

sProduct	Agricultural Inter-Cultivator	KisanKraft Invoice Date	
Brand	KisanKraft	KisanKraft Invoice No.	
Model	<input type="checkbox"/> KK-IC-300D <input type="checkbox"/> KK-IC-357D <input type="checkbox"/> KK-IC-307D <input type="checkbox"/> KK-CRT-550D <input type="checkbox"/> KK-IC-350D		
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	

Warranty Policy

What is covered: KisanKraft Limited and its manufacturers warrant this product to be free from defects in material or workmanship. All parts defective in material and workmanship are covered.

This warranty will only cover defects arising under normal usage.

This warranty is limited to repair or replacement by KisanKraft Limited or its manufacturers of such parts as appear to KisanKraft or its manufacturers, upon inspection, to be defective in material and/or workmanship. KisanKraft or its manufacturers make no warranty with respect to items not manufactured or sold by them. No onsite warranty is provided by KisanKraft Limited or its manufacturers. Defective items must be brought/sent to our Authorized Dealer or KisanKraft Limited's office for service.

What is not covered: The *warranty shall become null and void* and neither KisanKraft Limited nor any of its manufacturers, nor its authorized dealers assumes any responsibility, if the failure was caused by the following:

(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 (8) Any modification to the product whatsoever.

Important: (1) Normal maintenance and adjustments to the product is the responsibility of the customer. (2) Normal wear and tear are not covered under warranty. (3) Rubber/plastic parts and consumables such as blades, clutch and clutch-bell, sparkplugs, nylon line, air-filters, fuel-filters, oil seals and gaskets etc. are not covered under the warranty. (4) Electrical Motor, Electrical Parts, Battery Etc. are not covered under the warranty.

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.

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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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After-sales Service (Including Warranty): KisanKraft Limited does not sell directly to consumers. All sales or supplies are made through Authorized Dealers. It is the responsibility of the Authorized Dealer to provide all after-sales service to consumers. Any warranty claim should be raised by dealer to KisanKraft Limited as per warranty policy.

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

Notes:

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User Manual



KK-IC-350D



KK-IC-300D



KK-IC-357D



KK-IC-307D

KisanKraft Limited

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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 Intercultivator and remain with it if it is resold.

Application

This machine is small, lightweight, multi-functional, and with a high efficiency for Intercultural/Weeding Operations. 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. Intercultural/Weeding Operations, 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.

NOTE: KK-IC-350D and KK-CRT-550D have similar function. Additionally, KK-IC-350D can work as a DITCHER.

Safety Instructions

- Read the instructions carefully. Be familiar with the controls and the proper use of the equipment.
- Never allow children or people unfamiliar with these instructions to use the machine.
- Never work while people, especially children, or pets are nearby.
- Operator or owner is responsible for accidents or hazards to other people or their property.

Before starting the machine:

- Ensure sufficient engine oil.
- Press clutch during gear shifting.
- Load after idling the machine for 5 minutes.
- Close the choke for cold start
- Keep the choke half open for hot start.
- Before starting the machine, set shifting bar to the neutral position.
- When the machine is working, pay attention to the safety!
- Be careful not to be hurt by the rotary blades!
- While grasping the reverse handle, the shifting bar must be set to the neutral position.
- Fuel and lubricant must be clean.

- Clutch must be broken off when changing the shift.
- Please read the contents of nameplate on the handle bar carefully before using the machine.
- Must install the safety protecting board on the machine before using machine or after maintenance.

- Muffler is a high temperature spare part, do not touch the Inter-cultivator in work or out of work freshly.

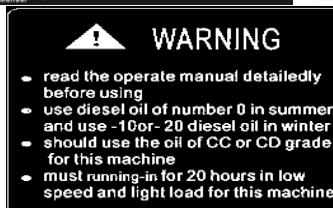
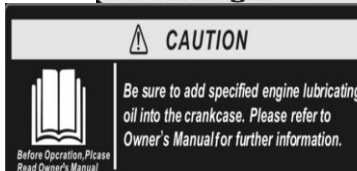
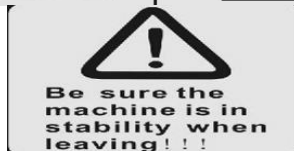
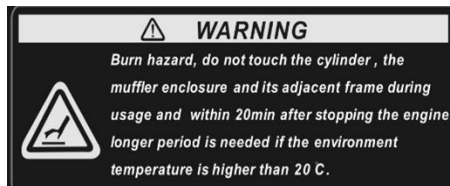
- When the Inter-cultivator is working, keep an eye on the rotary parts, do not be too close to the machine to avoid being hurt by the rotary blades.

- Keep the components of oil box away from fire and smoke.

