

KIPOR[®]

KIPOR POWER OPERATION MANUAL

PLEASE READ THIS MANUAL CAREFULLY.
IT CONTAINS IMPORTANT SAFETY INFORMATION.

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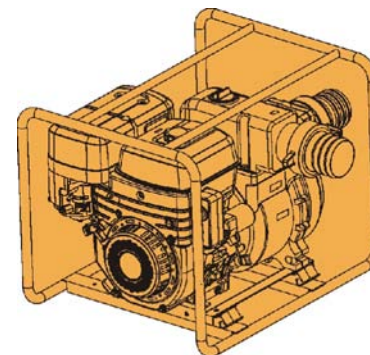
WUXI KIPOR POWER CO., LTD.

Address: Beside Jingyi Rd, Third-stage Development Section of
Wangzhuang Industry Area, Wuxi High &
New Technology Industry Development Zone.

TEL: 0086-510-85205041

FAX: 0086-510-85203796

E-MAIL: kipor@kipor.com



**Gasoline self-priming
sewage pump**

KGP20T

KGP30T

KGP40T

PREFACE

Thank you for purchasing KIPOR gasoline sewage pump.

The manual contains information on operation and maintenance of agricultural gasoline sewage pumps KGP20T, KGP30T and KGP40T.

Information herein is consistent with the product when the manual is printed.

KIPOR reserves the right of modification and bears no responsibility for a separate notice of modification.

The manual cannot be reproduced without written consent.

The manual is the integral part of the pump and shall be attached if pump is resold.

Please pay special caution to following information.

The following safety labels indicate the possible risks and degree of damage if pump is used improperly. Please pay special attention to them.



It indicates extreme dangers and means that incorrect operation will cause serious accident of personal injury and even death.



It indicates potential risks and means that incorrect operation may cause personal injury or serious equipment damage.



It indicates potential risks that may be ignored easily and means that minor personal injury or equipment damage may happen if there are no precautions.

【Attention】 It indicates that machine may be damaged if it is operated carelessly or considerations necessary for better performance or longer life of machine.

Considerations



KIPOR pump is safe and reliable if it is operated in accordance with the manual.
Incorrect operations will lead to personal injury or death and/or equipment damage

If pump fails or you have any question about the pump, please consult your sales representative or our after-sales service department.

It is hereby noted that the legend depends on the model of pumps.

Legend herein is for KGP40T as reference.

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1. SAFETY INFORMATION

Safety concerns:



■ Warning KIPOR pump can run safely and reliably as designed if you run it in accordance with the manual. Please read and understand the manual carefully before the use in order to prevent the possible injury or equipment damage.



■ The waste gas from engine contains toxic CO so that the engine cannot be used in an enclosed room. Ensure the well ventilation during the use.



■ Do not touch a pump that is running or just stops because the engine, silencer and exhaust system are hot. Pay attention to the warning label.

■ Store the pump in the room after it is cool completely.

To guarantee safe operations



- Gasoline is readily flammable and explosive under special conditions.
- Stop the engine before the filling of gasoline. Please add the gasoline at a well-ventilated place. Do not smoke or generate spark and open flame within the filling area and oil storage area.
- Prevent the overflow of fuel and tighten the cap of fuel tank after the filling.
- Clean the overflow of fuel immediately. Make sure that the affected area has been dry before you start the engine. Otherwise overflow of fuel and mist may cause a fire accident.
- Do not run the engine in an enclosed or restricted space. Waste gas contains toxic CO that may result in the poisoning choke even death if a person stays in such space.

