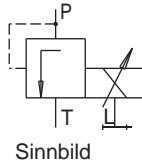


## Electrohydraulic pressure relief valve Typ HVD 306



### Special Features :

- high reliability
- easy service
- robust construction
- high dynamic response
- high constant quality
- no fixed nozzles
- pure sleeve valve

### General Description :

input stage : electric-power-transducer (linear magnet)  
 hydraulic stage : directional control valve with one throttling orifice with an integrated reference servo piston for the automatic balance of the pressure-giving choke  
 style of mounting : sub-plate NG 6 / Cetop 3  
 mounting position : see appendix  
 weight : 2,7 kg

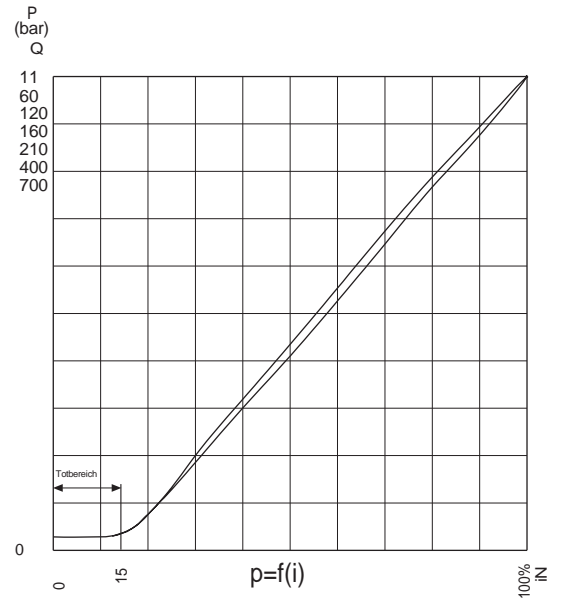
### Technical Data

#### 1. Hydraulic Data (definition according to DIN 24311)

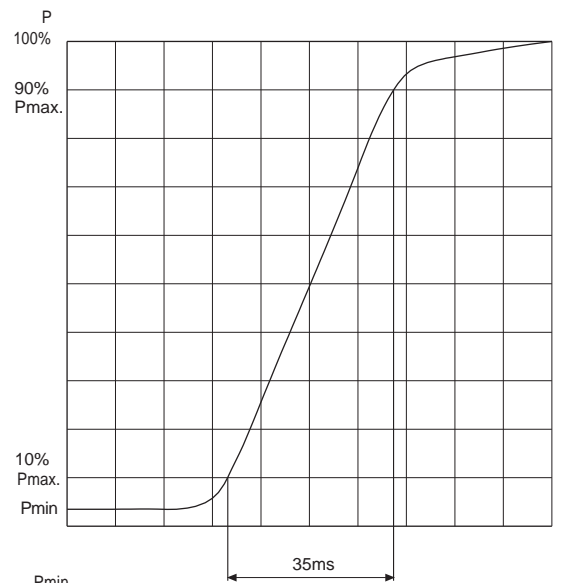
.1	rated pressure	$p_n$	=	11;60;160;400;700	[bar]
.2	operating pressure	$p_{bmin}$ $P_{bmax}$	= =	$f(Q)$ 700	[bar] [bar]
.3	Pressure adjustment range - depending upon zero-adjustment and rated flow (s. Minimum pressure diagram)	$p_{v \text{ single stage}}$ $p_{v \text{ two stage}}$	= =	1 ... 700 10 ... 700	[bar] [bar]
.4	leakage line (works up $p_v$ )	$p_{lmax.}$	=	0 ... 20	[bar]
.5	return line pressure (works up $P_v$ )	$p_{rzul.}$	=	0 ... 20	[bar] stat.
.6	rated flow	$Q_{\text{single stage}}$ $Q_{\text{two stage}}$	= =	max. 10	[l/min] dependent on size of the main stage
.7	hysteresis	H	~ ~	7%IN 3%IN	(without Dither) (with Dither)
.8	threshold span	S	~ ~	4%IN 1%IN	(without Dither) (with Dither)
.9	threshold sensitivity	E	~	1%IN	
.10	Reproductibility		<	1%IN	
.11	linearity deviation		<	2%IN	
.12	Switching time of 10 ... 90%	t	<	35	[ms]
.13	Dead range		~	150	[mA]
.14	operating temperature range	$\delta_M$	=	253...353	[K]
.15	viscosity range of fluid	$\gamma_{min}$	=	10...	1000 mm <sup>2</sup> /s approximate value normal: ISO VG 10...ISO VG 46
.16	filtration of fluid		<	class 4-5	to NAS 1638 or class 15/14/11 to ISO 4406
.17	fluid standard		=	HLP-hydraulic oils as per DIN 51524 Teil 2 (Special equipments possible)	

