

Important: (1) Normal maintenance and adjustments to the product is the responsibility customer. (2) Normal wear and tear is not covered under warranty. (3) Rubber/plastic parts and consumables such as blades, clutch and clutch-bell, spark-plugs, nylon line, air-filters, fuel-filters, oil seals etc. are not covered under the warranty.

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.

Modifications of Warranty: No agent, representative, dealer, or employee of KisanKraft Limited or any of its manufacturers has the authority to increase or alter the obligations of this warranty.

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What you must do to obtain limited warranty service: To obtain performance of any obligation under this warranty for failure during the applicable warranty period, deliver the defective product, to the nearest Authorized Dealer. KisanKraft Limited, its manufacturers and its dealers reserve the right to inspect the claimed defective part(s) to determine if the malfunction is the result of a defect covered by this warranty. Please note that the decision of KisanKraft Limited with respect to any warranty claim is final.

Receipt is required for availing warranty services

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

Our Products

- ◆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◆

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)

🌐: www.kisankraft.com

✉: info@kisankraft.com

☎: +91.80.22178200

Product	Agricultural Inter-Cultivator	KisanKraft Invoice Date	
Brand	KisanKraft	KisanKraft Invoice No.	
Model	❑ KK-IC-225P		
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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- (1) Operation of product with incorrect fuel or lubricants, (2) Incorrect usage of machine or misuse, (3) Lack of maintenance, (4) Negligence, (5) Accident or physical damage, (6) Repairs made by unauthorized parties and/or with unauthorized parts, (7) Improper set up, adjustments, tampering or altered products.

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Wide Range of Products for Every Need



For more information give **MISSED CALL: 07676065555**



Many of our products have BIS: ISI certification.



User Manual



Note: Pictures shown in this manual are only for illustration purposes.

KisanKraft Limited

(Formerly known as KisanKraft Machine Tools P 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 ♦ Shimla ♦ 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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Technical Specifications

ITEM			DESCRIPTION	
ENGINE	Engine model		KK-IC-225P	
	Max. Power (kw)		4.5	
	Rated Power (kw)		4	
	Rated Speed (r/min)		1800	
Cultivator	Dimension (L×W×H)mm		1600×750×800	
	Net Weight(kg)		88	
	Transmission System		Synchronous belt tension pulley transmission	
	Connecting System		Pin bolt	
	Clutch system			Belt tension
	Walking speed (r/m)	Front gear	Fast	73
			Slow	38
		Reverse gear	Fast	52
			Slow	27
	cultivating speed (r/m)	Chain box on fast	Fast	553
			Slow	299
		Chain box on slow	Fast	311
			Slow	168
	Blades			Three pieces, three group(2+1)
	Total blades			18 pcs
	cultivating depth (cm)			≥10
cultivating width (cm)			42 - 65	
Working productivity(hm²/h)			≥0.055	
Fuel consumption(kg/hm²)			≤30	

Note:

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

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Problem	Probable cause	Solution
Flange connection leak oil	Steel gasket broken	Change the gasket

4. Walking case has problem

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

5. Other problems

Problem	Probable cause	Solution
Blades broken	Hitting a stone or something hard	Change the blades
Cable broken	Worn out	Change 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

	Fork or gasket worn out	Change the gasket
	Fork pin bent or broken	Change
	Friction disk can't work	Change the friction disk
	Spring disk can't work	Change the spring disk
	Friction disk can't contact with bearing end side	use adjusting gasket
	Clutch broken	Change the clutch
Skid	Spring worn out and can't work	Change the spring
	Fork axle can't turn well	Clean it
	Clutch cable is not fitting well	Adjust the cable properly

