1/2" x 1"	----
55-809	1-1/2" x 1-1/4"	----
55-810	2" x 1/2"	----
55-789	2" x 3/4"	----
55-790	2" x 1"	----
55-791	2" x 1-1/4"	----
55-792	2" x 1-1/2"	----
55-798	2-1/2" x 1-1/2"	----
55-796	2-1/2" x 2"	----
55-816	3" x 2"	----
55-780	3" x 2-1/2"	----

## 45° SLIP ELBOW



Part #	Size	List Price
55-728	1/2"	----
55-729	3/4"	----
55-730	1"	----
55-731	1-1/4"	----
55-732	1-1/2"	----
55-733	2"	----
55-734	2-1/2"	----
55-735	3"	----

## SLIP BUSHING



Part #	Size	List Price
55-765	3/4" x 1/2"	----
55-766	1" x 1/2"	----
55-767	1" x 3/4"	----
55-768	1-1/4" x 1/2"	----
55-769	1-1/4" x 3/4"	----
55-770	1-1/4" x 1"	----
55-815	1-1/2" x 1/2"	----
55-771	1-1/2" x 3/4"	----
55-772	1-1/2" x 1"	----
55-773	1-1/2" x 1-1/4"	----
55-774	2" x 1/2"	----
55-775	2" x 3/4"	----
55-776	2" x 1"	----
55-777	2" x 1-1/4"	----
55-778	2" x 1-1/2"	----
55-814	2-1/2" x 1-1/2"	----
55-779	2-1/2" x 2"	----
55-797	3" x 2"	----
55-802	3" x 2-1/2"	----

Never put off until tomorrow, what you can put off until the day after tomorrow.

- Mark Twain



**SLIP X SLIP 90° ELBOW**

Part #	Size	List Price
806-002	1/4"	----
806-003	3/8"	----
806-005	1/2"	----
806-007	3/4"	----
806-010	1"	----
806-012	1-1/4"	----
806-015	1-1/2"	----
806-020	2"	----
806-025	2-1/2"	----
806-030	3"	----
806-040	4"	----
806-060	6"	----



**FIP X FIP 90° ELBOW**

Part #	Size	List Price
808-002	1/4"	----
808-003	3/8"	----
808-005	1/2"	----
808-007	3/4"	----
808-010	1"	----
808-012	1-1/4"	----
808-015	1-1/2"	----
808-020	2"	----
808-025	2-1/2"	----
808-030	3"	----
808-040	4"	----



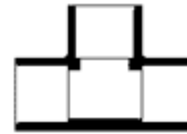
**SLIP X SLIP 45° ELBOW**

Part #	Size	List Price
817-002	1/4"	----
817-003	3/8"	----
817-005	1/2"	----
817-007	3/4"	----
817-010	1"	----
817-012	1-1/4"	----
817-015	1-1/2"	----
817-020	2"	----
817-025	2-1/2"	----
817-030	3"	----
817-040	4"	----
817-060	6"	----



**FIP X FIP 45° ELBOW**

Part #	Size	List Price
819-002	1/4"	----
819-003	3/8"	----
819-005	1/2"	----
819-007	3/4"	----
819-010	1"	----
819-012	1-1/4"	----
819-015	1-1/2"	----
819-020	2"	----
819-030	3"	----
819-040	4"	----



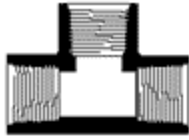
**SLIP X SLIP TEE**

Part #	Size	List Price
801-002	1/4"	----
801-003	3/8"	----
801-005	1/2"	----
801-007	3/4"	----
801-010	1"	----
801-012	1-1/4"	----
801-015	1-1/2"	----
801-020	2"	----
801-025	2-1/2"	----
801-030	3"	----
801-040	4"	----
801-060	6"	----

**PLASTIC FITTINGS**

It is more important to know where you are going than to get there quickly.

- Mabel Newcomber



**FIP X FIP TEE**

Part #	Size	List Price
805-002	1/4"	----
805-003	3/8"	----
805-005	1/2"	----
805-007	3/4"	----
805-010	1"	----
805-012	1-1/4"	----
805-015	1-1/2"	----
805-020	2"	----
805-025	2-1/2"	----
805-030	3"	----
805-040	4"	----



**SLIP X SLIP COUPLING**

Part #	Size	List Price
829-002	1/4"	----
829-003	3/8"	----
829-005	1/2"	----
829-007	3/4"	----
829-010	1"	----
829-012	1-1/4"	----
829-015	1-1/2"	----
829-020	2"	----
829-025	2-1/2"	----
829-030	3"	----
829-040	4"	----
829-060	6"	----

A complex system that does not work is invariably found to have evolved from a simpler system that worked just fine.

**- Murphy's Law of Computing**



**FIP X FIP COUPLING**

Part #	Size	List Price
830-002	1/4"	----
830-003	3/8"	----
830-005	1/2"	----
830-007	3/4"	----
830-010	1"	----
830-012	1-1/4"	----
830-015	1-1/2"	----
830-020	2"	----
830-030	3"	----
830-040	4"	----



**SLIP X SLIP REDUCING COUPLING**

Part #	Size	List Price
829-101	3/4" x 1/2"	----
829-130	1" x 1/2"	----
829-131	1" x 3/4"	----
829-168	1-1/4" x 1"	----
829-211	1-1/2" x 1"	----
829-212	1-1/2" x 1-1/4"	----
829-251	2 x 1-1/2"	----
829-338	3" x 2"	----
829-422	4" x 3"	----
829-532	6" x 4"	----



**FIP X FIP REDUCING COUPLING**

Part #	Size	List Price
830-052	3/8" x 1/4"	----
830-073	1/2" x 3/8"	----
830-101	3/4" x 1/2"	----
830-130	1" x 1/2"	----
830-131	1" x 3/4"	----
830-167	1-1/4" x 3/4"	----
830-168	1-1/4" x 1"	----
830-211	1-1/2" x 1"	----
830-212	1-1/2" x 1-1/4"	----
830-251	2" x 1-1/2"	----



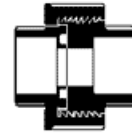
**MIP X SLIP ADAPTER**

Part #	Size	List Price
836002	1/4"	----
836003	3/8"	----
836005	1/2"	----
836007	3/4"	----
836010	1"	----
836012	1-1/4"	----
836015	1-1/2"	----
836020	2"	----
836025	2-1/2"	----
836030	3"	----
836040	4"	----



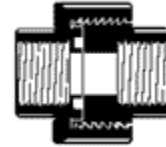
**MIP X FIP BUSHING**

Part #	Size	List Price
839041	1/4" x 1/8"	----
839050	3/8" x 1/8"	----
839052	3/8" x 1/4"	----
839072	1/2" x 1/4"	----
839073	1/2" x 3/8"	----
839099	3/4" x 3/8"	----
839101	3/4" x 1/2"	----
839130	1" x 1/2"	----
839131	1" x 3/4"	----
839166	1-1/4" x 1/2"	----
839167	1-1/4" x 3/4"	----
839168	1-1/4" x 1"	----
839209	1-1/2" x 1/2"	----
839210	1-1/2" x 3/4"	----
839211	1-1/2" x 1"	----
839212	1-1/2" x 1-1/4"	----
839247	2" x 1/2"	----
839248	2" x 3/4"	----
839249	2" x 1"	----
839250	2" x 1-1/4"	----
839251	2" x 1-1/2"	----
839338	3" x 2"	----
839420	4" x 2"	----
839422	4" x 3"	----



**SLIP X SLIP UNION**

Part #	Size	List Price
897002	1/4"	----
897003	3/8"	----
897005	1/2"	----
897007	3/4"	----
897010	1"	----
897012	1-1/4"	----
897015	1-1/2"	----
897020	2"	----
897025	2-1/2"	----
897030	3"	----
897040	4"	----



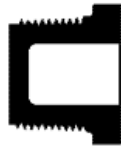
**FIP X FIP THREADED UNION**

Part #	Size	List Price
898002	1/4"	----
898003	3/8"	----
898005	1/2"	----
898007	3/4"	----
898010	1"	----
898012	1-1/4"	----
898015	1-1/2"	----
898020	2"	----
898025	2-1/2"	----
898030	3"	----
898040	4"	----



**SLIP PLUG**

Part #	Size	List Price
849005	1/2"	----
849007	3/4"	----
849010	1"	----
849012	1-1/4"	----
849015	1-1/2"	----
849020	2"	----
849025	2-1/2"	----
849030	3"	----
849040	4"	----



**MIP THREADED PLUG**

Part #	Size	List Price
850002	1/4"	----
850003	3/8"	----
850005	1/2"	----
850007	3/4"	----
850010	1"	----
850012	1-1/4"	----
850015	1-1/2"	----
850020	2"	----
850025	2-1/2"	----
850030	3"	----
850040	4"	----



**SLIP CAP**

Part #	Size	List Price
847002	1/4"	----
847003	3/8"	----
847005	1/2"	----
847007	3/4"	----
847010	1"	----
847012	1-1/4"	----
847015	1-1/2"	----
847020	2"	----
847025	2-1/2"	----
847030	3"	----
847040	4"	----
847060	6"	----



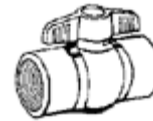
**FIP THREADED CAP**

Part #	Size	List Price
848002	1/4"	----
848003	3/8"	----
848005	1/2"	----
848007	3/4"	----
848010	1"	----
848012	1-1/4"	----
848015	1-1/2"	----
848020	2"	----
848025	2-1/2"	----
848030	3"	----
848040	4"	----



**FIP X FIP THREADED BALL VALVE**

Part #	Size	List Price
899000	1/2"	----
899001	3/4"	----
899002	1"	----
899003	1-1/4"	----
899004	1-1/2"	----
899005	2"	----
899006	2-1/2"	----
899007	3"	----
899008	4"	----



**SLIP X SLIP BALL VALVE**

Part #	Size	List Price
899050	1/2"	----
899051	3/4"	----
899052	1"	----
899053	1-1/4"	----
899054	1-1/2"	----
899055	2"	----
899056	2-1/2"	----
899057	3"	----
899058	4"	----

I like work: it fascinates me. I can sit and look at it for hours.

- Jerome K. Jerome

**AVAILABLE IN THREE TYPES OF PLASTIC**

**Add ( ) letter for type of plastic required**

**(W)** White Nylon- made from virgin grade formulated to resist physical stress and abrasion. This material meets F.D.A. requirements of Code of Federal Regulation part 177.1500 and is therefore suitable for food contact surfaces.

**Temperature Range:** -40°F to 200° F

**Working Pressure:** 125 PSI maximum.

**(B)** Black Polyethylene- made from a high molecular weight linear polyethylene formulated for chemical compatibility and high impact resistance at lower temperatures. Polyethylene is NSF approved for potable water.

**Temperature Range:** -65°F to 190°F

**Working Pressure:** 125 PSI maximum.

**(P)** Polypropylene- made from the finest polypropylene resins. Polypropylene is used for its resistance to a wide range of chemicals. Working pressures decrease as temperatures increase.

•NSF-approved materials

•FDA-approved materials

**Note: Do not use with compressed air or gas.**

**HEX HEAD PLUGS**



Part #	Size	B	P	W
28-601	1/8"	----	----	----
28-602	1/4"	----	----	----
28-603	3/8"	----	----	----
28-604	1/2"	----	----	----
28-605	3/4"	----	----	----
28-606	1"	----	----	----
28-607	1-1/4"	----	----	----
28-608	1-1/2"	----	----	----
28-609	2"	----	----	----

**PIPE CAP**



Part #	Size	W
28-640	1/4"	----
28-641	3/8"	----
28-642	1/2"	----
28-643	3/4"	----

Every generation laughs at the old fashions, but follows religiously the new.

**-Henry David Thoreau**

**HEX NIPPLES**



Part #	Size	B	P	W
28-611	1/8"	----	----	----
28-612	1/4"	----	----	----
28-613	3/8"	----	----	----
28-614	1/2"	----	----	----
28-615	3/4"	----	----	----
28-616	1"	----	----	----
28-617	1 1/4"	----	----	----

**REDUCER NIPPLES**



Part #	Size	B	P	W
28-620	1/4 x 1/8"	----	----	----
28-621	3/8 x 1/8"	----	----	----
28-622	3/8 x 1/4"	----	----	----
28-623	1/2 x 1/4"	----	----	----
28-624	1/2 x 3/8"	----	----	----
28-628	3/4 x 3/8"	----	----	----
28-625	3/4 x 1/2"	----	----	----
28-629	1 x 3/4"	----	----	----
28-631	1-1/4 x 3/4"	----	----	----
28-634	2 x 1-1/4"	----	----	----
28-635	3 x 2"	----	----	----

*More shapes and sizes available*

**HEX BUSHING**



Part #	Size	P	W
28-659	1/4 x 1/8"	----	----
28-660	3/8 x 1/8"	----	----
28-661	3/8 x 1/4"	----	----
28-663	1/2 x 1/4"	----	----
28-664	1/2 x 3/8"	----	----
28-665	3/4 x 1/8"	----	----
28-666	3/4 x 1/4"	----	----
28-667	3/4 x 3/8"	----	----
28-668	3/4 x 1/2"	----	----
28-671	1 x 1/2"	----	----
28-672	1 x 3/4"	----	----
28-674	1-1/4 x 3/4"	----	----
28-675	1-1/4 x 1"	----	----
28-678	1-1/2 x 3/4"	----	----
28-679	1-1/2 x 1"	----	----
28-680	1-1/2 x 1-1/4"	----	----
28-682	2 x 3/4"	----	----
28-683	2 x 1"	----	----

**ALL HOSE BARB "Y"**



Part #	Size	P*	W
33-300*	1/4"	----	----
33-301*	3/8"	----	----
33-302*	1/2"	----	----

*\*Natural Polypro*

**PLASTIC FITTINGS**



# PLASTIC PIPE

# PLASTIC FITTINGS

## ELBOW



Part #	Size	P	W
28-701	1/4"		----
28-702	3/8"	----	
28-703	1/2"		----
28-704	3/4"	----	
28-705	1"		----
28-706	1-1/4"		----

## STREET ELBOW



Part #	Size	P	W
28-720	1/4"		----
28-721	3/8"		----
28-723	1/2"	----	
28-724	3/4"		----
28-725	1"		----
28-726	1-1/4"		----

## TEE



Part #	Size	P	W
28-741	1/4"	----	----
28-742	3/8"	----	
28-743	1/2"	----	----
28-744	3/4"	----	----
28-745	1"		----
28-746	1-1/4"		----
28-747	1-1/2"		----

More shapes and sizes available

## COUPLING



Part #	Size	P	W
28-760	1/8"	----	----
28-761	1/4"	----	----
28-762	3/8"	----	----
28-763	1/2"	----	----
28-764	3/4"	----	----
28-765	1"		----
28-767	1-1/2"		----
28-768	2"		----

## HOSE BARB X FEMALE ADAPTERS



Hose ID x FIP

Part #	Size	B	P	W
33-053	1/4 x 1/4"	----		----
33-058	3/8 x 1/4"	----		----
33-059	3/8 x 3/8"			----
33-060	3/8 x 1/2"			----
33-062	1/2 x 3/8"		----	
33-061	1/2 x 1/2"			----
33-063	5/8 x 3/4"			----
33-064	3/4 x 1/2"			----

## MALE ADAPTERS



Hose ID x MIP

Part #	Size	B	P	W
33-002	3/16 x 1/8"	----		----
33-003	3/16 x 1/4"			----
33-004	1/4 x 1/8"	----		----
33-005	1/4 x 1/4"	----		----
33-006	1/4 x 3/8"	----		----
33-007	1/4 x 1/2"	----		----
33-380	1/4 x 3/4"			----
33-008	5/16 x 1/8"	----		----
33-009	5/16 x 1/4"	----		----
33-010	5/16 x 3/8"			----
33-011	3/8 X 1/8"			----
33-012	3/8 x 1/4"	----	----	----
33-013	3/8 x 3/8"	----		----
33-014	3/8 x 1/2"	----	----	----
33-026	3/8 x 3/4"	----		----
33-015	1/2 x 1/4"	----	----	----
33-016	1/2 x 3/8"	----	----	----
33-017	1/2 x 1/2"	----	----	----
33-018	1/2 x 3/4"	----	----	----
33-019	5/8 x 3/8"	----		----
33-020	5/8 x 1/2"	----	----	----
33-021	5/8 x 3/4"	----		----
33-022	3/4 x 1/2"	----	----	----
33-023	3/4 x 3/4"	----	----	----
33-000	3/4 x 1"			----
33-024	1 x 3/4"	----	----	----
33-025	1 x 1"	----	----	----
33-029	1 x 1-1/4"			----
33-028	1-1/4 x 1"			----
33-030	1-1/4 x 1-1/4"			----
33-032	1-1/4 x 1-1/2"			----
33-033	1-1/2 x 1-1/2"			----
33-035	2 x 2"			----

# PLASTIC FITTINGS

# PLASTIC PIPE

## HOSE BARB ADAPTERS -CONTINUED-

### ELBOWS



Hose ID x Male Pipe

Part #	Size	B	P	W
33-308	3/16 x 1/8	----		
33-381	3/16 x 1/4			----
33-038	1/4 x 1/8	----		----
33-039	1/4 x 1/4	----		----
33-309	1/4 x 3/8			----
33-040	5/16 x 1/4	----		----
33-310	5/16 x 3/8	----		----
33-046	3/8 x 1/8	----		----
33-041	3/8 x 1/4	----		----
33-042	3/8 x 3/8	----		----
33-047	3/8 x 1/2	----		----
33-384	3/8 x 3/4	----		----
33-048	1/2 x 1/4		----	----
33-043	1/2 x 3/8	----		----
33-311	1/2 x 1/2	----	----	----
33-385	1/2 x 3/4	----	----	----
33-044	5/8 x 3/8			----
33-045	5/8 x 1/2	----		----
33-312	5/8 x 3/4	----		----
33-313	3/4 x 1/2	----	----	----
33-314	3/4 x 3/4	----	----	----
33-315	3/4 x 1			----
33-386	1x3/4			----
33-316	1 x 1	----	----	----
33-460	1 x 1-1/4			----
33-461	1-1/4 x 1-1/4		----	----
33-463	1-1/2 x 1-1/2		----	----
33-464	2 x 2			----

## HOSE BARB X FEMALE ELBOW



Hose ID x Female Pipe

Part #	Size	B	W
33-402	1/2 x 3/8		----
33-403	1/2 x 3/4		----
33-471	3/4 x 3/4		----

## UNION ELBOWS



Part #	Size	B	P	W
33-390	1/4	----		----
33-391	3/8	----		----
33-394	1/2	----		----
33-395	5/8	----	----	----
33-396	3/4	----	----	----
33-397	1			----
33-398	1-1/4			----
33-399	1-1/2			----
33-389	2			----

## REDUCING UNION ELBOWS

Part #	Size	W
33-392	1/2 X 1/4	----

## SPLICERS



Part #	Size	B	P	W
33-091	1/8	----		----
33-092	3/16	----		----
33-093	1/4	----		----
33-094	5/16			----
33-095	3/8	----	----	----
33-096	1/2	----	----	----
33-097	5/8	----		----
33-098	3/4	----	----	----
33-099	1			----
33-480	1-1/4			----
33-481	1-1/2			----
33-482	2			----

## REDUCER CONNECTORS

Part #	Size	B	W
33-406	3/8 x 1/4	----	----
33-407	1/2 x 1/4		----
33-408	1/2 x 3/8	----	----
33-409	5/8 x 3/8		----
33-410	5/8 x 1/2	----	----

## TEES BARBED ON ALL SIDES



Part #	Size	B	P	W
33-415	1/8	----		----
33-417	5/32			----
33-418*	3/16	----		----
33-420*	3/16	----		----
33-422	1/4	----		----
33-426	5/16	----		----
33-429	3/8	----	----	----
33-433	1/2	----		----
33-436	5/8	----		----
33-437	3/4	----		----
33-438	1	----		----
33-439	1-1/4			----
33-440	1-1/2		----	----
33-441	2			----

\* single barb

## REDUCING TEES

Part #	Size 3 x 1 x 2	B	W
33-416*	1/8 x 5/32 x 5/32		----
33-423	1/4 x 3/8 x 3/8	----	
33-424	1/4 x 1/2 x 1/2	----	----
33-430	3/8 x 1/2 x 1/2	----	----
33-431	3/8 x 5/8 x 5/8		----
33-432	1/2 x 3/8 x 3/8	----	----
33-435	1/2 x 3/4 x 3/4	----	----

\* single barb

## TEES



Part #	Size 1 & 2 x 3	B	W
33-448	1/4 x 1/4	----	----
33-450	3/8 x 1/4		----
33-451	3/8 x 3/8		----
33-453	1/2 x 1/4		----
33-454	1/2 x 3/8		----
33-456	3/4 x 3/4		----

More sizes available...just ask!

PLASTIC  
FITTINGS

# PLASTIC GARDEN HOSE & COMPRESSION

# PLASTIC FITTINGS

## PLASTIC GARDEN HOSE FITTINGS

FITTINGS WITH GARDEN HOSE THREAD

### GARDEN HOSE CAP



• White Nylon

Part #	Size	
30-103P	3/4"	----

### GARDEN HOSE NUT



• White Nylon

Part #	Size	
31-022	3/4"	----

### GARDEN HOSE ADAPTER INSERTS



• White Nylon

Part #	Size	
31-031	3/8"	----
31-032	1/2"	----
31-033	5/8"	----
31-034	3/4"	----

### GARDEN HOSE THREAD ADAPTERS



• White Nylon

Part #	Size	
31-040	1/2"	----
31-041	5/8"	----

More sizes available

## MALE GARDEN HOSE X FEMALE PIPE



• White Nylon

Part #	Size	
31-068	MGH X 1/2 FIP	----

## FEMALE GARDEN HOSE X MALE PIPE



• White Nylon

Part #	Size	
31-093	FGH X 3/4 MPT	----

## FEMALE GARDEN HOSE X FEMALE PIPE



• White Nylon

Part #	Size	
31-096	FGH X 1/2 FIP	----

## ADAPTERS GARDEN TO PIPE THREAD



• White Nylon

Part #	Size	
31-058	GHT X 1/2 MPT	----
31-063	GHT X 3/4 MPT	----

## PLASTIC COMPRESSION FITTINGS

Corrosion resistant thermoresins designed to resist vibration, provide good electrical insulation, low flow resistance, and resistance to scale buildup.

Add letter to the end of part no. to denote the type you prefer.

N = Nylon

P = Polypropylene

Standard nut and sleeves will be provided (sleeve is integral part of nut). Other sizes available upon request.

## UNION & REDUCING UNION CONNECTORS



Part #	Size	P	N
17-064	1/4"	----	----
17-065	5/16"	----	----
17-078	5/16" x 1/4"		----
17-066	3/8"	----	----
17-079	3/8" x 1/4"	----	----
17-068	1/2"	----	----
17-081	1/2" x 3/8"	----	

## BULKHEAD UNIONS



Part #	Size	
17-088N	1/4"	----
17-090N	3/8"	----
17-091N	1/2"	----

## UNION TEES



Part #	Size	P	N
17-103	1/4"	----	----
17-105	3/8"	----	----
17-106	1/2"	----	----

## UNION ELBOWS



Part #	Size	P	N
17-124	1/4"	----	----
17-126	3/8"	----	----
17-127	1/2"	----	

**FEMALE CONNECTORS**



Part #	Tube x Female Pipe	P	N
17-145	1/4 x 1/8	----	
17-146	1/4 x 1/4		----
17-153	3/8 x 1/4	----	----
17-154	3/8 x 3/8	----	----
17-158	1/2 x 3/8	----	
17-159	1/2 x 1/2	----	

**MALE CONNECTORS**



Part #	Tube x Male Pipe	List Price	
		P	N
17-176	1/8 x 1/8		----
17-179	1/4 x 1/8	----	----
17-180	1/4 x 1/4	----	----
17-181	1/4 x 3/8	----	----
17-184	5/16 x 1/4		----
17-187	3/8 x 1/8	----	----
17-188	3/8 x 1/4	----	----
17-189	3/8 x 3/8	----	----
17-190	3/8 x 1/2	----	----
17-193	1/2 x 1/4	----	----
17-194	1/2 x 3/8	----	----
17-195	1/2 x 1/2	----	----

**MALE ELBOWS**



Part #	Tube x Male Pipe	P	N
17-224	1/4 x 1/8	----	----
17-225	1/4 x 1/4	----	----
17-226	1/4 x 3/8		----
17-229	5/16 x 1/4		----
17-233	3/8 x 1/4	----	----
17-234	3/8 x 3/8	----	----
17-237	1/2 x 3/8	----	----
17-238	1/2 x 1/2	----	----

**FEMALE ELBOWS**



Part #	Tube x Female Pipe	P	N
17-254	1/4 x 1/4	----	
17-258	3/8 x 1/4	----	----
17-259	3/8 x 3/8	----	----
17-262	1/2 x 3/8	----	
17-263	1/2 x 1/2	----	

**MALE RUN TEES**



Part #	Tube x Male Pipe	P
17-279	3/8 x 1/4	----
17-282	1/2 x 1/2	----

**MALE BRANCH TEES**



Part #	Tube x Male Pipe	P	N
17-291	1/4 x 1/8	----	
17-292	1/4 x 1/4	----	----
17-296	3/8 x 1/4	----	----
17-297	3/8 x 3/8	----	
17-299	1/2 x 3/8	----	

People often say that motivation doesn't last. Well, neither does bathing - that's why we recommend it daily.

- Zig Ziglar

1. DON'T SWEAT THE PETTY THINGS AND DON'T PET THE SWEATY THINGS.
2. ONE TEQUILA, TWO TEQUILA, THREE TEQUILA, FLOOR.
3. ATHEISM IS A NON-PROPHET ORGANIZATION.
4. IF MAN EVOLVED FROM MONKEYS AND APES, WHY DO WE STILL HAVE MONKEYS AND APES?
5. THE MAIN REASON THAT SANTA IS SO JOLLY IS BECAUSE HE KNOWS WHERE ALL THE BAD GIRLS LIVE.
6. I WENT TO A BOOKSTORE AND ASKED THE SALESWOMAN, "WHERE'S THE SELF- HELP SECTION?" SHE SAID IF SHE TOLD ME, IT WOULD DEFEAT THE PURPOSE.
7. WHAT IF THERE WERE NO HYPOTHETICAL QUESTIONS?
8. IF A DEAF CHILD SIGNS SWEAR WORDS, DOES HIS MOTHER WASH HIS HANDS WITH SOAP?
9. IF SOMEONE WITH MULTIPLE PERSONALITIES THREATENS TO KILL HIMSELF, IS IT CONSIDERED A HOSTAGE SITUATION?
10. IS THERE ANOTHER WORD FOR SYNONYM?
11. WHERE DO FOREST RANGERS GO TO "GET AWAY FROM IT ALL?"
12. WHAT DO YOU DO WHEN YOU SEE AN ENDANGERED ANIMAL EATING AN ENDANGERED PLANT?
13. IF A PARSLEY FARMER IS SUED, CAN THEY GARNISH HIS WAGES?
14. WOULD A FLY WITHOUT WINGS BE CALLED A WALK?
15. WHY DO THEY LOCK PETROL STATION BATHROOMS? ARE THEY AFRAID SOMEONE WILL CLEAN THEM?
16. IF A TURTLE DOESN'T HAVE A SHELL, IS HE HOMELESS OR NAKED?

**PLASTIC PUSH-IN TUBE FITTINGS**

**Fitting Working Specifications**

**Operating Temperature**  
33°F to 140°F ( 1°C to 60°C )

**Operating Pressure**  
Air: 0 - 150 lbs. psi.  
Liquid: 0 - 150 lbs. psi.  
Suitable for Vacuum

**Material Specifications**

- Bodies:** Food Grade, Acetal Copolymer or Polypropylene
- O'Rings:** Food Grade Nitrile Rubber or EPDM
- Collet:** Food Grade Acetal Copolymer, stainless steel teeth



**Fitting Tube Types**

**Plastic Tube:**

Polyethylene, nylon, polyurethane (for soft tubing or thin wall tube, tube supports are recommended).

**Braided Tube:**

For Braided Tube, the use of Tube to Hose Stems and Elbows is required. To retain braided tube on barbs, the use of clamps is also recommended.

Also available in metric sizes. Call order desk for details

**MALE CONNECTOR**



Part #	Tube OD	Thread NPTF	
20-050P	5/32"	1/8"	----
20-046P	5/32"	1/4"	----
20-052P	3/16"	1/8"	----
20-054P	1/4"	1/8"	----
20-055P	1/4"	1/4"	----
20-531P	5/16"	1/4"	----
20-056P	1/4"	3/8"	----
20-532P	5/16"	3/8"	----
20-057P	3/8"	1/8"	----
20-058P	3/8"	1/4"	----
20-059P	3/8"	3/8"	----
20-062P	3/8"	1/2"	----
20-061P	1/2"	3/8"	----
20-063P	1/2"	1/2"	----

*More sizes available upon request*

**UNION CONNECTOR**



Part #	Tube OD	
20-018P	5/32"	----
20-702P	3/16"	----
20-019P	1/4"	----
20-703P	5/16"	----
20-020P	3/8"	----
20-021P	1/2"	----

**CROSS**



Part #	Tube OD	
20-143P	3/8"	----

**REDUCING UNION**



Part #	Tube OD	Tube OD	
20-750P	1/4"	3/16"	----
20-751P	5/16"	5/32"	----
20-752P	5/16"	3/16"	----
20-753P	5/16"	1/4"	----
20-754P	3/8"	3/16"	----
20-755P	3/8"	1/4"	----
20-756P	3/8"	5/16"	----
20-757P	1/2"	5/16"	----
20-758P	1/2"	3/8"	----

**UNION ELBOW**



Part #	Tube OD	
20-151P	5/32"	----
20-704P	3/16"	----
20-152P	1/4"	----
20-155P	5/16"	----
20-153P	3/8"	----
20-154P	1/2"	----

I have never met a man so ignorant that I couldn't learn something from him.

- Galileo Galilei

## PLASTIC FITTINGS

## PLASTIC PUSH-IN

### REDUCING ELBOW



Part #	Tube OD	Tube OD	
20-730P	5/16"	5/32"	----
20-731P	5/16"	3/16"	----
20-732P	5/16"	1/4"	----
20-733P	3/8"	3/16"	----
20-734P	3/8"	1/4"	----
20-735P	3/8"	5/16"	----
20-736P	1/2"	3/8"	----

### FIXED ELBOW



Part #	Tube OD	Thread NPTF	
20-068P	1/4"	1/8"	----
20-069P	1/4"	1/4"	----
20-070P	1/4"	3/8"	----
20-072P	3/8"	1/4"	----
20-073P	3/8"	3/8"	----

### PLUG-IN ELBOW



Part #	Stem OD	Tube OD	
20-740P	5/32"	5/32"	----
20-741P	3/16"	3/16"	----
20-742P	1/4"	1/4"	----
20-743P	5/16"	5/16"	----
20-744P	3/8"	3/16"	----
20-745P	3/8"	1/4"	----
20-746P	3/8"	5/16"	----
20-747P	3/8"	3/8"	----
20-748P	1/2"	1/2"	----

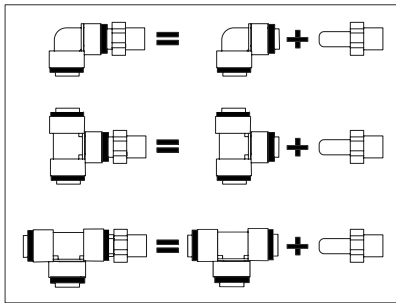
More sizes available upon request

The trouble with being punctual is that nobody's there to appreciate it.

- Franklin P. Jones

### Adaptability

Products can be coupled together to form new, integral fittings.



Use to get reducing swivel sizes you need!

### STEM ADAPTER



Part #	Stem OD	Thread NPTF	
20-522P	5/32"	1/8"	----
20-523P	5/32"	1/4"	----
20-700P	3/16"	1/8"	----
20-524P	1/4"	1/8"	----
20-526P	5/16"	1/8"	----
20-525P	1/4"	1/4"	----
20-527P	5/16"	1/4"	----
20-701P	5/16"	3/8"	----
20-528P	3/8"	1/4"	----
20-529P	3/8"	3/8"	----
20-530P	1/2"	3/8"	----
20-533P	1/2"	1/2"	----

### REDUCER



Part #	Stem OD	Tube OD	
20-760P	5/16"	3/16"	----
20-761P	5/16"	1/4"	----
20-762P	3/8"	3/16"	----
20-512P	3/8"	1/4"	----
20-763P	3/8"	5/16"	----
20-764P	1/2"	5/16"	----
20-514P	1/2"	3/8"	----

### UNION TEE



Part #	Tube OD	List Price
20-026P	5/32"	----
20-027P	3/16"	----
20-028P	1/4"	----
20-031P	5/16"	----
20-029P	3/8"	----
20-030P	1/2"	----

### REDUCING BRANCH TEE



Part #	Tube OD Ends	Tube OD Branch	
20-724P	1/2"	3/8"	----
20-725P	3/8"	1/4"	----

### BULKHEAD UNION



Part #	Tube OD	
20-125P	5/32"	----
20-126P	3/16"	----
20-127P	1/4"	----
20-123P	5/16"	----
20-128P	3/8"	----
20-129P	1/2"	----

### FEMALE CONNECTOR



Part #	Tube OD	Thread NPTF	
20-993P	1/4"	1/8"	----
20-035P	1/4"	1/4"	----
20-944P	3/8"	1/8"	----
20-036P	3/8"	1/4"	----

PLASTIC FITTINGS

# PLASTIC PUSH-IN

# PLASTIC FITTINGS

## 2-WAY DIVIDER



Part #	Tube OD	List Price
20-776P	5/16"	----
20-777P	3/8"	----

## TUBE TO HOSE STEM



Part #	Stem OD	Hose OD	
20-853P	1/4"	3/16"	----
20-854P	1/4"	1/4"	----
20-855P	5/16"	5/16"	----
20-856P	1/4"	5/16"	----
20-857P	5/16"	3/16"	----
20-858P	5/16"	1/4"	----
20-859P	5/16"	3/8"	----
20-860P	3/8"	1/4"	----
20-861P	3/8"	5/16"	----
20-862P	3/8"	3/8"	----
20-863P	3/8"	1/2"	----
20-864P	1/2"	3/8"	----
20-865P	1/2"	1/2"	----

## PLUG



Part #	Stem OD	
20-876P	5/32"	----
20-877P	3/16"	----
20-878P	1/4"	----
20-879P	5/16"	----
20-880P	3/8"	----
20-881P	1/2"	----

## TUBE SUPPORT



Part #	Tube OD	Tube ID	
20-836P	5/16"	1/4"	----
20-837P	3/8"	5/16"	----
20-838P	1/2"	3/8"	----

## Propylene push-in shut off valves for potable water

### Technical Specifications

- Operating Pressure: 0 to 150 psi ( 0 to 10 bar)
- Operating Temp. ( water ): 33° F to 150° F ( +1°C to 65°C)

### Materials

- Body - Food grade Polypropylene
- Collet - Food grade Polypropylene with stainless steel teeth
- O-Ring - EPDM

### Tube Tolerances

- Shut-off Valves are intended for use with potable water.
- The Valves are not for use with compressed air, explosive gases, petroleum spirits and other fuels or for heating systems.

## PL X PL



Part #	Tube OD	
20-900P	1/4"	----
20-901P	3/8"	----

## CHECK VALVE



Part #	Tube OD	
20-779P	3/8"	----

## PL X MALE NPTF



Part #	Tube OD	Thread NPTF	
20-904P	1/4"	1/4"	----
20-905P	3/8"	3/8"	----

17. CAN VEGETARIANS EAT ANIMAL CRACKERS?

18. IF THE POLICE ARREST A MIME, DO THEY TELL HIM HE HAS THE RIGHT TO REMAIN SILENT?

19. WHY DO THEY PUT BRAILLE ON THE DRIVE-THROUGH BANK MACHINES?

20. HOW DO THEY GET DEER TO CROSS THE ROAD ONLY AT THOSE YELLOW ROAD SIGNS?

21. WHAT WAS THE BEST THING BEFORE SLICED BREAD?

22. ONE NICE THING ABOUT EGOTISTS: THEY DON'T TALK ABOUT OTHER PEOPLE.

23. DOES THE LITTLE MERMAID WEAR AN ALGEBRA?

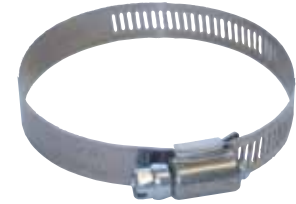
24. DO INFANTS ENJOY INFANCY AS MUCH AS ADULTS ENJOY ADULTERY?

25. HOW IS IT POSSIBLE TO HAVE A CIVIL WAR?

**1/2" BAND CLAMPS**



**Applications:** A general purpose clamp for automobiles, plumbing, home and garden general clamping applications, with anti-corrosive properties varying with the number of components made from stainless steel.



**600 Series**

- 5/16" Hex Slotted Carbon Steel Screw
- 1/2" Wide 201 Stainless Steel Band
- Carbon Steel Housing

**611 Series**

- 5/16" Hex Slotted Carbon Steel Screw
- 1/2" Wide 201 Stainless Steel Band
- 301 Stainless Steel Housing

#	Dia. Range		Part #		Part #	
	Min.	Max.				
6	3/8"	7/8"	600-006	----	611-006	----
8	7/16"	1"	600-008	----	611-008	----
10	9/16"	1-1/16"	600-010	----	611-010	----
12	9/16"	1-1/4"	600-012	----	611-012	----
16	11/16"	1-1/2"	600-016	----	611-016	----
20	3/4"	1-3/4"	600-020	----	611-020	----
24	1-1/16"	2"	600-024	----	611-024	----
28	1-5/16"	2-1/4"	600-028	----	611-028	----
32	1-9/16"	2-1/2"	600-032	----	611-032	----
36	1-13/16"	2-3/4"	600-036	----	611-036	----
40	2-1/16"	3"	600-040	----	611-040	----
44	2-5/16"	3-1/4"	600-044	----	611-044	----
48	2-9/16"	3-1/2"	600-048	----	611-048	----
52	2-13/16"	3-3/4"	600-052	----	611-052	----
56	3-1/16"	4"	600-056	----	611-056	----
60	3-5/16"	4-1/4"	600-060	----	611-060	----
64	2-1/2"	4-1/2"	600-064	----	611-064	----
72	3"	5"	600-072	----	611-072	----
80	3-1/2"	5-1/2"	600-080	----	611-080	----
88	4"	6"	600-088	----	611-088	----
96	4-1/2"	6-1/2"	600-096	----	611-096	----
104	5"	7"	600-104	----	611-104	----
116	5-3/4"	7-3/4"			611-116	----
128	6-1/2"	8-1/2"			611-128	----
152	2"	10"			611-152	----
164	1-3/4"	10-3/4"			611-164	----
176	9-1/4"	11-1/4"			611-176	----
188	2-1/16"	12-1/4"			611-188	----
200	11"	13"			611-200	----
212	11-3/4"	13-3/4"			611-212	----
224	12-1/2"	14-1/2"			611-224	----
248	10-3/4"	16"			611-248	----
270	15-3/8"	17-3/8"			611-270	----
312	18"	20"			611-312	----
332	19-1/8"	21-1/4"			611-332	----
390	22-7/8"	24-7/8"			611-390	----

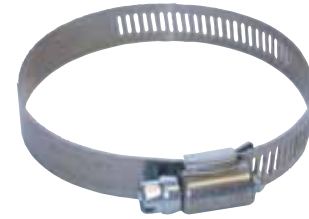


**1/2" BAND CLAMPS**

•Use for marine, underground and other high corrosive applications.

**620 Series**

- 5/16" Hex Slotted 305 Stainless Steel Screw
- 1/2" Wide 301 Stainless Steel Band
- 301 Stainless Steel Housing



#	Dia. Range		Part #	
	Min.	Max.		
6	3/8"	7/8"	620-006	----
8	7/16"	1"	620-008	----
10	9/16"	1-1/16"	620-010	----
12	9/16"	1-1/4"	620-012	----
16	11/16"	1-1/2"	620-016	----
20	3/4"	1-3/4"	620-020	----
24	1-1/16"	2"	620-024	----
28	1-5/16"	2-1/4"	620-028	----
32	1-9/16"	2-1/2"	620-032	----
36	1-13/16"	2-3/4"	620-036	----
40	2-1/16"	3"	620-040	----
44	2-5/16"	3-1/4"	620-044	----
48	2-9/16"	3-1/2"	620-048	----
52	2-13/16"	3-3/4"	620-052	----
56	3-1/16"	4"	620-056	----
60	3-5/16"	4-1/4"	620-060	----
64	2-1/2"	4-1/2"	620-064	----
72	3"	5"	620-072	----
80	3-1/2"	5-1/2"	620-080	----
88	4"	6"	620-088	----
96	4-1/2"	6-1/2"	620-096	----
104	5"	7"	620-104	----
116	5-3/4"	7-3/4"	620-116	----
128	6-1/2"	8-1/2"	620-128	----
152	2"	10"	620-152	----
164	1-3/4"	10-3/4"	620-164	----
176	9-1/4"	11-1/4"	620-176	----
188	2-1/16"	12-1/4"	620-188	----
200	11"	13"	620-200	----
212	11-3/4"	13-3/4"	620-212	----
224	12-1/2"	14-1/2"	620-224	----
248	10-3/4"	16"	620-248	----
270	15-3/8"	17-3/8"	620-270	----
312	18"	20"	620-312	----
332	19-1/8"	21-1/4"	620-332	----
390	22-7/8"	24-7/8"	620-390	----

**MINIATURE CLAMPS - 5/16" BAND**

**Applications:** For marine, agricultural, industrial and automotive uses.  
Corrosion resistance varies with stainless components.

Mechanically interlocked, 3 piece construction for service sealing pressure without spot welding.

**300 Series**

- 1/4" Hex Slotted Carbon Steel Screw
- 5/16" Wide 301 Stainless Steel Band
- Carbon Steel Housing



Dia. Range		Part #	
Min.	Max.		
7/32"	5/8"	300-0004	----
7/16"	11/16"	300-005	----
5/16"	7/8"	300-0006	----
7/16"	1"	300-0008	----
1/2"	1-1/16"	300-010	----
9/16"	1-1/4"	300-012	----
11/16"	1-1/2"	300-016	----
7/8"	1-3/4"	300-0020	----

**325 Series**

- 1/4" Hex Slotted Carbon Steel Screw
- 5/16" Wide 301 Stainless Steel Band
- 301 Stainless Steel Housing



Dia. Range		Part #	
Min.	Max.		
7/32"	5/8"	325-004	----
7/16"	11/16"	325-005	----
5/16"	7/8"	325-006	----
7/16"	1"	325-008	----
1/2"	1-1/16"	325-010	----
9/16"	1-1/4"	325-012	----
11/16"	1-1/2"	325-016	----
7/8"	1-3/4"	325-020	----

**350 Series**

- 1/4" Hex Slotted 410 Stainless Steel Screw
- 5/16" Wide 301 Stainless Steel Band
- 301 stainless Steel Housing



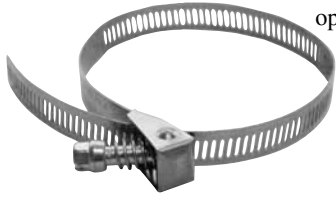
Dia. Range		Part #	
Min.	Max.		
7/32"	5/8"	350-004	----
7/16"	11/16"	350-005	----
5/16"	7/8"	350-006	----
7/16"	1"	350-008	----
1/2"	1-1/16"	350-010	----
9/16"	1-1/4"	350-012	----
11/16"	1-1/2"	350-016	----
7/8"	1-3/4"	350-020	----

**CLAMPS**

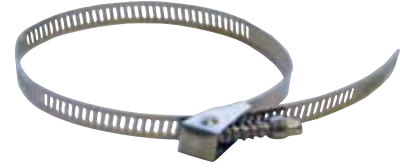
**QUICK RELEASE 500/550 SERIES**

These clamps feature a unique quick release design between the one piece housing and band allowing for quick and easy installation in restricted or difficult areas.

**Applications:** Quick release action permits easy installation in applications where clamp must be opened to be applied. Quick release clamps are used extensively in the telecommunications industry on cable enclosures where open air application demands durability.



Open/Close design allows easy installation.



**500 Series**

- 5/16" Hex Slotted Carbon Steel Screw
- 1/2" 301 Stainless Steel band
- 301 Stainless Steel Housing
- 410 Stainless Steel Bridge

**550 Series**

- 5/16" Hex Slotted 410 Stainless Steel Screw
- 1/2" 301 Stainless Steel band
- 301 Stainless Steel Housing
- 410 Stainless Steel Bridge

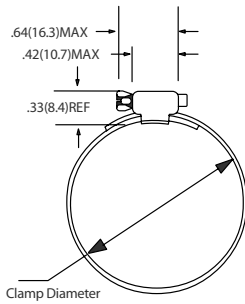
#	Dia. Range		Part #		Part #	
	Min.	Max.				
12	1/2"	1-1/4"	500-012	----	550-012	----
20	3/4"	1-3/4"	500-020	----	550-020	----
28	1"	2-1/4"	500-028	----	550-028	----
36	1"	2-3/4"	500-036	----	550-036	----
48	1-1/2"	3-1/2"	500-048	----	550-048	----
56	1"	4"	500-056	----	550-056	----
72	2"	5"	500-072	----	550-072	----
88	2-1/16"	6"	500-088	----	550-088	----
104	1-3/4"	7"	500-104	----	550-104	----
128	1-3/4"	8-9/16"	500-128	----	550-128	----
152	2"	10"	500-152	----	550-152	----
188	2-1/16"	12-5/16"	500-188	----	550-188	----
216	10-3/16"	14"	500-216	----	550-216	----
248	10-3/4"	16"	500-248	----	550-248	----
280	14-1/4"	18"	500-280	----	550-280	----
312	14"	20"			550-312	----

CLAMPS

The tragedy of life doesn't lie in not reaching your goal. The tragedy lies in having no goals to reach.

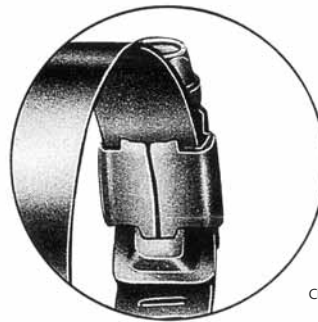
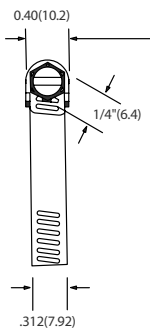
- Benjamin Mays

## WORM GEAR HOSE CLAMPS 830 Series



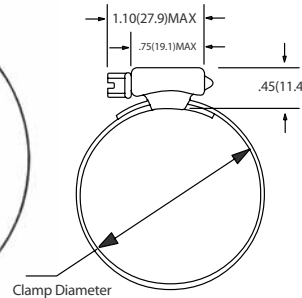
**MINI CLAMP**

Screw: 1/4" hex-head  
Band: 5/16" wide



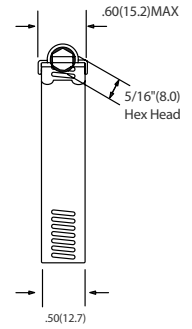
**Interlock Construction**

No welds, no bumps, which strengthens under tension to ensure maximum torque application.



**REGULAR CLAMP**

Screw: 5/16" hex-head  
Band: 1/2" wide



No.	Diameter Range		Use for General Industrial Application			
	Inch	MM	All Galvanized Steel		400 Series Stainless Steel Band, Housing and Screw	
	Min-Max	Min-Max	Part #		Part #	
<b>Mini Clamp with 8 mm wide Band (5/16")</b>						
<b>4</b>	7/32"-5/8"	6-16	830-185	----	830-185S	----
<b>6</b>	7/16"-3/4"	11-20	830-184	----	830-184S	----
<b>8</b>	1/2"-7/8"	13-23	830-183	----	830-183S	----
<b>Regular Clamp with 12.7 mm (1/2") wide Band</b>						
<b>10</b>	9/16"-1-1/16"	14-27	830-188	----	830-188S	----
<b>12</b>	11/16"-1-1/4"	18-32	830-189	----	830-189S	----
<b>16</b>	13/16"-1-1/2"	21-38	830-190	----	830-190S	----
<b>20</b>	13/16"-1-3/4"	21-44	830-192	----	830-192S	----
<b>24</b>	1-1/16"-2"	27-51	830-193	----	830-193S	----
<b>28</b>	15/16"-2-1/4"	33-57	830-194	----	830-194S	----
<b>32</b>	19/16"-2-1/2"	40-63	830-132	----	830-132S	----
<b>36</b>	1-13/16"-2 3/4"	46-70	830-195	----	830-195S	----
<b>40</b>	2-1/16"-3"	52-76	830-182	----	830-182S	----
<b>44</b>	2-5/16"-3-1/4"	59-82	830-196	----	830-196S	----
<b>48</b>	2-9/16"-3-3/4"	65-89	830-197	----	830-197S	----
<b>52</b>	2-13/16"-3-3/4"	72-95	830-152	----	830-152S	----
<b>56</b>	3-1/16"-4"	78-101	830-198	----	830-198S	----
<b>60</b>	3-5/16"-4-1/4"	84-108	830-060	----	830-060S	----
<b>64</b>	3-9/16"-4-1/2"	91-114	830-064	----	830-064S	----
<b>72</b>	4-1/8"-5"	105-127	830-072	----	830-072S	----
<b>80</b>	4-5/8"-5-1/2"	118-140	830-080	----	830-080S	----
<b>88</b>	5-1/8"-6"	130-152	830-288	----	830-288S	----
<b>96</b>	5-5/8"-6-1/2"	143-165	830-096	----	830-096S	----
<b>104</b>	6-1/8"-7"	155-178			<b>830-009S</b>	----

**T-Bolt Clamps**

- All designs meet SAE J1508 specifications.
- .025" Band Thickness
- 3/4" Wide Band
- Band Material: 300 Series Stainless Steel
- Bolt Material: 300 Series Stainless Steel
- Nut Material: 300 Series Stainless Steel
- Nuts are Self-locking
- Torque Rating 75 in/lb



Opens 1/16" above and tightens 1/8" smaller than nominal I.D. for a total of 3/16" range for clamps sizes 150 through 250. Opens 1/16" above and tightens 7/32" smaller than nominal I.D. for clamps sizes 256 through 750.

**Purpose:** To provide a quick, yet effective means of clamping a variety of fittings to a wide range of hose. T-Bolts can be applied with a standard 7/16" socket wrench. They provide 360° sealing surface by using a shoe or formed bridge.

**Services:** The T-Bolt clamp is a high strength, reliable clamp with numerous applications in both the commercial and industrial markets including hose and ductwork connections for air, oil, water and other types of low pressure

Nominal Size	O.D. Range		Part#	
	From:	To:		
1-1/4	1-5/32"	1-15/32"	840-131	----
1-1/2	1-3/8"	1-9/16"	840-150	----
1-3/4	1-5/8"	1-13/16"	840-175	----
1-7/8	1-3/4"	1-15/16"	840-188	----
2	1-7/8"	2-1/16"	840-200	----
2-1/4	2-1/8"	2-5/16"	840-225	----
2-3/8	2-1/4"	2-7/16"	840-238	----
2-1/2	2-3/8"	2-9/16"	840-250	----
2-9/16	2-11/32"	2-5/8"	840-256	----
2-5/8	2-13/32"	2-11/16"	840-263	----
2-3/4	2-17/32"	2-13/16"	840-275	----
2-7/8	2-21/32"	2-15/16"	840-288	----
3	2-25/32"	3-1/16"	840-300	----
3-1/8	2-29/32"	3-3/16"	840-312	----
3-1/4	3-1/32"	3-5/16"	840-325	----
3-1/2	3-9/32"	3-9/16"	840-350	----
3-3/4	3-17/32"	3-13/16"	840-375	----
3-53/64	3-19/32"	3-7/8"	840-382	----
4	3-25/32"	4-1/16"	840-400	----
4-1/4	4-1/32"	4-5/16"	840-425	----
4-1/2	4-9/32"	4-9/16"	840-450	----
4-3/4	4-17/32"	4-13/16"	840-475	----
5	4-25/32"	5-1/16"	840-500	----
5-1/4	5-1/32"	5-5/16"	840-525	----
5-1/2	5-9/32"	5-9/16"	840-550	----
5-3/4	5-17/32"	5-13/16"	840-575	----
6	5-25/32"	6-1/16"	840-600	----
6-1/4	6-1/32"	6-5/16"	840-625	----
6-1/2	6-9/32"	6-9/16"	840-650	----
6-3/4	6-17/32"	6-13/16"	840-675	----
7	6-25/32"	7-1/16"	840-700	----
7-1/2	7-9/32"	7-9/16"	840-750	----
8	7-25/32"	8-1/16"	840-800	----
8-1/4	8-9/32"	8-9/16"	840-850	----
8-7/8	8-21/32"	8-15/16"	840-888	----

# 1 EAR CLAMPS

## CARBON STEEL 1-EAR CLAMPS

1-Ear Clamps are intended for low pressures applications such as automotive (not fuel lines), appliances, industrial machinery, underground irrigation systems and beverage dispensing equipment. They are specifically designed for mass production applications where inexpensive clamps are needed.

### Pressure:

As a guideline, 1-Ear Clamps have held 30 bar - 441 psi.

This was done using a static water pressure test.



### Material:

Hot dipped galvanized carbon steel band - G90

Part #	Ref#	Nominal Size	Inches		
			Close	Open	
1050000	105	3/8"	0.350	0.414	----
1050001	113	7/16"	0.381	0.444	----
1050002	123	15/32"	0.394	0.486	----
1050003	133	1/2"	0.453	0.524	----
1050006	140	35/64"	0.472	0.551	----
1050007	145	9/16"	0.496	0.571	----
1050008	157	5/8"	0.543	0.618	----
1050009	170	11/16"	0.594	0.669	----
1050010	185	23/32"	0.618	0.728	----
1050011	198	3/4"	0.669	0.779	----
1050012	210	13/16"	0.716	0.827	----
1050013	226	7/8"	0.779	0.890	----
1050014	241	15/16"	0.839	0.949	----
1050015	256	1"	0.898	1.008	----
1050016	271	1-1/16"	0.945	1.067	----
1050017	286	1-1/8"	1.004	1.126	----
1050018	301	1-3/16"	1.063	1.185	----
1050020	331	1-5/16"	1.181	1.303	----
1050021	346	1-3/8"	1.240	1.362	----
1050023	376	1-15/32"	1.358	1.480	----
1050025	396	1-9/16"	1.437	1.559	----
1050026	410	1-5/8"	1.492	1.614	----
1050027	425	1-11/16"	1.551	1.673	----
1050028	440	1-23/32"	1.610	1.732	----
1050029	455	1-3/4"	1.669	1.791	----
1050030	470	1-16/16"	1.728	1.850	----
1050031	485	1-7/8"	1.787	1.909	----
1050032	500	1-15/16"	1.846	1.968	----
1050033	515	2"	1.905	2.028	----

## ONE PIECE 1-EAR CLAMPS

- Smooth inner band surface protects hose other material when subjected to pulsation, expansion, or contraction.
- One piece design offers quick and easy installation.
- Used in places where clamping a second ear is impractical.
- For air and fluid media lines.