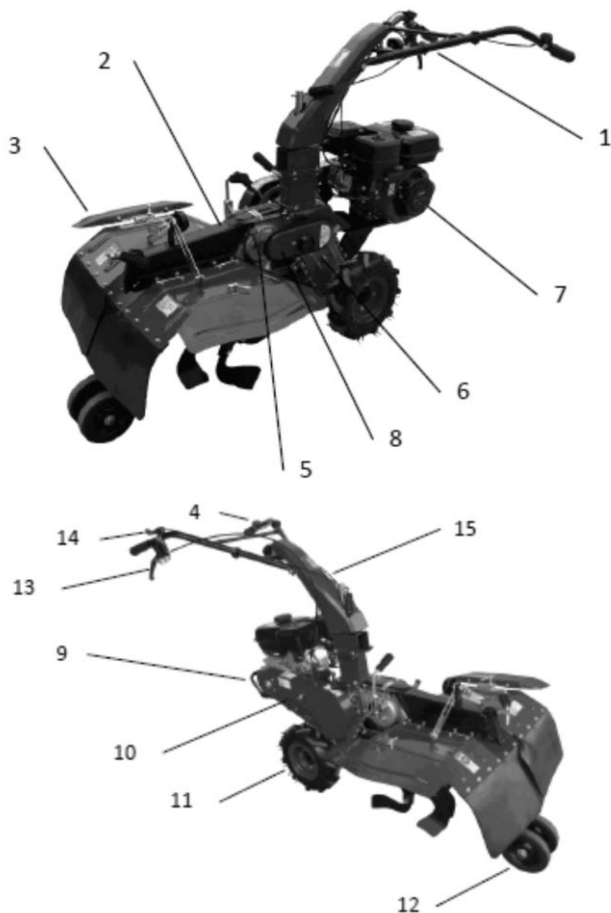
- Keep this machine stable before use and read the instruction carefully

- Please refuel on time

- Please pay attention to warning signs

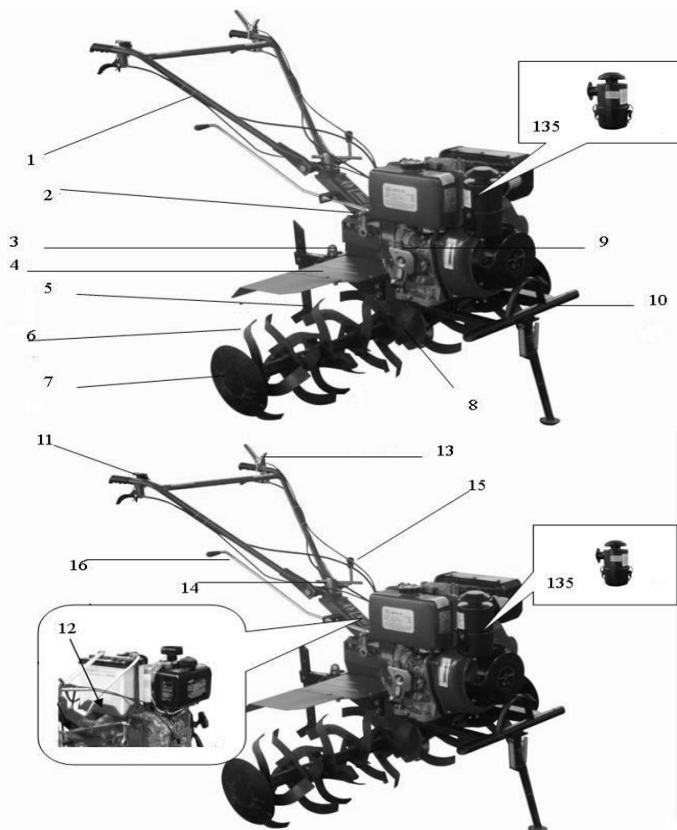


Overview-KK-IC-350D/357D & KK-CRT-550D



- | | |
|--|------------------------|
| 1. Hand control Assy | 9. Bumper |
| 2. Trailer | 10. Belt cover |
| 3. Mud fender | 11. Front tire |
| 4. Intercultivator/Weeder | 12. Rear wheel |
| 5. Intercultural/Weeding Operations box Assy | 13. Clutch handle |
| 6. Gear box Assy | 14. Throttle handlebar |
| 7. Diesel engine | 15. Steering column |
| 8. Chain transmission Assy | |

Overview-KK-IC-300D /307D



- | | |
|------------------------------|-------------------------------------|
| 1. Handle Bar | 9. Diesel Engine |
| 2. Gear-box Assy. | 10. Bumper |
| 3. Adjustment Screw | 11. Throttle Switch |
| 4. Fender | 12. Battery base |
| 5. Deep Furrowing Resistance | 13. Safety Device (Dead-man Handle) |
| 6. Rotary Blade | 14. Locked Handle (Up & Down) |
| 7. Side Disc | 15. Locked handle (left & right) |
| 8. Stepped Box Assy. | 16. Shifting Bar |

Scope- KK-IC-350D/357D & KK-CRT-550D

Intercultivator/Weeder:

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

Intercultivator/Weeder device mode	(Two + One) group
Rotary blades	3 pcs
Intercultivator/Weeder scope	3x6
	420-650mm

Ditching:

Take away resistance rod, install rear wheels, change Intercultural/Weeding Operations 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
Rotary blades	5 pcs	4 pcs	6 pcs
Intercultivator/Weeder scope	5x2	4x2	4x2
	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

Scope- KK-IC-300D / 307D

Intercultural/Weeding Operations: Applicable to garden, tea plantation, orchard, sugarcane, corn land, vegetables land, greenhouse etc., for rotary assignments.