3. Transmission box has problem

Problem	Probable cause	Solution
Gears are not functioning properly	Screw and round but at the back of main shaft is loosen.	Assemble main shaft well, and tighten the bolt at back.
Can't turn to needed forward gear	Block worn out	Change
	Driving umbrella gear is loose	Tighten bolts and nuts
	Spring of main shaft invalid	Change
	Main shaft raid, screw of case back cover is loose	Tighten the screw
Reverse gear can't hang on	Reverse fork worn	Change
	Reverse cable can't work well	Adjust or change
	Reverse axle is loose	Tight bolt at back of reverse axle
	Reverse fork block	Clean until it turns well
Reverse gear don't return	Reverse axle is loose and is causing gear block	Tighten bolt at back of reverse axle
	Spring on reverse axle can't work	Change the spring
	Reverse axle bend	Change the reverse axle
Reverse axle is loose	Bolt at back of reverse axle loosen	Tight
	Reverse axle and gear box not fixed well	Fix them properly
Gears make big noise	Umbrella axe, reverse axle bend	Replace
	Gears worn out seriously	Change them
	Umbrella reverse axle can't fixed well	Fix them properly
Main shaft oil leak	Oil plug on main shaft invalid	Change the oil plug
Reverse axle leak oil	O-ring invalid	Change the O-rings
Clutch fork leak oil	O-ring invalid	Change the O-rings
Gear shift axle oil leak	O-ring invalid	Change the O-rings
	Bolt is loose	Tighten the bolt

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Before Getting Started

Thank you for purchasing our Inter-cultivator.

- This manual can guide you to solve the problems when you are installing, manipulating and repairing the machine. With the continuous innovation and improvement of the products, the contents in the instruction manual may differ slightly from the actual situations, your understanding and pardon is highly appreciated. If you find some problems or have some good suggestions, please do not hesitate to contact your dealer.
- 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.

Application

This machine is small, lightweight, multi-functional, and with a high efficiency for cultivation. It can climb hills, run in water, walk over the field ridges and ditches, move freely and change the directions easily, and it is especially applicable to various works in hilly area, dry land, paddy field, orchard, vegetable garden and greenhouse, etc. Cultivating, ditching & ridging, and transport are the machine's basic functions. Moreover, after being equipped with relative devices and tools, it may be used to pump water, spray water and pesticide, reap the crops, generate electricity, fertilizer, implant seeds, threshing, cut tendrils, grind something, etc. The machine has a simple structure, can be easily repaired and its fuel consumption is less. It is your ideal micro agricultural machine.

Safety Information

Safety is very important for you and others. We have written down important safety information in both manual and machine. Please read it carefully. Safety information gives you warning that you may bring potential danger to yourself and others. The key words with "!" are put before every piece of information. These words are "danger, warning, attention". Please pay attention to the meanings of the above-mentioned identifiers.

! Danger: if you don't operate follow those indicated in the manual, serious injuries, even death will be caused.
! Warning: if you don't operate follow those indicated in the manual, device damage and injuries will be caused.
! Attention: if you don't operate follow those indicated in the manual, device damage and injuries may be caused.

Damage prevention

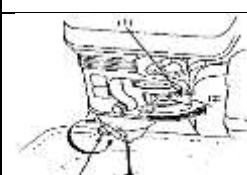
You can see other important information marked with "ATTENTION".
ATTENTION: If you don't operate as those indicated in the manual, device damage will be caused.

5. Long-period storage of rotary cultivator

When rotary cultivator needs be stored for a long period, the following measures should be adopted to prevent tarnishing.

- 5.1 Wash oil stain and clean dust.
- 5.2 Drain lube oil in the gear box and refuel new oil.
- 5.3 Paint pickling oil on non-aluminum parts where there is no paint.
- 5.4 Store cultivator in the dry, safe place where there is enough aeration.
- 5.5 Properly keep the attaching tools, certificates of conformity and instruction.

Troubleshooting

Problem	Probable cause	Solution
When the engine does not start:	Insufficient fuel	Fill the fuel
	Fuel valve is not in the ON position	Bring the fuel valve to ON position
	Engine switch is not in ON position	Bring the engine switch to ON position
	Petrol is not reaching the carburetor	Loosen the drain knob with the fuel valve ON. Fuel should flow freely. Retighten drain knob
	 <ol style="list-style-type: none"> (1) FUEL VALVE (2) ON (3) DRAIN KNOB 	
There is no spark at the spark plug	<ol style="list-style-type: none"> a. Remove the spark plug cap. Clean any dirt from around the spark plug base, and then remove the spark plug. b. Install the spark plug in the plug cap. c. Turn the engine switch on. d. Grounding the side electrode to any engine ground, pull the recoil starter to see if sparks jump across the gap. e. If there is not spark, replace the plug. 	

