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No Warranty On Electrical Motor / Electrical Parts / Battery Etc.

Incidental / Consequential Loss: KisanKraft Limited or its manufacturers will not be liable for general damages, including bodily injuries, or for incidental or consequential damages including, but not limited to, loss of use, loss of profits, loss of production, expense of substitute equipment or other commercial loss or damage.

Limitation of Liability: This limited warranty is in lieu of all other express warranties, obligations, or liabilities. Any implied warranties, obligations or liabilities, including, but not limited to, any implied warranty of merchantability shall be limited in duration to the applicable warranty period. Any action for breach of any warranty hereunder, including, but not limited to, any implied warranty of merchantability must be brought within the applicable warranty period.

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Receipt is required for availing warranty services

Jurisdiction: All disputes are subject to Bangalore court's jurisdiction.

Our Products	<ul style="list-style-type: none"> ◆Chainsaws◆Brush Cutters and Accessories◆Harvesters◆ ◆Engines and Water Pumps◆Hand Tools◆Garden Tools◆ ◆Cultivators and Accessories◆Sprayers and Accessories◆ ◆Transplanter and Post Hole Digger◆Milking Machines◆
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This warranty is null & void, if you fail to register the warranty with KisanKraft by sending the KisanKraft Copy with dealer's stamp.

KisanKraft Limited (formerly known as KisanKraft Machine Tools P Ltd)

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☎: +91.80.22178200

Product	Centrifugal Water Pump for Agriculture	KisanKraft Invoice Date	
Brand	KisanKraft	KisanKraft Invoice No.	
Model	<input type="checkbox"/> KK-WPP-21 <input type="checkbox"/> KK-WPP-31		
WARRANTY PERIOD	6 MONTHS	FOR THE SPECIFIED PERIOD FROM THE DATE OF SALE OR DELIVERY WHICHEVER IS EARLIER.	
Dealer's Invoice Date		Dealer's Invoice No.	
Buyer's Info (Name, Address, Phone, etc.):		Dealer's Stamp (Address, Phone, TIN, etc.):	
Buyer's Sign		Dealer's Sign	

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User Manual



KisanKraft Limited

(Formerly known as KisanKraft Machine Tools Pvt Ltd)

Sri Huchhanna Tower, #4, 1st Main, 7-A Cross, Maruthi Layout, Dasarahalli,
HAF Post, Hebbal, Bangalore 560024, Karnataka, INDIA

- ♦ Bangalore (HO) ♦ Ahmedabad ♦ Bhopal ♦ Bhubaneswar ♦
- ♦ Coimbatore ♦ Jammu ♦ Guwahati ♦ Hubli ♦ Hyderabad ♦
- ♦ Jaipur ♦ Karnal ♦ Kolkata ♦ Lucknow ♦ Pune ♦ Raipur ♦

KisanKraft has a large range of products to serve the farmers. A list of our products is given below:

<p>Brush Cutters and Accessories</p> <ul style="list-style-type: none"> Brush Cutter/Power Weeder Backpack Brush Cutter Tea Pruner Pole pruner with Engine Reaper Attachment Blades-Circular Blades (2 & 3 points) Baffle Nylon Rope Tap & Go <p>Chainsaws</p> <ul style="list-style-type: none"> Petrol Chainsaw Electric Chainsaw Chain Sharpening Machine <p>Engines and Water Pumps</p> <ul style="list-style-type: none"> Engine –Diesel-(Horizontal) Engine –Diesel(Vertical) Engine-Kerosene Water Pump with Petrol Engine Water Pump with Kerosene Engine Water Pump with Diesel Engine <p>Hand Tools</p> <ul style="list-style-type: none"> Secateurs Folding Saw Garden Rake Garden Shovel Hedge Shear Lopper Telescopic Hedge Shear Telescopic Lopping Shear Tree Pruner Telescopic Steel Pipe & Fruit Picker Bag Sheep Shear <p>Garden Tools</p> <ul style="list-style-type: none"> Electric Pressure Washer Hedge Trimmer Lawn Mower (Electric, Petrol & Manual) Leaf Blower 	<p>Cultivators and Accessories</p> <ul style="list-style-type: none"> Petrol and Diesel <p>Sprayers and Accessories</p> <ul style="list-style-type: none"> Battery Sprayer Portable Power Sprayer Trolley Sprayer Manual Knapsack Sprayer Manual Pressure Sprayer Rose Cans Hose Crimping Machine HTP Sprayer HTP Delivery Hose HTP Hose Reel HTP Stand HTP Gun / Lance(Brass Rod) Knapsack Power Sprayer Mister / Duster / Granuel Spreader HTP Sprayer Set with Diesel Engine HTP Sprayer Set with Kerosene Engine Fogging Machine <p>Milking Machine</p> <ul style="list-style-type: none"> Wood Shredder Fodder Ensiling Chaff Cutter Fodder Grinder Chaff Cutter Fodder Mini Chaff Cutter <p>Harvester</p> <ul style="list-style-type: none"> Maize Sheller Maize Sheller + Dehusker Maize Combine Harvester Onion Digger Carlotti Italy Tea Leaf Harvester Sugarcane Combine Harvester Sugarcane Leaf Stripper <p>Transplanter and Post Hole Digger</p> <ul style="list-style-type: none"> Paddy Transplanter (2 & 8 Rows) Transplanter-Vegetable & Tobacco Post Hole Digger(4" to 14" Augers)
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SL-No	KK-No	KK-Name	Qty
3	E15-03	Fuel tank cap	1
4	E15-04	Gasket Fuel tank Cap	1
5	E15-05	Fuel tank	1
6	E15-06	Fuel Filter	1
7	E15-07	Fuel Tube M4.5x140	1
8	E15-08	Clip Fuel tube	2
9	E15-09	O-ring 14mm(Fuel outlet joint)	1
10	E15-10	Nut M6 Flanged	2
11	E15-11	Bolt M6x30 Flanged Hex	1

CONTENTS

BEFORE GETTING STARTED	8
SAFETY INSTRUCTIONS.....	8
PARTS OVERVIEW	9
PREPARATION BEFORE OPERATION	9
A. Check the Engine Condition	9
B. Connect the Inlet Water Pipe	9
C. Connect the Outlet Water Pipe	10
D. Check the Level of Lubricating Oil	10
E. Check the Level of Fuel Oil	11
F. Check Air Cleaner Filter Element.....	11
G. Check the Pump	11
OPERATION.....	12
STOPPING THE ENGINE	13
MAINTENANCE	14
H. Change the Engine Oil (Lubricating. oil)	14
I. Maintain the Air Cleaner	15
J. Spark Plug Maintenance.....	15
K. Maintenance Schedule.....	16
TRANSPORTATION & STORAGE	17
TROUBLESHOOTING	17
TECHNICAL SPECIFICATIONS	20
PUMP PARTS DIAGRAM & LIST-KK-WPP-21/31	20
PETROL ENGINE-USER MANUAL	23

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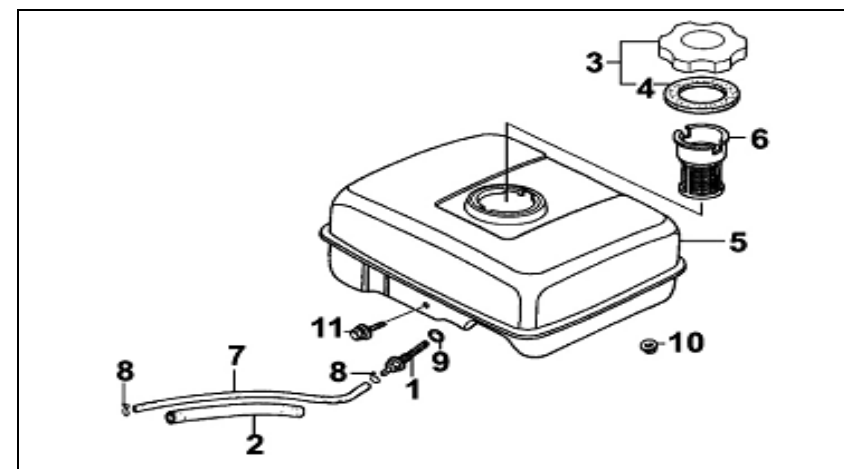
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SL-No	KK-No	KK-Name	Qty
1	E14-01	Muffler Assy	1
2	E14-02	N/A	1
3	E14-03	N/A	1
4	E14-04	Screw M5 x 8	4
5	E14-05	N/A	1
6	E14-06	Nut M8	2
7	E14-07	Gasket Muffler	1

