

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 warranties hereunder, including, but not limited to, any implied warranty of merchantability must be brought within the applicable warranty period.

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**KisanKraft Limited**

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☎: +91.80.22178200

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**KisanKraft Machine Tools Private Limited**

Customer Care Phone: 080.2233.0318, Email: kisankraft@gmail.com

**KisanKraft®**

# Warranty Certificate

(KISANKRAFT COPY)

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Many of our products have BIS: ISI certification.



# User Manual



## KisanKraft Limited

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

- ◆ Bangalore (HO) ◆ Ahmedabad ◆ Bhopal ◆ Coimbatore
- ◆ Guwahati ◆ Hyderabad ◆ Nellore ◆ Jaipur ◆
- ◆ Karnal ◆ Kolkata ◆ Lucknow ◆ Pune ◆ Raipur ◆

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

<p><b>Brush Cutters and Accessories</b></p> <ul style="list-style-type: none"> <li>Brush Cutter/Power Weeder</li> <li>Backpack Brush Cutter</li> <li>Tea Pruner</li> <li>Pole pruner with Engine</li> <li>Reaper Attachment</li> <li>Blades-Circular</li> <li>Blades (2 &amp; 3 points)</li> <li>Baffle</li> <li>Nylon Rope</li> <li>Tap &amp; Go</li> </ul> <p><b>Chainsaws</b></p> <ul style="list-style-type: none"> <li>Petrol Chainsaw</li> <li>Electric Chainsaw</li> <li>Chain Sharpening Machine</li> </ul> <p><b>Engines and Water Pumps</b></p> <ul style="list-style-type: none"> <li>Engine –Diesel-(Horizontal)</li> <li>Engine –Diesel(Vertical)</li> <li>Engine-Kerosene</li> <li>Water Pump with Petrol Engine</li> <li>Water Pump with Kerosene Engine</li> <li>Water Pump with Diesel Engine</li> </ul> <p><b>Hand Tools</b></p> <ul style="list-style-type: none"> <li>Secateurs</li> <li>Folding Saw</li> <li>Garden Rake</li> <li>Garden Shovel</li> <li>Hedge Shear</li> <li>Lopper</li> <li>Telescopic Hedge Shear</li> <li>Telescopic Lopping Shear</li> <li>Tree Pruner</li> <li>Telescopic Steel Pipe &amp; Fruit Picker Bag</li> <li>Sheep Shear</li> </ul> <p><b>Garden Tools</b></p> <ul style="list-style-type: none"> <li>Electric Pressure Washer</li> <li>Hedge Trimmer</li> <li>Lawn Mower (Electric, Petrol &amp; Manual)</li> <li>Leaf Blower</li> </ul>	<p><b>Cultivators and Accessories</b></p> <ul style="list-style-type: none"> <li>Petrol and Diesel</li> </ul> <p><b>Sprayers and Accessories</b></p> <ul style="list-style-type: none"> <li>Battery Sprayer</li> <li>Portable Power Sprayer</li> <li>Trolley Sprayer</li> <li>Manual Knapsack Sprayer</li> <li>Manual Pressure Sprayer</li> <li>Rose Cans</li> <li>Hose Crimping Machine</li> <li>HTP Sprayer</li> <li>HTP Delivery Hose</li> <li>HTP Hose Reel</li> <li>HTP Stand</li> <li>HTP Gun / Lance( Brass Rod)</li> <li>Knapsack Power Sprayer</li> <li>Mister / Duster / Granuel Spreader</li> <li>HTP Sprayer Set with Diesel Engine</li> <li>HTP Sprayer Set with Kerosene Engine</li> <li>Fogging Machine</li> </ul> <p><b>Milking Machine</b></p> <ul style="list-style-type: none"> <li>Wood Shredder</li> <li>Fodder Ensiling Chaff Cutter</li> <li>Fodder Grinder Chaff Cutter</li> <li>Fodder Mini Chaff Cutter</li> </ul> <p><b>Harvester</b></p> <ul style="list-style-type: none"> <li>Maize Sheller</li> <li>Maize Sheller + Dehusker</li> <li>Maize Combine Harvester</li> <li>Onion Digger Carlotti Italy</li> <li>Tea Leaf Harvester</li> <li>Sugarcane Combine Harvester</li> <li>Sugarcane Leaf Stripper</li> </ul> <p><b>Transplanter and Post Hole Digger</b></p> <ul style="list-style-type: none"> <li>Paddy Transplanter (2 &amp; 8 Rows)</li> <li>Transplanter-Vegetable &amp; Tobacco</li> <li>Post Hole Digger(4" to 14" Augers)</li> </ul>
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## TROUBLESHOOTING