Fix the tines onto the left and right side of the transmission shaft of the running part of the Inter-cultivator, then use two M8x55 screw bolts for axial positioning. After that, the machine can start Intercultural/Weeding Operations. (See following table 2 and figures 2, 3)

Form of Tines	Four groups		Five groups	
	3 blades	4 blades	3 blades	4 blades
No. of blades	3x8	4x8	3x10	4x10
Width of Intercultural/Weeding Operations (mm)	1050	1050	1350	1350
Applicable Soil	Paddy field without too much water and with Earth of high moisture	Hard earth	Wet earth after rain	Dry land or with long stump from long-stem. Crop.

Figure 2. Intercultural/Weeding Operations device



Figure 3. Ditching device



Ditching & Ridging: Knock down the adjustment screw before the ditcher is fixed. Subject to the adjustment of the width and height for ditcher, the ditching can be conducted. (See figure 3)

Short Distance Transport: When fixing the forearm of the wagon box on the trailer and wheels on the transmission shaft of the running part, the machine can be used for transportation. The rated load is 250kg, under normal rotation speed of the diesel engine, speed of the fast shift is about 10km/h and that of the slow shift is about 5 km/h.

Multi-Functional Working: Dismount protection cover of the gear-box (No.2 in Figure 1), unscrew the bolts away from the rear part of the main shaft, and take the cover for keys out of the shaft, fasten the self-contained belt pulley or coupling onto the gear-box's main shaft's rear part with screws. Type A of common V belt is adopted for belt pulley's cross section. Rated rpm of the belt pulley is 3000 rpm. When the corresponding devices are equipped, pumping water, spraying, threshing, reaping, generating electricity, etc. are realized. (Above additional implements are in exploration process.)

Assembly - KK-IC-350D//357D & KK-CRT-550D

Note: Two gear boxes are provided. One for tyre rotation and another one for tines rotation. Both the gear boxes have two speeds High and low. Air filter is provided with 2-stage (primary and secondary) filtration.

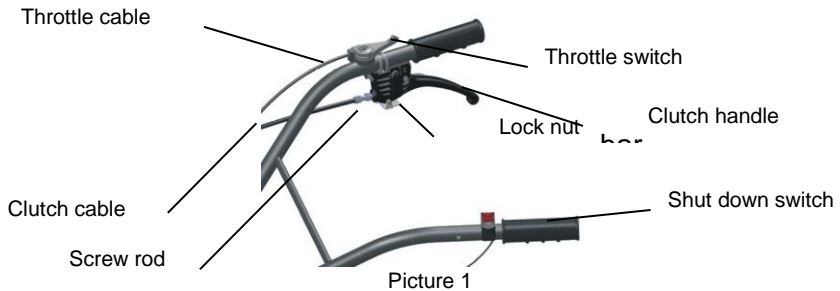
Unpacking Assembly

1. Take out Intercultivator and accessories.
2. Fix the body of Intercultivator, 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. Intercultural/Weeding Operations/ditching blades installation: install Intercultural/Weeding Operations 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 Intercultivator, 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 Intercultivator. The handle bar frame position is symmetrical accordingly for the Intercultivator, then use the locked pin to fix the frame.

Installation and adjustment of cables

Adjustment of clutch cable (Look at picture 1)

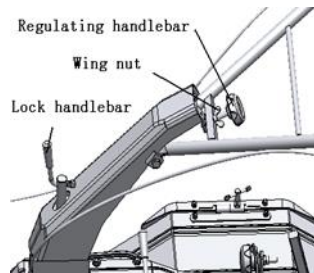
1. Unlock nuts on the screw rod.
2. Instantaneously rotate the screw rod to show the shortest part of the handle bar.
3. Connect the clutch cable head into clutch plug behind the gear box assy, thread the cable into axis pin M6×20, and fix with jump ring.
4. Properly pull down the clutch cable and fix 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.



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 Intercultivator through adapting to different position.



1.2 Adjustment of Intercultural/Weeding Operations depth

- Adjust resistance rod downwards, Intercultural/Weeding Operations depth will increase. Adjust resistance rod upwards, Intercultural/Weeding Operations 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 Intercultivator, Intercultivator blades stop rotating (Look at picture 5)
- When we clench the handle lock, clutch is connected. In this condition, power is transmitted to Intercultivator, 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					Intercultural/Weeding Operations 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

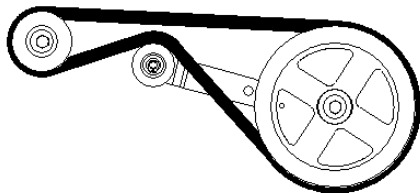
- Counterclockwise turn the throttle switch to the right position (mini).
- Clench clutch handlebar, and make clutch open.
- Change shift lever to the gear you need.
- Loosen clutch handlebar, make machine into the changed gear, then open the throttle to increase the speed into the work.
- If necessary,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

2 Pay attention to the following while using Intercultivator

- 2.1 When using Intercultivator , you should pay attention to the working situation and the sound, check the connection. If there is abnormal situation, you should stop the Intercultivator and check.
- 2.2 Never carry out work in heavy load condition if Intercultivator 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 Intercultivator from falling down when Intercultural/Weeding Operations.
- 2.6 Never install mini Intercultivator with rotary blades work on sand or stone to avoid damaging blades.
- 2.7 After Intercultural/Weeding Operations, pay attention to clear away dirtiness in the Intercultivator , 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 Intercultural/Weeding Operations box, turn handlebar to the direct of engine. When Intercultural/Weeding Operations, Intercultural/Weeding Operations box is front and gear box is rear. According to the falling soil position, we adjust mud fender or side mud fender.