Fuel tank



SL-No	KK-No	KK-Name	Qty
1	E15-01	Fuel outlet joint	1
2	E15-02	Sleeve Fuel pipe	1

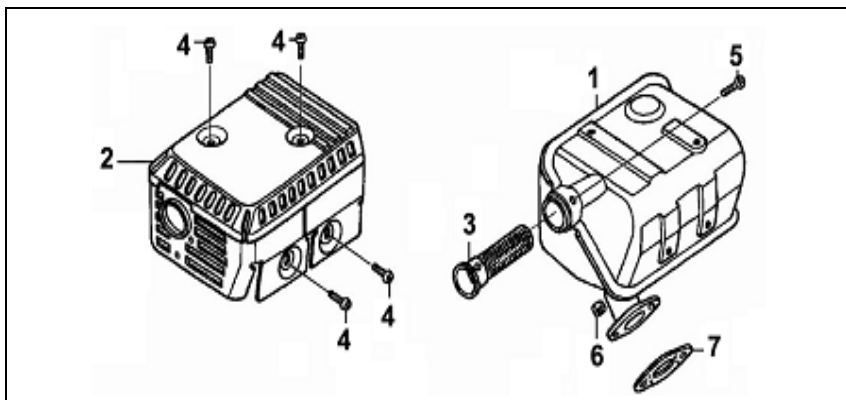
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SL-No	KK-No	KK-Name	Qty
8	E13-08	N/A	1
9	E13-09	Air Cleaner Seat Assy	1
10	E13-10	Butter Fly nut M6	2
11	E13-11	Nut M6	2
12	E13-12	ST Screw M4 x 12	1
13	E13-13	N/A	1
14	E13-14	N/A	1
15	E13-15	N/A	1
16	E13-16	N/A	1
17	E13-17	N/A	1

Muffler



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BEFORE GETTING STARTED

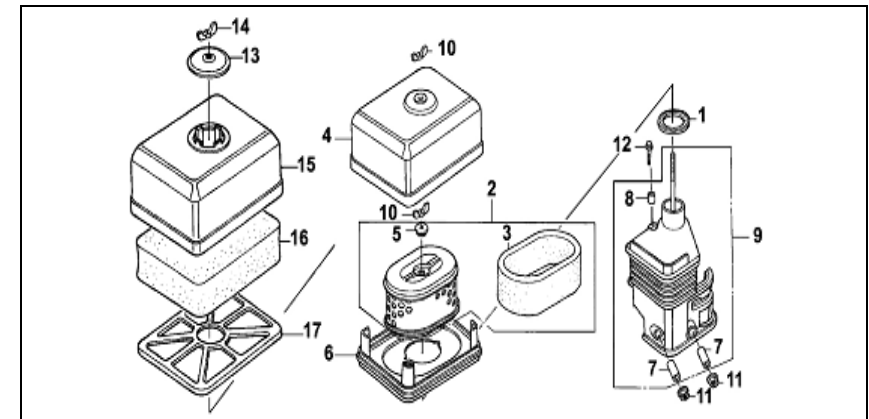
Thank you for your purchase and use of our products. In order to avoid accidents or injury, **please read this manual carefully** before using the machine. After reading, preserve it for further reference. Our company will not be responsible for any personal injury or mechanical failure caused by improper operation of the water pump. This manual describes the basic operation and maintenance instructions of new water pump which uses a 4-stroke petrol engine. The data given in this manual is subject to change without prior notice.

SAFETY INSTRUCTIONS

1. This pump should not be used to suck (intake) any inflammable liquid or corrosive liquid such as gasoline and acids, sea water, engine oil, alcohol, milk etc.
2. Place the pump set firmly on the ground to avoid the pump tilt or turnover. Keep the pump at least 1 meter away from building-wall, and do not put any inflammable substance close to the pump.
3. Be sure to know how to stop the engine and how to operate all the control devices. Do not use the pump in a risky way in violation of instructions.
4. Adding the gasoline must be at the place where there is good ventilation and do not smoke while adding the fuel.
5. Do not let the gasoline overflow, and tighten the tank cover firmly after fueling.

SL-No	KK-No	KK-Name	Qty
8	E12-08	Bolt 6 x 25	2
9	E12-09	Nut M14 Fly wheel Assy	1

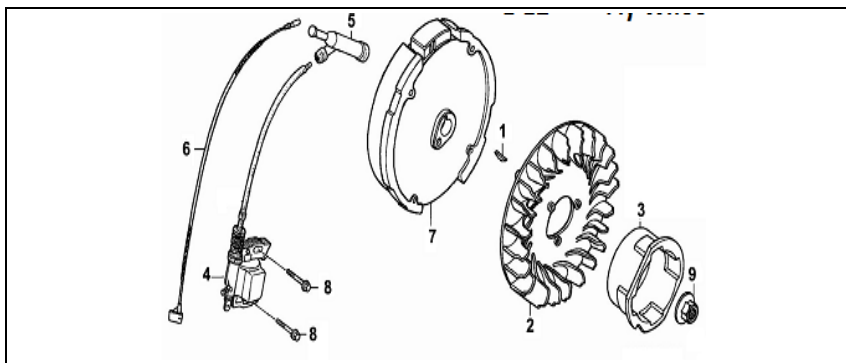
Air Cleaner



SL-No	KK-No	KK-Name	Qty
	E13	Air Cleaner Assy	1
1	E13-01	Seal Ring 32x47x3	1
2	E13-02	Air Filter Element	1
3	E13-03	N/A	1
4	E13-04	Filter Case	1
5	E13-05	Rubber Fixer	1
6	E13-06	Cover board	1
7	E13-07	N/A	2

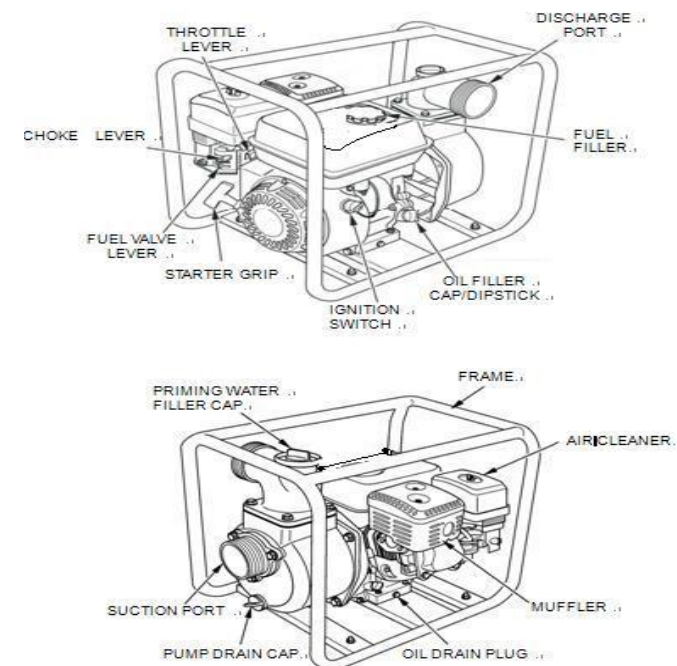
SL-No	KK-No	KK-Name	Qty
14	E11-14	Fine Adjustment Spring	1
15	E11-15	N/A	1
16	E11-16	Nut M6 Flanged Nylon	1
17	E11-17	Adjustment Screw	2

Fly Wheel



SL-No	KK-No	KK-Name	Qty
1	E12-01	Woodruff key	1
2	E12-02	Fly Wheel Fan	1
3	E12-03	Starter Sleeve	1
4	E12-04	Ignition Coil Assy	1
5	E12-05	Spark Plug Cap	1
6	E12-06	Stop lead	1
7	E12-07	Fly Wheel Assy	1

PARTS OVERVIEW



PREPARATION BEFORE OPERATION

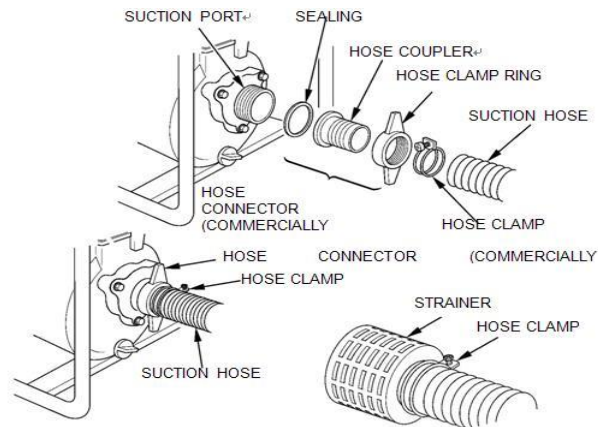
A. Check the Engine Condition

1. Check around the engine if it has any gasoline or oil leakage
2. Get rid of dirt and fragment, especially, around the muffler and startup
3. Check if the cap is tight, and the connection is firm

B. Connect the Inlet Water Pipe

1. Use the general water pipe, joints and clamp.
 - a. The inlet water pipe must be in a continuous and unfolded structure. The length of water pipe must not exceed required length. The pump will have the optimum performance when the distance between the pump and water source is not far. The self-suction time is proportional to the inlet water pipe length directly.