### 1. The Engine Can't Start

- 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.

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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"> <li>• Fill with fresh gasoline and add gasoline conditioner</li> <li>• Drain the carburetor float bowl</li> <li>• Drain the fuel sediment cup</li> </ul>

### STORAGE

If the engine is not used for a long time, do the necessary maintenance before its storage.

- Firstly, take off the fuel tank, drain out all fuel, and clean the dirt and water inside the tank. Open the fuel cock, unscrew the drain plug at the bottom of carburetor, drain out fuel in carburetor thoroughly, and then tighten the drain plug.
- Secondly, unscrew the drain plug at the bottom of the crankcase and drain out the lubricant oil in the crankcase thoroughly, then tighten the drain plug.
- Finally, clean the surface of the engine with clean cloth, remove the dirt and dust etc. Then store the engine in a well-ventilated, dirt-free place.

### TRANSPORTATION

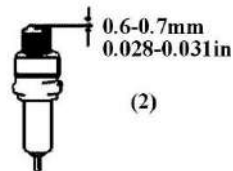
- Contact with the hot engine or exhaust system can cause serious burns or fires. Allow the engine to cool down before transporting or storing the engine.
- During transport of the engine, turn the engine switch and the fuel valve to OFF. Keep the engine cool.

### Everyday Maintenance:

- 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.
- Clean the core after 25hrs of engine run
- 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.
  - Refill with the recommended oil and check the oil level.

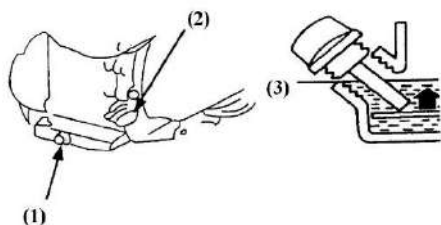


(1) Dismantle Spark Plug



(2) Adjust Clearance

- 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 GETTING STARTED

Thank you for purchasing our Inter-cultivator.

- This manual contains information on operation and maintenance of the Inter-cultivator, which is based on the most recent product information available at the time of approval for printing. We reserve the right to make amendments without prior notice and without incurring any obligation for sequences.
- No part of this publication may be reproduced without written permission.
- This manual should be considered a permanent part of the cultivator and remain with it if it is resold.

Please pay special attention to statements preceded by the following words:

<b>! Danger:</b>	Serious injuries, even death will be caused, if don't this indication in the manual.
<b>! Warning:</b>	Device damage and people injures/death may be caused, if don't follow this indication in the manual.
<b>! Attention:</b>	Device damage and injures may be caused, if don't follow this indication in the manual.

### Damage prevention

You can see other important information marked with "ATTENTION".

**ATTENTION:** Device damage will be caused, if don't follow the indication in the manual.

### Safety Prevention



If tiller is operated following instructions given in the manual, it will work safely and reliably. Before operating the mini tiller, please read this manual carefully. Otherwise, injures and device damage may occur.

### Attention

- When the engine is starting, the shift lever should be in the disengaged position with belt.
- Be careful when the tiller is working.
- Check the rotary blades and be careful while working with it.
- The fuel and oil must be clean and specified as per the manual.
- Before changing gear, you should release the tension roller with the belt (The machine clutch device is comprised of tension roller and belt.), and turn the engine speed to slow speed. Reverse in the slow speed circumstance is safer.
- You'd better not use reverse gear while tiller is going up or down a slope.