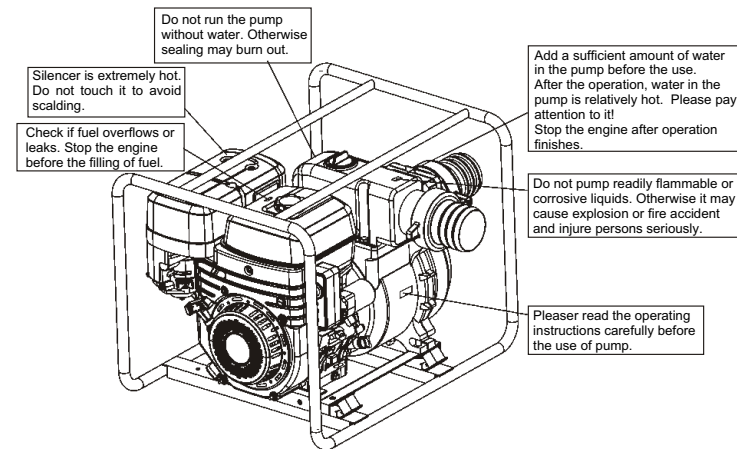
⚠ WARNING

- Implement the pre-use check before each use in order to prevent accident and equipment damage.
- For safety concerns pump cannot be used for readily flammable or corrosive liquids such as gasoline or acid liquid. Do not pump seawater, chemical solvent or alkaline liquids such as engine oil, alcohol or milk products to avoid the corrosion.
- Run the pump at a plane. Fuel may overflow if pump inclines or overturns.
- Provide sufficient ventilation during the operation in order to prevent fire accident. Keep pump one meter away from buildings or other equipments. Do not place readily flammable materials near pump.
- Keep children and kids away from the workplace to avoid heat injury of hot parts of engine.
- Operators must know how to stop pump quickly and operate control units. No person is allowed to operate the pump without proper instruction.

2. SAFETY LABELS

2.1. Safety warning labels

Safety warning labels indicate the potential risks of serious damage/injury. Please read labels, safety concerns and precautions specified in the manual carefully. If label leaves or turns illegible, please contact your sales representative or KIPOR after-sales service department for replacement.



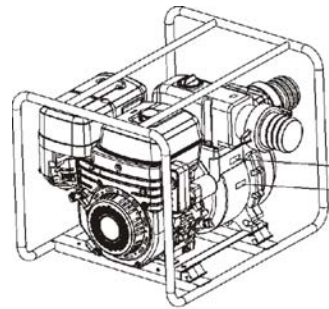
(Fig.1)

⚠ CAUTION

You are noted that applications of labels may depend on models.

2.2. Nameplate

Nameplate:



Number of pump
Position of nameplate

KIPOR gasoline self-priming sewage pump KGP20T	
Diameter of cylinder×stroke	68×54 mm
Nominal diameter of inlet/outlet	50 mm
Maximum flowrate	32 m ³ /h
Maximum pumping head	25 m
Maximum self-priming lift	8 m

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KIPOR gasoline self-priming sewage pump KGP30T	
Diameter of cylinder×stroke	78×58 mm
Nominal diameter of inlet/outlet	80 mm
Maximum flowrate	50 m ³ /h
Maximum pumping head	22 m
Maximum self-priming lift	8 m

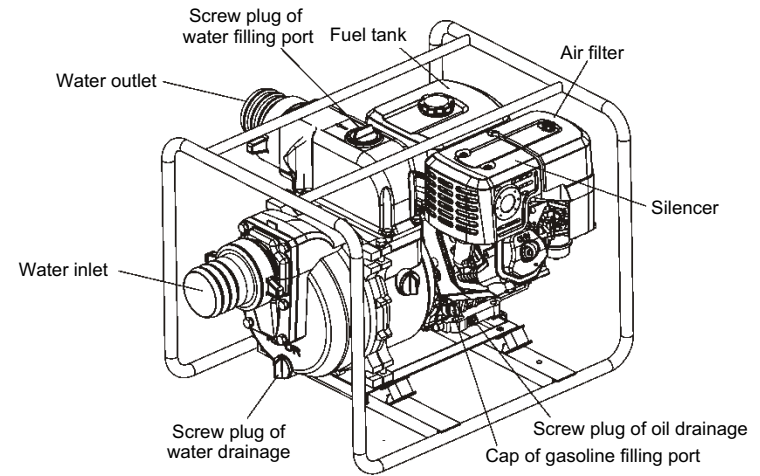
Wuxi KIPOR Machinery Co., Ltd.

(Fig. 2)

