

# User Manual

## AGRIMATE ROTARY TILLER **AM-RTD-5D** ROTARY WEEDER / POWER WEEDER / CULTIVATOR



**DISCLAIMER:** DUE TO CONSTANT UPGRADATION, FEATURES AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



BEFORE OPERATING THIS MACHINE,  
PLEASE READ THESE INSTRUCTIONS CAREFULLY

## FORWARD

Thank you for choosing our Rotary Tiller / Rotary Weeder / Power Weeder / Cultivator.

- This manual contains about operation and maintenance of 1000N Rotary Tiller / Rotary Weeder / Power Weeder / Cultivator.
- All contents in this manual are based on the latest information when the manual is printed.
- The manufacturer has the right to revise the manual without any prior notice and will not bear any legal responsibility.
- None parts in this manual can be copied without formal approval.
- This manual should be regarded as a part of the tillers, so it should be handed over when resold or lent.

## SAFETY INFORMATION

In order to save the safety of yours and others, please pay attention to information on both this manual and tiller

- Pay attention to statements preceded by the following word.

**! Danger:**

Indicates a possibility of severe personal injury or death if instruction are not followed.

**! Warning:**

Indicates a possibility of equipment damage or personal death if instruction are not followed.

### Damage prevention

You can see other important information are marked with "NOTICE".

It means that if not work upon the instructions, it may cause broken of tiller.

### Attention

- When the engine is starting, turn the shift lever to the "Neutral Position".
- Be careful when tiller is working.
- Look out the blades.
- The fuel and oil must be qualified and clean.
- Release clutch before gear shifting and slow down the engine. It is more safe when engine is slow down.
- Fuel is easy to catch fire and exploded.
- When working in paddy field or going slope, carefully using reverse gear.

Because machines are improved always, so pictures are may be different from practicality.

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## SAFETY INFORMATION AND WARNING

1. Training
  - a). Carefully read this manual, fully know all the controlling functions and the proper operation, learn how to quickly stop and separate the tiller.
  - b). Children are not allowed to use tiller. And adults who don't learn this manual are also not allowed to use this manual.
  - c). Keep working area without other people, especially children and pets.
2. Preparation
  - a). Check working area, and move away all the sundries.
  - b). Disengage all the clutches and place gear to neutral position before starting engine.
  - c). Do not use tiller without suitable clothes and skid-proof shoes.
  - d). Carefully deal with fuel which is tinder.
    - 1). Use suitable container to store fuel.

- 2). Do not add fuel when engine is working or hot.
- 3). Carefully add oil outdoor. Don't allow to add oil indoor.
- 4). Wrest on fuel tank cap, and clean out spilling fuel.
- e). When engine is working, do not do any adjustment which are not allowed.
- f). Wearing eye protect glasses when preparation, working and servicing.

### 3. Operate

- a). Never use hand or foot to touch rotary blades when it is working
- b). When go across cobbled road, crosswalk, and road, pay more attention to the latent danger. Do not let people ride on the tiller.
- c). If tiller bumps something, stop to check. If it is broken, repair it and then start it.
- d). Be careful when working, do not fall or slip.
- e). If tiller has abnormal noise, it means that it may have problems. Stop the tiller to check reason.
- f). Stop engine before leaving, cleaning blades, servicing, adjusting and checking.
- g). When no people working on the tiller, shift gear to the neutral gear and stop the engine.
- h). Before check, clean and repair the tiller, stop engine and checkif every part isstop.
- i). Do not work tiller indoor, because exhaust is poisonous.
- j). Do not work when there isn't proper equipment.
- k). Keep away from children and pets.
- l). Do not let tiller over load because of deep tilling depth and fast speed.
- m). Do not let tiller run on the slip road. Be careful when reverse.
- n). Do not let looker-on come near the tiller.
- o). Only these additional equipment allowed by manufacture can be used.
- p). Do not use tiller when weather is dark.
- q). When work on the hard land, blades may hitch the land and push tiller forward. In this condition, release the tiller and let it go itself, do not try to control it. Or else, there will be danger.
- r). Do not work on the sharp slop.
- s). When tiller go across slope, be careful and do not let tiller fall.

### 4. Service and store

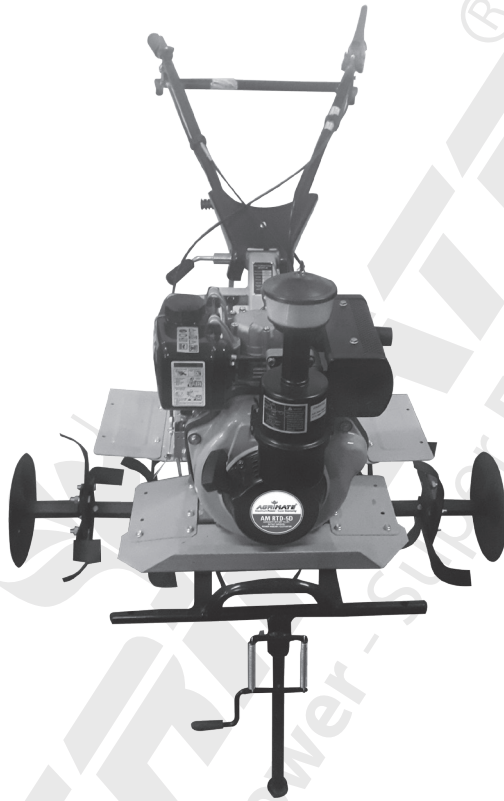
- a). Keep tiller and its additional equipment in well working condition.
- b). Periodically check engine bolts and other bolts, make sure they are fixed well, to ensure tiller in good working condition.
- c). Tiller should be kept indoor and away from fire. Stop and cool the engine before storage.
- d). If tiller needsto be stored for a long time, this manual should be also kept as an important part.
- e). Do not try to repair the tiller unless you know the knowledge, and have proper tools.

# TECHNICAL SPECIFICATION

ENGINE SPECIFICATIONS	
Engine Model	AM 173F
Type	Single Cylinder, Vertical, Diesel Engine-4S, Air Cooled
Starting	Recoil Start
Fuel	Diesel
Engine Oil / Capacity	SAE-20W-40 / 750ML
Capacity of Fuel tank	2.5L
Valve	OHV
Bore/Stroke	73x59mm
Displacement	245CC
Rated Power	5HP@3600rpm
Max. speed at no load (High Idling Speed)	3750rpm
Low idling speed	1400rpm
Speed at maximum torque	2880rpm
Air Cleaner	Oil bath type
Engine Weight	32Kg
TRANSMISSION SPECIFICATION	
Weeding - Width	1050mm / 42"
Weeding - depth	150-300mm/6"-12"
Gear Shifting	2 Forward+1 Reverse
Grade of oil	SAE 80W/90
Gear Box Oil capacity	1.5L
Productivity	0.4-0.6mu/h
Weight with Accessories with Engine	112Kg

Specification may be changed according to improving of machines.

## General chart



1. Resistance rod
2. Gear box
3. Tow bar
4. Dust fender
5. Wheel
6. Walking case
7. Engine
8. Handle bar

## APPLICABLE SCOPE

### 1. Tilling

Can be used for mountainous area, hill, paddy field, orchard, garden, vegetable field, shed and so on.

Assemble blades on both side of tilling system, and use pin to fixed blades, then can do tilling work.

### 2. Ditching

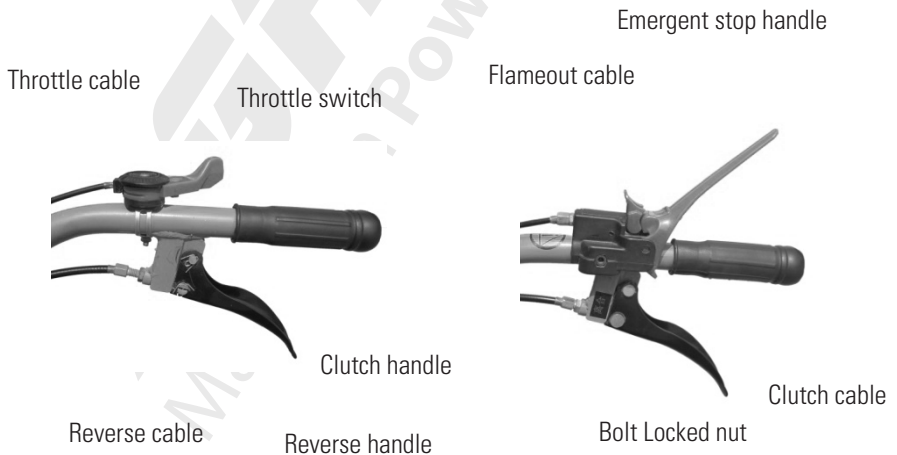
Take off resistance rod, can assemble ditching blade, and then can do ditching work.

## OPERATION AND USE

### 1. Assembly

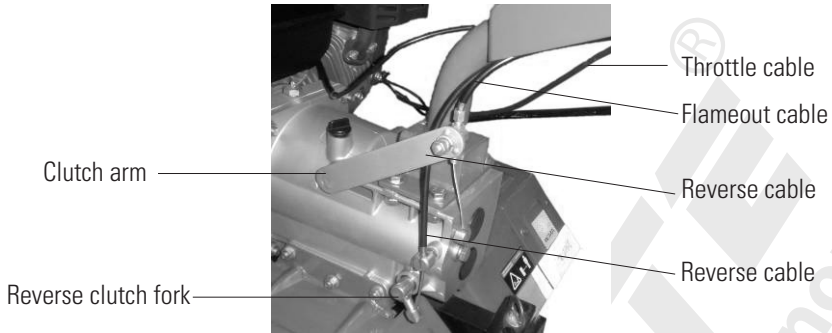
#### 1. Assembling after packing

- 1.1 Fixed machine, put wheels on both side of machines, and use pin to fix wheels.
- 1.2 Handle assembling: Match gear plate on handle with gear plate on handle seat, and then adjust straight position of handle, and then use long bolt, spring washer, and locked grip to lock handle. Then use cable clip to hold clutch cable, reverse gear cable, and throttle cable on handle.



Drawing 2

## 2.1 Adjustment of clutch cable. (Drawing 2 and Drawing 3)



Drawing 3

1. Loose locked nut.
2. Deasil turn bolt into shortest.
3. Put cable head into clutch cable seat of transmission box, and make sure that cable head is in the big hole.
4. Put steel wire into M8 hole of clutch arm seat, press clutch arm fork, and hang cable head on clutch cable seat.
5. Turn off Bolt, and hold it tightly. Loose clutch handle until spring in clutch can return handle, and then locked nut.

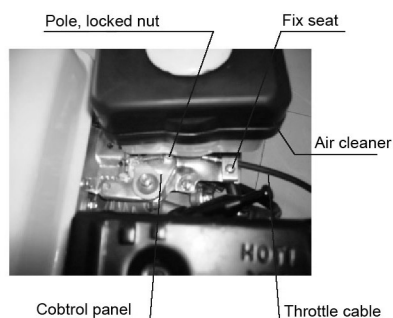
## 2.2 Adjustment of reverse cable.

1. Loose locked nut.
2. Deasil turn bolt into shortest.
3. Put cable head into clutch cable seat of transmission box, and make sure that cable head is in the big hole.
4. Anticlockwise turn reverse fork axle, and put cable through narrow slot, and make sure head into big hole of seat.
5. Turn off Bolt, and hold it tightly. Loose reverse handle until spring in clutch can return handle, and then locked nut.

## 2.3 Adjusting of throttle cable. (Drawing 4)

1. Turn throttle switch into max.
2. Put steel wire of throttle cable through wire seat and fixed seat which is on control panel.
3. Tight steel wire, locked screw on locked seat
4. Adjust fuel switch some time, until fuel rod on control panel into max.