### APPLICATION

The Intercultivator is suitable for cultivating, earth backing, ditching, ridging, and weeding for garden, orchard, and nursery and so on in flat land, hills and mountainous fields. Do not use the tiller in sloped land  $\geq 20^\circ$ .

### SAFETY INSTRUCTIONS

#### 1. Training

- Please read this manual carefully, and learn how to operate and use the tiller.
- Don't allow children and anyone without proper training to operate this tiller to avoid injury.
- Keep all persons (especial the kids) and pets away from the tilling working area.

#### 2. Preparation

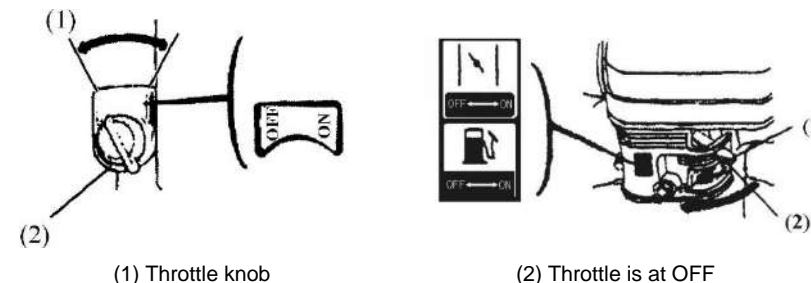
- Move all the sundries away from the tiller working area.
- Before engine starting, be sure the clutch is disengaged and the shift lever is in the neutral position.
- It is not allowed to operate the tiller without wearing proper coat. Wearing the antiskid shoes can improve the stability on the slide surface.
- Be careful the fuel, it is extremely flammable.
  - Using the proper tank to store the fuel.
  - It is not allowed to refuel when engine is working or before engine cooled. Refueling the lube oil into the tank is not permitted.
  - Refuel in a well-ventilated area with the engine stopped.
  - Before starting, tightening the fuel cap, and cleaning the spilled fuel.
- When engine running, any adjustment is not allowed (except the special adjustment recommended by manufacturer).
- Please wear the safety glasses for any operation, such as: preparation, operation and maintenance.

#### 3. Operation

- Keep your hands and feet away from the rotating parts while engine is running.
- Be careful to operate on (or across) the cobble road, pavement or highroad. Be careful the potential risk and traffic. Taking the passenger is not allowed.
- Please stop the engine and check if the tiller be broken after striking sundries. It is not allowed to start or operate before it is repaired if broken.
- Attention the operation floor, avoid slipping down.
- Any unusual vibration is the sign of fault should stop and inspect machine immediately.
- Stop the engine, while leaving the operation position, cleaning the rotor, doing maintenance, adjusting or checking the machine.
- After using, should do the preventive measures, such as: disengage the power output, gear in neutral position, engine off.
- Before cleaning, maintenance and inspection, the engine should be off, and ensure all the moving parts to be stopped.
- Exhaust contains poisonous gas; don't use the tiller in enclosure space.
- No protective devices, no operation the tiller.
- Keep away from the kids and pets.

### STOPPING THE ENGINE

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



#### ! DANGER:

- Gasoline is extremely flammable and explosive under certain conditions.
- 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.

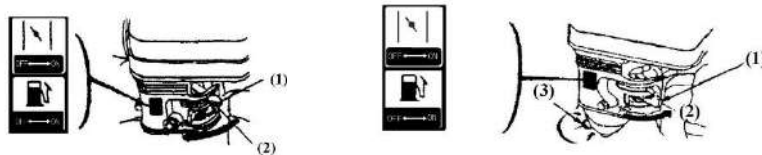
#### ! WARNING:

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.



### 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.



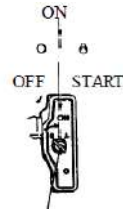
(1) Auto-Throttle

(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.