# HOSE CLAMPS



### Material:

- Zinc plated-steel SAE 1008/1010 or DIN 1.0338
- Stainless steel UNS S30400 or DIN 1.4301

## ZINC PLATED CARBON STEEL

Part #	Nominal	Inches		Band Width	
		Close	Open		
10300053	9/64"	0.118	0.138	0.118	----
10300054	5/32"	0.130	0.161	0.157	----
10300055	3/16"	0.161	0.201	0.157	----
10300056	15/64"	0.201	0.240	0.157	----
10300057	1/4"	0.220	0.260	0.157	----
10300008	9/32"	0.240	0.276	0.197	----
10300010	5/16"	0.268	0.315	0.197	----
10300012	11/32"	0.295	0.343	0.236	----
10300061	3/8"	0.311	0.374	0.276	----
10300016	25/64"	0.335	0.394	0.236	----
10300062	13/32"	0.351	0.413	0.256	----
10300063	27/64"	0.370	0.433	0.256	----
10300019	7/16"	0.376	0.445	0.236	----
10300064	29/64"	0.398	0.465	0.236	----
10300021	15/32"	0.398	0.472	0.276	----
10300022	31/64"	0.406	0.484	0.236	----
10300065	1/2"	0.425	0.504	0.236	----
10300066	33/64"	0.448	0.524	0.276	----
10300026	35/64"	0.476	0.551	0.276	----
10300068	9/16"	0.492	0.571	0.236	----
10300071	5/8"	0.555	0.630	0.295	----
10300073	11/16"	0.602	0.689	0.236	----

## STAINLESS STEEL

Part #	Nominal	Inches		Band Width	
		Close	Open		
15300000	1/8"	0.114	0.130	0.118	----
15300001	9/64"	0.118	0.138	0.118	----
15300002	5/32"	0.130	0.161	0.157	----
15300003	3/16"	0.161	0.201	0.157	----
15300004	15/64"	0.201	0.240	0.157	----
15300005	1/4"	0.221	0.260	0.157	----
15300006	9/32"	0.240	0.276	0.197	----
15300008	5/16"	0.268	0.315	0.197	----
15300010	11/32"	0.295	0.343	0.236	----
15300012	3/8"	0.319	0.374	0.276	----
15300013	25/64"	0.335	0.394	0.236	----
15300014	13/32"	0.369	0.413	0.256	----
15300015	27/64"	0.370	0.433	0.256	----
15300016	7/16"	0.376	0.445	0.236	----
15300017	29/64"	0.398	0.465	0.236	----
15300018	15/32"	0.398	0.472	0.276	----
15300019	31/64"	0.406	0.484	0.236	----
15300020	1/2"	0.425	0.504	0.236	----
15300021	33/64"	0.448	0.524	0.276	----
15300023	35/64"	0.476	0.551	0.276	----
15300024	9/16"	0.492	0.571	0.236	----
15300027	5/8"	0.543	0.630	0.295	----
15300030	11/16"	0.602	0.689	0.236	----

CLAMPS

## EAR CLAMPS

### 2-EAR CLAMPS

2-Ear Clamps are especially suited for industrial use and with heavily vibrating equipment.

This is a medium pressure clamp and is widely used for maintenance and OEM applications. Rubber hose, plastic tubing, coaxial and electrical cable, rope, etc. are all easily clamped. These clamps are installed on air, fluid, gas and steam lines. The one piece design offers a positive, tamper-proof seal without damaging the hose.

#### PRESSURE:

As a guideline, 2-Ear Clamps successfully seal at 54 bar - 800 psi with 35 pulsating strokes a minute.

#### MATERIAL:

Zinc plated carbon steel

SAE 1008/1010 or DIN 1.0338

Stainless steel tubing

UNS S30400 or DIN 1.4301



Note: When ordering your 2-Ear Clamps select nominal clamp size nearest to, but always larger than, O.D. of material to be clamped after insert has been fitted.

#### ZINC PLATED CARBON STEEL

Part #	Nominal Size	Inches		
		Close	Open	
1010002	3/16"	0.134	0.197	----
1010004	1/4"	0.197	0.276	----
1010008	5/16"	0.276	0.354	----
1010011	3/8"	0.319	0.433	----
1010016	1/2"	0.425	0.512	----
1010019	9/16"	0.492	0.591	----
1010022	19/32"	0.551	0.669	----
1010024	5/8"	0.591	0.709	----
1010027	3/4"	0.638	0.787	----

#### STAINLESS STEEL

Part #	Nominal Size	Inches		
		Close	Open	
1510003	1/4"	0.197	0.276	----
1510004	5/16"	0.276	0.354	----
1510023	3/8"	0.319	0.433	----
1510006	1/2"	0.425	0.512	----
1510007	9/16"	0.492	0.591	----
1510008	19/32"	0.551	0.669	----
1510009	5/8"	0.591	0.709	----
1510010	3/4"	0.638	0.787	----
1510011	13/16"	0.709	0.866	----
1510012	7/8"	0.748	0.906	----
1510013	15/16"	0.827	0.984	----
1510014	1"	0.886	1.063	----
1510016	1-1/8"	1.035	1.221	----
1510019	1-9/16"	1.260	1.457	----
1510020	1-1/2"	1.378	1.575	----

## HOSE CLAMPS

### GAPLESS EAR CLAMPS

#### Features

- Assured clamping seal
- For low durometer and/ or thin-walled hose/ tubing
- Perfect for silicon, vinyl, polyurethane or other high tech materials used in all industries.
- Once installed, smooth inner ban circumference prevents damage to the hose while the unique tongue-in-groove design provides a 360° seal
- There are no steps or gaps inside clamp



#### Material

- Stainless steel tubing UNS S30400 or DIN 1.4301

Part #	Nominal Size	Band Width	Inches		
			Close	Open	
16700001	9/32"	5mm	0.228	0.276	----
16700004	3/8"	5mm	0.307	0.374	----
16700007	7/16"	5mm	0.378	0.445	----
16700010	1/2"	7mm	0.425	0.524	----
16700012	35/64"	7mm	0.453	0.551	----
16700013	9/16"	7mm	0.472	0.571	----
16700016	5/8"	7mm	0.520	0.618	----
16700017	11/16"	7mm	0.571	0.669	----
16700022	3/4"	7mm	0.654	0.780	----
16700024	13/16"	7mm	0.701	0.827	----

### PINCERS

#### Model 1098 I Standard Jaw Pincers



Part #  
1410118

List Price  
----

#### SIDE JAW PINCERS

This dual purpose, side jaw design allows clamps to be applied or removed in confined areas with pincers held parallel to the hose. Also used like standard Pincers.

Part #  
1410083

Model 1099 I

List Price  
----



Open End Clamps are of the same general construction as the preformed clamps with this exception, the double wrapping of the band around the hose or article is part of the application. The open end clamps are used when one end or both, of the article to be clamped is not free, or an obstruction prevents slipping a preformed clamp over the end.

**OPEN END CLAMPS  
(3/8" AND 5/8" (NOMINAL) WIDTH)**

Catalog Number	Band Width & Thickness		Clamp I.D. Inches	Catalog Number	Band Width & Thickness	
FO-3	3/8 x .022	----	13/16	FOS-3	3/8 x .020	----
FO-311	3/8 x .022	----	1 3/8	FOS-311	3/8 x .020	----
FO-316	3/8 x .022	----	2	FOS-316	3/8 x .020	----
FO-325	3/8 x .022	----	3 1/8	FOS-325	3/8 x .020	----
WITH STAINLESS STEEL LOK						
FO-8	5/8 x .025	----	2	FOS-8	5/8 x .022	----
FO-10	5/8 x .025	----	2 1/2	FOS-10	5/8 x .022	----
HEAVY DUTY BANDS						
FO-12	5/8 x .031	----	3	FOS-12	5/8 x .022	----
FO-14	5/8 x .031	----	3 1/2	FOS-14	5/8 x .022	----
FO-16	5/8 x .031	----	4	FOS-16	5/8 x .022	----
FO-18	5/8 x .031	----	4 1/2	FOS-18	5/8 x .022	----
FO-20	5/8 x .031	----	5	FOS-20	5/8 x .022	----
FO-24	5/8 x .031	----	6	FOS-24	5/8 x .022	----
FO-28	5/8 x .031	----	7	FOS-28	5/8 x .022	----
FO-32	5/8 x .031	----	8	FOS-32	5/8 x .022	----
FO-36	5/8 x .031	----	9	FOS-36	5/8 x .022	----
FO-40	5/8 x .031	----	10	FOS-40	5/8 x .022	----
FO-48	5/8 x .031	----	12	FOS-48	5/8 x .022	----
FO-56	5/8 x .031	----	14	FOS-56	5/8 x .022	----
FO-64	5/8 x .031	----	16			
FO-80	5/8 x .031	----	20			
FO-96	5/8 x .031	----	24			
FO-144	5/8 x .031	----	36			
FO-168	5/8 x .031	----	42			

**APPLICATION TOOLS**

For 3/8", 5/8" .....F-38, F-40, F-100  
See page 267 for these tools.



Preformed Clamps are double wrapped and formed to a given diameter. Used primarily where one end of the hose or article is free to allow the clamps to be slid over the hose end before the fitting is inserted. All clamps may be pulled down to a smaller diameter but cannot be adjusted to a larger diameter.

**PREFORMED CLAMPS  
(3/8" AND 5/8" (NOMINAL) WIDTH)**

Catalog Number	Band Width & Thickness		Clamp I.D. Inches	Catalog Number	Band Width & Thickness	
F-3	3/8 x .025	----	13/16	FS-3	3/8 x .020	----
F-311	3/8 x .025	----	1 3/8	FS-311	3/8 x .020	----
F-4	5/8 x .025	----	1	FS-4	5/8 x .022	----
F-5	5/8 x .025	----	1 1/4	FS-5	5/8 x .022	----
HEAVY DUTY BANDS						
F-6	5/8 x .031	----	1 1/2	FS-6	5/8 x .022	----
F-7	5/8 x .031	----	1 3/4	FS-7	5/8 x .022	----
F-8	5/8 x .031	----	2	FS-8	5/8 x .022	----
F-9	5/8 x .031	----	2 1/4	FS-9	5/8 x .022	----

F-10	5/8 x .031	----	2 1/2	FS-10	5/8 x .022	----
F-11	5/8 x .031	----	2 3/4	FS-11	5/8 x .022	----
F-12	5/8 x .031	----	3	FS-12	5/8 x .022	----
F-14	5/8 x .031	----	3 1/2	FS-14	5/8 x .022	----
F-16	5/8 x .031	----	4	FS-16	5/8 x .022	----
F-18	5/8 x .031	----	4 1/2	FS-18	5/8 x .022	----
F-20	5/8 x .031	----	5	FS-20	5/8 x .022	----
F-24	5/8 x .031	----	6	FS-24	5/8 x .022	----
F-28	5/8 x .031	----	7	FS-28	5/8 x .022	----
F-32	5/8 x .031	----	8	FS-32	5/8 x .022	----

Double-wrapped, Triple Punched, Holds Permanently



Galvanized Preformed Clamps 2 1/2 inch I.D. and above, and 5/8" wide open end clamps have a stainless steel lock for greater strength and rigidity.



**K-CLAMP PREFORMED HOSE CLAMPS**

Each clamp is a double wrapped metal band formed to a given diameter. The clamp is designed to be slid over the hose end before the fitting is inserted. A punch-type or fold-up tool is then used to apply the clamp.

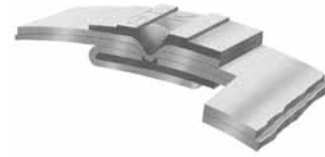
**Punch Indentation for ease of center punching**

Heavy Duty Lock for greater strength and rigidity



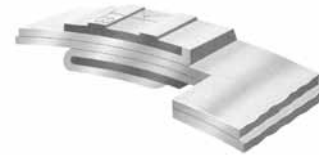
Heavy Duty Clamp

**Center Punched**



Less tension loss. Patented hole in inner band gives better internal mechanical locking after punching

**Fold-up**



K-Clamps may be secured by either a punch or fold-up method. (See cross sectioned views)

**PREFORMED CLAMPS**

**(3/8" AND 5/8" (NOMINAL) WIDTH)**

**GALVANIZED STEEL**

**STAINLESS STEEL TYPE 301**

Catalog Number	Clamp I.D. Inches	Band Width & Thickness	Catalog Number
K-3	13/16"	3/8" x .025	KS-3
K-311	1-3/8"	3/8" x .025	KS-311
K-4	1"	5/8" x .030	KS-4
K-5	1-1/4"	5/8" x .030	KS-5
K-6	1-1/2"	5/8" x .030	KS-6
K-7	1-3/4"	5/8" x .030	KS-7
K-8	2"	5/8" x .030	KS-8
K-9	2-1/4"	5/8" x .030	KS-9
K-10	2-1/2"	5/8" x .030	KS-10
K-11	2-3/4"	5/8" x .030	KS-11
K-12	3"	5/8" x .030	KS-12
K-14	3-1/2"	5/8" x .030	KS-14
K-16	4"	5/8" x .030	KS-16
K-18	4-1/2"	5/8" x .030	KS-18
K-20	5"	5/8" x .030	KS-20
K-24	6"	5/8" x .030	KS-24
K-28	7"	5/8" x .030	KS-28
K-32	8"	5/8" x .030	KS-32

**PREFORMED CLAMPS**

**(3/4" (NOMINAL) WIDTH)**

**GALVANIZED STEEL**

**STAINLESS STEEL TYPE 301**

Catalog Number	Clamp I.D. Inches	Band Width & Thickness	Catalog Number
K-87500	2"	3/4" x .030	KS-87501
K-97500	2-1/4"	3/4" x .030	KS-97501
K-107500	2-1/2"	3/4" x .030	KS-107501
K-117500	2-3/4"	3/4" x .030	KS-117501
K-127500	3"	3/4" x .030	KS-127501
K-147500	3-1/2"	3/4" x .030	KS-147501
K-167500	4"	3/4" x .030	KS-167501
K-187500	4-1/2"	3/4" x .030	KS-187501
K-207500	5"	3/4" x .030	KS-207501
K-247500	6"	3/4" x .030	KS-247501
K-287500	7"	3/4" x .030	KS-287501
K-327500	8"	3/4" x .030	KS-327501

*316 Stainless available upon request*

*For 3/8" and 5/8" widths .....F-40, F-100  
 For 3/4" width .....F-175(special order item)  
 For all widths .....KS001 (with KA001 aapter)*

See page 267 for these tools.

**FLJ-Clamp  
PREFORMED HOSE CLAMPS**

J-Clamps are available in 3/8", 5/8" and 3/4" widths, from 13/16" to 8" I.D. These non punch type clamps are to be secured by the foldup method, using the Wind-Up tool, our part no. KS001 and adapter KA001.



<b>GALVANIZED STEEL</b>	<b>3/8" ( NOMINAL WIDTH )</b>	<b>STAINLESS STEEL TYPE 301</b>
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Catalog Number	Clamp I.D. Inches	Band Width & Thickness	Catalog Number
FLJ-301	13/16"	3/8" x .025	FLJ-201
FLJ-343	1"	3/8" x .025	FLJ-243
FLJ-302	1-3/8"	3/8" x .025	FLJ-202
FLJ-345	2"	3/8" x .025	FLJ-245
FLJ-346	3"	3/8" x .025	FLJ-246
N/A	3-1/4"	3/8" x .025	FLJ-255
<b>5/8" ( NOMINAL WIDTH )</b>			
FLJ-303	1"	5/8" x 0.30	FLJ-203
FLJ-304	1-1/4"	5/8" x 0.30	FLJ-204
FLJ-305	1-1/2"	5/8" x 0.30	FLJ-205
FLJ-306	1-3/4"	5/8" x 0.30	FLJ-206
FLJ-307	2"	5/8" x 0.30	FLJ-207
FLJ-308	2-1/4"	5/8" x 0.30	FLJ-208
FLJ-309	2-1/2"	5/8" x 0.30	FLJ-209
<b>3/4" ( NOMINAL WIDTH )</b>			
FLJ-327	2"	3/4" x 0.30	FLJ-227
FLJ-310	2-3/4"	3/4" x 0.30	FLJ-210
FLJ-311	3"	3/4" x 0.30	FLJ-211
FLJ-312	3-1/2"	3/4" x 0.30	FLJ-212
FLJ-313	4"	3/4" x 0.30	FLJ-213
FLJ-314	4-1/2"	3/4" x 0.30	FLJ-214
FLJ-315	5"	3/4" x 0.30	FLJ-215
FLJ-316	6"	3/4" x 0.30	FLJ-216
FLJ-318	7"	3/4" x 0.30	FLJ-218
FLJ-319	8"	3/4" x 0.30	FLJ-219

**CLAMPS**

**FLJS-Clamp  
SMOOTH I.D. CLAMPS**

**FLJS** - Clamps are double wrapped clamps with a more smooth inside diameter, intended for your thermo-plastic and other thinner wall hose clamping applications. The JS series clamps slide on the hose prior to inserting the fitting.

**Preformed JS** - Clamps are available in 5/8" and 3/4" widths, 1" I.D. to 8" I.D. in 1/4" increments.

The **FLJS** - Clamp is intended to be applied with a KS001 tool or other comparable fold-up locking tool.



**STAINLESS  
STEEL**

	5/8" (NOMINAL WIDTH)		
Catalog Number	Clamp I.D. Inches	Band Width & Thickness	
FLJS-203	1"	5/8" x .030	----
FLJS-204	1-1/4"	5/8" x .030	----
FLJS-205	1-1/2"	5/8" x .030	----
FLJS-206	1-3/4"	5/8" x .030	----
FLJS-207	2"	5/8" x .030	----
FLJS-208	2-1/4"	5/8" x .030	----
FLJS-209	2-1/2"	5/8" x .030	----
3/4" (NOMINAL WIDTH)			
FLJS-227	2"	3/4" x .030	----
FLJS-210	2-3/4"	3/4" x .030	----
FLJS-211	3"	3/4" x .030	----
FLJS-212	3-1/2"	3/4" x .030	----
FLJS-213	4"	3/4" x .030	----
FLJS-214	4-1/2"	3/4" x .030	----
FLJS-215	5"	3/4" x .030	----
FLJS-216	6"	3/4" x .030	----
FLJS-218	7"	3/4" x .030	----
FLJS-219	8"	3/4" x .030	----



**CLAMP-IT**

The multi-sized clamps all rolled up in one..for your unknown requirements for 1 inch to 30 feet, be they round or otherwise. Clamp-It products will fill your needs. This Strapping in widths of 3/8", 1/2", 5/8", and 3/4" stainless or galvanized steel, as are the clamps (buckles).

**100' CLAMP-IT STRAPPING**

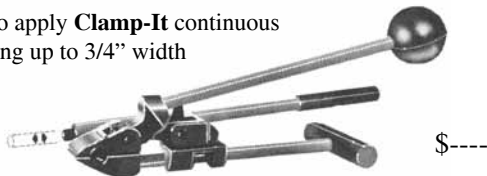
Catalog Number	Width	Thickness	Material 100'/CTN.	/ CNT
SS-3751	3/8"	.025	301 Stainless	----
SS-5001	1/2"	.030	301 Stainless	----
SS-6251	5/8"	.030	301 Stainless	----
SS-7501	3/4"	.030	301 Stainless	----
SG-3750	3/8"	.025	Galvanized	----
SG-5000	1/2"	.030	Galvanized	----
SG-6250	5/8"	.030	Galvanized	----
SG-7500	3/4"	.030	Galvanized	----

**CLAMPS (BUCKLES)**

Catalog Number	Width	Material 100'/CTN.	Each pc.
CS-3751	3/8"	301 Stainless	----
CS-5001	1/2"	301 Stainless	----
CS-6251	5/8"	301 Stainless	----
CS-7501	3/4"	301 Stainless	----
CG-3750	3/8"	Galvanized	----
CG-5000	1/2"	Galvanized	----
CG-6250	5/8"	Galvanized	----
CG-7500	3/4"	Galvanized	----

**C-2 Orbitor (Loking Tool)**

Used to apply **Clamp-It** continuous strapping up to 3/4" width



**ORBITOR**

A tool of endless travel... this lightweight, side entry, jack-type tool is the most rapid cinch-up application tool in its field. The **Orbitor C-2** Loking Tool will handle **Clamp-It** strapping widths to 3/4" and always reached desired tension without fear of losing travel capacity of the tool. The **Clamp-It Strapping, Clamp-It Clamps**, and the unique **Clamp-It tool** add up to a superior system for you.

**F-38 Loking Tool**



Portable hand tool used to apply punch Type 3/8 & 5/8 Clamps

**F-40 Loking Tool**



Used to apply Punch Type 3/8 & 5/8 clamps. Order mallet separately

**F-100 Loking Tool**



Used to apply Punch Type 3/8 & 5/8 clamps. Order mallet separately

**F-225 Mallet**



Used for punching of all punch type clamps.

**F-550 Clamp Cutter**



Used to remove clamps with minimum effort

**KS001 Wind-up Tool**



Used to apply fold-up clamps and continuous strapping up to 3/4" width

**CLAMPS**

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# NON PERFORATED (LINED) BAND

# HOSE CLAMPS

## HOSE CLAMPS

- All designs exceed SAE J1508 specifications
- Smooth inside surface
- Even tightening torque for 3600 seal
- Rolled-up band edge
- \* Non-perforated band prevents hose damage \*
- Precision thread pitch for high vibration applications
- Design allows reuse
- Provides a strong seal
- Tolerates corrosive environments

### ALUZINC MINI-F



Band and Housing • Aluzinc/ Painted  
 Band Width • (9mm) 3/8" wide band  
 Screw • Zinc Plated / Chromed  
 Corrosion Factor • 100  
**Sure seal of small thin-walled hoses.**

Part #	Size	
92-008	15/64-21/64	----
92-009	9/32-3/8	----
92-010	5/16-13/32	----
92-011	23/64-29/64	----
92-012	25/64-31/64	----
92-013	7/16-17/32	----
92-014	15/32-9/16	----
92-015	33/64-29/64	----
92-016	35/64-41/64	----
92-017	19/32-11/16	----

### 304 S.S. MINI-F



Band and Housing • SS2333/ AISI 304  
 Band Width • (9mm) 3/8" wide band  
 Screw • Zinc Plated / Chromed  
 Corrosion Factor • 1000 Industrial

Part #	Size	
93-008	15/64-21/64	----
93-009	9/32-3/8	----
93-010	5/16-13/32	----
93-011	23/64-29/64	----
93-012	25/64-31/64	----
93-013	7/16-17/32	----
93-014	15/32-9/16	----
93-015	33/64-29/64	----
93-016	35/64-41/64	----
93-017	19/32-11/16	----

Band and Housing • Aluzinc/ Painted  
 Band Width • (12.2mm) 3/8" wide band  
 Screw • Zinc Plated / Chromed  
 Corrosion Factor • 100

### ALUZINC



Part #	SAE	Size	
88-024	8	5/8-15/16	----
88-028	10	3/4-1-1/8	----
88-032	12	7/8-1-1/4	----
88-038	16	1-1/16-1-1/2	----
88-044	20	1-1/4-1-3/4	----
88-050	24	1-1/2-2	----
88-056	28	1-3/4-2-1/4	----
88-065	32	2-2-9/16	----
88-075	40	2-5/16-3	----
88-085	44	2-11/16-3-3/8	----
88-095	52	3-3-3/4	----
88-112	64	3-7/16-4-7/16	----
88-138	80	4-1/8-5-7/16	----
88-165	96	5-1/8-7-1/8	----
88-180	104	5-7/8-7-1/8	----
88-205	122	6-7/8-8-1/8	----
88-231	138	7-7/8-9-1/8	----
88-256	154	8-7/8-10-1/16	----
88-282	170	9-7/8-11-1/8	----
88-307	186	10-7/8-12-1/8	----

Band and Housing • SS2333/ AISI 304  
 Band Width • (12.2mm) 1/2" wide band  
 Screw • SS2333/ AISI 304  
 Corrosion Factor • 1000 Industrial

### All 304 S.S.



Part #	SAE	Size	
89-024	8	5/8-15/16	----
89-028	10	3/4-1-1/8	----
89-032	12	7/8-1-1/4	----
89-038	16	1-1/16-1-1/2	----
89-044	20	1-1/4-1-3/4	----
89-050	24	1-1/2-2	----
89-056	28	1-3/4-2-1/4	----
89-065	32	2-2-9/16	----
89-075	40	2-5/16-3	----
89-085	44	2-11/16-3-3/8	----
89-095	52	3-3-3/4	----
89-112	64	3-7/16-4-7/16	----
89-138	80	4-1/8-5-7/16	----
89-165	96	5-1/8-7-1/8	----
89-180	104	5-7/8-7-1/8	----
89-205	122	6-7/8-8-1/8	----
89-231	138	7-7/8-9-1/8	----
89-256	154	8-7/8-10-1/16	----
89-282	170	9-7/8-11-1/8	----
89-307	186	10-7/8-12-1/8	----

Band and Housing • Aluzinc/ Painted  
 Band Width • (9mm) 3/8" wide band  
 Screw • Zinc Plated / Chromed  
 Corrosion Factor • 100

### ALUZINC NOVA



Part #	SAE	Size	
91-015	3	5/16-9/16	----
91-017	4	7/16-11/16	----
91-022	6	1/2-13/16	----
91-025	8	5/8-15/16	----
91-028	10	3/4-1-1/8	----
91-032	12	7/8-1-1/4	----
91-040	16	1-1/16-1-1/2	----
91-045	20	1-1/4-1-3/4	----
91-051	24	1-1/2-2	----
91-056	28	1-3/4-2-1/4	----
91-065	32	2-2-9/16	----
91-075	40	2-5/16-3	----
91-085	44	2-11/16-3-3/8	----

# HOSE CLAMPS

# NON PERFORATED (LINED) BAND

## HOSE CLAMPS

Band and Housing • SS2333/ AISI 316  
 Band Width • (12.2mm) 1/2" wide band  
 Screw • SS2333/ AISI 304  
 Corrosion Factor • 1000 Industrial

### 304 S.S. RUBBER CLIP



Eliminates hose and cable wear due to vibrations

### ALL 316 ACID RESISTANT



Part #	SAE	Size	
90-014	3	5/16-9/16	----
90-017	4	7/16-11/16	----
90-020	6	1/2-13/16	----
90-024	8	5/8-15/16	----
90-028	10	3/4-1-1/8	----
90-032	12	7/8-1-1/4	----
90-038	16	1-1/16-1-1/2	----
90-044	20	1-1/4-1-3/4	----
90-050	24	1-1/2-2	----
90-056	28	1-3/4-2-1/4	----
90-065	32	2-2-9/16	----
90-075	40	2-5/16-3	----
90-085	44	2-11/16-3-3/8	----
90-095	52	3-3-3/4	----
90-112	64	3-7/16-4-7/16	----
90-138	80	4-1/8-5-7/16	----
90-165	96	5-1/8-7-1/8	----
90-180	104	5-7/8-7-1/8	----
90-205	122	6-7/8-8-1/8	----
90-231	138	7-7/8-9-1/8	----
90-256	154	8-7/8-10-1/16	----
90-282	170	9-7/8-11-1/8	----
90-307	186	10-7/8-12-1/8	----

### ALUZINC EXHAUST CLAMP

Uniform tightening force around the exhaust tubes for a good seal.



Part #	Size	
94-030	1.06-1.18	----
94-033	1.18-1.30	----
94-036	1.30-1.42	----
94-038	1.38-1.50	----
94-039	1.44-1.56	----
94-042	1.54-1.65	----
94-043	1.59-1.71	----
94-045	1.65-1.77	----
94-046	1.69-1.81	----
94-047	1.73-1.85	----
94-048	1.77-1.89	----
94-051	1.89-2.01	----
94-052	1.93-2.05	----
94-054	2.00-2.13	----
94-055	2.05-2.17	----
94-056	2.09-2.20	----
94-058	2.17-2.28	----
94-061	2.28-2.40	----
94-064	2.40-2.52	----
94-071	2.68-2.80	----
94-074	2.80-2.91	----

### ALUZINC ROBUST



Band and Housing Aluzinc/ Painted  
 Screw • Zinc Plated/ Chromed  
 Corrosion Factor • 100

Part #	Size (mm)	Band Width (mm)	
97-031	29-31	18	----
97-035	31-34	18	----
97-039	37-40	18	----
97-043	40-43	18	----
97-047	43-47	20	----
97-051	47-51	20	----
97-055	51-55	20	----
97-059	55-59	20	----
97-063	59-63	20	----
97-067	63-68	20	----
97-073	68-73	25	----
97-079	73-79	25	----
97-085	79-85	25	----
97-091	85-91	25	----
97-097	91-97	25	----
97-103	97-104	25	----
97-112	104-112	25	----
97-121	112-121	25	----
97-130	121-130	25	----
97-139	130-140	30	----
97-148	140-150	30	----
97-161	150-162	30	----
97-174	162-174	30	----
97-187	174-187	30	----
97-200	187-200	30	----
97-213	200-213	30	----
97-226	213-226	30	----
97-239	226-239	30	----
97-252	239-252	30	----

Eliminates hose and cable wear due to vibrations



### ALUZINC RUBBER CLIP

Part #	Size	Hole Dia.	
95-300	1/8	.26	----
95-301	3/16	.26	----
95-302	1/4	.26	----
95-303	5/16	.26	----
95-304	3/8	.26	----
95-305	7/16	.26	----
95-306	1/2	.26	----
95-307	9/16	.26	----
95-308	5/8	.26	----
95-309	11/16	.26	----
95-310	3/4	.26	----
95-311	13/16	.26	----
95-312	7/8	.26	----
95-313	15/16	.26	----
95-314	1	.26	----
95-315	1-1/6	.26	----
95-316	1-1/8	.26	----
95-317	1-3/16	.26	----
95-318	1-1/4	.26	----
95-319	1-5/16	.26	----
95-320	1-3/8	.26	----
95-321	1-7/16	.26	----
95-322	1-1/2	.26	----
95-326	1-5/8	.26	----
95-323	1-3/4	.26	----
95-328	1-7/8	.26	----
95-324	2	.26	----
95-325	2-1/8	.26	----
95-329	2-3/8	.26	----
95-327	2-1/2	.26	----
95-330	2-15/16	.26	----
95-331	4-5/16	.26	----

A single question can be more influential than a thousand statements.

- Bo Bennett

CLAMPS

# HOSE FERRULES

## SMOOTH BRASS HOSE FERRULES



Part #	Ferrule #	I.D.	Length	Pierce	Gauge	
32-500	6231	0.330	0.49	0.250	0.020	----
32-501	833	0.358	0.500	0.265	0.020	----
32-502	622	0.380	0.500	0.265	0.020	----
32-550	619	0.400	0.47	0.27	0.020	----
32-504	620	0.410	0.500	0.265	0.020	----
32-551	769R	0.450	0.562	0.343	0.020	----
32-552	4750	0.478	0.687	0.328	0.025	----
32-553	624R	0.500	0.500	0.343	0.020	----
32-554	7322	0.500	1.000	0.328	0.025	----
32-555	625	0.525	0.47	0.36	0.020	----
32-517	625A	0.525	0.56	0.360	0.020	----
32-556	7323	0.525	1.000	0.375	0.025	----
32-521	9974	0.525	1.000	0.437	0.025	----
32-557	7324	0.531	1.000	0.375	0.025	----
32-558	626	0.550	0.484	0.375	0.020	----
32-559	7325	0.56	1.000	0.437	0.025	----
32-561	7326	0.593	1.000	0.437	0.025	----
32-562	JJ	0.600	0.484	0.437	0.016	----
32-563	JJ	0.600	0.500	0.500	0.020	----
32-526	II	0.625	0.500	0.500	0.020	----
32-564	7327	0.625	1.000	0.437	0.025	----
32-565	HH	0.650	0.500	0.500	0.020	----
32-566	7328	0.656	1.000	0.437	0.025	----
32-567	GG	0.675	0.515	0.500	0.020	----
32-568	7329	0.69	1.000	0.500	0.025	----
32-570	7330	0.718	1.000	0.500	0.025	----
32-571	EE	0.725	0.530	0.500	0.020	----
32-572	DD	0.750	0.531	0.500	0.020	----
32-573	7331	0.750	1.000	0.625	0.025	----
32-574	CC	0.775	0.531	0.500	0.020	----
32-533	7332B	0.781	1.000	0.500	0.025	----
32-575	7332	0.781	1.000	0.625	0.025	----
32-576	BB	0.800	0.546	0.562	0.020	----
32-577	7333	0.812	1.000	0.625	0.025	----
32-578	AA	0.825	0.546	0.562	0.020	----
32-579	7244	0.875	0.843	0.687	0.025	----
32-580	7113	0.925	0.968	0.750	0.025	----
32-545	5235A	1.000	0.843	0.687	0.025	----
32-549	7145A	1.050	0.843	0.687	0.025	----
32-584	5027	1.100	0.843	0.812	0.025	----
32-588	7088	1.175	0.875	0.875	0.025	----
32-590	875L	1.200	0.843	0.875	0.025	----
32-591	7291	1.225	0.968	0.875	0.025	----

Also available in steel. Call for a quote!

*More sizes available*

# HOSE ACCESSORIES

## HOSE CRIMPER

### HOSE CRIMPERS

• Provides production capability and “big tool” crimping advantages at just a fraction of the cost of other tools offering comparable results.



**HOSE CRIMPER COMES WITH 5 DIES**

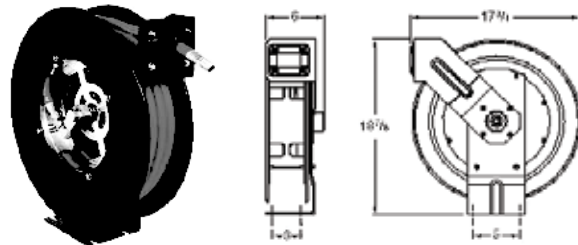
**# 308-071 THRU # 308-075**

Part #		
308-070	Hose Crimper	----

### REPLACEMENT DIES

Part #	Size	
308-071	5/8"	----
308-072	37/64"	----
308-073	17/32"	----
308-074	31/64"	----
308-075	11/16"	----
308-076	7/16"	----
308-077	3/4"	----
308-078	13/16"	----
308-079	3/8"	----

## HOSE REEL



### LOW PRESSURE

Reels are ideally suited for plant maintenance or many other industrial functions where hose storage is a problem. Standard hose for air, water and oxygen/ acetylene application.

- Made in the USA .
- All metal reel.
- Unitized multi-functional hub arbor.
- 8 Position guide arm.
- Minimal size envelope permits installation where space is a factor.
- Simple design incorporates fewer parts.
- Single set screw to access latch area and spring case.
- Heavy gauge base with no welds.

Part #	Operating Pressure	Capacity Hose ID		Shipping Weight	
		I.D.	Length		
940-350	300	3/8	50	41	----
940-250	300	1/4	50	44	----

940350 - Air/ Water

940250 - Oxygen/ Acetylene

**CORROSION RESISTANCE VALUES  
for Plastic Tubing**

Ratings based on tests at 70°F and should not be exposed to higher temperature without testing

**F**-5000 Poly Vinyl Chloride

**U**-2000 Polyurethane

**E**-1000 Low Density Polyethylene

**N**-6000 Nylon

**P**-1100 Polypropylene

**D**-4000 EVA

**T**-7000 Teflon

**U**-8000 Special Plasticizers PVC

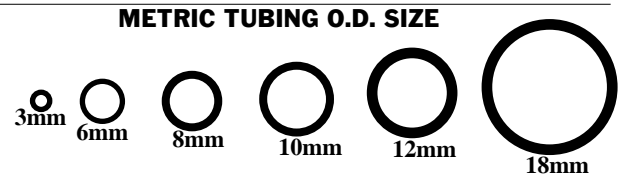
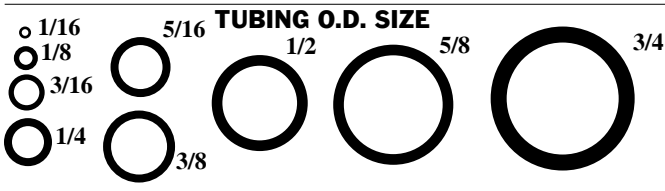
**G**-Good

**L**-Limited

**P**-Poor

**N**-Not Tested

	<b>F</b>	<b>U</b>	<b>E</b>	<b>N</b>	<b>P</b>	<b>D</b>	<b>T</b>	<b>U</b>	<b>ACIDS &amp; BASES</b>	<b>F</b>	<b>U</b>	<b>E</b>	<b>N</b>	<b>P</b>	<b>D</b>	<b>T</b>
<b>FUELS:</b>									<b>ACIDS &amp; BASES</b>							
Butane (1).....	G	G	L	G	L	G	G	N	Acetic, 50%.....	G	P	P	L	G	P	G
Diesel Fuel.....	L	G	L	G	L	P	N	G	Boric.....	G	G	G	G	G	G	G
Gasoline (regular).....	L	G	P	G	L	N	G	G	Carbolic (phenol).....	P	P	G	P	G	P	N
Kerosene.....	L	G	P	G	G	P	G	G	Fatty.....	G	G	P	G	G	N	G
Methane (nat. gas)(1).....	G	G	L	G	G	N	N	N	Formic, 90%.....	G	P	G	P	G	G	G
Propane (1).....	G	G	L	G	L	N	N	N	Hydrochloric, 10%.....	G	G	G	L	G	G	G
<b>OTHERS:</b>									Hydrochloric, 25%.....	G	L	G	P	G	L	G
Acetylene.....	N	G	G	G	G	N	N	N	Hydrochloric, 50%.....	G	L	G	P	G	L	G
Ammonia gas.....	P	G	G	G	G	G	N	N	Hydrocyanic, 50%.....	L	P	G	P	G	G	G
Ammonium salts.....	G	G	G	G	G	N	N	N	Maleic.....	G	P	G	G	G	N	N
Amyl acetate.....	P	P	L	G	P	P	G	N	Nitric, 10%.....	G	P	G	L	G	L	G
Aniline.....	P	P	L	L	G	P	G	N	Nitric, 30%.....	G	P	G	P	L	L	G
Animal oils.....	G	G	P	G	G	N	G	G	Oleic.....	L	G	L	G	G	P	N
Bleach, 7%.....	G	P	G	L	L	N	N	G	Phosphoric, 25%.....	G	L	G	G	G	G	N
Bromine.....	L	G	P	P	P	P	G	N	Sulfuric, 30%.....	G	L	G	L	G	L	G
Butandiol.....	G	G	G	G	G	N	N	N	Sulfuric, 70%.....	L	P	P	P	G	P	G
Calcium salts incl. Chloride.....	G	G	G	G	G	N	G	G	Sulfuric, 98%.....	P	P	P	P	G	P	G
Chlorine gas, dry.....	G	G	P	P	P	P	N	N	Sulfurous, 30%.....	G	P	G	L	G	N	G
Dibutyl phthalate.....	N	P	L	G	L	P	N	G	Tannic.....	G	P	G	G	G	N	G
Glucose.....	G	G	G	G	G	G	G	G	Ammonium hydroxide, 25%.....	P	G	L	G	G	G	N
Glycerine.....	G	G	G	G	G	G	N	G	Potassium hydroxide, 25%.....	L	G	G	G	G	G	G
Hydrogen peroxide 10%.....	G	G	G	G	G	G	G	G	Sodium hydroxide, 50%.....	G	G	G	G	G	L	G
Hydrogen peroxide 25%.....	L	G	G	P	G	G	G	G	<b>SOLVENTS:</b>							
Hydrogen sulfide.....	G	P	G	L	G	N	G	N	Acetone.....	P	P	G	G	L	P	G
Isocyanates.....	N	G	G	G	N	P	N	N	Benzene.....	P	L	P	G	P	P	G
Lead salts (3).....	G	G	G	G	G	N	N	N	Carbon tetrachloride.....	P	L	L	L	P	P	G
Magnesium salts.....	G	G	G	G	G	N	G	N	Chloroform.....	P	P	P	L	P	P	G
Mercury.....	G	G	G	G	G	N	N	N	Cyclohexanone.....	P	P	P	G	L	P	G
Milk.....	G	G	G	G	G	N	G	G	Dimethylformamide.....	P	P	L	N	G	N	N
Mineral Oil.....	G	G	L	G	L	P	G	G	Dioxane.....	N	N	P	G	L	N	N
Nitrous Oxide (1).....	G	G	L	G	G	N	N	N	Ethyl acetate.....	P	L	G	G	L	P	G
Oxygen (1).....	G	G	G	G	G	G	G	G	Ethyl alcohol (1).....	L	G	G	L	G	G	G
Ozone, ambient.....	G	G	L	G	L	N	N	G	Ethyl ether.....	L	L	G	G	L	P	N
Paint, oil base.....	L	G	L	G	G	N	N	G	Ethylene glycol.....	G	G	G	G	G	G	N
Polyglycols.....	G	G	G	G	G	N	N	N	Formaldehyde.....	G	G	G	G	G	L	N
Potassium salts.....	G	G	G	G	G	N	G	N	Freon - 12'.....	L	L	G	G	L	N	G
Pydraul.....	P	P	P	G	N	N	N	N	Methyl alcohol.....	L	G	G	L	G	N	N
Pyridine.....	P	L	G	L	G	N	G	N	Methylene chloride.....	P	P	L	G	L	P	N
Salt Water.....	G	G	G	G	G	G	G	G	Methyl ethyl ketone.....	P	P	G	G	L	P	N
Silver Nitrate.....	G	G	G	G	G	G	G	N	Naphthas (2).....	P	G	P	G	L	P	G
Skydrol.....	P	P	P	G	N	N	N	N	Toluene.....	P	G	P	G	L	P	N
Soap solution (conc.).....	G	G	L	G	G	N	G	G	Triclorethylene.....	P	P	P	L	P	P	G
Sodium salts.....	G	G	G	G	G	N	G	G	Turpentine.....	G	G	P	G	L	P	G
Sodium thiosulphate.....	G	G	G	G	G	N	G	G	Xylene.....	P	G	P	G	L	P	N
Styrene.....	P	G	P	G	N	N	N	G	<b>HYDRAULIC FLUIDS:</b>							
Trisodium phosphate.....	G	G	N	G	G	N	N	G	Diester base grease.....	N	G	P	G	L	P	N
Ucon oil.....	G	G	G	G	N	N	N	N	Petroleum base grease.....	G	G	L	G	L	P	N
Urea.....	G	G	G	G	G	N	G	G	Phosphate ester.....	L	P	P	G	G	N	N
Vegetable oils (1).....	G	G	G	G	G	P	N	G	Polyol ester.....	P	N	P	G	G	N	N
Water at 730F.....	G	G	G	G	G	G	G	G	Water-glycol.....	G	G	G	G	G	N	N
Water at 1400F.....	L	G	G	G	G	G	G	G	SAE motor oils.....	G	G	G	G	G	N	N
Water at 1700F.....	P	L	N	L	G	P	N	G	Machine oil.....	G	G	L	G	L	N	N
Whiskey, wine (1).....	N	G	G	G	G	N	G	G	MIL-L-7808 H.....	G	G	L	G	G	N	N
Zinc Chloride.....	G	G	G	G	G	G	N	N	Brake Fluid.....	N	N	N	N	N	N	N



**TUBING**



# PLASTIC TUBING

# TUBING

## POLYETHYLENE TUBING

- Economical
- Flexible
- Low Pressure & Temperature



- Low density polyethylene tubing has a wide range of uses including water lines, beverage tubing, air lines, instrumentation, plus uses in industrial, agricultural, and chemical applications.
- Has good resistance to alkalis, dilute acid, ammonia gas, ammonium hydroxide, brine water, and most aqueous solutions of metallic salts.
- Food Grade
- temperature: -40F° to 135°F
- Natural - ASTM D-1248-8f - Type 1 - Class A - Category 4, Colors are class B.
- 100' coils in Boxes.
- Working pressure 1/4 of Burst PSI @75°F

### 100' POLYETHYLENE TUBING

Part #	Tube O.D.	Tube Wall	Burst PSI	
973-200	1/8"	0.020	400	----
973-201	5/32"	0.025	400	----
973-202	3/16"	0.030	400	----
973-203	1/4"	0.040	400	----
973-204	1/4"	0.062	800	----
973-205	5/16"	0.062	600	----
973-206	3/8"	0.062	400	----
973-207	1/2"	0.062	300	----
973-208	5/8"	0.062	250	----
973-211	3/4"	0.062	150	----
973-209	3/4"	0.094	200	----
973-210	1"	0.125	300	----

### 500' NATURAL POLYETHYLENE

Part #	O.D.	
73-200N5	1/8"	----
73-203N5	1/4"	----
73-204N5	1/4"	----
73-206N5	3/8"	----
73-207N5	1/2"	----

More colors and lengths available... just ask!

### 1000' NATURAL POLYETHYLENE

Part #	O.D.	
73-203N1	1/4"	----
73-204N1	1/4"	----
73-206N1	3/8"	----

### 100' BLACK POLYETHYLENE TUBING

Part #	O.D.	
73-200B	1/8"	----
73-201B	5/32"	----
73-202B	3/16"	----
73-203B	1/4"	----
73-204B	1/4"	----
73-205B	5/16"	----
73-206B	3/8"	----
73-207B	1/2"	----
73-208B	5/8"	----

### 500' BLACK REEL

Part #	O.D.	
73-203B5	1/4"	----
73-205B5	5/16"	----
73-206B5	3/8"	----
73-207B5	1/2"	----

### 1000' BLACK REEL

Part #	O.D.	
73-206B1	3/8"	----

### 100' BLUE POLYETHYLENE TUBING

Part #	O.D.	
73-200U	1/8"	----
73-201U	5/32"	----
73-202U	3/16"	----
73-203U	1/4"	----
73-204U	1/4"	----
73-205U	5/16"	----
73-206U	3/8"	----
73-207U	1/2"	----

### 500' BLUE REEL

Part #	O.D.	
73-203U5	1/4"	----
73-206U5	3/8"	----

### 1000' BLUE REEL

Part #	O.D.	
73-203U1	1/4"	----

### 100' GREEN POLYETHYLENE TUBING

Part #	O.D.	
73-201G	5/32"	----
73-203G	1/4"	----
73-204G	1/4"	----
73-205G	5/16"	----
73-206G	3/8"	----
73-207G	1/2"	----

### 500' GREEN REEL

Part #	O.D.	
73-203G5	1/4"	----

### 1000' GREEN REEL

Part #	O.D.	
73-203G1	1/4"	----

### 100' RED POLYETHYLENE TUBING

Part #	O.D.	
73-203R	1/4"	----
73-205R	5/16"	----
73-206R	3/8"	----

### 500' RED REEL

Part #	O.D.	
73-203R5	1/4"	----

### 1000' RED REEL

Part #	O.D.	
73-203R1	1/4"	----

### 100' WHITE POLYETHYLENE TUBING

Part #	O.D.	
73-203W	1/4"	----
73-206W	3/8"	----
73-207W	1/2"	----

## PLASTIC TUBE CUTTER

Range: 1/8" - 3/8" I.D. (3mm-10mm)



Part #	Description	
91-707	Cutter w/Blade	----

## TUBING

### 100' YELLOW POLYETHYLENE TUBING

Part #	O.D.	
73-203Y	1/4"	----
73-205Y	5/16"	----
73-206Y	3/8"	----

### 100' ORANGE POLYETHYLENE TUBING

Part #	O.D.	
73-203O	1/4"	----

### 100' GRAY POLYETHYLENE TUBING

Part #	O.D.	
73-206A	3/8"	----

### POLYETHYLENE METRIC TUBING



Part #	MM O.D.	MM I.D.	Length meters	
73-200M1	4	2.5	150	----
73-201M2	6	4	25	----
73-201M1	6	4	150	----
73-202M2	8	6	25	----
73-202M1	8	6	150	----
73-203M2	10	8	25	----
73-203M1	10	8	150	----

More sizes and colors available...  
just ask!

Do not look where you fell, but  
where you slipped.

- African proverb

## FLEXIBLE NYLON 11 TUBING

- High Burst
- Resilient
- Corrosion Resistance



- Lubrication systems, instrumentation lines, fuel lines, refrigerant lines, Vacuum applications, food processing.
- Low moisture absorption, Good mechanical properties, and excellent electrical properties.
- Temperature range -10°F to 225 F°
- Has excellent resistance to a wide range of chemicals including oils, gasoline, hydraulic fluids, salt solutions, and bases.
- 1000lb min. burst P.S.I.
- For DOT tubing see air brake section
- 100' Boxed
- Working Pressure is 1/4 minimum burst

Part #	Tube O.D.	Tube Wall	
973-230	1/8"	.017	----
973-231	5/32"	.025	----
973-229	3/16"	.024	----
973-232	1/4"	.035	----
973-238	1/4"	.040	----
973-239	1/4"	.062	----
973-226	5/16"	.040	----
973-233	3/8"	.050	----
973-234	1/2"	.062	----
973-235	5/8"	.062	----

## 100' BLACK NYLON TUBING

Part #	Tube O.D.	
73-230B	1/8"	----
73-231B	5/32"	----
73-232B	1/4"	----
73-238B	1/4"	----
73-233B	3/8"	----
73-234B	1/2"	----

## 500' BLACK NYLON TUBING NATURAL

Part #	Tube O.D.	
73-232N5	1/4"	----

## PLASTIC TUBING

### 1000' BLACK NYLON

Part #	Tube O.D.	
73-230B1	1/8"	----

### NYLON 12 METRIC TUBING

- Same properties as nylon tubing



### 100' LENGTHS

Part #	MM O.D.	MM I.D.	MM Wall	Min PSI	
973-323	4	2.3	0.85	1800	----
973-324	5	3	1	1600	----
973-325	6	4	1	1200	----
973-326	6	3.5	1.25	1700	----
973-327	8	6	1	800	----
973-328	8	5.5	1.25	1100	----
973-329	10	8	1	600	----
973-332	12	10	1	480	----
973-333	12	9	1.5	800	----
973-334	14	12	1	950	----

## PLASTIC TUBE CUTTER

### MINI-TUBING CUTTER

- Great for tight places



Part #	Size	
990-571	3mm-22mm (1/8"-7/8")	----

## TUBING CUTTER



Part #	Size	
990-570	1/8"-1-1/8"	----

# PLASTIC/ ALUMINUM/ COPPER TUBING

# TUBING

## POLYVINYL CHLORIDE (PVC) TUBING

FDA recipe  
NSF approved  
Grade A



- Clear, flexible PVC tubing is suitable for use in low pressure applications including drain lines, laboratory tubing, industrial, chemical, agricultural, and food and beverage applications.
- Has good chemical resistance to alkalis, ammonium compounds, brine, and some acids and alcohols.
- Sanctioned by the FDA for food packaging applications.
- Temperature Range: -5°F to 125°F
- 100 Foot coils in Boxes.

Part #	Tube I.D.	Tube O.D.	Tube Wall	Min Burst	
973-222	1/8	3/16	1/32	200	----
973-224	1/8	1/4	1/16	400	----
973-223	3/16	5/16	1/16	250	----
973-215	1/4	3/8	1/16	200	----
973-252	5/16	7/16	1/16	150	----
973-253	5/16	1/2	3/32	250	----
973-216	3/8	1/2	1/16	125	----
973-255	3/8"	5/8"	1/8"	250	----
973-262	3/8	9/16	3/32	200	----
973-217	1/2	5/8	1/16	100	----
973-219	3/4	1	1/8	120	----
973-221	1	1-1/4	1/8	100	----

## BLUE POLYURETHANE TUBING

Part #	Tube O.D.	
73-343U	1/4	----

## BLACK POLYURETHANE TUBING

Part #	Tube O.D.	
73-343B	1/4	----

Part #	Tube O.D.	
73-343G	1/4	----

## YELLOW POLYURETHANE TUBING

Part #	Tube O.D.	
73-343Y	1/4	----

## POLYURETHANE METRIC TUBING



Part #	Tube O.D.	Tube I.D.	25 Meters
973-350	4	2.5	----
973-352	6	4	----
973-353	8	6	----

More sizes and colors available

## ALUMINUM TUBING

Alloy 3003-0  
ASTM B-483

Material to ASTM B-483



## ALUMINUM VERSATUBE 50' COILS

Part #	O.D.	Wall Thick	50' Coils
972-190	1/8	.025	----
972-191	3/16	.028	----
972-192	1/4	.032	----
972-193	5/16	.035	----
972-194	3/8	.035	----
972-195	1/2	.035	----

## COPPER TUBING

### REFRIGERATION

### COPPER TUBE (50' Coils)



Part #	O.D Actual	Wt. 50' Coil	Wall Thick.	
972-180	1/8	1.74	.030	----
972-181	3/16	2.88	.030	----
972-182	1/4	4.02	.030	----
972-183	5/16	5.45	.032	----
972-184	3/8	6.7	.032	----
972-185	1/2	9.1	.032	----
972-186	5/8	12.55	.035	----
972-187	3/4	15.25	.035	----

## TYPE L SOFT COPPER TUBING (60' Coils)



For residential water lines

Part #	O.D Nom	Wt. 50' Coil	Wall Thick.	
972-171	1/4	.126	.030	----
972-172	3/8	.198	.035	----
972-173	1/2	.285	.040	----

\* Add 1/8" to Nom OD to get the Actual OD

POR = Price on request

TUBING

## POLYURETHANE TUBING

### 100' COILS



Part #	Tube O.D.	Tube I.D.	
973-340	1/8	1/16	----
973-341	5/32	3/32	----
973-342	3/16	1/8	----
973-343	1/4	1/8	----
973-345	3/8	1/4	----
973-346	1/2	3/8	----

## TUBING ACCESSORIES

### Features:

- Route and secure multiple tubing lines
- Mounting versatility
  - Racks can be easily hand separated down to single holders.
  - Thru holes provided (all sizes)
- Standard color is BLACK. Other colors available on special request.

Note: Mounting screws not provided



Part #	Tubing OD	Description	Channels	
28-988	1/4	non-adhesive	10	----
28-989	1/4	adhesive	10	----
28-990	3/8	non-adhesive	7	----
28-991	1/2	non-adhesive	5	----

**1/4" BASIC SIZE**

**UNIVERSAL SERIES COUPLERS**

**1/4" BASIC SIZE**

**For ARO, TRU-FLATE, INDUSTRIAL INTERCHANGE**

**1/4" BASIC SIZE**

- Automatic Coupler
- Brass body, NBR Seal, Stainless Steel spring, Steel locking balls.
- Good for low pressure fluid lines.

**Working range:**

Maximum operating Pressure  
To 220 psi

**Temperature:** -4° to +176°F

Industrial

Accepts all 3 styles of plugs!

Parker

ARO



**MALE COUPLER**

**FEMALE COUPLER**

**HOSE BARB COUPLER**



**BRASS**



**BRASS**



**BRASS**

Part #	Size	
28-579	1/4" NPTF	----
28-589	3/8" NPTF	----

Part #	Size	
28-560	1/4" NPTF	----

Part #	Hose I.D. Size	
28-690	1/4"	----
28-691	3/8"	----

**1/4" BASIC SIZE**

**INDUSTRIAL INTERCHANGE**

**1/4" BASIC SIZE**

**Specifications**

Body Size (in.)	1/4
Rated Pressure (PSI)	250
Temperature Range	-4° to +176°

- Sleeve type couplings are widely used to connect compressed air and low pressure fluid lines.

Their compact and economical design uses a ball locking mechanism consisting of captive steel balls that engage the locking groove on the mating nipple. The sliding spring loaded sleeve on the coupler must be manually retracted in order to connect or disconnect the nipple. It is easy to do, but two hands are normally required.

**Common applications include:** compressed air, water, grease, paint, limited vacuum and limited gases.

- The standard is a brass coupler and valve with steel locking balls, NBR seat, and stainless steel springs.