Drawing 7

Control panel

Drawing 4

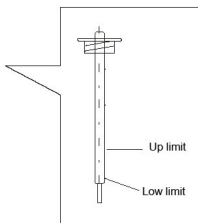
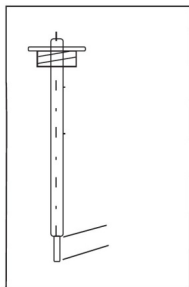
## 2.0 Operation

### 1. Check and add oil

1.1 Check if connections of every where if they are loosen, and fixed upon the moment need.

Name	Moment (N.m)
Flange and gasoline engine	20-25
Flange and transmission box	35-40
Transmission reverse axle locked bolt	26-40
Engine support frame and walking case locked bolt	35-40
Walking case end cover locked bolt	10.6-15
Walking case and tow bar locked bolt	50-60
Transmission box and walking case connection bolt	35-40
Tow bar	45-60
Engine bottom seat locked bolt	35-40
Handle bar fixed bolt	35-40

- 1.2 Check if all rod (Oil, clutch, reverse, gear shift) are flexible, and adjust them well.
  - 1.3 Turn gear shift rod into natural.
  - 1.4 Add oil
    1. Add SAE10W-40 into crank case of engine, drawing 8.
    2. Add Nr.20 oil into transmission box. Put tiller horizontal, take off oil ruler. And add oil through transmission box filling hole. And insert oil ruler to check oil level. If oil level is between up limit and low limit, turn off oil ruler. (Drawing 5)
    3. Add oil to air cleaner.
    4. According to working condition choose different oil. (Drawing 6)
- ! NOTE: Gear shift rod must be at natural place.

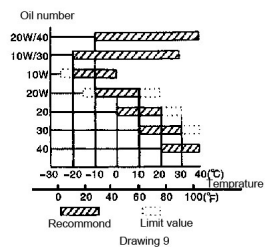


Drawing 8

Up limit

Low limit

Drawing 8



Drawing 9

## 2. Start

Start engine according to introduction of engine operation.

Engine should work at idling speed (1450-1750r/min) for two or three minutes.

Check if engine work right, if not, stop to check.

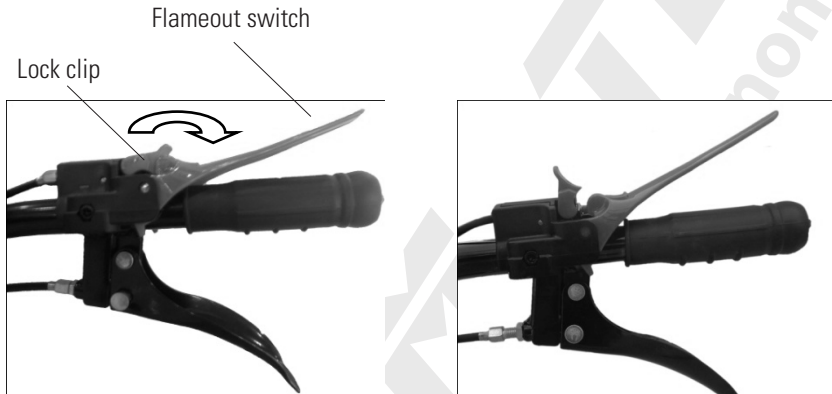
### 3. Operate

! NOTE: Tiller should be break-in before using, according to introduction of SECTION N

Drawing 5

Drawing 6

#### 3.1 Using of flameout switch



Clutch rod

Drawing A Start place

Drawing B Stop place

3.1.1 Start: Turn flameout switch to the place as drawing A, and use lock clip to block switch. And start engine according to SECTION FOUR/ 3/1.

3.1.2 Work: When work, hold flameout switch. Turn lock clip back. And hold on clutch rod can change gear. Then hold on flameout switch, and release clutch rod can do tilling work.

3.1.3 When meet emergency situation, release flameout switch, engine will stop.

!WARNING: When tilling or walking, can't turn lock clip as Drawing A show.

#### 3.2 Slow gear

3.2.1 Left hand hold on clutch rod, and meanwhile press down flameout switch to disengage clutch.

3.2.2 Right hand pull back shift gear rod, and then turn to slow gear. After shift gear, use right hand to hold handle grip.

!NOTE: When this step, don't hold reverse handle.

3.2.3 Slowly release clutch rod, then clutch will engage, and tiller can work at slow speed.

3.2.4 Turn accelerator to bigger, then tiller can work on slow gear at 5km/h.

### 3.3 Fast gear

3.3.1 Left hand hold on clutch rod, and meanwhile press down flameout switch to disengage clutch.

3.3.2 Right hand pull back shift gear rod, and then turn to fast gear. After shift gear, use right hand to hold handle grip.

!NOTE: When this step, don't hold reverse handle.

3.3.3 Slowly release clutch rod, then clutch will engage, and tiller can work at slow speed.

3.3.4 Turn accelerator to bigger, then tiller can work on fast gear at 10km/h.

### 3.4 Reverse gear

3.4.1 Left hand hold on clutch rod, and meanwhile press down flameout switch to disengage clutch.

3.4.2 Right hand pull back shift gear rod, and then turn to neutral gear. And then use right hand to hold on reverse handle.

3.4.3 Then slowly release clutch rod, then tiller can go reverse.

!NOTE: Don't release reverse handle. And before turn to reverse gear, must turn accelerator to smaller (but engine not stop, the speed is about 2000r/min). This will be more safe.

3.4.4 When no need reverse, left hand hold on clutch, and right hand release reverse handle.

3.5 When tiller is walking, don't shift gear. First turn accelerator to smaller, and then release clutch, until tiller stop walking, the shift gear.

3.6 Turning. Turning handle to left or right can turn tiller.

!NOTE: When turning, don't hold wrong handle or rod, or gears will be damaged.

### 3.7 Stop

3.7.1 Hold clutch rod, and meanwhile hold flameout switch to disengage clutch.

3.7.2 Turn shift gear rod to neutral, loose clutch rod, the Rotary Tiller / Rotary Weeder / Power Weeder / Cultivator will stop working.

3.7.3 If engine need to be stopped, please see SECTION FOUR/3/2.

## 4. Connection of accessories

### 4.1 Tilling.

When need tilling, disassemble walking wheel, and then put blades onto both side of axle. And use pin and clip to fix. After blades are assembled, must assemble dust fender. Dust fender can protect. Tilling depth can be adjusted by deep resistance rod.

### 4.2 Ditching

When need do ditching work, take off deep resistance rod, adjust ditching blades height, and then can do ditching work.

Ditching width: 40cm

Ditching depth: 11-25cm

## 5. Using notice

### !NOTE:

- When working on tiller, take care if any strange noise. If strange noise, stop engine to check.
- When tiller is cool, don't add heavy load. Especially new machine and machine which is after big repaired.
- Take care oil in transmission box, if no oil, add.
- Not allowed to pure water to cool down tiller.
- When working on tiller, don't let tiller falling down.
- Don't allowed tiller with blades walking on hard road.
- After using, clean tiller, will prolong using life of tiller.
- Often clean air cleaner element, and change it when need.

### 3 Attentions of Operating Engine:

#### 1. BREAK-IN OF NEW ENGINE :

If your engine has not breaking in yet, improper usage will shorten the life of engine. the initial 20 hrs is the break-in-period. The operator must obey the following items :

#### 2. RUNNING IN FOR 5 MINS AFTER FIRST START.

Running with low speed and low load before the engine gets hot. Avoid running with high speed and full load, or low speed and no load.

#### 3. AVOID RUNNING WITH OVER LOAD.

During break-in period, the engine can't run with full load, but can run with 3000rpm and 50% load.

#### 4. CHANGE ENGINE OIL REGULARLY.

After working for 20hrs, change the oil when engine is still warm, otherwise it will be difficult to drain the residual oil in the engine.

### IX. Oil Bath Type Air Filter:

1. Check the oil level before operating.
2. Fill oil upto upper limit. If oil is dirty, change it. Please use diesel to clean oil bath element frequently, then dip the element in the oil and squeeze out extra.

### Running

#### WARNING

- Be sure to operate the engine in a good ventilated place in order to avoid exhaust poisoning.
- Avoid letting hands, body & clothes entangle in output shaft, belt pulley, V-type belt pulley and other moving parts, so as to prevent from getting injured.
- Stop the engine first and then maintain the movable parts and other parts around it. Make sure there are no tools and sundries in the body of the engine before operating.

Run engine for 5mins to warm up

#### NOTICE

- The muffler becomes very hot during and immediately after operation. Don't touch it.
- The air filter will inhale the air around itself when the engine works. Don't let the hands, body and clothes approach the air filter to avoid injury.

After the engine becomes warm, put the speed lever on necessary position to run the engine.

#### NOTICE

- Be sure to use the speed lever to adjust the speed of engine.
- Donot loose the speed limit screw and fuel control screw; otherwise the speed and output of engine will be abnormal.

#### Running

- a. If the engine gives out black smoke continuously, it is because the engine is overloaded. The belt pulley of the engine or that of the powered equipment must be adjusted.
- b. Pay attention to the following points when the engine is running:
  - i. Whether there is abnormal sound and vibration?
  - ii. Whether the exhaust is normal?
  - iii. Whether the engine gives out white or black smoke continuously?

If any of the above phenomena is detected, stop the engine immediately and contact the nearby dealer.

#### X. Methods of Starting the Agricultural Mini-tiller

##### a. Starting by Hand:

- Open fuel switch.
- Put engine speed lever in the start position
- LockAuto-cut off switch.
- Hold recoil starter handle.
- Pull the starting handle slowly until you feel resistance, then release it slowly.
- Push the decompression lever down by hand to no compression position. It will get back automatically by itself after the engine gets started.
- Starting : hold the starting handle with two hands, pull the rope lightly until you feel the resistance, then pull the rope fast with strength.
- If it is not easy to start the engine when the weather gets cold. You could take down the refuel screw on the cylinder cover and fill in 2ml oil before starting.

#### Notice

Tighten the refuel screw on the cylinder cover except filling oil in order to avoid rain and dust to get in the engine and wearing or damage of the engine.

## XI. Safety Instructions:

### Do's...

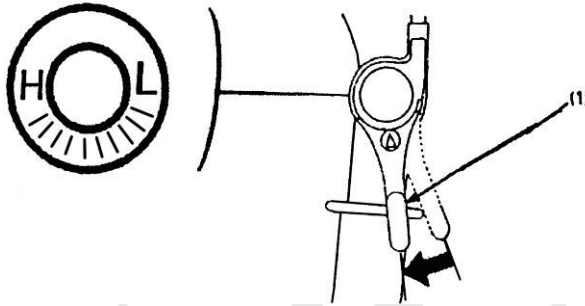
- Do visual check before starting, every time
- Keep Agricultural Mini-tiller Clean
- Do use recommended Fuel and Lubricants Only
- Do Check Fuel Level
- Do Check Air Intake Filter oil level
- Do Check Engine Oil and Gear Oil levels
- Do Check for any leakage
- Do Check Decompress Knob before starting
- Do Check Gear in Neutral position before starting
- Do use recommended attachments Only
- Do maintain distance (1ft) from buildings and other equipments when operating, to avoid any accidents
- Keep away from flammable materials
- Keep away from children and pets to avoid any injuries or accidents.
- Only operator with knowledge of machine and its operations must be permitted to operate Agricultural Mini-tiller
- Must stop engine before refueling, and refuel in good ventilation place
- Must clean and spilled or over flown fuel of the Agricultural Mini-tiller
- Let Agricultural Mini-tiller cool down before storing indoors.

### Don'ts...

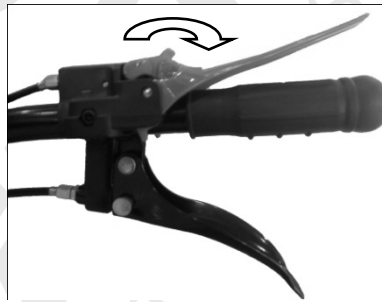
- Don't overflow the fuel, but also never let fuel tank run out empty
- Don't use adulterated fuel
- Don't smoke or allow flame or spark where Agricultural Mini-tiller is refueled or where fuel is stored
- Don't inhale exhaust for it can contain poisonous carbon monoxide
- Don't run Agricultural Mini-tiller without adequate ventilation
- Don't lean/tilt Diesel Hal more than 20°, otherwise fuel may spill
- Don't cover Agricultural Mini-tiller top so as to avoid fire
- Don't touch muffler/exhaust, as it gets hot when operating and stays hot for sometime after stopping
- Don't delay on service schedules
- Don't Operate Diesel Hal continuously more than 2hrs.30mins for any given operation (Give break of 20mins)

- Don't make any alterations in Design, Operations and Functioning of Functioning of Agricultural Mini-tiller other than Company's recommendation.

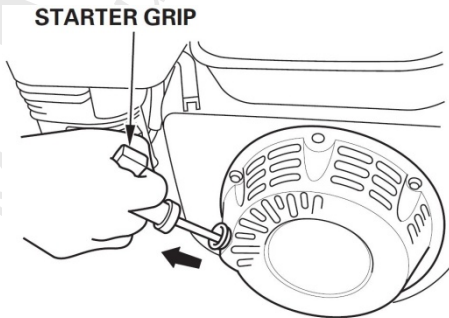
1.3 Slightly turn oil control rod to right.  
 (1) Oil control rod.