- The filter should be fitted on the end of inlet water pipe with the clamp, as shown in the figure below.



Note:

- Before pumping, fit the filter.
- Tighten the joint and clamp, ensure the inlet pipe is tight and there is no air leakage.

C. Connect the Outlet Water Pipe

Use the general water pipe, joints and clamp to connect the outlet water pipe and ensure the clamp been tightened firmly.

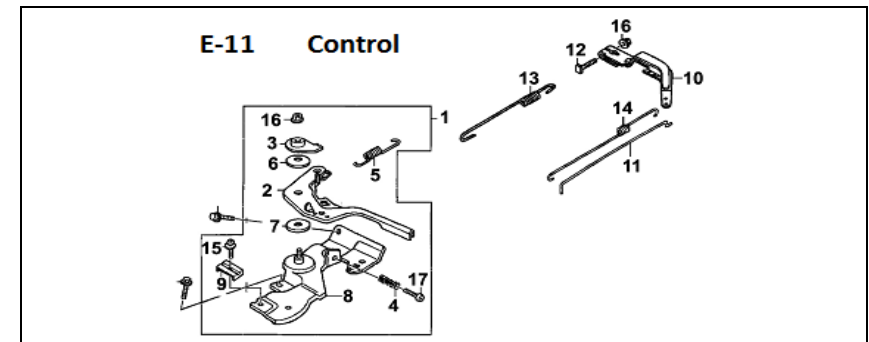
D. Check the Level of Lubricating Oil

Note:

- The gasoline engine of pump set is shipped without Lubricating oil from factory. Please fill the engine with 20W40 or equivalent lubricating oil before the first usage.
- When checking the oil level, the engine should be stopped and kept in horizontal position
- Remove the oil dipstick, clean it and insert it into oil filling hole, but do not screw it.
- If oil level is too low, add the oil to the top of filling hole.

Warning: If the Lubricating oil is not enough, the engine will be damaged seriously.

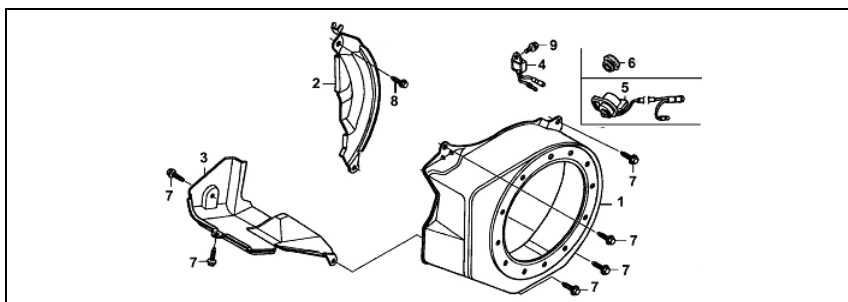
Control



SL-No	KK-No	KK-Name	Qty
1	E11-01	Speed Adjustment Base Ass.	1
2	E11-02	N/A	1
3	E11-03	N/A	1
4	E11-04	Adjustment Spring	1
5	E11-05	Throttle spring	1
6	E11-06	N/A	1
7	E11-07	N/A	2
8	E11-08	N/A	1
9	E11-09	N/A	1
10	E11-10	Speed Adjustment arm	1
11	E11-11	Pulling Rod	1
12	E11-12	Quadrate bolt M6x21	1
13	E11-13	Return Spring	1

SL-No	KK-No	KK-Name	Qty
10	E9-10	Starter spring	1
11	E9-11	Friction Spring 16x1	1
12	E9-12	Bolt M6x12 Flanged Hex	3

Fan Cover



SL-No	KK-No	KK-Name	Qty
1	E10-01	Fan cover	1
2	E10-02	Side Plate	1
3	E10-03	Wind guide	1
4	E10-04	Current Amplifier	1
5	E10-05	Engine switch	1
6	E10-06	N/A	1
7	E10-07	Bolt M6x12 Flanged Hex	6
8	E10-08	Bolt M6 x 20 Flanged Hex	1

E. Check the Level of Fuel Oil

1. Remove the fuel oil tank cover and check the fuel oil level, if the level is too low, add gasoline.
2. Do not use mixture oil of Lubricating oil and gasoline.
3. Avoid any dirt and water from entering into the fuel tank.

Note:

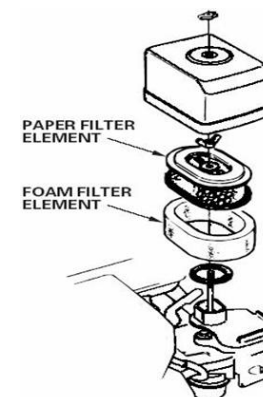
- Do not allow the fuel oil to overflow the oil tank. After adding, tighten the cover firmly.
- Do not allow the fuel oil to spray out, if it is so, clean and wipe it off before starting the engine.
- Avoid skin to come in contact with gasoline for a prolonged time and keep it in a place where the children cannot reach.

F. Check Air Cleaner Filter Element

1. Remove butterfly nut, washer and air cleaner cover.
2. Check the filter element, if necessary, clean it.

Caution:

When the air cleaner is not mounted on the engine, the engine should not be started, otherwise, the dirt will be sucked into engine through the carburetor, and then the engine will be worn out gradually.

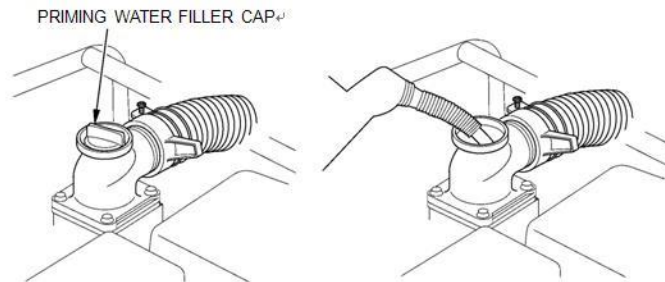


G. Check the Pump

Before working, the pump must be filled up with water.

Caution:

- Don't operate when there is no water in the pump or the temperature of the pump is too high, otherwise, the pump seal will be damaged.
- If you find the pump is operating without water, stop the engine immediately and add water into pump after it cools down.

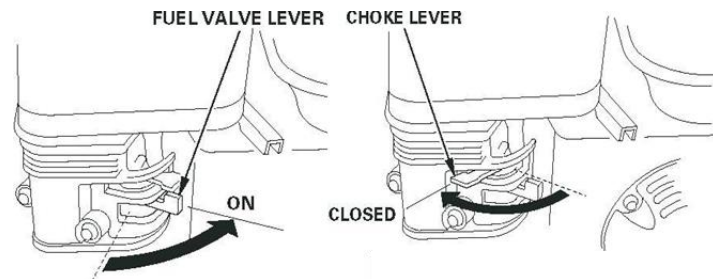


OPERATION

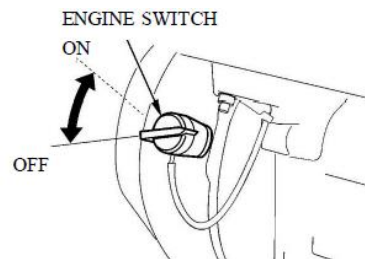
1. Open the fuel cock.
2. Close the choke.

Note:

When engine is in hot condition or the surrounding temperature is very high, it's unnecessary to use the choke (that means do not close the choke before start).