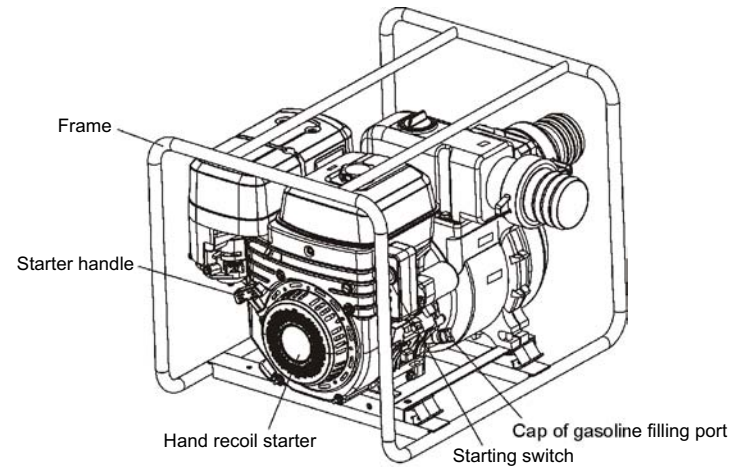
KIPOR gasoline self-priming sewage pump KGP40T	
Diameter of cylinder×stroke	89×64 mm
Nominal diameter of inlet/outlet	100 mm
Maximum flowrate	70 m ³ /h
Maximum pumping head	22 m
Maximum self-priming lift	8 m

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3. IDENTIFICATION OF PARTS



(Fig. 3)

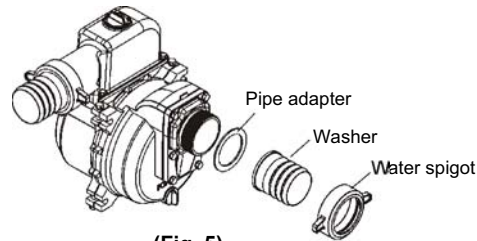


(Fig. 4)

4. PRE-USE CHECK

4.1. Assemble the adapter of water pipe

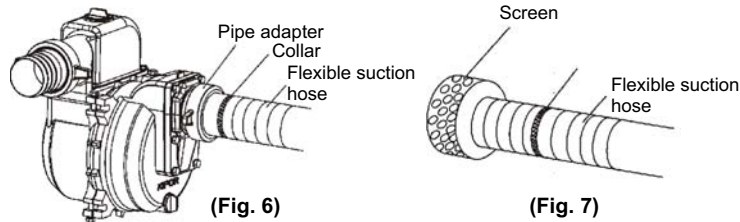
Check if washers are in good conditions. Mount washers in place, connect water spigots and adapters with water inlet and outlet and tighten them.



(Fig. 5)

4.2. Connection of suction hoses

Flexible suction hoses as well as collars are available on the market. Flexible suction hoses must be made of durable materials. Do not extend the flexible suction hose too much. Engine provides the optimum performance if water pump is a little higher the working point. The long extension of flexible suction hose will increase the self-priming time and cause overheating of pump. Use the collar to fix the screen matching the pump at the end of flexible suction pipe tightly.



(Fig. 6)

(Fig. 7)



WARNING

It is necessary to mount the screen at the end of flexible suction hose before the use of pump. It can prevent foreign matters from entering the pump and blocking or damaging impellers.



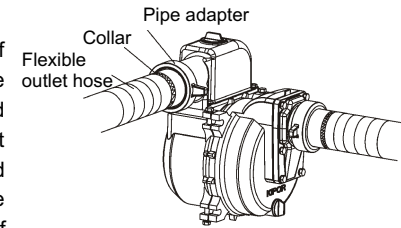
CAUTION

Tighten or lock adapter and collar to avoid leakage and reduction of pump performance and self-priming capacity.

4.3. Connection of outlet hose

Flexible outlet hoses as well as collars are available on the market.

Flexible suction hoses must be made of durable materials. Keep the flexible outlet hose as short as possible and diameter as large as possible so that pump can perform best. The long and thin hose will increase the resistance against flow, reduce the output power of pump and influence the water outflow.



(Fig. 8)



CAUTION

Tighten or lock adapter and collar to avoid the disconnection under a high pressure.

4.4. Check the level of engine oil

Engine oil is crucial for performance and life of engine. Do not use engine oil, cleaning engine oil or vegetable oil with bad lubrication property.

Please select the high-quality cleaning engine oil for four-stroke cylinder or others with equivalent strong cleaning property subject to the requirements of API SG and SF that are compulsory for American carmakers.

Select the viscosity of engine oil in accordance with the average temperature of local area. Recommend the SAE10W-30 suitable for all temperature conditions.