1.4 Turn flameout switch to the place as drawing show, and use locked clip to fix flameout switch.



1.5 Slightly pull recoil starter grip until feel resistance, and then put it fast.





!NOTE: Don't suddenly release starter grip let it bounce back, it may broken engine. Need slowly put the grip back.

1.6 After preheating the engine, gradually move choke to OPEN position.

1 CHOKE LEVER

1.7 Adjust rotary speed of engine through the throttle switch (or throttle handle)

## 2. Stop engine

In urgent situation, turn off engine switch (flameout switch) to stop.



Usually stop engine as following way:

2.1 Turn throttle switch to smallest (or turn choke lever to most right).

2.2 Turn flameout switch to the position as drawing show.

2.3 Turn fuel valve to OFF.

(1) Fuel valve

(2) OFF

# MAINTENANCE

## 1. Maintenance of engine

Do periodic maintenance to keep tiller in good working condition. Please follow the schedule below.

! WARNING: Stop engine before doing any maintenance. If the engine must run, keep the place well aeration. The exhaust contains CO.

! NOTICE: Use original spare parts or other qualified substitute. Use unqualified spare parts may damage engine.

## MAINTENANCE SCHEDULE

ITEM		PERIOD	Everyday	The 1 <sup>st</sup> month or 20 hrs	Every 3 months or 50hrs	Every 6 months or 100hrs	Every year or 300hrs
Oil	Check amount		0				
	Replace			0		0	
Air cleaner element	Check		0				
	Clean				0 (1)		
Fuel strainer cup	Clean					0	
Spark plug	Clean Readjust clearance					0	
Valve clearance	Check Adjust				0		
Gear box oil	Check amount		0				
Oil box drainer	Clean						0 (2)
Clutch cable	adjust			0		0	
Oil throttle	adjust						0
Tension pulley	adjust			0		0	
Fuel pipe	adjust	Every two year (2) (It is necessary to replace)					

## ! NOTICE:

- (1) Check more frequently when tiller works in heavy dust circumstance.
- (2) If users neither have special tools nor know mechanical knowledge well, these maintenance should be done by dealers.

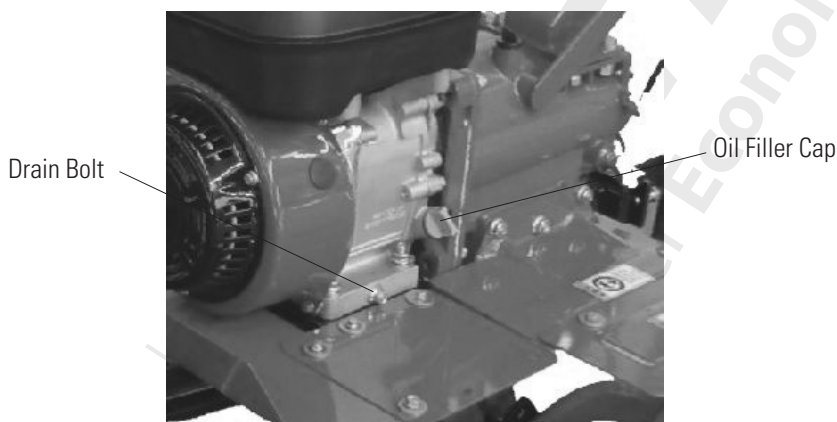
### 1. Change oil

Drain out oil when engine is warm.

Screw down drain bolt and loosen oilfiller cap. Refill with recommended oil and check oil level.

(Drawing 7)

OIL CAPACITY : 0.6L



Drawing 7

### 2. Air cleaner maintenance

A dirty air cleaner will restrict air flowing into the carburetor. Check the carburetor regularly to prevent carburetor malfunction. Check and clean it more often if tiller works in heavy dirt area.

**WARNING** Never use gasoline or low flash point solvent to clean air cleaner element. Or it may burnt or explode.

**! NOTICE:** Never run engine without air cleaner. Impurity will directly come into engine and speed up wearing..

1. Take off butterfly nut and plate, and then take out element.
2. Wash element in warm suds or high flash point solvent. Then naturally air-dry it. Dip it with farthing oil, and squeeze it to make it equably wettish. Engine may exhaust heavy smoke if it is dipped with too much oil.
3. Pour the oil in box, clean the box, and let it dry.
4. Add recommend oil into box.
5. Put back air cleaner element and plate.

## 2. Maintenance of tiller

Keeping the tiller in good condition will prolong the tiller's life, and help it Arrive optimum performance whenever you wish to till you garden.

To help you properly care for the rototiller, the following pages include a maintenance schedule, routine inspection procedures, and simple maintenance procedures using basic hand tools. Other service tasks that are more difficult, or require special tools, are best handled by professionals and are normally performed by a qualified mechanic.

### 1. Brake-in

New machine, or machine after big service need first work without load for one hour. And then work under low load for 5 hour. And drain out oil, and add clean oil. Next add fresh gasoline to clean. And then add clean oil, and then brake-in four hours. Then machine can wrok rightly.

### 2. Maintenance

2.1. Good maintenance is your responsibility. Poor maintenance means troubles.

Follow good shop practices

Keep service area clean and dry

Be sure electrical outlets and tools are properly grounded.

Use adequate light for the job at hand.

2.2. Make sure the engine is off before you begin any maintenance or repairs. This will eliminate several potential hazards:

Carbon monoxide poisoning from engine exhaust.

Be sure there is adequate ventilation whenever you operate the engine

Never operate the engine in a closed building.

Let the engine and exhaust system cool before touching

Do not run the engine unless instructed to do so.

2.3. Read the instructions before you begin, and make sure you have tile tools and skills required

2.4. To reduce the possibility of fire or explosion, be careful when working around gasoline Use only a nonflammable solvent, not gasoline, to clean parts. Keep sparks and flames away from all fuel-related parts.

2.5. Frequently check tiller tines. They should be free of nicks and cracks and securely fastened in place

2.6. Periodically lighten all bolts, nuts, screw, and check that all pills ate properly installed to make certain unit is safe to operate.

2.7. Where replacement parts are necessary for periodic maintenance and servicing, use only new, original replacement parts or their equivalents for repair and replacement to restore your equipment to original specifications.

2.8. The manufacturer and/or distributor will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.

2.9. A first aid kit should be kept readily accessible while performing maintenance on this equipment.

### 3. Maintenance sheet

Regularly service period		Every time	Every month or 20 hours	Every 3 months or 50 hours	Every half year or 100 hours	Every year or 300 hours
Use the time come first						
Drive belt tension	Check	√				
	Change	√				
Engine oil	Check level	√				
	Change		√		√	
Air filter	Check	√				
	Clean			√ (1)	√ (1)	
	Replace					√
Tiller transmission oil	Check	√				
	Replace			√		
Tire pressure	Check	√				
Tine shaft	Clean	√				
Wheel axle shaft	Lubricate			√	√	

1) Service more frequently when used in dusty area.

#### 4. Engine long time storage

Refer to the engine manual for information on engine maintenance. The engine manual provides detailed information and a maintenance schedule for performing the following tasks:

- 5.1.1. Check oil level before each time's use or after every 8 hours of operation.
  - 5.1.2. Change oil after first 5-8 hours of operation. Change oil while engine is warm. Refill with new oil of recommended grade.
  - 5.1.3. Check spark plug yearly or every 100 hours of operation.
  - 5.1.4. Service air cleaner.
  - 5.1.5. Keep engine and part clean.
  - 5.1.6. Check engine and equipment often for loose nuts and bolts and keep tightened.
- Check or Fill Engine Crank case
- 5.2.1. Add oil according to engine manual. Do not overfill.
  - 5.2.2. Use a clean, high quality detergent oil. Do not mix oil with gasoline oil level must be full. Check the oil level by removing oil fill plug. Oil level should be up to the bottom of the fill plug opening.
  - 5.2.3. Always check oil level before starting engine. Refer to engine manual for Capacity. And type of oil to use.

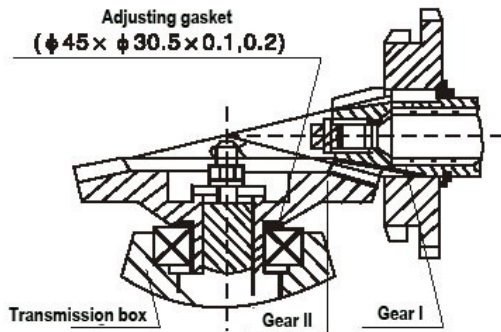
#### 5. Tiller long time storage

Follow the steps below to prepare your tiller for storage. Read your engine manual for detailed instructions on preparing the engine for storage.

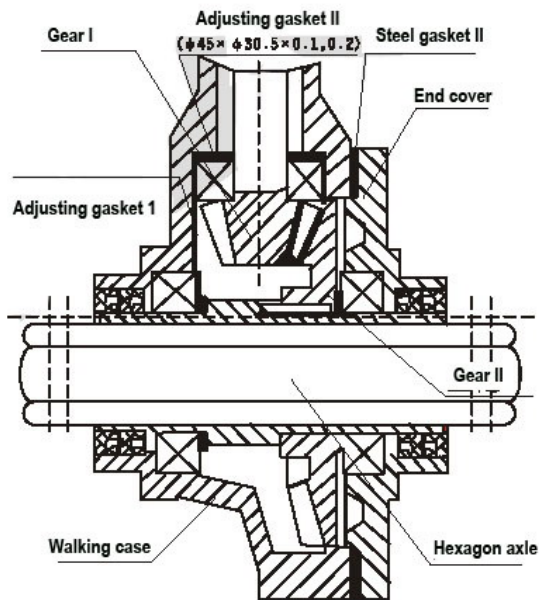
- 1. Protect wheels and axles from rain:
  - Loosen locking bolt inside wheel. Slide wheel toward machine,
  - Coat the axles lightly with axle grease
  - Move wheel back into position and lock jam nut.
  - Back off locked bolt 1/16 turn and lock jam nut.
- 2. Drain fuel system completely following engine manufacturer's instructions or add fuel stabilizer to prevent fuel from gumming up during extended storage period.
- 3. While engine is still warm, drain the oil from the engine. Refill with fresh oil the recommended grade.
- 4. Clean external surfaces and engine.
- 5. Remove spark plug, pour one ounce of SAE 30 oil into spark plug hole
- 6. Plug hole and pull starter cord slowly to distribute oil evenly head area
- 7. Take off spark plug, and store it.
- 8. Transport unit to a suitable storage location. If you have chosen to use a fuel stabilizer and have not drained the fuel system, follow all safety instructions and storage precautions in this manual to prevent the possibility of fire from the ignition of gasoline fumes. Take care, gasoline fumes can travel to distant sources of ignition and ignite, causing risk of explosion and fire.

9. Store the unit in an area away from human activity.
10. If there is any possibility of unauthorized use or tampering, remove the spark plug and store it in a safe place before storing the rototiller unit away. Be sure to plug the spark plug hole to prevent foreign material from entering.

### 3. Adjusting



Drawing 8



Drawing 9

## 1. Umbrella gear adjusting

If sure that umbrella gear has big strange noise, immediately adjust as following.

1.1 Umbrella gear clearance in transmission box. (Drawing 8)

1.1.1 When vice gear side clearance  $\Delta < 0.05$ , should add steel gasket between transmission box and walking case.

1.1.2 When vice gear side clearance  $\Delta > 0.3$ , should add adjusting gasket between bearing and gear II, to make sure clearance between 0.5-0.10.

1.2 Umbrella gear clearance in walking case. (Drawing 9)

1.2.1 When vice gear side clearance  $\Delta < 0.05$ , should add adjusting gasket I 0.2-0.3 to make clearance bigger, and change steel gasket II and to make sure gear II clearance 0.05-0.15.

1.2.2 When vice gear side clearance  $\Delta > 0.3$ , should reduce adjusting gasket I, and make sure gear II clearance 0.05-0.15; or adjusting gasket II, and meanwhile make sure gear I clearance 0.05-0.15.



## 2. Reverse gear and cable adjusting

When find tiller can't reverse very well, then need adjust reverse cable according SECTION THREE.