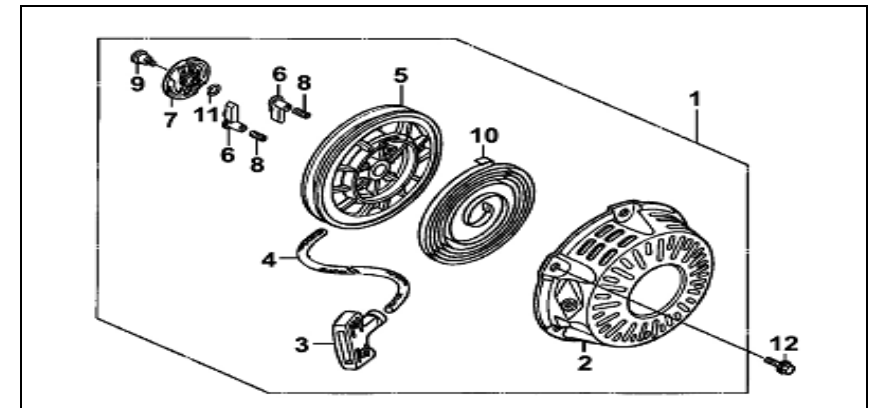


3. Put the engine switch to "ON" position.



SL-No	KK-No	KK-Name	Qty
27	E8-27	N/A	1
28	E8-28	N/A	1

Recoil Starter

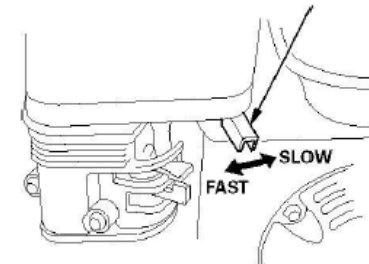


SL-No	KK-No	KK-Name	Qty
1	E9-01	Recoil Starter Assy	1
2	E9-02	Starter cover	1
3	E9-03	Pulling handle	1
4	E9-04	Rope	1
5	E9-05	Roller/Rope Reel	1
6	E9-06	Ratchet	2
7	E9-07	Ratchet guide	1
8	E9-08	Ratchet Spring	2
9	E9-09	Pivot Bolt	1

SL-No	KK-No	KK-Name	Qty
5	E8-05	Adjustment screw Idle speed	1
6	E8-06	Screw(Fuel Cup)	1
7	E8-07	Tighten bolt (Fuel cup)	1
8	E8-08	Chock Valve Assy	1
9	E8-09	Carburetor Assy	1
10	E8-10	Adjustment Screw Assy (mixture ratio)	1
11	E8-11	Main Nozzle	1
12	E8-12	O-ring 21x2(Sediment cup)	1
13	E8-13	Block, Carburetor/Insulator	1
14	E8-14	Gasket, inlet port	1
15	E8-15	Steel gasket	1
16	E8-16	Gasket carburetor	1
17	E8-17	Hand grip chock valve assy	1
18	E8-18	Handle Bar Fuel on/off	1
19	E8-19	Upper cover(Fuel on/off)	1
20	E8-20	Spring Washer-(Fuel on/off)	1
21	E8-21	Fuel Valve	1
22	E8-22	Sediment cup	1
23	E8-23	Screw M3x7	2
24	E8-24	N/A	1
25	E8-25	Main jet	1
26	E8-26	Measure hole Assy idle speed	1

- Move the choke control lever to left side slowly.

Throttle valve control lever



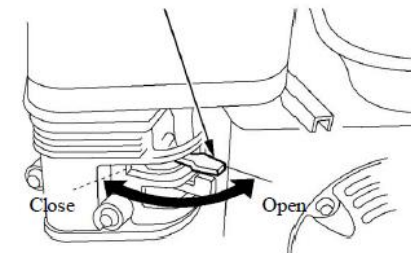
- Pull the starting handle slightly till the resistance force is felt, then, Pull it up quickly.

Caution:

Slightly release the starting handle when engine has been started, lest that the starter would be damaged due to sudden release.

- After the engine has been warmed up, open the choke gradually.

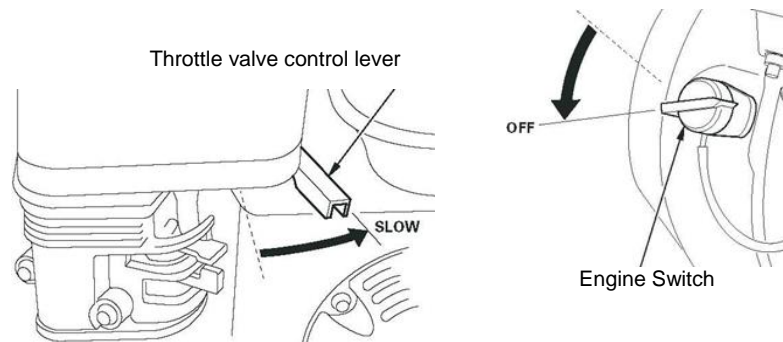
Choke control lever



- Put the throttle valve at the preset speed position.(refer step-4 above)

STOPPING THE ENGINE

- Move the throttle valve control lever to the right end.
- Put the engine switch to the "OFF" position.
- Put the fuel oil cock to "OFF" position.



MAINTENANCE

1. In order to keep this water pump in good condition, it is necessary to check and adjust it periodically, which can help to extend the life of the pump.

Note:

Before maintenance, be sure to stop the engine. If the maintenance must be carried out in a running state, make sure the engine is at a ventilated place. The exhaust gas of Co is very harmful for your health.

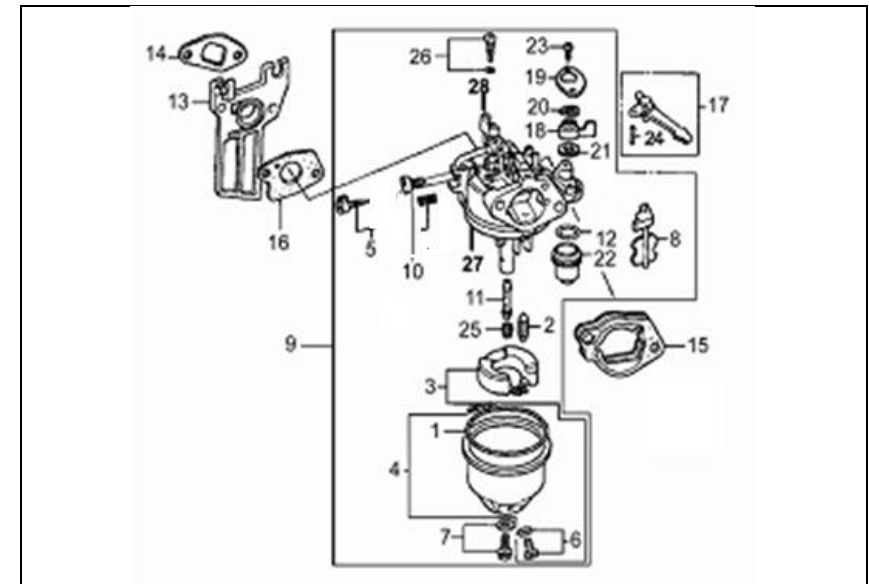
2. If this pump has to be used for pumping sea water, please pump the fresh water immediately after that to reduce the corrosion and to flush out the remaining sea water.

H. Change the Engine Oil (Lubricating. oil)

- Change the engine oil after initial usage of the pump set for one month or 20 hours, after that, change the oil every six months or every 300 hours regularly.
- Change the engine oil when the engine is still hot in order to drain out oil thoroughly.
 - a) Remove the oil dipstick and drain plug, then start draining the used oil.
 - b) Refit the oil drain plug and tighten it firmly.
 - c) Add the new engine oil up to required level.
- The oil volume is 0.6L
- If your body comes in contact with engine oil, please wash hands with soap and clean water.

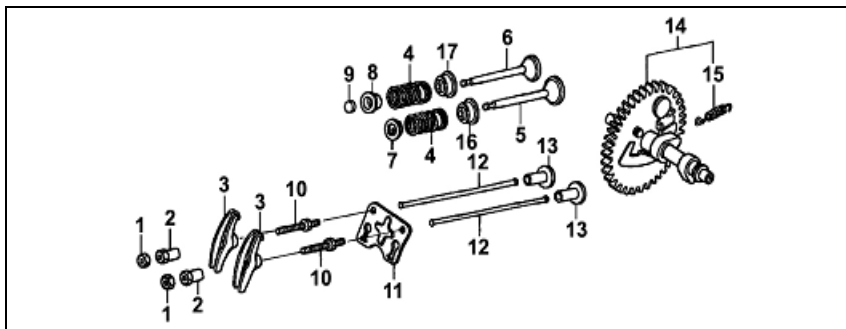
SL-No	KK-No	KK-Name	Qty
14	E7-14	Cam Shaft Assy	1
15	E7-15	N/A	1
16	E7-16	N/A	1
17	E7-17	Inlet valve oil seal	1