## 2. Diagrams HVD 306

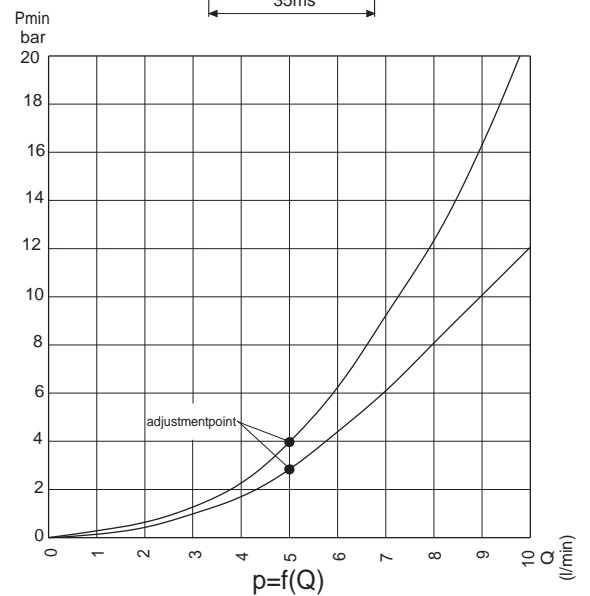
statical pressure flow-stream function



dynamic pressure function



minimum pressure



### 3. Electric Features

#### 3.1.1 Electric Data

nominal pressure	11	60,160	400,700	[bar]
rated current	1,0	0,7	1,0	[A]
rated voltage	24	24	24	[V]
coil resistance [R20]	16,7	24,6	16,7	[Ω]
electric connection	plug coupling 3 pol.			

#### Important remarks:

##### 1. Application of a Dither

###### .1 single-stage

in order to improve the handling and regulation quality a dither is recommended

dither recommendation: sinus 50 to 200 Hz  
50 bis 200 mAss

###### .2 two-stage

A dither is necessary when using a low pump pulsation – gear pumps, sliding-van pumps or piston pumps with great capabilities.

A dither is not necessary when using a piston pump and a near location to the pump.

##### 2. Leakage Port and Pilot Oil Port

###### .1 A separate leakage line is necessary with all the valves with the final number 1 C.

Leakage pressure : maximum 100 bar static dynamic when the valve is in function with 2 bar.

Valves with the final number 0C, f.ex. HVD 306-210-1200-0C, the leakage is internally connected with the pilot flow and drained in the tank.

#### ATTENTION :

The backwash in this pipe influences the maneuverable minimal pressure.

###### .2 Ports that are related to the application of a leakage line are only

necessary when there are high stability requirements.

With a two-stage function a Y-port is necessary.

###### .3 Disposition of the leakage line

No special disposition is required with the preferable fitting position (point 3).

The leakage line must, at the least, be led away at 100 mm above the valve, when the magnet is pointing towards the top or the valve is positioned horizontally with the leakage line is pointing downwards.

##### 3. Mounting Position:

By preference the mounting position is vertical, plug port vertical to the top, leakage port vertical to the top, magnet downwards

A rigid suspension is necessary when mounted into a pipe.