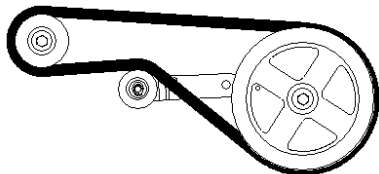
3. Adjustment of belt tension

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.



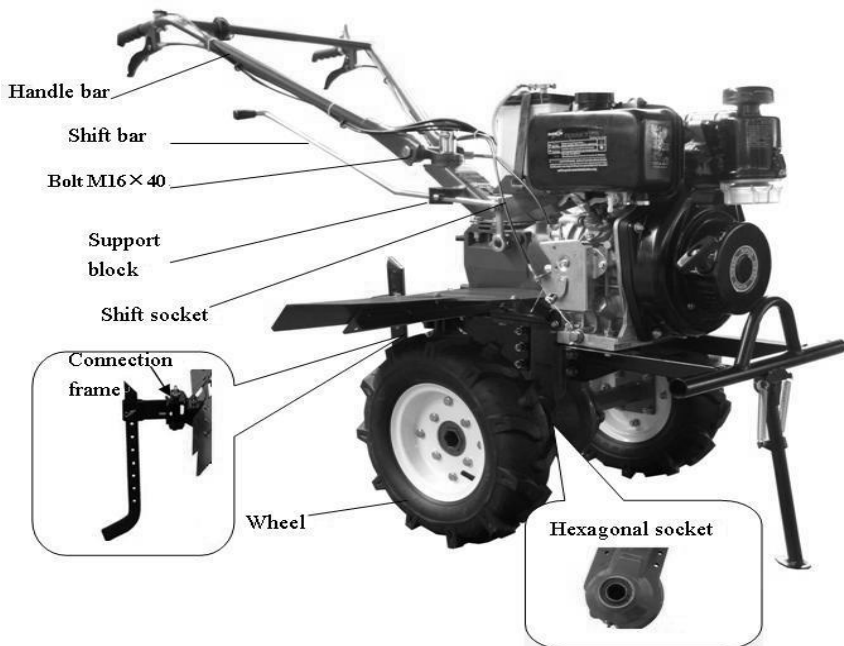
Loosing condition of clutch handlebar

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.



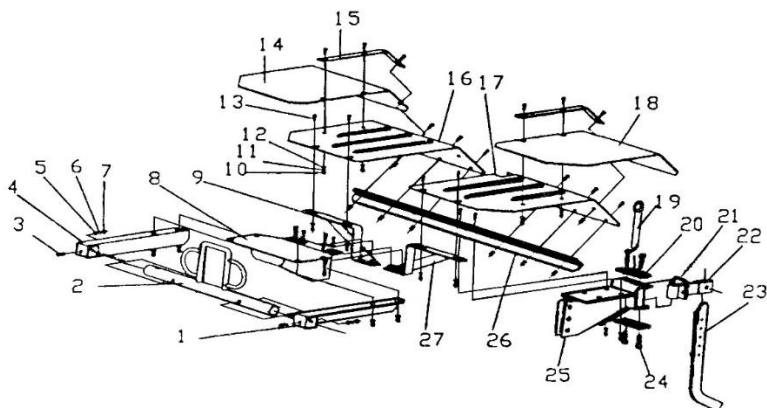
Clenching condition of clutch handlebar

Assembly -IC-300D / 307D



1. Fix the main machine; insert the hexagonal output shaft onto stepped box's output casing's hexagonal hole.
2. Fix the hexagonal stop casing onto the hexagonal output shaft with M6x6 socket head screws, and make sure the hexagonal shaft does not move axially.
3. **Wheel fixing:** fix the wheels at the two sides of the Hexagonal output shaft, and fix them with two M8x55 bolts and M8 nuts.
4. **Trailer fixing:** Fix the link group onto the trailer, use the link shaft assembly for connection, insert the split pin $\phi 3 \times 26$ and insert the velocity adjustment screw into square groove of the link group, and fix it with M8x55 bolts and nuts.
5. **Handle bar fixing:** Two gear discs of the handle bar support aim at the discs of the handle bar support base, and adjust the positions. Fix them with M16x140 bolts, flat gasket 16 and spring gasket 16.
6. **Shifting bar assembly:** Get the shifting bar through the groove of shift support in the handle bar support base, and insert it into the hole of the shift casing, then fix it with split pin $\phi 3.2 \times 16$. Set the shifting bar in neutral position.

Assembly drawing of safety protection guard installation.



- | | |
|---------------------------------------|--------------------------------------|
| 1. Bracket of collision bumper(left) | 15. Fifty of safety protection guard |
| 2. Bracket of collision bumper(front) | 16. Safety protection guard(right) |
| 3. Bolt m8 (gb5781-86) | 17. Safety protection guard(left) |
| 4. Bracket of collision bumper(right) | 18. Fender for paddy field(left) |
| 5. Nut m8(gb41-86) | 19. Dowel |
| 6. Spring washer $\phi 8$ (gb93-87) | 20. Connecting plate |
| 7. Washer $\phi 8$ (gb95-85) | 21. Bolt m8x50(gb5781-86) |
| 8. Stand (diesel) | 22. Connector jointing assembly |
| 9. Bracket(right) | 23. Deep furrowing resistance stick |
| 10. Nut m6(gb41-86) | 24. Bolt m8x25(gb5781-86) |
| 11. Spring washer $\phi 6$ (gb93-87) | 25. Bulling set (trough comp 16mm) |
| 12. Washer $\phi 6$ (gb95-85) | 26. Bracket of fender comp |
| 13. Bolt m6x10(gb5781-86) | 27. Bracket (left) |
| 14. Fender for paddy field (right) | |

ATTENTION: After maintenance the safety protection guard installment must be fixed on the Inter-cultivator wholly.