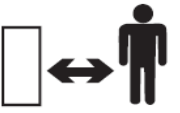

- To avoid over tilling depth, and over speed, cause the machine overload.
- The tiller should not be run in high speed on the slippery road, be careful the back situation when using backward gear.
- Keep people away from the machine.
- Use only genuine parts or their equivalents (such as: wheel bob-weight, balancing weight, cabin etc).
- Don't operate the tiller in poor view or weak light environment.
- Be careful to operate on hard land, because the blade into land can push the tiller forward. In this case, release the handle bar, don't try to control it.
- Do not use the tiller on slope.
- When the tiller goes up or down the slope, should prevent tip-over.

### 4. Maintenance and Storage

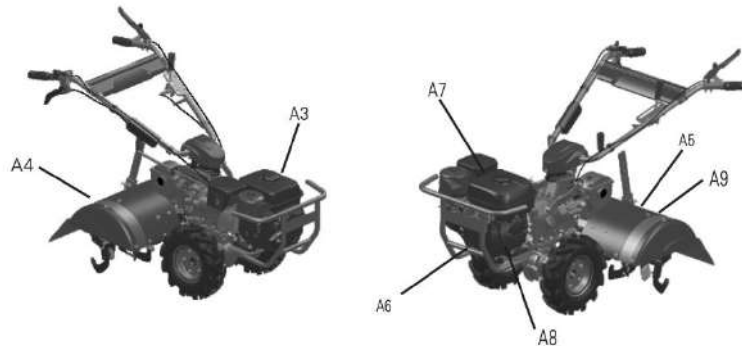
- Keep the tiller, attached device and components in good operation condition.
- At set intervals, check if the bolts fasten to ensure the tiller in safe operation condition.
- Indoor storage, away from the fire. Cool the engine before indoor storage.
- For long-period storage, should keep this manual well, too.
- Don't try to repair the machine, otherwise you have the proper tools and disassemble, assemble and maintenance manual.

### 5. Safety warning indication

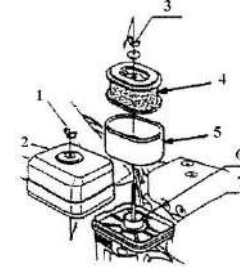
	<p>No Burning Fuel: #0 in Summer, - 10# in Winter.</p>		<p>Safety shields should be installed correctly while rotary blades are running</p>
<p><b>A3 Fire-proof safety</b></p>		<p><b>A4 Rotary blades safety shield</b></p>	
<p>Max rotate speed is 1800r/min, Over-speed is not allowed.</p>			<p>Read user manual carefully before operation, Pay attention to safety especially when tiller is running.</p>
			
<p><b>A6 Rotation</b></p>		<p><b>A7 Reading user manual</b></p>	

<p>△! Warning</p> 	<p>Keep away from the rotate blades, injuries will be caused if touching the blades.</p>		<p>Keep away from the fly wheels, no touch, keep safe distance. Spectators should keep a safe distance away from the tiller.</p>
<p>△! Warning</p> 	<p><b>A9</b></p> <p>Wear safe glasses and ear shields when operating tiller</p>	<p><b>A8</b></p>	

### 6. Safety warning position



- 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



- Butterfly nut
- Air cleaner cover
- Butterfly nut
- Paper element
- Foam element
- Seal washer
- Silencer plate

### ! WARNING:

Do not run the engine without air cleaner.

### ! DANGER

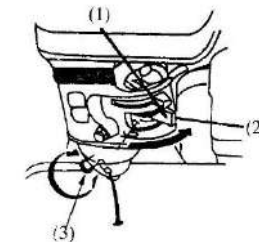
Using gasoline or flammable solvent to clean the filter element can cause a fire or explosion.