**MALE PIPE COUPLER**

**BRASS**



Part #	NPT Size	
28-552	1/4"	----
28-553	3/8"	----

**STEEL**

28552S	1/4"	----
28553S	3/8"	----

**MALE PLUG**

**STEEL**



Part #	NPT Size	
28-545	1/8	----
28-546	1/4	----
28-547	3/8	----

**360° TURNING SWIVEL PLUG**

1/4" Basic size

Industrial Interchange Plug

•360° Turning

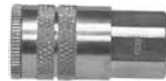
•Swivels



Part #	Size	
320-065	1/4"	----

**FEMALE PIPE COUPLER**

**BRASS**



Part #	NPT Size	
28-540	1/4"	----
28-541	3/8"	----

**STEEL**

28540S	1/4"	----
28541S	3/8"	----

**FEMALE PLUG**

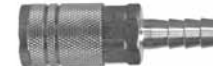
**STEEL**



Part #	NPT Size	
28-533	1/8"	----
28-534	1/4"	----
28-535	3/8"	----

**HOSE ID COUPLER**

**BRASS**



Part #	Hose ID	
28-562	1/4"	----
28-564	3/8"	----
28-565	1/4(Push on)	----
28-566	3/8(Push on)	----

**STEEL**

28-562S	1/4"	----
28-564S	3/8"	----
28-565S	1/4(Push on)	----
28-566S	3/8(Push on)	----

**HOSE ID PLUG**

**STEEL**



Part #	NPT Size	
28-557	1/4"	----
28-559	3/8"	----
28-558	1/4(Push on)	----
28-561	3/8(Push on)	----

**QUICK DISCONNECT**

# QUICK DISCONNECTS

# PNEUMATIC ACCESSORIES

3/8" BASIC SIZE

INDUSTRIAL INTERCHANGE

3/8" BASIC SIZE

**Specifications**

Body Size (in.)	3/8
Rated Pressure (PSI)	250
Temperature Range	-4° to +176°

- Sleeve type couplings are widely used to connect compressed air and low pressure fluid lines.
- Their compact and economical design uses a ball locking mechanism consisting of captive steel balls that engage the locking groove on the mating nipple. The sliding spring loaded sleeve on the coupler must be manually retracted in order to connect or disconnect the nipple. It is easy to do, but two hands are normally required.

**Common applications include:** compressed air, water, grease, paint, limited vacuum and limited gases.

- The standard is a Steel coupler with a Steel valve, NBR seat, and stainless steel springs. Brass coupler avail. on request.
- 3/8" Basic size.

**MALE COUPLER  
STEEL**



Part #	NPT Size	
98-823	1/4"	----
98-824	3/8"	----
98-825	1/2"	----

**FEMALE COUPLER  
STEEL**



Part #	NPT Size	
98-810	1/4"	----
98-811	3/8"	----
98-812	1/2"	----

**HOSE ID COUPLER  
STEEL**



Part #	NPT Size	
98-840	1/4"	----
98-841	3/8"	----
98-842	3/8" ( Push on )	----

**MALE PLUG  
STEEL**



Part #	NPT Size	
98-814	1/4"	----
98-815	3/8"	----

**FEMALE PLUG  
STEEL**



Part #	NPT Size	
98-801	1/4"	----
98-802	3/8"	----

**HOSE ID PLUG  
STEEL**



Part #	Hose I.D. Size	
98-828	3/8"	----
98-830	3/8" ( Push on )	----

1/4" BASIC SIZE

PARKER INTERCHANGE (TRU-FLATE)

1/4" BASIC SIZE

**Specifications**

Body Size (in.)	1/4
Rated Pressure (PSI)	250
Temperature Range	-4° to +176°

- The standard is a brass coupler and valve with steel locking balls, NBR seat, and stainless steel springs.
- Unique design has been field proven as a long lasting, high performance coupling especially when used with pneumatic tools.
- Marval connect and disconnect.

**MALE PIPE COUPLER**

BRASS



Part #	NPT Size	
28-515	1/8"	----
28-516	1/4"	----
28-517	3/8"	----

**FEMALE PIPE COUPLER**

BRASS



Part #	NPT Size	
28-506	1/8"	----
28-507	1/4"	----
28-508	3/8"	----

**HOSE ID COUPLER**

BRASS



Part #	Size	
28-528	1/4"	----
28-530	3/8"	----
28-531	1/4" (Push on)	----
28-532	3/8" (Push on)	----

**MALE PLUG**

STEEL



Part #	NPT Size	
28-509	1/8"	----
28-510	1/4"	----
28-511	3/8"	----

**FEMALE PLUG**

STEEL



Part #	NPT Size	
28-500	1/8"	----
28-501	1/4"	----
28-502	3/8"	----

**HOSE ID PLUG**

STEEL



Part #	Size	
28-518	1/4"	----
28-520	3/8"	----
28-521	1/4" (Push on)	----
28-522	3/8" (Push on)	----

QUICK DISCONNECT

# PNEUMATIC ACCESSORIES

# QUICK DISCONNECTS

1/4" BASIC SIZE

ARO 210 INTERCHANGE

1/4" BASIC SIZE

## Specifications

Body Size (in.)	1/4
Rated Pressure (PSI)	250
Temperature Range	-4° to +176°

- Brass bodies and valves, steel locking balls, NBR seat, and stainless steel springs.
- Couplings have a full opening tubular valve for maximum flow and a built-in sleeve guard to minimize accidental disconnect.
- Marval connect and disconnect.

### MALE PIPE COUPLER

BRASS



Part #	NPT Size	
28-592	1/8"	----
28-593	1/4"	----
28-594	3/8"	----

### FEMALE PIPE COUPLER

BRASS



Part #	NPT Size	
28-583	1/8"	----
28-584	1/4"	----
28-585	3/8"	----

### HOSE ID COUPLER

BRASS



Part #	Size	
28-601	1/4"	----
28-603	3/8"	----

### MALE PLUG

STEEL



Part #	NPT Size	
28-586	1/8"	----
28-587	1/4"	----

### FEMALE PLUG

STEEL



Part #	NPT Size	
28-577	1/8"	----
28-578	1/4"	----

### HOSE ID PLUG

STEEL



Part #	Size	
28-595	1/4"	----
28-597	3/8"	----

## ST SERIES...HIGH FLOW

## Specifications

Brass - Coupler & Steel Plug		
Temperature Range	-40° to 250°	
Rated Pressure	4650	2350

### MALE PIPE COUPLER

BRASS



Part #	Body & Thread Size	
28-667	1/8"	----
28-665	1/4"	----
28-666	3/8"	----
28-668	1/2"	----
28-669	3/4"	----
28-670	1"	----

### FEMALE PIPE COUPLER

BRASS



Part #	Body & Thread Size	
28-671	1/8"	----
28-651	1/4"	----
28-652	3/8"	----
28-672	1/2"	----
28-673	3/4"	----
28-674	1"	----

### MALE PLUG

STEEL



Part #	Size	
28-675	1/8"	----
28-639	1/4"	----
28-640	3/8"	----
28-676	1/2"	----
28-677	3/4"	----
28-678	1"	----

### FEMALE PLUG

STEEL



Part #	Size	
28-688	1/8"	----
28-619	1/4"	----
28-620	3/8"	----
28-679	1/2"	----
28-680	3/4"	----
28-681	1"	----

- Non-valved couplings for applications where maximum flow is required. Ideal for applications such as high pressure water and steam washers, carpet cleaners and mold coolant lines. They are often used in food processing, on fluid and dye transfer lines.

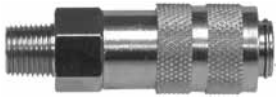
- Standard seals are Buna-N (Nitrile).

QUICK DISCONNECT

**MINI TYPE QUICK DISCONNECTS**

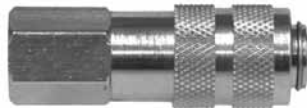
**Working Range:** 0-145 psi  
**Material:** Chrome Plated Brass

**MALE COUPLER**



Part #	Size	
28-605	1/8"	----

**FEMALE COUPLER**



Part #	Size	
28-606	1/8"	----

**MALE PLUG**



Part #	Size	
28-607	1/8"	----

**FEMALE PLUG**



Part #	Size	
28-608	1/8"	----

**LINCOLN INTERCHANGE**

- 1/4" Basic Size

**Specifications**

Body Size (in.)	1/4
Rated Pressure (PSI)	250
Temperature Range	-40° to +250°

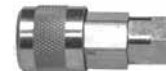
- Brass body with steel sleeve and backnut. Valve material is Acetal and seal is Nitrile.

**MALE PIPE COUPLER**



Part #	Size	
28-682	1/8"	----
28-683	1/4"	----

**FEMALE PIPE COUPLER**



Part #	Size	
28-684	1/4"	----

**MALE PLUG**

**Steel**



Part #	Size	
28-685	1/8"	----
28-686	1/4"	----

**FEMALE PLUG**

**Steel**



Part #	Size	
28-687	1/4"	----

**MOLD COOLANT-LINE QUICK COUPLERS**

**OPERATING PRESSURE:**  
 200 PSIG (14.06 Kg/sq. cm)  
**Standard Seal:**  
**SILICONE:** -90°F to 400°F (-68°C to + 205°C)

- Our coolant couplers are engineered for optimum speed and performance in connecting coolant lines to molds used for thermoplastic, thermosetting, blow molding, diecasting and on other types of tooling and equipment utilizing a constant fluid flow pumped through cooling channels.



**BRASS**

**MALE PLUG (BRASS)**

**1/4" BASIC SIZE**

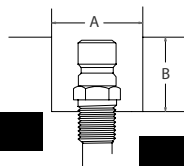
Part #	Size	A	B	
29-900	1/8"	0.69	0.69	----
29-901	1/4"	0.84	0.94	----
29-902	3/8"	1.00	0.97	----

**3/8" BASIC SIZE**

Part #	Size	A	B	
29-906	1/4"	1.00	0.94	----
29-907	3/8"	1.00	1.13	----
29-908	1/2"	1.81	1.25	----

**1/2" BASIC SIZE**

Part #	Size	A	B	
29-911	1/2"	1.25	1.50	----
29-912	3/4"	1.50	1.56	----



**STEEL**

**FEMALE PLUG (STEEL)**

**1/4" BASIC SIZE**

Part #	Size	
29-903	1/8"	----
29-904	1/4"	----
29-905	3/8"	----

**3/8" BASIC SIZE**

Part #	Size	
29-909	1/4"	----
29-910	3/8"	----

**1/2" BASIC SIZE**

Part #	Size	
29-913	1/2"	----
29-914	3/4"	----

**MOLD COOLANT-LINE QUICK COUPLERS**

D-M-E, PARKER and FOSTER INTERCHANGE

**Straight Stem**



**90° Stem**



**45° Stem**



**Body Only**



**1/4" BASIC SIZE, BRASS**

**STRAIGHT THROUGH (Non-Valved)**

Hose ID Size	Straight Stem		90° Stem		45° Stem		Body Only	
	Part #		Part #		Part #		Part #	
1/4"	98-915	----	98-920	----	98-925	----	98-930	----
1/4" (Push On)	98-916	----	98-921	----	98-926	----	(1/8" Female Pipe)	
5/16"	98-917	----	98-922	----	98-927	----		
3/8"	98-918	----	98-923	----	98-928	----		
3/8" (Push On)	98-919	----	98-924	----	98-929	----		

**1/4" BASIC SIZE, BRASS**

**VALVED**

Hose ID Size	Straight Stem		90° Stem		45° Stem		Body Only	
	Part #		Part #		Part #		Part #	
1/4"	98-931	----	98-936	----	98-941	----	98-946	----
1/4" (Push On)	98-932	----	98-937	----	98-942	----	(1/8" Female Pipe)	
5/16"	98-933	----	98-938	----	98-943	----		
3/8"	98-934	----	98-939	----	98-944	----		
3/8" (Push On)	98-935	----	98-940	----	98-945	----		

**3/8" BASIC SIZE, BRASS**

**STRAIGHT THROUGH (Non-Valved)**

Hose ID Size	Straight Stem		90° Stem		45° Stem		Body Only	
	Part #		Part #		Part #		Part #	
3/8"	98-947	----	98-952	----	98-957	----	98-962	----
3/8" (Push On)	98-948	----	98-953	----	98-958	----	(1/4" Female Pipe)	
1/2"	98-949	----	98-954	----	98-959	----	98-986	----
1/2"	98-950	----	98-955	----	98-960	----	(3/8" Female Pipe)	
1/2" (Push On)	98-951	----	98-956	----	98-961	----		

**3/8" BASIC SIZE, BRASS**

**VALVED**

Hose ID Size	Straight Stem		90° Stem		45° Stem		Body Only	
	Part #		Part #		Part #		Part #	
3/8"	98-963	----	98-967	----	98-971	----	98-975	----
3/8" (Push On)	98-964	----	98-968	----	98-972	----	(1/4" Female Pipe)	
1/2"	98-965	----	98-969	----	98-973	----		
1/2"	98-966	----	98-970	----	98-974	----		

**1/2" BASIC SIZE, BRASS**

**STRAIGHT THROUGH (Non-Valved)**

Hose ID Size	Straight Stem		90° Stem		45° Stem		Body Only	
	Part #		Part #		Part #		Part #	
1/2"	98-976	----	98-979	----	98-982	----	98-985	----
1/2" (Push On)	98-977	----	98-980	----	98-983	----	(1/2" Female Pipe)	
3/4"	98-978	----	98-981	----	98-984	----		

**QUICK  
DISCONNECT**

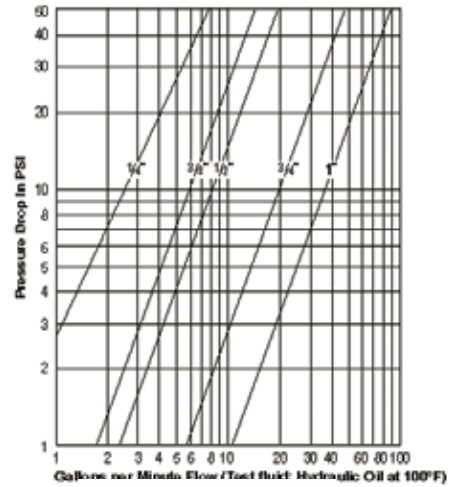


# QUICK DISCONNECT

# HYDRAULIC COUPLINGS

## ISO-A Interchange

Nominal Size	Material	Rated Flow	Minimum Burst-Coupler	Minimum Burst-Plug	Minimum Burst Connected
1/4"	Steel	2.5 GPM	27,260 PSI	20,155 PSI	18,850 PSI
3/8"	Steel	6.6 GPM	22,185 PSI	18,125 PSI	17,400 PSI
1/2"	Steel	11.3 GPM	18,850 PSI	15,370 PSI	16,820 PSI
3/4"	Steel	24.5 GPM	18,705 PSI	17,400 PSI	15,080 PSI
1"	Steel	29.7 GPM	16,820 PSI	14,500 PSI	14,500 PSI



**FEMALE PIPE COUPLER**

Part #	Body Size	NPT	Working PSI	
ANV-14-F	1/4"	1/4"	5075	----
ANV-38-F	3/8"	3/8"	4550	----
ANV-12-F	1/2"	1/2"	4500	----
ANV-34-F	3/4"	3/4"	3625	----
ANV-1-F	1"	1"	3335	----

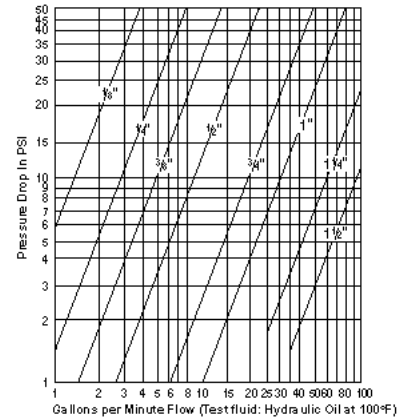


**PLUG**

Part #	Body Size	NPT	Working PSI	
ANV-14-M	1/4"	1/4"	5075	----
ANV-38-M	3/8"	3/8"	4550	----
ANV-12-M	1/2"	1/2"	4500	----
ANV-34-M	3/4"	3/4"	3625	----
ANV-1-M	1"	1"	3335	----

## ISO-B Interchange

Nominal Size	Material	Rated Flow	Minimum Burst-Coupler	Minimum Burst-Plug	Minimum Burst Connected
1/8"	Steel	2.0 GPM	25,300 PSI	23,200 PSI	23,200 PSI
1/4"	Steel	4.2 GPM	27,260 PSI	21,460 PSI	20,880 PSI
3/8"	Steel	8.0 GPM	27,550 PSI	18,850 PSI	19,430 PSI
1/2"	Steel	11.0 GPM	23,780 PSI	15,370 PSI	15,370 PSI
3/4"	Steel	24.0 GPM	19,720 PSI	15,950 PSI	15,660 PSI
1"	Steel	25.0 GPM	19,720 PSI	15,950 PSI	15,660 PSI



**FEMALE PIPE COUPLER**

Part #	Body Size	NPT	Working PSI	
HNV-14-F	1/4"	1/4"	5075	----
HNV-38-F	3/8"	3/8"	4350	----
HNV-12-F	1/2"	1/2"	4060	----
HNV-34-F	3/4"	3/4"	2610	----
HNV-1-F	1"	1"	2175	----



**PLUG**

Part #	Body Size	NPT	Working PSI	
HNV-14-M	1/4"	1/4"	5075	----
HNV-38-M	3/8"	3/8"	4350	----
HNV-12-M	1/2"	1/2"	4060	----
HNV-34-M	3/4"	3/4"	2610	----
HNV-1-M	1"	1"	2175	----

QUICK DISCONNECT

# HYDRAULIC COUPLINGS

# QUICK DISCONNECT

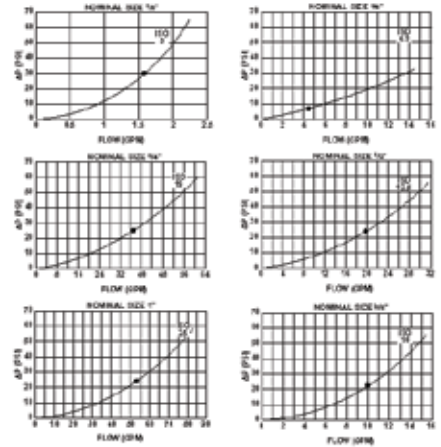
## FLUSH FACE

Nominal Size	ISO Size	Maximum Working Pressure	Rated Flow	Minimum Burst-Plug	Minimum Burst-Coupler	Minimum Burst-Connected
1/8"	5	7250 PSI	1.6 GPM	43,500 PSI	29,000 PSI	43,500 PSI
1/4"	6.3	5000 PSI	4.8 GPM	28,275 PSI	23,925 PSI	33,350 PSI
3/8"	10	5000 PSI	10.0 GPM	29,200 PSI	21,025 PSI	20,590 PSI
1/2"	12.5	5000 PSI	19.8 GPM	25,375 PSI	21,750 PSI	23,295 PSI
5/8"	16	5000 PSI	26.4 GPM	24,255 PSI	21,750 PSI	23,200 PSI
3/4"	19	5000 PSI	37.0 GPM	20,580 PSI	20,580 PSI	20,300 PSI
1"	25	5000 PSI	52.8 GPM	20,580 PSI	20,580 PSI	21,750 PSI
1-1/2"	40	3625 PSI	89.5 GPM	14,500 PSI	14,500 PSI	14,500 PSI



**FEMALE PIPE COUPLER**

Part #	Body Size	NPT	Working PSI	
FF-14-F	1/4"	1/4"	4400	----
FF-38-12-F	3/8"	1/2"	4350	----
FF-38-F	3/8"	3/8"	4350	----
FF-12-F	1/2"	1/2"	3650	----
FF-34-12-SAE-F	1/2"	3/4"	3675	----
FF-34-F	3/4"	3/4"	3650	----
FF-1-F	1"	1"	3675	----



**PLUG**

Part #	Body Size	NPT	Working PSI	
FF-14-M	1/4"	1/4"	4400	----
FF-38-12-M	3/8"	1/2"	4350	----
FF-38-M	3/8"	3/8"	4350	----
FF-12-M	1/2"	1/2"	3650	----
FF-34-12-SAE-M	1/2"	3/4"	3675	----
FF-34-M	3/4"	3/4"	3650	----
FF-1-M	1"	1"	3675	----

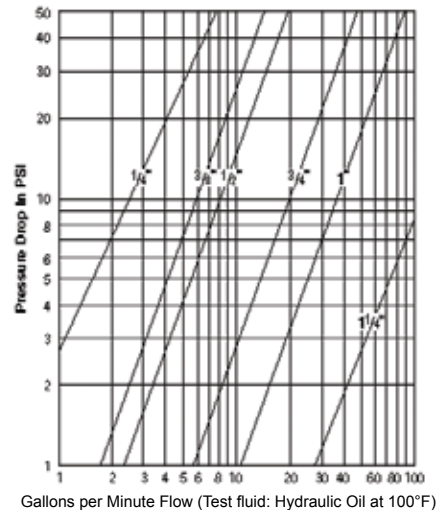
## AG INTERCHANGE

Nominal Size	Rated Flow	Minimum Burst-Coupler	Minimum Burst-Plug	Minimum Burst-Connected
1/4"	6.08 GPM	27,550 PSI	21,170 PSI	22,040 PSI
3/8"	9.5 GPM	26,970 PSI	18,125 PSI	23,200 PSI
1/2"	11.3 GPM	18,850 PSI	15,370 PSI	16,820 PSI
3/4"	24.5 GPM	17,400 PSI	17,400 PSI	15,370 PSI
1"	27.5 GPM	16,820 PSI	14,500 PSI	14,790 PSI



**FEMALE PIPE COUPLER**

Part #	Body Size	NPT	Working PSI	
NV-14-F	1/4"	1/4"	5075	----
NV-38-F	3/8"	3/8"	4550	----
NV-12-F	1/2"	1/2"	3625	----
NV-34-F	3/4"	3/4"	3625	----
NV-1-F	1"	1"	3335	----



Gallons per Minute Flow (Test fluid: Hydraulic Oil at 100°F)



**PLUG**

Part #	Body Size	NPT	Working PSI	
NV-14-M	1/4"	1/4"	5075	----
NV-38-M	3/8"	3/8"	4550	----
NV-12-M	1/2"	1/2"	3625	----
NV-34-M	3/4"	3/4"	3625	----
NV-1-M	1"	1"	3335	----

**QUICK DISCONNECT**

# PNEUMATICS

# PNEUMATIC ACCESSORIES

## BRASS MUFFLERS

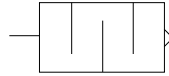


**Materials:**  
**Body:** Brass  
**Element:** Sintered Bronze  
**Max Operating Pressure:** 300PSI  
**Temperature:** 35° to 300°F

Part #	Size	
300-020	10/32"	----
300-021	1/8"	----
300-022	1/4"	----
300-023	3/8"	----
300-024	1/2"	----
300-026	3/4"	----
300-028	1"	----

40 Micron element

## STAINLESS MUFFLERS



**Materials:**  
**Body:** 303 Grade Stainless Steel  
**Element:** 316 Grade Stainless Steel  
**Max Operating Pressure:** 300PSI  
**Temperature:** 35° to 392°F

Part #	Size	
300-031	10-32 NF	----
300-032	1/8"	----
300-033	1/4"	----
300-034	3/8"	----
300-035	1/2"	----
300-036	3/4"	----
300-037	1"	----

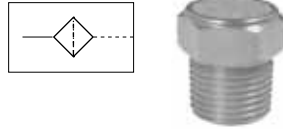
## BRASS BREATHER VENT



**Materials:**  
**Body:** Brass  
**Element:** Sintered Bronze  
**Max Operating Pressure:** 150PSI  
**Temperature:** 35° to 300°F  
 40 Micron element

Part #	Size	
300-000	10-32"	----
300-001	1/8"	----
300-002	1/4"	----
300-003	3/8"	----
300-004	1/2"	----
300-006	3/4"	----
300-008	1"	----

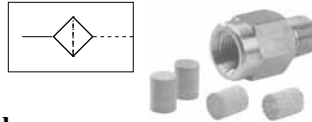
## STAINLESS BREATHER VENT



**Materials:**  
**Body:** 303 Grade Stainless Steel  
**Element:** 316 Grade Stainless Steel  
**Max Operating Pressure:** 150PSI  
**Temperature:** 35° to 390°F

Part #	Size	
300-014	1/8"	----
300-015	1/4"	----
300-017	3/8"	----
300-018	1/2"	----
300-019	3/4"	----
300-007	1"	----

## PRESSURE SNUBBER



**Materials:**  
**Body:** Brass  
**Element:** Sintered Bronze  
**Max Operating Pressure:** 9000PSI  
**Temperature:** 35° to 300°F

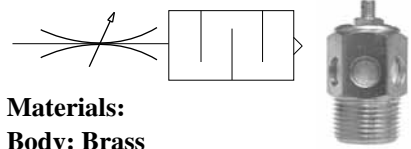
Part #	Size	Porosity	
28-354	1/4"	40 um	----
28-353	1/4"	30 um	----
28-352	1/4"	25 um	----
28-351	1/4"	20 um	----
28-350	1/4"	10 um	----

Part #	Size	Porosity	
28-359	3/8"	40 um	----
28-358	3/8"	30 um	----
28-357	3/8"	25 um	----
28-356	3/8"	20 um	----
28-355	3/8"	10 um	----

### Recommended Element Porosity Rating

Porosity Rating	Color Code	Recommended Application
40 um	None	Viscous Fluids (over 500 ssu)
30 um	Black	Med. Type Oils (225 to 500 ssu)
25 um	Brown	Water & L.T. Oils (30 to 25 ssu)
20 um	Green	Low Viscosity Fluids (under 30 ssu)
10 um	Red	
5 um	Purple	Air and Other Gases

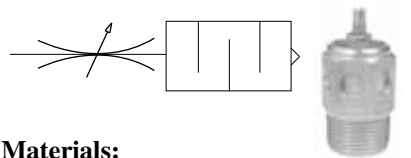
## SPEED CONTROL VALVE



**Materials:**  
**Body:** Brass  
**Element:** 40 Micron Sintered Bronze  
**Max Operating Pressure:** 300PSI  
**Temperature:** 35° to 300°F

Part #	Size	
940-800	1/8"	----
940-801	1/4"	----
940-803	3/8"	----
940-804	1/2"	----
940-805	3/4"	----
940-806	1"	----

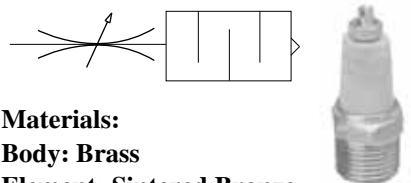
## STAINLESS SPEED CONTROL VALVE



**Materials:**  
**Body:** 303 Grade Stainless Steel  
**Element:** 316 Grade Stainless Steel  
**Max Operating Pressure:** 300PSI  
**Temperature:** 35° to 392°F

Part #	Size	
940-810	1/8"	----
940-811	1/4"	----
940-812	3/8"	----
940-813	1/2"	----
940-814	3/4"	----
940-815	1"	----

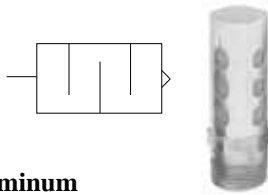
## MUFFLER W/ FLOW ADJUSTMENT



**Materials:**  
**Body:** Brass  
**Element:** Sintered Bronze  
**Max Operating Pressure:** 300PSI  
**Temperature:** 35° to 300°F

Part #	Size	
28-379	1/8"	----
28-380	1/4"	----
28-381	3/8"	----
28-382	1/2"	----

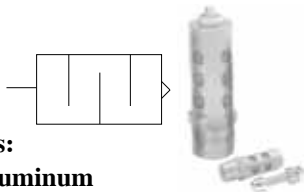
**HIGH FLOW ALUMINUM MUFFLER**



**Materials:**  
**Body: Aluminum**  
**Element: 50 Mesh Stainless Steel**  
**Max Operating Pressure: 300PSI**  
**Temperature: 35° to 160°F**

Part #	Size	
940-822	1/8"	----
940-823	1/4"	----
940-824	3/8"	----
940-825	1/2"	----
940-826	3/4"	----
940-827	1"	----

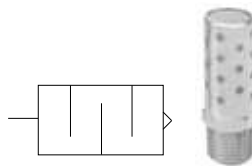
**SPEED CONTROL ALUMINUM MUFFLER**



**Materials:**  
**Body: Aluminum**  
**Element: 50 Mesh Stainless Steel**  
**Max Operating Pressure: 300PSI**  
**Temperature: 35° to 160°F**

Part #	Size	
940-816	1/8"	----
940-817	1/4"	----
940-818	3/8"	----
940-819	1/2"	----
940-820	3/4"	----
940-821	1"	----

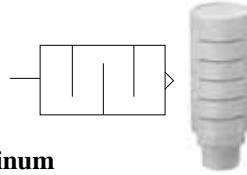
**HIGH FLOW STEEL MUFFLER**



**Materials:**  
**Body: Steel**  
**Element: 50 Mesh Stainless Steel**  
**Max Operating Pressure: 300PSI**  
**Temperature: 35° to 160°F**

Part #	Size	
28-373	1/8"	----
28-374	1/4"	----
28-375	3/8"	----
28-376	1/2"	----
28-377	3/4"	----
28-378	1"	----

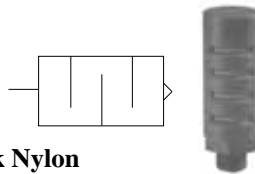
**ALUMINUM HIGH FLOW MUFFLER**



**Materials:**  
**Body: Aluminum**  
**Element: 50 Mesh Stainless Steel**  
**Max Operating Pressure: 300PSI**  
**Temperature: 35° to 160°F**

Part #	Size	
28-367	1/8"	----
28-368	1/4"	----
28-369	3/8"	----
28-370	1/2"	----
28-371	3/4"	----
28-372	1"	----

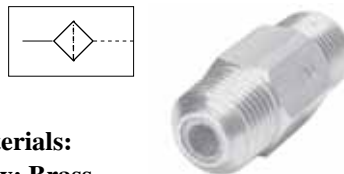
**PLASTIC HIGH FLOW MUFFLER**



**Materials:**  
**Body: Black Nylon**  
**Element: 50 Mesh Stainless Steel**  
**Max Operating Pressure: 150PSI**  
**Temperature: 35° to 120°F**

Part #	Size	
28-363	1/8"	----
28-364	1/4"	----
28-365	3/8"	----
28-366	1/2"	----

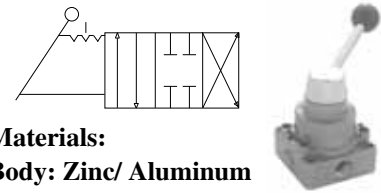
**NIPPLE INLINE FILTER**



**Materials:**  
**Body: Brass**  
**Element: 40 Micron Sintered Bronze**  
**Max Operating Pressure: 300PSI**  
**Temperature: 35° to 300°F**

Part #	Size	
940-845	1/8"	----
940-846	1/4"	----
940-847	3/8"	----
940-848	1/2"	----

**SLIDING HAND VALVES**



**Materials:**  
**Body: Zinc/ Aluminum**  
**Cover: Zinc**  
**Rotary Disk: Teflon**  
**Pressure Range: 0 to 140PSI**  
**Proof Pressure: 213 PSI**  
**Temperature: 41°F to 140°F**  
**Media: Air**  
**Valve Function: 4-Way, 3 Position**  
**Operation Method: Manually operated 90°, Rotary Disk, Direct-Acting type**

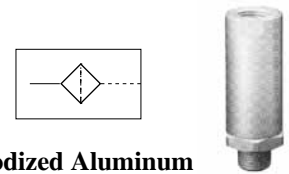
**Body: Zinc**

Part #	Size	
28-360	1/4"	----

**Body: Aluminum**

28-361	3/8"	----
28-362	1/2"	----

**REPAIRABLE AIR/ OIL INLINE FILTER**



**Materials:**  
**Body: Anodized Aluminum**  
**Element: 40 Micron Sintered Bronze**  
**Max Operating Pressure: 300PSI**  
**Temperature: 35° to 200°F**

Part #	Size	
940-840	1/8"	----
940-841	1/4"	----
940-842	3/8"	----
940-843	1/2"	----
940-844	3/4"	----

If the lessons of history teach us anything it is that nobody learns the lessons that history teaches us.

- Anon.

# MANIFOLDS

# PNEUMATIC ACCESSORIES

## Materials:

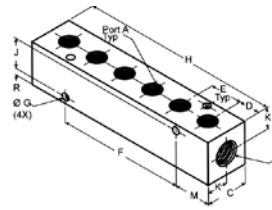
Aluminum with black anodizing for corrosion resistance.

## Specifications:

Max Operating Pressure: 1000PSI

Temperature: -10° to 200°F

Media: Air and liquids compatible with materials of construction.



## RIGHT ANGLE MANIFOLD

## THREADED PORTS

Part #	Ports		A NPT	B NPT	C	D	E	F	G	H	J	K	M	R	Part #	
28-448	2	----	1/8"	1/4"	1.00	0.50	0.75	N/A	0.17	1.75	0.70	0.50	0.88	0.15	28-448R	----
28-449	3	----						0.75		2.50					28-449R	----
28-450	4	----						1.5		3.25					28-450R	----
28-451	5	----						2.25		4.00					28-451R	----
28-452	6	----						3.00		4.75					28-452R	----
28-453	7	----						3.75		5.50					28-453R	----
28-454	8	----						4.50		6.25					28-454R	----
28-455	9	----						5.25		7.00					28-455R	----
28-456	10	----						6.00		7.75					28-456R	----
28-457	2	----						1/4"		3/8"					1.25	0.63
28-458	3	----	0.88	3.00	28-458R	----										
28-459	4	----	1.75	3.88	28-459R	----										
28-460	5	----	2.63	4.75	28-460R	----										
28-461	6	----	3.50	5.63	28-461R	----										
28-462	7	----	4.38	6.50	28-462R	----										
28-463	8	----	5.25	7.38	28-463R	----										
28-464	9	----	6.13	8.25	28-464R	----										
28-465	10	----	7.00	9.13	28-465R	----										
28-466	2	----	3/8"	3/8"	1.25	1.00	1.13		N/A		0.20	3.13	0.89	0.63		
28-467	3	----						1.13	4.25	28-467R		----				
28-468	4	----						2.25	5.38	28-468R		----				
28-469	5	----						3.38	6.50	28-469R		----				
28-470	6	----						4.50	7.63	28-470R		----				
28-471	7	----						5.63	8.75	28-471R		----				
28-472	8	----						6.75	9.88	28-472R		----				
28-473	9	----						7.88	N/A	28-473R		----				
28-474	10	----						9.00	N/A	28-474R		----				

## 3 IN 1 ALUMINUM AIR MANIFOLD

No need to connect and disconnect every time you want to change tools. Supply 3 air tools from one outlet. These manifolds have one inlet with three 1/4 outlets.

S685-4	D3406
S685-6	D3408
S685-8	3104
D3404	3106



Part #	Size	
320-120	1/4" Inlet	----
320-121	3/8" Inlet	----
320-122	1/2" Inlet	----
three 1/4" Outlets		

## SAFETY BLOW GUN

- N/P steel handle with plastic sleeve
  - Brass Valve
  - Zinc body
  - Aluminum nozzle
- 90 PSI
- 20430AD S148  
5114 D204-30  
51-124 6475  
401



1/8" Outlet

Part #	Size	
320-050	1/4" Inlet	----

## PISTOL GRIP BLO-GUN

### Material

- Body: POM (engineering plastic)
- Nozzle: nickel plated carbon steel

### Features

- Simple construction, economic
- Global thread connection
- Durable and versatile applications
- 4 inch nozzle

150 PSI



Part #	Size	
320-035	1/4"	----

## RUBBER TIPPED NOZZLE



51-521  
2058  
D201RT  
411R

Makes positive seal between gun and fuel line or other openings. Use only on air line regulated to 30 PSI or less

Part #	Thread Size	
320-070	1/8 - 27	----

## HIGH FLOW SAFETY NOZZLE



51-338  
SST10  
411BT  
2056

Meets OSHA regulations of 30 PSI maximum outlet pressure when line pressure is 150 PSI or less. Has an air pressure bypass which prevent build up of tip pressure even if nozzle is blocked. Adapts to any blow gun with a 1/8" NPT nozzle port

Part #	
320-075	----

**MULTI-PURPOSE AIR VENT**

705



Part #	Size	
46-048	1/8"	----

**BRASS BICYCLE PUMP FITTING**

Screw on swivel chuck for most hand operated tire pumps.

Buna-N-Seal • Deflator



Part #	Size	
32-782	3/16"	----

**INFLATOR**



Part #	Size	
32-783	3/16"	----

**360° Turning Swivel Fitting**

1/4" Basic size Industrial Interchange Plug •360° Turning •Swivels



Part #	Size	
320-065	1/4"	----

**SWIVEL FITTING**

•360° Turning  
•Swivels

**Male NPT x Female NPT**



Part #	Size	
320-061	1/4"	----

**AIR CHUCKS**

**HEX BALL FOOT CHUCK**



Part #		
46-600	1/4 FPT Live	----

**BALL FOOT CHUCK WITH 1/4 I.D. HOSE BARB**



Part #		
46-607	1/4 ID Live Air	----

**DUAL FOOT CHUCKS**

6999	DTC-02	99941
693		50-065
108		6569



Part #	
320-000	----

**ANGLE CHUCK**



690  
6172

Part #	
320-005	----

**TANK & VENT VALVES**

Three standard styles of valve bodies, complete with short core, for air lifts, water pumps, vacuum, pressurized containers, air jacks, and other pneumatic devices.

**REGULAR:** 300 PSI and cracking pressure 80 PSI

**1/8" NPT, .9" LONG SPRING CORD**

Thread - .302 x 32

7/16" Hex



Part #		
46-620	REGULAR	----

**1/8" NPT 1.207" LONG SPRING CORD**

7/16" Hex



Part #		
46-621	REGULAR	----

**1/4" NPT 1" LONG SPRING CORD**

9/16" Hex



Part #		
46-622	REGULAR	----

**TANK VALVE ACCESSORIES**

**BLACK PLASTIC CAP**

No Gasket



Part #	
46-630	----

**SHORT NICKEL PLATED DOME CAP**



Dome skirted type

Part #	
46-631	----

**FILTERS**

- Quick release bayonet bowl.
- Optional service life indicator turns from green to red when the filter element needs to be replaced.

**TECHNICAL DATA**

**Fluid:**

Compressed Air

**Operating Pressure:**

Transparent bowl: 150 psig

Metal bowl: 250 psig

Automatic drain: 150 psig

**Operating temperature\*:**

Transparent bowl: -30° to 150°F

Metal bowl: -30° to 150°F

\*Air supply must be dry enough to avoid ice formation at temperatures below 35°F.

**MATERIALS**

**F72G**

Body: zinc

Transparent Bowl: polycarbonate

Element: sintered polypropylene

Elastomers: neoprene and nitrile

F73G & F74G

Body: aluminum

Metal bowl: aluminum

Metal bowl liquid level indicator lens:

transparent nylon

Element: sintered polypropylene

**Manual Drain Available**



Part #	Size	Description	
F72G	1/4"	General purpose filter	----
F73G	3/8"	General purpose filter	----
F74G	1/2"	General purpose filter	----

**REGULATORS**

- Full flow gauge ports.
- Balanced valve design minimizes effect of variation in the inlet pressure on the outlet pressure.
- Standard relieving models allow reduction of downstream pressure when the system is dead-ended.

**TECHNICAL DATA**

**Fluid:**

Compressed Air

**Maximum Pressure:**

300 psig (20 bar)

**Operating temperature\*:**

-30° to 175°F (-34 to 80°C)

\*Air supply must be dry enough to avoid ice formation at temperatures below 35°F.

Typical flow with 150 psig (10 bar) inlet pressure, 90 psig (6.3 bar) set pressure and 15 psig (1 bar) droop from set: 144 scfm (68 dm<sup>3</sup>/s).

**MATERIALS**

**R72G**

Body: zinc

Bonnet: acetal

Valve: brass

Elastomers: nitrile

Bottom plug: acetal

**R73G & R74G**

Body: aluminum

Bonnet: aluminum or zinc

Elastomers: nitrile

Bottom plug: acetal



These products allow inlet pressure to pass directly through the body. The outlet port is at right angles to the inlet. This then allows units to be clamped together in a bank, meaning numerous regulated pressures can be obtained from a single supply. R72M pressure regulators are ideal for control cabinet installations where neat, compact assemblies are required.

Part #	Size	Description	
R72G	1/4"	Regulator	----
R73G	3/8"	Regulator	----
R74G	1/2"	Regulator	----



**LUBRICATORS**

- Quick release bayonet bowl.
- Flow sensor provides a nearly constant oil/air ratio over a wide range of flows.
- Highly visible, prismatic liquid level indicator lens on metal bowls.
- All round (360°) visibility of sight-feed dome for ease of drip rate setting.
- Micro-fog.

**TECHNICAL DATA**

**Fluid:**

Compressed Air

**Maximum Pressure:**

300 psig (20 bar)

**Operating temperature\*:**

-30° to 175°F (-34 to 80°C)

\*Air supply must be dry enough to avoid ice formation at temperatures below 35°F.

Typical flow with 150 psig (10 bar) inlet pressure, 90 psig (6.3 bar) set pressure and 15 psig (1 bar) droop from set: 144 scfm (68 dm<sup>3</sup>/s).



**MATERIALS**

**L72M**

Body: zinc

Bonnet: acetal

Valve: brass

Elastomers: nitrile

Bottom plug: acetal

**L72M**

Body: zinc

Transparent bowl: polycarbonate

Sight-feeding dome: transparent nylon

Elastomers: neoprene, nitrile & Geolast.

**L73M & L74M**

Body: aluminum

Metal bowl: aluminum

Liquid level indicator lens metal bowl: transparent nylon

Sight-feed dome: transparent nylon

Elastomers: neoprene & nitrile.

Part #	Size	Description	
L72M	1/4"	Lubricator	----
L73M	3/8"	Lubricator	----
L74M	1/2"	Lubricator	----

**FILTER/REGULATOR COMBOS**

- High efficiency water and particle removal.
- Quick release bayonet bowl.
- Push to lock adjusting knob with tamper resistant accessory.

**TECHNICAL DATA**

**Fluid:**

Compressed Air

**Maximum Pressure:**

Metal bowl: 250 psig (17 bar)

B72G with metal bowl & auto drain: 150 psig (10 bar)

**Operating temperature\*:**

Metal bowl: -30° to 175°F (-34 to 80°C)

\*Air supply must be dry enough to avoid ice formation at temperatures below 35°F.



**MATERIALS**

**B72G**

Body: zinc

Bonnet: acetal

Valve: brass

Metal bowl: zinc

Liquid level indicator lens (metal bowl) : transparent nylon

Element: sintered polypropylene

Elastomers: neoprene & nitrile

**B73G & B74G**

Body & bonnet: aluminum

Metal bowl: aluminum

Liquid level indicator lens: transparent nylon

Element: sintered polypropylene

Elastomers: neoprene & nitrile

Part #	Size	Description	
B72G	1/4"	Filter/ Regulator Combo	----
B73G	3/8"	Filter/ Regulator Combo	----
B74G	1/2"	Filter/ Regulator Combo	----

**WATER PRESSURE REGULATOR**

- Non-relieving models.
- Brass body, corrosion resistant construction.
- Balanced valve minimizes effects of inlet pressure variations on outlet pressure.
- T-bar adjustment standard.
- Full flow gauge ports can be used as auxiliary outlets.
- Panel mounting nut standard.
- Can be disassembled without the use of tools or removal from the air or water line.

**MATERIALS**

Body: Brass

Bonnet: Aluminum

Valve: brass

Bottom plug: brass

Elastomers: nitrile



Part #	Size	Description	
R433	3/8"	Water Regulator w/o gauge	----
R434	1/2"	Water Regulator with gauge	----

**Miniatures**

**Miniature Series 07 General Purpose Filter - 1/8"**

- Compact design.
- Protects air operated devices by removing liquid and solid contaminants.
- Screw-on bowl reduces maintenance time
- Can be disassembled without the use of tools or removal from the air line.

**TECHNICAL DATA**

**Fluid:** Compressed Air

**Maximum Pressure:** Transparent bowl: 150 psig (10 bar)

**Operating temperature:** Transparent bowl: -30° to 125°F (-34 to 50°C)

**Particle removal:** 5 µm or 40 µm filter element

**Air quality:** Within ISO 8573-1, Class 3 and Class 5 (particulates)



**MATERIALS**

**Body:** zinc

**Transparent bowl:** polycarbonate

**Element:** polycarbonate

**Elastomers:** neoprene & nitrile

**Miniature General Purpose Regulators - R07**

- Full flow gauge ports.
- Snap action knob locks pressure setting when pushed in.
- Standard relieving models allow reduction of outlet pressure even when the system is dead-ended.

**TECHNICAL DATA**

**Fluid:** Compressed Air

**Maximum Pressure:** 300 psig (20 bar)

**Operating temperature\*:** -34° to 150°F (-35 to 65°C)

\*Air supply must be dry enough to avoid ice formation at temperatures below 35°F.



**MATERIALS**

**Body:** zinc

**Bonnet:** acetal

**Valve seat:** acetal

**Elastomers:** nitrile

**Ported Micro-Fog Lubricators - L07 Lubricators**

- All around (360°) visibility of the sight-feed dome simplifies installation and adjustment.
- Screw-on bowl reduces maintenance time.
- Can be disassembled without the use of tools or removal from the air line.

**TECHNICAL DATA**

**Fluid:** Compressed Air

**Maximum Pressure:** Transparent bowl: 150 psig (10 bar)

**Operating temperature:** Transparent bowl: -0° to 125°F (-20 to 50°C)

**Start point (ie minimum flow required for lubricator operation):**

0.5 scfm (0.24 dm3/s) at 90 psig (6.3 bar) inlet pressure.

**Nominal bowl size:** 1 fluid ounce (31 mil).

**Drain connection:** Will fit 1/8-27 and 1/8-28 pipe thread.



**MATERIALS**

**Body:** zinc

**Transparent bowl:** polycarbonate

**Sight-feed dome:** Transparent nylon

**Elastomers:** neoprene & nitrile

**Ported Filter/ Regulators - B07**

- Full flow gauge ports.
- High efficiency oil and particle removal.
- Excellent flow and regulation characteristics.

**TECHNICAL DATA**

**Fluid:** Compressed Air

**Maximum Pressure:** Transparent bowl: 150 psig (10 bar)

**Operating temperature\*:** Transparent bowl: -30° to 125°F (-34 to 50°C)

\*Air supply must be dry enough to avoid ice formation at temperatures below 35°F.



**MATERIALS**

**Body:** zinc

**Bonnet:** acetal

**Valve seat:** acetal

**Transparent bowl:** polycarbonate

**Element:** sintered polycarbonate

**Elastomers:** nitrile

Part #	Size	Description	
F07	1/8"	Mini Filter	----
R07	1/8"	Mini Regulator	----
B07	1/8"	Mini Filter/ Regulator combo	----
L07	1/8"	Mini Lubricator	----

**INTEGRAL FILTER REGULATOR**

- Combines air filter and pressure regulator into one compact unit.
- Non-rising, push-lock pressure adjustment knob provides easy hand adjustment at any pressure.
- Adjustment knob can be removed to provide tamper-resistance.
- Aluminum bowl guard standard.
- 20 micron sintered bronze filter.
- Pressure gauge and auto-drain are included.
- Convenient see-through bowl guard.
- Auto-drain will automatically dispense contaminants collected by the filter, prevents overflow. Because manual draining of filters is often overlooked in the normal industrial environment.
- Float type auto-drain has built-in filter screen to prevent clogging Internal float-type auto-drain.

**TECHNICAL DATA**

Model Number		I280	I380	I480
Port Size	NPTF	1/4"	3/8"	1/2"
Max. Air supply		210.0 PSI (15 kgf/cm <sup>2</sup> )		
Max. Operating pressure		140 PSI (9.9 kgf/cm <sup>2</sup> )		
Regulating range		7.0~120.0 PSI (0.5~8.5 kgf/cm <sup>2</sup> )		
Pressure gauge port size	NPTF	1/8"	1/4"	
Auto-drain port size	NPT	1/8"M	1/8"F	
Nominal filtration rating		20UM		
Construction		Relieving Type		
Operating temperature range		41°~140° F( 5~60°C )		
Material	Body	Aluminum		
	Bonnet	Poly Aceta	Diecast Aluminum	
	Filter Element	Sintered Bronze		
	Bowl	Polycarbonate		
	Bowl Guard	Aluminum		
Weight	LBS	1.5	3	3
Included accessory ( standard )		Auto drain, Pressure gauge, Mounting bracket		



Part #	Size	Description	
I280	1/4"	Integral Filter Regulator	----
I380	3/8"	Integral Filter Regulator	----
I480	1/2"	Integral Filter Regulator	----

**PARTS & ACCESSORIES**

Part #	Description	
MB280	Mounting Bracket (I280)	----
MB380	Mounting Bracket (I280/480)	----
RN280	Retaining Nut (I280)	----
RN380	Retaining Nut (I280/480)	----
G280	Pressure Gauge (I280)	----
G380	Pressure Gauge (I280/480)	----
RF280	Replacement Filter Element (I280)	----
RF380	Replacement Filter Element (I280/480)	----

Part #	Description	
B280	Replacement Bowl (I280)	----
B380	Replacement Bowl (I380)	----
B480	Replacement Bowl (I480)	----
BG280	Replacement Bowl & Guard (I280)	----
BG380	Replacement Bowl & Guard (I380)	----
BG480	Replacement Bowl & Guard (I480)	----
BGA280	Replacement Bowl, Guard, Auto Drain (I280)	----
BGA380	Replacement Bowl, Guard, Auto Drain (I380)	----
BGA480	Replacement Bowl, Guard, Auto Drain (I480)	----

**ACCESSORIES**

**2/2-way Solenoid Valves**

**Indirectly actuated Diaphragm design**



- Normally Closed
- Pressure Range: See table
- Temperature: Fluid max. 194°F (+90 °C)  
Ambient max. 122 °F (+50 °C)
- Material: Body BRASS  
Seat Seal NBR (Standard)

Part #	Port Size NPT	Operating Pressure		
		psi	bar	
83-001	1/4	1.45 - 232	0.1 - 16	----
83-002	1/2	1.45 - 232	0.1 - 16	----
83-003	3/4	1.45 - 232	0.1 - 16	----
83-004	1	1.45 - 232	0.1 - 16	----
83-005	1-1/2	1.45 - 145	0.1 - 10	----
83-006	2	1.45 - 145	0.1 - 10	----



**2/2-way Solenoid Valves**

**with forced lifting Diaphragm design**

- Normally Closed
- High flow rate
- Clear design
- Compact solenoid with integrated core tube
- Pressure Range: 0 - 145psi (10 bar)
- Temperature: Fluid max. 194°F (+90 °C)  
Ambient max. 122 °F (+50 °C)
- Material: Body BRASS  
Seat Seal NBR (Standard)

Part #	Port Size NPT	Length ( End to End )		
		in.	mm	
83-100	1/2	2.36	60	----



**2/2-way Solenoid Valves**

**with forced lifting Diaphragm design**

- Normally Closed
- Pressure Range: 0 - 145 psi ( 10 bar )
- Temperature: Fluid max. 194°F (+90 °C)  
Ambient max. 122 °F (+50 °C)
- Material: Body BRASS  
Seat Seal NBR (Standard)

Part #	Port Size NPT	
83-201	1/4	----
83-202	1/2	----
83-203	3/4	----
83-204	1	----
83-205	1-1/2	----
83-206	2	----



ACCESSORIES

**DUAL ANGLE-FOOT TRUCK  
PENCIL GAUGE**



High pressure 20-120 PSI, in 2lb unit

Part #	
320-023	----

**DUAL STRAIGHT-FOOT  
PENCIL GAUGE**



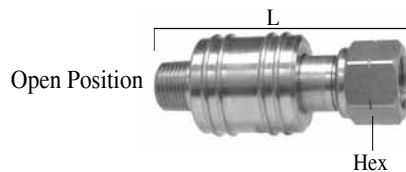
Identical to above except has straight chuck with 30° reverse angle chuck.

Part #	
320-027	----

**PNEUMATIC SLIDE VALVES**

- Max Operating Pressure: 200 psig
- Temperatures: -20°F to +200°F

Manually operated slide valves provide simple on/off airflow control. They can be mounted horizontally, vertically or at any angle.



**MALE X FEMALE**

Part #	Size	L	Hex	
20-780	1/8"	2.15	9/16"	----

**STANDARD DRY GAUGES**

**STEEL CASE**



All the gauges supplied by us are designed for long, reliable service under rugged conditions. Typical applications include compressors, filter regulators, water pumps, beverage dispensing equipment, hydraulic and pneumatic systems, and other applications, where the media does not corrode brass

**2" FACE  
1/4" LOWER MOUNT**

Part #	PSI	
80-001	0-15	----
80-002	0-30	----
80-003	0-60	----
80-004	0-100	----
80-005	0-160	----
80-006	0-200	----
80-007	0-300	----



**2-1/2" FACE  
1/4" LOWER MOUNT**

Part #	PSI	
80-031	0-15	----
80-032	0-30	----
80-033	0-60	----
80-034	0-100	----
80-035	0-160	----
80-036	0-200	----

**LIQUID FILLED GAUGES**

**STAINLESS CASE**

Liquid filled gauges enhance the reliability and integrity of the measuring system for long periods. The glycerine filling helps dampen the effects of vibration and pulsation. It also lubricates the movement which extends the life of the gauge.



- Liquid Filled Gauges with a stainless case are used for protection in harsh environments.
- Stainless Steel Case
- Copper Alloy Wetted parts
- Polycarbonate window ± 1.5% of span accuracy

**2-1/2" FACE  
1/4" LOWER MOUNT**

Part #	PSI	
80-061	0-15	----
80-062	0-30	----
80-063	0-60	----
80-064	0-100	----
80-065	0-160	----
80-066	0-200	----
80-067	0-300	----
80-068	0-400	----
80-069	0-600	----
80-100	0-1000	----
80-101	0-1500	----
80-102	0-2000	----
80-103	0-3000	----
80-104	0-5000	----
80-080	30-0 Vacuum	----

**2-1/2" FACE  
1/4" CENTER BACK MOUNT**

Part #	PSI	List Price
80-201	0-15	----
80-202	0-30	----

1-1/2" & 2" ABS also available

**4" FACE  
1/4" LOWER MOUNT**

Part #	PSI	
80-463	0-100	----

*Other Gauges available upon request...Just Ask!*

## ACCESSORIES

### TEFLON TAPE

**Chemical Properties:** Min. of 99% Polytrafluoroethelene

**Thickness:** .0035", +0.001 or -0.0005"

**Elongation:** Min. of 50% (most times it far exceeds)

**Width:** Nominal width +0.02, -0.02

**Length:** Nominal length + 20", -0"

**Density:** -0.35 to 0.40

**Incompatibility:** Avoid using on Moten Alkali, certain Halogen products & Flourine at high temperatures and pressures

**Temperature:** When heated to over 260 degrees Centigrade, it will thermally degrade and decompose and produce toxic fumes.

**Government standard:** Meets military specification T-27730a

**Usage:** To be used on all types of threaded fittings for passage of water; potable and non-potable, most chemicals, oxygen, gas, hydraulic and high pressure lines.