Carburetor

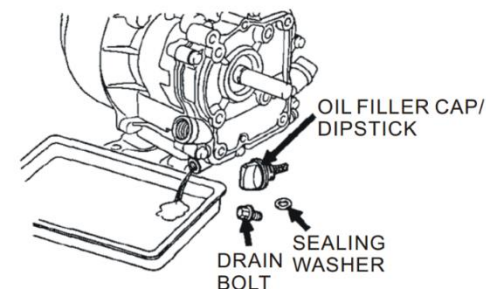


SL-No	KK-No	KK-Name	Qty
1	E8-01	Rubber seal (Fuel cup)	1
2	E8-02	Needle Valve	1
3	E8-03	Fuel Floater	1
4	E8-04	Fuel cup	1

Camshaft



SL-No	KK-No	KK-Name	Qty
	E7-1,2,3,10	Rocker Assy	1
1	E7-01	Buy Rocker Assy	
2	E7-02	Buy Rocker Assy	
3	E7-03	Buy Rocker Assy	
4	E7-04	Valve Spring	2
5	E7-05	Intake Valve	1
6	E7-06	Exhaust Valve	1
7	E7-07	Spring seat Intake Valve	1
8	E7-08	Spring Seat Exhaust Valve	1
9	E7-09	Cap Exhaust Valve	1
10	E7-10	Buy Rocker Assy	2
11	E7-11	Pusher guide	1
12	E7-12	Pusher	2
13	E7-13	Tappet	2



I. Maintain the Air Cleaner

A dirty air cleaner will block the air flow into the carburetor. Please clean the air cleaner periodically. If the working environment is very dirty, the maintenance frequency for air cleaner should be increased.

Caution:

When the air cleaner is not mounted on the engine, do not operate the engine, otherwise, the dirt will be sucked into engine, which will shorten the life of the engine.

- Remove butterfly Nut, take off the cover of cleaner, and then take out the filter element.
- Clean the filter element with nonflammable or high-flame-point solvent. Then let it dry thoroughly.
- Soak the filter element into the clean engine oil, squeeze out the surplus engine oil, otherwise the engine will have smoke with initial startup.
- Re-assemble the filter element and cleaner cover.

J. Spark Plug Maintenance

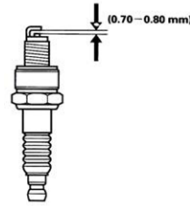
In order to ensure the normal start of the engine, make sure that the spark plug have proper clearance or gaps, and there is no carbon laydown.

- Remove the cap of spark plug, and clean the dirt at its bottom.

Warning

- When engine is running, the muffler will be very hot. Do not touch the muffler.
- Inspect the spark plug. If it wears out or has obvious damage or crack on the isolating ring, please replace it with a new one. If it has carbon laydown, clean with brush.

- Measure the clearance of spark plug with feeler.
- Correct the clearance by moving the side electrode.
- The spark plug clearance is about 0.7-0.8 mm.
- Check the spark plug seal-ring, screw in the spark plug with special spanner so as to protect its threads.



Note:

When fitting the new spark plug, after pressing against the seal-ring, the new spark plug should be screwed 1/2 turn more. If the spark plug is a used one, 1/8 ~ 1/4 turn more.

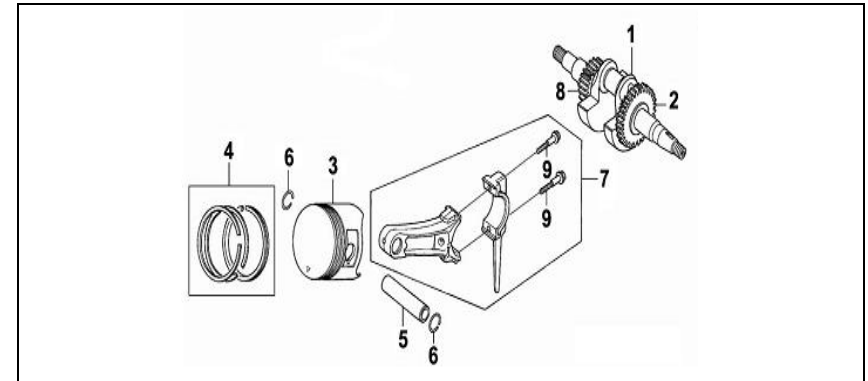
Caution:

Make sure to tighten the spark plug firmly, if it is not so, it will be overheating and thus damage the engine easily. Do not use the spark plug with unsuitable calorific value range to avoid damage of the engine.

K. Maintenance Schedule

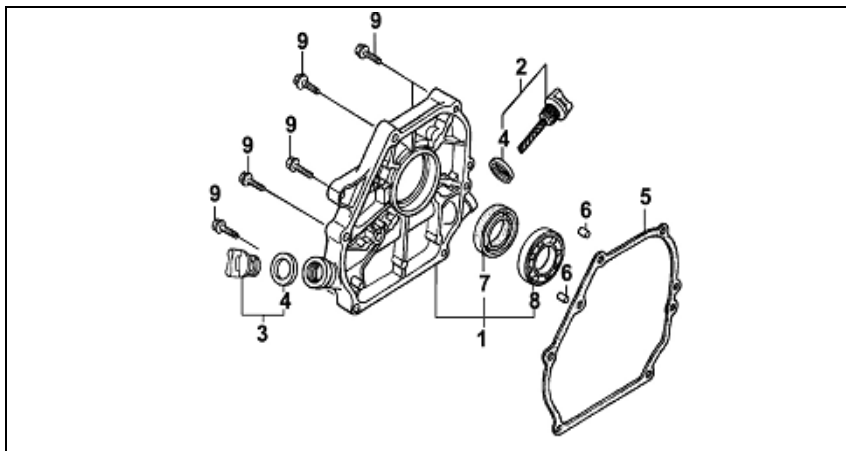
Regular Maintenance		per time	20 hours/ first month	50 hours/three months	100 hours/six months	300 hours/one year
Oil	Inspection of oil level	○				
	Replacement		○		○	
Air filter	Inspection	○				
	Clear			○ (1)		
Spark plug	Clear				○	
	Replacement					○
Valve clearance	Adjustment					○ (2)
Cylinder cover	Clear and wash	300 hours (2)				
Fuel tank	Clear and wash	200 hours (2)				
Filter gauze						
Oil pipe	Replacement					
fan	Inspection					○ (2)
Fan clearance						
Bottom valve						

Crankshaft Piston



SL-No	KK-No	KK-Name	Qty
1	E6-01	Crankshaft assy	1
2	E6-02	Governor Gear	1
3	E6-03	Piston	1
4	E6-04	Piston Ring Assy	1
5	E6-05	Piston Pin	1
6	E6-06	Clip Piston Pin	2
7	E6-07	Connecting rod assy	1
8	E6-08	Timing Gear	1
9	E6-09	Bolt connecting rod M7x35	2

Crankcase Cover



SL-No	KK-No	KK-Name	Qty
1	E5-01	Crankcase cover	1
2	E5-02	Oil Gauge	1
3	E5-03	Oil Plug assembly	1
4	E5-04	seal-oil guage	2
5	E5-05	Gasket crankcase	1
6	E5-06	Set pin 8X14	2
7	E5-07	Oil Seal 25x41.25x6	1
8	E5-08	Ball Bearing 6205	1
9	E5-09	Bolt M8 x 30	6

- (1) Maintenance should be strengthened in high dust area.
- (2) All the items above should be assisted by local agency.

TRANSPORTATION & STORAGE

1. Cool down engine before handling and storage.
2. When handling water pump, put the fuel cock to "OFF" position and place the pump set horizontally to avoid spraying out of the fuel.

Before Long Period Storage:

1. Make sure that the storage area is dry and clean.
2. Clean the internal of the pump set, and flush it with clean water. Then unscrew the water drain plug to drain out the water inside thoroughly.
3. Drain out the fuel.
 - a. Put the fuel cock to "OFF" position, remove the drain screw of the float chamber of the Carburetor.
 - b. Put the fuel cock to "ON" position, drain out the fuel in tank.
 - c. Refit the drain screw of the Carburetor.
4. Change the engine oil.
5. Remove the spark plug, add a little clean engine oil in cylinder, and turn the crankshaft several cycles to lubricate the cylinder and piston, then refit the spark plug.
6. Cover the pump set to avoid the dust.

TROUBLESHOOTING

If the engine cannot be started, check whether:

1. The fuel oil is not enough.
2. The fuel cock is not open.
3. The fuel has not reached carburetor.
After putting the fuel cock to "ON" position, remove the drain plug at the bottom of carburetor to check whether the fuel has reached the carburetor.
Note:
If the fuel sprays out, clean and wipe it off before testing the spark plug and starting the engine.
4. The engine switch is in "ON" position.
5. The engine oil in crankcase is enough.
6. The spark plug is in good condition.
Remove the spark plug cap, clean it, and adjust the spark plug clearance. Pull up kick starter, if there's no spark, change the spark plug.
7. If the engine still cannot be started, please send the pump set to the service station for repairing.