### !NOTE:

- 2.1. Hold and loose reverse handle two or three times, if find tiller still can't reverse very well. Adjust the reverse cable.
- 2.2. When tiller work, loose reverse handle, reverse gear should return. And then gear box shouldn't be noise. If any noise, gears may be broken.

## 3. Clutch cable adjusting

After sometime's using, because friction disk worn out, clutch fork worn out, and make clutch can't engage very well, then need adjust clutch cable according to SECTION THREE.

### !NOTE:

- 3.1. Hold and loose clutch rod two or three times, if find tiller still can't engage very well. Adjust the clutch cable.
- 3.2. If adjust many times still can't solved problem, must be clutch worn out too much. Then need take machine to service center to replace clutch assy or clutch fork.
- 3.3. Don't disassemble clutch by yourself, or may be damaged clutch.

## 4. Throttle cable adjusting

When turn throttle lever, can't increase or decrease engine speed very well, need adjust oil throttle cable according to SECTION FOUR.

### !NOTE:

- 4.1 Turn the throttle lever two or three times, to see the function.
- 4.2 Throttle cable and cable head must use screw to fasten.

# TROUBLESHOOTING

## 1. Engine can't start and solution

When engine can't start:

- 1.1 Check if engine switch is ON?
- 1.2 Check if enough oil?
- 1.3 Check if fuel valve is ON?
- 1.4 Check if enough fuel in fuel tank?
- 1.5 Check if fuel arrive carburetor?

! WARNING: If fuel leak out, clean them complete. And the check spark plug or engine. Leak out fuel will cause fire.

- 1.6 Check if spark plug has spark?
  - 1.6.1 Take off spark plug cap, clean dust on it. And then take off spark plug.
  - 1.6.2 Put back spark plug cap on spark plug.
  - 1.6.3 Put spark plug on any grounded point of engine, and start engine, to see if any spark in spark plug clearance.
  - 1.6.4 If no spark, please change a new spark plug.
  - 1.6.5 If have spark, please put it back, and start engine again.

## 2. Clutch has problem

! NOTE: Don't disassemble clutch complete, if has problem as \*, please contact with seller.

Problem	Reason	Solution
Can't clutch	Clutch rod broken	Change or repair
	Clutch cable broken	Change
	Fork or gasket worn out	Change
	Fork axle, jointing fall	Change or repair
	Fork pin bent or broken	Change
	* Friction disk can't work	Change
	* Spring disk can't work	Change
	Friction disk can't contact with bearing end side	Add adjusting gasket
Skid	Clutch broken	Change
	* Spring worn out and can't work	Change
	Fork axle can't turn well	Clean
	Clutch cable don't adjust well	Adjust

### 3. Transmission box has problem

Problem	Reason	Solution
Each gears not right	Screw and round but at the back of main shaft is loosen.	Assemble main shaft well, and tight the bolt at back.
Can't turn to needed forward gear	Block worn out	Change
	Driving umbrella gear loosen	Tight bolt and nut
	Spring of main shaft invalid	Change
	Main shaft raid, screw of case back cover loosen	Tight
Reverse gear can't hang on	Reverse fork worn	Change
	Reverse cable can't work well	Adjust or change
	Reverse axle loose	Tight bolt at back of reverse axle
	Reverse fork block	Clean until it turn well
Reverse gear don't return	Reverse axle loose and cause gear block	Tight bolt at back of reverse axle
	Spring on reverse axle can't work	Change
	Reverse axle bend	Change
Reverse axle loosen	Bolt at back of reverse axle loosen	Tight
	Reverse axle and gear box not fixed well	Change
Gears has big noise	Umbrella axe, reverse axle bend	Change
	Gears worn out seriously	Change
	Umbrella axle, reverse axle can't fixed well	Change
Mainshaft leak oil	Oil plug on mainshaft invalid	Change
Reverse axle leak oil	O-ring invalid	Change
Clutch fork leak oil	O-ring invalid	Change

Gear shift axle leak oil	O-ring invalid	Change
Flange connection leak oil	Bolt loosen	Tight
	Steel gasket broken	Change

**4. Walking case has problem**

Problem	Reason	Solution
Gear has big noise	Gears worn out or not assemble well	Change or assemble again
Gears block	Not assemble well	Assemble again
Over heat	Oil in case is little	Add oil
	Gears clearance too narrow	Assemble again
	Axle direction clearance is too small	Adjust
Transmission box connecting place leak oil	Connection bolts loosen	Tight
Oil leak out	Gasket broken	Change
Output shaft sleeve outside leak oil	Oil seal broken	Change
Output shaft sleeve inner hole leak oil	Sleeve broken	Change
Drain hole leak oil	O ring broken	Change
	Plug loosen	Tight
Case leak oil	Case has some small hidden hole	Welding or paint

## 5. Other problem

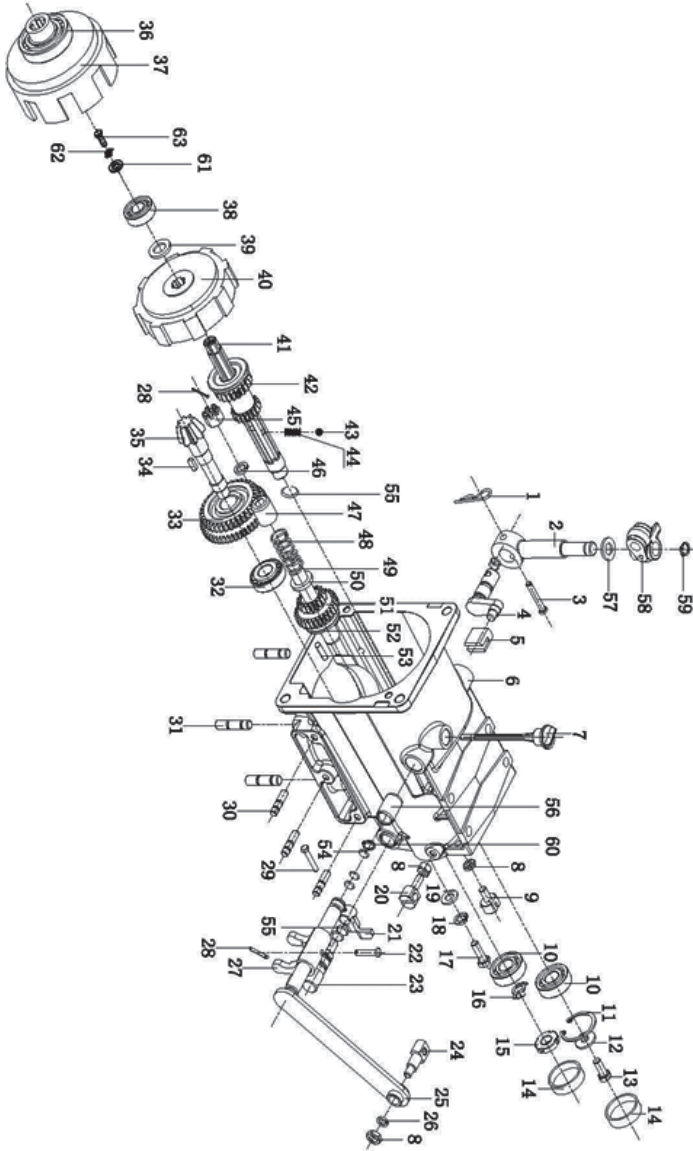
Problem	Reason	Solution
Blades broken	Hit stone or something hard	Change
Cable broken	Worn out	Change

## EASILY-DAMAGED PARTS

Number	Name	Assy.
1	o-ring 10×2.65	Gear box assy.
2	o-ring 11.2×2.65	Gear box assy.
3	o-ring 18×1.8	Gear box assy.
4	Clutch cable	Handle frame assy.
5	Throttle cable	Handle frame assy.
6	Throttle switch	Handle frame assy.
7	Oil plug	Gear box assy.
8	Oil seal 30×42×7	Transmission box assy.
9	Rubber handlebar	Handle frame assy.
10	Engine vulnerable parts	Refer to engine manual and catalogue

# TRANSMISSION DIAGRAM & SPARE PARTS OF AM-RTD-5D

## SHIFT GEARS DIAGRAM-A



# TRANSMISSION DIAGRAM & SPARE PARTS OF AM-RTD-5D

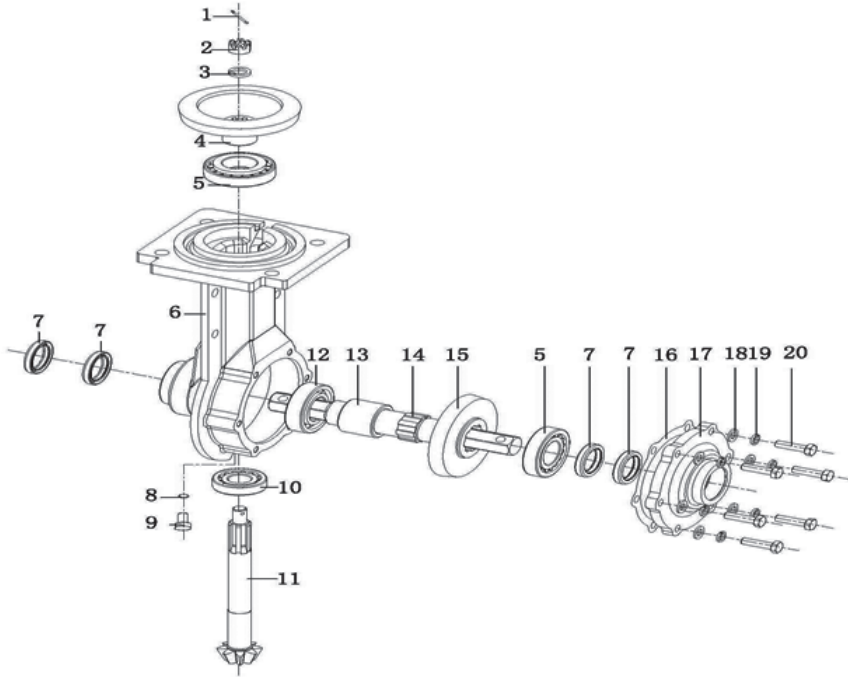
## SHIFT GEARS PARTS-A

Part No	Description
AM-RTD-TA-1	Clipφ2
AM-RTD-TA-2	Sheath,Shift Rod
AM-RTD-TA-3	Pin6×40,Shift Rod
AM-RTD-TA-4	Shift Axes
AM-RTD-TA-5	Shift fork
AM-RTD-TA-6	Shift Gear box
AM-RTD-TA-7	Dipstick
AM-RTD-TA-8	Nut M8
AM-RTD-TA-9	Seat,cluth cable
AM-RTD-TA-10	Bearing 6203
AM-RTD-TA-11	A type external circlip
AM-RTD-TA-12	Washer 8
AM-RTD-TA-13	Bolt M8×20
AM-RTD-TA-14	Oil plug
AM-RTD-TA-15	Round nut
AM-RTD-TA-16	Tap washer 14
AM-RTD-TA-17	Bolt M10×25
AM-RTD-TA-18	Spring Washer10
AM-RTD-TA-19	Washer10
AM-RTD-TA-20	Seat,reverse gear cable
AM-RTD-TA-21	Rever gear fork
AM-RTD-TA-22	Pin6×29,cluth fork
AM-RTD-TA-23	Axes,rever gear fork
AM-RTD-TA-24	Seat,cluth cable
AM-RTD-TA-25	Axes,cluth fork
AM-RTD-TA-26	Spring Washer8
AM-RTD-TA-27	Cluth fork
AM-RTD-TA-28	Splitpin 1.6×20
AM-RTD-TA-29	Bolt M5×30
AM-RTD-TA-30	Stud M8*25
AM-RTD-TA-31	Stud M10/36
AM-RTD-TA-32	Taper ball bearing 30203