### TEFLON TAPE



### Thread Sealant

Part #	Size	
982-107	1/2" x 260"	----
982-108	1/2" x 520"	----
982-109	3/4" x 260"	----
982-110	3/4" x 520"	----

### POP OUT COVERED SPOOL

### PREMIUM GRADE DUCT TAPE

#### 200 MPH Tape

- Waterproof
- Polyethylene coated cloth backed tape
- Provides high tack and quick grab
- Meets U.L. No. 723 specifications
- Each roll individually shrink wrapped

### PREMIUM GRADE DUCT TAPE



Part #	
990-128	----

### PRINTED CAUTION TAPE

### PRINTED CAUTION TAPE



Part #	Size	
990-143	3" x 300 ft long	----

### ELECTRICAL TAPE

- 7 mil vinyl
- UL approved

### ELECTRICAL TAPE



Part #	Size	
990-157	3/4" x 60 ft long	----

### SCRUBS IN A BUCKET



Truly portable Scrubs in a Bucket® provide, fast, easy and effective hand cleaning. Can be used anywhere, anyplace, anytime on the toughest soils, greases, tar, etc. Each dispensing canister contains 10-1/2" x 12-1/4" perforated absorbent cleaning towels. Containing a germ-fighting chemical known as Triclosan. No rinsing, no drying, no residue. Also can be used for cleaning tools and spills. On-the-spot hand cleaning when there is no sink around.

Part #	PSI	
980-100	30 Scrubs™/container	----
980-101	72 Scrubs™/container	----

## ACCESSORIES

### COPPER FITTING BRUSHES

- Extra thick mass of steel wire insures perfect cleaning job with minimum effort. Twisted wire handle - for copper fittings. Carbon steel brush
- Sold in boxes of 12 only



Part #	Size	
990-540	3/8"	----
990-541	1/2"	----
990-542	3/4"	----
990-543	1"	----

If you don't make mistakes, you're not working on hard enough problems. And that's a big mistake.

- Frank Wilczek

The bad news is time flies. The good news is you're the pilot.

- Michael Althsuler

You can tell whether a man is clever by his answers. You can tell whether a man is wise by his questions.

- Naguib Mahfouz

# CAM & GROOVE

# CAM & GROOVE



**TYPE A**

**TYPE B**

**TYPE C**

**TYPE D**

**TYPE E**

**TYPE F**

**TYPE DC**

**TYPE DP**

### Aluminum

Type	A		B		C		D		E		F		DC		DP		Type
Size	Part#		Part#		Part#		Part#		Part#		Part#		Part#		Part#		Size
3/4"	61-911	----	61-921	----	61-931	----	61-941	----	61-951	----	61-961	----	61-971	----	61-981	----	3/4"
1"	61-912	----	61-922	----	61-932	----	61-942	----	61-952	----	61-962	----	61-972	----	61-982	----	1"
1-1/4"	61-913	----	61-923	----	61-933	----	61-943	----	61-953	----	61-963	----	61-973	----	61-983	----	1-1/4"
1-1/2"	61-914	----	61-924	----	61-934	----	61-944	----	61-954	----	61-964	----	61-974	----	61-984	----	1-1/2"
2"	61-915	----	61-925	----	61-935	----	61-945	----	61-955	----	61-965	----	61-975	----	61-985	----	2"
2-1/2"	61-916	----	61-926	----	61-936	----	61-946	----	61-956	----	61-966	----	61-976	----	61-986	----	2-1/2"
3"	61-917	----	61-927	----	61-937	----	61-947	----	61-957	----	61-967	----	61-977	----	61-987	----	3"
4"	61-918	----	61-928	----	61-938	----	61-948	----	61-958	----	61-968	----	61-978	----	61-988	----	4"

### 316 Stainless Steel

Type	A		B		C		D		E		F		DC		DP		Type
Size	Part#		Part#		Part#		Part#		Part#		Part#		Part#		Part#		Size
3/4"	63-911	----	63-921	----	63-931	----	63-941	----	63-951	----	63-961	----	63-971	----	63-981	----	3/4"
1"	63-912	----	63-922	----	63-932	----	63-942	----	63-952	----	63-962	----	63-972	----	63-982	----	1"
1-1/4"	63-913	----	63-923	----	63-933	----	63-943	----	63-953	----	63-963	----	63-973	----	63-983	----	1-1/4"
1-1/2"	63-914	----	63-924	----	63-934	----	63-944	----	63-954	----	63-964	----	63-974	----	63-984	----	1-1/2"
2"	63-915	----	63-925	----	63-935	----	63-945	----	63-955	----	63-965	----	63-975	----	63-985	----	2"
2-1/2"	63-916	----	63-926	----	63-936	----	63-946	----	63-956	----	63-966	----	63-976	----	63-986	----	2-1/2"
3"	63-917	----	63-927	----	63-937	----	63-947	----	63-957	----	63-967	----	63-977	----	63-987	----	3"
4"	63-918	----	63-928	----	63-938	----	63-948	----	63-958	----	63-968	----	63-978	----	63-988	----	4"

### Brass

Type	A		B		C		D		E		F		DC		DP		Type
Size	Part#		Part#		Part#		Part#		Part#		Part#		Part#		Part#		Size
3/4"	44-911	----	44-921	----	44-931	----	44-941	----	44-951	----	44-961	----	44-971	----	44-981	----	3/4"
1"	44-912	----	44-922	----	44-932	----	44-942	----	44-952	----	44-962	----	44-972	----	44-982	----	1"
1-1/4"	44-913	----	44-923	----	44-933	----	44-943	----	44-953	----	44-963	----	44-973	----	44-983	----	1-1/4"
1-1/2"	44-914	----	44-924	----	44-934	----	44-944	----	44-954	----	44-964	----	44-974	----	44-984	----	1-1/2"
2"	44-915	----	44-925	----	44-935	----	44-945	----	44-955	----	44-965	----	44-975	----	44-985	----	2"
2-1/2"	44-916	----	44-926	----	44-936	----	44-946	----	44-956	----	44-966	----	44-976	----	44-986	----	2-1/2"
3"	44-917	----	44-927	----	44-937	----	44-947	----	44-957	----	44-967	----	44-977	----	44-987	----	3"
4"	44-918	----	44-928	----	44-938	----	44-948	----	44-958	----	44-968	----	44-978	----	44-988	----	4"

### Polypropylene

Type	A		B		C		D		E		F		DC		DP		Type
Size	Part#		Part#		Part#		Part#		Part#		Part#		Part#		Part#		Size
1/2"	35-910	----	35-920	----	35-930	----	35-940	----	35-950	----	35-960	----	35-970	----	35-980	----	1/2"
3/4"	35-911	----	35-921	----	35-931	----	35-941	----	35-951	----	35-961	----	35-971	----	35-981	----	3/4"
1"	35-912	----	35-922	----	35-932	----	35-942	----	35-952	----	35-962	----	35-972	----	35-982	----	1"
1-1/4"	35-913	----	35-923	----	35-933	----	35-943	----	35-953	----	35-963	----	35-973	----	35-983	----	1-1/4"
1-1/2"	35-914	----	35-924	----	35-934	----	35-944	----	35-954	----	35-964	----	35-974	----	35-984	----	1-1/2"
2"	35-915	----	35-925	----	35-935	----	35-945	----	35-955	----	35-965	----	35-975	----	35-985	----	2"
3"	35-917	----	35-927	----	35-937	----	35-947	----	35-957	----	35-967	----	35-977	----	35-987	----	3"



# HOSE ACCESSORIES

# UNIVERSAL COUPLINGS

## MALE NPT ENDS



\* Safety clip included

Part #	Size	
66005	3/8"	----
66006	1/2"	----
66007	3/4"	----
66008	1"	----

## WASHER



Part #	
66000	----

## FEMALE NPT ENDS



\* Safety clip included

Part #	Size	
66009	3/8"	----
66010	1/2"	----
66011	3/4"	----
66012	1"	----

## HOSE END



\* Safety clip included

Part #	Size	
66001	3/8"	----
66002	1/2"	----
66003	3/4"	----
66004	1"	----

## TRIPLE CONNECTIONS



Part #	
66013	----

The best car safety device is a rear-view mirror with a cop in it.

- Dudley Moore

For high pressure air and water service, steam, sanitary, high pressure spray, LPG and anhydrous ammonia service, petroleum products and chemicals: All parts plated malleable iron. Insert and spud may be either steel or malleable iron. NPT Male and Female spud. Female wing nut-to-spud connection is NPSM ground joint.

## HEAVY DUTY COUPLINGS - Ground Joint Type, Plated

### Hose Stem with

#### Wing Nut & Female Spud



Part #	Size	
73-003	1/2"	----
73-004	3/4"	----
73-005	1"	----
73-006	1-1/4"	----
73-007	1-1/2"	----
73-008	2"	----
73-009	2-1/2"	----
73-010	3"	----
73-011	4"	----

#### Hose Stem Only



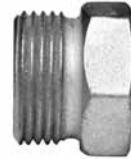
Part #	Size	
73-023	1/2"	----
73-024	3/4"	----
73-025	1"	----
73-026	1-1/4"	----
73-027	1-1/2"	----
73-028	2"	----
73-029	2-1/2"	----
73-030	3"	----
73-031	4"	----

#### Wing Nut Only



Part #	Size	
73-033	1/2"	----
73-035	1"	----
73-036	1-1/4"	----
73-037	1-1/2"	----
73-038	2"	----
73-039	2-1/2"	----
73-040	3"	----
73-041	4"	----

#### Female Spud Only



Part #	Size	
73-063	1/2"	----
73-064	3/4"	----
73-065	1"	----
73-066	1-1/4"	----
73-067	1-1/2"	----
73-068	2"	----
73-069	2-1/2"	----
73-070	3"	----
73-071	4"	----

### Male Pipe Stem Only (NPT)



Part #	Size	
73-043	1/2"	----
73-044	3/4"	----
73-045	1"	----
73-046	1-1/4"	----
73-047	1-1/2"	----
73-048	2"	----
73-049	2-1/2"	----
73-050	3"	----
73-051	4"	----

### 2, 4, 6 Bolt Clamps



Part #	Size	
73-056	3/4"	----
73-057	1"	----
73-058	1-1/2"	----
73-059	2"	----
73-060	3"	----

**Danger:** Failure or improper selection or improper use of hose couplings or related accessories can cause death, personal injury and property damage. Possible consequences of failure or improper selection or improper use of hose couplings or related accessories include but are not limited to:

- Coupling or parts thrown off at high speed.
- High velocity fluid discharge.
- Explosion or burning of the conveyed fluid.
- Contact with suddenly moving or falling objects that are to be held in position or moved by the conveyor fluid.
- Dangerously whipping hose.
- Contact with conveyed fluids that may be hot, cold, toxic or otherwise injurious.
- Sparking or explosion while paint or flammable liquid spraying.

Before selecting or using any of our products, it is important to check with our offices for more detailed specifications regarding use.

**HYDRANT ADAPTERS - BRASS**



Part #	Description	
444-011	1-1/2" NST x 3/4" GHT	----
444-000	2-1/2" NST x 3/4" GHT	----
444-001	2-1/2" NST x 3/4" NPT	----
444-003	2-1/2" NST x 1" NPSH	----
444-002	2-1/2" NST x 1" NPT	----
444-004	2-1/2" NST x 1-1/2" NPSH	----
444-005	2-1/2" NST x 1-1/2" NPT	----
444-007	2-1/2" NST x 2" NPSH	----
444-008	2-1/2" NST x 2" NPT	----
444-006	2-1/2" NST x 1-1/2" NST	----
444-009	3" NPSH x 2-1/2" NST	----
444-010	3" NST x 2-1/2" NST	----

**FEMALE TO MALE HEX ADAPTER - BRASS**



Part #	Description	
444-021	1-1/2" NST x 1-1/2" NPSH	----
444-023	1-1/2" NPT x 1-1/2" NPSH	----
444-027	2-1/2" NST x 2-1/2" NPSH	----
444-028	2-1/2" NPT x 2-1/2" NPSH	----
444-024	1-1/2" NPSH x 1-1/2" NST	----
444-020	1-1/2" NST x 1-1/2" NPT	----
444-026	2-1/2" NST x 2-1/2" NPT	----

**DOUBLE MALE HEX NIPPLE - BRASS**



Part #	Description	
444-042	1-1/2" NPT x 1-1/2" NPSH	----
444-047	2-1/2" NPT x 2-1/2" NPSH	----
444-040	1-1/2" NPT x 1-1/2" NST	----
444-048	2" NPT x 2-1/2" NST	----
444-045	2-1/2" NPT x 2-1/2" NST	----
444-049	3" NPT x 2-1/2" NST	----

**DOUBLE FEMALE SWIVEL - BRASS**



Part #	Description	
444-100	1-1/2" NPT x 1-1/2" NPSH	----
444-101	2-1/2" NPT x 2-1/2" NPSH	----
444-102	1-1/2" NPT x 1-1/2" NST	----
444-103	2" NPT x 2-1/2" NST	----
444-104	2-1/2" NPT x 2-1/2" NST	----
444-105	3" NPT x 2-1/2" NST	----

**MALE SWIVEL ADAPTER - BRASS**



Part #	Description Female x Male	
444-110	1-1/2" NST x 1-1/2" NPT	----
444-111	2-1/2" NST x 2" NPT	----
444-112	2-1/2" NST x 2-1/2" NPT	----
444-113	2-1/2" NST x 3" NPT	----

**FEMALE SWIVEL ADAPTER - BRASS**



Part #	Description	
444-120	2-1/2" NST x 2-1/2" NPT	----
444-121	2-1/2" NST x 3" NPT	----

**DOUBLE MALE - BRASS**



Part #	Description	
444-130	1-1/2" NPSH x 1-1/2" NPSH	----
444-131	2-1/2" NPSH x 2-1/2" NPSH	----
444-132	1-1/2" NST x 1-1/2" NST	----
444-133	2-1/2" NST x 2-1/2" NST	----

**CAP - BRASS**



Part #	Description	
444-061	1-1/2" NPSH	----
444-060	1-1/2" NST	----
444-062	2-1/2" NST	----

**PLUG AND CHAIN - BRASS**



Part #	Description	
444-071	1-1/2" NST	----
444-072	2-1/2" NST	----

# HOSE FITTINGS FOR PLASTIC PIPE

# HOSE ACCESSORIES

## BRONZE INSERT FITTINGS

150 PSI Genuine red brass  
- for plastic pipe  
**HEX MALE ADAPTERS**



( Barb x Male Pipe )

Part #	Hose Size	
973-927	1" x 1"	----
973-930	1" x 1-1/4"	----
973-928	1-1/4" x 1-1/4"	----
973-929	1-1/4" x 1"	----
973-948	1-1/2" x 1-1/2"	----
973-949	2" x 2"	----

## BRONZE TEES ALL BARB



Part #	Size	
973-965	3/4"	----
973-966	1"	----
973-967	1-1/4"	----

## ELBOWS



( BARB X MALE PIPE )

Part #	Size	
973-980	3/4" x 3/4"	----
973-981	1" x 3/4"	----
973-982	1" x 1"	----

## ELBOWS



( Barb x Barb )

Part #	Hose Size	
973-975	3/4"	----
973-976	1"	----
973-977	1-1/4" x 1"	----
973-978	1-1/4"	----
973-979	1-1/2"	----

## STEEL INSERT FITTINGS FOR PLASTIC PIPE

### MALE ADAPTER



( BARB X MALE PIPE )

Part #	Size	Box/Case	
973-906	1/2"	25/100	----
973-907	3/4"	25/10	----
973-908	1"	16/48	----
973-909	1-1/4"	12/36	----
973-910	1-1/2"	6/36	----
973-911	2"	5/25	----
973-912	2-1/2"	1/3	----
973-877	3"	1/3	----
973-914	4"	1/3	----

### REDUCING ADAPTER



( INSERT X NPT )

Part #	Size	
974-264	3/4 x 1/2	----
974-265	1 x 3/4	----
974-266	1-1/4 x 1	----
974-267	1-1/2 x 1-1/4	----

### COUPLINGS



Part #	Size	Box/Case	
973-900	1/2	30/120	----
973-901	3/4	20/100	----
973-902	1	20/100	----
973-903	1-1/4	16/64	----
973-904	1-1/2	12/48	----
973-905	2	5/25	----

## HOSE NIPPLES

### STEEL HOSE NIPPLES



( Barb x Male Pipe )

Part #	Hose Size	
973-850	1/2"	----
973-851	3/4"	----
973-852	1"	----
973-853	1-1/4"	----
973-854	1-1/2"	----
973-855	2"	----
973-856	2-1/2"	----
973-857	3"	----
973-858	4"	----

## STEEL HOSE NIPPLES

### PLATED STEEL



( Barb x Male Pipe )

Part #	Hose Size	
973-870	1/2"	----
973-871	3/4"	----
973-872	1"	----
973-873	1-1/4"	----
973-874	1-1/2"	----
973-875	2"	----
973-876	2-1/2"	----
973-878	4"	----

### STEEL HOSE MENDER



Part #	Hose Size	
973-890	1/2"	----
973-891	3/4"	----
973-892	1"	----
973-893	1-1/4"	----
973-894	1-1/2"	----
973-895	2"	----

*More sizes available...just ask!*

The cure for boredom is curiosity.  
There is no cure for curiosity.

- Ellen Parr

# STAINLESS FITTINGS

# BEVERAGE FITTINGS

**1/4"**

**SWIVEL NUT (NICKEL PLATED BRASS)**



**NEW**

Part #	
34-500	----

**SWIVEL HOSE STEM FOR 1/4" SWIVEL NUT**

**STAINLESS STEEL**



Part #	
34-503	----

**3/8"**

**SWIVEL NUT (NICKEL PLATED BRASS)**



Part #	
34-512	----

**SWIVEL HOSE STEM FOR 3/8" SWIVEL NUT**

**STAINLESS STEEL**



Part #	
34-515	----

**SWIVEL ELBOWS**

**90° SWIVEL ELBOW**



**STAINLESS STEEL**

**HOSE ID x FEMALE 45° FLARE**

Part #	Size	
34-525	1/4" x 1/4"	----
34-529	3/8" x 3/8"	----

**BARB SPLICERS**

**HOSE SPLICER (STRAIGHT)**



**STAINLESS STEEL**

**ID HOSE**

Part #	Size	
34-533	1/4"	----
34-535	3/8"	----
34-543	3/8" x 1/4"	----

**90° BARB SPLICER**



**STAINLESS STEEL**

**ID HOSE**

Part #	Size	
34-551	1/4"	----
34-552	3/8"	----

**TEES & CROSSES**

**BARB HOSE TEES**



**STAINLESS STEEL**

**ID HOSE**

Part #	Size	
34-562	1/4"	----
34-563	3/8"	----

# BEVERAGE FITTINGS

# STAINLESS FITTINGS

## ADAPTERS

### MALE FLARE TO BARB ADAPTER



HOSE ID x 45° FLARE

Part #	Size	
34-579	1/4" x 1/4"	----
34-583	1/4" x 3/8"	----
34-584	3/8" x 1/4"	----
34-585	3/8" x 3/8"	----

### NPT TO BARB ADAPTER



HOSE ID x MALE NPTF

Part #	Size	
34-587	1/4" x 1/8"	----
34-588	1/4" x 1/4"	----
34-589	1/4" x 3/8"	----
34-590	3/8" x 1/8"	----
34-591	3/8" x 1/4"	----
34-592	3/8" x 3/8"	----
34-595	3/8" x 1/2"	----
34-597	1/2" x 3/4"	----

## SWIVEL ELBOWS

### SWIVEL TO BARB ELBOW



HOSE ID x FEMALE 45° FLARE

Part #	Size	
34-600	1/4" x 1/4"	----

## ADAPTERS

### NPT ELBOWS & TEES



HOSE ID x MALE NPTF

Part #	Size	
34-610	1/4" x 1/8"	----
34-611	3/8" x 1/4"	----
34-612	3/8" x 3/8"	----
34-613	1/2" x 1/2"	----

**PLEASE CALL US FOR ANY STAINLESS STEEL BEVERAGE FITTINGS**

*If you don't see what you need, ask us!*



**CONFORMANCE**

- SAE J514
- 30-Degree Chamfers - Most NPSM pipe swivel union fittings have 30-degree chamfers on NPTF male end of fittings. This chamfer is optional per SAE J514. If chamfer is mandatory, consult with our customer service department to verify chamfer exists on items you are requesting.
- Temperature Range: -65°F to +400°F

**MATERIALS**

- Steel - Carbon steel trivalent chrome plating per ASTM B633-98 (Type II SC-2).

**Torque Values:** The torque values provide benchmarks that we believe give optimum results for leak free connections. Actual torque values should be based on individual applications.

**Caution: NPSM pipe swivel unions are not designed to provide structural support for other components**

**WORKING PRESSURES**

The following table lists the recommended working pressures for steel NPSM pipe swivel union hydraulic fittings made in accordance with SAE standard J514. Many factors such as impulsing, vibration, mechanical shock and overtightening may affect the integrity of the fitting and swivel union connection. For these reasons, the recommended working pressures are actually lower than the capacity of the fittings. SAE recommends sufficient testing to be conducted to assure that performance levels will be safe and satisfactory, especially if installed in systems operating at elevated pressures or in severe conditions. When using fittings with different size or thread type, use the lower pressure rating of the two threads.

**SAE J514 NPSM PRESSURE RATINGS**

Dash Size	NPSM Thread Size	4 TO 1 Minimum Burst PSI
-2	1/8-27	5000
-4	1/4-18	5000
-6	3/8-18	4000
-8	1/2-14	3500
-12	3/4-14	2250
-16	1-11 1/2	2000
-20	1 1/4-11 1/2	1625
-24	1 1/2-11 1/2	1250
-32	2-11 1/2	1125

**STEEL PIPE SWIVEL ASSEMBLY INSTRUCTIONS**

**RECOMMENDED**

- Step 1.** Inspect male pipe fitting connecting to swivel and confirm that it has an internal 30-degree chamfer. Do not install into union if chamfer is missing.
- Step 2.** Lubricate the threads and the entire chamfered area of male fitting with hydraulic fluid or other light weight lubricant.
- Step 3.** Install lubricated pipe fitting into swivel nut and turn nut until finger tight.
- Step 4.** Place wrench on hex of male fitting to prevent male fitting from turning, and torque swivel nut to the values in the following table.

**Caution:** When torquing swivel nut on straight swivel union fittings, it may be necessary to also place a wrench on the fitting wrench pad to prevent the fitting from backing out of its port while torquing the swivel nut.

Dash Size	NPSM Thread Size	Torque Foot/LBS
-2	1/8-27	13
-4	1/4-18	20
-6	3/8-18	25
-8	1/2-14	47
-12	3/4-14	84
-16	1-11 1/2	129
-20	1 1/4-11 1/2	152
-24	1 1/2-11 1/2	152
-32	2-11 1/2	300

**ALTERNATE ASSEMBLY METHOD**

- Step 1.** If torque method not possible, follow steps 1-3 above, then proceed to the steps below.
- Step 2.** Place wrench on hex of male pipe fitting and consider this wrench in the 12 o'clock position.
- Step 3.** Lightly wrench tighten the swivel union nut so that the wrench is as near the 3 o'clock position as possible.
- Step 5.** Rotate wrench in 3 o'clock position counterclockwise to no less than the 1 o'clock position, but no more than the 12 o'clock position.

**WHY WET TORQUE?**

Due to the difference in plating types and thickness, materials, and thread quality of different components, the coefficient of friction varies greatly on any given assembly. Lubrication not only produces a more consistent coefficient of friction, it increases clamping force on sealing area with less torque on the threads. Overtightening causes threads to yield, deform and lose their ability to maintain an adequate load or clamping force on the seating area. Extended operation and severe conditions cause further yielding which results in leaks. Overtightening is the single greatest cause for leaks in metal to metal seat hydraulic connections. It is our firm position, that to not wet torque, is to compromise consistency and quality for convenience.



# STEEL PIPE SWIVELS NPSM

# HYDRAULIC ADAPTERS

## STEEL PIPE SWIVEL ADAPTERS

### MALE PIPE SWIVEL ADAPTER

SAE 140130



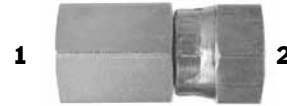
1404  
2045R  
1210  
9205R  
0107

Part #	Male Pipe 1	Female NPSM 2	
1404-2-2	1/8	1/8	----
1404-2-4	1/8	1/4	----
1404-4-2	1/4	1/8	----
1404-4-4	1/4	1/4	----
1404-4-6	1/4	3/8	----
1404-4-8	1/4	1/2	----
1404-6-4	3/8	1/4	----
1404-6-6	3/8	3/8	----
1404-6-8	3/8	1/2	----
1404-8-4	1/2	1/4	----
1404-8-6	1/2	3/8	----
1404-8-8	1/2	1/2	----
1404-8-12	1/2	3/4	----
1404-12-6	3/4	3/8	----
1404-12-8	3/4	1/2	----
1404-12-12	3/4	3/4	----
1404-12-16	3/4	1	----
1404-16-8	1	1/2	----
1404-16-12	1	3/4	----
1404-16-16	1	1	----
1404-16-20	1	1-1/4	----
1404-20-16	1-1/4	1	----
1404-20-20	1-1/4	1-1/4	----
1404-20-24	1-1/4	1-1/2	----
1404-24-20	1-1/2	1-1/4	----
1404-24-24	1-1/2	1-1/2	----
1404-32-32	2	2	----

*Also available in Stainless Steel*  
*More sizes available*  
**-Available in a Restrictor-**

### FEMALE PIPE SWIVEL ADAPTER

SAE 140131



1405  
2046R  
1212  
9255R  
C207

Part #	Female Pipe 1	Female NPSM 2	
1405-2-2	1/8	1/8	----
1405-2-4	1/8	1/4	----
1405-4-2	1/4	1/8	----
1405-4-4	1/4	1/4	----
1405-4-6	1/4	3/8	----
1405-6-4	3/8	1/4	----
1405-6-6	3/8	3/8	----
1405-6-8	3/8	1/2	----
1405-8-4	1/2	1/4	----
1405-8-6	1/2	3/8	----
1405-8-8	1/2	1/2	----
1405-8-12	1/2	3/4	----
1405-12-8	3/4	1/2	----
1405-12-12	3/4	3/4	----
1405-12-16	3/4	1	----
1405-16-12	1	3/4	----
1405-16-16	1	1	----
1405-20-20	1-1/4	1-1/4	----
1405-24-24	1-1/2	1-1/2	----
1405-32-32	2	2	----

*Also available in Stainless Steel*  
*More sizes available...just ask!*

### FEMALE SWIVEL UNION

1406  
1222



Part #	Female NPSM 1	Female NPSM 2	
1406-4-4	1/4	1/4	----
1406-6-6	3/8	3/8	----
1406-8-8	1/2	1/2	----
1406-12-12	3/4	3/4	----
1406-16-16	1	1	----

## HYDRAULIC ADAPTERS

## STEEL PIPE SWIVELS NPSM

### MALE PIPE ELBOW SWIVEL ADAPTER

SAE 140230



2

1501  
2047R  
1218  
9405R  
2107

Part #	Male Pipe 1	Female NPSM 2	
1501-2-2	1/8	1/8	----
1501-2-4	1/8	1/4	----
1501-4-2	1/4	1/8	----
1501-4-4	1/4	1/4	----
1501-4-6	1/4	3/8	----
1501-4-8	1/4	1/2	----
1501-6-4	3/8	1/4	----
1501-6-6	3/8	3/8	----
1501-6-8	3/8	1/2	----
1501-6-12	3/8	3/4	----
1501-8-4	1/2	1/4	----
1501-8-6	1/2	3/8	----
1501-8-8	1/2	1/2	----
1501-8-12	1/2	3/4	----
1501-12-6	3/4	3/8	----
1501-12-8	3/4	1/2	----
1501-12-12	3/4	3/4	----
1501-12-16	3/4	1	----
1501-16-8	1	1/2	----
1501-16-12	1	3/4	----
1501-16-16	1	1	----
1501-16-20	1	1-1/4	----
1501-20-12	1-1/4	3/4	----
1501-20-16	1-1/4	1	----
1501-20-20	1-1/4	1-1/4	----
1501-20-24	1-1/4	1-1/2	----
1501-24-20	1-1/2	1-1/4	----
1501-24-24	1-1/2	1-1/2	----
1501-32-32	2	2	----

*Also available in Stainless Steel*

*More sizes available*

**-Available in a Restrictor-**

### EXTRA LONG MALE PIPE ELBOW



2

Part #	Male Pipe 1	Female NPSM 2	
1501-LL-4-4	1/4	1/4	----
1501-LL-6-6	3/8	3/8	----
1501-LL-8-8	1/2	1/2	----
1501-LL-12-12	3/4	3/4	----
1501-LL-16-16	1	1	----

### FEMALE UNION ELBOW SWIVEL ADAPTER

SAE 140231



2

1502  
2207  
1216  
94SSR

Part #	Female Pipe 1	Female NPSM 2	
1502-2-2	1/8	1/8	----
1502-2-4	1/8	1/4	----
1502-4-2	1/4	1/8	----
1502-4-4	1/4	1/4	----
1502-4-6	1/4	3/8	----
1502-6-4	3/8	1/4	----
1502-6-6	3/8	3/8	----
1502-6-8	3/8	1/2	----
1502-8-4	1/2	1/4	----
1502-8-6	1/2	3/8	----
1502-8-8	1/2	1/2	----
1502-8-12	1/2	3/4	----
1502-12-8	3/4	1/2	----
1502-12-12	3/4	3/4	----
1502-12-16	3/4	1	----
1502-16-12	1	3/4	----
1502-16-16	1	1	----
1502-20-20	1-1/4	1-1/4	----
1502-24-24	1-1/2	1-1/2	----
1502-32-32	2	2	----

*Also available in Stainless Steel*

*More sizes available*

Before enlightenment, chop wood, carry water. After enlightenment, chop wood, carry water.

- Zen proverb

# STEEL PIPE SWIVELS NPSM

# HYDRAULIC ADAPTERS

## MALE 45° PIPE ELBOW SWIVEL ADAPTER

SAE 140330



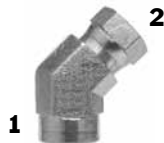
1503  
2049R  
3107  
1214  
9355R

Part #	Male Pipe 1	Female NPSM 2	
1503-2-2	1/8	1/8	----
1503-2-4	1/8	1/4	----
1503-4-2	1/4	1/8	----
1503-4-4	1/4	1/4	----
1503-4-6	1/4	3/8	----
1503-6-4	3/8	1/4	----
1503-6-6	3/8	3/8	----
1503-6-8	3/8	1/2	----
1503-8-4	1/2	1/4	----
1503-8-6	1/2	3/8	----
1503-8-8	1/2	1/2	----
1503-8-12	1/2	3/4	----
1503-12-6	3/4	3/8	----
1503-12-8	3/4	1/2	----
1503-12-12	3/4	3/4	----
1503-12-16	3/4	1	----
1503-16-12	1	3/4	----
1503-16-16	1	1	----
1503-16-20	1	1-1/4	----
1503-20-16	1-1/4	1	----
1503-20-20	1-1/4	1-1/4	----
1503-24-24	1-1/2	1-1/2	----
1503-32-32	2	2	----

*Also available in Stainless Steel  
More sizes available*

## FEMALE 45° UNION ELBOW SWIVEL ADAPTER

SAE 140331



1504  
2050R  
1249  
9385R

Part #	Female Pipe 1	Female NPSM 2	
1504-2-2	1/8	1/8	----
1504-4-4	1/4	1/4	----
1504-6-4	3/8	1/4	----
1504-6-6	3/8	3/8	----
1504-8-6	1/2	3/8	----
1504-8-8	1/2	1/2	----
1504-12-12	3/4	3/4	----
1504-16-16	1	1	----
1504-20-20	1-1/4	1-1/4	----
1504-24-24	1-1/2	1-1/2	----

*Also available in Stainless Steel  
More sizes available*

## MALE SWIVEL BRANCH TEE



1601  
2254R  
1258  
9406R

Part #	Female NPSM 1 & 2	Male Pipe 3	
1601-2-2	1/8	1/8	----
1601-4-4	1/4	1/4	----
1601-6-4	1/4	3/8	----
1601-6-6	3/8	3/8	----
1601-6-8	1/2	3/8	----
1601-8-4	1/4	1/2	----
1601-8-6	3/8	1/2	----
1601-8-8	1/2	1/2	----
1601-12-8	1/2	3/4	----
1601-12-12	3/4	3/4	----
1601-16-12	3/4	1	----
1601-16-16	1	1	----
1601-20-20	1-1/4	1-1/4	----
1601-24-24	1-1/2	1-1/2	----

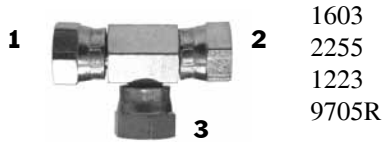
## FEMALE SWIVEL TEE



1602  
2253R  
1259  
9456R

Part #	Female NPSM 1 & 2	Female Pipe 3	
1602-2-2	1/8	1/8	----
1602-4-4	1/4	1/4	----
1602-6-4	1/4	3/8	----
1602-6-6	3/8	3/8	----
1602-8-6	3/8	1/2	----
1602-8-8	1/2	1/2	----
1602-12-8	1/2	3/4	----
1602-12-12	3/4	3/4	----
1602-16-12	3/4	1	----
1602-16-16	1	1	----
1602-20-20	1-1/4	1-1/4	----
1602-24-24	1-1/2	1-1/2	----

**FEMALE SWIVEL UNION TEE**



Part #	Female NPSM 1,2 & 3	
1603-2-2	1/8	----
1603-4-4	1/4	----
1603-6-6	3/8	----
1603-8-8	1/2	----
1603-12-12	3/4	----
1603-16-16	1	----
1603-20-20	1-1/4	----

**TOOL DESCRIPTIONS**

**DRILL PRESS** - A tall upright machine useful for suddenly snatching flat metal bar stock out of your hands so that it smacks you in the chest and flings your beer across the room, denting the freshly-painted project which you had carefully set in the corner where nothing could get to it.

**WIRE WHEEL** - Cleans paint off bolts and then throws them somewhere under the workbench with the speed of light. Also removes fingerprints and hard-earned calluses from fingers in about the time it takes you to say, 'Oh sh --'

**SKILL SAW** - A portable cutting tool used to make studs too short.

**PLIERS** - Used to round off bolt heads. Also used in the creation of blood-blisters.

**BELT SANDER** - An electric sanding tool commonly used to convert minor touch-up jobs into major refinishing jobs.

**HACKSAW** - One of a family of cutting tools built on the Ouija board principle. It transforms human energy into a crooked, unpredictable motion, and the more you attempt to influence its course, the more dismal your future becomes.

**WISE-GRIPS** - Generally used after pliers to completely round off bolt heads. If nothing else is available, they can also be used to transfer intense welding heat to the palm of your hand.

**OXYACETYLENE TORCH** - Used almost entirely for lighting various flammable objects in your shop on fire. Also handy for igniting the grease inside the wheel hub out of which you want to remove a bearing race..

**TABLE SAW** - A large stationary power tool commonly used to launch wood projectiles for testing wall integrity.

**PHILLIPS SCREWDRIVER** - Normally used to stab the vacuum seals under lids or for opening old-style paper-and-tin oil cans and splashing oil on your shirt; but can also be used, as the name implies, to strip out Phillips screw heads.

**STRAIGHT SCREWDRIVER** - A tool for opening paint cans. Sometimes used to convert common slotted screws into non-removable screws and butchering your palms.

**PRY BAR** - A tool used to crumple the metal surrounding that clip or bracket you needed to remove in order to replace a 50 cent part.

**HOSE CUTTER** - A tool used to make hoses too short.

**HAMMER** - Originally employed as a weapon of war, the hammer nowadays is used as a kind of divining rod to locate the most expensive parts adjacent the object we are trying to hit.

**UTILITY KNIFE** - Used to open and slice through the contents of cardboard cartons delivered to your front door; works particularly well on contents such as seats, vinyl records, liquids in plastic bottles, collector magazines, refund checks, and rubber or plastic parts. Especially useful for slicing work clothes, but only while in use.

**37° JIC ADAPTERS**

Straights Pg. 283-285  
 Shapes Pg. 285-290  
 Bulkheads Pg. 290-291  
 Female Swivels Pg. 304-306  
 O-Ring Fittings Pg. 307-312

**Caution: 37-Degree flared fittings are not designed to provide structural support for other components.**

**CONFORMANCE**

- SAE J514
- MS51500-MS51534
- Temperature Range: -65°F to +400°F

**MATERIALS**

- Carbon Steel trivalent chrome plating

**WORKING PRESSURES**

The following table lists the recommended working pressures for steel 37° flare hydraulic tube fittings manufactured in accordance with SAE standard J514. Many factors such as impulsing, vibration, mechanical shock, and overtightening may affect the integrity of the fitting connection. For these reasons, the recommended working pressures are actually lower than the capacity of the fittings. SAE recommends sufficient testing to be conducted to assure that performance levels will be safe and satisfactory, especially if installed in systems operating at elevated pressures or in severe conditions. When using fittings with different size or thread type, use the lower pressure rating of the two threads.

**SAE J514 37-DEGREE FLARED FITTINGS PRESSURE RATING**

Dash Size	Flared Thread Size	4 TO 1 Minimum Burst PSI
-2	5/16-24	5000
-3	3/8-24	5000
-4	7/16-20	5000
-5	1/2-20	5000
-6	9/16-18	5000
-8	3/4-16	4500
-10	7/8-14	3500
-12	1-1/16-12	3500
-14	1-3/16-12	3000
-16	1-5/16-12	3000
-20	1-5/8-12	2500
-24	1-7/8-12	2000
-32	2-1/2-12	1500

**37° FLARED FITTING ASSEMBLY INSTRUCTIONS**

**RECOMMENDED**

- Step 1.** Inspect for possible contamination or damage from shipping or handling. Sealing surface should be smooth. Annular tool marks of (100uin) concentric with thread permissible.
- Step 2.** Lubricate the threads and the entire surface of the cone with hydraulic fluid or a light lubricant.
- Step 3.** Align mating components for hand connection and turn flare nut until sealing surfaces make full contact.
- Step 4.** Torque nut to the values shown on the following table. If a wrench pad is provided next to nut, place a second wrench on pad to prevent flare from rotating while being torqued.
- Step 5.** When torquing nut onto a straight flared fitting, it may be necessary to also place a wrench on the flared fitting wrench pad to prevent it from turning during assembly.

**ALTERNATE ASSEMBLY METHOD**

- Step 1.** If torque method not possible, follow steps 1-3 above, then proceed to the steps below.
- Step 2.** Lightly wrench tighten the nut until there is firm resistance.
- Step 3.** Place a wrench on wrench pad next to nut as near the 6 o'clock position as possible.
- Step 4.** Place second wrench on nut as near the 3 o'clock position as possible.
- Step 5.** Turn nut clockwise to no less than the 4 o'clock position and no more than the 6 o'clock position. Required rotation generally decreases as size increases.

Dash Size	Flared Thread Size	Torque Foot/Lbs.
-2	5/16-24	6-7
-3	3/8-24	6-9
-4	7/16-20	9-12
-5	1/2-20	14-15
-6	9/16-18	18-20
-8	3/4-16	27-39
-10	7/8-1/4	36-63
-12	1-1/16-12	65-88
-14	1-3/16-12	75-103
-16	1-5/16-12	85-113
-20	1-5/8-12	115-133
-24	1-7/8-12	125-167
-32	2-1/2-12	190-258

**WHY WET TORQUE?**

Due to the difference in plating types and thickness, materials, and thread quality of different components, the coefficient of friction varies greatly on any given assembly. Lubrication not only produces a more consistent coefficient of friction, it increases clamping force on sealing area with less torque on the threads. Overtightening causes threads to yield, deform and lose their ability to maintain an adequate load or clamping force on the seating area. Extended operation and severe conditions cause further yielding which results in leaks. Overtightening is the single greatest cause for leaks in metal to metal seat hydraulic connections. It is our firm position, that to not wet torque, is to compromise consistency and quality for convenience.

**STEEL 37° JIC FLARE  
TUBE FITTINGS**

**JIC SHORT TUBE NUT**



303  
302  
1326

Part #	Tube O.D	JIC Thread Size	
0302-4	1/4	7/16-20	----
0302-6	3/8	9/16-18	----
0302-8	1/2	3/4-16	----
0302-10	5/8	7/8-14	----
0302-12	3/4	1-1/16-12	----
0302-16	1	1-5/16-12	----
0302-20	1-1/4	1-5/8-12	----
0302-24	1-1/2	1-7/8-12	----

**LONG JIC TUBE NUT**

SAE 070111

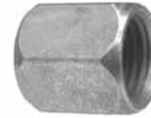


304  
221000  
0304

Part #	Tube O.D	JIC Thread Size	
0304-4	1/4	7/16-20	----
0304-5	5/16	1/2-20	----
0304-6	3/8	9/16-18	----
0304-8	1/2	3/4-16	----
0304-10	5/8	7/8-14	----
0304-12	3/4	1-1/16-12	----
0304-14	7/8	1-3/16-12	----
0304-16	1	1-5/16-12	----
0304-20	1-1/4	1-5/8-12	----
0304-24	1-1/2	1-7/8-12	----
0304-32	2	2-1/2-12	----

**JIC CAP**

SAE 070112  
MS 51532



304  
210292  
FNTX  
1329  
C5129

Part #	Tube O.D.	JIC Thread Size	
0304-C-2	1/8	5/16-24	----
0304-C-3	3/16	3/8-24	----
0304-C-4	1/4	7/16-20	----
0304-C-5	5/16	1/2-20	----
0304-C-6	3/8	9/16-18	----
0304-C-8	1/2	3/4-16	----
0304-C-10	5/8	7/8-14	----
0304-C-12	3/4	1-1/16-12	----
0304-C-14	7/8	1-3/16-12	----
0304-C-16	1	1-5/16-12	----
0304-C-20	1-1/4	1-5/8-12	----
0304-C-24	1-1/2	1-7/8-12	----
0304-C-32	2	2-1/2-12	----

*Also available in Stainless Steel*

It is better to know some of the questions than all of the answers.

- James Thurber

# STRAIGHTS STEEL 37° JIC FLARE

# HYDRAULIC ADAPTERS

## JIC TUBE NUT (SLEEVE REQUIRED)

SAE 070110  
MS 51531



318  
1290  
BTX  
1311  
C5105

Part #	Tube O.D	JIC Thread Size	
0318-2	1/8	5/16-24	----
0318-3	3/16	3/8-24	----
0318-4	1/4	7/16-20	----
0318-5	5/16	1/2-20	----
0318-6	3/8	9/16-18	----
0318-8	1/2	3/4-16	----
0318-10	5/8	7/8-14	----
0318-12	3/4	1-1/16-12	----
0318-14	7/8	1-3/16-12	----
0318-16	1	1-5/16-12	----
0318-20	1-1/4	1-5/8-12	----
0318-24	1-1/2	1-7/8-12	----
0318-32	2	2-1/2-12	----

Also available in Stainless Steel

## JIC TUBE SLEEVE

SAE 070115  
MS 51532

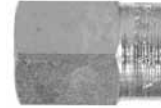


319  
900605  
TX  
1253  
C5165

Part #	Tube O.D	
0319-2	1/8	----
0319-3	3/16	----
0319-4	1/4	----
0319-5	5/16	----
0319-6	3/8	----
0319-8	1/2	----
0319-10	5/8	----
0319-12	3/4	----
0319-14	7/8	----
0319-16	1	----
0319-20	1-1/4	----
0319-24	1-1/2	----
0319-32	2	----

Also available in Stainless Steel

## JIC FLARELESS TUBE NUT (SLEEVE REQUIRED)



418

Part #	Tube O.D	JIC Thread Size	
V0318-3	3/16	3/8-24	----
V0318-4	1/4	7/16-20	----
V0318-5	5/16	1/2-20	----
V0318-6	3/8	9/16-18	----
V0318-8	1/2	3/4-16	----
V0318-10	5/8	7/8-14	----
V0318-12	3/4	1-1/16-12	----
V0318-16	1	1-5/16-12	----
V0318-20	1-1/4	1-5/8-12	----
V0318-24	1-1/2	1-7/8-12	----
V0318-32	2	2-1/2-12	----

## JIC FLARELESS TUBE SLEEVE



419

Part #	Tube O.D	
V0319-3	3/16	----
V0319-4	1/4	----
V0319-5	5/16	----
V0319-6	3/8	----
V0319-8	1/2	----
V0319-10	5/8	----
V0319-12	3/4	----
V0319-16	1	----
V0319-20	1-1/4	----
V0319-24	1-1/2	----
V0319-32	2	----

## JIC BRAZE TUBE UNION



403  
73014  
1403

Part #	Braze Port 1	JIC Thread Size 2	
0403-4	1/4	7/16-20	----
0403-6	3/8	9/16-18	----
0403-8	1/2	3/4-16	----
0403-10	5/8	7/8-14	----
0403-12	3/4	1-1/16-12	----
0403-14	7/8	1-3/16-12	----
0403-16	1	1-5/16-12	----
0403-20	1-1/4	1-5/8-12	----
0403-24	1-1/2	1-7/8-12	----
0403-32	2	2-1/2-12	----

# HYDRAULIC ADAPTERS

# STRAIGHTS STEEL 37° JIC FLARE

## JIC TUBE UNION

SAE 070101  
MS 51501



2403  
2027  
HTX  
1204  
C5305

Part #	JIC Thread Size 1	JIC Thread Size 2	
2403-2	5/16-24	5/16-24	----
2403-3	3/8-24	3/8-24	----
2403-4	7/16-20	7/16-20	----
2403-5	1/2-20	1/2-20	----
2403-6	9/16-18	9/16-18	----
2403-6-4	9/16-18	7/16-20	----
2403-6-5	9/16-18	1/2-20	----
2403-8	3/4-16	3/4-16	----
2403-8-4	3/4-16	7/16-20	----
2403-8-6	3/4-16	9/16-18	----
2403-10	7/8-14	7/8-14	----
2403-10-4	7/8-14	7/16-20	----
2403-10-6	7/8-14	9/16-18	----
2403-10-8	7/8-14	3/4-16	----
2403-12	1-1/16-12	1-1/16-12	----
2403-12-6	1-1/16-12	9/16-18	----
2403-12-8	1-1/16-12	3/4-16	----
2403-12-10	1-1/16-12	7/8-14	----
2403-14	1-3/16-12	1-3/16-12	----
2403-16	1-5/16-12	1-5/16-12	----
2403-16-10	1-5/16-12	7/8-14	----
2403-16-12	1-5/16-12	1-1/16-12	----
2403-20	1-5/8-12	1-5/8-12	----
2403-20-12	1-5/8-12	1-1/16-12	----
2403-20-16	1-5/8-12	1-5/16-12	----
2403-24	1-7/8-12	1-7/8-12	----
2403-24-20	1-7/8-12	1-5/8-12	----
2403-32	2-1/2-12	2-1/2-12	----

*Some sizes available in Stainless Steel  
More jump sizes available*

## JIC LARGE HEX TUBE UNION



2403-LH  
202712  
LHTX  
1204-LH  
C5306

Part #	JIC Thread Size 1	JIC Thread Size 2	
2403-LH-4	7/16-20	7/16-20	----
2403-LH-6	9/16-18	9/16-18	----
2403-LH-8	3/4-16	3/4-16	----
2403-LH-10	7/8-14	7/8-14	----
2403-LH-12	1-1/16-12	1-1/16-12	----
2403-LH-16	1-5/16-12	1-5/16-12	----
2403-LH-20	1-5/8-12	1-5/8-12	----

*Also available in Stainless Steel*

## JIC MALE CONNECTOR

SAE 070102  
MS 51500



2404  
2021R  
FTX  
1202R  
C5205

Part #	JIC Thread Size 1	Male Pipe Thread 2	
2404-2-2	5/16-24	1/8	----
2404-2-4	5/16-24	1/4	----
2404-3-2	3/8-24	1/8	----
2404-3-4	3/8-24	1/4	----
2404-4-2	7/16-20	1/8	----
2404-4-4	7/16-20	1/4	----
2404-4-6	7/16-20	3/8	----
2404-4-8	7/16-20	1/2	----
2404-5-2	1/2-20	1/8	----
2404-5-4	1/2-20	1/4	----
2404-5-6	1/2-20	3/8	----
2404-6-2	9/16-18	1/8	----
2404-6-4	9/16-18	1/4	----
2404-6-6	9/16-18	3/8	----
2404-6-8	9/16-18	1/2	----
2404-6-12	9/16-18	3/4	----
2404-8-4	3/4-16	1/4	----
2404-8-6	3/4-16	3/8	----
2404-8-8	3/4-16	1/2	----
2404-8-12	3/4-16	3/4	----
2404-8-16	3/4-16	1	----
2404-10-4	7/8-14	1/4	----
2404-10-6	7/8-14	3/8	----
2404-10-8	7/8-14	1/2	----
2404-10-12	7/8-14	3/4	----
2404-10-16	7/8-14	1	----
2404-12-6	1-1/16-12	3/8	----
2404-12-8	1-1/16-12	1/2	----
2404-12-12	1-1/16-12	3/4	----
2404-12-16	1-1/16-12	1	----
2404-12-20	1-1/16-12	1-1/4	----
2404-14-12	1-3/16-12	3/4	----
2404-14-16	1-3/16-12	1	----
2404-16-12	1-5/16-12	3/4	----
2404-16-16	1-5/16-12	1	----
2404-16-20	1-5/16-12	1-1/4	----
2404-16-24	1-5/16-12	1-1/2	----
2404-20-12	1-5/8-12	3/4	----
2404-20-16	1-5/8-12	1	----
2404-20-20	1-5/8-12	1-1/4	----
2404-20-24	1-5/8-12	1-1/2	----
2404-24-16	1-7/8-12	1	----
2404-24-20	1-7/8-12	1-1/4	----
2404-24-24	1-7/8-12	1-1/2	----
2404-24-32	1-7/8-12	2	----
2404-32-16	2-1/2-12	1	----
2404-32-20	2-1/2-12	1-1/4	----
2404-32-24	2-1/2-12	1-1/2	----
2404-32-32	2-1/2-12	2	----
2404-40-40	3-12	2-1/2	----

*Some sizes available in Stainless Steel*

**-Available in a Restrictor-**

HYDRAULIC



# STRAIGHTS STEEL 37° JIC FLARE

# HYDRAULIC ADAPTERS

## JIC LONG MALE CONNECTOR

SAE 070102  
MS 51500

2404L  
202113R  
1202L0R



Part #	JIC Thread Size 1	Male Pipe Size 2	Length	
2404-L-4-2	7/16-20	1/8"	1.81"	----
2404-L-4-4	7/16-20	1/4"	2.35"	----
2404-L-6-4	9/16-18	1/4"	2.35"	----
2404-L-6-6	9/16-18	3/8"	2.50"	----
2404-L-8-6	3/4-16	3/8"	2.75"	----
2404-L-8-8	3/4-16	1/2"	3.13"	----
2404-L-10-8	7/8-14	1/2"	3.13"	----
2404-L-12-12	1-1/16-12	3/4"	3.50"	----
2404-L-16-16	1-5/16-12	1"	4"	----

Also available in extra long lengths

### More Golf Quotes

After all these years, it's still embarrassing for me to play on the American golf tour. Like the time I asked my caddie for a sand wedge and he came back ten minutes later with a ham on rye.

- Chi Chi Rodriguez

The ball retriever is not long enough to get my putter out of the tree.

- Brian Weis

Swing hard in case you hit it.

- Dan Marino

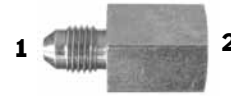
My favorite shots are the practice swing and the conceded putt. The rest can never be mastered.