If the pump cannot be pumping water, check whether:

1. The added water is enough.
2. The filter is blocked.
3. The pipe clamp is fixed firmly.
4. The water pipe is damaged.
5. The suck distance is too high

Engine:

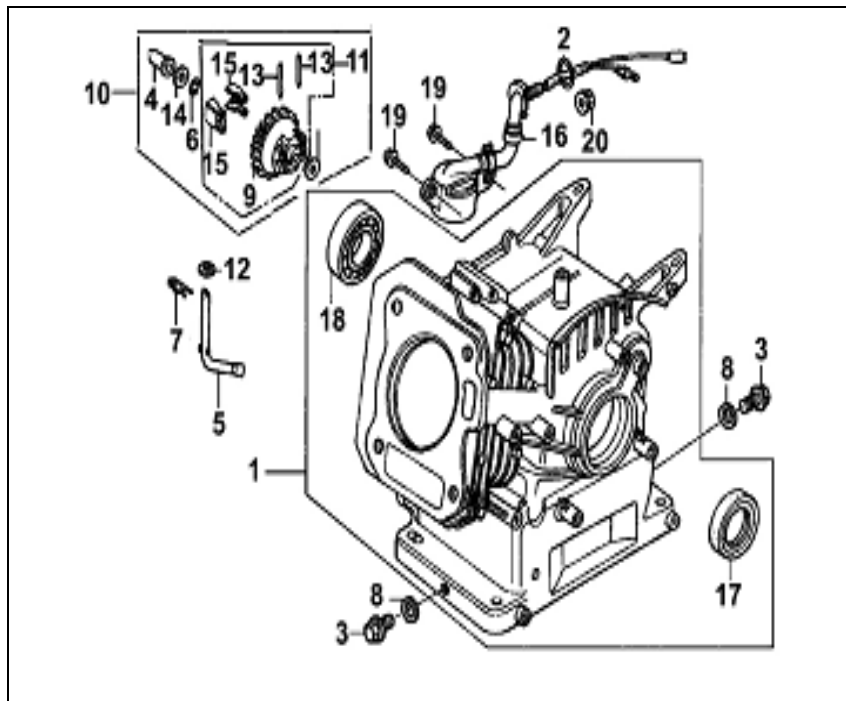
Cannot start	Cause	Solution
Inspection of control parts	Fuel switch is closed	Open the fuel valve
	Choke is open	Close Choke unless hot engine
	Switch of engine is closed	Turn on engine switch
Inspection of fuel	Lack of fuel	Fill up with fuel
Remove spark plug and inspect	Incorrect or damaged plug clearance.	Adjustment or replacement
	Wetting of plug due to excessive fuel	Dry out and reinstall plug Adjust speed to high speed and start up
Contact authorized service person	Blocking of Fuel and air filter, breakdown of carburetor or ignition system, seizure of valve etc.	Repair or replace the necessary parts accordingly.

Shortage of power	Cause	Solution
inspection of air filter element	Blocking of element	Clear and wash element or replace element
Inspection of fuel	Deterioration of fuel	Drain off fuel inside carburetor and fuel tank, then fill up new fuel
Contact authorized service person	Blocking of Fuel and air filter, breakdown of carburetor or ignition system, seizure of valve etc.	Repair or replace the necessary parts accordingly.

SL-No	KK-No	KK-Name	Qty
1	E4-01	Crankcase Body	1
2	E4-02	O-ring 14mm	1
3	E4-03	Drain bolt	2
4	E4-04	N/A	1
5	E4-05	Sway bar	1
6	E4-06	N/A	1
7	E4-07	Split Clip	1
8	E4-08	Washer Drain bolt	2
9	E4-09	N/A	1
10	E4-10	Centrifugal gear Parts	1
11	E4-11	N/A	1
12	E4-12	Plain washer 6mm	2
13	E4-13	N/A	2
14	E4-14	N/A	1
15	E4-15	N/A	2
16	E4-16	Oil sensor Assy	1
17	E4-17	Oil seal crankcase(25*41.25*6)	1
18	E4-18	Ball Bearing 6205	1
19	E4-19	Bolt M6 x 14	2
20	E4-20	Nut M10	1

SL-No	KK-No	KK-Name	Qty
9	E3-09	Air duck/Pipe	1
10	E3-10	Stud Intake Port M6 x 113	2
11	E3-11	Stud Exhaust Port M8 x 32	2
12	E3-12	Set pin 10x14	2
13	E3-13	Bolt M6x12	4
14	E3-14	Bolt M8 x 60,	4

Crankcase Assembly



Pump:

No water comes out	Cause	Solution
Inspection of inside chamber	Water is not filled in.	Fill with water
	Rupture of inlet pipe, appearance of hole	Replacement of inlet pipe
	Filter gauze didn't soak under water completely	To make inlet pipe end and filter gauze soak in the water completely
Inspection of inlet pipe	Leak of pipe junction	Tighten clamp, replace sealing gasket if no gasket or damaged gasket
	Blocking of filter gauze	Remove blockage
Measurement of suction and lift	Too high for lift	Adjust pump and lift
Inspection of engine	Shortage of power	Refer the table 2. Given above

Less flow	Cause	Solution
Inspection of inlet pipe	Collapsed pipe, damaged pipe, overlong pipe, shorter pipe diameter	Replacement of inlet pipe
	Leakage near pipe junction	Tighten clamp, replace sealing gasket if no gasket or damaged gasket
	Blocking of filter gauze	Remove blockage
Inspection of outlet pipe	Damaged pipe, overlong pipe, shorter pipe diameter	Replacement of pipe
Measurement of suction and lift	Reach to critical lift	Adjust pump and lift
Inspection of engine	Shortage of power	Refer table 2 given above

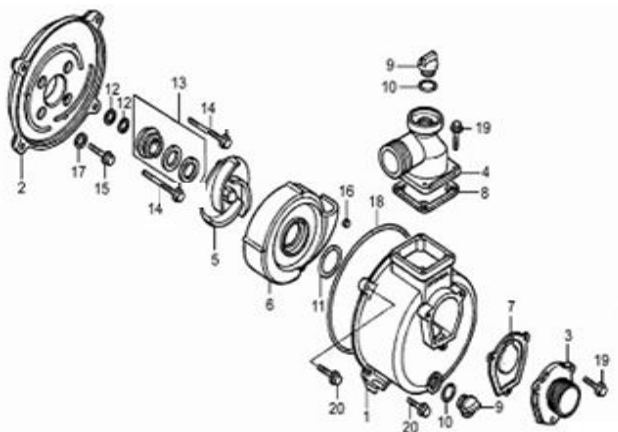
TECHNICAL SPECIFICATIONS

WATER-PUMPS		
Model	KK-WPP-21	KK-WPP-31
Type	Self-priming	
Inlet/Outlet size(mm)	50	80
Max lift(m)	30	
Suction(m)	5~8	
Engine model	KK-PE4-163	KK-PE4-203
Max discharge capacity (Liters per Hour)	36,000	60,000
N.W/G.W (kgs)	25/27	28/30
Dimension	490x395x450	515x410x460

Please refer to page 31 for engine specifications.