Viscosity table of SAE oil

Viscosity of engine oil- surrounding temperature	
One-grade oil	SAE20, 20W ← SAE40, 50
Surrounding temperature	SAE10W ← SAE30
	← SAE10W/30 →
Multiple-grade oil	← SAE15W/40 →
	← SAE5W/20 →
	← SAE5W/30 →

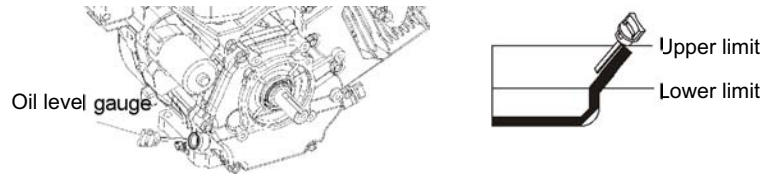


CAUTION

Use non-cleaning engine oil or engine oil for two-stroke cylinder will shorten the life of engine.

Recommended working temperature: -5°C - 40°C

Stop the engine and place the pump at a plane to check the level of engine oil.



(Fig. 9)

Stop and place the engine at a plane. Remove the oil level gauge and clean it. Insert the gauge through the oil filling port to the bottom. Do not turn the gauge. Then pull it again to check the level of engine oil. Meanwhile check if engine oil is clean.

If the level of engine oil is relatively low, add the recommended engine oil through oil filling port.



Engine will be damaged if pump is running without sufficient engine oil.



If engine cannot restart after the stop, check the level of engine oil at first.

4.5. Check the level of fuel

Remove the cap of fuel tank and check the level of fuel. Add the fuel in timely manner if the level is too low.

Please use lead-free gasoline for vehicle to reduce the carbon deposit in the combustion chamber.

Do not use the combination of engine oil and gasoline or dirty gasoline. Close the cap of fuel tank tightly after the filling in order to avoid dirt, dust and water entering the fuel tank.

Stop the engine when you add the fuel. Normally add the fuel up to 90% of fuel tank.



(Fig. 10)

Volume of fuel tank: KGP20T: 3.6L
KGP30T: 6L KGP40T: 6.5L



Gasoline is easily flammable and explosive under certain conditions.

Please supplement the fuel at the ventilated place and close the engine. Prevent the fire and spark from the area where engine is filled and/ or fuel is stored.

Avoid the overflow of fuel (i.e. no fuel above the upper limit). Close the cap of fuel tank tightly after the filling.

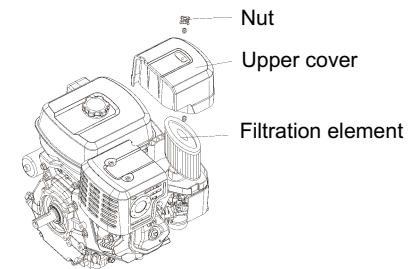
Overflow of fuel or fuel mist may catch fire. Wipe off the excessive fuel immediately and ensure that the affected area has been dry before the engine starts in order to prevent the possibility of fire accident.

Avoid the long-term or repeated contact of gasoline. Prevent gasoline from children.

4.6. Check the air filter

Loosen the nut at the top of air filter and remove the cover. Check the filtration element to guarantee it clean and intact.

Clean the dirty or contaminated filtration element. Replace the damaged element. After cleaning or replacing, remount the filtration element and cover of air filter properly. Then tighten the nut.



(Fig. 11)



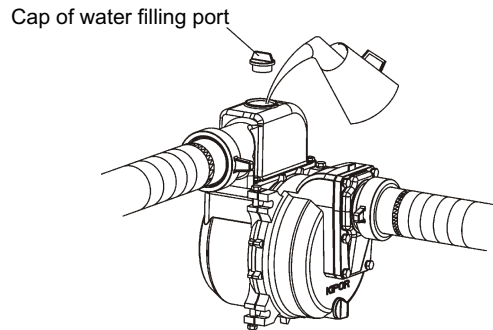
Do not run the engine without air filter or filtration element. Otherwise dust and other dirt may enter the engine and cause the earlier wearing of engine.

4.7 Check the water level before the use of pump

Fill the pump cavity with clean water before pump runs. It can avoid running pump without water.



Run the pump after it is full of water. Do not run it if there is no water or pump overheats. Running without water will damage the sealing. If pump runs without water unintentionally, stop the engine immediately and add water after pump is cool.



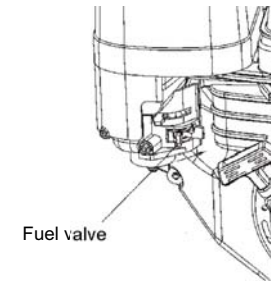
(Fig.12)

4.8 Check if bolts and nuts are tightened

Check if all bolts and nuts are complete and tightened before the pump runs. Tighten any loose bolt or nut before the use. Loose bolt or nut will result in the abnormal vibration of pump, mechanical fault or damage even serious accident.