- Lord Robertson

## JIC FEMALE CONNECTOR

SAE 070103  
MS 51503

2405  
2022R  
GTX  
1230R  
C5255



Part #	JIC Thread Size 1	Female Pipe Size 2	
2405-2-2	5/16-24	1/8	----
2405-3-2	3/8-24	1/8	----
2405-3-4	3/8-24	1/4	----
2405-4-2	7/16-20	1/8	----
2405-4-4	7/16-20	1/4	----
2405-4-6	7/16-20	3/8	----
2405-5-2	1/2-20	1/8	----
2405-5-4	1/2-20	1/4	----
2405-6-2	9/16-18	1/8	----
2405-6-4	9/16-18	1/4	----
2405-6-6	9/16-18	3/8	----
2405-6-8	9/16-18	1/2	----
2405-8-4	3/4-16	1/4	----
2405-8-6	3/4-16	3/8	----
2405-8-8	3/4-16	1/2	----
2405-8-12	3/4-16	3/4	----
2405-10-6	7/8-14	3/8	----
2405-10-8	7/8-14	1/2	----
2405-10-12	7/8-14	3/4	----
2405-12-8	1-1/16-12	1/2	----
2405-12-12	1-1/16-12	3/4	----
2405-12-16	1-1/16-12	1	----
2405-14-12	1-3/16-12	3/4	----
2405-16-12	1-5/16-12	3/4	----
2405-16-16	1-5/16-12	1	----
2405-16-20	1-5/16-12	1-1/4	----
2405-20-20	1-5/8-12	1-1/4	----
2405-24-24	1-7/8-12	1-1/2	----
2405-32-32	2-1/2-12	2	----

Some sizes available in Stainless Steel

## JIC TWO PIECE TUBE REDUCER



Part #	JIC Female Tube O.D 1	JIC Male Thread 2	
2407-6-4	3/8	7/16-20	----
2407-8-4	1/2	7/16-20	----
2407-8-6	1/2	9/16-18	----
2407-12-6	3/4	9/16-18	----
2407-12-8	3/4	3/4-16	----
2407-16-12	1	1-1/16-12	----
2407-20-16	1-1/4	1-5/16-12	----
2407-24-20	1-1/2	1-5/8-12	----

Also available in Stainless Steel

More sizes available

# HYDRAULIC ADAPTERS

# STRAIGHTS STEEL 37° JIC FLARE

## JIC REDUCER/ EXPANDER



2406  
C5015  
2215  
TRTX  
1246

Part #	JIC Thread Size 1	JIC Thread Size 2	
2406-6-4	9/16-18	7/16-20	----
2406-6-5	9/16-18	1/2-20	----
2406-8-4	3/4-16	7/16-20	----
2406-8-6	3/4-16	9/16-18	----
2406-8-12*	3/4-16	1-1/16-12	----
2406-10-4	7/8-14	7/16-20	----
2406-10-6	7/8-14	9/16-18	----
2406-10-8	7/8-14	3/4-16	----
2406-12-4	1-1/16-12	7/16-20	----
2406-12-6	1-1/16-12	9/16-18	----
2406-12-8	1-1/16-12	3/4-16	----
2406-12-10	1-1/16-12	7/8-14	----
2406-12-16*	1-1/16-12	1-5/16-12	----
2406-14-6	1-3/16-12	9/16-18	----
2406-14-8	1-3/16-12	3/4-16	----
2406-14-10	1-3/16-12	7/8-14	----
2406-14-12	1-3/16-12	1-1/16-12	----
2406-16-4	1-5/16-12	7/16-20	----
2406-16-6	1-5/16-12	9/16-18	----
2406-16-8	1-5/16-12	3/4-16	----
2406-16-10	1-5/16-12	7/8-14	----
2406-16-12	1-5/16-12	1-1/16-12	----
2406-16-14	1-5/16-12	1-3/16-12	----
2406-16-20*	1-5/16-12	1-5/8-12	----
2406-20-8	1-5/8-12	3/4-16	----
2406-20-12	1-5/8-12	1-1/16-12	----
2406-20-16	1-5/8-12	1-5/16-12	----
2406-24-16	1-7/8-12	1-5/16-12	----
2406-24-20	1-7/8-12	1-5/8-12	----
2406-32-24	2-1/2-12	1-7/8-12	----

**\*Tube Expander**  
*More expanding sizes available*

## PLUG

SAE 070109  
MS 51518



2408  
430549  
PNTX  
1254  
C5229

Part #	Tube O.D.	JIC Thread Size	
2408-2	1/8	5/16-24	----
2408-3	3/16	3/8-24	----
2408-4	1/4	7/16-20	----
2408-5	5/16	1/2-20	----
2408-6	3/8	9/16-18	----
2408-8	1/2	3/4-16	----
2408-10	5/8	7/8-14	----
2408-12	3/4	1-1/16-12	----
2408-14	7/8	1-3/16-12	----
2408-16	1	1-5/16-12	----
2408-20	1-1/4	1-5/8-12	----
2408-24	1-1/2	1-7/8-12	----
2408-32	2	2-1/2-12	----

*Some available in Stainless Steel*

## JIC UNION ELBOW

SAE 070201  
MS 51505



2500  
2039  
1234  
C5505

Part #	JIC Thread Size 1	JIC Thread Size 2	
2500-2-2	5/16-24	5/16-24	----
2500-3-3	3/8-24	3/8-24	----
2500-4-4	7/16-20	7/16-20	----
2500-5-5	1/2-20	1/2-20	----
2500-6	9/16-18	9/16-18	----
2500-6-4	9/16-18	7/16-20	----
2500-8-8	3/4-16	3/4-16	----
2500-8-4	3/4-16	7/16-20	----
2500-8-6	3/4-16	9/16-18	----
2500-10	7/8-14	7/8-14	----
2500-10-8	7/8-14	3/4-16	----
2500-12	1-1/16-12	1-1/16-12	----
2500-12-8	1-1/16-12	3/4-16	----
2500-14	1-3/16-12	1-3/16-12	----
2500-16	1-5/16-12	1-5/16-12	----
2500-16-12	1-5/16-12	1-1/16-12	----
2500-20	1-5/8-12	1-5/8-12	----
2500-24	1-7/8-12	1-7/8-12	----
2500-32	2-1/2-12	2-1/2-12	----

*Some available in Stainless Steel*  
*More sizes available*

# SHAPES STEEL 37° JIC FLARE

# HYDRAULIC ADAPTERS

## STEEL 37° JIC FLARE SHAPES

SAE 070202  
MS 51504

### JIC MALE ELBOW



1208R  
C5405  
2501  
2024R  
CTX

Part #	JIC Size 1	Male Pipe Size 2	
2501-2-2	5/16-24	1/8	----
2501-2-4	5/16-24	1/4	----
2501-3-2	3/8-24	1/8	----
2501-3-4	3/8-24	1/4	----
2501-4-2	7/16-20	1/8	----
2501-4-4	7/16-20	1/4	----
2501-4-6	7/16-20	3/8	----
2501-4-8	7/16-20	1/2	----
2501-5-2	1/2-20	1/8	----
2501-5-4	1/2-20	1/4	----
2501-5-6	1/2-20	3/8	----
2501-6-2	9/16-18	1/8	----
2501-6-4	9/16-18	1/4	----
2501-6-6	9/16-18	3/8	----
2501-6-8	9/16-18	1/2	----
2501-6-12	9/16-18	3/4	----
2501-8-4	3/4-16	1/4	----
2501-8-6	3/4-16	3/8	----
2501-8-8	3/4-16	1/2	----
2501-8-12	3/4-16	3/4	----
2501-8-16	3/4-16	1	----
2501-10-6	7/8-14	3/8	----
2501-10-8	7/8-14	1/2	----
2501-10-12	7/8-14	3/4	----
2501-10-16	7/8-14	1	----
2501-12-6	1-1/16-12	3/8	----
2501-12-8	1-1/16-12	1/2	----
2501-12-12	1-1/16-12	3/4	----
2501-12-16	1-1/16-12	1	----
2501-12-20	1-1/16-12	1-1/4	----
2501-14-12	1-3/16-12	3/4	----
2501-14-16	1-3/16-12	1	----
2501-16-12	1-5/16-12	3/4	----
2501-16-16	1-5/16-12	1	----
2501-16-20	1-5/16-12	1-1/4	----
2501-20-16	1-5/8-12	1	----
2501-20-20	1-5/8-12	1-1/4	----
2501-20-24	1-5/8-12	1-1/2	----
2501-24-20	1-7/8-12	1-1/4	----
2501-24-24	1-7/8-12	1-1/2	----
2501-24-32	1-7/8-12	2	----
2501-32-24	2-1/2-12	1-1/2	----
2501-32-32	2-1/2-12	2	----
2501-40-40	3-12	2-1/2	----

## JIC ELBOW RESTRICTOR



Part #	JIC Size 1	Male Pipe Size 2	Restriction	
2501-RS-4-4	7/16-20	1/4	.062	----
2501-RS-6-6	9/16-18	3/8	.062	----
2501-RS-6-8	9/16-18	1/2	.062	----

### LONG MALE ELBOW

SAE 071502



25012  
202411R  
CCTX  
1208-LR  
C5425

Part #	JIC Size 1	Male Pipe Size 2	Length*	
2501-L-4-2	7/16-20	1/8	1.17"	----
2501-L-4-4	7/16-20	1/4	1.58"	----
2501-L-5-2	1/2-20	1/8	1.22"	----
2501-L-5-4	1/2-20	1/4	1.55"	----
2501-L-6-2	9/16-18	1/8	1.58"	----
2501-L-6-4	9/16-18	1/4	1.58"	----
2501-L-6-6	9/16-18	3/8	1.83"	----
2501-L-8-4	3/4-16	1/4	1.83"	----
2501-L-8-6	3/4-16	3/8	1.83"	----
2501-L-8-8	3/4-16	1/2	2.17"	----
2501-L-10-8	7/8-14	1/2	2.17"	----
2501-L-12-8	1-1/16-12	1/2	2.24"	----
2501-L-12-12	1-1/16-12	3/4	2.44"	----
2501-L-14-12	1-3/16-12	3/4	2.66"	----
2501-L-16-16	1-5/16-12	1	3.02"	----
2501-L-20-20	1-5/8-12	1-1/4	3.69"	----
2501-L-24-24	1-7/8-12	1-1/2	4.11"	----

\* Length = mid-JIC to end of threads  
Also available in Stainless Steel

Some sizes available in Stainless Steel

# HYDRAULIC ADAPTERS

# SHAPES STEEL 37° JIC FLARE

## JIC EXTRA-LONG MALE ELBOW

SAE 071602



2501LL  
202413R  
CCCTX  
1208-LLR  
C5435

Part #	JIC Size 1	Male Pipe Size 2	Length*	
2501-LL-4-2	7/16-20	1/8	1.56"	----
2501-LL-4-4	7/16-20	1/4	2.11"	----
2501-LL-5-4	1/2-20	1/4	2.04"	----
2501-LL-6-2	9/16-18	1/8	2.04"	----
2501-LL-6-4	9/16-18	1/4	2.08"	----
2501-LL-6-6	9/16-18	3/8	2.44"	----
2501-LL-8-4	3/4-16	1/4	2.42"	----
2501-LL-8-6	3/4-16	3/8	2.42"	----
2501-LL-8-8	3/4-16	1/2	2.88"	----
2501-LL-10-8	7/8-14	1/2	2.88"	----
2501-LL-12-8	1-1/16-12	1/2	3.25"	----
2501-LL-12-12	1-1/16-12	3/4	3.28"	----
2501-LL-14-12	1-3/16-12	3/4	3.63"	----
2501-LL-16-16	1-5/16-12	1	4.05"	----
2501-LL-20-20	1-5/8-12	1-1/4	5.00"	----
2501-LL-24-24	1-7/8-12	1-1/2	5.50"	----

## JIC EXTRA EXTRA LONG MALE ELBOW

2501LLL  
202414R



Part #	JIC Size 1	Male Pipe Size 2	Length*	
2501-LLL-4-2	7/16-20	1/8	2.31"	----
2501-LLL-4-4	7/16-20	1/4	3.00"	----
2501-LLL-6-4	9/16-18	1/4	3.06"	----
2501-LLL-6-6	9/16-18	3/8	3.06"	----
2501-LLL-8-6	3/4-16	3/8	3.75"	----
2501-LLL-8-8	3/4-16	1/2	3.75"	----
2501-LLL-10-8	7/8-14	1/2	4.50"	----
2501-LLL-12-12	1-1/16-12	3/4	5.03"	----
2501-LLL-16-16	1-5/16-12	1	6.34"	----

\* Length = mid-JIC to end of threads

## JIC MALE ELBOW SWIVEL



• swivel for installation only

Part #	JIC Thread Size 1	Male Pipe Size 2	
2501-S-4-4	7/16-20	1/4	----
2501-S-6-4	9/16-18	1/4	----
2501-S-6-6	9/16-18	3/8	----
2501-S-8-6	3/4-16	3/8	----
2501-S-8-8	3/4-16	1/2	----
2501-S-10-8	7/8-14	1/2	----
2501-S-12-12	1-1/16-12	3/4	----

## JIC FEMALE ELBOW

SAE 070203  
MS 51506



2502  
2025R  
DTX  
1240R  
C5455

Part #	JIC Thread Size 1	Female Pipe Size 2	
2502-4-2	7/16-20	1/8	----
2502-4-4	7/16-20	1/4	----
2502-4-6	7/16-20	3/8	----
2502-5-2	1/2-20	1/8	----
2502-5-4	1/2-20	1/4	----
2502-6-2	9/16-18	1/8	----
2502-6-4	9/16-18	1/4	----
2502-6-6	9/16-18	3/8	----
2502-6-8	9/16-18	1/2	----
2502-8-4	3/4-16	1/4	----
2502-8-6	3/4-16	3/8	----
2502-8-8	3/4-16	1/2	----
2502-8-12	3/4-16	3/4	----
2502-10-6	7/8-14	3/8	----
2502-10-8	7/8-14	1/2	----
2502-12-8	1-1/16-12	1/2	----
2502-12-12	1-1/16-12	3/4	----
2502-14-12	1-3/16-12	3/4	----
2502-16-12	1-5/16-12	3/4	----
2502-16-16	1-5/16-12	1	----
2502-20-20	1-5/8-12	1-1/4	----
2502-24-24	1-7/8-12	1-1/2	----
2502-32-32	2-1/2-12	2	----

Also available in Stainless Steel

## SHAPES STEEL 37° JIC FLARE

SAE 070302  
MS 51508

### JIC MALE 45° ELBOW



2503  
2023R  
VTX  
1206R  
C5355

Part #	JIC Thread Size 1	Male Pipe Size 2	
2503-2-2	5/16-24	1/8	----
2503-3-2	3/8-24	1/8	----
2503-4-2	7/16-20	1/8	----
2503-4-4	7/16-20	1/4	----
2503-4-6	7/16-20	3/8	----
2503-5-2	1/2-20	1/8	----
2503-5-4	1/2-20	1/4	----
2503-6-2	9/16-18	1/8	----
2503-6-4	9/16-18	1/4	----
2503-6-6	9/16-18	3/8	----
2503-6-8	9/16-18	1/2	----
2503-6-12	9/16-18	3/4	----
2503-8-4	3/4-16	1/4	----
2503-8-6	3/4-16	3/8	----
2503-8-8	3/4-16	1/2	----
2503-8-12	3/4-16	3/4	----
2503-10-6	7/8-14	3/8	----
2503-10-8	7/8-14	1/2	----
2503-10-12	7/8-14	3/4	----
2503-12-6	1-1/16-12	3/8	----
2503-12-8	1-1/16-12	1/2	----
2503-12-12	1-1/16-12	3/4	----
2503-12-16	1-1/16-12	1	----
2503-14-12	1-3/16-12	3/4	----
2503-16-12	1-5/16-12	3/4	----
2503-16-16	1-5/16-12	1	----
2503-16-20	1-5/16-12	1-1/4	----
2503-20-16	1-5/8-12	1	----
2503-20-20	1-5/8-12	1-1/4	----
2503-24-24	1-7/8-12	1-1/2	----
2503-32-32	2-1/2-12	2	----
2503-40-40	3-12	2-1/2	----

*Some sizes available in Stainless Steel*

### JIC 45° UNION ELBOW



2504

Part #	JIC Thread Size 1	JIC Thread Size 2	
2504-6	9/16-18	9/16-18	----
2504-8	3/4-16	3/4-16	----
2504-10	7/8-14	7/8-14	----
2504-12	1-1/16-12	1-1/16-12	----
2504-16	1-5/16-12	1-5/16-12	----
2504-20	1-5/8-12	1-5/8-12	----

## HYDRAULIC ADAPTERS

### JIC 45° FEMALE ELBOW

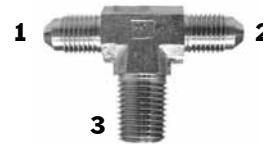


2505  
2044-R

Part #	JIC Thread Size 1	Female Pipe Size 2	
2505-6-4	9/16-18	1/4	----
2505-8-6	3/4-16	3/8	----
2505-10-8	7/8-14	1/2	----
2505-12-12	1-1/16-12	3/4	----

*More sizes available*

### JIC MALE BRANCH TEE



2601  
2030R  
STX  
1221R  
C5605

Part #	JIC Thread Size 1&2	Pipe Thread Size 3	
2601-2-2	5/16-24	1/8	----
2601-3-2	3/8-24	1/8	----
2601-4-2	7/16-20	1/8	----
2601-4-4	7/16-20	1/4	----
2601-5-2	1/2-20	1/8	----
2601-5-4	1/2-20	1/4	----
2601-6-4	9/16-18	1/4	----
2601-6-6	9/16-18	3/8	----
2601-8-4	3/4-16	1/4	----
2601-8-6	3/4-16	3/8	----
2601-8-8	3/4-16	1/2	----
2601-10-6	7/8-14	3/8	----
2601-10-8	7/8-14	1/2	----
2601-12-8	1-1/16-12	1/2	----
2601-12-12	1-1/16-12	3/4	----
2601-14-12	1-3/16-12	3/4	----
2601-16-12	1-5/16-12	3/4	----
2601-16-16	1-5/16-12	1	----
2601-20-20	1-5/8-12	1-1/4	----
2601-24-24	1-7/8-12	1-1/2	----
2601-32-32	2-1/2-12	2	----

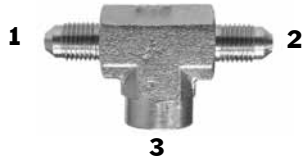
*Also available in Stainless Steel*

# HYDRAULIC ADAPTERS

# SHAPES STEEL 37° JIC FLARE

## JIC FEMALE BRANCH TEE

SAE 070427  
MS 51513

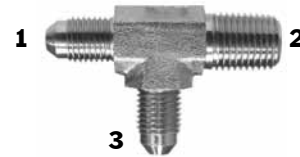


2602  
2031R  
OTX  
1228R  
C6566

Part #	JIC Thread Size 1 & 2	Female Pipe Size 3	
2602-3-2	3/8-24	1/8	----
2602-4-2	7/16-20	1/8	----
2602-4-4	7/16-20	1/4	----
2602-5-2	1/2-20	1/8	----
2602-6-4	9/16-18	1/4	----
2602-6-6	9/16-18	3/8	----
2602-8-8	3/4-16	1/2	----
2602-12-8	1-1/16-12	1/2	----
2602-12-12	1-1/16-12	3/4	----
2602-16-16	1-5/16-12	1	----
2602-20-20	1-5/8-12	1-1/4	----
2602-24-24	1-7/8-12	1-1/2	----
2602-32-32	2-1/2-12	2	----

## JIC MALE RUN TEE

SAE 070424  
MS 51511

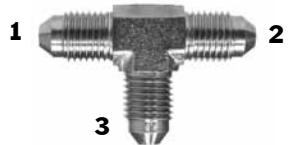


26C5  
2028R  
RTX  
1224R  
C5755

Part #	JIC Thread Size 1 & 3	Male Pipe Size 2	
2605-2-2	5/16-24	1/8	----
2605-3-2	3/8-24	1/8	----
2605-4-2	7/16-20	1/8	----
2605-4-4	7/16-20	1/4	----
2605-5-2	1/2-20	1/8	----
2605-5-4*	1/2-20	1/4	----
2605-6-4	9/16-18	1/4	----
2605-6-6	9/16-18	3/8	----
2605-8-4	3/4-16	1/4	----
2605-8-6	3/4-16	3/8	----
2605-8-8	3/4-16	1/2	----
2605-10-8	7/8-14	1/2	----
2605-12-8	1-1/16-12	1/2	----
2605-12-12	1-1/16-12	3/4	----
2605-14-12	1-3/16-12	3/4	----
2605-16-12*	1-5/16-12	3/4	----
2605-16-16	1-5/16-12	1	----
2605-20-20	1-5/8-12	1-1/4	----
2605-24-24	1-7/8-12	1-1/2	----
2605-32-32	2-1/2-12	2	----

## JIC UNION TEE

SAE 070401  
MS 51510



2603  
2033  
JTX  
1220  
C5705

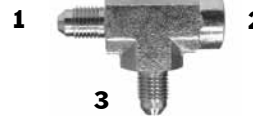
Part #	JIC Thread Size 1 & 2	JIC Thread Size 3	
2603-2-2	5/16-24	5/16-24	----
2603-3-3	3/8-24	3/8-24	----
2603-4-4	7/16-20	7/16-20	----
2603-5-5	1/2-20	1/2-20	----
2603-6	9/16-18	9/16-18	----
2603-8	3/4-16	3/4-16	----
2603-10	7/8-14	7/8-14	----
2603-12	1-1/16-12	1-1/16-12	----
2603-14	1-3/16-12	1-3/16-12	----
2603-16	1-5/16-12	1-5/16-12	----
2603-20	1-5/8-12	1-5/8-12	----
2603-24	1-7/8-12	1-7/8-12	----
2603-32	2-1/2-12	2-1/2-12	----

More reducing sizes available

*\*Braze-on Style*

*More sizes available*

## JIC FEMALE RUN TEE

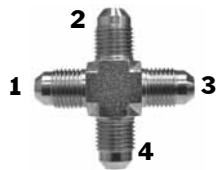


2606  
2029R  
MTX  
1226R  
C5805

Part #	JIC Thread Size 1 & 3	Female Pipe Size 2	
2606-3-2	3/8-24	1/8	----
2606-4-2	7/16-20	1/8	----
2606-4-4	7/16-20	1/4	----
2606-5-4	1/2-20	1/4	----
2606-6-4	9/16-18	1/4	----
2606-6-6	9/16-18	3/8	----
2606-8-6	3/4-16	3/8	----
2606-8-8	3/4-16	1/2	----
2606-10-8	7/8-14	1/2	----
2606-12-8	1-1/16-12	1/2	----
2606-12-12	1-1/16-12	3/4	----
2606-14-12	1-3/16-12	3/4	----
2606-16-16	1-5/16-12	1	----
2606-20-20	1-5/8-12	1-1/4	----
2606-24-24	1-7/8-12	1-1/2	----
2606-32-32	2-1/2-12	2	----

## SHAPES STEEL 37° JIC FLARE

### JIC UNION CROSS



Part #	JIC Thread Size 1&2	JIC Thread Size 3 & 4	
2650-4	7/16-20	7/16-20	----
2650-5	1/2-20	1/2-20	----
2650-6	9/16-18	9/16-18	----
2650-8	3/4-16	3/4-16	----
2650-10	7/8-14	7/8-14	----
2650-12	1-1/16-12	1-1/16-12	----
2650-16	1-5/16-12	1-5/16-12	----
2650-20	1-5/8-12	1-5/8-12	----
2650-24	1-7/8-12	1-7/8-12	----

More sizes available

### JIC TO PIPE RUN TEE



2611  
203103R

Part #	JIC Thread Size 1	Pipe Thread Size 2 & 3	
2611-6-6-6	9/16-18	3/8	----
2611-8-6-6	3/4-16	3/8	----
2611-8-8-8	3/4-16	1/2	----
2611-12-12-12	1-1/16-12	3/4	----
2611-16-16-16	1-5/16-12	1	----
2611-20-20-20	1-5/8-12	1-1/4	----

More sizes available

## STEEL BULKHEAD FITTINGS

### BULKHEAD LOCK NUT

SAE 070118  
MS 51860



1306  
894  
210212  
WLN  
1332  
C5624

Part #	Thread Size	
0306-4	7/16-20	----
0306-5	1/2-20	----
0306-6	9/16-18	----
0306-8	3/4-16	----
0306-10	7/8-14	----
0306-12	1-1/16-12	----
0306-14	1-3/16-12	----
0306-16	1-5/16-12	----
0306-20	1-5/8-12	----
0306-24	1-7/8-12	----
0306-32	2-1/2-12	----

## HYDRAULIC ADAPTERS

### JIC BULKHEAD UNION

SAE 070601  
MS 51520



2700  
2041R  
WTX  
1260  
C5325

Part #	JIC Thread Size 1	JIC Thread Size 2	
2700-4-4	7/16-20	7/16-20	----
2700-5-5	1/2-20	1/2-20	----
2700-6-6	9/16-18	9/16-18	----
2700-8	3/4-16	3/4-16	----
2700-10	7/8-14	7/8-14	----
2700-12	1-1/16-12	1-1/16-12	----
2700-14	1-3/16-12	1-3/16-12	----
2700-16	1-5/16-12	1-5/16-12	----
2700-20	1-5/8-12	1-5/8-12	----
2700-24	1-7/8-12	1-7/8-12	----
2700-32	2-1/2-12	2-1/2-12	----

### JIC BULKHEAD UNION ELBOW

SAE 070701  
MS 51507



2701  
2043R  
WETX  
1262  
C5525

Part #	JIC Thread Size 1	JIC Bulkhead Thread 2	
2701-4	7/16-20	7/16-20	----
2701-5	1/2-20	1/2-20	----
2701-6	9/16-18	9/16-18	----
2701-8	3/4-16	3/4-16	----
2701-10	7/8-14	7/8-14	----
2701-12	1-1/16-12	1-1/16-12	----
2701-14	1-3/16-12	1-3/16-12	----
2701-16	1-5/16-12	1-5/16-12	----
2701-20	1-5/8-12	1-5/8-12	----
2701-24	1-7/8-12	1-7/8-12	----

# HYDRAULIC ADAPTERS

# BULKHEAD FITTINGS STEEL 37° JIC FLARE

## JIC BULKHEAD UNION 45° ELBOW

SAE 070801  
MS 51509



2702  
2042  
WNTX  
1261  
C5375

Part #	JIC Thread Size 1	JIC Thread Size 2	
2702-4	7/16-20	7/16-20	----
2702-5	1/2-20	1/2-20	----
2702-6	9/16-18	9/16-18	----
2702-8	3/4-16	3/4-16	----
2702-10	7/8-14	7/8-14	----
2702-12	1-1/16-12	1-1/16-12	----
2702-16	1-5/16-12	1-5/16-12	----
2702-20	1-5/8-12	1-5/8-12	----
2702-24	1-7/8-12	1-7/8-12	----

*Also available in Stainless Steel*

## JIC BULKHEAD BRANCH TEE

SAE 070959  
MS 51515



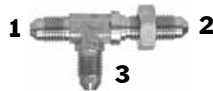
2703  
203002  
WJT  
1283  
C5725

Part #	JIC Thread Size 1&2	JIC Thread Size 3	
2703-4	7/16-20	7/16-20	----
2703-5	1/2-20	1/2-20	----
2703-6	9/16-18	9/16-18	----
2703-8	3/4-16	3/4-16	----
2703-10	7/8-14	7/8-14	----
2703-12	1-1/16-12	1-1/16-12	----
2703-16	1-5/16-12	1-5/16-12	----
2703-20	1-5/8-12	1-5/8-12	----
2703-24	1-7/8-12	1-7/8-12	----

*Also available in Stainless Steel*

## JIC BULKHEAD RUN TEE

SAE 070958  
MS 51516



2704  
203008  
WJTT  
1284  
C5726

Part #	JIC Thread Size 1&3	JIC Thread Size 2	
2704-4	7/16-20	7/16-20	----
2704-6	9/16-18	9/16-18	----
2704-8	3/4-16	3/4-16	----
2704-10	7/8-14	7/8-14	----
2704-12	1-1/16-12	1-1/16-12	----
2704-16	1-5/16-12	1-5/16-12	----

*More sizes available  
Also available in Stainless Steel*

## JIC TO FEMALE PIPE BULKHEAD



2705  
2239  
WGTX  
C5275

Part #	JIC Thread	Female Pipe Size 2	
2705-4-2	7/16-20	1/8	----
2705-4-4	7/16-20	1/4	----
2705-5-2	1/2-20	1/8	----
2705-6-4	9/16-18	1/4	----
2705-6-6	9/16-18	3/8	----
2705-8-6	3/4-16	3/8	----
2705-8-8	3/4-16	1/2	----
2705-10-8	7/8-14	1/2	----
2705-12-12	1-1/16-12	3/4	----
2705-14-12	1-3/16-12	3/4	----
2705-16-16	1-5/16-12	1	----
2705-20-20	1-5/8-12	1-1/4	----
2705-24-24	1-7/8-12	1-1/2	----
2705-32-32	2-1/2-12	2	----

*Also available in Stainless Steel*

## JIC TO MALE PIPE BULKHEAD



2706  
2240

Part #	JIC Thread Size 1	Pipe Thread Size 2	
2706-4-2	7/16-20	1/8	----
2706-4-4	7/16-20	1/4	----
2706-6-4	9/16-18	1/4	----
2706-6-6	9/16-18	3/8	----
2706-8-6	3/4-16	3/8	----
2706-8-8	3/4-16	1/2	----
2706-10-8	7/8-14	1/2	----
2706-12-12	1-1/16-12	3/4	----
2706-16-16	1-5/16-12	1	----
2706-20-20	1-5/8-12	1-1/4	----
2706-24-24	1-7/8-12	1-1/2	----
2706-32-32	2-1/2-12	2	----



**STEEL PIPE ADAPTERS**

**CONFORMANCE**

- SAE J514 for hex nipples, expanders, elbows, tees and crosses.
- SAE J514, J530 and J531 for bushings and plugs.
- Temperature Range: -65°F to +400°F

**MATERIALS**

- Steel- SAE 12L14 carbon steel trivalent chrome plated or bright silver finish.

**STYLES**

- Barstock
- Forged
- Chamfered - male ends have an internal 30-degree chamfer to mate with NPSM female swivel union connections. Many pipe fittings do not have this chamfer, as it is not required per SAE J514 standard.

**Caution: Although most pipe fittings have sufficient structural integrity to support the weight of many components, consult our technical support department for guidance in selection of parts for this purpose**

**WORKING PRESSURES**

The following table lists the recommended working pressures for steel NPTF hydraulic pipe fittings manufactured in accordance with SAE standard J514. Many factors such as number of threads engaged, impulsing, vibration, mechanical shock, removal and reassembly, thermal expansion and contraction may affect the integrity of the fitting or fitting connection. For these reasons, the recommended working pressures are actually lower than the capacity of the fittings. SAE recommends sufficient testing to be conducted to assure that performance levels will be safe and satisfactory, especially if installed in systems operating at elevated pressures or in severe conditions.

**SAE J514 NPTF PIPE WORKING PRESSURES**

Dash Size	NPTF Thread Size	4 TO 1 Minimum Burst PSI
-1	1/16-27	5000
-2	1/8-27	5000
-4	1/4-18	5000
-6	3/8-18	4000
-8	1/2-14	3000
-12	3/4-14	2500
-16	1-11 1/2	2000
-20	1-1/4-11-1/2	1150
-24	1-1/2-11-1/2	1000
-32	2-11-1/2	750

**NPTF DRY SEAL PIPE ASSEMBLY INSTRUCTIONS**

- Step 1.** Inspect port and fitting to ensure that both are free of contaminants and excessive burrs and nicks.
- Step 2.** Apply a stripe of an anaerobic liquid pipe sealant around the male threads leaving the first two threads uncovered. If no liquid sealant is available, wrap Teflon tape 1 1/2 to 2 turns in a clockwise direction, viewed from the pipe end, leaving the first two threads uncovered. **Caution: Teflon tape and some pipe sealants are destructive to hydraulic components. Always use extreme caution and follow manufacturers recommendations for proper application of any sealant in order to prevent contamination**
- Step 3.** Screw finger tight into the port.
- Step 4.** Wrench tighten the fitting to the correct turns past finger tight position. (See following table) When installing elbows or tees, consider final orientation position as to not exceed the recommended TPFT
- Caution: Never back off an installed pipe fitting to achieve proper alignment. Loosening installed pipe fittings will corrupt the seal and contribute to leakage and failure.**

Torque installation of pipe fittings is not a recommended practice. Thread taper and quality, different port and fitting materials, plating thickness and types, varying threads sealants, orientation, and other factors reduce the reliability of a torqued connection. If torque installation is required, refer to the following table for suggested torque values.

Dash Size	NPTF Thread Size	Turns Past Finger Tight
-1	1/16-27	2.0 - 3.0
-2	1/8-27	2.0 - 3.0
-4	1/4-18	2.0 - 3.0
-6	3/8-18	2.0 - 3.0
-8	1/2-14	2.0 - 3.0
-12	3/4-14	2.0 - 3.0
-16	1-11 1/2	1.5 - 2.5
-20	1-1/4-11-1/2	1.5 - 2.5
-24	1-1/2-11-1/2	1.5 - 2.5
-32	2-11-1/2	1.5 - 2.5

Dash Size	NPTF Thread Size	Torque Foot/LBS
-2	1/8-27	12
-4	1/4-18	25
-6	3/8-18	40
-8	1/2-14	54
-12	3/4-14	78
-16	1-11-1/2	112
-20	1-1/4-11-1/2	154
-24	1-1/2-11-1/2	211
-32	2-11-1/2	300

See STRAIGHT THREAD O-RING FITTING SECTION for assembly instructions and torque values for

**PIPE COUPLING**

SAE 140138



5000  
2096  
GG  
1273  
C3309

Part #	Female Pipe 1	Female Pipe 2	
5000-2	1/8	1/8	----
5000-4-2	1/4	1/8	----
5000-4	1/4	1/4	----
5000-6-2	3/8	1/8	----
5000-6-4	3/8	1/4	----
5000-6-6	3/8	3/8	----
5000-8-4	1/2	1/4	----
5000-8-6	1/2	3/8	----
5000-8	1/2	1/2	----
5000-12-6	3/4	3/8	----
5000-12-8	3/4	1/2	----
5000-12-12	3/4	3/4	----
5000-16-8	1	1/2	----
5000-16-12	1	3/4	----
5000-16	1	1	----
5000-20-12	1-1/4	3/4	----
5000-20-16	1-1/4	1	----
5000-20-20	1-1/4	1-1/4	----
5000-24	1-1/2	1-1/2	----
5000-32	2	2	----

**CLOSE NIPPLE**



**3,000 PSI**

Part #	Male Pipe 1&2	Length (Inches)	
5400CL-2	1/8	3/4	----
5400CL-4	1/4	7/8	----
5400CL-6	3/8	1	----
5400CL-8	1/2	1-1/8	----
5400CL-12	3/4	1-3/8	----
5400CL-16	1	1-1/2	----
5400CL-20	1-1/4	1-5/8	----

**LONG PIPE NIPPLE**



**3,000 PSI**

Part #	Male Pipe 1 & 2	Length (Inches)	
5400-2-1.5	1/8	1-1/2	----
5400-2-2	1/8	2	----
5400-2-2.5	1/8	2-1/2	----
5400-2-3	1/8	3	----
5400-4-2	1/4	2	----
5400-4-2.5	1/4	2-1/2	----
5400-4-3	1/4	3	----
5400-4-4	1/4	4	----
5400-4-6	1/4	6	----
5400-6-2	3/8	2	----
5400-6-2.5	3/8	2-1/2	----
5400-6-3	3/8	3	----
5400-6-4	3/8	4	----

Give me golf clubs, fresh air and a beautiful partner, and you can keep the clubs and the fresh air.

**- Jack Benny**

There is no similarity between golf and putting; they are two different games, one played in the air, and the other on the ground..

**- Ben Hogan**

Professional golf is the only sport where, if you win 20% of the time, you're the best

**- Jack Nicklaus**

# STEEL PIPE FITTINGS

# HYDRAULIC ADAPTERS

## STEEL PIPE FITTINGS

### HEX PIPE NIPPLE

SAE 140137



5404  
2083  
FF  
1252  
C3069

Part #	Male Pipe 1	Male Pipe 2	
5404-2	1/8	1/8	----
5404-4-2	1/4	1/8	----
5404-4	1/4	1/4	----
5404-6-2	3/8	1/8	----
5404-6-4	3/8	1/4	----
5404-6	3/8	3/8	----
5404-8-4	1/2	1/4	----
5404-8-6	1/2	3/8	----
5404-8	1/2	1/2	----
5404-12-6	3/4	3/8	----
5404-12-8	3/4	1/2	----
5404-12	3/4	3/4	----
5404-16-6	1	3/8	----
5404-16-8	1	1/2	----
5404-16-12	1	3/4	----
5404-16	1	1	----
5404-20-8	1-1/4	1/2	----
5404-20-12	1-1/4	3/4	----
5404-20-16	1-1/4	1	----
5404-20	1-1/4	1-1/4	----
5404-24-12	1-1/2	3/4	----
5404-24-16	1-1/2	1	----
5404-24-20	1-1/2	1-1/4	----
5404-24	1-1/2	1-1/2	----
5404-32-20	2	1-1/4	----
5404-32-24	2	1-1/2	----
5404-32	2	2	----

*More sizes & lengths available  
Also available in Stainless Steel*

What we think, or what we know, or what we believe is, in the end, of little consequence. The only consequence is what we do.

**- John Ruskin**

## EXPANDING PIPE ADAPTER

SAE 140139



5405  
2040  
FG-(R)  
1274  
C3209(R)

Part #	Male Pipe 1	Female Pipe 2	
5405-1-2	1/16	1/8	----
5405-2-2	1/8	1/8	----
5405-2-4	1/8	1/4	----
5405-2-6	1/8	3/8	----
5405-2-8	1/8	1/2	----
5405-4-4	1/4	1/4	----
5405-4-6	1/4	3/8	----
5405-4-8	1/4	1/2	----
5405-4-12	1/4	3/4	----
5405-6-6	3/8	3/8	----
5405-6-8	3/8	1/2	----
5405-6-12	3/8	3/4	----
5405-8-8	1/2	1/2	----
5405-8-12	1/2	3/4	----
5405-8-16	1/2	1	----
5405-12-12	3/4	3/4	----
5405-12-16	3/4	1	----
5405-12-20	3/4	1-1/4	----
5405-16-16	1	1	----
5405-16-20	1	1-1/4	----
5405-16-24	1	1-1/2	----
5405-20-20	1-1/4	1-1/4	----
5405-20-24	1-1/4	1-1/2	----
5405-24-24	1-1/2	1-1/2	----
5405-24-32	1-1/2	2	----

*Also available in Stainless Steel  
More sizes available*

I always wanted to be somebody, but now I realize I should have been more specific.

**- Lily Tomlin**

# HYDRAULIC ADAPTERS

# STEEL PIPE FITTINGS

## HEX REDUCER BUSHING



5406  
2081  
PTR  
1250  
C3109

Part #	Male Pipe	Female Pipe	
5406-4-2	1/4	1/8	----
5406-6-2	3/8	1/8	----
5406-6-4	3/8	1/4	----
5406-8-2	1/2	1/8	----
5406-8-4	1/2	1/4	----
5406-8-6	1/2	3/8	----
5406-12-2	3/4	1/8	----
5406-12-4	3/4	1/4	----
5406-12-6	3/4	3/8	----
5406-12-8	3/4	1/2	----
5406-16-4	1	1/4	----
5406-16-6	1	3/8	----
5406-16-8	1	1/2	----
5406-16-12	1	3/4	----
5406-20-4	1-1/4	1/4	----
5406-20-6	1-1/4	3/8	----
5406-20-8	1-1/4	1/2	----
5406-20-12	1-1/4	3/4	----
5406-20-16	1-1/4	1	----
5406-24-6	1-1/2	3/8	----
5406-24-8	1-1/2	1/2	----
5406-24-12	1-1/2	3/4	----
5406-24-16	1-1/2	1	----
5406-24-20	1-1/2	1-1/4	----
5406-32-8	2	1/2	----
5406-32-12	2	3/4	----
5406-32-16	2	1	----
5406-32-20	2	1-1/4	----
5406-32-24	2	1-1/2	----
5406-40-32	2-1/2	2	----
5406-48-32	3	2	----

*Some sizes available in Stainless Steel  
Also available in short pattern*

SAE 130109E

## HEX HEAD PLUG



5406P  
2082  
HP  
1251  
C3154

Part #	Male Pipe	
5406-P-2	1/8	----
5406-P-4	1/4	----
5406-P-6	3/8	----
5406-P-8	1/2	----
5406-P-12	3/4	----
5406-P-16	1	----
5406-P-20	1-1/4	----
5406-P-24	1-1/2	----
5406-P-32	2	----

*Also available in Stainless Steel*

## HOLLOW HEX PLUG

SAE 130109



Part #	Male Pipe	
5406-HHP-1	1/16	----
5406-HHP-2	1/8	----
5406-HHP-4	1/4	----
5406-HHP-6	3/8	----
5406-HHP-8	1/2	----
5406-HHP-12	3/4	----
5406-HHP-16	1	----
5406-HHP-20	1-1/4	----
5406-HHP-24	1-1/2	----
5406-HHP-32	2	----

## FLUSH HOLLOW HEX PLUG W/ 7/8 TAPER



Part #	Male Pipe	
5406-FLP-1	1/16	----
5406-FLP-2	1/8	----
5406-FLP-4	1/4	----
5406-FLP-6	3/8	----
5406-FLP-8	1/2	----
5406-FLP-12	3/4	----

## SQUARE HEAD PLUG

SAE 130109A



Part #	Male Pipe	
5406-SHP-2	1/8	----
5406-SHP-4	1/4	----
5406-SHP-6	3/8	----
5406-SHP-8	1/2	----
5406-SHP-12	3/4	----
5406-SHP-16	1	----
5406-SHP-20	1-1/4	----
5406-SHP-24	1-1/2	----
5406-SHP-32	2	----

# STEEL PIPE FITTINGS

# HYDRAULIC ADAPTERS

## PIPE CAP



Part #	Female Pipe	
5406-C-2	1/8	----
5406-C-4	1/4	----
5406-C-6	3/8	----
5406-C-8	1/2	----
5406-C-12	3/4	----
5406-C-16	1	----

Also available in Stainless Steel

## MALE ELBOW

SAE 140237



5500  
2085  
CR  
1275  
C3529

Part #	Male Pipe 1	Male Pipe 2	
5500-2	1/8	1/8	----
5500-4-2	1/4	1/8	----
5500-4	1/4	1/4	----
5500-6-4	3/8	1/4	----
5500-6	3/8	3/8	----
5500-8-4	1/2	1/4	----
5500-8-6	1/2	3/8	----
5500-8	1/2	1/2	----
5500-12-6	3/4	3/8	----
5500-12-8	3/4	1/2	----
5500-12-12	3/4	3/4	----
5500-16-12	1	3/4	----
5500-16	1	1	----
5500-20-16	1-1/4	1	----
5500-20-20	1-1/4	1-1/4	----
5500-24	1-1/2	1-1/2	----
5500-32	2	2	----

Also available in Stainless Steel  
More sizes available

## MALE ELBOW SWIVEL



• swivels for installation purpose only

Part #	Male Pipe 1	Male Pipe 2	
5700-S-4-4	1/4	1/4	----
5700-S-6-6	3/8	3/8	----
5700-S-8-8	1/2	1/2	----
5700-S-12-12	3/4	3/4	----

## 45° MALE ELBOW

5501  
2247



Part #	Male Pipe 1	Male Pipe 2	
5501-2-2	1/8	1/8	----
5501-4-4	1/4	1/4	----
5501-6-6	3/8	3/8	----
5501-8	1/2	1/2	----
5501-12-12	3/4	3/4	----
5501-16-16	1	1	----
5501-20-20	1-1/4	1-1/4	----
5501-24-24	1-1/2	1-1/2	----

## 90° STREET ELBOW

SAE 140239



5502  
2089  
CD  
1234R  
C3409

Part #	Male Pipe 1	Female Pipe 2	
5502-2	1/8	1/8	----
5502-2-4-4	1/8	1/4	----
5502-2-6	1/8	3/8	----
5502-4-2	1/4	1/8	----
5502-4	1/4	1/4	----
5502-4-6	1/4	3/8	----
5502-4-8-8	1/4	1/2	----
5502-6-2	3/8	1/8	----
5502-6-4	3/8	1/4	----
5502-6	3/8	3/8	----
5502-6-8	3/8	1/2	----
5502-8-4	1/2	1/4	----
5502-8-6	1/2	3/8	----
5502-8-8	1/2	1/2	----
5502-8-12	1/2	3/4	----
5502-12-8	3/4	1/2	----
5502-12	3/4	3/4	----
5502-12-16	3/4	1	----
5502-16-12	1	3/4	----
5502-16-16	1	1	----
5502-16-20	1	1-1/4	----
5502-20-16	1-1/4	1	----
5502-20	1-1/4	1-1/4	----
5502-24	1-1/2	1-1/2	----
5502-32	2	2	----

Also available in Stainless Steel  
More sizes available

# HYDRAULIC ADAPTERS

# STEEL PIPE FITTINGS

## STREET ELBOW SWIVEL



•Swivels for installation only

Part #	Male Pipe 1	Female Pipe 2	
5702-4-4	1/4	1/4	----
5702-6-6	3/8	3/8	----
5702-8-8	1/2	1/2	----
5702-12-12	3/4	3/4	----

## SHORT BODY STREET ELBOW



Part #	Male Pipe 1	Female Pipe 2	
5502-X-4	1/4	1/4	----
5502-X-6	3/8	3/8	----
5502-X-8	1/2	1/2	----

## 45° STREET ELBOW

SAE 140339



5503  
CD45  
1244

Part #	Male Pipe 1	Female Pipe 2	
5503-2	1/8	1/8	----
5503-4	1/4	1/4	----
5503-6	3/8	3/8	----
5503-8	1/2	1/2	----
5503-12-12	3/4	3/4	----
5503-16	1	1	----
5503-20	1-1/4	1-1/4	----
5503-24	1-1/2	1-1/2	----
5503-32	2	2	----

*More sizes available  
Also available in Stainless Steel*

## FEMALE ELBOW

SAE 140238



5504  
2087  
DD  
1245  
C3509

Part #	Female Pipe 1	Female Pipe 2	
5504-2	1/8	1/8	----
5504-4-2	1/4	1/8	----
5504-4	1/4	1/4	----
5504-6-4	3/8	1/4	----
5504-6	3/8	3/8	----
5504-8-4	1/2	1/4	----
5504-8-6	1/2	3/8	----
5504-8	1/2	1/2	----
5504-12-6	3/4	3/8	----
5504-12-8	3/4	1/2	----
5504-12	3/4	3/4	----
5504-16-12	1	3/4	----
5504-16	1	1	----
5504-20-16	1-1/4	1	----
5504-20	1-1/4	1-1/4	----
5504-24	1-1/2	1-1/2	----
5504-32	2	2	----

*More sizes available  
Also available in Stainless Steel*

## 45° FEMALE ELBOW

SAE 140338



5505  
DD45  
1241  
C3559

Part #	Female Pipe 1	Female Pipe 2	
5505-2	1/8	1/8	----
5505-4	1/4	1/4	----
5505-6	3/8	3/8	----
5505-8	1/2	1/2	----
5505-12	3/4	3/4	----
5505-16	1	1	----
5505-20	1-1/4	1-1/4	----

*More sizes available*

# STEEL PIPE FITTINGS

# HYDRAULIC ADAPTERS

## MALE PIPE TEE

SAE 140437



5600  
2257  
RRS

Part #	Male Pipe 1 & 2	Male Pipe 3	
5600-2-2	1/8	1/8	----
5600-4-4	1/4	1/4	----
5600-6-6	3/8	3/8	----
5600-8-8	1/2	1/2	----
5600-12	3/4	3/4	----
5600-16	1	1	----
5600-20	1-1/4	1-1/4	----

Also available in Stainless Steel

## FEMALE BRANCH PIPE TEE

SAE 140427



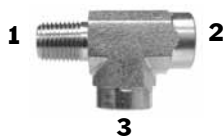
5601  
2256

Part #	Male Pipe 1 & 2	Female Pipe 3	
5601-2-2	1/8	1/8	----
5601-4-4	1/4	1/4	----
5601-6-6	3/8	3/8	----
5601-8	1/2	1/2	----
5601-12	3/4	3/4	----
5601-16	1	1	----
5601-20	1-1/4	1-1/4	----
5601-24	1-1/2	1-1/2	----

Some sizes available in Stainless Steel

## STREET PIPE TEE

SAE 140424



5602  
2092  
MRO  
1276  
C3759

Part #	Male Pipe 1	Female Pipe 2 & 3	
5602-2-2	1/8	1/8	----
5602-4-4	1/4	1/4	----
5602-6-6	3/8	3/8	----
5602-8-8	1/2	1/2	----
5602-12	3/4	3/4	----
5602-16	1	1	----
5602-20	1-1/4	1-1/4	----
5602-24	1-1/2	1-1/2	----
5602-32	2	2	----

Also available in Stainless Steel

## FEMALE RUN PIPE TEE

SAE 1404276



5603  
2093  
MMO  
1277

Part #	Male Pipe 1 & 3	Female Pipe 2	
5603-2-2	1/8	1/8	----
5603-4-4	1/4	1/4	----
5603-6-6	3/8	3/8	----
5603-8-8	1/2	1/2	----
5603-12	3/4	3/4	----
5603-16	1	1	----
5603-20	1-1/4	1-1/4	----
5603-24	1-1/2	1-1/2	----
5603-32	2	2	----

Some sizes available in Stainless Steel

## MALE BRANCH PIPE TEE



5604  
2091  
KMMOO  
1278  
C3609

Part #	Female Pipe 1 & 2	Male Pipe 3	
5604-2-2	1/8	1/8	----
5604-4-4	1/4	1/4	----
5604-6-6	3/8	3/8	----
5604-8-8	1/2	1/2	----
5604-12	3/4	3/4	----
5604-16	1	1	----
5604-20	1-1/4	1-1/4	----
5604-24	1-1/2	1-1/2	----
5604-32	2	2	----

Some sizes available in Stainless Steel

## FEMALE PIPE TEE

SAE 140438



5605  
2090  
1225  
C3709

Part #	Female Pipe	
5605-2-2	1/8	----
5605-4-4	1/4	----
5605-6-6	3/8	----
5605-8	1/2	----
5605-12	3/4	----
5605-16	1	----
5605-20	1-1/4	----
5605-24	1-1/2	----
5605-32	2	----

More sizes available  
All sizes available in Stainless Steel

SAE 140538

**FEMALE CROSS**

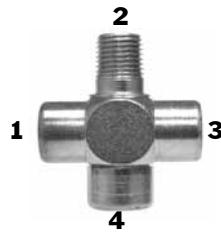


5652  
2080  
1279  
C3959

Part #	Female Pipe 1,2,3 & 4	
5652-2	1/8	----
5652-4	1/4	----
5652-6	3/8	----
5652-8	1/2	----
5652-12	3/4	----
5652-16	1	----
5652-20	1-1/4	----
5652-24	1-1/2	----
5652-32	2	----

*Also available in Stainless Steel*

**MALE BRANCH CROSS**



5655  
208007

Part #	Pipe Size 1, 2, 3 & 4	
5655-4-4-4-4	1/4	----
5655-6-6-6-6	3/8	----
5655-8-8-8-8	1/2	----
5655-12-12-12-12	3/4	----

The uglier a man's legs are, the better he plays golf. It's almost a law.

- H G Wells

I never pray on a golf course. Actually, the Lord answers my prayers everywhere except on the course.

- Billy Graham

If you watch a game, it's fun. If you play at it, it's recreation. If you work at it, it's golf.

- Bob Hope

While playing golf today I hit two good balls. I stepped on a rake.

- Henny Youngman

If you think it's hard to meet new people, try picking up the wrong golf ball.

- Jack Lemmon

You can make a lot of money in this game. Just ask my ex-wives. Both of them are so rich that neither of their husbands work.

- Lee Trevino

I'm not saying my golf game went bad, but if I grew tomatoes, they'd come up sliced.

- Lee Trevino



**STEEL STRAIGHT THREAD O-RING ADAPTERS**

Straights Pg. 283-285  
 Shapes Pg. 285-290  
 Bulkheads Pg. 290-291  
 Female Swivels Pg. 304-306  
 O-Ring Fittings Pg. 307-312

**CONFORMANCE**

- SAE J514
- SAE J1926/1, SAE J1926/3
- ISO 11926-1, ISO 11926-3

**MATERIALS**

- Steel- SAE 12L14 Carbon steel trivalent chrome plated or bright silver finish.

**WORKING PRESSURES**

The following table lists the recommended working pressures for steel O-ring Straight Thread Fittings made in accordance with SAE standard J514. Many factors such as surging, vibration, mechanical shock and over tightening may affect the integrity of the fitting connections. SAE recommends sufficient testing be conducted to assure that performance levels will be safe and satisfactory, especially if installed in systems operating at elevated pressures or in severe conditions. When using the fittings with different size or thread type, use the lower pressure rating of the two threads.

**Caution: Although most O-ring Straight Thread Fittings have sufficient structural integrity to support the weight of many components, consult with our technical support department for guidance in selection of parts for this purpose.**

**SAE J514 O-RING STRAIGHT THREAD FITTING PRESSURE RATINGS FOR STRAIGHT AND ADJUSTABLE THREAD PORT STUDS**

Dash Size	Straight Thread	4 to 1 Minimum Burst PSI Straight O-ring	4 to 1 Minimum Burst PSI Adjustable O-ring
-2	5/16-24	5000	5000
-3	3/8-24	5000	5000
-4	7/16-20	5000	4500
-5	1/2-20	5000	4000
-6	9/16-16	5000	4000
-8	3/4-16	4500	4000
-10	7/8-14	3500	3000
-12	1-1/16-12	3500	3000
-14	1-3/16-12	3000	2500
-16	1-5/16-12	3000	2500
-20	1-5/8-12	2500	2000
-24	1-7/8-12	2000	1500
-32	2-1/2-12	1500	1125

**STEEL STRAIGHT THREAD O-RING RECOMMENDED ASSEMBLY INSTRUCTIONS**

**NON-ADJUSTABLE STUD**

- Step 1.** Inspect port area to be free of any contaminant.
- Step 2.** Lubricate o-ring and threads on fitting.
- Step 3.** Turn fitting into port finger tight, then torque to the value shown in the following tables.

**J514 & J1926/3 TORQUE VALUES**

Dash Size	Straight Thread	Straight Stud Torque	Adjustable Stud Torque
-2	5/16-24	6	6
-3	3/8-24	6	6
-4	7/16-20	9	8
-5	1/2-20	14	9
-6	9/16-18	18	12
-8	3/4-16	27	20
-10	7/8-14	36	30
-12	1-1/16-12	65	44
-14	1-3/16-12	75	53
-16	1-5/16-12	85	59
-20	1-5/8-12	115	75
-24	1-7/8-12	125	105
-32	2-1/2-12	290	225

**ADJUSTABLE STUD**

- Step 1.** Follow steps 1 and 2 from the foregoing instructions, then proceed to the following steps below.
- Step 2.** Looking at fitting from end with nut/washer/O-ring assembly, turn nut clockwise as far as possible.
- Step 3.** Using wrench pad, turn fitting into port until the washer touches the port spot face. Continue turning fitting until washer touches the thread nearest wrench pad.
- Step 4.** Back off fitting counterclockwise not exceeding one revolution until it is orientated in the correct position.
- Step 5.** Place wrench on the wrench pad of fitting to prevent fitting from turning, and torque nut to the value shown in the following table.

**J1453 & J1926/2 TORQUE VALUES**

Dash Size	Straight Thread	Straight Stud Torque	Adjustable Stud Torque
-2	5/16-24	NA	NA
-3	3/8-24	NA	NA
-4	7/16-20	14	11
-5	1/2-20	18	14
-6	9/16-18	24	18
-8	3/4-16	40	28
-10	7/8-14	55	44
-12	1-1/16-12	95	65
-14	1-3/16-12	105	75
-16	1-5/16-12	120	85
-20	1-5/8-12	160	115
-24	1-7/8-12	175	125

**WHY WET TORQUE?**

Due to the difference in plating types and thickness, materials, and thread quality of different components, the coefficient of friction varies greatly on any given assembly. Lubrication not only produces a more consistent coefficient of friction, it increases clamping force on sealing area with less torque on the threads. Overtightening causes threads to yield, deform and lose their ability to maintain an adequate load or clamping force on the seating area. Extended operation and severe conditions cause further yielding which results in leaks. Overtightening is the single greatest cause for leaks in metal to metal seat hydraulic connections. It is our firm position, that to not wet torque, is to compromise consistency and quality for convenience.