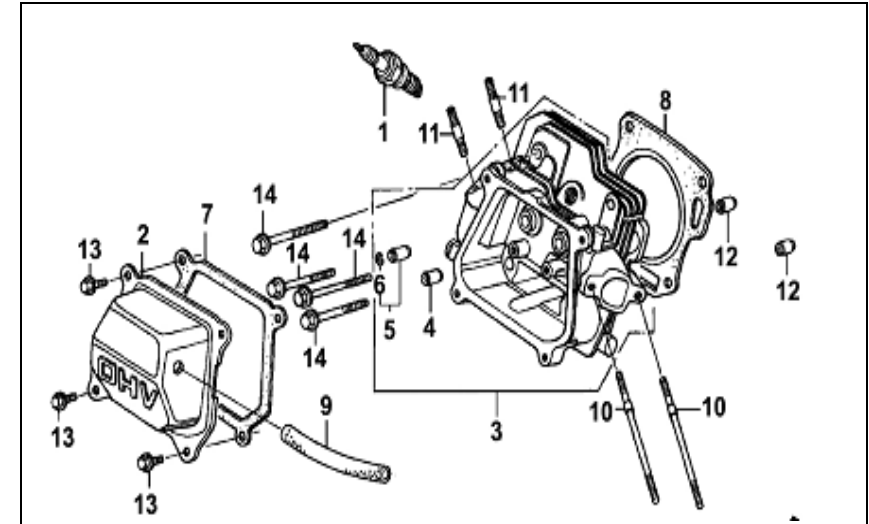
PUMP PARTS DIAGRAM & LIST-KK-WPP-21/31

Pump Set Contents



ENGINE PARTS DIAGRAM & LIST- KK – PE4-163 / 203

Cylinder Head



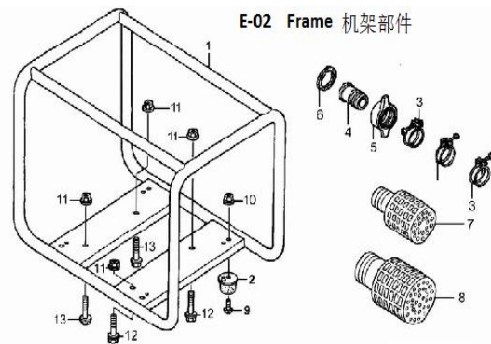
SL-No	KK-No	KK-Name	Qty
1	E3-01	Spark plug	1
2	E3-02	Cylinder head cover	1
3	E3-03	Cylinder head Assy	1
4	E3-04	In. valve guide	1
5	E3-05	Ex. valve guide	1
6	E3-06	Valve guide clip	1
7	E3-07	Gasket Cylinder head cover	1
8	E3-08	Gasket Cylinder head	1

Model	KK-PE4-163	KK-PE4-203
Engine Type	OHV,Single-cylinder, 4-stroke ,forced air cooling	
Fuel tank capacity	3.6L	
Engine oil capacity	0.6L	
Displacement	163cc	196cc
Dimension(L×W×H)	400×375×380	
Bore × Stroke	68 × 45mm	
Compression Ratio	8.5:1	

Note: The Engine **KK-PE4-163** and **KK-PE4-203** are BIS: ISI certified.

SL-No	KK-No	KK-Name	Qty
1	E1-01	Pump body	1
2	E1-02	Pump Cover	1
3	E1-03	Triangle flange	1
4	E1-04	Pump Elbow	1
5	E1-05	Impeller	1
6	E1-06	Turbine	1
7	E1-07	rubber gasket, Triangle flange	1
8	E1-08	Rectangular rubber gasket	1
9	E1-09	Rubber Plug	2
10	E1-10	O-Ring(Rubber Plug)	2
11	E1-11	O-ring(Turbine)	1
12	E1-12	Rubber gasket(Bolt)	5
13	E1-13	Water Seal assy	1
14	E1-14	Bolt M8x55 Flanged Hex	4
15	E1-15	Bolt M8x25 Flanged Hex(SPL)	4
16	E1-16	N/A	1
17	E1-17	Washer 8-Plain	4
18	E1-18	O-Ring(Pump body)	1
19	E1-19	Bolt M8x20 Hex	7
20	E1-20	Bolt M8x25 Hex	5

Frame



SL-No	KK-No	KK-Name	Qty
1	E2-01	Frame assembly	1
2	E2-02	Rubber Bedding	4
3	E2-03	Clamp(Hose)	3
4	E2-04	Inlet and outlet pipe	1
5	E2-05	Flange nut	1
6	E2-06	Rubber gasket, inlet and outlet pipe	1
7	E2-07	Filter	1
8	***	N/A	1
9	E2-09	Bolt M6x12 Flanged Hex	4
10	E2-10	N/A	4
11	E2-11	Nut M8 Flange	2
12	E2-12	Bolt M8x45 Flanged Hex	4
13	E2-13	N/A	2

TROUBLESHOOTING

1. The Engine Can't Startup

- Have the engine checked if it is hard to or cannot be started.
- Firstly, check the fuel level of the fuel tank. Turn fuel valve to (2), Fuel should flow from the drain when the fuel valve is turned ON. Tighten the drain plug. (Refer to starting of the engine)

2. Spark Plug

Check the spark plug. Remove the spark plug cap and clean any dirt around it. If the engine still cannot be started after repeating several times, please see the authorized dealer. Users are not allowed to dismantle or reassemble the unit by themselves.

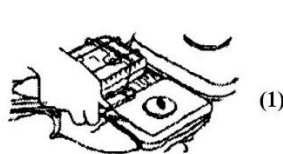
3. Not Enough Power

- Check the air-cleaners. Please refer the maintenance inspection book to clear the air-cleaner.
- Check the fuel. Please strain out the gasoline in fuel tank and in carburetor, and fill in new gasoline.
- For any other trouble, please contact our dealer.

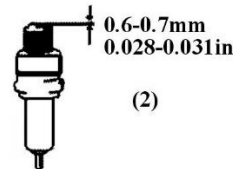
TECHNICAL SPECIFICATIONS

Model	KK-PE4-163	KK-PE4-203
Engine Type	OHV,Single-cylinder,4-stroke,forced air cooling	
Fuel tank capacity	3.6L	
Engine oil capacity	0.6L	
Displacement	163cc	196cc
Rated power	2.3 kW (3 hp)	3 kW (4 hp)
	At 3600rpm	
Max. torque	10N.m/2500rpm	11N.m/2500rpm
Oil consumption	395g/kWh	
Ignition system	Transistor magneto	
Starting system	Recoil start or Electric start(Optional)	
N.W./G.W	15 / 17kg	

- Refill with the recommended oil and check the oil level.

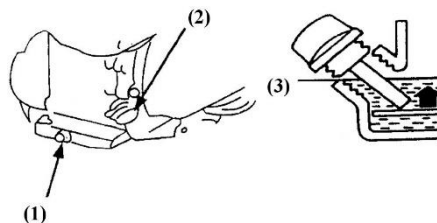


(1) Dismantle Spark Plug



(2) Adjust Clearance

4. Clean the fuel tank and filter when working time reaches 100hrs: Remove the fuel cover, drop out filter, and wash it with brush slightly. Remove fuel tank, clean the fouling and water inside fuel tank. Reinstall fuel tank, place filter from fill-in hole, filling the clean fuel to red line level.



- 1) Drain plug 2) Engine switch 3) Lower level

Check aging of fuel pipe every 2 years. If ageing, hardening and cracking is detected, have it replaced. Tighten the joints, and check leakage.

Before storing the unit for an extended period:

1. Make sure the storage area is free of excessive humidity and dust.
2. Service according to the table below.

Storage Time	Recommended Service Procedure To Prevent Hard Starting
Less than 1 month	No preparation required
1 to 2 months	Fill with fresh gasoline and add gasoline conditioner
2 months to 1 year	<ul style="list-style-type: none"> • Fill with fresh gasoline and add gasoline conditioner • Drain the carburetor float bowl • Drain the fuel sediment cup

PETROL ENGINE-USER MANUAL



SAFETY LABELS

! DANGER

Indicates a hazard, if not avoided, can result in human injury or death.

! WARNING

Indicates a hazard, if not avoided, could result in human injury and/or property damage.

CAUTION

Indicates a hazard, if not avoided, might result in slight injury and/or property damage.



Please read and understand this owner's manual before operation of the engine to avoid accidents by familiarizing yourself with your engine's controls and safe operation procedures.

SAFETY INSTRUCTIONS

1. Please perform some pre-operation checks before operation to avoid human injury and equipment damage.
2. Keep the engine in good ventilated places at least 1 meter away from buildings and other equipment's during operation and keep the flammable substances away from the engine to avoid fire.
3. Keep children and pets away from the operation area.
4. Make sure that the person who operates the engine receives proper instruction.
5. Keep the flammable substances (gasoline, matches) away from the operating engine.
6. As gasoline is extremely flammable and explosive under certain conditions, please refuel in a well-ventilated area with the engine stopped.
7. Do not fill above the shoulder of the fuel strainer.
8. Make sure the fuel cover is tightened.
9. Make sure that any spilled fuel has been wiped off before starting the engine.
10. Do not smoke or allow flames or sparks where the engine is refueled or where gasoline is stored.
11. Exhaust contains poisonous carbon monoxide, a colorless and odorless gas. Breathing exhaust can cause loss of consciousness and may lead to death. Do not operate the engine without good ventilation or in enclosed room.
12. If you run the engine in an area that is confined, or even partially enclosed, the air you breathe could contain a dangerous amount of exhaust gas. Provide adequate ventilation so as to keep exhaust gas from accumulation.
13. Place the engine on flat (level) surface, tilting angle of the engine should not be more than 20°, otherwise it will lead to fuel spilling out.
14. Do not cover the engine so as to avoid fire occurrence.
15. The muffler becomes very hot during and immediately after operation. Be careful not to touch the muffler while it is hot. Let the engine cool down before storing the engine indoor.