2. Clutch has problem

Problem	Probable cause	Solution
Can't clutch	Clutch rod broken	Change or repair the clutch rod
	Clutch cable broken	Change the clutch cable

3. Technical maintenance table of mini cultivator

Working interval Maintenance contents	Every day	Work with half load for 8 hours	Work for one month or 20 hours	Work for 3 months or 150 hours	Every year or 1000 hours	Per 2 years or 2000 hours
Check and tighten nuts, bolts	√					
Check and refuel lube	√					
Check and change lube		√(first time)	√(second time)	√(third time or more)		
Check if there is oil leakage	√					
Clean mud, grass and oil stain	√					
Debug malfunction	√					
Adjust operation parts	√					
Gears and bearings					√	

Note: This mark "√" indicates the maintenance contents

4. Long-term storage of the engine

! WARNING : To prevent to be burned or fire hazard, let the engine cool before we put engine indoor.

4.1 Storage preparation

The correct storage preparation is the key of reducing the failures and maintaining a good appearance. In order to start better in next time, please avoid corrosion to impact engine.

4.2 Clean

If engine just stops working, you must cool it for at least half an hour before cleaning.

Clean all external surfaces, the metal surfaces easily rusted are coated with lubricant.

! ATTENTION : The engine cannot be washed with water to prevent water through the air filter and muffler into the cylinder to cause damage to the engine.

4.3 Fuel

During storing, fuel is easily oxidized and deteriorated. Gum deposit in the oil circuit blocks oil pipe, this will cause difficult start. During storing, if the fuel is deteriorated, you must maintain or change carburetor and other circuit components. Therefore, if storage is longer than 30 days, in last work, please let out fuel in carburetor and tank or operate the engine till fuel uses up.

! DANGER : Petrol is flammable, even easily exploded in certain conditions. Smoking, firing or sparking is prohibited in working site.



If mini cultivator is operated follow those indicated in the manual, it will work safely and reliably. Before operating the mini cultivator, please read this manual carefully. Otherwise, injuries and device damage will be caused

Attention

- When starting engine, please turn gear lever to neutral position.
- When the machine is working, please pay attention to safety!
- Be careful about the rotary blades, because they may hurt you!
- Fuel and lube oil must be clear.
- Before shifting the gear, you must disconnect the clutch. When holding the backshift bar, the gear lever must be put in the neutral position.
- Fuel is flammable, you must pay attention to fire and exploding.

As the machine is always improved, photos or illustrations shown here may slightly vary with the actual machine

1. Training

- Carefully read this manual, fully know all the controlling functions and the proper operation, learn how to quickly stop and disport the cultivator.
- Children are not allowed to use cultivator. And adults who don't learn this manual are also not allowed to use this cultivator.
- Keep working area without other people, especially children and pets.

2. Preparation

- Check working area, and move away all the obstacles.
- Disengage all the clutches and place gear to neutral position before starting engine.
- Do not use cultivator without suitable clothes and skid-proof shoes.
- Carefully deal with fuel which is highly flammable.
 - Use suitable container to store fuel.
 - Do not add fuel when engine is working or hot.
 - Always add oil outdoor. Never fill oil indoors.
 - Wrest on fuel tank cap, and clean out spilling fuel.
- When engine is working, do not do any adjustment which are not allowed.
- Wearing eye protect glasses when preparation, working and servicing.

3. Operate

- Never use hand or foot to touch rotary blades when it is working
- When go across cobbled road, crosswalk, and road, pay more attention to the latent danger. Do not let people ride on the cultivator.
- If cultivator bumps something, stop to check. If it is broken, repair it and then start it.
- Be careful when working, do not fall or slip.
- If cultivator has abnormal noise, it means that it may have problems. Stop the cultivator to check reason.
- Stop engine before leaving, cleaning blades, servicing, adjusting and checking.
- When the cultivator is not in use, shift gear to the neutral gear and stop the engine.
- Before checking, cleaning and repairing the cultivator, stop engine and confirm if every

part is in stop state.

- i). Do not use the cultivator indoors, because exhaust is poisonous.
- j). Do not use the cultivator when there isn't proper equipment.
- k). Keep away from children and pets.
- l). Do not let cultivator over load because of deep cultivating depth and fast speed.
- m). Do not let cultivator run on the slippery road. Be careful when moving in reverse direction.
- n). Do not let bystanders come near the cultivator.
- o). Additional equipment provided by manufacture only can be used.
- p). Do not use cultivator when it is dark.
- q). When work on the hard land, blades may hitch the land and push cultivator forward. In this condition, release the cultivator and let it go itself, do not try to control it. Or else, there will be danger.
- r). Do not work on the sharp slope.
- s). When using the cultivator on slope, be careful to not let cultivator fall.