# HYDRAULIC ADAPTERS

## JIC TO O-RING CONNECTOR

SAE 070120  
MS 51525



6400  
202702R  
F50X  
1231  
C5315

Part #	JIC Thread Size 1	O-Ring Thread 2	
6400-2	5/16-24	5/16-24	----
6400-3	3/8-24	3/8-24	----
6400-4	7/16-20	7/16-20	----
6400-4-3	7/16-20	3/8-24	----
6400-4-5	7/16-20	1/2-20	----
6400-4-6	7/16-20	9/16-18	----
6400-4-8	7/16-20	3/4-16	----
6400-4-10	7/16-20	7/8-14	----
6400-5	1/2-20	1/2-20	----
6400-5-4	1/2-20	7/16-20	----
6400-5-6	1/2-20	9/16-18	----
6400-6	9/16-18	9/16-18	----
6400-6-4	9/16-18	7/16-20	----
6400-6-5	9/16-18	1/2-20	----
6400-6-8	9/16-18	3/4-16	----
6400-6-10	9/16-18	7/8-14	----
6400-6-12	9/16-18	1-1/16-12	----
6400-6-16	9/16-18	1-5/16-12	----
6400-8	3/4-16	3/4-16	----
6400-8-4	3/4-16	7/16-20	----
6400-8-6	3/4-16	9/16-18	----
6400-8-10	3/4-16	7/8-14	----
6400-8-12	3/4-16	1-1/16-12	----
6400-8-16	3/4-16	1-5/16-12	----
6400-10	7/8-14	7/8-14	----
6400-10-6	7/8-14	9/16-18	----
6400-10-8	7/8-14	3/4-16	----
6400-10-12	7/8-14	1-1/16-12	----
6400-10-16	7/8-14	1-5/16-12	----
6400-12	1-1/16-12	1-1/16-12	----
6400-12-8	1-1/16-12	3/4-16	----
6400-12-10	1-1/16-12	7/8-14	----
6400-12-14	1-1/16-12	1-3/16-12	----
6400-12-16	1-1/16-12	1-5/16-12	----
6400-12-20	1-1/16-12	1-5/8-12	----
6400-14	1-3/16-12	1-3/16-12	----
6400-14-12	1-3/16-12	1-1/16-12	----
6400-14-16	1-3/16-12	1-5/16-12	----
6400-16	1-5/16-12	1-5/16-12	----
6400-16-10	1-5/16-12	7/8-14	----
6400-16-12	1-5/16-12	1-1/16-12	----
6400-16-14	1-5/16-12	1-3/16-12	----
6400-16-20	1-5/16-12	1-5/8-12	----
6400-16-24	1-5/16-12	1-7/8-12	----
6400-20	1-5/8-12	1-5/8-12	----
6400-20-12	1-5/8-12	1-1/16-12	----
6400-20-16	1-5/8-12	1-5/16-12	----
6400-20-24	1-5/8-12	1-7/8-12	----
6400-24	1-7/8-12	1-7/8-12	----
6400-24-20	1-7/8-12	1-5/8-12	----
6400-24-32	1-7/8-12	2-1/2-12	----
6400-32	2-1/2-12	2-1/2-12	----
6400-32-24	2-1/2-12	1-7/8-12	----

Also available in Stainless Steel  
Also Available in restrictor

# STEEL O-RING ADAPTERS

## LONG JIC TO O-RING CONNECTOR



6400L  
202713R  
FF50X  
1231LO  
C5316

Part #	JIC Thread Size 1	O-Ring Thread 2	Length*	
6400-L-4	7/16-20	7/16-20	2.12"	----
6400-L-6	9/16-18	9/16-18	2.31"	----
6400-L-8	3/4-16	3/4-16	2.68"	----
6400-L-10	7/8-14	7/8-14	3.00"	----
6400-L-12	1-1/16-12	1-1/16-12	3.56"	----
6400-L-16	1-5/16-12	1-5/16-12	4.00"	----
6400-L-20	1-5/8-12	1-5/8-12	4.62"	----

\*Length= Overall length of fitting  
Also available in Stainless Steel

## O-RING TO PIPE ADAPTER



6401  
F5X  
1264R  
C3249

Part #	O-Ring Thread 1	Male Pipe Thread 2	
6401-4-2	7/16-20	1/8	----
6401-4-4	7/16-20	1/4	----
6401-5-2	1/2-20	1/8	----
6401-6-4	9/16-18	1/4	----
6401-6-6	9/16-18	3/8	----
6401-6-8	9/16-18	1/2	----
6401-8-6	3/4-16	3/8	----
6401-8-8	3/4-16	1/2	----
6401-8-12	3/4-16	3/4	----
6401-10-8	7/8-14	1/2	----
6401-12-8	1-1/16-12	1/2	----
6401-12-12	1-1/16-12	3/4	----
6401-16-16	1-5/16-12	1	----
6401-20-20	1-5/8-12	1-1/4	----
6401-24-24	1-7/8-12	1-1/2	----
6401-32-32	2-1/2-12	2	----

More sizes available  
Some sizes available in Stainless Steel

HYDRAULIC

# STEEL O-RING ADAPTERS

## O-RING TO 37° JIC SWIVEL ADAPTER



6402  
2266  
F65X  
1213  
9316

Part #	O-Ring Thread 1	JIC Thread Size 2	
6402-O-4-4	7/16-20	7/16-20	----
6402-O-5-5	1/2-20	1/2-20	----
6402-O-6-6	9/16-18	9/16-18	----
6402-O-6-8	9/16-18	3/4-16	----
6402-O-8-8	3/4-16	3/4-16	----
6402-O-8-6	3/4-16	9/16-18	----
6402-O-10-10	7/8-14	7/8-14	----
6402-O-12-12	1-1/16-12	1-1/16-12	----
6402-O-14-14	1-3/16-12	1-3/16-12	----
6402-O-16-16	1-5/16-12	1-5/16-12	----
6402-O-16-12	1-5/16-12	1-1/16-12	----
6402-O-20-20	1-5/8-12	1-5/8-12	----
6402-O-24-24	1-7/8-12	1-7/8-12	----

*Some sizes available in Stainless Steel  
More sizes available*

## O-RING HEX NIPPLE UNION



Part #	O-Ring Thread 1	O-Ring Thread 2	
6403-O-4	7/16-20	7/16-20	----
6403-O-6	9/16-18	9/16-18	----
6403-O-6-4	9/16-18	7/16-20	----
6403-O-8	3/4-16	3/4-16	----
6403-O-10	7/8-14	7/8-14	----
6403-O-10-8	7/8-14	3/4-16	----
6403-O-12	1-1/16-12	1-1/16-12	----
6403-O-12-8	1-1/16-12	3/4-16	----
6403-O-12-10	1-1/16-12	7/8-14	----
6403-O-16	1-5/16-12	1-5/16-12	----

*More sizes available*

# HYDRAULIC ADAPTERS

## ADJUSTABLE O-RING HEX NIPPLE

SAE 090109A



6403NWO  
2220  
F50HAO  
1286

Part #	O-Ring Thread 1	O-Ring Thread 2	
6403-AO-4	7/16-20	7/16-20	----
6403-AO-6	9/16-18	9/16-18	----
6403-AO-8	3/4-16	3/4-16	----
6403-AO-8-6	3/4-16	9/16-18	----
6403-AO-10	7/8-14	7/8-14	----
6403-AO-10-8	7/8-14	3/4-16	----
6403-AO-12	1-1/16-12	1-1/16-12	----
6403-AO-12-8	1-1/16-12	3/4-16	----
6403-AO-12-10	1-1/16-12	7/8-14	----
6403-AO-16	1-5/16-12	1-5/16-12	----
6403-AO-16-12	1-5/16-12	1-1/16-12	----
6403-AO-20	1-5/8-12	1-5/8-12	----
6403-AO-24	1-7/8-12	1-7/8-12	----
6403-AO-32	2-1/2-12	2-1/2-12	----

*Also available in Stainless Steel*

## FEMALE O-RING TO MALE PIPE ADAPTER



6404  
2246R  
FHGJ  
1267R  
C3239

Part #	O-Ring Thread 1	Male Pipe Thread 2	
6404-4-2	7/16-20	1/8	----
6404-4-4	7/16-20	1/4	----
6404-6-4	9/16-18	1/4	----
6404-6-6	9/16-18	3/8	----
6404-6-8	9/16-18	1/2	----
6404-8-4	3/4-16	1/4	----
6404-8-6	3/4-16	3/8	----
6404-8-8	3/4-16	1/2	----
6404-10-8	7/8-14	1/2	----
6404-10-12	7/8-14	3/4	----
6404-10-16	7/8-14	1	----
6404-12-12	1-1/16-12	3/4	----
6404-16-16	1-5/16-12	1	----
6404-20-20	1-5/8-12	1-1/4	----

*More sizes available*

# HYDRAULIC ADAPTERS

## O-RING TO FEMALE PIPE ADAPTER



6405  
2216R  
F50G  
1268R  
C3269

Part #	O-Ring Thread 1	Female Pipe Thread 2	
6405-O-2-2	5/16-24	1/8	----
6405-O-2-4	5/16-24	1/4	----
6405-O-3-2	3/8-24	1/8	----
6405-O-3-4	3/8-24	1/4	----
6405-O-4-2	7/16-20	1/8	----
6405-O-4-4	7/16-20	1/4	----
6405-O-5-2	1/2-20	1/8	----
6405-O-5-4	1/2-20	1/4	----
6405-O-6-2	9/16-18	1/8	----
6405-O-6-4	9/16-18	1/4	----
6405-O-6-6	9/16-18	3/8	----
6405-O-6-8	9/16-18	1/2	----
6405-O-6-12	9/16-18	3/4	----
6405-O-8-4	3/4-16	1/4	----
6405-O-8-6	3/4-16	3/8	----
6405-O-8-8	3/4-16	1/2	----
6405-O-8-12	3/4-16	3/4	----
6405-O-10-4	7/8-14	1/4	----
6405-O-10-6	7/8-14	3/8	----
6405-O-10-8	7/8-14	1/2	----
6405-O-10-12	7/8-14	3/4	----
6405-O-12-6	1-1/16-12	3/8	----
6405-O-12-8	1-1/16-12	1/2	----
6405-O-12-12	1-1/16-12	3/4	----
6405-O-12-16	1-1/16-12	1	----
6405-O-14-8	1-3/16-12	1/2	----
6405-O-14-12	1-3/16-12	3/4	----
6405-O-14-16	1-3/16-12	1	----
6405-O-16-6	1-5/16-12	3/8	----
6405-O-16-8	1-5/16-12	1/2	----
6405-O-16-12	1-5/16-12	3/4	----
6405-O-16-16	1-5/16-12	1	----
6405-O-16-20	1-5/16-12	1-1/4	----
6405-O-20-12	1-5/8-12	3/4	----
6405-O-20-20	1-5/8-12	1-1/4	----
6405-O-20-24	1-5/8-12	1-1/2	----
6405-O-24-16	1-7/8-12	1	----
6405-O-24-20	1-7/8-12	1-1/4	----
6405-O-24-24	1-7/8-12	1-1/2	----
6405-O-32-20	2-1/2-12	1-1/4	----
6405-O-32-24	2-1/2-12	1-1/2	----
6405-O-32-32	2-1/2-12	2	----

*Some sizes available in Stainless Steel  
More sizes available*

# STEEL O-RING ADAPTERS

## O-RING HEX HEAD PLUG

SAE 090109A



6408  
900598  
P50N  
1265  
7237

Part #	O-Ring Thread	
6408-O-2	5/16-24	----
6408-O-3	3/8-24	----
6408-O-4	7/16-20	----
6408-O-5	1/2-20	----
6408-O-6	9/16-18	----
6408-O-8	3/4-16	----
6408-O-10	7/8-14	----
6408-O-12	1-1/16-12	----
6408-O-14	1-3/16-20	----
6408-O-16	1-5/16-12	----
6408-O-20	1-5/8-12	----
6408-O-24	1-7/8-12	----
6408-O-32	2-1/2-12	----

*Also available in Stainless Steel*

## O-RING HOLLOW HEX HEAD PLUG

SAE 090109B



6408HHP  
FF2138  
HP50N  
1256  
7238

Part #	O-Ring Thread	
6408-H-O-2	5/16-24	----
6408-H-O-3	3/8-24	----
6408-H-O-4	7/16-20	----
6408-H-O-5	1/2-20	----
6408-H-O-6	9/16-18	----
6408-H-O-8	3/4-16	----
6408-H-O-10	7/8-14	----
6408-H-O-12	1-1/16-12	----
6408-H-O-14	1-3/16-20	----
6408-H-O-16	1-5/16-12	----
6408-H-O-20	1-5/8-12	----
6408-H-O-24	1-7/8-12	----
6408-H-O-32	2-1/2-12	----

*Also available in Stainless Steel*

# STEEL O-RING ADAPTERS/ SWIVELS

# HYDRAULIC ADAPTERS

## O-RING PORT REDUCER/EXPANDER



6410  
FF1010  
F50G5  
1270  
7033

Part #	O-Ring Thread 1	O-Ring Thread 2	
6410-O-2-4	5/16-24	7/16-20	----
6410-O-4-5	7/16-20	1/2-20	----
6410-O-4-6	7/16-20	9/16-18	----
6410-O-6-4	9/16-18	7/16-20	----
6410-O-6-8	9/16-18	3/4-16	----
6410-O-8-4	3/4-16	7/16-20	----
6410-O-8-6	3/4-16	9/16-18	----
6410-O-8-10	3/4-16	7/8-14	----
6410-O-8-12	3/4-16	1-1/16-12	----
6410-O-10-4	7/8-14	7/16-20	----
6410-O-10-6	7/8-14	9/16-18	----
6410-O-10-8	7/8-14	3/4-16	----
6410-O-10-12	7/8-14	1-1/16-12	----
6410-O-12-4	1-1/16-12	7/16-20	----
6410-O-12-6	1-1/16-12	9/16-18	----
6410-O-12-8	1-1/16-12	3/4-16	----
6410-O-12-10	1-1/16-12	7/8-14	----
6410-O-12-14	1-1/16-12	1-3/16-12	----
6410-O-12-16	1-1/16-12	1-5/16-12	----
6410-O-14-8	1-3/16-12	3/4-16	----
6410-O-14-10	1-3/16-12	7/8-14	----
6410-O-14-12	1-3/16-12	1-1/16-12	----
6410-O-16-6	1-5/16-12	9/16-18	----
6410-O-16-8	1-5/16-12	3/4-16	----
6410-O-16-10	1-5/16-12	7/8-14	----
6410-O-16-12	1-5/16-12	1-1/16-12	----
6410-O-16-14	1-5/16-12	1-3/16-12	----
6410-O-16-20	1-5/16-12	1-5/8-12	----
6410-O-20-10	1-5/8-12	7/8-14	----
6410-O-20-12	1-5/8-12	1-1/16-12	----
6410-O-20-16	1-5/8-12	1-5/16-12	----
6410-O-20-24	1-5/8-12	1-7/8-12	----
6410-O-24-12	1-7/8-12	1-1/16-12	----
6410-O-24-16	1-7/8-12	1-5/16-12	----
6410-O-24-20	1-7/8-12	1-5/8-12	----
6410-O-32-16	2-1/2-12	1-5/16-12	----
6410-O-32-20	2-1/2-12	1-5/8-12	----
6410-O-32-24	2-1/2-12	1-7/8-12	----

*Some sizes available in Stainless Steel*  
*More sizes available*  
*Available in an extender*

## FEMALE SWIVELS JIC

### JIC SWIVEL NUT ELBOW

SAE 070221  
MS 51521



6500  
2071R  
C6X  
1236  
G5506

Part #	JIC Thread Size 1	JIC Thread Size 2	
6500-4	7/16-20	7/16-20	----
6500-5	1/2-20	1/2-20	----
6500-6	9/16-18	9/16-18	----
6500-8	3/4-16	3/4-16	----
6500-8-6	3/4-16	9/16-18	----
6500-10	7/8-14	7/8-14	----
6500-10-8	7/8-14	3/4-16	----
6500-12	1-1/16-12	1-1/16-12	----
6500-12-10	1-1/16-12	7/8-14	----
6500-14	1-3/16-12	1-3/16-12	----
6500-16	1-5/16-12	1-5/16-12	----
6500-20	1-5/8-12	1-5/8-12	----
6500-24	1-7/8-12	1-7/8-12	----
6500-32	2-1/2-12	2-1/2-12	----

*More sizes available*  
*Some sizes available in Stainless Steel*

### JIC SWIVEL TO MALE PIPE ELBOW



6501  
2250  
1247R  
TF5406

Part #	JIC Thread Size 1	Male Pipe Thread 2	
6501-4-2	7/16-20	1/8	----
6501-4-4	7/16-20	1/4	----
6501-6-4	9/16-18	1/4	----
6501-6-6	9/16-18	3/8	----
6501-8-6	3/4-16	3/8	----
6501-8-8	3/4-16	1/2	----
6501-10-8	7/8-14	1/2	----
6501-12-12	1-1/16-12	3/4	----
6501-14-12	1-3/16-12	3/4	----
6501-16-16	1-5/16-12	1	----
6501-20-20	1-5/8-12	1-1/4	----
6501-24-24	1-7/8-12	1-1/2	----
6501-32-32	2-1/2-12	2	----

*Also available in Stainless Steel*  
*More sizes available*

## HYDRAULIC ADAPTERS

### JIC SWIVEL 45° ELBOW

SAE 070321  
MS 51522



6502  
2070R  
V6X  
1237  
C5356

Part #	JIC Thread	JIC Thread	
6502-4	7/16-20	7/16-20	----
6502-5	1/2-20	1/2-20	----
6502-6	9/16-18	9/16-18	----
6502-8	3/4-16	3/4-16	----
6502-10	7/8-14	7/8-14	----
6502-12	1-1/16-12	1-1/16-12	----
6502-14	1-3/16-12	1-3/16-12	----
6502-16	1-5/16-12	1-5/16-12	----
6502-20	1-5/8-12	1-5/8-12	----
6502-24	1-7/8-12	1-7/8-12	----
6502-32	2-1/2-12	2-1/2-12	----

*Some sizes available in Stainless Steel*

### JIC SWIVEL TO FEMALE PIPE ELBOW



Part #	JIC Thread Size 1	Female Pipe Thread 2	
6503-6-4	9/16-18	1/4	----
6503-6-6	9/16-18	3/8	----
6503-8-6	3/4-16	3/8	----
6503-8-8	3/4-16	1/2	----
6503-10-8	7/8-14	1/2	----
6503-12-12	1-1/16-12	3/4	----

*Also available in Stainless Steel  
More sizes available*

### JIC SWIVEL CONNECTOR

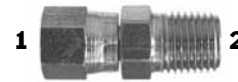


6504  
1205

Part #	JIC Thread	JIC Thread	
6504-4-4	7/16-20	7/16-20	----
6504-6-6	9/16-18	9/16-18	----
6504-8-8	3/4-16	3/4-16	----
6504-10-10	7/8-14	7/8-14	----
6504-12-12	1-1/16-12	1-1/16-12	----
6504-16-16	1-5/16-12	1-5/16-12	----
6504-20-20	1-5/8-12	1-5/8-12	----
6504-24-24	1-7/8-12	1-7/8-12	----
6504-32-32	2-1/2-12	2-1/2-12	----

## FEMALE SWIVELS

### JIC SWIVEL TO MALE PIPE ADAPTER



6505  
2018  
F6X  
1211  
9100R

Part #	JIC Thread Size 1	Male Pipe Thread 2	
6505-4-2	7/16-20	1/8	----
6505-4-4	7/16-20	1/4	----
6505-5-4	1/2-20	1/4	----
6505-6-4	9/16-18	1/4	----
6505-6-6	9/16-18	3/8	----
6505-8-6	3/4-16	3/8	----
6505-8-8	3/4-16	1/2	----
6505-10-8	7/8-14	1/2	----
6505-10-12	7/8-14	3/4	----
6505-12-8	1-1/16-12	1/2	----
6505-12-12	1-1/16-12	3/4	----
6505-16-12	1-5/16-12	3/4	----
6505-16-16	1-5/16-12	1	----
6505-20-20	1-5/8-12	1-1/4	----
6505-24-24	1-7/8-12	1-1/2	----
6505-32-32	2-1/2-12	2	----

*Also available in Stainless Steel*

### JIC SWIVEL TO FEMALE PIPE ADAPTER



6506  
2242  
1215

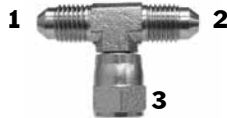
Part #	JIC Thread Size 1	Female Pipe Thread 2	
6506-4-2	7/16-20	1/8	----
6506-4-4	7/16-20	1/4	----
6506-6-4	9/16-18	1/4	----
6506-6-6	9/16-18	3/8	----
6506-6-8	9/16-18	1/2	----
6506-8-6	3/4-16	3/8	----
6506-8-8	3/4-16	1/2	----
6506-8-12	3/4-16	3/4	----
6506-10-6	7/8-14	3/8	----
6506-10-8	7/8-14	1/2	----
6506-10-12	7/8-14	3/4	----
6506-12-8	1-1/16-12	1/2	----
6506-12-12	1-1/16-12	3/4	----
6506-14-12	1-3/16-12	3/4	----
6506-16-16	1-5/16-12	1	----
6506-20-20	1-5/8-12	1-1/4	----
6506-24-24	1-7/8-12	1-1/2	----
6506-32-32	2-1/2-12	2	----

*More sizes available  
Also available in Stainless Steel*

## FEMALE SWIVELS

### JIC SWIVEL BRANCH TEE

SAE 070433  
MS 51524



6600  
203101R  
65X  
1227  
C5707

Part #	JIC Thread Size 1 & 2	JIC Female Thread 3	
6600-4-4	7/16-20	7/16-20	----
6600-5-5	1/2-20	1/2-20	----
6600-6-6	9/16-18	9/16-18	----
6600-8-8	3/4-16	3/4-16	----
6600-10	7/8-14	7/8-14	----
6600-12	1-1/16-12	1-1/16-12	----
6600-14	1-3/16-12	1-3/16-12	----
6600-16	1-5/16-12	1-5/16-12	----
6600-20	1-5/8-12	1-5/8-12	----
6600-24	1-7/8-12	1-7/8-12	----

*More sizes available*

### JIC SWIVEL RUN TEE

SAE 070432  
MS 51523



6602  
203102R  
R6X  
1248  
C5706

Part #	JIC Thread Size 1 & 3	JIC Female Thread 2	
6602-4	7/16-20	7/16-20	----
6602-5	1/2-20	1/2-20	----
6602-6	9/16-18	9/16-18	----
6602-8	3/4-16	3/4-16	----
6602-10	7/8-14	7/8-14	----
6602-12	1-1/16-12	1-1/16-12	----
6602-14	1-3/16-12	1-3/16-12	----
6602-16	1-5/16-12	1-5/16-12	----
6602-20	1-5/8-12	1-5/8-12	----
6602-24	1-7/8-12	1-7/8-12	----
6602-32	2-1/2-12	2-1/2-12	----

*More sizes available*

*Also available in Stainless Steel*

## HYDRAULIC ADAPTERS

### JIC BENT TUBE SWIVEL

#### NUT ELBOW



Part #	JIC Thread Size 1	JIC Thread Size 2	
6701-4	7/16-20	7/16-20	----
6701-6	9/16-18	9/16-18	----
6701-8	3/4-16	3/4-16	----
6701-10	7/8-14	7/8-14	----
6701-12	1-1/16-12	1-1/16-12	----
6701-16	1-5/16-12	1-5/16-12	----
6701-20	1-5/8-12	1-5/8-12	----
6701-24	1-7/8-12	1-7/8-12	----

### JIC LONG BENT TUBE SWIVEL NUT ELBOW



Part #	JIC Thread Size 1	JIC Thread Size 2	
6701-L-4	7/16-20	7/16-20	----
6701-L-6	9/16-18	9/16-18	----
6701-L-8	3/4-16	3/4-16	----
6701-L-10	7/8-14	7/8-14	----
6701-L-12	1-1/16-12	1-1/16-12	----
6701-L-16	1-5/16-12	1-5/16-12	----
6701-L-20	1-5/8-12	1-5/8-12	----

### JIC EXTRA HEAVY BENT TUBE SWIVEL NUT ELBOW



Meets SAE  
100R10 pressures

Part #	JIC Thread Size 1	JIC Thread Size 2	
6701-XH-8	3/4-16	3/4-16	----
6701-XH-12	1-1/16-12	1-1/16-12	----
6701-XH-16	1-5/16-12	1-5/16-12	----
6701-XH-20	1-5/8-12	1-5/8-12	----
6701-XH-24	1-7/8-12	1-7/8-12	----

# HYDRAULIC ADAPTERS

# STEEL SAE O-RING

## JIC EXTRA HEAVY LONG BENT TUBE SWIVEL NUT ELBOW



Meets SAE 100R10 pressures

Part #	JIC Thread Size 1	JIC Thread Size 2	
6701-LXH-8	3/4-16	3/4-16	----
6701-LXH-12	1-1/16-12	1-1/16-12	----
6701-LXH-16	1-5/16-12	1-5/16-12	----

## JIC 45° BENT TUBE SWIVEL NUT ELBOW



Part #	JIC Thread Size 1	JIC Thread Size 2	
6702-6	9/16-18	9/16-18	----
6702-8	3/4-16	3/4-16	----
6702-10	7/8-14	7/8-14	----
6702-12	1-1/16-12	1-1/16-12	----
6702-16	1-5/16-12	1-5/16-12	----

The world can only be grasped by action, not by contemplation.

- Jacob Bronowski

## STEEL SAE O-RING FITTINGS

### JIC TO O-RING ELBOW CONNECTOR

SAE 070220  
MS 51527



6801  
2062R  
C50X  
1238L  
C5515

Part #	JIC Thread Size 1	O-Ring Thread Size 2	
6801-NWO-2	5/16-24	5/16-24	----
6801-NWO-3	3/8-24	3/8-24	----
6801-NWO-4	7/16-20	7/16-20	----
6801-NWO-4-3	7/16-20	3/8-24	----
6801-NWO-4-5	7/16-20	1/2-20	----
6801-NWO-4-6	7/16-20	9/16-18	----
6801-NWO-4-8	7/16-20	3/4-16	----
6801-NWO-5	1/2-20	1/2-20	----
6801-NWO-5-4	1/2-20	7/16-20	----
6801-NWO-5-6	1/2-20	8/16-18	----
6801-NWO-6	9/16-18	9/16-18	----
6801-NWO-6-4	9/16-18	7/16-20	----
6801-NWO-6-5	9/16-18	1/2-20	----
6801-NWO-6-8	9/16-18	3/4-16	----
6801-NWO-6-10	9/16-18	7/8-14	----
6801-NWO-6-12	9/16-18	1-1/16-12	----
6801-NWO-8	3/4-16	3/4-16	----
6801-NWO-8-6	3/4-16	9/16-18	----
6801-NWO-8-10	3/4-16	7/8-14	----
6801-NWO-8-12	3/4-16	1-1/16-12	----
6801-NWO-8-16	3/4-16	1-5/16-12	----
6801-NWO-10	7/8-14	7/8-14	----
6801-NWO-10-6	7/8-14	9/16-18	----
6801-NWO-10-8	7/8-14	3/4-16	----
6801-NWO-10-12	7/8-14	1-1/16-12	----
6801-NWO-10-16	7/8-14	1-5/16-12	----
6801-NWO-12	1-1/16-12	1-1/16-12	----
6801-NWO-12-8	1-1/16-12	3/4-16	----
6801-NWO-12-10	1-1/16-12	7/8-14	----
6801-NWO-12-14	1-1/16-12	1-3/16-12	----
6801-NWO-12-16	1-1/16-12	1-5/16-12	----
6801-NWO-12-20	1-1/16-12	1-5/8-12	----
6801-NWO-14	1-3/16-12	1-3/16-12	----
6801-NWO-14-12	1-3/16-12	1-1/16-12	----
6801-NWO-14-16	1-3/16-12	1-5/16-12	----
6801-NWO-16	1-5/16-12	1-5/16-12	----
6801-NWO-16-12	1-5/16-12	1-1/16-12	----
6801-NWO-16-14	1-5/16-12	1-3/16-12	----
6801-NWO-16-20	1-5/16-12	1-5/8-12	----
6801-NWO-20	1-5/8-12	1-5/8-12	----
6801-NWO-20-12	1-5/8-12	1-1/16-12	----
6801-NWO-20-16	1-5/8-12	1-5/16-12	----
6801-NWO-20-24	1-5/8-12	1-7/8-12	----
6801-NWO-24	1-7/8-12	1-7/8-12	----
6801-NWO-24-20	1-7/8-12	1-5/8-12	----
6801-NWO-32	2-1/2-12	2-1/2-12	----

Some sizes available in Stainless Steel  
More sizes available

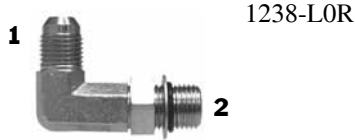
HYDRAULIC



# STEEL SAE O-RING

# HYDRAULIC ADAPTERS

## LONG JIC TO O-RING ELBOW

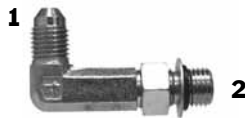


1238-LOR

Part #	JIC Thread Size 1	O-Ring Thread Size 2	
6801-L-NWO-4	7/16-20	7/16-20	----
6801-L-NWO-6	9/16-18	9/16-18	----
6801-L-NWO-6-8	9/16-18	3/4-16	----
6801-L-NWO-8	3/4-16	3/4-16	----
6801-L-NWO-8-10	3/4-16	7/8-14	----
6801-L-NWO-10	7/8-14	7/8-14	----
6801-LNWO-12	1-1/16-12	1-1/16-12	----
6801-LNWO-16	1-5/16-12	1-5/16-12	----

More sizes available

## EXTRA LONG JIC TO O-RING ELBOW

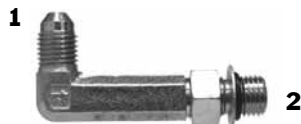


6801-LL  
206209R  
1238-LLR

Part #	JIC Thread Size 1	O-Ring Thread Size 2	
6801-LL-NWO-4	7/16-20	7/16-20	----
6801-LL-NWO-6	9/16-18	9/16-18	----
6801-LL-NWO-6-8	9/16-18	3/4-16	----
6801-LL-NWO-8	3/4-16	3/4-16	----
6801-LL-NWO-8-10	3/4-16	7/8-14	----
6801-LL-NWO-10	7/8-14	7/8-14	----
6801-LL-NWO-12	1-1/16-12	1-1/16-12	----
6801-LL-NWO-16	1-5/16-12	1-5/16-12	----

More sizes available

## EXTRA-EXTRA LONG JIC TO O-RING ELBOW



Part #	JIC Thread Size 1	O-Ring Thread Size 2	
6801-LLL-NWO-6	9/16-18	9/16-18	----
6801-LLL-NWO-8	3/4-16	3/4-16	----
6801-LLL-NWO-10	7/8-14	7/8-14	----

## JIC TO O-RING SWIVEL ELBOW



• Swivel for installation only

Part #	JIC Thread Size 1	O-Ring Thread Size 2	
6801-NWS-6-6	9/16-18	9/16-18	----
6801-NWS-8-8	3/4-16	3/4-16	----
6801-NWS-10-10	7/8-14	7/8-14	----

## JIC TO O-RING 45° ELBOW

SAE 070320  
MS 51528



6802  
2061  
V50X  
1240R  
C5716

Part #	JIC Thread Size 1	O-Ring Thread Size 2	
6802-NWO-4	7/16-20	7/16-20	----
6802-NWO-4-6	7/16-20	9/16-18	----
6802-NWO-4-8	7/16-20	3/4-16	----
6802-NWO-5	1/2-20	1/2-20	----
6802-NWO-5-8	1/2-20	3/4-16	----
6802-NWO-6	9/16-18	9/16-18	----
6802-NWO-6-8	9/16-18	3/4-16	----
6802-NWO-6-10	9/16-18	7/8-14	----
6802-NWO-8	3/4-16	3/4-16	----
6802-NWO-8-6	3/4-16	9/16-18	----
6802-NWO-8-10	3/4-16	7/8-14	----
6802-NWO-8-12	3/4-16	1-1/16-12	----
6802-NWO-10	7/8-14	7/8-14	----
6802-NWO-10-8	7/8-14	3/4-16	----
6802-NWO-10-12	7/8-14	1-1/16-12	----
6802-NWO-12	1-1/16-12	1-1/16-12	----
6802-NWO-12-14	1-1/16-12	1-3/16-12	----
6802-NWO-12-16	1-1/16-12	1-5/16-12	----
6802-NWO-14	1-3/16-12	1-3/16-12	----
6802-NWO-16	1-5/16-12	1-5/16-12	----
6802-NWO-16-12	1-5/16-12	1-1/16-12	----
6802-NWO-16-20	1-5/16-12	1-5/8-12	----
6802-NWO-20	1-5/8-12	1-5/8-12	----
6802-NWO-20-16	1-5/8-12	1-5/16-12	----
6802-NWO-24	1-7/8-12	1-7/8-12	----
6802-NWO-32	2-1/2-12	2-1/2-12	----

Some sizes available in Stainless Steel

More sizes available

## HYDRAULIC ADAPTERS

## STEEL SAE O-RING

SAE 070429  
MS 51529

### JIC TO O-RING BRANCH TEE



6803  
203003X  
S50X  
1265R  
C5716

Part #	JIC Thread Size 1 & 2	O-Ring Thread Size 3	
6803-NWO-4	7/16-20	7/16-20	----
6803-NWO-5	1/2-20	1/2-20	----
6803-NWO-6	9/16-18	9/16-18	----
6803-NWO-6-8	9/16-18	3/4-16	----
6803-NWO-8	3/4-16	3/4-16	----
6803-NWO-8-10	3/4-16	7/8-14	----
6803-NWO-10	7/8-14	7/8-14	----
6803-NWO-12	1-1/16-12	1-1/16-12	----
6803-NWO-14	1-3/16-12	1-3/16-12	----
6803-NWO-16	1-5/16-12	1-5/16-12	----
6803-NWO-16-12	1-5/16-12	1-1/16-12	----
6803-NWO-20	1-5/8-12	1-5/8-12	----
6803-NWO-24	1-7/8-12	1-7/8-12	----
6803-NWO-32	2-1/2-12	2-1/2-12	----

*Some sizes available in Stainless Steel  
More sizes available*

SAE 070428  
MS 51530

### JIC TO O-RING RUN TEE



6804  
203005R  
R50X  
1266R  
C3459

Part #	JIC Thread Size 1 & 3	O-Ring Thread Size 2	
6804-NWO-4	7/16-20	7/16-20	----
6804-NWO-5	1/2-20	1/2-20	----
6804-NWO-6	9/16-18	9/16-18	----
6804-NWO-6-8	9/16-18	3/4-16	----
6804-NWO-8	3/4-16	3/4-16	----
6804-NWO-8-10	3/4-16	7/8-14	----
6804-NWO-10	7/8-14	7/8-14	----
6804-NWO-12	1-1/16-12	1-1/16-12	----
6804-NWO-16	1-5/16-12	1-5/16-12	----
6804-NWO-16-12	1-5/16-12	1-1/16-12	----
6804-NWO-20	1-5/8-12	1-5/8-12	----
6804-NWO-24	1-7/8-12	1-7/8-12	----
6804-NWO-32	2-1/2-12	2-1/2-12	----

*More sizes available  
Also available in stainless steel*

### O-RING TO FEMALE PIPE ELBOW



6805  
206801R  
AE0G  
1264  
C3469

Part #	O-Ring Thread Size 1	Pipe Thread Size 2	
6805-NWO-4-2	7/16-20	1/8	----
6805-NWO-4-4	7/16-20	1/4	----
6805-NWO-5-2	1/2-20	1/8	----
6805-NWO-6-4	9/16-18	1/4	----
6805-NWO-6-6	9/16-18	3/8	----
6805-NWO-8-6	3/4-16	3/8	----
6805-NWO-8-8	3/4-16	1/2	----
6805-NWO-10-8	7/8-14	1/2	----
6805-NWO-12-12	1-1/16-12	3/4	----
6805-NWO-14-12	1-3/16-12	3/4	----
6805-NWO-16-16	1-5/16-12	1	----
6805-NWO-20-20	1-5/8-12	1-1/4	----
6805-NWO-24-24	1-7/8-12	1-1/2	----

*More sizes available*

### EXTRA LONG O-RING TO FEMALE PIPE ELBOW



Part #	O-Ring Thread Size 1	Pipe Thread Size 2	
6805-LL-8-6	3/4-16	3/8	----
6805-LL-10-8	7/8-14	1/2	----
6805-LL-12-12	1-1/16-12	3/4	----
6805-LL-16-16	1-5/16-12	1	----

Always be a first-rate version of yourself, instead  
of a second-rate version of someone else.

- Judy Garland

# STEEL SAE O-RING

# HYDRAULIC ADAPTERS

## O-RING TO MALE PIPE ELBOW



6806  
1263  
TF3569

Part #	O-Ring Thread Size 1	Pipe Thread Size 2	
6806-NWO-4-2	7/16-20	1/8	----
6806-NWO-4-4	7/16-20	1/4	----
6806-NWO-6-4	9/16-18	1/4	----
6806-NWO-6-6	9/16-18	3/8	----
6806-NWO-8-6	3/4-16	3/8	----
6806-NWO-8-8	3/4-16	1/2	----
6806-NWO-10-8	7/8-14	1/2	----
6806-NWO-12-12	1-1/16-12	3/4	----
6806-NWO-16-16	1-5/16-12	1	----
6806-NWO-20-20	1-5/8-12	1-1/4	----
6806-NWO-24-24	1-7/8-12	1-1/2	----
6806-NWO-32-32	2-1/2-12	2	----

*More sizes available*

## O-RING TO O-RING



Part #	O-Ring Thread Size 1 & 2	
6807-NWO-4-4	7/16-20	----
6807-NWO-6-6	9/16-18	----
6807-NWO-8-8	3/4-16	----
6807-NWO-10-10	7/8-14	----
6807-NWO-12-12	1-1/16-12	----
6807-NWO-16-16	1-5/16-12	----
6807-NWO-20-20	1-5/8-12	----
6807-NWO-24-24	1-7/8-12	----

*More sizes available*

## 37° JIC SWIVEL NUT TO O-RING ELBOW



Part #	O-Ring Thread Size 1	JIC Thread Size 2	
6809-NWO-4-4	7/16-20	7/16-20	----
6809-NWO-6-6	9/16-18	9/16-18	----
6809-NWO-8-8	3/4-16	3/4-16	----
6809-NWO-8-10	3/4-16	7/8-16	----
6809-NWO-10-10	7/8-14	7/8-14	----
6809-NWO-12-12	1-1/16-12	1-1/16-12	----
6809-NWO-16-16	1-5/16-12	1-5/16-12	----
6809-NWO-20-20	1-5/8-12	1-5/8-12	----

## FEMALE O-RING TO MALE O-RING ELBOW



Part #	O-Ring Thread Size 1	O-Ring Thread Size 2	
6815-NWO-6-6	9/16-18	9/16-18	----
6815-NWO-8-8	3/4-16	3/4-16	----
6815-NWO-10-10	7/8-14	7/8-14	----
6815-NWO-12-12	1-1/16-12	1-1/16-12	----

*More sizes available*

## O-RING TO FEMALE PIPE BRANCH TEE



Part #	O-Ring Thread Size 1	Pipe Thread Size 2	
6855-NWO-6-4	9/16-18	1/4	----
6855-NWO-6-6	9/16-18	3/8	----

*More sizes available*

It is surprisingly how easy it is to forget that the way to get things done is to do them.

- Mark Forster

# HYDRAULIC ADAPTERS

# STEEL SAE O-RING

## MALE O-RING SWIVEL ADAPTER

SAE 140157



6900  
2066R  
1235  
9315

Part #	O-Ring Thread Size 1	Female NPSM Size 2	
6900-O-4-2	7/16-20	1/8	----
6900-O-4-4	7/16-20	1/4	----
6900-O-4-6	7/16-20	3/8	----
6900-O-4-8	7/16-20	1/2	----
6900-O-5-4	1/2-20	1/4	----
6900-O-6-4	9/16-18	1/4	----
6900-O-6-6	9/16-18	3/8	----
6900-O-6-8	9/16-18	1/2	----
6900-O-8-4	3/4-16	1/4	----
6900-O-8-6	3/4-16	3/8	----
6900-O-8-8	3/4-16	1/2	----
6900-O-8-12	3/4-16	3/4	----
6900-O-10-4	7/8-14	1/4	----
6900-O-10-6	7/8-14	3/8	----
6900-O-10-8	7/8-14	1/2	----
6900-O-10-12	7/8-14	3/4	----
6900-O-12-6	1-1/16-12	3/8	----
6900-O-12-8	1-1/16-12	1/2	----
6900-O-12-12	1-1/16-12	3/4	----
6900-O-12-16	1-1/16-12	1	----
6900-O-14-8	1-3/16-12	1/2	----
6900-O-14-12	1-3/16-12	3/4	----
6900-O-16-8	1-5/16-12	1/2	----
6900-O-16-12	1-5/16-12	3/4	----
6900-O-16-16	1-5/16-12	1	----
6900-O-16-20	1-5/16-12	1-1/4	----
6900-O-20-12	1-5/8-12	3/4	----
6900-O-20-16	1-5/8-12	1	----
6900-O-20-20	1-5/8-12	1-1/4	----
6900-O-24-24	1-7/8-12	1-1/2	----
6900-O-32-32	2-1/2-12	2	----

More sizes available

I can accept failure, but I can't accept not trying.

- Michael Jordan

## 90° O-RING SWIVEL ADAPTER

SAE 140257



6401  
2068R  
1271  
9515

Part #	O-Ring Thread Size 1	Female NPSM Size 2	
6901-NWO-4-2	7/16-20	1/8	----
6901-NWO-4-4	7/16-20	1/4	----
6901-NWO-4-6	7/16-20	3/8	----
6901-NWO-6-4	9/16-18	1/4	----
6901-NWO-6-6	9/16-18	3/8	----
6901-NWO-6-8	9/16-18	1/2	----
6901-NWO-8-4	3/4-16	1/4	----
6901-NWO-8-6	3/4-16	3/8	----
6901-NWO-8-8	3/4-16	1/2	----
6901-NWO-8-12	3/4-16	3/4	----
6901-NWO-10-4	7/8-14	1/4	----
6901-NWO-10-6	7/8-14	3/8	----
6901-NWO-10-8	7/8-14	1/2	----
6901-NWO-10-12	7/8-14	3/4	----
6901-NWO-12-6	1-1/16-12	3/8	----
6901-NWO-12-8	1-1/16-12	1/2	----
6901-NWO-12-12	1-1/16-12	3/4	----
6901-NWO-12-16	1-1/16-12	1	----
6901-NWO-14-12	1-3/16-12	3/4	----
6901-NWO-16-12	1-5/16-12	3/4	----
6901-NWO-16-16	1-5/16-12	1	----
6901-NWO-16-20	1-5/16-12	1-1/4	----
6901-NWO-20-12	1-5/8-12	3/4	----
6901-NWO-20-16	1-5/8-12	1	----
6901-NWO-20-20	1-5/8-12	1-1/4	----
6901-NWO-24-24	1-7/8-12	1-1/2	----
6901-NWO-32-32	2-1/2-12	2	----

## O-RING SWIVEL TEE



Part #	Female NPSM Size 1 & 2	O-Ring Thread Size 3	
6911-NWO-4-4	1/4	7/16-20	----
6911-NWO-6-6	3/8	9/16-18	----
6911-NWO-8-8	1/2	3/4-16	----
6911-NWO-12-12	3/4	1-1/16-12	----

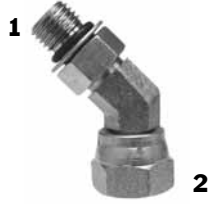
More sizes available

HYDRAULIC

# STEEL SAE O-RING

## 45° O-RING SWIVEL ADAPTER

SAE 140357



6902  
2067R  
1272  
9365

2

Part #	O-Ring Thread Size 1	Female NPSM Size 2	
6902-NWO-4-2	7/16-20	1/8	----
6902-NWO-4-4	7/16-20	1/4	----
6902-NWO-4-6	7/16-20	3/8	----
6902-NWO-6-4	9/16-18	1/4	----
6902-NWO-6-6	9/16-18	3/8	----
6902-NWO-6-8	9/16-18	1/2	----
6902-NWO-8-4	3/4-16	1/4	----
6902-NWO-8-6	3/4-16	3/8	----
6902-NWO-8-8	3/4-16	1/2	----
6902-NWO-8-12	3/4-16	3/4	----
6902-NWO-10-6	7/8-14	3/8	----
6902-NWO-10-8	7/8-14	1/2	----
6902-NWO-10-12	7/8-14	3/4	----
6902-NWO-12-8	1-1/16-12	1/2	----
6902-NWO-12-12	1-1/16-12	3/4	----
6902-NWO-12-16	1-1/16-12	1	----
6902-NWO-16-12	1-5/16-12	3/4	----
6902-NWO-16-16	1-5/16-12	1	----
6902-NWO-20-20	1-5/8-12	1-1/4	----
6902-NWO-24-24	1-7/8-12	1-1/2	170.22

The best way to have a good idea is to have lots of ideas.

- Linus Pauling

# HYDRAULIC ADAPTERS

## O-RINGS

### VITON 90 SAE BOSS O-RING

Fluorocarbon



Part #	O-Ring Thread	O-Ring I.D.	
4001-2-2	5/16-24	.239	----
4001-3-3	3/8-24	.301	----
4001-4-4	7/16-20	.351	----
4001-5-5	1/2-20	.414	----
4001-6-6	9/16-18	.468	----
4001-8-8	3/4-16	.644	----
4001-10	7/8-14	.755	----
4001-12	1-1/16-12	.924	----
4001-16	1-5/16-12	1.171	----
4001-20	1-5/8-12	1.475	----
4001-24	1-7/8-12	1.720	----
4001-32	2-1/2-12	2.337	----

### NITRILE 90 SAE BOSS O-RING



Part #	O-Ring Thread	O-Ring I.D.	
4000-2-2	5/16-24	.239	----
4000-3-3	3/8-24	.301	----
4000-4-4	7/16-20	.351	----
4000-5-5	1/2-20	.414	----
4000-6-6	9/16-18	.468	----
4000-8-8	3/4-16	.644	----
4000-10	7/8-14	.755	----
4000-12	1-1/16-12	.924	----
4000-14	1-3/16-12	1.048	----
4000-16	1-5/16-12	1.171	----
4000-20	1-5/8-12	1.475	----
4000-24	1-7/8-12	1.720	----
4000-32	2-1/2-12	2.337	----

**STEEL FLANGE ADAPTERS**

**CONFORMANCE**

- SAE J518

**MATERIALS**

- Steel per SAE J518 with either black phosphate finish or plated chrome finish or iridite dip. Stainless Steel available upon request.

**WORKING PRESSURES**

The following table lists the recommended working pressures for steel Four-bolt Solid and Split Flange Fittings and Hose Ends manufactured in accordance with SAE standards J518 and J517. SAE recommends sufficient testing to be conducted to assure that performance levels will be safe and satisfactory, especially if installed in systems operating at elevated pressures or in severe conditions. When using Flanged Fittings that have a threaded connection on one end, use the lower pressure rating of the two.

**Caution: Although many Four-bolt Flanged Fittings have sufficient structural integrity to support the weight of many components, we recommend consulting with our technical support department for guidance in selection of parts for this purpose.**

**SAE J518 FOUR-BOLT CODE 61  
FLANGE PRESSURE RATINGS**

Dash Size	Flange Head OD Inches	4 TO 1 Minimum Burst PSI
-8	1-3/16 - 1.188	5000
-12	1-1/2 - 1.500	5000
-16	1-3/4 - 1.750	5000
-20	2 - 2.000	4000
-24	2-3/8 - 2.375	3000
-32	2-13/16 - 2.812	3000
-40	3-5/16 - 3.312	2500
-48	4 - 4.000	2000
-56	4-1/2 - 4.500	500
-64	5 - 5.000	500
-80	6 - 6.000	500

**SAE J518 FOUR-BOLT CODE 62  
FLANGE PRESSURE RATINGS**

Dash Size	Flange Head OD Inches	4 TO 1 Minimum Burst PSI
-8	1-1/4 - 1.250	6000
-12	1-5/8 - 1.625	6000
-16	1-7/8 - 1.875	6000
-20	2-1/8 - 2.125	6000
-24	2-1/2 - 2.500	6000
-32	3-1/8 - 3.125	6000

**STEEL FLANGE ADAPTERS  
ASSEMBLY INSTRUCTIONS**

**RECOMMENDED SOLID FOUR-BOLT**

- Step 1.** Inspect port area to be smooth and free of nicks, burrs, scratches, or contaminants.
- Step 2.** Lubricate the o-ring and place in flange head groove.
- Step 3.** Lubricate screw threads, slip lock washers onto screws, and insert screws into flange
- Step 4.** Position flange on port and finger tighten all screws.
- Step 5.** Torque the screws in a figure eight sequence, incrementally until the appropriate torque value in the following table is achieved.

**J518 CODE 61 AND CODE 62  
FLANGE MINIMUM TORQUE VALUES**

Dash Size	Port Size	Code 61 Foot/Lbs.	Code 62 Foot/Lbs.
-8	1/2"	15-19	15-19
-12	3/4"	20-29	25-33
-16	1"	27-35	41-50
-20	1-1/4"	35-46	62-75
-24	1-1/2"	46-58	116-133
-32	2"	53-67	200-217
-40	2-1/2"	79	NA
-48	3"	137	NA
-56	3-1/2"	116	NA
-64	4"	116	NA
-80	5"	116	NA

**RECOMMENDED SPLIT FOUR-BOLT**

- Step 1.** Follow steps 1 through 3 above, then proceed to the following steps.
- Step 2.** Position both flanges on port and turn one screw in each flange about three turns.
- Step 3.** Rotate each flange away from the port for sufficient clearance to position hose or fitting flange head on port.
- Step 4.** Close each flange until it properly captures flange head. Insert remaining screws and finger tighten.
- Step 5.** Torque the screws in a figure eight sequence incrementally until the appropriate torque value in the preceding table is achieved.

**WHY WET TORQUE?**

Due to the difference in plating types and thickness, materials, and thread quality of different components, the coefficient of friction varies greatly on any given assembly. Lubrication not only produces a more consistent coefficient of friction, it increases clamping force on sealing area with less torque on the threads. Overtightening causes threads to yield, deform and lose their ability to maintain an adequate load or clamping force on the seating area. Extended operation and severe conditions cause further yielding which results in leaks. Overtightening is the single greatest cause for leaks in metal to metal seat hydraulic connections. It is our firm position, that to not wet torque, is to compromise consistency and quality for convenience.

# FLANGE ADAPTERS

## JIC FLANGE ADAPTER CODE 61

6840  
503



3000 PSI

Part #	JIC Thread Size 1	Flange Size 2	Flange Head OD	
1700-8-8	3/4-16	1/2	1.18	----
1700-8-12	3/4-16	3/4	1.50	----
1700-12-12	1-1/16-12	3/4	1.50	----
1700-12-16	1-1/16-12	1	1.75	----
1700-16-16	1-5/16-12	1	1.75	----
1700-16-20	1-5/16-12	1-1/4	2.00	----
1700-16-24	1-5/16-12	1-1/2	2.37	----
1700-20-16	1-5/8-12	1	1.75	----
1700-20-20	1-5/8-12	1-1/4	2.00	----
1700-20-32	1-5/8-12	2	2.81	----
1700-24-24	1-7/8-12	1-1/2	2.37	----
1700-32-32	2-1/2-12	2	2.81	----
1700-40-40	3-12	2-1/2	3.31	----

More sizes available

## JIC FLANGE 45° ADAPTER CODE 61

6845  
505



3000 PSI

Part #	JIC Thread Size 1	Flange Size 2	Flange Head OD	
1703-8-8	3/4-16	1/2	1.18	----
1703-8-12	3/4-16	3/4	1.50	----
1703-12-12	1-1/16-12	3/4	1.50	----
1703-12-16	1-1/16-12	1	1.75	----
1703-16-16	1-5/16-12	1	1.75	----
1703-16-20	1-5/16-12	1-1/4	2.00	----
1703-16-24	1-5/16-12	1-1/2	2.37	----
1703-20-16	1-5/8-12	1	1.75	----
1703-20-20	1-5/8-12	1-1/4	2.00	----
1703-20-24	1-5/8-12	1-1/2	2.37	----
1703-24-40	1-7/8-12	2-1/2	3.31	----
1703-32-24	2-1/2-12	1-1/2	2.37	----
1703-32-32	2-1/2-12	2	2.81	----

More sizes available

# HYDRAULIC ADAPTERS

## JIC FLANGE 90° ADAPTER CODE 61

6890  
504



3000 PSI

Part #	JIC Thread Size 1	Flange Size 2	Flange Head OD	
1704-8-8	3/4-16	1/2	1.18	----
1704-8-12	3/4-16	3/4	1.50	----
1704-10-16	7/8-14	1	1.75	----
1704-12-12	1-1/16-12	3/4	1.50	----
1704-12-16	1-1/16-12	1	1.75	----
1704-12-20	1-1/16-12	1-1/4	2.00	----
1704-16-12	1-5/16-12	3/4	1.50	----
1704-16-16	1-5/16-12	1	1.75	----
1704-16-20	1-5/16-12	1-1/4	2.00	----
1704-16-24	1-5/16-12	1-1/2	2.37	----
1704-20-16	1-5/8-12	1	1.75	----
1704-20-20	1-5/8-12	1-1/4	2.00	----
1704-20-24	1-5/8-12	1-1/2	2.37	----
1704-24-16	1-7/8-12	1	1.75	----
1704-24-20	1-7/8-12	1-1/4	2.00	----
1704-24-32	1-7/8-12	2	2.81	----
1704-24-40	1-7/8-12	2-1/2	3.31	----
1704-32-24	2-1/2-12	1-1/2	2.37	----
1704-32-32	2-1/2-12	2	2.81	----

More sizes available

## JIC FLANGE ADAPTER CODE 62

6842



6000 PSI

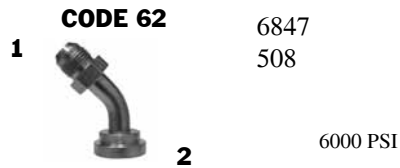
Part #	JIC Thread Size 1	Flange Size 2	Flange Head OD	
1800-8-8	3/4-16	1/2	1.25	----
1800-12-12	1-1/16-12	3/4	1.62	----
1800-12-16	1-1/16-12	1	1.88	----
1800-16-16	1-5/16-12	1	1.88	----
1800-16-20	1-5/16-12	1-1/4	2.12	----
1800-20-16	1-5/8-12	1	1.88	----
1800-20-20	1-5/8-12	1-1/4	2.12	----
1800-20-24	1-5/8-12	1-1/2	2.50	----
1800-24-24	1-7/8-12	1-1/2	2.50	----
1800-32-32	2-1/2-12	2	3.12	----

More sizes available

# HYDRAULIC ADAPTERS

# FLANGE ADAPTERS

## JIC FLANGE 45° ADAPTER



Part #	JIC Thread Size 1	Flange Size 2	Flange Head OD	
1803-12-12	1-1/16-12	3/4	1.62	----
1803-12-16	1-1/16-12	1	1.88	----
1803-16-16	1-5/16-12	1	1.88	----
1803-16-20	1-5/16-12	1-1/4	2.12	----
1803-20-16	1-5/8-12	1	1.88	----
1803-20-20	1-5/8-12	1-1/4	2.12	----
1803-20-24	1-5/8-12	1-1/2	2.50	----
1803-24-24	1-7/8-12	1-1/2	2.50	----
1803-32-32	2-1/2-12	2	3.12	----

More sizes available

## JIC FLANGE 90° ADAPTER



Part #	JIC Thread Size 1	Flange Size 2	Flange Head OD	
1804-8-8	3/4-16	1/2	1.25	----
1804-12-12	1-1/16-12	3/4	1.62	----
1804-12-16	1-1/16-12	1	1.88	----
1804-16-16	1-5/16-12	1	1.88	----
1804-16-20	1-5/16-12	1-1/4	2.12	----
1804-20-16	1-5/8-12	1	1.88	----
1804-20-20	1-5/8-12	1-1/4	2.12	----
1804-20-24	1-5/8-12	1-1/2	2.50	----
1804-24-24	1-7/8-12	1-1/2	2.50	----
1804-32-32	2-1/2-12	2	3.12	----

More sizes available

## BRAZE TO SPLIT FLANGE



Part #	Flange Size	Tube O.D.	
1861-8	1/2	1/2	----
1861-12	3/4	3/4	----
1861-16	1	1	----
1861-20	1-1/4	1-1/4	----
1861-24	1-1/2	1-1/2	----
1861-32	2	2	----
1861-40	2-1/2	2-1/2	----

## BRAZE TO SPLIT FLANGE



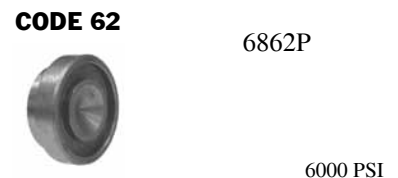
Part #	Flange Size	Tube O.D.	
1862-8	1/2	1/2	----
1862-12	3/4	3/4	----
1862-16	1	1	----
1862-20	1-1/4	1-1/4	----
1862-24	1-1/2	1-1/2	----
1862-32	2	2	----

## SPLIT FLANGE PLUG



Part #	Flange Size	
1961-8	1/2	----
1961-12	3/4	----
1961-16	1	----
1961-20	1-1/4	----
1961-24	1-1/2	----
1961-32	2	----

## SPLIT FLANGE PLUG



Part #	Flange Size	
1962-8	1/2	----
1962-12	3/4	----
1962-16	1	----
1962-20	1-1/4	----
1962-24	1-1/2	----
1962-32	2	----



# FLANGE ADAPTERS

# HYDRAULIC ADAPTERS

## NITRILE 90 FLANGE O-RING



Viton Available upon request  
90DF

Part #	Flange Size	O-Ring Number	
4004-8-8	1/2	210	----
4004-12	3/4	214	----
4004-16	1	219	----
4004-20	1-1/4	222	----
4004-24	1-1/2	225	----
4004-32	2	228	----
4004-40	2-1/2	232	----
4004-48	3	237	----

## FLANGE CONNECTOR PLATES CODE 61



CP

Part #	Flange Size	
1900-8	1/2	----
1900-12	3/4	----
1900-16	1	----
1900-20	1-1/4	----
1900-24	1-1/2	----
1900-32	2	----
1900-40	2-1/2	----

## SPLIT FLANGE KIT CODE 61

SFK



3000 PSI

Part #	Flange Size	Flange Head Dia.	
1901-8	1/2	1.19	----
1901-12	3/4	1.50	----
1901-16	1	1.75	----
1901-20	1-1/4	2.00	----
1901-24	1-1/2	2.38	----
1901-32	2	2.81	----
1901-40	2-1/2	3.31	----
1901-48	3	4.00	----

## SPLIT FLANGE KIT CODE 62

SFXX



6000 PSI

Part #	Flange Size	Flange Head Diameter	
1902-8	1/2	1.25	----
1902-12	3/4	1.63	----
1902-16	1	1.88	----
1902-20	1-1/4	2.12	----
1902-24	1-1/2	2.50	----
1902-32	2	3.12	----

## SPLIT FLANGE HALF CODE 61

SF



3000 PSI

Part #	Flange Size	Flange Head Diameter	
2061-8	1/2	1.19	----
2061-12	3/4	1.50	----
2061-16	1	1.75	----
2061-20	1-1/4	2.00	----
2061-24	1-1/2	2.38	----
2061-32	2	2.81	----
2061-40	2-1/2	3.31	----
2061-48	3	4	----

## SPLIT FLANGE HALF CODE 62

SFX



6000 PSI

Part #	Flange Size	Flange Head Diameter	
2062-8	1/2	1.25	----
2062-12	3/4	1.63	----
2062-16	1	1.88	----
2062-20	1-1/4	2.12	----
2062-24	1-1/2	2.50	----
2062-32	2	3.12	----

# HYDRAULIC ADAPTERS

# FLANGE ADAPTERS

## PIPE WELD FLANGE PAD CODE 61

W4



3000 PSI

Part #	Pipe Size	
2161-8-8	1/2	----
2161-12-12	3/4	----
2161-16-16	1	----
2161-20-20	1-1/4	----
2161-24-24	1-1/2	----
2161-32-32	2	----

## PIPE WELD FLANGE PAD CODE 62

W42



6000 PSI

Part #	Pipe Size	
2162-8-8	1/2	----
2162-12-12	3/4	----
2162-16-16	1	----
2162-20-20	1-1/4	----
2162-24-24	1-1/2	----
2162-32-32	2	----

## PIPE THREAD FLANGE PAD CODE 61

W43



3000 PSI

Part #	Pipe Size	
2261-8-8	1/2	----
2261-12-12	3/4	----
2261-16-16	1	----
2261-20-20	1-1/4	----
2261-24-24	1-1/2	----
2261-32-32	2	----
2261-40-40	2-1/2	----
2261-48-48	3	----

## PIPE THREAD FLANGE PAD CODE 62

W44



6000 PSI

Part #	Pipe Size	
2262-8-8	1/2	----
2262-12-12	3/4	----
2262-16-16	1	----
2262-20-20	1-1/4	----
2262-24-24	1-1/2	----
2262-32-32	2	----
2262-40-40	2-1/2	----
2262-48-48	3	----

## O-RING FLANGE PAD CODE 61

W46



3000 PSI

Part #	O-Ring Thread Size	Pad Size	
2361-12-12	1-1/16-12	3/4	----
2361-16-16	1-5/16-12	1	----
2361-20-20	1-5/8-12	1-1/4	----
2361-24-24	1-7/8-12	1-1/2	----

## O-RING FLANGE PAD CODE 62

W48



6000 PSI

Part #	O-Ring Thread Size	Pad Size	
2362-12-12	1-1/16-12	3/4	----
2362-16-16	1-5/16-12	1	----
2362-20-20	1-5/8-12	1-1/4	----
2362-24-24	1-7/8-12	1-1/2	----

**O-RING FACE SEAL ADAPTER**

**CONFORMANCE**

- SAE J1453

**MATERIALS**

- Steel- SAE 12L14 carbon steel trivalent chrome plated or clear silver finish.