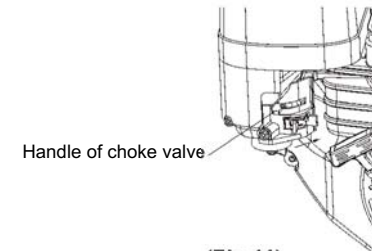
5. STARTUP OF ENGINE

5.1. Turn the fuel valve to the position Open.



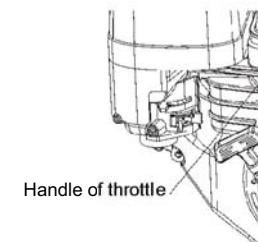
(Fig. 13)

5.2. Turn the handle of choke valve to the position Close in case of cold starting. Turn it to the position Open if engine starts in the hot manner.



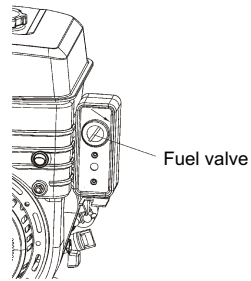
(Fig.14)

5.3. Turn the handle of throttle from Low to a position 1/2 away from Quick.



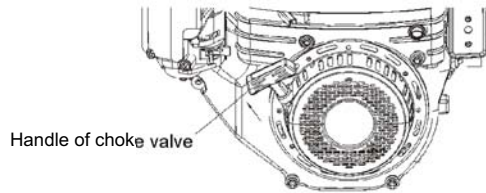
(Fig.15)

5.4. Turn the engine switch to the position ON.



(Fig. 16)

5.5. Hold the frame and pull the starter handle tightly. Pull the handle quickly when you feel certain pressure.



(Fig. 17)

WARNING

Take care! Prevent starter handle from rebounding to the engine. Release the handle slowly to protect the starter.

CAUTION

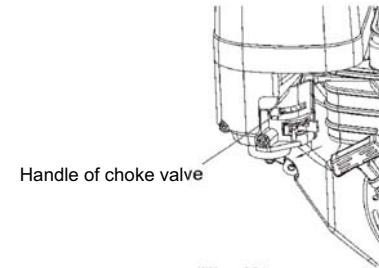
Pull the starter handle quickly. Otherwise electrode of spark plug cannot generate spark to start the engine.

6. OPERATION

WARNING

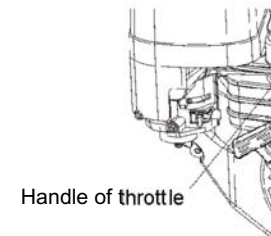
Do not pump easily flammable or corrosive liquids such as waste oil and alcohol. Neither pull the starter wildly nor run the engine beyond the range of design parameters.

6.1. Turn the handle of choke valve slowly to the position Open when it has been located at the position Close upon the startup of engine and engine becomes heater gradually.



(Fig.18)

6.2. Turn the handle of throttle to the position of desired velocity. Regulate the rotation speed of engine to control the water outflow. Turn the handle of throttle to the position Quick to increase the water outflow while turning the handle to the position Slow to decrease the water outflow.

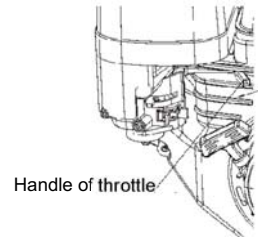


(Fig.19)

7. STOP OF ENGINE

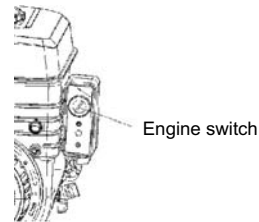
Turn the engine switch to OFF in case of emergency stop.
Normally close the engine in the following order:

7.1. Turn the handle of throttle to the position Slow.



(Fig.20)

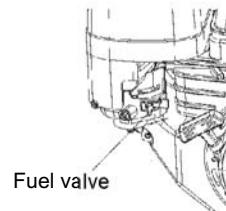
7.2. Turn the engine switch to the position OFF.



(Fig.21)

7.3. Turn the fuel valve to the position Close.

Remove the screw plug of water drainage, take out the cap of water inlet and flush the pump body with fresh water after the use of pump. Drain out water and reassemble the cap of water inlet and screw plug water drainage.