### ! 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

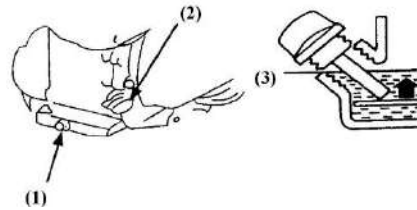
- Turn the fuel valve to ON position, unscrew the drain plug on carburetor bottom, and fasten the drain plug until oil spills out.
- Pull the choke rod to the CLOSE position. Adjust throttle to proper position. Pull the starter grip lightly until resistance is felt, then pull it rapidly



(1) Fuel Valve

(2) Start Level

(3) Drain Plug



(1) Drain plug

(2) Engine switch

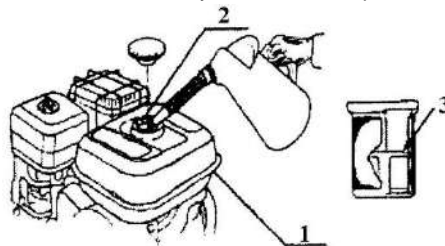
(3) Lower level

### 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

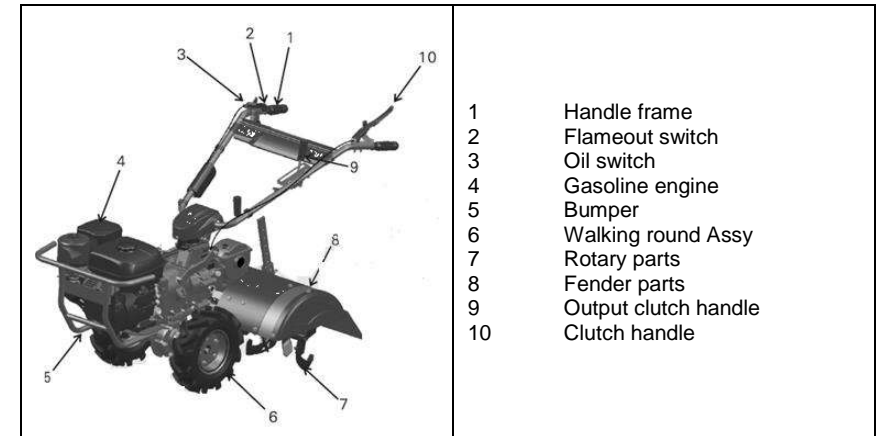
(3) Red line level

### 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.

## PRODUCT OVERVIEW



## INSTALLATION METHOD

### Assembly after unpacking:

#### 1.1. Walking round

Fix the body of tiller, install wheels on both sides of hexagonal shaft and fix it by clip B and Pin.

#### 1.2 Armrest frame

Install Armrest: Put the bolt of armrest plate into the hole on rotary plate, and then lock those tight with press gasket, wave washer and nut.

1.3 Fix handle cover on the rotary plate with Bolt M6x12.

1.4 Checking the tiller, attached components if it exists lack, then go for next step following this manual.

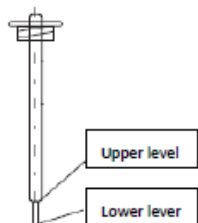
## OPERATION INTRODUCTION

Before sending the tiller out of factory, adjusting and debugging is done, for comfortable and easier using, the user should inspect and adjust it again.

### 1. Daily Checking

- 1.1 Check all the bolts in the connecting part ensure all of them are tightening.
- 1.2 Checking the handles (throttle, Clutch and gear shifting lever), make them flexible and in the correct position.
- 1.3 Put the shift lever in the neutral gear place.
- 1.4 Add oil:
  - Add lube oil (SAE10W-30) to crankcase as Photo III shows;

- Put the engine at horizontal position. Insert the dipstick into the filler neck without screwing it in. Get the dipstick out, check the oil level. The oil level should be the mentioned position in the dipstick. (Look at Photo III).
  - Refuel air cleaner with oil, disassembling the synthetic glass cover tent below the cleaner, and refuel 0.1L No.20 oil.
- 1.5 Add fuel; add No. 90 petrol to fuel tank.  
1.6 Make preparation following the user manual before starting machine.