**WORKING PRESSURES**

The following table lists the recommended working pressures for steel O-ring Face Seal tube fittings made in accordance with SAE standard J1943. Many factors such as impulsing, vibration, mechanical shock and overtightening may affect the integrity of fitting connections. SAE recommends sufficient testing be conducted to assure that performance levels will be safe and satisfactory, especially if installed in systems operating at elevated pressures or in severe conditions. When using fittings with different size or thread type, use lower pressure rating of the two threads.

**Caution: O-ring Face Seal fittings are not designed to provide structural support for other components.**

**SAE J1453 O-RING FACE SEAL FITTINGS PRESSURE RATINGS**

Dash Size	Flared Thread Size	4 TO 1 Minimum Burst PSI
-4	9/16-18	6000
-6	11/16-16	6000
-8	13/16-16	6000
-10	1-14	6000
-12	1-3/16-12	6000
-16	1-7/16-12	6000
-20	1-11/16-12	4000
-24	2-12	4000

**SAE J1453 O-RING FACE SEAL PRESSURE RATINGS FOR STRAIGHT THREAD PORT**

Dash Size	Flared Thread Size	4 TO 1 Straight	Minimum Burst Adjustable
-4	9/16-18	6000	6000
-6	11/16-16	6000	6000
-8	13/16-16	6000	6000
-10	1-14	6000	6000
-12	1-3/16-12	6000	6000
-16	1-7/16-12	6000	5000
-20	1-11/16-12	4000	4000
-24	2-12	4000	3000

**O-RING FACE SEAL ASSEMBLY INSTRUCTIONS**

**RECOMMENDED**

- Step 1.** Lubricate the threads and the entire surface of the face seal o-ring
- Step 2.** Install o-ring into face seal groove.
- Step 3.** Place matting face seal flange against o-ring and finger tighten face seal flange nut.
- Step 4.** Torque flange nut to the value in the following table.

Dash Size	Flared Thread Size	Torque Foot/Lbs.
-4	9/16-20	10
-6	11/16-16	20
-8	13/16-16	32
-10	1-14	46
-12	1-3/16-12	65
-16	1-7/16-12	92
-20	1-7/8-12	125
-24	2-12	150

**ALTERNATE ASSEMBLY METHOD**

- Step 1.** If torque method not possible, follow steps 1-3 above, then proceed to the steps below.
- Step 2.** Lightly wrench tighten the nut until there is firm resistance.
- Step 3.** Place a wrench on wrench pad next to nut as near the 6 o'clock as possible.
- Step 4.** Place second wrench on nut as near the 3 o'clock position as possible.
- Step 5.** Turn nut clockwise to no less than half way to the 4 o'clock position and no more than the 6 o'clock position.

**WHY WET TORQUE?**

Due to the difference in plating types and thickness, materials, and thread quality of different components, the coefficient of friction varies greatly on any given assembly. Lubrication not only produces a more consistent coefficient of friction, it increases clamping force on sealing area with less torque on the threads. Overtightening causes threads to yield, deform and lose their ability to maintain an adequate load or clamping force on the seating area. Extended operation and severe conditions cause further yielding which results in leaks. Overtightening is the single greatest cause for leaks in metal to metal seat hydraulic connections. It is our firm position, that to not wet torque, is to compromise consistency and quality for convenience.

Torque Values: The torque values provided are to provide benchmarks that we believe give optimum results for leak free connections. Actual torque val-

# HYDRAULIC ADAPTERS

# O-RING FACE SEAL ADAPTERS

## BRAZE TUBE NUT (SLEEVE REQUIRED)

SAE 520110

FF318  
FF1311



Part #	Tube O.D.	Braze Tube O.D.	
FSO318-4	1/4	.25	----
FSO318-6	3/8	.38	----
FSO318-8	1/2	.50	----
FSO318-10	5/8	.62	----
FSO318-12	3/4	.72	----
FSO318-16	1	1.00	----
FSO318-20	1 1/4	1.25	----
FSO318-24	1 1/2	1.50	----

## BRAZE TUBE SLEEVE

SAE 520115

FF319  
FF3019



Part #	Tube O.D.	
FSO319-4	1/4	----
FSO319-6	3/8	----
FSO319-8	1/2	----
FSO319-10	5/8	----
FSO319-12	3/4	----
FSO319-16	1	----
FSO319-20	1-1/4	----
FSO319-24	1-1/2	----

*Also available in Stainless Steel*

*See Page 310 for JIC Nut and Sleeve*

If you eat a frog first thing in the morning,  
the rest of your day will be wonderful.

- Mark Twain

## BRAZE TUBE UNION

SAE 520104

FF403



Part #	Braze Port	Flat Face Thread	
FSO403-4-4	1/4	9/16-18	----
FSO403-6-6	3/8	11/16-16	----
FSO403-8-8	1/2	13/16-16	----
FSO403-10-10	5/8	1-14	----
FSO403-12-12	3/4	1-3/8-12	----
FSO403-16-16	1	1-7/16-12	----
FSO403-20-20	1-1/4	1-11/16-12	----
FSO403-24-24	1-1/2	2-12	----

*More sizes available*

## CAP

SAE 520112

FF304C



Part #	Tube O.D.	Flat Face Thread	
FSO304-C-4	1/4	9/16-18	----
FSO304-C-6	3/8	11/16-16	----
FSO304-C-8	1/2	13/16-16	----
FSO304-C-10	5/8	1-14	----
FSO304-C-12	3/4	1-3/8-12	----
FSO304-C-16	1	1-7/16-12	----
FSO304-C-20	1-1/4	1-11/16-12	----
FSO304-C-24	1-1/2	2-12	----

## PLUG

SAE 520109

FF2408  
FF1254



Part #	Tube O.D.	Flat Face Thread	
FSO2408-4	1/4	9/16-18	----
FSO2408-6	3/8	11/16-16	----
FSO2408-8	1/2	13/16-16	----
FSO2408-10	5/8	1-14	----
FSO2408-12	3/4	1-3/8-12	----
FSO2408-16	1	1-7/16-12	----
FSO2408-20	1-1/4	1-11/16-12	----
FSO2408-24	1-1/2	2-12	----

# O-RING FACE SEAL ADAPTERS

# HYDRAULIC ADAPTERS

## O-RING FACE SEAL ADAPTERS

### MALE CONNECTOR

SAE 520102

FF2404  
FF1202



Part #	Flat Face Thread 1	Male Pipe Thread 2	
FSO2404-4-4	9/16-18	1/8	----
FSO2404-4-6	9/16-18	3/8	----
FSO2404-6-4	11/16-16	1/4	----
FSO2404-6-6	11/16-16	3/8	----
FSO2404-8-4	13/16-16	1/4	----
FSO2404-8-6	13/16-16	3/8	----
FSO2404-8-8	13/16-16	1/2	----
FSO2404-10-8	1-14	1/2	----
FSO2404-12-12	1-3/16-12	3/4	----
FSO2404-16-16	1-7/16-12	1	----
FSO2404-20-20	1-11/16-12	1-1/4	----
FSO2404-24-24	2-12	1-1/2	----

Also available in Stainless Steel

More sizes available

### MALE ELBOW

SAE 520202

FF2501  
FF1208



Part #	Flat Face Thread 1	Male Pipe Thread 2	
FS2501-4-4	9/16-18	1/4	----
FS2501-6-4	11/16-16	1/4	----
FS2501-6-6	11/16-16	3/8	----
FS2501-8-6	13/16-16	3/8	----
FS2501-8-8	13/16-16	1/2	----
FS2501-8-12	13/16-16	3/4	----
FS2501-10-8	1-14	1/2	----
FS2501-10-12	1-14	3/4	----
FS2501-12-8	1-3/8-12	1/2	----
FS2501-12-12	1-3/8-12	3/4	----
FS2501-12-16	1-3/8-12	1	----
FS2501-16-12	1-7/16-12	3/4	----
FS2501-16-16	1-7/16-12	1	----
FS2501-20-20	1-11/16-12	1-1/4	----
FS2501-24-24	2-12	1-1/2	----

Also available in Stainless Steel

More sizes available

## STRAIGHT THREAD CONNECTOR

SAE 520120

FF6400  
FF1231



Part #	Flat Face Thread 1	O-Ring Thread 2	
FS6400-O-4-4	9/16-18	7/16-20	----
FS6400-O-4-6	9/16-18	9/16-18	----
FS6400-O-6-4	11/16-16	7/16-20	----
FS6400-O-6-6	11/16-16	9/16-18	----
FS6400-O-6-8	11/16-16	3/4-16	----
FS6400-O-8-6	13/16-16	9/16-18	----
FS6400-O-8-8	13/16-16	3/4-16	----
FS6400-O-8-10	13/16-16	7/8-14	----
FS6400-O-10-8	1-14	3/4-16	----
FS6400-O-10-10	1-14	7/8-14	----
FS6400-O-10-12	1-14	1-1/16-12	----
FS6400-O-12-8	1-3/16-12	3/4-16	----
FS6400-O-12-10	1-3/16-12	7/8-14	----
FS6400-O-12-12	1-3/16-12	1-1/16-12	----
FS6400-O-12-16	1-3/16-12	1-5/16-12	----
FS6400-O-16-12	1-7/16-12	1-1/16-12	----
FS6400-O-16-16	1-7/16-12	1-5/16-12	----
FS6400-O-16-20	1-7/16-12	1-5/8-12	----
FS6400-O-20-20	1-11/16-12	1-5/8-12	----
FS6400-O-20-24	1-11/16-12	1-7/8-12	----
FS6400-O-24-20	2-12	1-5/8-12	----
FS6400-O-24-24	2-12	1-7/8-12	----

Also available in Stainless Steel

### MALE FLAT FACE TO FEMALE 37 ° SWIVEL

FF6402  
FF1294



Part #	Flat Face Thread 1	JIC Thread 2	
FS6402-4-4	9/16-18	7/16-20	----
FS6402-6-6	11/16-16	9/16-18	----
FS6402-8-8	13/16-16	3/4-16	----
FS6402-10-10	1-14	7/8-14	----
FS6402-12-12	1-3/16-12	1-1/16-12	----
FS6402-16-16	1-7/16-12	1-5/16-12	----

More sizes available

## HYDRAULIC ADAPTERS

## O-RING FACE SEAL ADAPTERS

### SWIVEL NUT ELBOW



FF6500  
FF1236

Part #	Flat Face Thread 1	Flat Face Thread 2	
FS6500-4-4	9/16-18	9/16-18	----
FS6500-6-6	11/16-16	11/16-16	----
FS6500-8-8	13/16-16	13/16-16	----
FS6500-10-10	1-14	1-14	----
FS6500-12-12	1-3/16-12	1-3/16-12	----
FS6500-16-16	1-7/16-12	1-7/16-12	----
FS6500-20-20	1-11/16-12	1-11/16-12	----
FS6500-24-24	2-12	2-12	----

*More sizes available*

*Also available in Stainless Steel*

### MALE JIC 37° FLARE TO FEMALE FLAT FACE SWIVEL



FF6504  
FF1296

Part #	JIC Thread Size 1	Flat Face Thread 2	
FS6504-4-4	7/16-20	9/16-18	----
FS6504-6-6	9/16-18	11/16-16	----
FS6504-8-8	3/4-16	13/16-16	----
FS6504-10-10	7/8-14	1-14	----
FS6504-12-12	1-1/16-12	1-3/16-12	----
FS6504-16-16	1-5/16-12	1-7/16-12	----

*More sizes available*

Your manuscript is both good and original, but the part that is good is not original and the part that is original is not good.

**- Samuel Johnson**

### O-RING ELBOW CONNECTOR



FF6801  
FF1238

Part #	Flat Face Thread 1	O-Ring Thread 2	
FS6801-4-4	9/16-18	7/16-20	----
FS6801-4-6	9/16-18	9/16-18	----
FS6801-6-4	11/16-16	7/16-20	----
FS6801-6-6	11/16-16	9/16-18	----
FS6801-6-8	11/16-16	3/4-16	----
FS6801-8-6	13/16-16	9/16-18	----
FS6801-8-8	13/16-16	3/4-16	----
FS6801-8-10	13/16-16	7/8-14	----
FS6801-10-8	1-14	3/4-16	----
FS6801-10-10	1-14	7/8-14	----
FS6801-10-12	1-14	1-1/16-12	----
FS6801-12-10	1-3/16-12	7/8-14	----
FS6801-12-12	1-3/16-12	1-1/16-12	----
FS6801-12-16	1-3/16-12	1-5/16-12	----
FS6801-16-12	1-7/16-12	1-1/16-12	----
FS6801-16-16	1-7/16-12	1-5/16-12	----
FS6801-16-20	1-7/16-12	1-5/8-12	----
FS6801-20-16	1-11/16-12	1-5/16-12	----
FS6801-20-20	1-11/16-12	1-5/8-12	----
FS6801-24-24	2-12	1-7/8-12	----

*More sizes available*

*Also available in Stainless Steel*

### STRAIGHT THREAD SWIVEL NUT ELBOW



FF6809  
FF1239

Part #	O-Ring Thread 1	Flat Face Thread 2	
FS6809-4-4	7/16-20	9/16-18	----
FS6809-6-6	9/16-18	11/16-16	----
FS6809-8-8	3/4-16	13/16-16	----
FS6809-10-10	7/8-14	1-14	----
FS6809-12-12	1-1/16-12	1-3/16-12	----
FS6809-16-16	1-5/16-12	1-7/16-12	----

*More sizes available*

# STEEL BSPT ADAPTERS

# HYDRAULIC ADAPTERS

## STEEL BSPT ADAPTERS

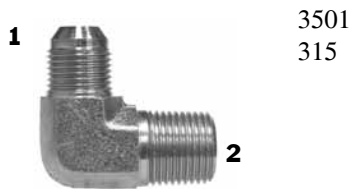
### JIC MALE CONNECTOR BSPT



Part #	JIC Thread Size 1	Male BSPT 2	
7000-4-2	7/16-20	1/8-28	----
7000-4-4	7/16-20	1/4-19	----
7000-6-4	9/16-18	1/4-19	----
7000-6-6	9/16-18	3/8-19	----
7000-6-8	9/16-18	1/2-14	----
7000-8-6	3/4-16	3/8-19	----
7000-8-8	3/4-16	1/2-14	----
7000-8-12	3/4-16	3/4-14	----
7000-10-8	7/8-14	1/2-14	----
7000-10-12	7/8-14	3/4-14	----
7000-12-8	1-1/16-12	1/2-14	----
7000-12-12	1-1/16-12	3/4-14	----
7000-16-16	1-5/16-12	1-11	----
7000-20-20	1-5/8-12	1-1/4-11	----

More sizes available

### JIC MALE ELBOW BSPT



Part #	JIC Thread Size 1	Male BSPT 2	
7200-4-2	7/16-20	1/8-28	----
7200-4-4	7/16-20	1/4-19	----
7200-6-4	9/16-18	1/4-19	----
7200-6-6	9/16-18	3/8-19	----
7200-6-8	9/16-18	1/2-14	----
7200-8-6	3/4-16	3/8-19	----
7200-8-8	3/4-16	1/2-14	----
7200-10-8	7/8-14	1/2-14	----
7200-12-12	1-1/16-12	3/4-14	----
7200-16-16	1-5/16-12	1-11	----
7200-20-20	1-5/8-12	1-1/4-11	----

More sizes available

### BSPT HEX NIPPLE



Part #	Male BSPT 1	Male BSPT 2	
7520-2-2	1/8-28	1/8-28	----
7520-4-4	1/4-19	1/4-19	----
7520-6-6	3/8-19	3/8-19	----
7520-8-8	1/2-14	1/2-14	----
7520-10-10	5/8-14	5/8-14	----
7520-12-12	3/4-14	3/4-14	----

More sizes available

### BSPT PLUG

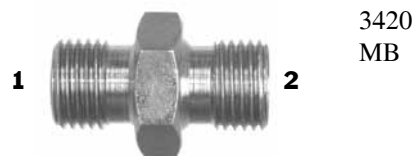


Part #	BSPT	
9508-2	1/8-28	----
9508-4	1/4-19	----
9508-6	3/8-19	----
9508-8	1/2-14	----
9508-12	3/4-14	----
9508-16	1-11	----

More sizes available

## STEEL BSPP ADAPTERS

### BSPP HEX NIPPLE



Part #	Male BSPP 1	Male BSPP 2	
7420-2-2	1/8-28	1/8-28	----
7420-4-2	1/4-19	1/8-28	----
7420-6-4	3/8-19	1/4-19	----
7420-6-6	3/8-19	3/8-19	----
7420-8-6	1/2-14	3/8-19	----
7420-8-8	1/2-14	1/2-14	----
7420-10-8	5/8-14	1/2-14	----
7420-12-8	3/4-14	1/2-14	----
7420-12-12	3/4-14	3/4-14	----
7420-16-12	1-11	3/4-14	----
7420-16-16	1-11	1-11	----
7420-20-16	1-1/4-11	1-11	----
7420-20-20	1-1/4-11	1-1/4-11	----

# HYDRAULIC ADAPTERS

# STEEL BSPP ADAPTERS

## BSPP COUPLING



3425  
FB

Part #	BSPP	
7425-2	1/8-28	----
7425-4	1/4-19	----
7425-8	1/2-14	----
7425-10	5/8-14	----
7425-12	3/4-14	----
7425-16	1-11	----

*Reducing sizes available*

## JIC TO FEMALE BSPP STRAIGHT SWIVEL



3240  
MJFBS

Part #	JIC Thread Size 1	Female BSPP Swivel 2	
7240-4	7/16-20	1/4-19	----
7240-6	9/16-18	3/8-19	----
7240-8	3/4-16	1/2-14	----
7240-10	7/8-14	5/8-14	----
7240-12	1-1/16-12	3/4-14	----
7240-16	1-5/16-12	1-11	----

*More sizes available*

## JIC TO BSPP MALE ELBOW



3801  
315

Part #	JIC Thread Size 1	Male BSPP 2	
7202-NWO-4-2	7/16-20	1/8-28	----
7202-NWO-4-4	7/16-20	1/4-19	----
7202-NWO-6-4	9/16-18	1/4-19	----
7202-NWO-6-6	9/16-18	3/8-19	----
7202-NWO-6-8	9/16-18	1/2-14	----
7202-NWO-8-6	3/4-16	3/8-19	----
7202-NWO-8-8	3/4-16	1/2-14	----
7202-NWO-8-12	3/4-16	3/4-14	----
7202-NWO-10-8	7/8-14	1/2-14	----
7202-NWO-12-12	1-1/16-12	3/4-14	----
7202-NWO-12-16	1-1/16-12	1-11	----
7202-NWO-16-16	1-5/16-12	1-11	----
7202-NWO-20-20	1-5/8-12	1-1/4-11	----
7202-NWO-24-24	1-7/8-12	1-1/2-11	----

## JIC TO BSPP 45° ELBOW



3802  
35J

Part #	JIC Thread Size 1	Male BSPP 2	
7802-4	7/16-20	1/4-19	----
7802-6	9/16-18	3/8-19	----
7802-8	3/4-16	1/2-14	----
7802-12	1-1/16-12	3/4-14	----
7802-16	1-5/16-12	1-11	----

## BSPP TO MALE PIPE NIPPLE



MBMP  
3825

Part #	Male BSPP Size 1	Male Pipe Thread Size 2	
7825-2	1/8-28	1/8	----
7825-4	1/4-19	1/4	----
7825-6	3/8-19	3/8	----
7825-8	1/2-14	1/2	----
7825-12	3/4-14	3/4	----
7825-16	1-11	1	----
7825-20	1-1/4-11	1-1/4	----

*More sizes available*

## JIC TO BSPP MALE CONNECTOR



30J  
3800

Part #	JIC Thread Size 1	Male BSPP 2	
7002-4-2	7/16-20	1/8-28	----
7002-4-4	7/16-20	1/4-19	----
7002-4-6	7/16-20	3/8-19	----
7002-4-8	7/16-20	1/2-14	----
7002-6-4	9/16-18	1/4-19	----
7002-6-6	9/16-18	3/8-19	----
7002-6-8	9/16-18	1/2-14	----
7002-8-6	3/4-16	3/8-19	----
7002-8-8	3/4-16	1/2-14	----
7002-8-12	3/4-16	3/4-14	----
7002-10-8	7/8-14	1/2-14	----
7002-12-12	1-1/16-12	3/4-14	----
7002-12-16	1-1/16-12	1-11	----
7002-16-16	1-5/16-12	1-11	----
7002-20-20	1-5/8-12	1-1/4-11	----
7002-24-24	1-7/8-12	1-1/2-11	----

*More sizes available*



# STEEL BSPP / METRIC ADAPTERS

# HYDRAULIC ADAPTERS

## JIC TO BSPP STRAIGHT SWIVEL



3402  
3055

Part #	JIC Thread Size 1	Male BSPP 2	
7022-4-2	7/16-20	1/8-28	----
7022-4-4	7/16-20	1/4-19	----
7022-6-4	9/16-18	1/4-19	----
7022-6-6	9/16-18	3/8-19	----
7022-8-6	3/4-16	3/8-19	----
7022-8-8	3/4-16	1/2-14	----
7022-10-8	7/8-14	1/2-14	----
7022-12-12	1-1/16-12	3/4-14	----
7022-16-16	1-5/16-12	1-11	----

More sizes available

## HEX HEAD PLUG BSPP



3408

Part #	Male BSPP	
9522-P-2	1/8-28	----
9522-P-4	1/4-19	----
9522-P-6	3/8-19	----
9522-P-8	1/2-14	----
9522-P-12	3/4-14	----
9522-P-16	1-11	----
9522-P-20	1-1/4-11	----

## HOLLOW HEX PLUG BSPP



3408 HHP

Part #	Male BSPP	
9522-H-2	1/8-28	----
9522-H-4	1/4-19	----
9522-H-6	3/8-19	----
9522-H-8	1/2-14	----
9522-H-12	3/4-14	----
9522-H-16	1-11	----
9522-H-20	1-1/4-11	----

## FEMALE ADAPTER BSPP



3455  
MMFP

Part #	Female Pipe 1	Male BSPP 2	
7042-2-2	1/8	1/8-28	----
7042-4-2	1/4	1/8-28	----
7042-4-4	1/4	1/4-19	----
7042-6-6	3/8	3/8-19	----
7042-8-8	1/2	1/2-14	----
7042-12-12	3/4	3/4-14	----
7042-16-16	1	1-11	----
7042-20-20	1-1/4	1-1/4-11	----
7042-24-24	1-1/2	1-1/2-11	----

More sizes available

# STEEL METRIC ADAPTERS

## MALE CONNECTOR



7400  
30J (R)

Port-seal crush washer and O-ring included

Part #	JIC Thread Size 1	Metric Thread 2	
7005-4-10	7/16-20	10x1.0	----
7005-4-12	7/16-20	12x1.5	----
7005-4-14	7/16-20	14x1.5	----
7005-4-18	7/16-20	18x1.5	----
7005-5-10	1/2-20	10x1.0	----
7005-5-12	1/2-20	12x1.5	----
7005-5-14	1/2-20	14x1.5	----
7005-6-14	9/16-18	14x1.5	----
7005-6-16	9/16-18	16x1.5	----
7005-6-18	9/16-18	18x1.5	----
7005-8-16	3/4-16	16x1.5	----
7005-8-18	3/4-16	18x1.5	----
7005-8-22	3/4-16	22x1.5	----
7005-10-18	7/8-14	18x1.5	----
7005-10-20	7/8-14	20x1.5	----
7005-10-22	7/8-14	22x1.5	----
7005-12-22	1-1/16-12	22x1.5	----
7005-12-27	1-1/16-12	27x2.0	----
7005-14-26	1-3/16-12	26x1.5	----
7005-16-27	1-5/16-12	27x2.0	----
7005-16-33	1-5/16-12	33x2.0	----
7005-20-42	1-5/8-12	42x2.0	----
7005-24-48	1-7/8-12	48x2.0	----

# HYDRAULIC ADAPTERS

## MALE ELBOW



7801  
315 (R)

Port-seal crush washer  
and O-ring included

Part #	JIC Thread Size 1	Metric Thread 2	
7205-NWO-4-10	7/16-20	10x1.0	----
7205-NWO-4-12	7/16-20	12x1.5	----
7205-NWO-4-14	7/16-20	14x1.5	----
7205NWO-5-12	1/2-20	12x1.5	----
7205-NWO-6-14	9/16-18	14x1.5	----
7205-NWO-6-16	9/16-18	16x1.5	----
7205-NWO-8-16	3/4-16	16x1.5	----
7205-NWO-8-18	3/4-16	18x1.5	----
7205-NWO-8-22	3/4-16	22x1.5	----
7205-NWO-10-18	7/8-14	18x1.5	----
7205-NWO-10-20	7/8-14	20x1.5	----
7205-NWO-10-22	7/8-14	22x1.5	----
7205-NWO-12-22	1-1/16-12	22x1.5	----
7205-NWO-12-27	1-1/16-12	27x2.0	----
7205-NWO-16-27	1-5/16-12	27x2.0	----
7205-NWO-16-33	1-5/16-12	33x2.0	----
7205-NWO-20-42	1-5/8-12	42x2.0	----

## STRAIGHT SWIVEL



7402  
30JS (R)

Part #	JIC Thread Size 1	Metric Thread 2	
7025-4-10	7/16-20	10x1.0	----
7025-4-12	7/16-20	12x1.5	----
7025-5-12	1/2-20	12x1.5	----
7025-6-14	9/16-18	14x1.5	----
7025-6-16	9/16-18	16x1.5	----
7025-8-16	3/4-16	16x1.5	----
7025-10-22	7/8-14	22x1.5	----
7025-12-27	1-1/16-12	27x2.0	----
7025-16-33	1-5/16-12	33x2.0	----

# STEEL METRIC ADAPTERS

## HEX HEAD PLUG METRIC PARALLEL



7408

Part #	Metric Thread	
8555-P-10	10x1.0	----
8555-P-12	12x1.5	----
8555-P-14	14x1.5	----
8555-P-16	16x1.5	----
8555-P-18	18x1.5	----
8555-P-20	20x1.5	----
8555-P-22	22x1.5	----
8555-P-26	26x1.5	----
8555-P-30	30x1.5	----

## HOLLOW HEX HEAD PLUG METRIC PARALLEL



7408 HHP

Part #	Metric Thread	
8555-H-10	10x1.0	----
8555-H-12	12x1.5	----
8555-H-14	14x1.5	----
8555-H-16	16x1.5	----
8555-H-18	18x1.5	----
8555-H-20	20x1.5	----
8555-H-22	22x1.5	----
8555-H-26	26x1.5	----
8555-H-30	30x1.5	----

More sizes available

## FEMALE ADAPTER

MMFP (R)



Part #	Female Pipe Thread 1	Metric Thread 2	
7045-2-10	1/8	10x1.0	----
7045-4-12	1/4	12x1.5	----
7045-4-14	1/4	14x1.5	----
7045-6-16	3/8	16x1.5	----
7045-6-18	3/8	18x1.5	----
7045-8-16	1/2	16x1.5	----
7045-8-18	1/2	18x1.5	----
7045-8-22	1/2	22x1.5	----
7045-12-27	3/4	27x2.0	----
7045-16-33	1	33x2.0	----
7045-20-42	1-1/4	42x2.0	----

More sizes available

HYDRAULIC

# HIGH PRESSURE SWIVELS 3000 PSI

# HYDRAULIC ADAPTERS

## HIGH PRESSURE SWIVELS

### MALE CONNECTOR



Part #	JIC Thread Size 1	Male Pipe Thread 2	
HP2404-6-4	9/16-18	1/4	----
HP2404-8-6	3/4-16	3/8	----
HP2404-10-8	7/8-14	1/2	----
HP2404-12-12	1-1/16-12	3/4	----
HP2404-16-16	1-5/16-12	1	----
HP2404-20-20	1-5/8-12	1-1/4	----
HP2404-24-24	1-7/8-12	1-1/2	----

### FEMALE CONNECTOR



Part #	JIC Thread Size 1	Female Pipe Thread 2	
HP2405-6-4	9/16-18	1/4	----
HP2405-8-6	3/4-16	3/8	----
HP2405-10-8	7/8-14	1/2	----
HP2405-12-12	1-1/16-12	3/4	----
HP2405-16-16	1-5/16-12	1	----
HP2405-20-20	1-5/8-12	1-1/4	----
HP2405-24-24	1-7/8-12	1-1/2	----

### TUBE ADAPTER



Part #	JIC Thread Size 1	JIC Thread Size 2	
HP2406-6-6	9/16-18	9/16-18	----
HP2406-8-8	3/4-16	3/4-16	----
HP2406-10-10	7/8-14	7/8-14	----
HP2406-12-12	1-1/16-12	1-1/16-12	----
HP2406-14-14	1-3/16-12	1-3/16-12	----
HP2406-16-16	1-5/16-12	1-5/16-12	----
HP2406-20-20	1-5/8-12	1-5/8-12	----
HP2406-24-24	1-7/8-12	1-7/8-12	----
HP2406-32-32	2-1/2-12	2-1/2-12	----

### MALE ELBOW



Part #	JIC Thread Size 1	Male Pipe Thread 2	
HP2501-6-4	9/16-18	1/4	----
HP2501-6-6	9/16-18	3/8	----
HP2501-8-6	3/4-16	3/8	----
HP2501-8-8	3/4-16	1/2	----
HP2501-10-8	7/8-14	1/2	----
HP2501-12-12	1-1/16-12	3/4	----
HP2501-16-16	1-5/16-12	1	----
HP2501-20-20	1-5/8-12	1-1/4	----
HP2501-24-24	1-7/8-12	1-1/2	----
HP2501-32-32	2-1/2-12	2	----

### FEMALE ELBOW



Part #	JIC Thread Size 1	Female Pipe Thread 2	
HP2502-6-4	9/16-18	1/4	----
HP2502-6-6	9/16-18	3/8	----
HP2502-8-6	3/4-16	3/8	----
HP2502-10-8	7/8-14	1/2	----
HP2502-12-12	1-1/16-12	3/4	----
HP2502-16-16	1-5/16-12	1	----
HP2502-20-20	1-5/8-12	1-1/4	----
HP2502-24-24	1-7/8-12	1-1/2	----
HP2502-32-32	2-1/2-12	2	----

### PIPE ADAPTER



Part #	Male Pipe Thread 1	Female Pipe Thread 2	
HP5405-4-4	1/4	1/4	----
HP5405-6-6	3/8	3/8	----
HP5405-8-8	1/2	1/2	----
HP5405-12-12	3/4	3/4	----
HP5405-16-16	1	1	----
HP5405-20-20	1-1/4	1-1/4	----
HP5405-24-24	1-1/2	1-1/2	----
HP5405-32-32	2	2	----

Also available in Stainless Steel

# HYDRAULIC ADAPTERS

# HIGH PRESSURE SWIVELS 3000 PSI

## PIPE COUPLING



Part #	Female Pipe Thread 1	Female Pipe 2	
HP5000-4-4	1/4	1/4	----
HP5000-6-6	3/8	3/8	----
HP5000-8-8	1/2	1/2	----
HP5000-12-12	3/4	3/4	----
HP5000-16-16	1	1	----
HP5000-20-20	1-1/4	1-1/4	----
HP5000-24-24	1-1/2	1-1/2	----
HP5000-32-32	2	2	----

Also available in Stainless Steel

## MALE SWIVEL ELBOW



Part #	Male Pipe Thread 1	Female NPSM 2	
HP1501-4-4	1/4	1/4	----
HP1501-4-6	1/4	3/8	----
HP1501-6-4	3/8	1/4	----
HP1501-6-6	3/8	3/8	----
HP1501-8-8	1/2	1/2	----
HP1501-12-12	3/4	3/4	----
HP1501-16-16	1	1	----
HP1501-20-20	1-1/4	1-1/4	----
HP1501-24-24	1-1/2	1-1/2	----
HP1501-32-32	2	2	----

Also available in Stainless Steel

## FEMALE SWIVEL ELBOW



Part #	Female Pipe Thread 1	Female NPSM 2	
HP1502-4-4	1/4	1/4	----
HP1502-4-6	1/4	3/8	----
HP1502-6-4	3/8	1/4	----
HP1502-6-6	3/8	3/8	----
HP1502-8-8	1/2	1/2	----
HP1502-12-12	3/4	3/4	----
HP1502-16-16	1	1	----
HP1502-20-20	1-1/4	1-1/4	----
HP1502-24-24	1-1/2	1-1/2	----
HP1502-32-32	2	2	----

Also available in Stainless Steel

## STREET ELBOW



Part #	Male Pipe Thread 1	Female Pipe Thread 2	
HP5502-4-4	1/4	1/4	----
HP5502-4-6	1/4	3/8	----
HP5502-6-4	3/8	1/4	----
HP5502-6-6	3/8	3/8	----
HP5502-8-8	1/2	1/2	----
HP5502-12-12	3/4	3/4	----
HP5502-16-16	1	1	----
HP5502-20-20	1-1/4	1-1/4	----
HP5502-24-24	1-1/2	1-1/2	----
HP5502-32-32	2	2	----

Also available in Stainless Steel

## JIC TO O-RING ELBOW CONNECTOR



Part #	JIC Thread Size 1	O-Ring Thread 2	
HP6801-6-6	9/16-18	9/16-18	----
HP6801-6-8	9/16-18	3/4-16	----
HP6801-8-8	3/4-16	3/4-16	----
HP6801-10-10	7/8-14	7/8-14	----
HP6801-12-12	1-1/16-12	1-1/16-12	----
HP6801-16-16	1-5/16-12	1-5/16-12	----
HP6801-20-20	1-5/8-12	1-5/8-12	----
HP6801-24-24	1-7/8-12	1-7/8-12	----
HP6801-32-32	2-1/2-12	2-1/2-12	----

\* Live swivel is on the 2 side as pictured.

# STEEL BEADED HOSE INSERTS

# HYDRAULIC ADAPTERS

## STEEL BEADED HOSE INSERTS

### MALE PIPE HOSE INSERT

SAE 430160



Part #	Hose I.D.		Pipe Thread
	1	2	
4404-4-2	1/4	1/8	----
4404-4-4	1/4	1/4	----
4404-5-2	5/16	1/8	----
4404-6-4	3/8	1/4	----
4404-6-6	3/8	3/8	----
4404-8-6	1/2	3/8	----
4404-8-8	1/2	1/2	----
4404-10-8	5/8	1/2	----
4404-12-12	3/4	3/4	----
4404-16-12	1	3/4	----
4404-16-16	1	1	----
4404-20-20	1-1/4	1-1/4	----
4404-24-20	1-1/2	1-1/4	----
4404-24-24	1-1/2	1-1/2	----
4404-32-32	2	2	----

More sizes available

### 90° PIPE HOSE INSERT

SAE 430260



Part #	Hose I.D.		Pipe Thread
	1	2	
4501-4-2	1/4	1/8	----
4501-4-4	1/4	1/4	----
4501-5-2	5/16	1/8	----
4501-6-2	3/8	1/4	----
4501-6-6	3/8	3/8	----
4501-8-6	1/2	3/8	----
4501-8-8	1/2	1/2	----
4501-10-8	5/8	1/2	----
4501-12-12	3/4	3/4	----
4501-16-12	1	3/4	----
4501-16-16	1	1	----
4501-20-16	1-1/4	1	----
4501-20-20	1-1/4	1-1/4	----
4501-24-24	1-1/2	1-1/2	----
4501-32-32	2	2	----

More sizes available

### 45° PIPE HOSE INSERT

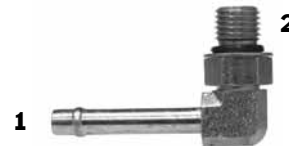
SAE 430360



Part #	Hose I.D.		Pipe Thread
	1	2	
4503-4-2	1/4	1/8	----
4503-6-4	3/8	1/4	----
4503-8-6	1/2	3/8	----
4503-10-8	5/8	1/2	----
4503-12-12	3/4	3/4	----
4503-16-16	1	1	----
4503-20-20	1-1/4	1-1/4	----

More sizes available

### 90° O-RING HOSE INSERT



Part #	Hose I.D.		O-Ring Thread 2
	1	2	
4601-NWO-4	1/4	7/16-20	----
4601-NWO-5	5/16	1/2-20	----
4601-NWO-6	3/8	9/16-18	----
4601-NWO-8	1/2	3/4-16	----
4601-NWO-10	5/8	7/8-14	----
4601-NWO-10-8	5/8	3/4-16	----
4601-NWO-12	3/4	1-1/16-12	----
4601-NWO-16	1	1-5/16-12	----
4601-NWO-16-12	1	1-1/16-12	----
4601-NWO-20	1-1/4	1-5/8-12	----
4601-NWO-24	1-1/2	1-7/8-12	----
4601-NWO-24-20	1-1/2	1-5/8-12	----
4601-NWO-32	2	2-1/2-12	----

More sizes available

## 45° O-RING HOSE INSERT



Part #	Hose I.D. 1	O-Ring Thread 2	
4603-NWO-4	1/4	7/16-20	----
4603-NWO-6	3/8	9/16-18	----
4603-NWO-8	1/2	3/4-16	----
4603-NWO-10	5/8	7/8-14	----
4603-NWO-12	3/4	1-1/12-12	----
4603-NWO-16	1	1-5/16-12	----
4603-NWO-20	1-1/4	1-5/8-12	----
4603-NWO-20-16	1-1/4	1-5/16-12	----
4603-NWO-20-24	1-1/4	1-7/8-12	----
4603-NWO-24	1-1/2	1-7/8-12	----
4603-NWO-24-20	1-1/2	1-5/8-12	----
4603-NWO-32	2	2-1/2-12	----

*More sizes available*

## O-RING HOSE INSERT



Part #	Hose I.D. 1	O-Ring Thread 2	
4604-O-4	1/4	7/16-20	----
4604-O-5	5/16	1/2-20	----
4604-O-6	3/8	9/16-18	----
4604-O-8	1/2	3/4-16	----
4604-O-10	5/8	7/8-14	----
4604-O-10-8	5/8	3/4-16	----
4604-O-12	3/4	1-1/16-12	----
4604-O-16	1	1-5/16-12	----
4604-O-16-12	1	1-1/16-12	----
4604-O-20	1-1/4	1-5/8-12	----
4604-O-20-16	1-1/4	1-5/16-12	----
4604-O-24	1-1/2	1-7/8-12	----
4604-O-24-20	1-1/2	1-5/8-12	----

*More sizes available*

**Aphorism:** A short, pointed sentence expressing a wise or clever observation or general truth:

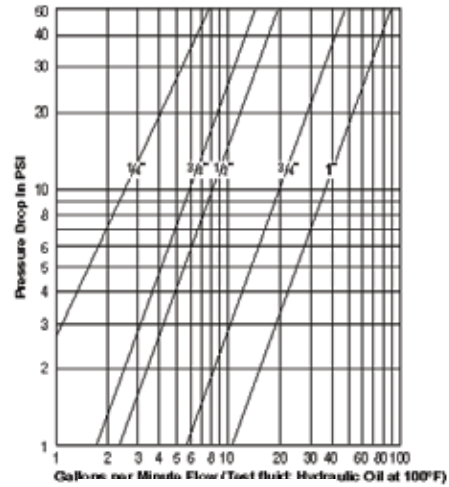
1. The nicest thing about the future is that it always starts tomorrow.
2. Money will buy a fine dog but only kindness will make him wag his tail.
3. If you don't have a sense of humor, you probably don't have any sense.
4. Seat belts are not as confining as wheelchairs.
5. A good time to keep your mouth shut is when you're in deep water.
6. How come it takes so little time for a child who is afraid of the dark to become a teenager who wants to stay out all night?
7. Business conventions are important because they demonstrate how many people a company can operate without.
8. Why is it that at class reunions you feel younger than everyone else looks?
9. Scratch a cat and you will have a permanent job.
10. No one has more driving ambition than the boy who wants to buy a car.
11. There are no new sins; the old ones just get more publicity.
12. There are worse things than getting a call for a wrong number at 4 AM. It could be a right number.
13. No one ever says 'It's only a game.' when their team is winning.
14. I've reached the age where the happy hour is a nap.
15. Be careful reading the fine print. There's no way you're going to like it.
16. The trouble with bucket seats is that not everybody has the same size bucket.
17. Do you realize that in about 40 years, we'll have thousands of old ladies running around with tattoos? (And rap music will be Golden Oldies!)
18. Money can't buy happiness -- but somehow it's more comfortable to cry in a Corvette than in a Yugo.
19. After 60, if you don't wake up aching in every joint, you are probably dead!!
20. Always be yourself because the people that matter don't mind, and the ones who mind, don't matter.

# QUICK DISCONNECT

# HYDRAULIC COUPLINGS

## ISO-A Interchange

Nominal Size	Material	Rated Flow	Minimum Burst-Coupler	Minimum Burst-Plug	Minimum Burst Connected
1/4"	Steel	2.5 GPM	27,260 PSI	20,155 PSI	18,850 PSI
3/8"	Steel	6.6 GPM	22,185 PSI	18,125 PSI	17,400
1/2"	Steel	11.3 GPM	18,850 PSI	15,370 PSI	16,820
3/4"	Steel	24.5 GPM	18,705 PSI	17,400 PSI	15,080
1"	Steel	29.7 GPM	16,820 PSI	14,500 PSI	14,500



## ISO 7241-A



660 Series  
56  
61C

**COUPLER**



660 Series  
56N  
61N

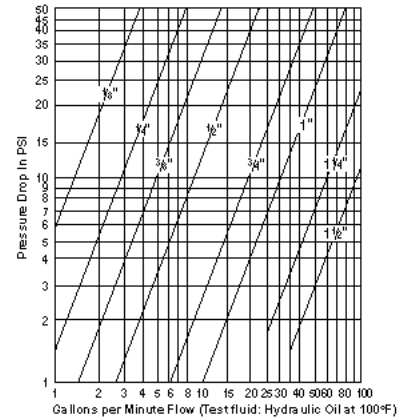
**PLUG**

Part #	Body Size	NPT Female	Working PSI	
ANV-14-F	1/4	1/4	5075	----
ANV-38-F	3/8	3/8	4550	----
ANV-12-F	1/2	1/2	4500	----
ANV-34-F	3/4	3/4	3625	----
ANV-1-F	1	1	3335	----

Part #	Body Size	NPT Female	Working PSI	
ANV-14-M	1/4	1/4	5075	----
ANV-38-M	3/8	3/8	4550	----
ANV-12-M	1/2	1/2	4500	----
ANV-34-M	3/4	3/4	3625	----
ANV-1-M	1	1	3335	----

## ISO-B Interchange

Nominal Size	Material	Rated Flow	Minimum Burst-Coupler	Minimum Burst-Plug	Minimum Burst Connected
1/8"	Steel	2.0 GPM	25,300 PSI	23,200 PSI	23,200 PSI
1/4"	Steel	4.2 GPM	27,260 PSI	21,460 PSI	20,880 PSI
3/8"	Steel	8.0 GPM	27,550 PSI	18,850 PSI	19,430 PSI
1/2"	Steel	11.0 GPM	23,780	15,370 PSI	15,370 PSI
3/4"	Steel	24.0 GPM	19,720	15,950 PSI	15,660 PSI
1"	Steel	25.0 GPM	19,720	15,950 PSI	15,660 PSI



## ISO 7241-B



'H' Series  
PCC  
72C

**COUPLER**



'H' Series  
PCN  
72N

**PLUG**

Part #	Body Size	NPT Female	Working PSI	
HNV-14-F	1/4	1/4	5075	----
HNV-38-F	3/8	3/8	4350	----
HNV-12-F	1/2	1/2	4060	----
HNV-34-F	3/4	3/4	2610	----
HNV-1-F	1	1	2175	----

Part #	Body Size	NPT Female	Working PSI	
HNV-14-M	1/4	1/4	5075	----
HNV-38-M	3/8	3/8	4350	----
HNV-12-M	1/2	1/2	4060	----
HNV-34-M	3/4	3/4	2610	----
HNV-1-M	1	1	2175	----

# HYDRAULIC COUPLINGS

# QUICK DISCONNECT

## FLUSH FACE

Nominal Size	ISO Size	Maximum Working Pressure	Rated Flow	Minimum Burst-Plug	Minimum Burst-Coupler	Minimum Burst Connected
1/8"	5	7250 PSI	1.6 GPM	43,5000 PSI	29,000 PSI	43,500 PSI
1/4"	6.3	5000 PSI	4.8 GPM	28,275 PSI	23,925 PSI	33,350 PSI
3/8"	10	5000 PSI	10.0 GPM	29,200 PSI	21,025 PSI	20,590 PSI
1/2"	12.5	5000 PSI	19.8 GPM	25,375 PSI	21,750 PSI	23,925 PSI
5/8"	16	5000 PSI	26.4 GPM	24,255 PSI	21,750 PSI	23,200 PSI
3/4"	19	5000 PSI	37.0 GPM	20,580 PSI	20,580 PSI	20,300 PSI
1"	25	5000 PSI	52.8 GPM	20,580 PSI	20,580 PSI	21,750 PSI
1 1/2"	40	3625 PSI	89.5 GPM	14,500 PSI	14,500 PSI	14,500 PSI

### ISO 16028



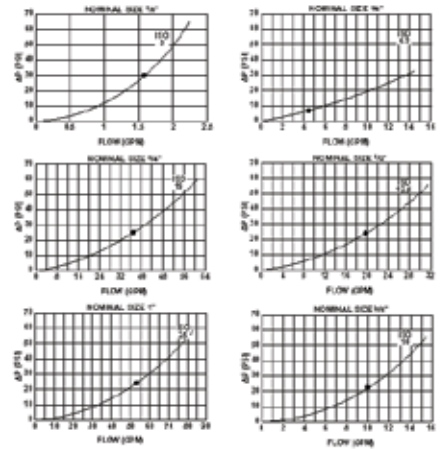
**COUPLER**

FF Series  
HTMC  
74C



**PLUG**

FF Series  
HTMN  
74N



Part #	Body Size	NPT Female	Working PSI	
FF-14-F	1/4	1/4	4400	----
FF-38-12-F	3/8	1/2	4350	----
FF-38-F	3/8	3/8	4350	----
FF-12-F	1/2	1/2	3650	----
FF-34-12-SAE-F	1/2	3/4	3675	----
FF-34-F	3/4	3/4	3650	----
FF-1-F	1	1	3675	----

Part #	Body Size	NPT Female	Working PSI	
FF-14-M	1/4	1/4	4400	----
FF-38-12-M	3/8	1/2	4350	----
FF-38-M	3/8	3/8	4350	----
FF-12-M	1/2	1/2	3650	----
FF-34-12-SAE-M	1/2	3/4	3675	----
FF-34-M	3/4	3/4	3650	----
FF-1-M	1	1	3675	----

## AG INTERCHANGE

Nominal Size	Rated Flow	Minimum Burst-Coupler	Minimum Burst-Plug	Minimum Burst Connected
1/4"	6.08 GPM	27,550 PSI	21,170 PSI	22,040 PSI
3/8"	9.5 GPM	26,970 PSI	18,125 PSI	23,200 PSI
1/2"	11.3 GPM	18,850 PSI	15,370 PSI	16,820 PSI
3/4"	24.5 GPM	17,400 PSI	17,400 PSI	15,370 PSI
1"	27.5 GPM	16,820 PSI	14,500 PSI	14,790 PSI

### ISO 7241-A

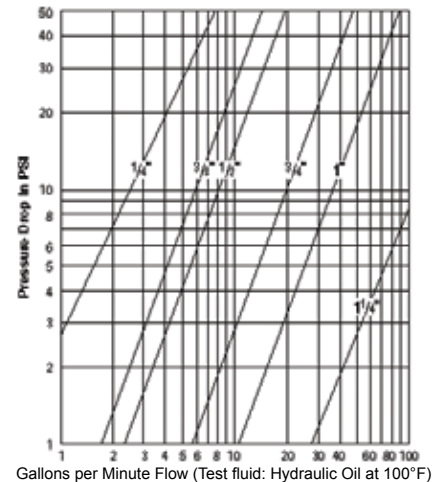


**COUPLER**

Pioneer 4000 Series



**PLUG**



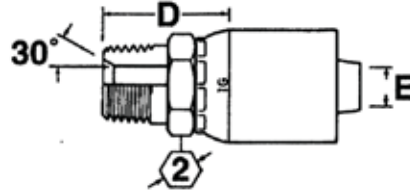
Part #	Body Size	NPT Female	Working PSI	
NV-14-F	1/4	1/4	5075	----
NV-38-F	3/8	3/8	4550	----
NV-12-F	1/2	1/2	3625	----
NV-34-F	3/4	3/4	3625	----
NV-1-F	1	1	3335	----

Part #	Body Size	NPT Female	Working PSI	
NV-14-M	1/4	1/4	5075	----
NV-38-M	3/8	3/8	4550	----
NV-12-M	1/2	1/2	3625	----
NV-34-M	3/4	3/4	3625	----
NV-1-M	1	1	3335	----

HYDRAULIC

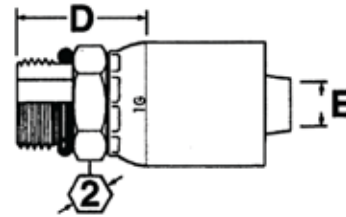


**NPTF SOLID MALE PIPE FITTING - ONE PIECE BITE TYPE**



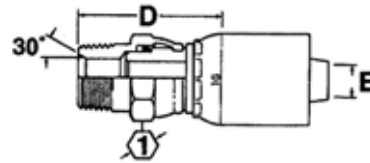
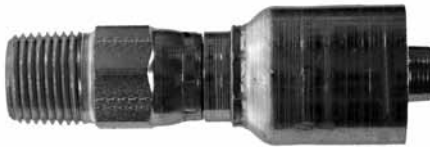
Part #	Thread Size	Hose ID	Overall Length	D Cut-off	E Nipple ID	Hex 2	Price
D1MP 101-0404	1/4-18	1/4	2.06	1.14	.17	.56	----
D1MP 101-0606	3/8-18	3/8	2.27	1.28	.26	.69	----
D1MP 101-0808	1/2-14	1/2	2.74	1.56	.38	.88	----
D1MP 101-1212	3/4-14	3/4	2.84	1.65	.61	1.13	----
D1MP 101-1616	1-11 1/2	1	3.22	1.86	.82	1.38	----
D1MP 101-2020	1-1/4 - 11-1/2	1-1/4	3.52	1.79	1.05	1.81	----
D1MP 101-2424	1-1/2 - 11-1/2	1-1/2	4.18	2.36	1.26	2.00	----

**MALE BOSS O-RING - ONE PIECE/ FITTING**



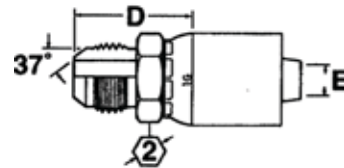
Part #	Thread Size	Hose ID	Overall Length	D Cut-off	E Nipple ID	Hex 2	Price
D1MB 105-0404	7/16-20	1/4	1.84	.92	.17	.56	----
D1MB 105-0606	9/16-18	3/8	2.00	1.00	.26	.69	----
D1MB 105-0808	3/4-16	1/2	2.36	1.19	.38	.88	----
D1MB 105-1212	1-1/16 - 12	3/4	2.44	1.25	.61	1.25	----
D1MB 105-1616	1-5/16 - 12	1	2.74	1.39	.82	1.50	----
D1MB 105-2020	1-5/8 - 12	1-1/4	3.63	1.90	1.05	1.88	----

**NPTF MALE SWIVEL PIPE FITTING - ONE PIECE BITE TYPE**



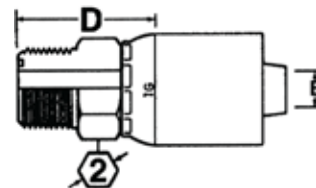
Part #	Thread Size	Hose ID	Overall Length	D Cut-off	E Nipple ID	Hex 1	Price
D1PS 113-0404	1/4 - 18	1/4	2.59	1.62	.17	.56	----
D1PS 113-0606	3/8 - 18	3/8	2.66	1.67	.26	.69	----
D1PS 113-0808	1/2 - 14	1/2	3.13	1.96	.38	.88	----
D1PS 113-1212	3/4 - 14	3/4	3.24	2.05	.61	1.13	----
D1PS 113-1616	1 - 11-1/2	1	3.88	2.53	.81	1.38	----

**MALE JIC 37° FITTING - ONE PIECE BITE TYPE**



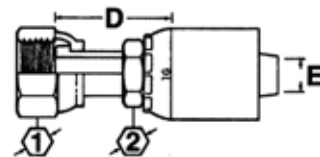
Part #	Thread Size	Hose ID	A Overall	D Cut-Off	E Nipple	Hex Dia. 2	Price
D1MJ 103-0404	7/16-20	1/4	2.00	1.07	.17	.56	----
D1MJ 103-0606	9/16-18	3/8	2.16	1.17	.26	.69	----
D1MJ 103-0808	3/4-16	1/2	2.57	1.41	.38	.81	----
D1MJ 103-1212	1 1/16-12	3/4	2.94	1.75	.61	1.12	----
D1MJ 103-1616	1 5/16-12	1	3.25	1.90	.82	1.38	----
D1MJ 103-2020	1 5/8-12	1-1/4	3.89	2.16	1.05	1.75	----

**MALE O-RING FACE SEAL FITTING - ONE PIECE BITE TYPE**



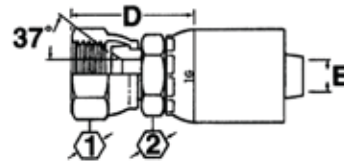
Part #	Thread Size	Hose ID	A Overall	D Cut-Off	E Nipple	Hex Dia. 2	Price
D1MR 1J0-0404	9/16-18	1/4	1.78	.86	.17	.62	----
D1MR 1J0-0606	11/16-16	3/8	1.99	.99	.26	.75	----
D1MR 1J0-0808	13/16-16	1/2	2.30	1.13	.38	.88	----
D1MR 1J0-1212	1 3/16-12	3/4	2.63	1.44	.61	1.25	----
D1MR 1J0-1616	1 7/16-12	1	2.53	1.34	.61	1.50	----

**FEMALE O-RING FACE SEAL FITTING - ONE PIECE BITE TYPE**



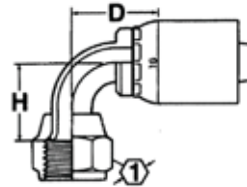
Part #	Thread Size	Hose ID	A Overall	D Cut-Off	E Nipple	Hex Dia. 1	Hex Dia. 2	Price
D1FR 1JC-0404	9/16-18	1/4	1.95	1.03	.17	.69	.56	----
D1FR 1JC-0606	11/16-16	3/8	2.23	1.24	.26	.81	.69	----
D1FR 1JC-0808	13/16-16	1/2	2.67	1.50	.38	.94	.88	----
D1FR 1JC-1212	1 3/16-12	3/4	2.91	1.72	.61	1.38	1.12	----
D1FR 1JC-1616	1 7/16-12	1	3.29	1.94	.81	1.62	1.38	----

**FEMALE JIC 37° SWIVEL FITTING - ONE PIECE BITE TYPE**



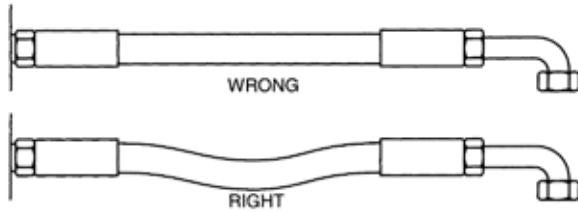
Part #	Thread Size	Hose ID	Overall Length	D Cut-off	E Nipple ID	Hex 1	Hex 2	Price
D1FJ 106-0404	7/16-20	1/4	2.00	1.07	.17	.56	.56	----
D1FJ 106-0606	9/16-18	3/8	2.28	1.28	.26	.69	.56	----
D1FJ 106-0808	3/4-16	1/2	2.63	1.46	.38	.88	.81	----
D1FJ 106-1212	1 1/16-12	3/4	2.84	1.65	.61	1.25	1.12	----
D1FJ 106-1616	1 5/16-12	1	3.29	1.93	.81	1.50	1.38	----
D1FJ 106-2020	1 5/8-12	5/4	3.61	1.88	1.05	2.00	1.88	----
D1FJ 106-2424	1 7/8-12	1-1/2	3.90	2.07	1.26	2.25	2.12	----

**FEMALE JIC 37° SWIVEL 90° ELBOW - ONE PIECE BITE TYPE**



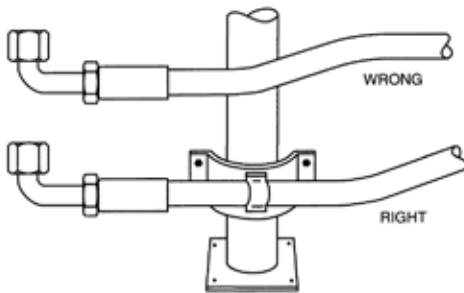
Part #	Thread Size	Hose ID	Overall Length	D Cut-off	H Drop	Hex 1	Price
D1FJB 139-0404	7/16-20	1/4	1.84	.92	.68	.56	----
D1FJB 139-0606	9/16-18	3/8	2.21	1.22	.84	.69	----
D1FJB 139-0808	3/4-16	1/2	2.59	1.42	1.09	.88	----
D1FJB 139-1212	1 1/16-12	3/4	3.36	2.17	1.80	1.25	----
D1FJB 139-1616	1 5/16-12	1	3.56	2.20	2.39	1.50	----
D1FJB 139-2020	1 5/8-12	1-1/4	4.25	2.52	2.75	2.00	----

## 1. Provide for length change.



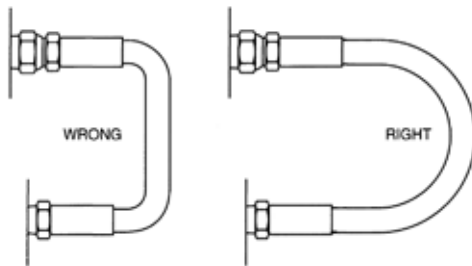
In straight hose installations, allow enough slack in the hose line to provide for changes in length that will occur when pressure is applied. This change in length can be from +2% to -4%.