(Fig. 22)

8. PERIODIC MAINTENANCE AND REPAIR

Periodic check and adjustment are very important for maintaining pump in good conditions. Periodic maintenance and repair can increase the life of pump. Please refer to the following table for items and intervals of maintenance and repair.

⚠ DANGER

- Please stop the engine before any maintenance and repair.
- Maintain/repair an engine that has to run during the maintenance and repair at a well-ventilated area because waste gas contains toxic CO and will cause anesthesia even death in case of long-term exposure.

⚠ WARNING

- Enable the pump to handle clean fresh water immediately after it operates seawater and similar liquids in order to reduce the corrosion.
- Please use original KIPOR parts or equivalent parts for replacement during the maintenance and repair. Bad parts will damage the pump.

Maintenance schedule ○ Item for maintenance ※ just replace the paper element

Item	Interval	Interval					
		Before the use	20h	50h	100h	200h	500h
Engine oil	Check the level of engine oil	○					
	Replace		○		○(2)		
Air filter	Check	○					
	Clean			○(1)			
Bolts and nuts	Check	○					
Spark plug	Clean				○		
Spark arrester	Clean				○		
Fuel tank	Clean					○(3)	
Fuel filter	Check					○(3)	
Intake/exhaust valve clearance	Check/adjust						○(3)
Fuel pipe	Check/adjust	Every two year (3)					
Impeller	Check					○(3)	
Impeller clearance	Check					○(3)	
Intake valve clearance	Check					○(3)	

Note: (1) Shorten the interval of maintenance if the engine is used in the dirty environment.
(2) Replace the engine oil once every 25 hours if the load is great or ambient temperature is high.
(3) Maintenance must be done by the authorized sales agent of KIPOR or our after-sales service department unless user has appropriate tools and qualified mechanic.

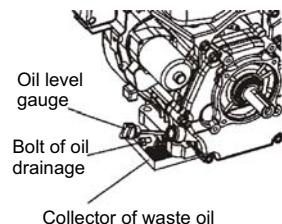
8.1. Replace the engine oil

Drain out the engine oil completely and quickly when the engine is still warm after the stop.

- (1) Remove the oil level gauge and bolt of oil drainage to empty the engine oil.
- (2) Reassemble and tighten the bolt of oil drainage.
- (3) Add new engine oil as recommended to the specified volume.
- (4) Reassemble the oil level gauge.

**Volume of engine oil: KGP20T: 0.6L,
KGP30T: 1.1L KGP40T: 1.1L**

Clean your hands with soap and clean water after you contact waste engine oil every time.



(Fig. 23)



We recommend you to collect the waste engine oil in a sealed container and send the container to the local service center or recycling center to protect the environment. Do not pour the engine oil on the ground or waste.

8.2 Maintenance of air filter

If air filter is contaminated excessively, it will affect air flowing into the carburetor and cause difficult start, insufficient output power, black smoke and other abnormalities. Please maintain air filter periodically to keep carburetor in good conditions. If pump is used at a very dirty place, maintain it frequently.

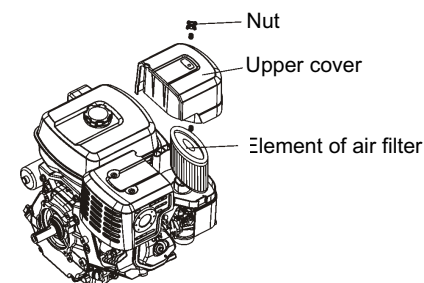


Do not clean the element of air filter with gasoline or solvent with low ignition point because they may be flammable and explosive easily under certain conditions.



Do not run the pump without air filter. Otherwise dust and other dirt may enter the engine and cause the earlier wearing of engine.

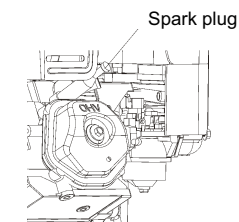
- (1) Loosen the butterfly nut at the cover of air filter, remove the cover and take out the element of air filter.
- (2) Knock the rigid housing of paper element lightly or blow the element with compressed air from inwards to outwards in order to clean dust attached on the element.
Note: Do not scrape the element with hard matters in order to protect the element.
- (3) Check the element carefully. If there is hole (s) or breakage or element is too dirty, please replace the element.
- (4) Reassemble the element and cover in order and tighten the butterfly nut.