### ⚠ Attention

Don't rotate dipstick, don't add lube oil between upper level and lower level.

## 2. Tiller adjustment

### ⚠ Attention

Please put the tiller on firm land level before adjusting the handle height to prevent the handle from collapsing accidentally.

#### 2.1 Handle frame adjustment

Adjust the height and direction of handle frame by lock hands.

#### 2.2 Tilling depth adjustment

Control the tilling depth by adjusting the height of the resistance rod. Rod going down, tilling depth decreased; Rod going up, tilling depth increased.

## 3. Engine start and stop

### ⚠ Attention

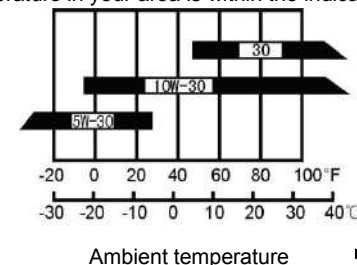
Shift lever must be in the neutral gear position.

- Shift lever must be in the neutral gear position before starting the tiller.
- Start the gasoline engine following the steps of user manual.
- Engines should run in the low speed (1450-1750r/min) for 2-3 minutes without load.
- Check if the engine runs normally, if abnormal, please turn it off and repair.

### ⚠ Attention

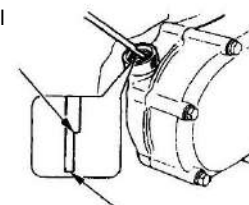
The tiller must running-in before starting using. Check Chapter VI for running-in method

- 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.



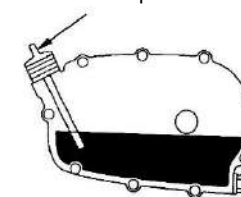
- Before checking engine lubricant oil, place the engine on level surface
- Turn out the oil filler cap and clean the dipstick with a clean cloth.
- Insert the dipstick back into the oil filler hole without turning it in.
- If oil level is below the lower mark of the dipstick, fill oil to the upper level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

## 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

### 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.

## 4. Operation

- 4.1 Starting tiller: Clutch bar should be disengaged, and all gear shifting levers should be in neutral gear position, and then start the engine following the usual manual.
- 4.2 Running: Put gear shifting handle in the required gear position, clench the clutch handlebar to make the tiller work/walk.
- 4.3 Parking:
  - a) Loosen Clutch handlebar;
  - b) Put Gear shifting lever to Neutral position;
  - c) Following the user manual, if need to turn off the engine.

### ⚠ Attention

Park the tiller on flatland

## 5. Operation Attention

- 5.1 When using mini tiller, you should pay attention to the working situation and sound of every part, check if the connection is good. There mustn't be loosed connection. If there is abnormal situation, please stop the mini tiller and check.
- 5.2 Never carry out work with heavy load if mini tiller has not been used for a long time, especially the new ones or the repaired ones.
- 5.3 Pay attention to the oil level of gasoline engine, walking case and gear box. When they are insufficient, please refuel them.
- 5.4 Never cool the gasoline engine in the way of water-pouring.
- 5.5 Prevent mini tiller from falling down when tilling.
- 5.6 Never install mini tiller with rotary blades when walking on sand or stone to avoid damaging blades.
- 5.7 After tilling, please clear away dirtiness on the mini tiller, such as mud, grass and oil stain. Keep the tiller clean.

## MAINTENANCE

Due to rotary situation, abrasion and load change of mini tiller, bolts will become loose and parts will be worn during the work. These changes will destroy the proper working state of mini tiller, create abnormal fitting clearance, degrade output of gasoline engine, increase oil consumption, lead to the maladjustment of spare parts, increase malfunction of mini tiller. All these will seriously affect the working efficiency of mini tiller. To decrease the frequency of the above-mentioned accidents, prevention of maintenance work must be done strictly and regularly to keep the mini tiller in a good technical state and prolong its life.