4. Service and store

- a). Keep cultivator and its additional equipment in well working condition.
- b). Periodically check engine bolts and other bolts, make sure they are fixed well, to ensure cultivator in good working condition.
- c). Cultivator should be stored indoor and away from fire. Stop and cool the engine before storage.
- d). If cultivator needs to be stored for a long time, this manual should also be preserved along with.
- e). Do not try to repair the cultivator without proper knowledge, and proper tools.

Maintenance & Service

During the working period of the Inter-cultivator, due to the changing running speeds, abrasion and varying loads, phenomena of bolts loosening and parts wearing are inevitable which in turn may lead to the malfunction of the system, abnormalities of clearances, declination of engine power, more oil consumption, malfunction of each part, more failures of the machine, and the problems affect the normal use of the Inter-cultivator. To reduce chances of troubles, it is better to do a strict and regular maintenance job which emphasizes precautionary measures to keep a good performance and extend the machine's working life.

1. Running-in of rotary cultivator

If cultivator is new or just repaired, it should work without load for one hour. After the mini cultivator works with light load for five hours, all oil in gear box and crankcase should be drained immediately. Afterwards, you should refuel clean oil adequately, run the mini cultivator at idle speed for 3 to 5 minutes to wash it, then drain oil completely. Please refuel oil and carry out running-in for 4 hours according to the procedure given earlier. By doing so, the cultivator will be ready to work in normal condition.

2. Technical maintenance of rotary cultivator

2.1 Per shift maintenance (before and after work):

- 1) Hear and check if there is malfunction for every part (such as abnormal noise, overheat, loose screw).
- 2) Check if there is oil leakage from the engine, gear box and running gear.
- 3) Check if the oil level is in dipstick scale.
- 4) Clean the mud, grass and oil stain regularly.
- 5) Daily record.

2.2 Primary maintenance (per 150 hours)

- 1) Carry out all maintenance works of per shift.
- 2) Wash gearbox and change lube oil.
- 3) Check and adjust clutch unit, shift unit and reverse gear unit.

2.3 Secondary maintenance (per 800 hours)

- 1) Carry out all maintenance works per 150 working hours.
- 2) Check all gears and bearings. If they are fretted severely, please replace them.
- 3) Check other parts, such as rotary blades or bolts. If there is damage, please replace them.

2.4 Technical inspection (per 1500-2000 hours)

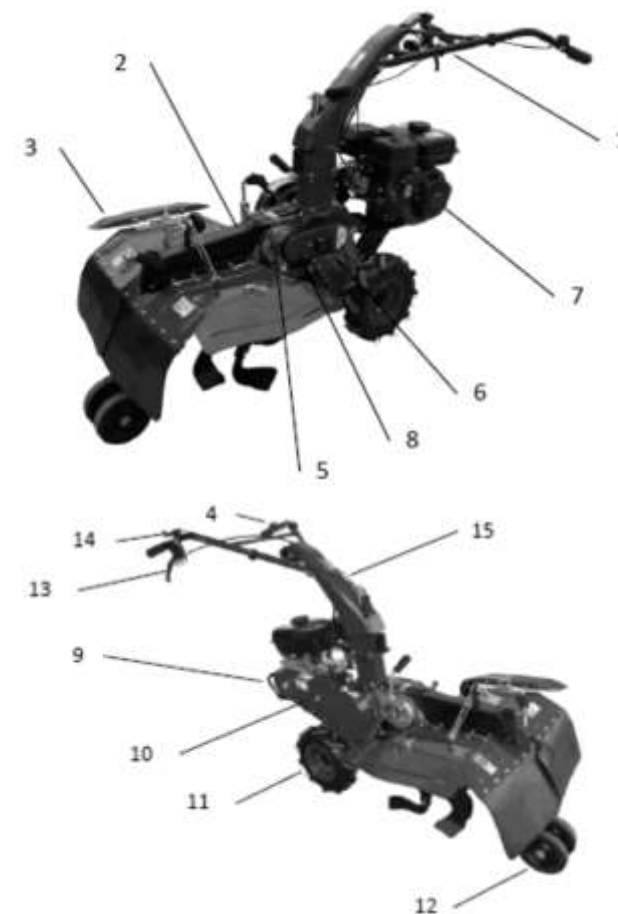
- 1) Disassemble, clear or check the whole machine in the specific maintenance station. If the accessories are severely fretted, they must be changed or repaired.
- 2) Ask experts to check the clutch.