(Fig. 24)

8.3 Maintenance of spark plug

Recommended spark plug: F6TC(F6RTC)



(Fig. 25)



Keep the normal spark plug clearance and avoid the carbon deposit in order to guarantee the normal running of engine.

- (1) Remove the spark plug cap with properly sized spanner.



Silencer is hot just after engine stops. Carry out the maintenance and repair till the silencer is cool completely.

- (2) Check the spark plug visually. Discard the spark plug that has been worn or has broken insulation. Clean the spark plug with brush wire for reuse.
- (3) Use the feeler to measure the spark plug clearance. Bend the electrode at one end for adjustment if necessary. Remount the spark plug with hands carefully in the manner that threads do not overlap. Spark plug clearance: 0.7-0.8mm
- (4) Bend the side electrode carefully for the desired adjustment, if necessary. Mount a new spark plug with hands and turn it 1/2 turn with spanner to compress the washer. If an old spark plug is in place, locate and turn it 1/8 to 1/4 turn with spanner.

CAUTION

Mount the spark plug reliably. Otherwise spark plug will be hot and cause the damage of pump. Do not use a spark plug with inappropriate heat measurement.

8.4. Maintenance of spark arrester (optional)

WARNING

Silencer is hot just after engine stops. Carry out the maintenance and repair till the silencer is cool completely.

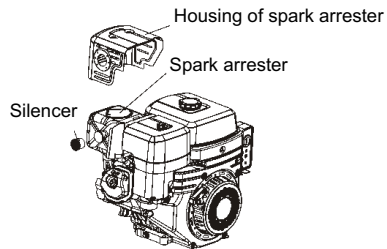
CAUTION

Maintain the spark arrester every 100 hours to ensure the efficiency.

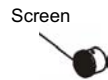
- (1) Loosen screws and remove the housing of silencer.
- (2) Loosen screws and disconnect the spark arrester from the silencer. (Do not damage the wire net.)

CAUTION

Check carbon deposit around the vent and spark arrester. Clean the carbon despoit if necessary.



(Fig. 26)



(Fig. 27)

- (3) Clean the carbon deposit on the screen of spark arrester with carbon brush.

CAUTION

Take care not to damage the screen of spark arrester.

CAUTION

Replace a spark arrester with crack or hole.

- (4) Reassemble the spark arrester and silencer in the order opposite to the disassembly.

9. SHIPMENT AND STORAGE

WARNING

Ship or store the pump till engine is cool in order to prevent fire accidents.

Close the fuel tank and place the pump at a plane during the shipment. Make sure that cap of fuel tank has been tightened to avoid fuel overflow. Any fuel overflow or vapor will cause fire accidents.

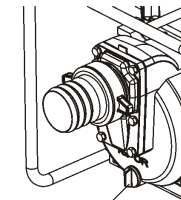
Long-term storage

Make following preparations before the long-term storage of pump.

- 1. Select a ventilated, dry, clean and dust-proof place for pump.
- 2. Clean the inside of pump thoroughly before the storage.

(1) Certain dregs may stay in the pump if the pump is applied in the muddy area or water containing sand and big debris. Flush the pump with clean water before the stop of pump. Otherwise these dregs may damage the impeller upon the restart.

(2) Remove the screw plug of water drainage at the top of pump and empty water in the pump after the inside of pump is cleaned. Then remount the screw plug of water drainage.



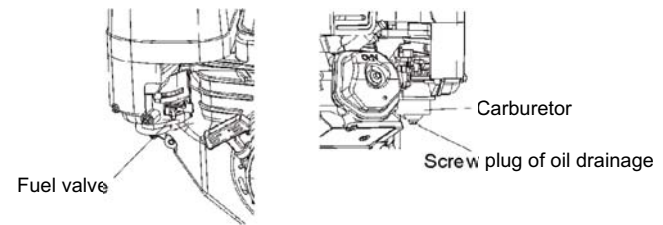
Screw plug of water drainage (Fig. 28)

3. Empty fuel

(1) Close the fuel valve and remove the bolt of oil drainage on the carburetor. Incline the pump a little to drain out fuel. Take care not to contact the discharged fuel.

(2) Open the fuel switch and incline the pump a little to transfer the fuel from fuel tank to a proper container. Take care not to contact the discharged fuel.

(3) Retighten the bolt of oil drainage on the carburetor.