PRE-OPERATION CHECKS

1. Check the oil level

Lubricating oil:

- Engine lubricant oil is a major factor affecting engine performance and service life.
- The use of the lubricating oil free of cleaning agent or the lubricating oil for the two-stroke engine will shorten the life of the gasoline engine.
- The operating temperature range recommended for the gasoline engine is - 5°C~40°C.
- Use 4-stroke motor lubricant oil. 20W-40 is recommended in general, at all temperature use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

- Refuel in well-ventilated places with the engine stopped. Do not smoke or allow flames or sparks near the places where the engine is refueled or gasoline is stored.
- Do not add fuel over the shoulder of strainer. After fueling, tighten the tank cover.
- Fuel vapors are extremely flammable and may ignite after the engine has started. Make sure that any fuel spillage has been wiped off before starting the engine.
- Avoid skin coming in contact with gasoline for a long time, avoid breathing in gasoline vapors. Keep children away from them.

NOTE:

Fuel can damage paint and plastics. Be careful when refueling. Damage caused by spilling fuel is not covered under warranty.

MAINTENANCE

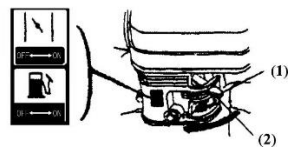
Do periodic maintenance to keep the engine in good condition. Always follow the inspection and maintenance recommendation and schedules given in this manual.

! WARNING:

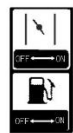
Stop the engine before doing any maintenance work. If the engine must be operated, provide adequate ventilation. Breathing in exhaust can cause loss of consciousness and even lead to death.

Everyday Maintenance:

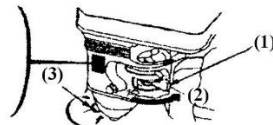
1. **Air cleaner:** A dirty air cleaner will restrict air flow into the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the generator in extremely dusty areas.
 - Check air cleaner core, get rid of fouling, and keep the core clean.
 - Check bolts, fasten the loose ones.
 - Check whether lubricant oil level is within the limits.
2. Clean the core after 25hrs of engine run
3. Clean carbon fouling of the spark plug after working up to 50hrs. Check the clearance, and adjust the gap to 0.6-0.7mm (see figure 4-1). Check radiator, and clean fouling among radiators.
 - Drain the oil while the engine is warm to assure rapid and complete draining.
 - Remove the drain plug and sealing washer, remove the oil filler cap, and drain the oil.
 - Reinstall the drain plug and sealing washer. Tighten the plug securely.



(1) Auto-Throttle



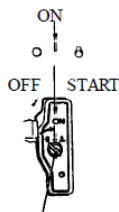
(2) Off Position



(3) Starter Knob

Electrical Starting:

Turn the engine switch to START position and hold a while until the engine started

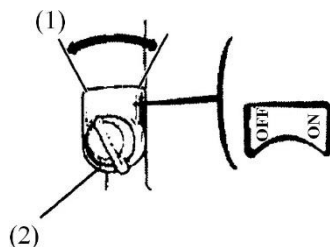


ENGINE SWITCH

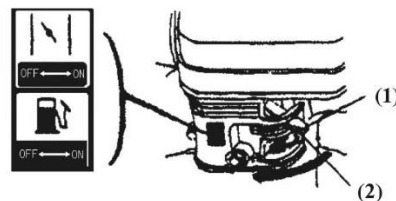
NOTE: Restrict the starting time within 5 seconds to avoid engine damage. If engine cannot be started, release starter knob, retry after 10 seconds.

STOPPING THE ENGINE

Adjust throttle to proper position. Reduce engine speed, close the choke. Turn engine switch to OFF position.



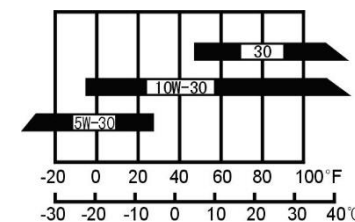
(1) Throttle knob



(2) Throttle is at OFF

! DANGER:

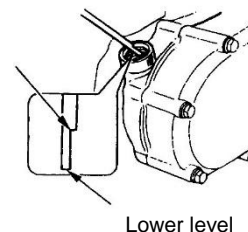
- Gasoline is extremely flammable and explosive under certain conditions.



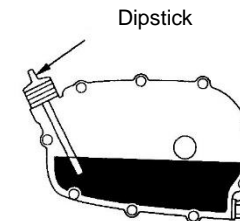
Ambient temperature

- Before checking engine lubricant oil, place the engine on level surface
- Turn out the oil filler cap and clean the dipstick with a clean cloth.
- Insert the dipstick back into the oil filler hole without turning it in.
- If oil level is below the lower mark of the dipstick, fill oil to the upper level of the dipstick.
- Reinstall the oil filler cap properly.

Upper level



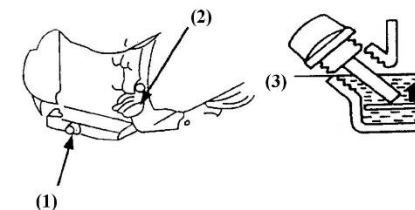
Lower level



Dipstick

Engine oil alert system (optional function):

The oil alert system is designed to prevent engine damage caused by insufficient oil in the crankcase. When the oil level in the crankcase falls below the safe limit, the oil alert system will automatically stop the engine even if the engine switch remains at the ON position. If the engine stops and cannot be restarted, check the engine oil level before troubleshooting in other areas.



(1) Drain plug

(2) Engine switch

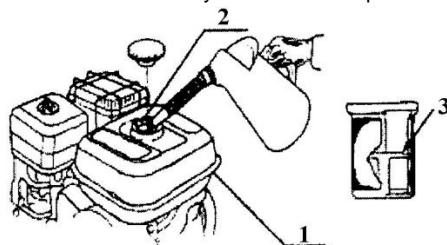
(3) Lower level

2. Fuel level

- Check the fuel gauge, and refill the tank if the fuel level is low. Do not fill above the shoulder of the fuel strainer. The fuel 90# gasoline is recommended.
- Unleaded gasoline produces less engine and spark plug fouling and extends exhaust system life.
- Never use stale or contaminated gasoline or oil/gasoline mixture. Avoid dirt, rubbish and water from getting into the fuel tank.
- If spark knock or pinging occurs at a steady engine speed under normal load, change brands of gasoline. If spark knock or pinging persists, see an authorized dealer.

! WARNING:

- Running the engine with persistent spark knock or pinging can cause engine damage.
- If persistent spark knocks or pinging is caused by improper usage of the unit, the Distributor's Limited Warranty does not cover parts damaged by that.



(1) Fuel tank

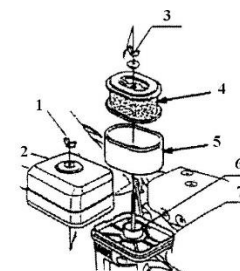
(2) Fill in hole

(3) Red line level

3. Air cleaner

The air cleaner is a dry type including paper element and foam element.

- Remove the clip and dismantle the air cleaner housing or remove the wing nuts and air cleaner cover.
- Wash the element in solution of household detergent and warm water, then rinse thoroughly, or wash in nonflammable or high flash point solvent. Allow the element to dry thoroughly



- 1) Butterfly nut
- 2) Air cleaner cover
- 3) Butterfly nut
- 4) Paper element
- 5) Foam element
- 6) Seal washer
- 7) Silencer plate

! WARNING:

Do not run the engine without air cleaner.

! DANGER

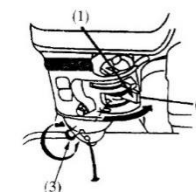
Using gasoline or flammable solvent to clean the filter element can cause a fire or explosion.

! CAUTION:

Do not run the engine without air cleaner core, otherwise dust and/or other foreign matters may get into the engine through carburetor, and results in rapid engine worn-out.

STARTING THE ENGINE

- Turn the fuel valve to ON position, unscrew the drain plug on carburetor bottom, and fasten the drain plug until oil spills out.
- Pull the choke rod to the CLOSE position. Adjust throttle to proper position. Pull the starter grip lightly until resistance is felt, then pull it rapidly



(1) Fuel Valve

(2) Start Level

(3) Drain Plug

NOTE:

- Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.
- Once the engine got started, let it run for 1~3 minutes at idle speed, check whether it is balanced, cracked, then pull the throttle to open position, adjust choke rod to OPEN.