Installation and Adjustment for cable: Please See Figure 5 and 6 below.

1. Unscrew the locknut of the tie rod.
2. Spin the tie rod clockwise until the exposed handle support is the shortest.
3. Get the joint of cable into the clutch wire socket of rear part of the gear-box assembly, and ensure the joint of cable goes into the hole of the socket.
4. Get the wire into the M8 hole on base of the clutch fork arm, properly press the fork arm of the clutch, and put the joint of cable into the wire socket.
5. Unscrew the tie rod, grasp and loosen the clutch handle until the spring force in the clutch can reset the handle, then screw the locknut.

Figure 5

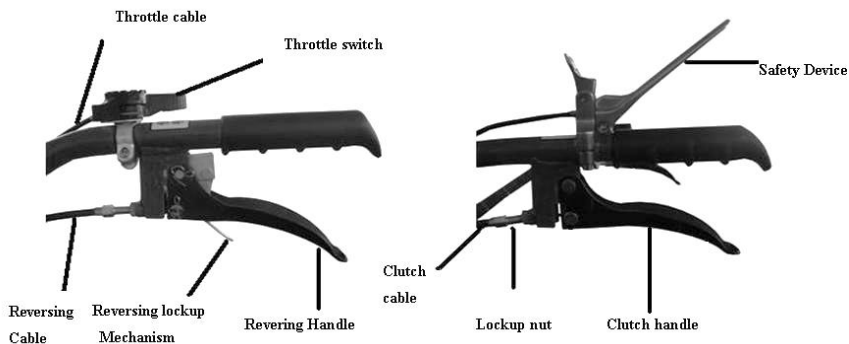
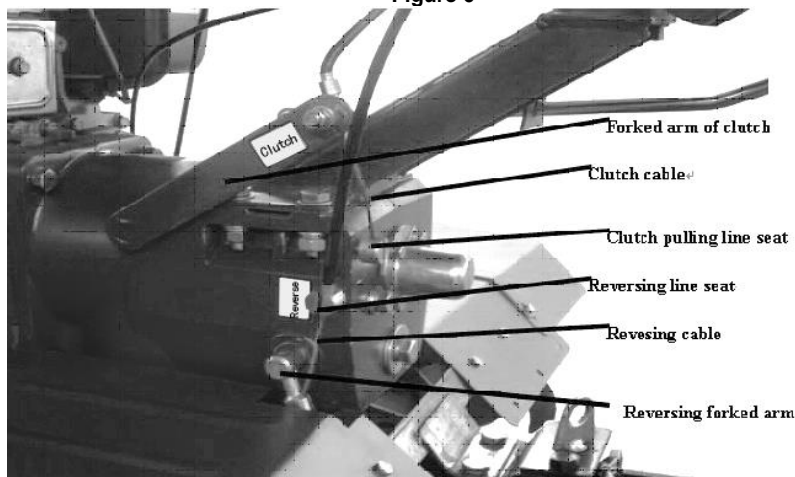


Figure 6



Adjustment of the reversing gear cable: (See Figure 5 and 6)

1. Unscrew the locknut of the tie rod.
2. Spin the tie rod clockwise until the bare handle support is the shortest.
3. Get the cable into the reversing fork shaft besides the gear-box, and ensure the joint of cable goes into the hole of the fork shaft.
4. Properly pull the reversing fork shaft counterclockwise, get the cable into the narrow gap of the reversing wire socket besides the gear-box, and ensure the pipe head goes into the hole of the wire socket.
5. Unscrew the tie rod, grasp and loosen the clutch handle until the spring force in the clutch can reset the handle, then screw the locknut.

Adjustment of the throttle cable:

(See Figure 7)

- Shift the throttle switch clockwise to minimum positioning.
- Get wire of the throttle cable into the threading base and firm base on
- Top of the throttle adjustment board of the diesel engine.
- Tighten the wire, screw the binding bolts on the firm base.
- Adjust the throttle switch repeatedly until the throttle handle on the oil valve adjustment board can reach the maximum and minimum position.