### 1. Running-in of mini tiller

- 1.1 As for running-in of gasoline engine, please refer to its instruction.
- 1.2 If mini tiller is new or is just heavily repaired, it should work without load for one hour. After the mini tiller works with light load for five hours, all oil in gear box and crankcase of gasoline engine should be drained immediately. Afterwards, you should refuel adequate clean gasoline oil, pull the starting grip 5~10 times, then drain it. Refuel the lube oil for 4 hours running-in, then can use the tiller normally.

### 2. Technical maintenance table of mini tiller

- 2.1 Every-time maintenance (before and after work)
- Listen and check if there is malfunction of every part (such as abnormal noise, overheat, loose screw and so on).
  - Check if there is oil leakage from gasoline engine, gear box and running gear.
  - Check if the oil level of gasoline engine and gear box is between the upper and lower limit of dipstick.
  - Clean the whole machine and spare parts which are with mud, grass and oil stain regularly.
  - Do daily record.
- 2.2 Primary maintenance (per 150 hours)
- Carry out maintenance work based on all contents of every-time maintenance.
  - Wash gear box, running gearbox and change lube oil.
  - Check and adjust clutch, shift system and reverse gear system.
- 2.3 Secondary maintenance (per 800 hours)
- Carry out maintenance work based on all contents of primary maintenance.
  - Check all gears and bearings. If they are fretted severely, please replace them.
  - Check other parts of mini tiller, such as: rotary blades or bolts and so on. If there is damage, please replace them.
- 2.4 Technical inspection (per 1500-2000 hours)
- Take the whole machine to the specific maintenance station, and have a check. If the spare parts are severely fretted, they must be changed or repaired according to the situation.

### 3. Technical maintenance of mini tiller

Working intervals Maintenance contents	Everyday	Work with half load for 8 hours	Work for 1 month or 20 hours	Work for 3 months or 150 hours	Every year or 1000 hours	Per 2 years or 2000 hours
Check & tighten nuts, bolts	√					
Check and refuel lube	√					
Check and change lube		√ (1 <sup>st</sup> time)	√ (2 <sup>nd</sup> time)	√ (3 <sup>rd</sup> time or more)		
Check if there is oil leakage	√					
Clean mud, grass and oil stain	√					
Debug malfunction	√					
Adjust operation parts	√					

### USER MANUAL- KK-PE4-170F-2



### 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. This manual is a part of the gasoline engine and should be transferred when the machine is resold.

### 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.

## TECHNICAL SPECIFICATIONS

CULTIVATOR	<b>Model</b>	<b>KK-IC-320P</b>
	Dimension (L x W x H) (mm)	1480x800x1100
	N.W/G.W(kg)	90/100
	Transmission System	Belt / Chain
	Tilling width (mm)	≥1000
	Tilling Depth (mm)	620
ENGINE	Engine Model	KK-PE4-170F-2
	Type	OHV, Single-cylinder, <b>4-stroke</b> , forced air cooling
	Displacement	212 cc
	Bore x stroke	70x55 mm
	Compression Ratio	8.5 : 1
	Max. Output	5/3600 (kW/rpm)
	Rated Output	4/3600 (kW/rpm)
	Max. Torque ( nm)	12N.m/2500rpm
	Ignition system	Transistor Magneto
	Starting System	Manual Start
	Oil capacity	0.6 L
	Fuel tank capacity	3.6 L
	Oil consumption	395g/kWh
	N.W./G.W	15 / 17kg
	Air Cleaner	Oil Bath Filter

Note:

1. FREE HEADLIGHT included.
2. Product specifications are subject to change without prior notice.

Working intervals	Everyday	Work with half load for 8 hours	Work for 1 month or 20 hours	Work for 3 months or 150 hours	Every year or 1000 hours	Per 2 years or 2000 hours
Maintenance contents						
Tighten the belt	√					
Gear and bearing					√	

## 4. Long-period storage of mini tiller

When mini tiller needs storing for a long period, the following measures should be taken to prevent tarnishing.