##### 4. Operational Main Stage (Cartridge)

When operating with Cartridges NG 16 and NG 32 we supply an intermediate-plate-safety-valve with a throttle/choke wiring. (See accessories.)

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In order to improve our products, we reserve the right to change the specifications of the products described without any advance notice.

Order Information

# HVD 306 - 400 - 12XX - 1 - X

<u>Model</u>	
306	
<u>Rated pressure</u>	
011 bar	
060 bar	
160 bar	
400 bar	
700 bar	
<u>Seal material</u>	
1 Perbunan	
2 Viton	
3 Butyl	
4 Vulkollan	
5 Ethylen-Propylen	
<u>Power supply</u>	
24V (standard)	
<u>Work definition</u>	
for special applications	
<u>Work definition</u>	
for special applications	
<u>LEAKAGE LINE</u>	
0 intern to T	
1 extern R1/8"	
<u>Design letter</u>	
assigned by manufacturer	

5. Accessories:

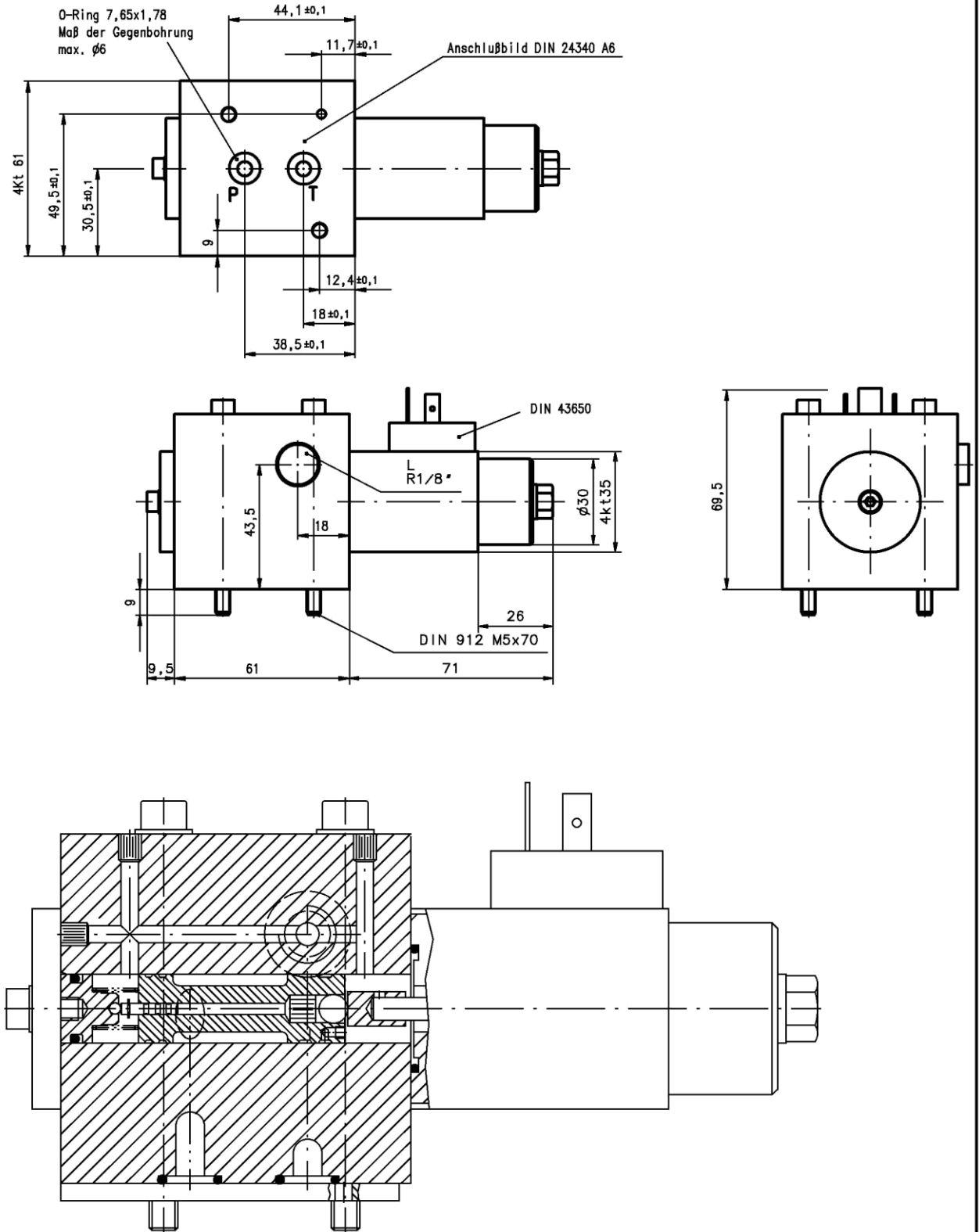
Description		KE Gdm	Order No.
Connector		13471	13471
Subplate	HZ040	13490	
Box-Amplifier		BOE EPA-M-110-21	23661
Connector-Amplifier		STE 004-EPC-110/10	42366
Relief valve for	NG 16	HZ 045-0B	14700
main stage	NG 32	HZ 045-1B	14732