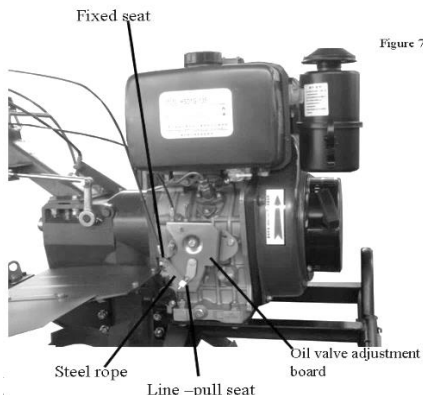


Figure 7

Checks and Refueling:

1. Check whether all the connection bolts are tight or not, and fix the connection bolts according to the moment of force listed in table 3. (Refer to the instruction manual for diesel engine for the screwing moment of force bolt and nut respectively)

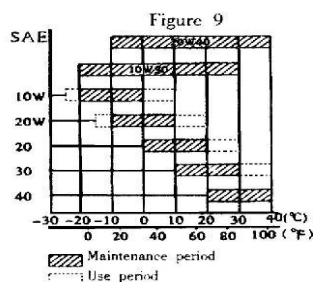
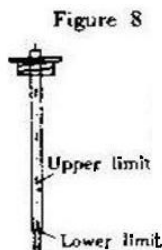
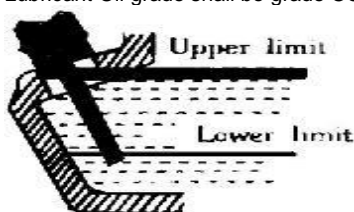
Name of parts	Moment of force (N.M)
Flange and the diesel engine	20-25
Flange and the gear-box	35-40
Binding bolts of end of driving shaft of gear-box	10-12
Binding bolts of reversing gear shaft of gear-box	26-40
Binding bolts between engine support and traveling mechanism	35-40
Binding bolts of cover of the traveling mechanism	10.6-15
Binding bolts of trailer of the traveling mechanism	50-60
Connection bolts between traveling mechanism and gear-box	35-40
Trailer unit	45-60
Set bolts of the diesel engine base	35-40
Set bolts of the handle support base	35-40

2. Check each handle of the manipulation system (throttle switch, clutch, shifting bar and reversing bar) to see whether they can move freely or not. If they are out of the right positions, make them at the right positions.
3. Pull shift bar of the gear-box to the neutral position.

4. Refilling the engine oil:
 - Refill the SAE10W-40 lubricant into the crankcase of
 - The diesel engine. See Figure 9 for details Make the whole machine stable and horizontal, and refilling 20 # lubricant engine oil into the gear-box from oil hole at the top of the gear-box .when check the oil level, put the oil dipstick into the oil. (Note: not to turn the dipstick around), the oil level should be between the two limits of the oil dipstick. (refer to figure 8)

Select the appropriate lubricant for the diesel engine according to the environmental temperature. (See figure 9).

Fill in machine oil when diesel engine is placed level, and checking the oil level only needs a poke by dipstick rather than a rotation of dipstick. Lubricant Oil grade shall be grade CC or CD.



5. Knock down the lower cover of the air cleaner, refill about 0.1 liter 20# engine oil into the air cleaner.

Important Note: Do not exceed the mark when refilling.

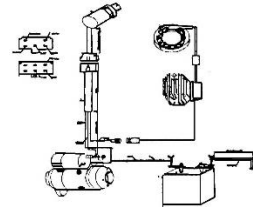
Connection of Auxiliary Devices & Tools

1. **When Intercultural/Weeding Operations is needed:** Knock down the wheels, fix the hexagonal union of the Intercultural/Weeding Operations device onto two ends of the hexagonal shaft of the running part, and axially fix them with M8x55 bolt. Note: Intercultural/Weeding Operations blades are divided into two groups, namely, the left and the right. Fixing the blades should guarantee that when the machine is running, the blade edge should work first. After fixing the blades, also fix the left and right protection board for safety purpose. Depth of the Intercultural/Weeding Operations can be realized by adjusting height of the velocity adjustment screw and angles between the lever and the ground (refer to table 4).
2. **Intercultural/Weeding Operations of paddy field:** When the submerged depth of human's feet in the paddy field is less than 25cm, bent blades for wet land can be directly used for the Intercultural/Weeding Operations of paddy field.

3. **When ditching is needed:** Unlade the Deep Furrowing Resistance Stick, fix the ditcher, adjust width & height of the ditcher, and then ditching can be conducted.
 - Width scope of ditching : 14cm-40cm
 - Depth scope of ditching: 11cm-25cm
4. **Short distance transport:** Fix forearm of the wagon box on the trailer and wheels on the transmission shaft of the running part, the machine can do a transportation job. The rated load is 250kg, under normal rotated speed of the diesel engine, speed of the fast shift is about 10 km/h and that of the slow shift is about 5km/h.
5. **Multi-functional working:** Knock down protection over of the gear-box (No.2 in Figure 1), unscrew the bolts away from the rear part of the main shaft, and take the cover for keys out of the shaft. Fasten the self-contained belt pulley or coupling onto the gear-box's main shaft's rear part with screws. Type A of common V belt is adopted for belt pulley's cross section. Rated rpm of the belt pulley is 3000 rpm. When the corresponding devices are equipped, pumping water, spraying, threshing, reaping, generating electricity, etc. are realized.



Hookup, Electric Starter:



Preparation:

1. The safety protection guard must be attached to the machine before using.
2. Check that the blade and fender are correctly assembled and securely fastened.
3. While working, always wear substantial footwear and long trousers. Do not operate the equipment barefoot or wearing open sandals.
4. Thoroughly inspect the area where the equipment is to be used and remove all objects which can be thrown out by the machine.
5. **WARNING-Diesel is highly flammable:**
 - a. Store fuel in containers specifically designed for this purpose
 - b. Refuel outdoor only and do not smoke while refueling.
 - c. Add fuel before starting the engine. Never remove the cap of the fuel tank or add diesel while the engine is running or when the engine is hot.
 - d. If diesel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until diesel vapors have dissipated.
 - e. Replace all fuel tank and container caps securely
6. Replace faulty silencers

Before using, always visually inspect to see that tools are not worn or damaged. Replace worn or damaged elements and bolts in sets to preserve balance.