## 3. Protect from hazardous environment



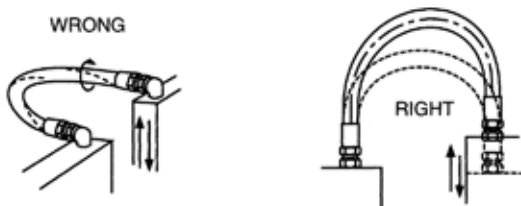
Keep hose away from hot parts. High ambient temperature will shorten hose life. If you can not route it away from the heat source, insulate it.

## 5. Use proper bend radius.



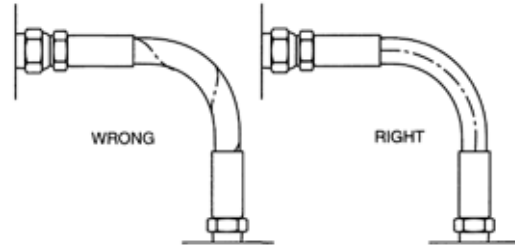
Keep the bend radius of the hose as large as possible to avoid collapsing of the hose and restriction of flow. Follow catalog specs on minimum bend radii.

## 8. Avoid improper hose movement



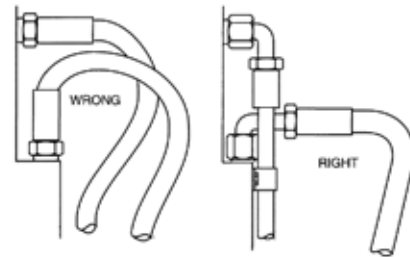
Make sure relative motion of the machine components produces bending rather than twisting of the hose. Hose should be routed so that the flex is in the same plane as the equipment movement.

## 2. Avoid twisting and orient properly.



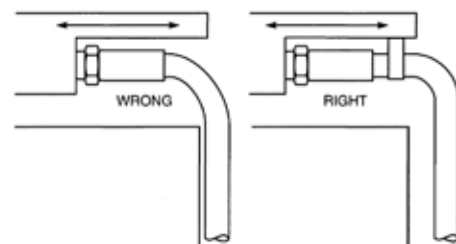
Do not twist hose during installation. This can be determined by the printed layline on the hose. Pressure applied to a twisted hose can cause failure or loosening of connections.

## 4. Avoid mechanical strain.



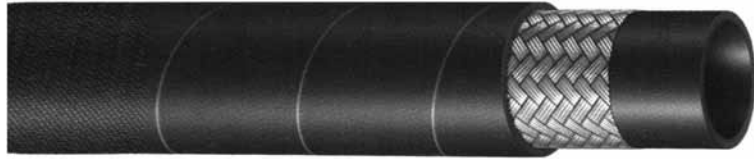
Use elbows and adapters in the installation to relieve strain on the assembly and to provide easier and neater installations that are accessible for inspection and maintenance.

## 6. Secure for protection.



Install hose runs to avoid rubbing or abrasion.

**SAE100 R1 AT/ 1SN**



**Construction**

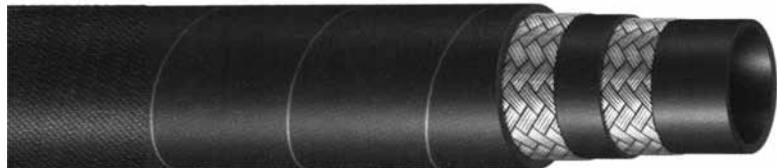
- **Tube:** Oil resistant Synthetic Rubber.
- **Reinforcement:** 1-Wire Braid. High tensile steel wire.
- **Cover:** Oil, weather and abrasion resistant Synthetic Rubber.
- **Hose is shipped in bundles.**
- Reel \$ available upon request.

**Application and Temperature Range**

- Petroleum base hydraulic fluids and lubricating oils within a temperature range of -40°F to +212°F (-40°C to + 100°C).
- Water, water/ glycol and water/ oil emulsion hydraulic fluids up to +185°F (+85°C).
- Air within a temperature range of -40°F to +158°F (-40°C to + 70°C).
- **Maximum operating temperature:** 125°C (257°F).
- **Air Maximum temperature:** 70°C (160°F).

Part #	I.D.	O.D.	Working Pressure	Burst Pressure	Min. B/ Radius	Weight /FT	Roll Length/ feet	
100R1025	1/4	0.53	3250	13000	3.94	0.15	164	----
100R1038	3/8	0.69	2600	10400	5.12	0.23	164	----
100R1050	1/2	0.81	2325	9300	7.09	0.28	164	----
100R1075	3/4	1.09	1525	6100	9.45	0.42	164	----
100R1100	1	1.40	1275	5100	11.81	0.59	65	----
100R1125	1-1/4	1.71	625	2500	16.54	0.85	65	----
100R1150	1-1/2	1.99	500	2000	19.69	1.01	65	----

**SAE100 R2 AT/ 2SN**



**Construction**

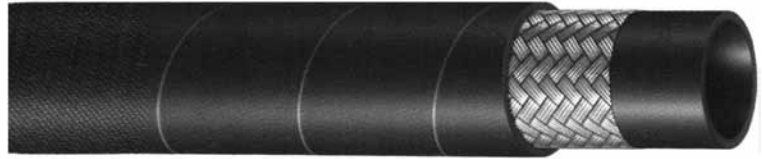
- **Tube:** Oil resistant Synthetic Rubber.
- **Reinforcement:** 2-Wire Braid. High tensile steel wire.
- **Cover:** Oil, weather and abrasion resistant Synthetic Rubber.
- **Hose is shipped in bundles.**
- Reel \$ available upon request.

**Application and Temperature Range**

- Petroleum base hydraulic fluids and lubricating oils within a temperature range of -40°F to +212°F (-40°C to + 100°C).
- Water, water/ glycol and water/ oil emulsion hydraulic fluids up to +185°F (+85°C).
- Air within a temperature range of -40°F to +158°F (-40°C to + 70°C).

Part #	I.D.	O.D.	Working Pressure	Burst Pressure	Min. B/ Radius	Weight /FT	Roll Length/ feet	
100R2025	1/4	0.59	5800	23200	3.94	0.22	164	----
100R2038	3/8	0.75	4750	19000	5.12	0.36	164	----
100R2050	1/2	0.87	4000	16000	7.09	0.41	164	----
100R2075	3/4	1.15	3100	12400	9.45	0.60	164	----
100R2100	1	1.50	2400	9600	11.81	0.89	65	----
100R2125	1-1/4	1.90	1625	6500	16.54	1.39	65	----
100R2150	1-1/2	2.15	1250	5000	19.69	1.58	65	----

**SAE100 R17**



**Construction**

- **Tube:** Oil resistant Synthetic Rubber.
- **Reinforcement:** one (upto 1/2") or two (from 5/8") high tensile steel wire braids.
- **Cover:** Oil, weather and abrasion resistant Synthetic Rubber.
- **Hose is shipped in bundles.**
- Reel \$ available upon request.

**Application and Temperature Range**

- Petroleum base hydraulic fluids and lubricating oils within a temperature range of -40°F to +257°F (-40°C to + 125°C).
- Water, water/ glycol and water/ oil emulsion hydraulic fluids up to +185°F (+85°C).
- Air within a temperature range of -40°F to +158°F (-40°C to + 70°C).

Part #	I.D.	O.D.	Working Pressure	Burst Pressure	Min. B/ Radius	Weight /FT	Roll Length/ feet	List Price
100R17025	1/4	0.49	3000	12000	1.97	0.14	164	----
100R17038	3/8	0.65	3000	12000	2.56	0.20	164	----
100R17050	1/2	0.78	3000	12000	3.54	0.34	164	----
100R17075	3/4	1.10	3000	12000	4.92	0.57	164	----
100R17100	1	1.43	3000	12000	5.91	1.02	65	----

**SAE100 R16**



**Construction**

- **Tube:** Oil resistant Synthetic Rubber.
- **Reinforcement:** 2-Wire Braid. High tensile steel wire.
- **Cover:** Oil, weather and abrasion resistant Synthetic Rubber.
- **Hose is shipped in bundles.**
- Reel \$ available upon request.

**Application and Temperature Range**

- Petroleum base hydraulic fluids and lubricating oils within a temperature range of -40°F to +212°F (-40°C to + 125°C).
- Water, water/ glycol and water/ oil emulsion hydraulic fluids up to +185°F (+85°C).
- Air within a temperature range of -40°F to +158°F (-40°C to + 70°C).

Part #	I.D.	O.D.	Working Pressure	Burst Pressure	Min. B/ Radius	Weight /FT	Roll Length/ feet	List Price
100R16025	1/4	0.57	5000	20000	1.97	0.19	164	----
100R16038	3/8	0.74	4000	16000	2.48	0.29	164	----
100R16050	1/2	0.86	3500	14000	3.46	0.35	164	----
100R16075	3/4	1.14	2250	9000	4.72	0.52	164	----
100R16100	1	1.44	2000	8000	5.91	0.73	65	----

**Two-Way**



BKH

Part Number	Nominal Size	Thread	Working Pressure	
GE2-14-NPT	1/4"	1/4" NPTF	7250 PSI	----
GE2-38-NPT	3/8"	3/8" NPTF	7250 PSI	----
GE2-12-NPT	1/2"	1/2" NPTF	7250 PSI	----
GE2-34-NPT	3/4"	3/4" NPTF	5800 PSI	----
GE2-1-NPT	1"	1" NPTF	5075 PSI	----
*GE2-114T-NPT	1"	1-1/4" NPTF	5075 PSI	----
*GE2-112T-NPT	1"	1-1/2" NPTF	5075 PSI	----
*GE2-2T-NPT	2"	2" NPTF	5075 PSI	----

Part Number	Nominal Size	Thread	Working Pressure	
GE2-04-SAE	1/4"	7/16-20 UNF	7250 PSI	----
GE2-06-SAE	3/8"	9/16-18 UNF	7250 PSI	----
GE2-08-SAE	1/2"	3/4-16 UNF	7250 PSI	----
GE2-12-SAE	3/4"	1-1/16-12 UNF	5800 PSI	----
GE2-16-SAE	1"	1-5/16-12 UNF	5075 PSI	----
*GB2-20T-SAE	1"	1-5/8-12 UNF	5075 PSI	----
*GB2-24T-SAE	1"	1-7/8-12 UNF	5075 PSI	----
*GB2-32T-SAE	2"	2-1/2-12 UNF	5075 PSI	----

\* = Reduced Port Only  
Full Port available by special quote.

**Temp Rating = -22° - 212°F**

**Construction:** Steel Body, Ball, Stem  
Zinc Chromate Plate  
Buna "O" Rings (Viton on request)  
Delrin Ball Seats

**Three-Way**



BK3

Part Number	Nominal Size	Thread	Working Pressure	
GE3L-14-NPT	1/4"	1/4" NPTF	5800 PSI	----
GE3L-38-NPT	3/8"	3/8" NPTF	5800 PSI	----
GE3L-12-NPT	1/2"	1/2" NPTF	5800 PSI	----
GE3L-34-NPT	3/4"	3/4" NPTF	5075 PSI	----
GE3L-1-NPT	1"	1" NPTF	5075 PSI	----
*GE3L-114T-NPT	1 1/4"	1 1/4" NPTF	5075 PSI	----
*GE3L-112T-NPT	1 1/2"	1 1/2" NPTF	5075 PSI	----
*GE3L-2T-NPT	2"	2" NPTF	5075 PSI	----

Part Number	Nominal Size	Thread	Working Pressure	
GE3L-04-SAE	1/4"	7/16-20 UNF	5800 PSI	----
GE3L-06-SAE	3/8"	9/16-18 UNF	5800 PSI	----
GE3L-08-SAE	1/2"	3/4-16 UNF	5800 PSI	----
GE3L-12-SAE	3/4"	1-1/16-12 UNF	5075 PSI	----
GE3L-16-SAE	1"	1-5/16-12 UNF	5075 PSI	----
*GB3L-20T-SAE	1 1/4"	1-5/8-12 UNF	5075 PSI	----
*GB3L-24T-SAE	1 1/2"	1-7/8-12 UNF	5075 PSI	----
*GB3L-32T-SAE	2"	2-1/2-12 UNF	5075 PSI	----

\* = Reduced Port Only  
Available in Reduced Port  
Full Port available by special quote.

**Temp Rating = -22° - 212°F**

**Construction:** Steel Body, Ball, Stem  
Zinc Chromate Plate  
Buna "O" Rings (Viton on request)  
Delrin Ball Seats

**Also Available in Stainless Steel**

# HYDRAULIC MOTOR

# ACCESSORIES

(Charlynn 101 / Danfoss DH / White HS / Parker ME-MB-TE-TJ / -RR-USA HP)

The MMPH series gear set, shaft distribution flow, hydraulic motor is a compact, high efficient, low speed high torque design which can be used in either parallel or series systems.



Part #		MMPH50	MMPH80	MMPH100	MMPH125	MMPH160	MMPH200	MMPH250	MMPH315	MMPH400
		----	----	----	----	----	----	----	----	----
<b>Displacement</b> cm <sup>3</sup> /rev(cu.in/rev)		51.7 (3.15)	77.7 (4.75)	96.2 (5.9)	118 (7.2)	156 (9.5)	190 (11.6)	231 (14.1)	312 (19)	387 (23.6)
<b>Max Speed rpm</b>	Cont.	880	740	590	475	370	295	240	190	150
	Int.	975	825	675	595	465	370	295	235	185
<b>Max Torque</b> NW (in.lbs)	Cont.	81 (717)	129(1140)	161(1425)	202(1790)	245(2170)	286(2530)	360(3185)	406(3575)	435(3850)
	Int.	108(956)	171(1514)	213(1885)	268(2372)	342(3026)	390(3450)	456(4035)	505(4470)	533(4717)
<b>Max performance</b> KW/ (HP)	Cont.	7(9.4)	9.1(12.2)	9(12.1)	9.1(12.2)	8.7(11.65)	8.1(10.85)	8.2(11)	7.2(9.7)	6.1(8.2)
	Int.	8.9(12)	11.8(15.8)	11.9(15.95)	11.8(15.8)	11.9(15.95)	10.9(14.7)	10.1(13.5)	8.6(11.5)	7.2(9.65)
<b>Max Differential</b> Mpa/ (PSI)	Cont.	12.5(1840)	12.5(1840)	12.5(1840)	12.5(1840)	12.5(1840)	11(1625)	11(1625)	11(1625)	10(1450)
	Int.	16.5(2425)	16.5(2425)	16.5(2425)	16.5(2425)	16.5(2425)	16.5(2425)	14(2060)	12.5(1840)	10.5(1540)
<b>Max flow</b> L/min. / (gpm)	Cont.	45(11.85)	60(15.8)	60(15.8)	60(15.8)	60(15.8)	60(15.8)	60(15.8)	60(15.8)	60(15.8)
	Int.	50(13.15)	75(19.75)	75(19.75)	75(19.75)	75(19.75)	75(19.75)	75(19.75)	75(19.75)	75(19.75)
<b>Weight</b>	lb.	5.6	5.7	5.9	6	6.2	6.4	6.6	6.9	7.4

## ORDERING INFORMATION

### MMPH

### 50

### H2

### K

### P

#### MODEL SERIES

MMPH (GEROTOR)

MMRS (GEROTOR)

#### FRAME SIZE

(cu.in/rev)

MMPH

MMRS

50 (3.15) 50 (3.13)  
 80 (4.74) 80 (4.92)  
 100 (5.87) 100 (6.15)  
 125 (7.19) 125 (7.62)  
 160 (9.49) 160 (9.59)  
 200 (11.59) 200 (12.15)  
 250 (15.25) 250 (15.38)  
 315 (19.02) 315 (19.2)  
 400 (23.57) 375 (22.58)

#### MOUNTING FLANGE TYPE

H4 - 4 Bolt  
 H2 - SAE "A" 2 Bolt  
 H6 - Magneto

#### DRIVE SHAFT

K - 1 Inch Woodruff Key  
 S - SAE - 6B Spline  
 H - 1 Inch parallel  
 0.40 dia. crosshole  
 H1 - 1 Inch parallel  
 0.31 dia. crosshole

#### PORT SIZE

P - 1/2 NPTF  
 S - 7/8-14 SAE "O" Ring  
 F - Manifold

(Charlynn 103 & 158 / Danfoss DS / Parker ME-MB-TE-TJ / RR-USA HR)

The MMRS series advanced gear set, shaft distribution flow, hydraulic motor is a compact, low noise, highly efficient torque low speed design. The gear set also affords a reliable smooth start-up at low pressure. The special design of the drive linkage and high pressure capability of the shaft seal provides a long life and these motors can be used in either series or parallel operation.



Part #		MMRS50	MMRS80	MMRS100	MMRS125	MMRS160	MMRS200	MMRS250	MMRS315	MMRS375
		----	----	----	----	----	----	----	----	----
<b>Displacement</b> cm <sup>3</sup> /rev(cu.in/rev)		51.3 (3.13)	80.6 (4.92)	100.8 (6.15)	124.9 (7.62)	157.2 (9.59)	199.2 (12.15)	252 (15.38)	314.5 (19.2)	370 (22.58)
<b>Max Speed rpm</b>	Rated	755	750	600	475	375	300	240	190	160
	Cont.	970	940	750	600	470	375	300	240	200
<b>Max Torque</b> NW (in.lbs)	Cont.	100(885)	190(1682)	240(2124)	292(2584)	363(3273)	358(3168)	352(3115)	360(3186)	420(3717)
	Int.	126(1115)	220(1947)	280(2478)	340(3010)	430(3806)	448(3965)	470(4159)	470(4159)	548(4850)
<b>Max performance</b> KW/ (HP)	Cont.	7.7(10.3)	15(20.10)	15(20.10)	14(18.75)	14(18.75)	11(14.75)	9(12.10)	7.2(9.7)	6.1(8.2)
	Int.	9.7(13)	17(22.8)	17(22.8)	16(21.45)	16(21.45)	14(18.75)	12(16.10)	9(12.10)	12(16.10)
<b>Max Differential</b> Mpa/ (PSI)	Cont.	14(2061)	17.5(2576)	17.5(2576)	17.5(2576)	16.5(2429)	13(1914)	11(1619)	8.5(1251)	8.5(1251)
	Int.	17.5(2576)	20(2944)	20(2944)	20(2944)	20(2944)	17.5(2576)	14(2061)	11.5(1693)	11.5(1693)
<b>Max flow</b> L/min. / (gpm)	Cont.	40(10.5)	60(15.8)	60(15.8)	60(15.8)	60(15.8)	60(15.8)	60(15.8)	60(15.8)	60(15.8)
	Int.	50(13.1)	75(19.75)	75(19.75)	75(19.75)	75(19.75)	75(19.75)	75(19.75)	75(19.75)	75(19.75)
<b>Weight</b>	lb.	6.7	6.9	6.9	7.2	7.5	8.0	8.5	9.0	9.3

HYDRAULIC



**MODEL # MGP-F20**

- Aluminium construction.
- 8 Displacement sizes from 0.36 to 1.52 cu. in/rev.
- Mounting flange is SAE A-2 bolt.
- Ports are SAE-12 inlet and SAE-10 outlet.
- Drive shaft is a 5/8 inch diameter straight with 5/32 straight key.

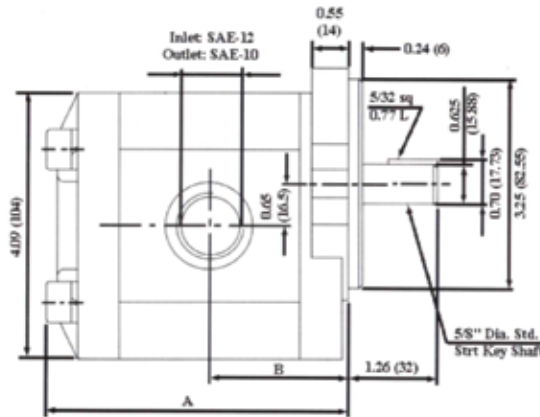
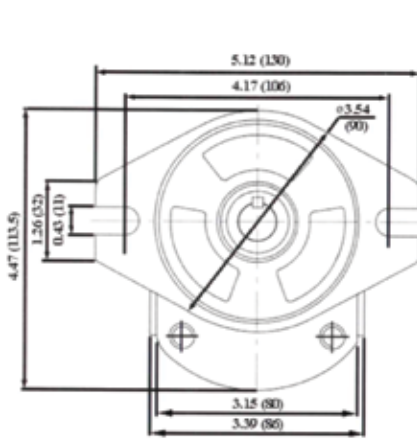
**Recommended working conditions:**

- Filtration 25 micron or better.
- Oil Viscosity 6 to 200 cSt.
- Inlet pressure 12 to 32 psi abs.
- Oil Temperature -25 to 55 degrees C (-12 to 175 F°).
- Ambient -22 to 55 C° (-8 to 130 F°).



Part #	Displacement cu.in/rev	PSI	Speed RPM		Weight Lbs	
			Rated	Max		
MGP-F20-06	0.36	3650	2000	3000	5.35	----
MGP-F20-08	0.48	3650	2000	3000	5.61	----
MGP-F20-10	0.61	3650	2000	3000	5.72	----
MGP-F20-12	0.73	3650	2000	3000	5.91	----
MGP-F20-14	0.85	3650	2000	3000	6.00	----
MGP-F20-16	0.97	2900	2000	3000	6.27	----
MGP-F20-20	1.22	2900	2000	3000	6.73	----
MGP-F20-25	1.52	2900	2000	3000	7.19	----

**INSTALLATION DATA**



**Port Sizes**  
**Inlet - SAE-12 (1 1/16-12)**  
**Outlet - SAE-10 (7/8-14)**

Part #	A		B	
	Millimeters	Inches	Millimeters	Inches
MGP-F20-06	98	3.87	45	1.77
MGP-F20-08	100	3.95	47	1.85
MGP-F20-10	104	4.12	48	1.89
MGP-F20-12	108	4.25	50	1.97

Part #	A		B	
	Millimeters	Inches	Millimeters	Inches
MGP-F20-14	110	4.35	51	2
MGP-F20-16	114	4.50	52.5	2.07
MGP-F20-20	120	4.72	56	2.2
MGP-F20-25	128	5.05	60	2.36

**ORDERING INFORMATION**

**MGP**

Aluminum  
Gear Pump

**F20**

High  
Pressure  
Series

**16**

Displacement  
cm3/rev  
(see chart)  
06/08/10/12/14/16  
20/25

**P**

Drive  
Shaft  
P-5/8 Dia  
Straight  
P1-3/4 Dia  
Straight  
S9-Spline 9 tooth

**C**

Rotation  
Direction  
C-Clockwise  
A-Counter Clockwise  
(viewed from drive shaft  
end)

## MODEL # MGP-F10

- All Aluminium construction.
- 7 Displacement sizes from 0.07 to 0.37 cu. in/rev.
- Mounting flange is SAE AA-2 bolt.
- Ports are SAE-8 inlet and SAE-6 outlet.
- Drive shaft is a 1/2 inch straight shaft with 1/8 key.

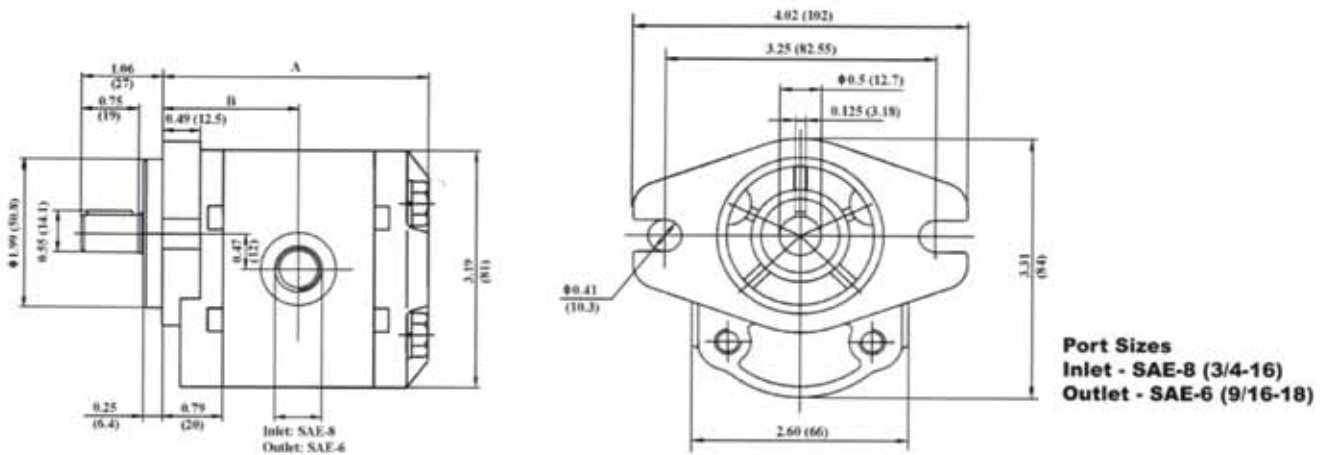
### Recommended working conditions:

- Filtration 25 micron or better.
- Oil Viscosity 6 to 200 cSt.
- Inlet pressure 12 to 32 psi abs.
- Oil Temperature -25 to 55 degrees C (-12 to 175 F°).
- Ambient -22 to 55 C° (-8 to 130 F°).



Part #	Displacement cu.in/rev	PSI	Speed RPM		Weight Lbs	
			Rated	Max		
MGP-F10-13	0.07	3625	2000	3000	2.02	----
MGP-F10-20	0.12	3625	2000	3000	2.31	----
MGP-F10-27	0.16	3625	2000	3000	2.68	----
MGP-F10-34	0.20	3625	2000	3000	2.99	----
MGP-F10-41	0.25	3625	2000	3000	3.34	----
MGP-F10-51	0.31	3625	2000	3000	3.78	----
MGP-F10-61	0.37	3625	2000	3000	4.18	----

## INSTALLATION DATA



Part #	A		B	
	Millimeters	Inches	Millimeters	Inches
MGP-F10-13	82	3.23	42	1.65
MGP-F10-20	84	3.3	43	1.69
MGP-F10-27	86	3.39	44	1.73
MGP-F10-34	88	3.46	45	1.77

Part #	A		B	
	Millimeters	Inches	Millimeters	Inches
MGP-F10-41	90	3.54	46	1.81
MGP-F10-51	93	3.66	47.5	1.87
MGP-F10-61	96	3.78	49	1.93

## ORDERING INFORMATION

### MGP

Aluminum  
Gear Pump

### F10

High  
Pressure  
Series

### 16

Displacement  
cm<sup>3</sup>/rev  
(see chart)  
13/20/27/34  
41/51/61

### P

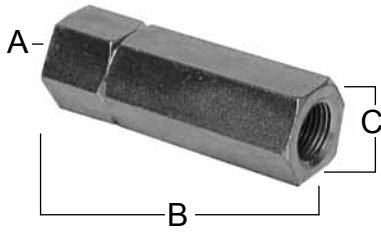
Drive  
Shaft  
P-5/8 Dia  
Straight  
P1-3/4 Dia  
Straight  
S9-Spline 9 tooth

### C

Rotation  
Direction  
C-Clockwise  
A-Counter Clockwise  
(viewed from drive shaft  
end)

## HARD SEAT CARBON STEEL CONSTRUCTION - 5lb or 65lb Cracking Pressure Available

- Available w/ NPT or SAE threads



A ( NPT Female both ends )

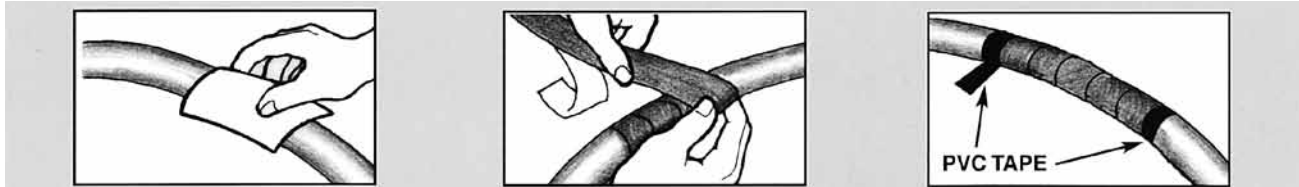
Part #	A Size	B Inches	C Inches	Rated Flow gpm	
1000-2-5 or 65	1/4 NPT	2.44	.87	6	----
1000-3-5 or 65	3/8 NPT	2.87	.95	10	----
1000-4-5 or 65	1/2 NPT	3.50	1.14	18	----
1000-6-5 or 65	3/4 NPT	4.25	1.50	30	----
1000-8-5 or 65	1 NPT	5.12	1.69	36	----
1000-10-5 or 65	1-1/4 NPT	5.56	2.40	50	----
1000-12-5 or 65	1-1/2 NPT	5.56	2.56	60	----
1001-4-5 or 65	7/16-20 SAE	2.56	.87	6	----
1001-6-5 or 65	9/16-20 SAE	2.91	.94	10	----
1001-8-5 or 65	3/4-16 SAE	3.74	1.18	18	----
1001-12-5 or 65	1-1/6-12 SAE	4.29	1.50	30	----
1001-16-5 or 65	1-5/16-12 SAE	5.00	1.81	36	----
1001-20-5 or 65	1-5/8-12 SAE	5.20	2.41	50	----
1001-24-5 or 65	1-7/8-12 SAE	5.20	2.56	60	----

Rated Pressure: Sizes 2 thru 8 - 5000 psi / Sizes 10 thru 24 - 3000 psi

## HYDRAULIC HOSE PROTECTOR



- Tough abrasion resistant self-adhering neoprene wrap
- Protects against cuts and abrasions
- Can be easily applied to hoses of varying diameters, even after hose is installed on equipment.
- Covers and protects wear areas
- Chemical resistant neoprene resists oil, gasoline, and solvents
- Flexible self-adhering wrap material allows hoses to flex and bend.
- Wrap can also be used to bundle hoses and cables.
- Performance temperature range -20°F to 200°F



**Step 1:** Clean hose of all dirt, grime and grease in the application area.

**Step 2:** Remove paper backing as Hose Protector is applied. Wrap tightly at a slight angle while overlapping in notched area.

**Step 3:** To finish, wrap both ends of Hydraulic Hose Protector with PVC tape.

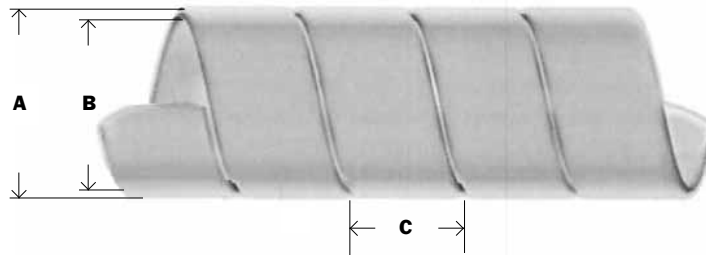
Part #	Description	
MHP112	12' Kit	----
MHP150	50' Kit	----
MHP1300	300' Kit	----

	MATERIAL COVERAGE CHART		
	12' Roll	50' Roll	300' Roll
3/8" Hydraulic Hose I.D.	52"	217"	1,302"
1/2" Hydraulic Hose I.D.	40"	167"	1,002"
3/4" Hydraulic Hose I.D.	29"	121"	726"
1" Hydraulic Hose I.D.	24"	100"	600"

**SAFEGUARD SPIRALS - PROTECTION FOR HYDRAULIC HOSES**

- **WHAT IS SPIRAL WRAP:** Spiral wrap is the proven way to protect hose, wire, cable , etc... against chaffing, rubbing, crushing, ultraviolet and other environmental hazards that cause premature failure.
- **COST SAVINGS:** Used effectively on all types of hoses, ropes, wires and cables. Users have realized a dramatic increase in serviceable life and reduction in costly repairs and down time.
- **MATERIAL:** Heavy wall, high Grade HDPE, polyethylene resin, high tensile strength, thermal plastic.
- **RESILIENCE:** Has a high resistance against ultra violet weathering and a wide temperature range. (-60 - + 175°F)

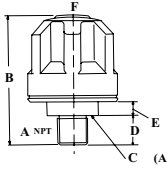
Proprietary extrusion method gives the final product smooth round, edges, which are non-abrasive, greater strength & durability.



Part #		Spiral Size	Pitch (C)	Inches		Coil Wt. lbs.	Coil Lgth feet	
Black	Yellow			OD (A)	ID (B)			
25C100B	25C100Y	1/4" (#4) HYDRAULIC HOSE	0.47	2/3	0.50	4.0	100	----
38C100B	38C100Y	3/8" (#6) HYDRAULIC HOSE	0.78	3/4	0.65	6.0	100	----
50C100B	50C100Y	1/2" (#8) & 5/8" (#10) HYDRAULIC HOSE	0.98	1	0.80	10.1	100	----
75C100B	75C100Y	3/4" (#12) HYDRAULIC HOSE	0.87	1-1/4	1.10	12.8	100	----
100C100B	100C100Y	1" (#16) & 1-1/4" (#20) HYDRAULIC HOSE	1.39	1-3/5	1.40	20.1	100	----

\* More sizes & colors available.  
 \* Shipped in 100'FT coils only.

## SCREW-ON TYPE AIR BREATHERS

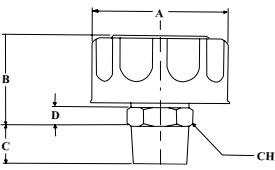


- 1/4 NPT
- Plastic Model
- 10 Micron Breather

Part Number	Description	A	B	C	D	E	F	
PDSAB-3101	10 Micron 1/4 NPT Screw Type Breather - Weight .5 ozs.	1/4	2.28	79	.53	.24	1.57	----



- 1/4 To 1 Inch NPT
- Steel Model
- 40 Micron Breather

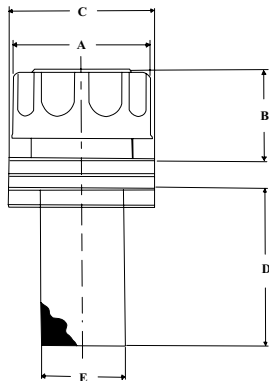


Part Number	Flow cfm	NPT	A	B	C	D	CH	Micron	
MB40-04	10	1/4	1.85	1.60	.50	.30	.63	40	----
MB40-06	10	3/8	1.85	1.70	.50	.30	.75	40	----
MB40-08	10	1/2	2.54	1.88	.68	.29	.95	40	----
MB40-12	25	3/4	3.13	2.00	.82	.35	1.12	40	----
MB40-16	25	1	3.13	2.11	.90	.42	1.35	40	----

## FILTER FILLER BREATHERS



- Chrome Plated Cap
- 40 Micron Breather
- 3" Basket Length
- Lockable Options
- Plastic Basket Standard



Part Number	A	B	C	D	E	
MFB40-03	2.95	1.97	1.97	1.97	1.90	----

## PROTECTIVE HOSE COVERINGS



**Material:** Cordura or Anso-tex bulk nylon fiber yarn. Cordura is a registered trademark of Dupont. Anso-tex is a registered trademark of Allied Fibers.

**Thickness:** .090" ± .020"  
Doubled Flat

**Color:** Black

**Flammability:** Passes FMVSS 302 horizontal flame test, MSHA accepted.

**Temperature:** Maximum ambient temperature 250°F

**Packaging:** 300ft. rolls. **Only**

Part Number	Flat Width	ID	
MHS-077	1-1/3"	0.79"	----
MHS-090	1-1/2"	0.90"	----
MHS-100	1-2/3"	1.00"	----
MHS-114	1-7/8"	1.06"	----
MHS-130	2-1/8"	1.22"	----
MHS-138	2-1/4"	1.38"	----
MHS-153	2-1/2"	1.42"	----
MHS-159	2-5/8"	1.59"	----
MHS-175	2-7/8"	1.75"	----
MHS-185	3"	1.81"	----
MHS-225	3-5/8"	2.19"	----
MHS-238	3-7/8"	2.38"	----
MHS-264	4-1/4"	2.63"	----
MHS-296	4-3/4"	2.88"	----
MHS-366	5-7/8"	3.66"	----



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HP2501-6-6.....	354	K-5 .....	264	MGP-F20-10 .....	368	R74G .....	287				
HP2501-8-6.....	354	K-6 .....	264	MGP-F20-12 .....	368	RF280.....	291				
HP2501-8-8.....	354	K-7 .....	264	MGP-F20-12 .....	368	RF380.....	291				
HP2502-10-8.....	354	K-8 .....	264	MGP-F20-14 .....	368	RN280 .....	291				
HP2502-12-12.....	354	K-87500 .....	264	MGP-F20-14 .....	368	RN380 .....	291				
HP2502-16-16.....	354	K-9 .....	264	MGP-F20-16 .....	368	SG-3750 .....	267				
HP2502-20-20.....	354	K-97500 .....	264	MGP-F20-16 .....	368	SG-5000 .....	267				
HP2502-24-24.....	354	KA001.....	265	MGP-F20-20 .....	368	SG-6250 .....	267				
HP2502-32-32.....	354	KA001.....	266	MGP-F20-20 .....	368	SG-7500 .....	267				
HP2502-6-4.....	354	KS001 .....	265	MGP-F20-25 .....	368	SS-3751 .....	267				
HP2502-6-6.....	354	KS001 .....	266	MGP-F20-25 .....	368	SS-5001 .....	267				
HP2502-8-6.....	354	KS001 .....	267	MHP112 .....	370	SS-6251 .....	267				
HP5000-12-12.....	355	KS-10 .....	264	MHP1300 .....	370	SS-7501 .....	267				
HP5000-16-16.....	355	KS-107501 .....	264	MHP150 .....	370	v0318-10 .....	310				
HP5000-20-20.....	355	KS-11 .....	264	MHS-077.....	372	v0318-12 .....	310				
HP5000-24-24.....	355	KS-117501 .....	264	MHS-090.....	372	v0318-16 .....	310				
HP5000-32-32.....	355	KS-12 .....	264	MHS-100.....	372	v0318-20 .....	310				
HP5000-4-4.....	355	KS-127501 .....	264	MHS-114.....	372	v0318-24 .....	310				
HP5000-6-6.....	355	KS-14 .....	264	MHS-130.....	372	v0318-3 .....	310				
HP5000-8-8.....	355	KS-147501 .....	264	MHS-138.....	372	v0318-32 .....	310				
HP5405-12-12.....	354	KS-16 .....	264	MHS-153.....	372	v0318-4 .....	310				
HP5405-16-16.....	354	KS-167501 .....	264	MHS-159.....	372	v0318-5 .....	310				
HP5405-20-20.....	354	KS-18 .....	264	MHS-175.....	372	v0318-6 .....	310				
HP5405-24-24.....	354	KS-187501 .....	264	MHS-185.....	372	v0318-8 .....	310				
HP5405-32-32.....	354	KS-20 .....	264	MHS-225.....	372	v0319-10 .....	310				
HP5405-4-4.....	354	KS-207501 .....	264	MHS-238.....	372	v0319-12 .....	310				
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HP5502-4-6.....	355	KS-4 .....	264	MMPH315 .....	367	v0319-8 .....	310				
HP5502-6-4.....	355	KS-5 .....	264	MMPH400 .....	367						
HP5502-6-6.....	355	KS-6 .....	264	MMPH50 .....	367						
HP5502-8-8.....	355	KS-7 .....	264	MMPH80 .....	367						
HP6801-10-10.....	355	KS-8 .....	264	MMRS100 .....	367						
HP6801-12-12.....	355	KS-87501 .....	264	MMRS125 .....	367						
HP6801-16-16.....	355	KS-9 .....	264	MMRS160.....	367						
HP6801-20-20.....	355	KS-97501 .....	264	MMRS200.....	367						
HP6801-24-24.....	355	L07 .....	290	MMRS250.....	367						
HP6801-32-32.....	355	L72M.....	288	MMRS315.....	367						
HP6801-6-6.....	355	L73M.....	288	MMRS375.....	367						
HP6801-6-8.....	355	L74M.....	288	MMRS50.....	367						
HP6801-8-8.....	355	MB280 .....	291	MMRS80.....	367						
I280 .....	291	MB380 .....	291	NV-12-F.....	281						
I380 .....	291	MB40-04.....	372	NV-12-F.....	359						
I480 .....	291	MB40-06.....	372	NV-12-M.....	281						

**THREAD INFORMATION**

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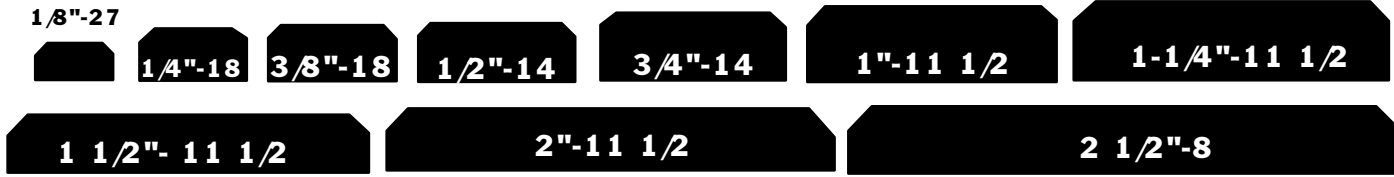
**Thread Chart**

DASH SIZE	2	3	4	5	6	7	8	10	12	14	16	20	24	32	40	48	
O.D. TUBING SIZE	1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	2	2-1/2	3
STANDARD PIPE SIZE N.P.T.F. (DRYSEAL)*	1/8-27		1/4-18		3/8-18		1/2-14		3/4-14		1-11 1/2	1 1/4-11 1/2	1 1/2-11 1/2	2-11 1/2	2 1/2-8	3-8	
S.A.E. 45° FLARE	5/16-24		7/16-20	1/2-20	5/8-18	11/16-16	3/4-16	7/8-14	1 1/16-14	1 1/4-12	1 3/8-12						
INVERTED FLARE	5/16-24		7/16-24	1/2-20	5/8-18	11/16-18	3/4-18	7/8-18	1 1/16-16								
J.I.C. 37° FLARE	5/16-24		7/16-20	1/2-20	9/16-18		3/4-16	7/8-14	1 1/16-12	1 3/16-12	1 5/16-12	1 5/8-12	1 7/8-12	2 1/2-12	3-12	3 1/2-12	
COMPRESSION	5/16-24	5/16-24	7/16-24	1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	1 1/8-18							
FLARELESS																	
COMPRESSION (PLASTIC TUBE)	5/16-24		3/8-24	7/16-24	1/2-24		11/16-20										
AIR BRAKE - PLASTIC TUBE			7/16-24		17/32-24		11/16-20	13/16-18	1-18								
AIR BRAKE - COPPER TUBE			7/16-24	1/2-24	17/32-24		11/16-20	13/16-18	1-18								
DOUBLE COMPRESSION	5/16-24		7/16-24	1/2-20	9/16-20		11/16-16										
STEEL																	
COMPRESSION (HIGH PRESSURE)	5/16-24		7/16-20	1/2-20	9/16-18		3/4-16	7/8-14	1 1/16-12	1 3/16-12	1 5/16-12	1 5/8-12	1 7/8-12	2 1/2-12			
S.A.E. O-RING	5/16-24		7/16-20	1/2-20	9/16-18		3/4-16	7/8-14	1 1/16-12	1 3/16-12	1 5/16-12	1 5/8-12	1 7/8-12	2 1/2-12			
INTERNAL O-RING																	
NPSM SWIVEL THREAD	1/8-27		1/4-18		3/8-18		1/2-14		3/4-14		1-11 1/2	1 1/4-11 1/2	1 1/2-11 1/2	2-11 1/2			
FLAT FACE THREAD			9/16-18		11/16-16		13/16-16	1-14	1 3/16-12		1 7/16-12	1 11/16-12	2-12				
BRITISH THREAD BSPP/BSPT	1/8-28		1/4-19		3/8-19		1/2-14		3/4-14		1-11	1 1/4-11	1 1/2-11	2-11			
METRIC THREAD	10		14	16	18	20	22	24	26	27	30	33	36	42	48		
CODE 61	M10X1.0		M12X1.5	M14X1.5	M16X1.5	M18X1.5	M20X1.5	M22X1.5	M24X1.5	M26X1.5	M30X2.0	M33X2.0	M36X2.0	M42X2.0	M48X2.0		
FLANGE HEAD O.D							1.19	1.335	1.50		1.75	2.00	2.38	2.81	3.31	4.00	
CODE 62																	
FLANGE HEAD O.D							1.25		1.62		1.88	2.12	2.50	3.12			

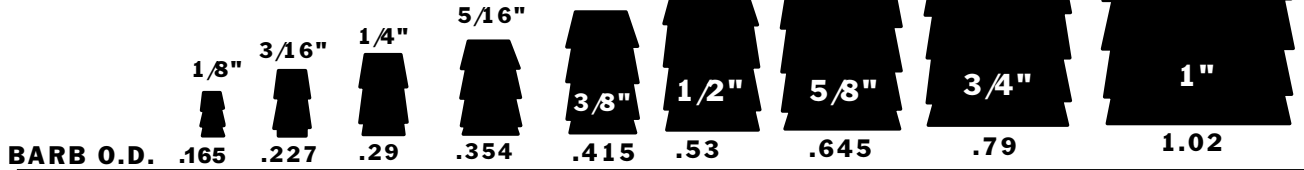
# THREAD PROFILES

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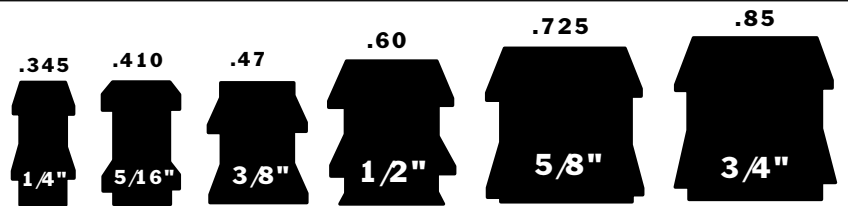
## Pipe Threads



## Hose Barb Fittings

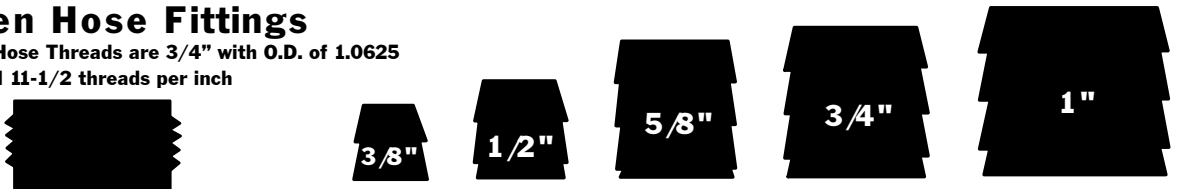


## Push On Fittings

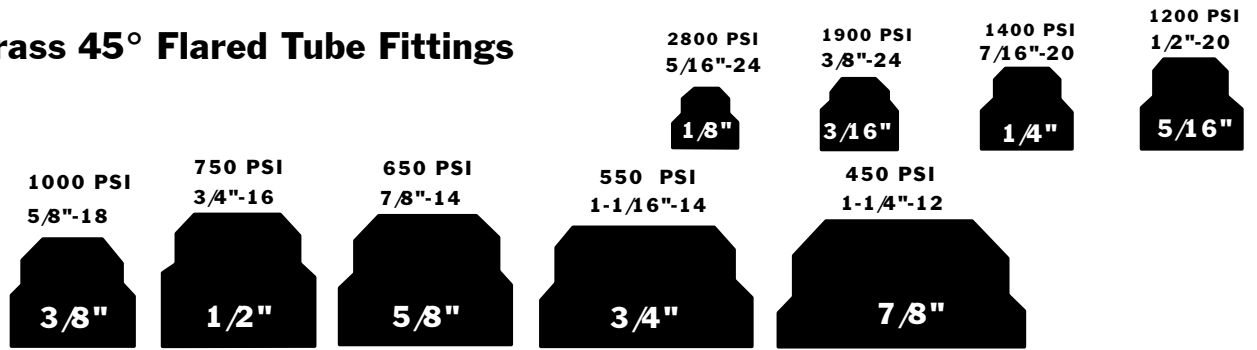


## Garden Hose Fittings

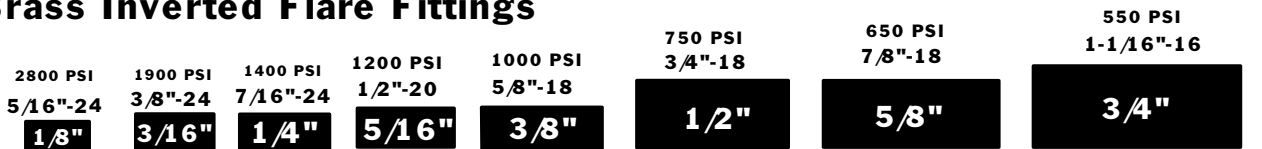
Male Garden Hose Threads are 3/4" with O.D. of 1.0625 and 11-1/2 threads per inch



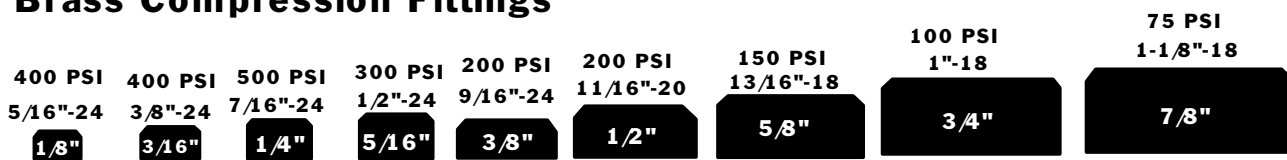
## Brass 45° Flared Tube Fittings



## Brass Inverted Flare Fittings



## Brass Compression Fittings



## Tubing O.D. Size