Important remarks:

Valve mounting surface must be flat within 0,02mm and smoothness not to exceed 6µm. Easy hydraulic Zero adjustment by means of Allen key S8 DIN 911. Max.perm issible drain line pressure 10 bar.Valves with modified characteristics available. Modifications, which serve technical progress, remain reserving.

Stand11/2003

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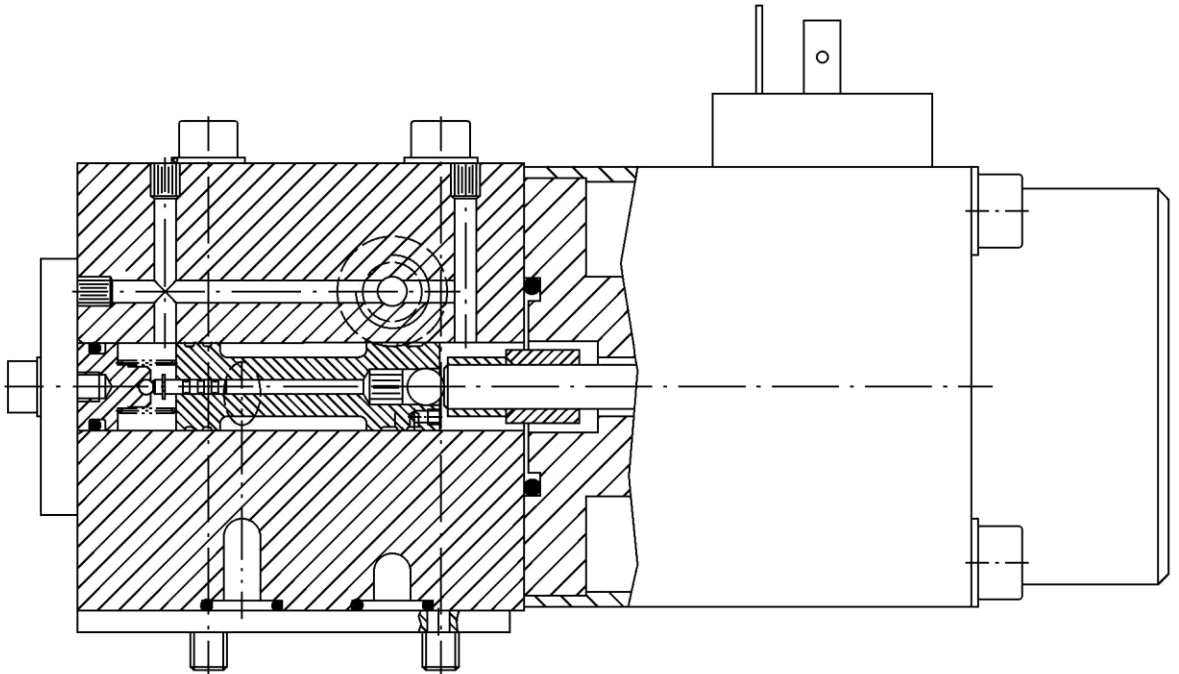
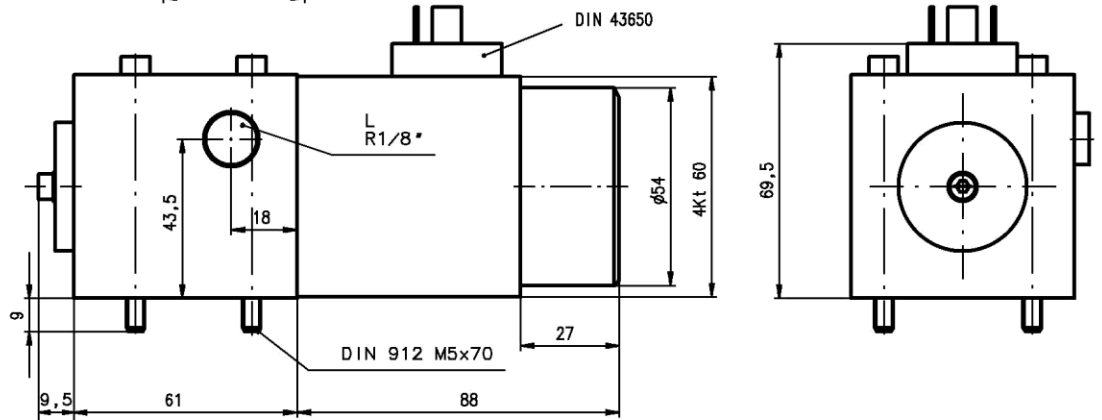
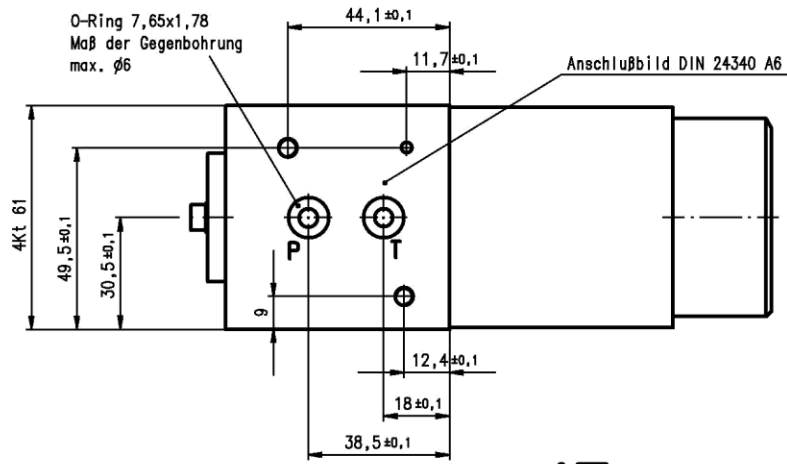


Angaben ohne Einheiten in mm  
All dimensions without unit in mm

Nur zur Information / Only for information

Änderungsindex / Amendment index		Ventil Valve	HVD 306-60(160)-XXXX-0C	Id.- Nr. -
Datum Date	Name Name			
dwg.	30.03.01	Dindorf	Jos. Schneider Optische Werke GmbH Ringstr. 132 55543 Bad Kreuznach Germany	

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Angaben ohne Einheiten in mm  
All dimensions without unit in mm

Nur zur Information / Only for information

Änderungsindex / Amendment index		Ventil Valve	HVD 306-011(400;700)-XXXX-0C	Id.- Nr. -
Datum Date	Name Name			
dwg.	30.03.01	Dindorf	Jos. Schneider Optische Werke GmbH Ringstr. 132 55543 Bad Kreuznach Germany	