Part No	Description
AM-RTD-TA-33	Double gear,countershaft
AM-RTD-TA-34	KeyA6×6×20
AM-RTD-TA-35	Countershaft
AM-RTD-TA-36	Bearing 6007
AM-RTD-TA-37	Cover,clutch
AM-RTD-TA-38	Axletree 6204
AM-RTD-TA-39	Clutch washer
AM-RTD-TA-40	Core comp, clutch
AM-RTD-TA-41	Principal axes
AM-RTD-TA-42	Iniative gear
AM-RTD-TA-43	Steel ball Sφ6.35
AM-RTD-TA-44	Spring ,principal axes
AM-RTD-TA-45	Nut M12
AM-RTD-TA-46	Spring Washer12
AM-RTD-TA-47	Restrict cover,reverse gear
AM-RTD-TA-48	Spring seat,reverse gear
AM-RTD-TA-49	Axes,reverse gear
AM-RTD-TA-50	Spring seat,reverse gear
AM-RTD-TA-51	Double gear,reverse gear
AM-RTD-TA-52	Pushing plate,reverse gear
AM-RTD-TA-53	Cylindrical pin
AM-RTD-TA-54	O-ring11.2×2.65
AM-RTD-TA-55	O-ring18×1.8
AM-RTD-TA-56	Sheath 20×16×29
AM-RTD-TA-57	Washer10
AM-RTD-TA-58	PTO Hinge B
AM-RTD-TA-59	Ring 9
AM-RTD-TA-60	Ring 15
AM-RTD-TA-61	Gasket 8
AM-RTD-TA-62	Sawtooh loched gasket
AM-RTD-TA-63	Bolt M8×20

# TRANSMISSION DIAGRAM & SPARE PARTS OF AM-RTD-5D

## TRANSMISSION CASE DIAGRAM & PARTS-B



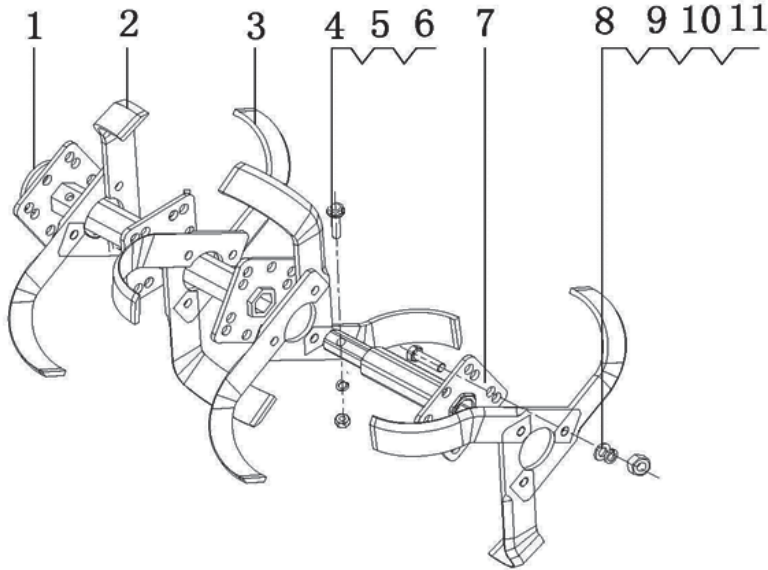
Part No.	Description
AM-RTD-TB-1	Splitpin 2.5x22
AM-RTD-TB-2	Nut M12
AM-RTD-TB-3	Spring Washer 12
AM-RTD-TB-4	Driven umbrella gear
AM-RTD-TB-5	Taper ball bearing 30206
AM-RTD-TB-6	Walking case
AM-RTD-TB-7	Oil Seal 30x42x7
AM-RTD-TB-8	O-ring 10x2.65
AM-RTD-TB-9	Bearing 6205
AM-RTD-TB-10	Taper ball bearing 30204

Part No.	Description
AM-RTD-TB-11	Umbrella gear axes
AM-RTD-TB-12	Bearing 6206
AM-RTD-TB-13	Cover, output axes
AM-RTD-TB-14	Flange output axes
AM-RTD-TB-15	Walking umbrella gear
AM-RTD-TB-16	Side cover gasket $\delta$ 0.2/80.5
AM-RTD-TB-17	Side cover
AM-RTD-TB-18	Washer 8
AM-RTD-TB-19	Spring Washer 8
AM-RTD-TB-20	Bolt M8x30



# TRANSMISSION DIAGRAM & SPARE PARTS OF AM-RTD-5D

## ROTARY TILLER DIAGRAM & PARTS-C

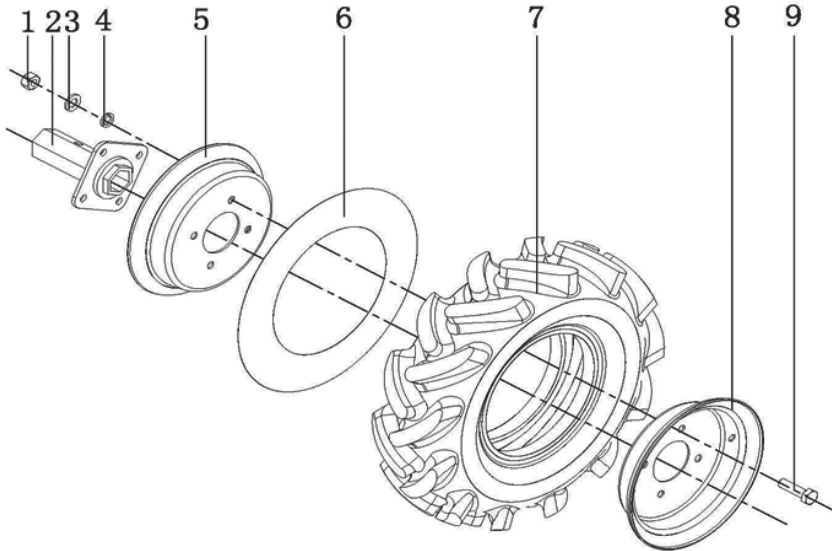


Part No.	Description
AM-RTD-TC-1	Main tube
AM-RTD-TC-2	Blade (R)
AM-RTD-TC-3	Blade (L)
AM-RTD-TC-4	Bolt M8x35
AM-RTD-TC-5	Spring Washer 8
AM-RTD-TC-6	Washer 8

Part No.	Description
AM-RTD-TC-7	Counter tube
AM-RTD-TC-8	Bolt M10x35
AM-RTD-TC-9	Spring Washer 10
AM-RTD-TC-10	Washer 10
AM-RTD-TC-11	Nut M10

# TRANSMISSION DIAGRAM & SPARE PARTS OF AM-RTD-5D

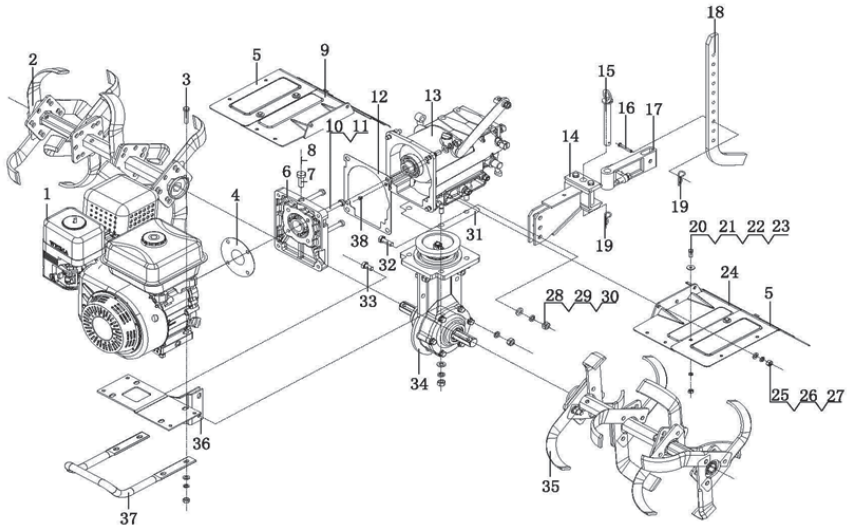
## LAMBDOIDAL WHEEL DIAGRAM & PARTS-D



Part No.	Description
AM-RTD-TD-1	Nut M10
AM-RTD-TD-2	Wheel axle
AM-RTD-TD-3	Spring Washer10
AM-RTD-TD-4	Washer10
AM-RTD-TD-5	Spoke (R)
AM-RTD-TD-6	Inner tube
AM-RTD-TD-7	Outer rubber tyer3.50-6
AM-RTD-TD-8	Spoke (L)
AM-RTD-TD-9	Bolt M10×30

# TRANSMISSION DIAGRAM & SPARE PARTS OF AM-RTD-5D

## JOINT DIAGRAM & PARTS-E

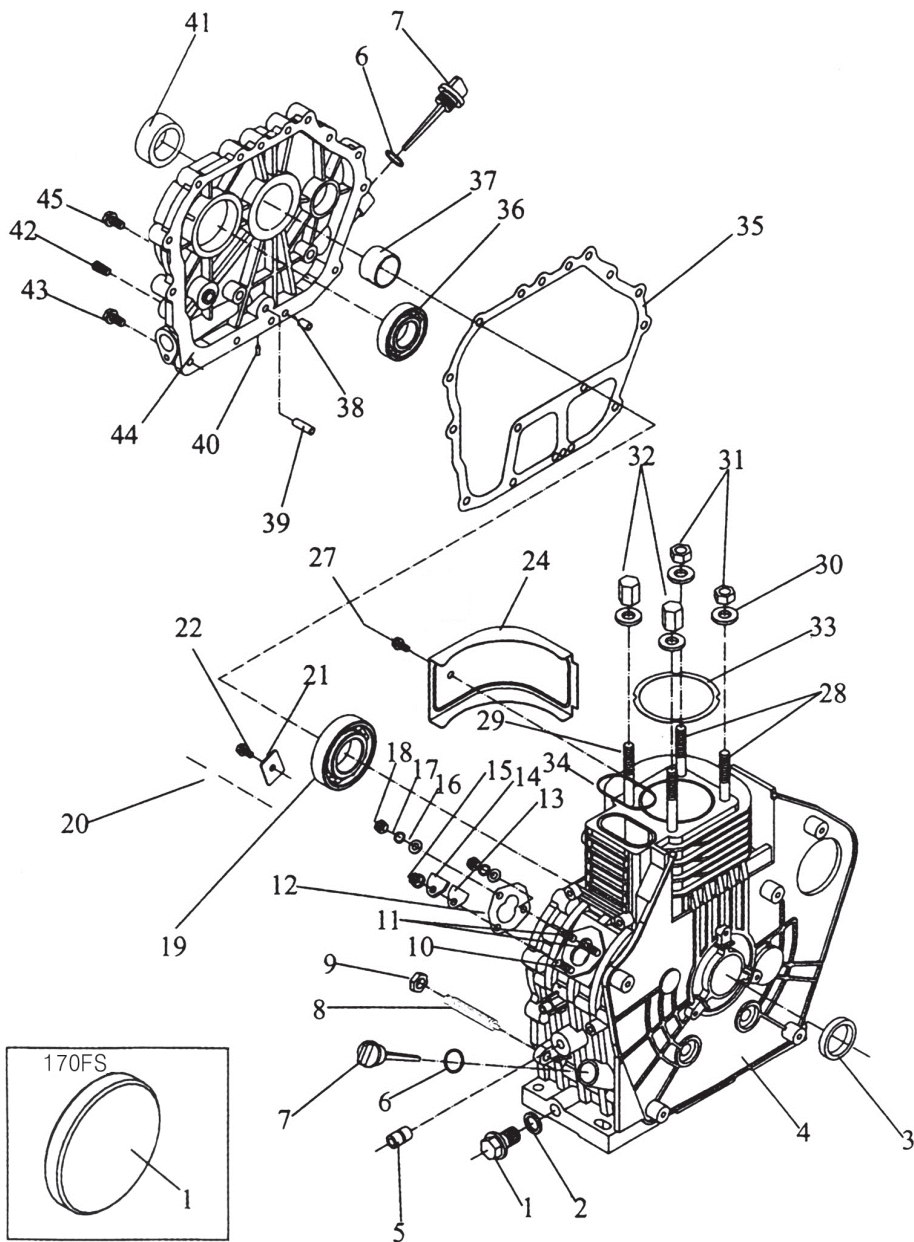


Part No.	Description
AM-RTD-TE-1	Gasoline Engine
AM-RTD-TE-2	Dry land blade comp(R)
AM-RTD-TE-3	Bolt M8x40
AM-RTD-TE-4	Flange gasket
AM-RTD-TE-5	Vice-fender
AM-RTD-TE-6	Flange
AM-RTD-TE-7	Bolt M12x1.25x25
AM-RTD-TE-8	Pin 2.6*25
AM-RTD-TE-9	Right Fender
AM-RTD-TE-10	Bolt M8x35
AM-RTD-TE-11	Spring Washer8
AM-RTD-TE-12	Aiproof gasket,gear box
AM-RTD-TE-13	Gear box comp
AM-RTD-TE-14	Dragging assy
AM-RTD-TE-15	Pin with ring
AM-RTD-TE-16	Pin8x40
AM-RTD-TE-17	Connection frame
AM-RTD-TE-18	Resistance rod
AM-RTD-TE-19	Clipφ2
AM-RTD-TE-20	Bolt M6x16