Before Operating an Engine

Break-in of new engine:

- Refer to the Engine's instruction manual for the breaking-in of the diesel engine
- As for a new or overhauled Inter-cultivator, it should be working for 1 hour under no load or 5 hours under light load, then drain all the lubricant from the gear-box and crankcase of the diesel engine, refill appropriate fix of clean diesel, and clean them at a slow speed for 3-5 minutes, then drain the diesel off. Refill engine oil into them according to instructions to enter four hours breaking-in, then the machine can work.

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

Running in for 5 minutes after first start: Running with low speed and low load before the engine gets hot. Avoid running with high speed and full load, or low speed and no load.
Avoid running with overload: During break-in period, the engine can't run with full load, but can run with 3000rpm and 50% load.

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

Oil Bath Type Air Filter:

- Check the oil level before operating.
- 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.

Starting the Engine

Note: The shift bar must be in the neutral position

1. Start the diesel engine according to the procedures stipulated in the instruction manual for the diesel engine.
2. The diesel engine should run at a low speed (1500-2000 rpm) under no load for 2-3 minutes.
3. Check whether the diesel engine runs normally or not. If it is abnormal, stop the engine and have a check.

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 injury.
- Stop the engine first and then maintain the movable parts and other parts around it. Make sure there are no tools and sundries in the body of the engine before operating.

Run engine for 5mins to warm up

Note:

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

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

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 engine will be abnormal.

While the engine is running

- 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.
- Pay attention to the following points when the engine is running:
 - i. Whether there is abnormal sound and vibration?
 - ii. Whether the exhaust is normal?
 - iii. Whether the engine gives out white or black smoke continuously?

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

Methods of Starting the Agricultural Inter-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 the 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 two hands, pull the rope lightly until you feel the resistance, then pull the rope fast with 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 from getting in to the engine and wearing causing damage to the engine.

Operation

(Note: breaking-in must be performed before the using the Inter-cultivator)

1. Using a slow shift:
 - The left hand should grasp the clutch handle tightly making the clutch separated.
 - The right hand should pull the shift bar backwards, make sure the shift casing is in the slow shift position, and observe whether it reaches the right position or not. Then the right hand should grasp the right handle.
(Note: Do not grasp the reversing bar)
 - i. Loosen the clutch handle gradually, the clutch will combine, and the Inter-cultivator can run at a slow speed.
 - ii. The right hand should increase the throttle properly so that the motor can run at a speed of 5 km/h
2. Using a fast shift:
 - The left hand should grasp the clutch handle tightly making the clutch separated.
 - The right hand pushes the shift bar forwards, make sure the shift casing is located in the fast shift position, and observe whether it reaches the right position or not. Then the right hand should grasp the right handle.
(Note: Do not grasp the reversing bar)
 - Loosen the clutch handle gradually, the clutch will combine, and the Inter-cultivator can run at a fast speed.
 - The right hand should increase the throttle properly so that the motor can run at a speed of 10 km/h.
3. Using a reversing shift:
 - The left hand should grasps the clutch handle tightly making the clutch separated.
 - The right hand should pull or push the shift bar to the neutral shift and observe whether it reaches the right position or not. The fore finger of right hand should grasp the trigger of the reversing shift first, then the right hand should grasp the reversing handle.

- Loosen the clutch handle gradually, the clutch will combine, and the Inter-cultivator can run backwards.
(Note: Do not loosen the reversing handle)
 - When the backward running of the machine is not needed, the left hand should hold the clutch handle gradually, and the right hand should loosen the reversing handle.
4. Shift:
When the machine is running, reduce the oil valve of the diesel engine (but subject to the diesel engine's not quenching), then the clutch is made separated. When the machine stops running, then shift.
5. Change directions:
Pull the handle to left or right to make the machine turn left or right.
(Note: pulling the wrong handle may damage the gears)
6. The operation method of recoil/electric starter and safety device:
- Left hand close upon the red emergency stop lever in the handle bar; draw back the clutch handle with your middle finger and ring finger at a time. The above mutual locking will make the engine ready to start. And now, the operator can recoil –start the engine with hand according to the instructions given in the manual.
 - If the engine is of electric-starting model, carry out the following two steps. (step2, 3 are not suitable for recoil start engine) connecting well the power supply and control switch as the electric start hookup (or connect it beforehand). If the Inter-cultivator is without power supply, you should prepare a lead-acid battery accord with direct current 12V, 36AH.
 - Turn the starting-key Clockwise to the start position after inspecting clearly, and then release the key after the engine has started, it will return to the primary position automatically.
 - Adjust the throttling cock to the right position after the engine has started.
 - Press the red emergency lever in the handle bar (Grasp the emergency stop handle and the handle bar with your left hand), and buckle the trigger of emergency stop lock come out from the clutch handle gently by your middle finger. Restore the clutch handle down, then the clutch switch on, and the machine start to work. You should grasp the emergency stop handle and handle bar all the while in whole working course.
 - In case of any emergency, release the emergency stop handle and handle bar, the engine will flameout and the machine will stop working immediately.
7. **Stopping the machine:**
- Grasp the clutch handle, and separate the clutch.
 - Pull the shift bar to the neutral position, loosen the clutch handle, and turn the oil switch clockwise to the minimum position, now the machine will stop.
 - When stopping of the diesel engine is needed, it should be conducted according to relative contents in the instruction manual.
(Note: Stopping the machine is generally conducted on the flat ground)