- Do check air intake filter oil level
- Do check engine oil and gear oil levels
- Do check for any leakage
- Do check decompress knob before starting
- Do check if the gear is in neutral position before starting
- Do use recommended attachments only
- Do maintain distance (1ft) from buildings and other equipment's when operating, to avoid any accidents
- Keep the machine away from flammable materials
- Keep the machine away from children and pets to avoid any injuries or accidents.
- Only operator with knowledge of machine and its operations must be permitted to operate Agricultural Inter-Cultivator
- Must stop the engine before refueling, and refuel in a place with good ventilation.
- Must clean and spilled or over flown fuel of the Agricultural Inter-cultivator
- Let Agricultural Inter-Cultivator cool down before storing indoors.

DON'TS...

- Don't overfill the tank with fuel, but also never let fuel tank run out empty
- Don't use adulterated fuel
- Do not work on excessively steep slopes
- Do not change the engine governor setting or over speed the engine
- Do not put hands or feet near or under rotating parts.
- Don't smoke or allow flame or spark where Agricultural Inter-cultivator is refueled or where fuel is stored
- Don't inhale exhaust for it can contain poisonous carbon monoxide
- Don't run Agricultural Inter-cultivator in a place without adequate ventilation
- Don't lean/tilt Diesel tank more than 20°, otherwise fuel may spill
- Don't cover Agricultural Inter-cultivator top so as to avoid fire
- Don't touch muffler/exhaust, as it gets hot during operating and stays hot for some time even after stopping
- Don't delay on service schedules
- Don't Operate Diesel Hal continuously more than 2hrs.30mins for any given operation (Give a break of 20mins)
- Don't make any alterations in Design, Operations and Functioning of Agricultural Inter-cultivator other than Company's recommendation
- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.

Overview-KK-IC-225P



- | | |
|---------------------------------|------------------------|
| 1. Hand control Assy | 9. Bumper |
| 2. Trailer | 10. Belt cover |
| 3. Mud fender | 11. Front tire |
| 4. Rotary cultivating equipment | 12. Rear wheel |
| 5. Cultivating box Assy | 13. Clutch handle |
| 6. Gear box Assy | 14. Throttle handlebar |
| 7. Engine | 15. Steering column |
| 8. Chain transmission Assy | |

Applicable Scope

Rotary Cultivating: Applicable to garden, tea plantation, orchard, sugarcane, corn land, vegetables land, greenhouse etc., for rotary assignments.

Assemble cultivating blades on output shaft of cultivating gear box gear, and fix it with pin and clip. Finally we change rear wheel to resistance rod to do cultivating work as given below.

Rotary cultivating device mode	(Two + One) group
	3 pcs
Rotary blades	3×6
Rotary cultivating scope	420-650mm

Ditching:

Take away resistance rod, install rear wheels, change cultivating blades into ditching blades (look at table 3), and adjust the height of rear wheel. Finally we can do ditching work

Ditching device	Standard accessories	Optional accessories	
	One group	One group	One group
	5 pcs	4 pcs	6 pcs
Rotary blades	5×2	4×2	4×2
Rotary cultivating scope	290-320mm	210-240mm	440-470mm

Multi- functional work: Take away rear wheels or resistance rod, match the relative tools and accessories and carry out multifunctional work, such as covering mulch, reaping, and chemical spraying

Assembly

Unpacking Assembly

1. Take out rotary cultivator and accessories.
2. Fix the body of rotary cultivator, install walking wheels, then use pin 8×40 and clip to fix them. Install rear wheels in the appropriate height, then use lock bolt to fix it.
3. Cultivating/ditching blades installation: install cultivating blades or ditching blades on both sides of output shaft, edge towards forward, and then use pin M8×40 and clip to fix it.
4. Mud fender (or narrow mud fender) and side mud fender installation: Install left and right mud fenders on the cultivator, fixing with bolt M6×12 (8 pcs) and locknut M6 (8 pcs), and screw up by spanner. The adjustable part of mud fender place is as the picture. Then install side mud fender on both sides and screw up small handles.
5. Handle bar installation: assemble handle bar components on cultivator. The handle bar frame position is symmetrical accordingly for the cultivator, then use the locked pin to fix the frame.