Part No.	Description
AM-RTD-TE-21	Nut M6
AM-RTD-TE-22	Spring Washer6
AM-RTD-TE-23	Washer6
AM-RTD-TE-24	Dust cover (L)
AM-RTD-TE-25	Spring Washer8
AM-RTD-TE-26	Washer8
AM-RTD-TE-27	Nut M8
AM-RTD-TE-28	Spring Washer10
AM-RTD-TE-29	Washer10
AM-RTD-TE-30	Nut M10
AM-RTD-TE-31	Gasket for gear box and walking case,80.2/80.5
AM-RTD-TE-32	Bolt M10x30
AM-RTD-TE-33	Bolt M10x25
AM-RTD-TE-34	Transmission Case Parts
AM-RTD-TE-35	Dry land blade comp(L)
AM-RTD-TE-36	Support frame, engine
AM-RTD-TE-37	Bumper comp
AM-RTD-TE-38	Locating pin for gear box

# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 1. CRANKCASE ASSEMBLY-A



# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

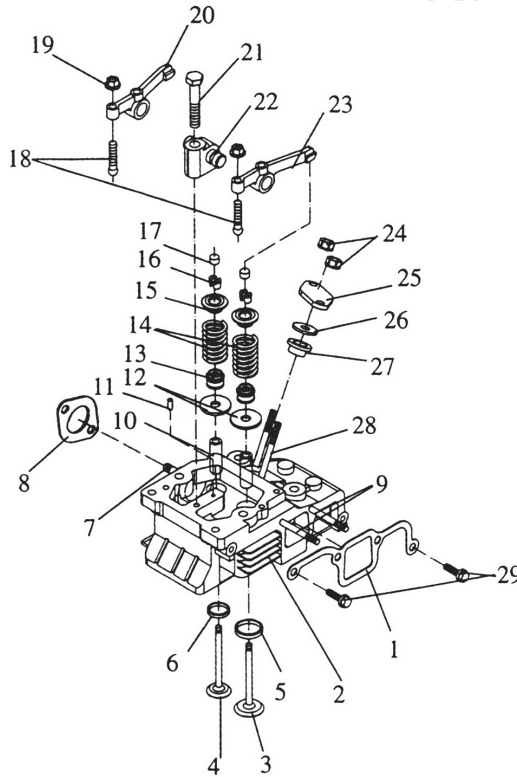
## 1. CRANKCASE ASSEMBLY-A

Part No.	Description
AM-RTD-EA-1	Drain Plug
AM-RTD-EA-2	Oil Plug Seal Assy
AM-RTD-EA-3	Oil Seal Sg30*45*8
AM-RTD-EA-4	Cylinder Block. Cylinder Block.
AM-RTD-EA-5	Needle Bearing/Hk081410
AM-RTD-EA-6	O-Ring 24*2.4
AM-RTD-EA-7	Oil Filler Gap
AM-RTD-EA-8/ AM-RTD-EA-9	Fuel Controller
AM-RTD-EA-10	Stud AM6*30
AM-RTD-EA-11	Stud AM6*40
AM-RTD-EA-12	Fuel Injection Pump Gasket
AM-RTD-EA-13	Seal Gasket
AM-RTD-EA-14	Seal Plate
AM-RTD-EA-15	Nut M6
AM-RTD-EA-16	Washer 6
AM-RTD-EA-17	Spring Washer 6
AM-RTD-EA-19	Ball Bearing 6305/P5
AM-RTD-EA-20	Needle Bearing HM1512
AM-RTD-EA-21	Retainer
AM-RTD-EA-22	Bolt M8*16
AM-RTD-EA-24	Governor

Part No.	Description
AM-RTD-EA-27	Bolt M6*12
AM-RTD-EA-28	Cylinder Head Stud/M8*79
AM-RTD-EA-29	Cylinder Head Stud/M8*88
AM-RTD-EA-30	Washer
AM-RTD-EA-31	Cylinder Head Nut short
AM-RTD-EA-32	Cylinder Head Nut Long
AM-RTD-EA-33	Cylinder Head Shim
AM-RTD-EA-34	Cylinder Head Ring
AM-RTD-EA-35	Crank Case Gasket
AM-RTD-EA-36	Ball Bearing 6205/P5
AM-RTD-EA-37	Main Bearing
AM-RTD-EA-38	Pin 8*12
AM-RTD-EA-39	Oil Indicator
AM-RTD-EA-41	Oil Seal SG25* $\phi$ 42*8
AM-RTD-EA-42	Plug
AM-RTD-EA-43	Bolt M8 * 33.5
AM-RTD-EA-44	Crank Case Cover
AM-RTD-EA-45	Bolt M6 * 28
AM-RTD-EA-1	Crankshaft Plug

# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 2. CYLINDER HEAD ASSEMBLY-B

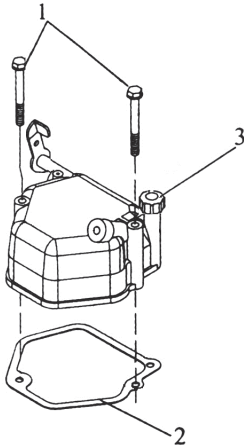


Part No.	Description
AM-RTD-EB-1	Air Intake Gasket
AM-RTD-EB-2	Cylinder Head
AM-RTD-EB-5	
AM-RTD-EB-6	
AM-RTD-EB-10	
AM-RTD-EB-3	
AM-RTD-EB-4	Exhaust Valve
AM-RTD-EB-7	Stud AM8*32
AM-RTD-EB-8	Silencer Gasket
AM-RTD-EB-9	Stud AM6*72
AM-RTD-EB-11	Pin 4*8
AM-RTD-EB-12	Valve Spring Washer
AM-RTD-EB-13	Valve Conduit Oil Seal

Part No.	Description
AM-RTD-EB-14	Spring Retainer
AM-RTD-EB-15	Rock Arm Assy
AM-RTD-EB-16	Cotter
AM-RTD-EB-17	Valve Adjusting Plate
AM-RTD-EB-18	Arm Assy
AM-RTD-EB-21	Bolt M8*45
AM-RTD-EB-24	Nut M6
AM-RTD-EB-25	Nozzle Retainer
AM-RTD-EB-26	Spacer Washer
AM-RTD-EB-27	Spacer
AM-RTD-EB-28	Stud AM6*60
AM-RTD-EB-29	Bolt M6*25

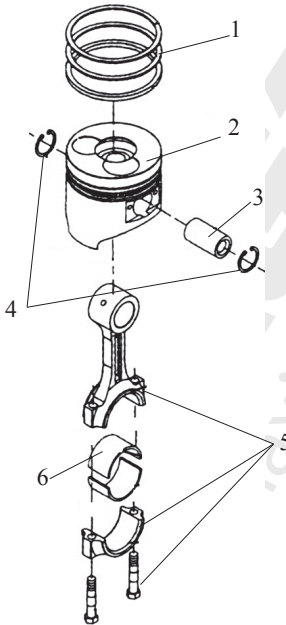
# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 3. CYLINDER HEAD COVER ASSEMBLY-C



Part No.	Description
AM-RTD-EC-1	Bolt M6*55
AM-RTD-EC-2	Bonner Gasket
AM-RTD-EC-3	Bonnet Assy

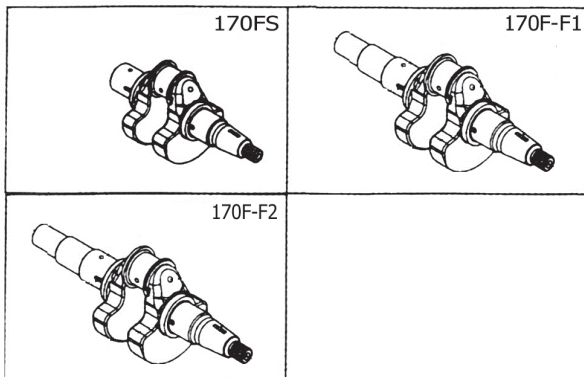
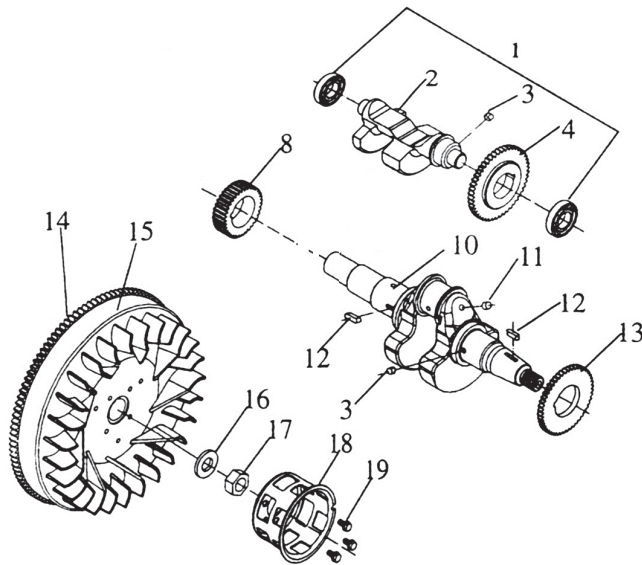
## 4. PISTON ROD ASSEMBLY-D



Part No.	Description
AM-RTD-ED-1	Ring Set
AM-RTD-ED-2	Piston
AM-RTD-ED-3	Piston Pin
AM-RTD-ED-4	Washer 21
AM-RTD-ED-5	Connecting Rod Assy
AM-RTD-ED-6	Crank Pin Bearing

# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 5. CRANKSHAFT FLYWHEEL ASSEMBLY-F



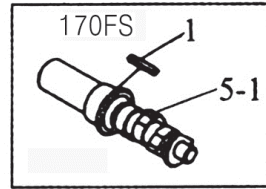
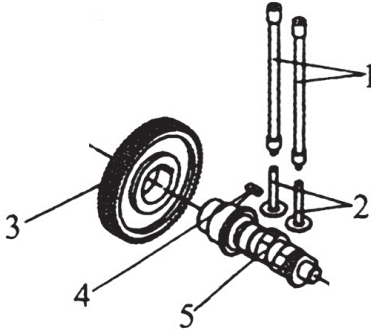
Part No.	Description
AM-RTD-EF-1	Ball Bearing 6202/P5
AM-RTD-EF-2	Balancer Shaft
AM-RTD-EF-3	Key 5x7
AM-RTD-EF-4	Timing Gear Of Balance Shaft
AM-RTD-EF-8	Crankshaft Timing Gear
AM-RTD-EF-10	Crank Shaft
	Crank Shaft
	Crank Shaft
AM-RTD-EF-11	Steel Ball

Part No.	Description
AM-RTD-EF-12	Key 5x12
AM-RTD-EF-13	Drive Gear Of Balance Shsft
AM-RTD-EF-14	Flywheel Ring Geat
AM-RTD-EF-15	Fly Wheel
AM-RTD-EF-16	Fly Wheel Nut Washer
AM-RTD-EF-17	Fly Wheel Nut
AM-RTD-EF-18	Starter Pulley
AM-RTD-EF-19	Bolt M6*12



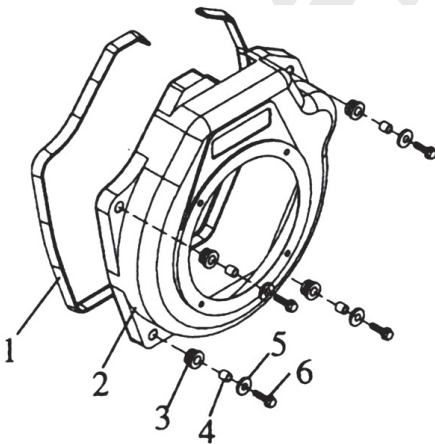
# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 6. CAMSHAFT ASSEMBLY-G



Part No.	Description
AM-RTD-EG-1	Valve Rod Assy
AM-RTD-EG-2	Valve Tappet
AM-RTD-EG-3	Camshaft Timing Gear
AM-RTD-EG-4	Key 5*14
AM-RTD-EG-5	Camshaft
AM-RTD-EG-5-1	Camshaft