- 4.1 Wash oil stain and clean dust on the machine.
- 4.2 Drain lube oil in the gear box and refuel new oil.
- 4.3 Paint pickling oil on non-aluminum parts where there is no paint.
- 4.4 Store mini tiller in the dry, safe place where there is enough aeration.
- 4.5 Properly keep the attaching tools, certificates of conformity and instruction of mini tiller.

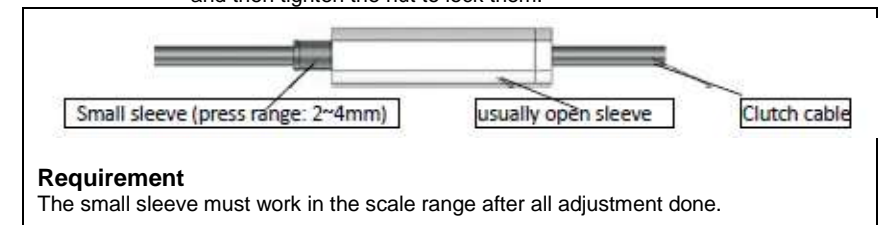
## ADJUSTMENT METHODS

### 1. Adjustment of clutch cable

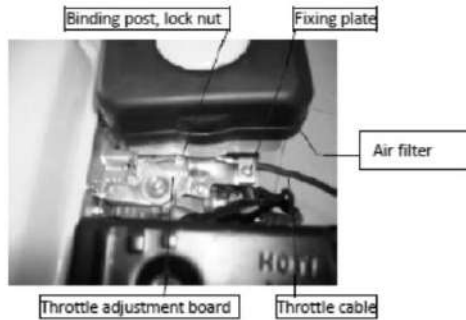
The abrasion of friction plates and the clutch shifting fork will make malfunction of clutch after using for a long time, in this case, should adjust clutch accordingly.

#### 1.1 Clutch cable adjustment

- 1.1.1 Every tiller must be equipped with one set of clutch limit usually open sleeve, which cannot be replaced by a common clutch cable;
- 1.1.2 When adjusting the clutch, must make sure the small sleeve running in the scale range. When loosen clutch handlebar, the main output shaft should be stopped immediately. Please replace a new clutch cable if the small sleeve runs out of the scale range.
- 1.1.3 When adjust clutch cable, please make the clutch cable adjusting rod on both clutch shifting fork arm and armrest-frame in the proper position, and then tighten the nut to lock them.



## 2. Adjustment of throttle cable



2.1 Adjust throttle cable, make throttle handle can reach the fastest and slowest position, then tighten the throttle switch with locking bolt.

## TROUBLESHOOTING

### Common troubles and solutions

Problem	Reason	Solution
Abnormal noise on gear	Over abrasion of the gear or improper installation	Reinstall or replace the gear
Gear cannot run smoothly	Improper installation	Reinstall the gear
Overheat of the machine	Less lube oil in the tank	Add lube oil as required
	Too narrow space between gears	Reassembly
	Two narrow space between bearings	Readjust
Oil leakage on the linkage of gear box	The connecting bolt is loosened	Tighten the bolt
Oil leakage	Sealing gasket is broken	Replace the sealing gasket
Oil leakage on the output shaft	Lip-shaped oil seal is broken	Replace the oil seal
Oil leakage on the oil-draining hole	O Ring is broken	Replace the O ring
	Screw plug is loosen	Tighten it accordingly
Oil leakage on the tank	Small holes on the tank	Welding or paint the holes

### 2. Other troubles and solutions

Problem	Reason	Solution
Rotary blades are broken	Hit stones or bricks when using	Replace the blades, pay attention to avoid the stones and bricks
Controlling cable is broken	Long-time working abrasion	Replace the cable

Try to start the engine according to the instructions given above  
If the engine still does not start, take the Inter-cultivator to an authorized dealer.