Installation and adjustment of cables

Adjustment of clutch cable (Look at picture 1)

1. Unlock nuts on the screw rod.

Run engine for 5mins to warm up

Note:

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

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

Note

- Be sure to use the speed lever to adjust the speed of engine.
- Do not loosen the speed limit screw and fuel control screw; otherwise the speed and output of the engine will be abnormal.

Running

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

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

Methods of Starting the Agricultural Mini-cultivator

Starting by Hand:

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

Note:

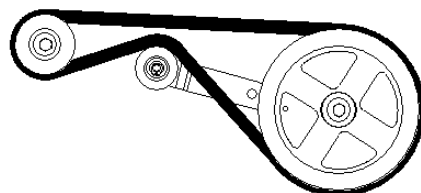
Tighten the refuel screw on the cylinder cover except filling oil in order to avoid rain and dust to get into the engine and causing damage to the engine.

Safety Instructions:

DO'S

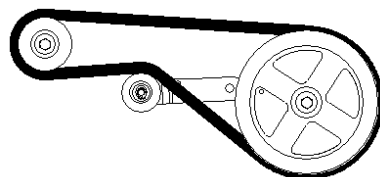
- Do visual check every time before starting,
- Keep Agricultural Inter-cultivator Clean
- Do use recommended Fuel and Lubricants only
- Do check the fuel level

3.1 Normal range of belt tension degree is 25mm or so, when we loosen brake handle, tension pulley moves upward to press tightly belt and transmission begins to work, when we clench clutch handle, tension pulley moves down to make belt loosen, engine stops to input transmission to gear box.



Loosing condition of clutch handlebar

3.2 If belt tension degree is not in the normal range, it's necessary to adjust. To loosen the four fixed bolts of the engine, if the belt is too loose, we make the engine move forward, if the belt is too tight, we make the engine move backward, until tension level is in the normal range. Tighten the four fixed bolts of the engine.



Clenching condition of clutch handlebar

Attentions of Operating Engine:

1. Break-In Of New Engine:

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

2. Running In For 5mins After First Start:

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

3. Avoid Running With Overload:

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

4. Change Engine Oil Regularly:

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

Oil Bath Type Air Filter:

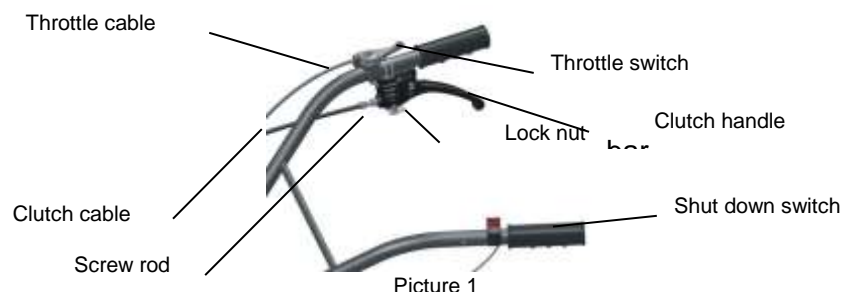
1. Check the oil level before operating.
2. Fill oil up to upper limit. If oil is dirty, change it. Please use diesel to clean oil bath element frequently, then dip the element in the oil and squeeze out extra.

Running

WARNING

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

2. Instantaneously rotate the screw rod to show the shortest part of the handle bar.
3. Connect the clutch cable head into clutch plug behind the gear box assy, thread the cable into axis pin M6×20, and fix with jump ring.
4. Properly pull down the clutch cable and fix the clutch cable head to handle bar bottom.
5. Rotate out the screw rod and clip it repeatedly, unlock the clutch handlebar until spring force of clutch can reset the bar, finally fasten the nuts.



Operation

Before leaving the factory, manufacturer has already adjusted the cultivator. But users should check and adjust again before using.