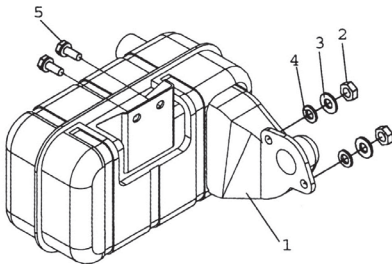
## 7. WIND SHIELD ASSEMBLY-H



Part No.	Description
AM-RTD-EH-1	Shock Absorber Seat
AM-RTD-EH-2	Fan Case Welded Assy
AM-RTD-EH-3	Shock Absorber
AM-RTD-EH-4	Collar10*10
AM-RTD-EH-5	Washer 6
AM-RTD-EH-6	Bolt M6*25

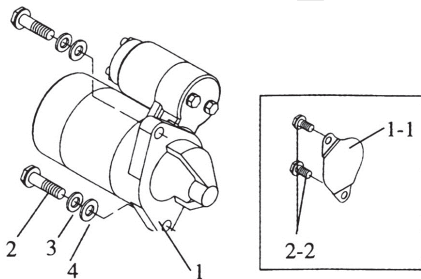
# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 8. MUFFLER ASSEMBLY-J



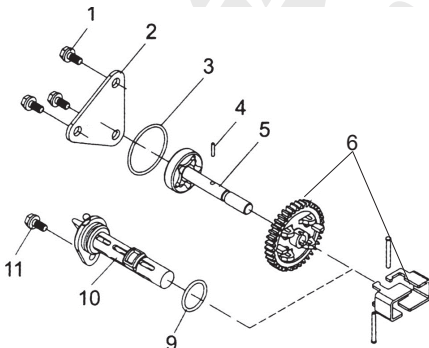
Part No.	Description
AM-RTD-EJ-1	Silencer Assy
AM-RTD-EJ-2	Nut 8
AM-RTD-EJ-3	Spring Washer 6
AM-RTD-EJ-4	Washer 8
AM-RTD-EJ-5	Bolt M6*14

## 9. STARTER MOTOR ASSEMBLY-K



Part No.	Description
AM-RTD-EK-1	Fly Wheel Alternator
AM-RTD-EK-1-1	Starter Seat Cover
AM-RTD-EK-2	Bolt M10*35
AM-RTD-EK-2-2	Bolt M10*20
AM-RTD-EK-3	Spring Washer 6
AM-RTD-EK-4	Washer 10

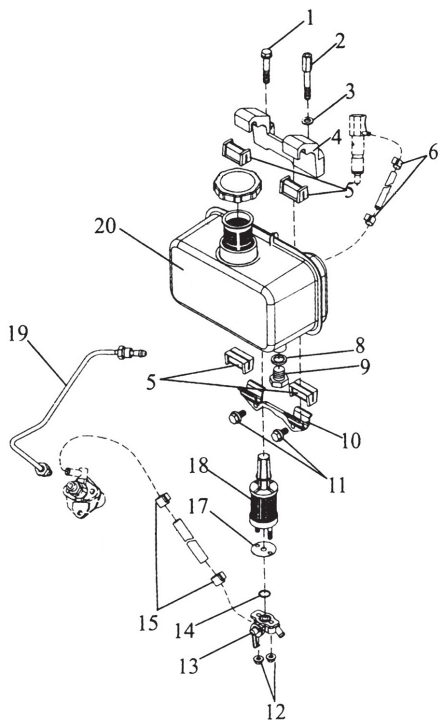
## 10. LUBRICATION SYSTEM-L



Part No.	Description
AM-RTD-EL-1	Bolt M6*12
AM-RTD-EL-2	Oil Pump Cover
AM-RTD-EL-3	O-Ring 34.8*1.8
AM-RTD-EL-4	Pin 3*16
AM-RTD-EL-5	Oil Pump Assy
AM-RTD-EL-6	Oil Pump Gear
AM-RTD-EL-9	O-Ring 242.4
AM-RTD-EL-10	Oil Filter Assy
AM-RTD-EL-11	Bolt M6*14

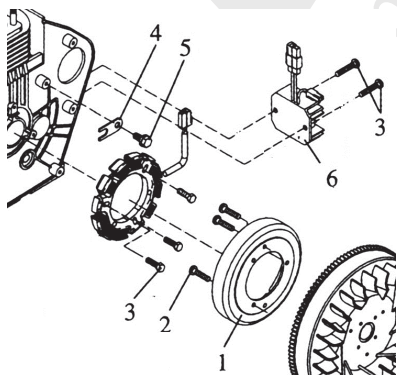
# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 11. FUEL SYSTEM-M



Part No.	Description
AM-RTD-EM-1	Bolt M8×45
AM-RTD-EM-2	Upper Stay Bolt
AM-RTD-EM-3	Washer 8
AM-RTD-EM-4	Upper Stay
AM-RTD-EM-5	Fuel Tank Damper
AM-RTD-EM-6	Fuel Return Pipe Assy
AM-RTD-EM-8	Fuel Tank Plug Seat
AM-RTD-EM-9	Fuel Tank Plug
AM-RTD-EM-10	Lower Stay Assy
AM-RTD-EM-11	Bolt M6*14
AM-RTD-EM-12	Nut 6
AM-RTD-EM-13	Fuel Tank Gock Assy
AM-RTD-EM-14	O-Ring 13.2*1.8
AM-RTD-EM-15	Fuel Pipe Assy
AM-RTD-EM-17	Fuel Filter Gasket
AM-RTD-EM-18	Fuel Filter Assy
AM-RTD-EM-19	Fuel Injection Pipe Assy
AM-RTD-EM-20	Fuel Tank Assy
AM-RTD-EM-21	Fuel Tank Gap Assy

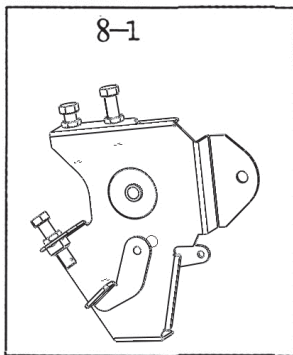
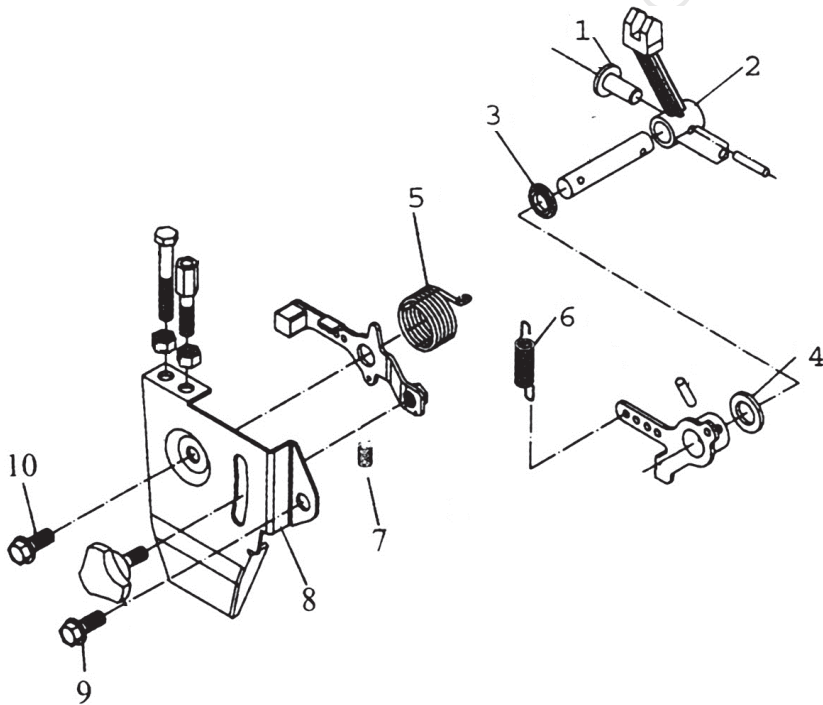
## 12. FLYWHEEL GENERATOR ASSEMBLY-N



Part No.	Description
AM-RTD-EN-1	Fly Wheel Alternator
AM-RTD-EN-2	Screw Bolt M6*8
AM-RTD-EN-3	Bolt M6*20
AM-RTD-EN-4	Wire Clamp
AM-RTD-EN-5	Bolt M6*12
AM-RTD-EN-6	Regulator

# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 13. CONTROL AND MANIPULATION COMBINATION-P

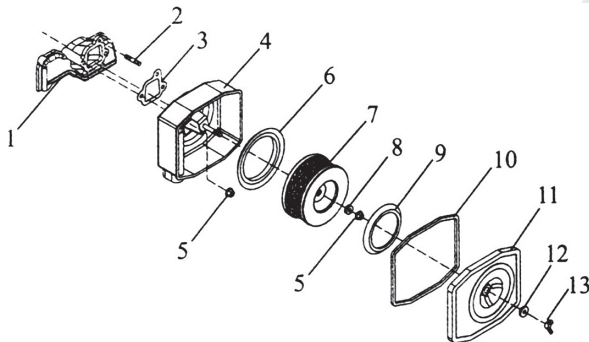


Part No.	Description
AM-RTD-EP-1	Tappet 25.5
AM-RTD-EP-2	Lever Fork
AM-RTD-EP-3	Oil Seal 8×14×4
AM-RTD-EP-4	Lever Washer
AM-RTD-EP-5	Return Spring
AM-RTD-EP-6	Governor Spring
AM-RTD-EP-7	Fine Spring
AM-RTD-EP-8	Control Lever Assy.
AM-RTD-EP-8-1	Control Lever Assy.
AM-RTD-EP-9	Nut M6×12
AM-RTD-EP-10	Nut M6×25

# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 14. INTAKE SYSTEM

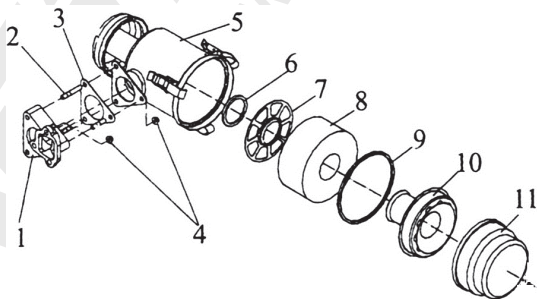
### PURE POWER-Q



Part No.	Description
AM-RTD-EQ-1	Intake Pipe
AM-RTD-EQ-2	Nut M6x12
AM-RTD-EQ-3	Air Cleaner Gasket
AM-RTD-EQ-5	Flange Nut M6
AM-RTD-EQ-4	Air Cleaner Case Assy
AM-RTD-EQ-6	Shock Absorber Washer 2
AM-RTD-EQ-7	Air Cleaner Element Assy

Part No.	Description
AM-RTD-EQ-8	Element Shock Absorber
AM-RTD-EQ-9	Shock Absorber Washer 1
AM-RTD-EQ-10	Case Ring
AM-RTD-EQ-11	Cover Assy
AM-RTD-EQ-12	Case Shock Absorber
AM-RTD-EQ-13	Nut M6

### TILLER POWER-R

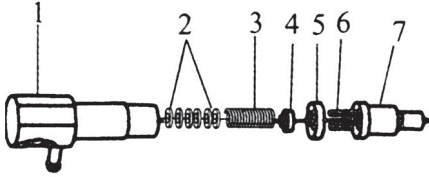


Part No.	Description
AM-RTD-ER-1	Intake Pipe/Integration
AM-RTD-ER-2	Nut M6x12
AM-RTD-ER-3	Air Cleaner Gasket
AM-RTD-ER-5	Air Filter Connecting Disc

Part No.	Description
AM-RTD-ER-6	Toghtenig Bolt Of Air Cleaner
AM-RTD-ER-7	Washer I
AM-RTD-ER-8	Air Filter Case
AM-RTD-ER-9	O-Ring