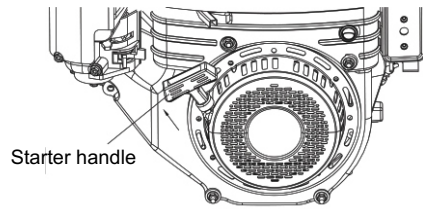


(Fig. 29)

CAUTION

Collect the fuel from fuel tank in a proper container. Do not release it willfully. Gasoline catches fire or causes explosion easily under certain conditions.

4. Replace the engine oil.
5. Clean the air filter.
6. Remove the spark plug and add a spoon of engine oil in the cylinder. Rotate the engine several times to distribute the engine oil evenly. Then remount the spark plug.
7. Pull the starter handle till you feel pressure. By then valve is closed. It can avoid dirt entering the cylinder of engine and prevent engine corrosion. Then reset the starter handle slowly.
8. Mount the housing of pump to prevent the entry of dust.



(Fig. 30)

10. FAULT SOLUTIONS

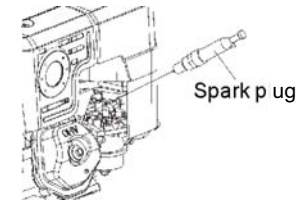
10.1. Engine cannot start

Check following items to resolve faults at first.

1. Do you turn on the engine switch?
2. Is there sufficient engine oil?
3. Is fuel valve open?
4. Is there sufficient fuel in the fuel tank?
5. Does gasoline flow into the carburetor?

Open the fuel valve and loosen the bolt of oil drainage for check.

6. Does the spark plug generate spark?
 - (1) Disassemble the spark plug cap, clean dirt at the bottom of spark plug and remove the spark plug.
 - (2) Place the spark plug in the spark plug cap.
 - (3) Turn on the engine switch.
 - (4) Connect the side electrode to the earthing terminal of engine and pull the recoil starter several times to check if spark plug generates spark.
 - (5) Replace the spark plug if there is no spark.
 - (6) Remount the spark plug and restart the engine as instructed if there is spark.
7. Send the pump to KIPOR service station or contact yours sales representative or our after-sales service department if you cannot start the engine after finishing the mentioned checks.



(Fig.31)

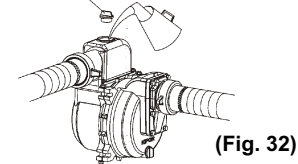
WARNING

Check if the affected area of overflow, if any, is dry before you start the engine, which can prevent fire accidents.

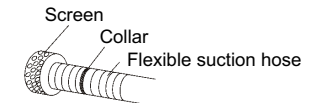
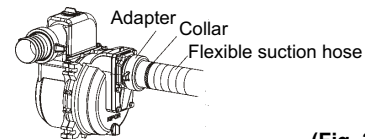
10.2 Pump does not work.

- (1) Is pump full of water?
- (2) Is screen blocked?
- (3) Is collar tightened?
- (4) Does suction hose crack or break?
- (5) Is the suction lift too higher?
- (6) Send the pump to KIPOR service station or contact yours sales representative or our after-sales service department if you cannot start the engine after finishing the mentioned checks.

Cap of water filling port



(Fig. 32)



(Fig. 33)

11. MAIN TECHNICAL PARAMETERS

Model		KDP20T	KDP30T	KDP40T
Nominal diameter of water inlet mm (in)		50(2)	80(3)	100(4)
Nominal diameter of water outlet mm(in)		50(2)	80(3)	100(4)
Maximum flowrate m ³ /h		32	50	70
Maximum pumping head m		25	22	22
Maximum self-priming lift m		8	8	8
Self-priming period (self-priming lift of 4m)s		80	120	180
Rated rotation speed r/min		3600	3600	3600
Engine	Model of power	KG200	KG280	GK400
	Type of power	Single, air-cooling, four-stroke, inclined cylinder with top-mounted valve		
	Diameter of cylinder x stroke mm	68×54	78×58	89×64
	Displacement ml	196	277	398.1
	Maximum power kW/(r/min)	4.0/3600	5.5/3600	7.7/3600
	Cooling method	Forced air cooling		
Type of fuel		Lead-free gasoline for vehicle		
Method of start		Recoil hand-operated or electrically operated		
Noise dB(A)/7m		74	76	76
Net weight kg		48	60	79
Gross weight kg		58	72	98
Overall dimension (L×W×H) mm		625×505×485	655×515×530	730×575×570