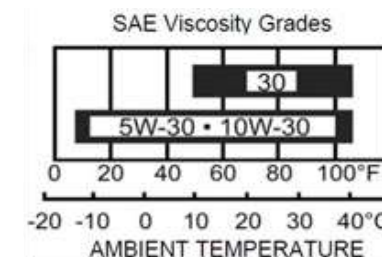
Daily check

A. Check engine oil

! WARNING: Engine oil should be 0.6L when it is in right condition. Engine will be seriously damaged if oil is low.

- Make engine horizontal.
- Take out oil sticker, and clean it(Look at picture3)
- Insert oil sticker into filling hole, but don't screw on.
- Take out oil sticker, check oil level. Oil level is right when in the marked range of oil sticker.
- SAE 10W-30 oil is recommended for the usual temperature sly damaged if oil is low.

! WARNING: Please use clean, good quality four stroke engine oil. If use dirty oil, engine usage time may be shorter.



B. Check oil in gear box and cultivating box.

- Set rotary cultivator horizontal, screw out oil bolt.
- Usually the oil amount in the gear box should be about 0.5L and cultivator box should be about 1.2L.

- C. Place the shift lever of gear box and cultivating box in neutral position.
D. Check air cleaner.

! WARNING: Don't use engine without air cleaner, if so, engine will be abraded.

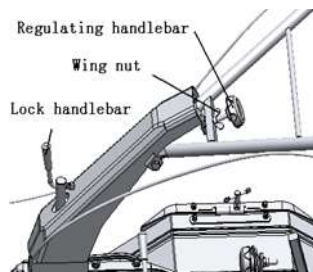
- Add oil into air cleaner: disassemble the cover, then add about 0.1L oil number 20.

! WARNING: Oil level should not exceed the mark.

Adjustments

1.1 Adjustment of handle bar height.

- Loosen the regulating handle, adjust the handle frame to suitable position, screw into the regulating handle, and tighten the wing nut.
- Loosen the locked handlebar and standpipe, standpipe and handle frame can be rotated in 330 °, which has 18 positions. Then tighten the locked handle, operate the rotary cultivator through adapting to different position.



1.2 Adjustment of cultivating depth

- Adjust resistance rod downwards, cultivating depth will increase. Adjust resistance rod upwards, cultivating depth will decrease.

1.3 Usage and adjustment of clutch.

- Control power output of engine by clutch.
- When clutch handle is loosen, clutch is opened, the engine stops inputting power to cultivator, cultivator blades stop rotating (Look at picture 5)
- When we clench the handle lock, clutch is connected. In this condition, power is transmitted to cultivator, blades begin to work. (Look at picture 6)



Picture 5



Picture 6

1.4 Gear Choice

Gear box has 5 shifts, including neutral position. The gears are optional as given below.

Gear box					Cultivating box(Using with chain box together)				
Transmission speed(km/h)					Blades rotary speed (rpm)				
Forward		Stop	Back		Fast		Stop	Slow	
Slow	Fast	Neutral	Slow	Fast	High	Low	Neutral	High	Low
2.55	4.83		1.82	3.45	553	299		311	168

Changing the gear

- Counterclockwise turn the throttle switch to the right position (mini).
- Clench clutch handlebar, and make clutch open.
- Change shift lever to the gear you need.
- Loosen clutch handlebar, make machine into the changed gear, then open the throttle to increase the speed into the work.
- If necessary, we may start engine to check if clutch is working.

2 Pay attention to the following while using rotary cultivator

- 2.1 When using cultivator, you should pay attention to the working situation and the sound, check the connection. If there is abnormal situation, you should stop the rotary cultivator and check.
- 2.2 Never carry out work in heavy load condition if cultivator has not been used for some time, especially for the new ones or the repaired ones.
- 2.3 Pay attention to the oil level of diesel engine and gear box. Please refuel oil in insufficient condition.
- 2.4 Never cool the diesel engine in the way of water-pouring.
- 2.5 Prevent rotary cultivator from falling down when cultivating.
- 2.6 Never install mini cultivator with rotary blades work on sand or stone to avoid damaging blades.
- 2.7 After cultivating, pay attention to clear away dirtiness in the rotary cultivator, such as mud, grass and oil stain.
- 2.8 Frequently wash the sponge in the air filter and change oil more often.
- 2.9 Ridging or weeding: Assemble ridging or weeding blades to the cultivating box, turn handlebar to the direct of engine. When cultivating, cultivating box is front and gear box is rear. According to the falling soil position, we adjust mud fender or side mud fender.

3. Adjustment of belt tension