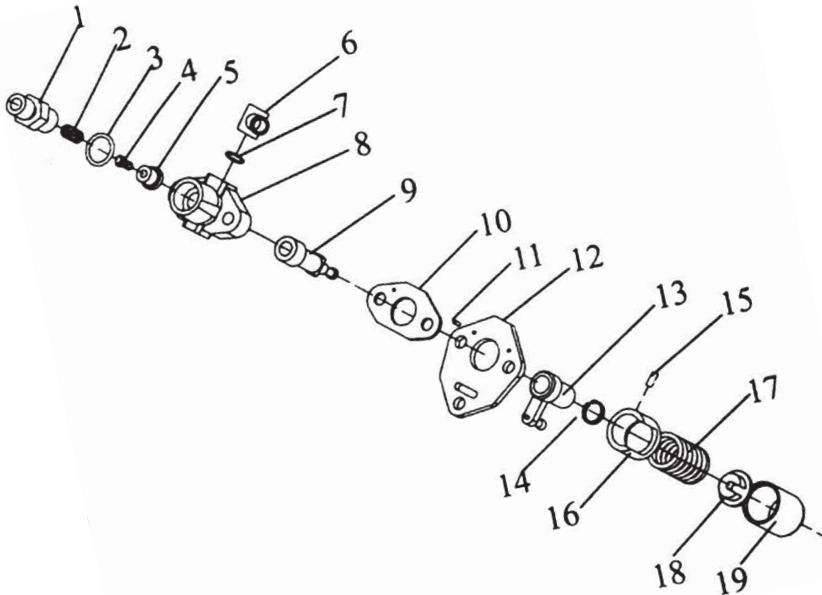
# ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

## 15. INJECTOR PARTS-S



Part No.	Description
AM-RTD-ES-1	Fuel Injection Valve Block
AM-RTD-ES-2	Washer
AM-RTD-ES-3	Volt-Adjustment Spring
AM-RTD-ES-4	Mandril
AM-RTD-ES-5	Intermediate Block
AM-RTD-ES-6	Locating Pin
AM-RTD-ES-7	Nozzle

## 16. FUEL PUMP PARTS-T



Part No.	Description
AM-RTD-ET-1	Fuel Delivery Valve Forcing Holder
AM-RTD-ET-2	Fuel Delivery Valve Spring
AM-RTD-ET-3	Fuel Delivery Valve Seat

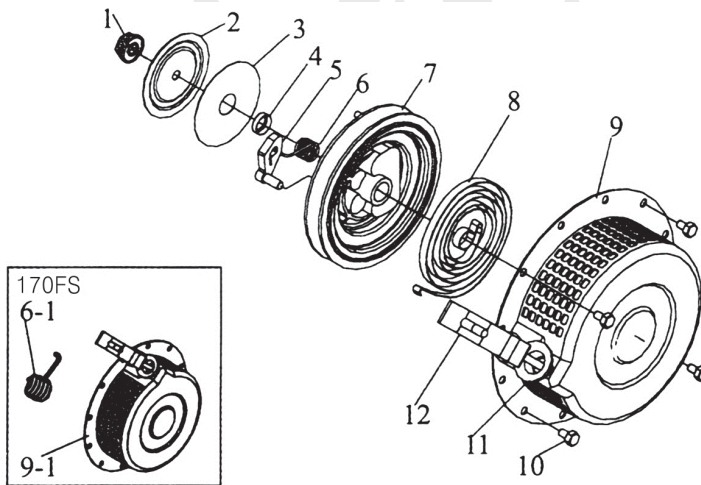
Part No.	Description
AM-RTD-ET-4	Fuel Delivery Valve Core
AM-RTD-ET-5	Fuel Delivery Valve Seat
AM-RTD-ET-6	Fuel Pipe Weldment Assy.
AM-RTD-ET-7	O-Ring
AM-RTD-ET-8	Fuel Block

## ENGINE DIAGRAM & SPARE PARTS OF AM-RTD-5D

Part No.	Description
AM-RTD-ET-9	Plunger
AM-RTD-ET-10	Washer
AM-RTD-ET-11	Pin2x6
AM-RTD-ET-12	Fip Connecting Plate
AM-RTD-ET-13	Fuel Limiting Sheath
	Weldmenl Assy

Part No.	Description
AM-RTD-ET-14	Steel Clip
AM-RTD-ET-15	Pin3x8
AM-RTD-ET-16	Support
AM-RTD-ET-17	Spring
AM-RTD-ET-18	Spring Holder
AM-RTD-ET-19	Tappet

### 17. RECOIL STARTER MEMBER-U



Part No.	Description
AM-RTD-EU-1	Nut M8
AM-RTD-EU-2	Friction Reel
AM-RTD-EU-3	Friction Plate
AM-RTD-EU-4	Spring Cover
AM-RTD-EU-5	Ratchet
AM-RTD-EU-6	Return Spring

Part No.	Description
AM-RTD-EU-7	Starter Reel
AM-RTD-EU-8	Spiral Spring
AM-RTD-EU-9	Outer Case Assy
AM-RTD-EU-10	Bolt M6 X8
AM-RTD-EU-11	Starter Rope
AM-RTD-EU-12	Starter Handle

## INSPECTION & MAINTENANCE

For safety use, make sure the machine is cleaned every three-months. Before working, make sure to inspect the filter and the nozzle, and ensure there is no impurity. After working, make sure there is no water in the pump and the hose.

If the machine needs to be repaired in the guarantee period, please return the machine to the shop. You need to provide the certificate of purchase in order to repair or get the substitute.

Before Packing, the machine should be cleaned, then use closed packaging, packaging should be firm. Store the machine in dry place.

For transportation safety. The machine should comply with ISTA.



Meaning of crossed - out wheeled dustbin:

Do not dispose of electrical machines as unsorted municipal waste, use separate collection facilities.

If electrical machines are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

When replacing old machines with new ones, the retailer is legally obligated to take back your old machine for disposals at least free of charge.



## Warranty Card

CUSTOMER COPY



Date \_\_\_\_\_

Purchaser's Name & Address

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Product Name

**AM-RTD-5D** AGRIMATE ROTARY TILLER /ROTARY WEEDER /  
POWER WEEDER / CULTIVATOR

Product Serial No.

\_\_\_\_\_

Invoice / DN No.

\_\_\_\_\_

Date of Delivery

\_\_\_\_\_

Dealer's Office Seal

\_\_\_\_\_

Dealer Sign \_\_\_\_\_

Customer Sign. \_\_\_\_\_

I/We accept the terms and conditions of Warranty as  
in the Warranty Card.

## Warranty Card

DEALER'S COPY



Date \_\_\_\_\_

Purchaser's Name & Address

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Product Name

**AM-RTD-5D** AGRIMATE ROTARY TILLER /ROTARY WEEDER /  
POWER WEEDER / CULTIVATOR

Product Serial No.

\_\_\_\_\_

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\_\_\_\_\_

Date of Delivery

\_\_\_\_\_

Dealer's Office Seal

\_\_\_\_\_

Dealer Sign \_\_\_\_\_

Customer Sign. \_\_\_\_\_

I/We accept the terms and conditions of Warranty as  
in the Warranty Card.

## Warranty Card

COMPANY COPY



Date \_\_\_\_\_

Purchaser's Name & Address

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Product Name

**AM-RTD-5D** AGRIMATE ROTARY TILLER /ROTARY WEEDER /  
POWER WEEDER / CULTIVATOR

Product Serial No.

\_\_\_\_\_

Invoice / DN No.

\_\_\_\_\_

Date of Delivery

\_\_\_\_\_

Dealer's Office Seal

\_\_\_\_\_

Dealer Sign \_\_\_\_\_

Customer Sign. \_\_\_\_\_

I/We accept the terms and conditions of Warranty as  
in the Warranty Card.

1. **LIMITED WARRANTY PERIOD** : For a period of six months from the date of Sale / delivery of the product which ever is earlier. 2. **LIMITED WARRANTY OBLIGATION** : Replacement of defective part(s) by authorized dealer are free of charges. If found defective by reasons of defective material / poor workmanship, parts will be replaced and there will be no value re-imbursalment. 3. **TERMS & CONDITIONS** : a. Claims under warranty will be accepted on submission of Warranty Card duly filled and stamped by authorized dealer together with the original purchase document. : b. Shipping / transportation / Incidental charges incurred in replacing defective parts under warranty shall be borne by the purchaser.

**WARRANTY null & void if**

- (i) Lack of maintenance, (ii) Incorrect use of the machine or tampering, (iii) Use of non-genuine spare parts, (iv) Usage of acids, solvents, or any flammable materials, (v) Non-usage of filter water / clear water / soft water & using water above 40°C temperature, (vi) While using the pressure washers to draw water which is contaminated with dust & solvents (eg. paint thinners, gasoline, oil, etc.), (vii) Repair done by unauthorized service people, (viii) Those parts subject to wear & tear due to normal operations and plastic parts, rubber items etc, (ix) Loose connections, faulty electrical fixtures & fluctuations in power supply.
4. Should any failure occur during or after the warranty period, customer does not have the right to interrupt payment / price discount.
5. Incidental or consequential damages like inconvenience commercial loss, loss of tie, mental agony etc.
6. Loss of any nature due to operation or non-operation is not covered under warranty.
7. All free service are at Dealer's service point only.
8. Warranty ceases if service is not done periodically.
9. The attached card should be completed and returned to Ratnagiri Impex Pvt. Ltd. for registration immediately after sale / delivery.
10. The warranty is void unless you register the warranty card with Ratnagiri Impex Pvt. Ltd.
11. The decision of Ratnagiri Impex Pvt. Ltd., in settling the warranty is final in all respects.
12. All disputes are subject to Bangalore Courts Jurisdiction

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### 1st Free Service Coupon

ISO 9001-2015  
CERTIFIED COMPANY

**FREE SERVICE COUPON (30 Days / 20 hrs (Which ever is earlier))**

Model

**AM-RTD-5D** AGRIMATE ROTARY TILLER /ROTARY WEEDER / POWER WEEDER / CULTIVATOR

PDI Date	Service No.	Purchase bill no.	Date
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Dealer's Office Seal & Signature

Serial Number

Customer Signature.....

*Conditions: Operations listed have been performed to my entire satisfaction without any labour charges. Only consumables were charged.*

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WARRANTY AND FREE SERVICE COUPON



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### 2nd Free Service Coupon

ISO 9001-2015  
CERTIFIED COMPANY

**FREE SERVICE COUPON 60 Days/100 hrs (Which ever is earlier)**

Model

**AM-RTD-5D** AGRIMATE ROTARY TILLER /ROTARY WEEDER / POWER WEEDER / CULTIVATOR

PDI Date	Service No.	Purchase bill no.	Date
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Dealer's Office Seal & Signature

Serial Number

Customer Signature.....

*Conditions: Operations listed have been performed to my entire satisfaction without any labour charges. Only consumables were charged.*

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WARRANTY AND FREE SERVICE COUPON



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### 3rd Free Service Coupon

ISO 9001-2015  
CERTIFIED COMPANY

**FREE SERVICE COUPON 90 Days/200 hrs (Which ever is earlier)**

Model

**AM-RTD-5D** AGRIMATE ROTARY TILLER /ROTARY WEEDER / POWER WEEDER / CULTIVATOR

PDI Date	Service No.	Purchase bill no.	Date
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Dealer's Office Seal & Signature

Serial Number

Customer Signature.....

*Conditions: Operations listed have been performed to my entire satisfaction without any labour charges. Only consumables were charged.*

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WARRANTY AND FREE SERVICE COUPON



Small Maintenance. Big Savings.



Small Maintenance. Big Savings.



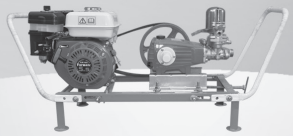
Small Maintenance. Big Savings.

# Do's & Don'ts

- Always read the instruction manual supplied along with the equipments and understand the correct installation and operating procedures before attempting to use the equipments.
- It is important to use the personal protection equipments such as head helmet with visor, ear defenders, goggles, safety gloves, cut resistant shoes, trousers and jackets while operating potentially dangerous machines.
- Avoid untrained persons using the equipments. Children must not be allowed to handle these equipments.
- Always use genuine spares and accessories in repairs and usage to derive maximum life of the equipments.
- Always keep the equipments in good working condition to minimize loss of output as well as to reduce the pollution and save the environment.
- Do not use the machine within range of persons unless they wear protective clothing.
- Do not operate the machine when fatigued or under the influence of alcohol or drugs.
- When the machine is running, please maintain a constant water supply. Without water circulation will damage the sealing rings of the machine.
- For more query kindly contact for our Service Center/Dealer/ franchise

# Agrimate Army For Pest Control

ANY WHERE - ANY TIME - ANY CROP



  
**AGRIMATE**<sup>®</sup>  
Maximum Power - Super Economy

**RATNAGIRI IMPEX PVT., LTD.,**

Annapurna House, #1/1G, 7th Cross, New Guddadahalli

Mysore Road, Bangalore - 560 026

Customer Care: 1800-425-3036

Email: [info@ratnagiriimpex.com](mailto:info@ratnagiriimpex.com)



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