Safety Instructions during operation:

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
- 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.
- Work only in daylight or in good artificial light.
- Always be sure of your footing on slopes
- Walk, never run with the machine.
- Exercise extreme caution when changing direction on slopes
- Use extreme caution when reversing or pulling the machine towards you
- Start the engine carefully according to instructions and with feet well away from the tool(s).
- Never pick up or carry a machine while the engine is running
- Stop the engine:
- Whenever you leave the machine
- Before refueling
- Reduce the throttle setting during engine shut down and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of working

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.

Important Cautions during Operation

1. Pay attention to working situations and sound of each part during the work, check whether the connection between different parts is ok or not, loose connections are not allowed. If abnormalities are found, stop the machine and solve the problem immediately.
2. A cold machine should not be used to do heavy load work immediately after the machine is started, especially for the new machines or the ones after overhaul.
3. Pay attention to checking the oil levels of the diesel engine and gear-box. Refill the engine oil when it is not enough
4. Do not cool the diesel engine by pouring water.
5. Be cautious about the machine's tilting while farming.
6. Machine fixed with Intercultural/Weeding Operations blades should not be used on sandy or stony place.
7. After using the machine for farming, pay attention to cleaning dirt, weeds and smear on the surface of the machine and keep the machine clean.
8. Clean the air cleaner with sponge or the wire mesh frequently, and change the engine oil. (Keep an eye on the marking on the empty air cleaner oil level)

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. Keep all nuts, bolts and screw tight to ensure the equipment is in safe working condition.
2. Never store the equipment with diesel in the tank inside a building where fumes can reach an open flame or spark.
3. Allow the engine to cool before storing in any enclosed place.
4. To reduce the fire hazard, keep the engine, muffler, battery compartment and diesel storage area free of inflammable material and excessive grease.
5. Replace worn or damaged parts for safety.
6. If the fuel tank has to be drained, this shall be done outdoors
7. After adjustment or maintenance, the safety protection guard must be attached to the machine.

Technical Service of Intercultivator

- MAINTENANCE AFTER EACH WORK SHIFT** (conducted before and after each shift)
 - Listen and observe if there are any abnormalities of each part (such as abnormal sound, overheating and bolt loosening)
 - Check if there is oil leakage in diesel engine, gear-box and Traveling box.
 - Check if the oil levels of the diesel engine and gear-box are between the two extremes of the oil dipstick.
 - Timely clean the mud, weeds and smear on the machine and its parts.
 - Keep a good record.
- FIRST LEVEL SERVICE (EVERY 150 WORKING HOURS)**
 - Do all the things listed for each work shift maintenance.
 - Clean the gear-box and Traveling box, and change the engine oil.
 - Check and adjust the clutch, shift system and reversing gear system.
- SECOND LEVEL SERVICE (EVERY 600 WORKING HOURS)**
 - Do all the things listed every 150 hours for service.
 - Check all the gears and bearing, replace with new ones if serious abrasion is found.
 - Other parts of the Inter-cultivator, like Intercultural/Weeding Operations blade or connection bolts .if damaged, replace with new ones.
- TECHNICAL OVERHAUL (EVERY 1800-2000 WORKING HOURS)**
 - Take the machine apart in the local special service center, clean and check the machine, then replace or repair the seriously- worn out parts.
 - Specialized service men are invited to check the friction piece and clutch.
- MAINTENANCE OF DIESEL ENGINE:**
 - Refer to the instruction manual of the diesel engine

Technical Service List of Intercultivator

Interval →→	Daily	8-Hrs	20-Hrs Or 1-Month	150-Hrs Or 3- Months	1000 Hrs Or 1-Year	2000 Hrs Or 2-Years
Check and screw bolts and nuts	✓					
Check and refill engine oil	✓					
Clean and change the diesel		✓	✓	✓		
Check oil leakage	✓					
Clean dirt, weeds and smear	✓					
Troubleshooting	✓					
Adjust the control parts	✓					
Friction piece of the clutch						✓
Gears and bearings					✓	

Note: The mark ✓ means service required.

Long-Term Storage of Inter-cultivator

When the Inter-cultivator needs a long-term storage, the following measures should be adopted to avoid rust.

1. The instruction manual of diesel engine requires sealing the diesel engine up for keeping purpose.
2. Clean dust and dirt away from the surface of the machine.
3. Drain the lubricant from the gear-box and add new lubricant into it.
4. Paint anti-rust oil on the non-painted area of the non-aluminum surface
5. The machine should be kept in a well-ventilated, dry and soft place.
6. Keep well the self-contained tools, conformity certificate of product and instruction manual

Troubleshooting

Troubleshooting of Reversing Gears and Cables:

When the Inter-cultivator's running backwards is not normal, it is necessary to adjust the reversing gears and Cables, see the instructions below.

1. Grasp and loosen the reversing handle for 2-3 minutes to confirm the putting into gear. If it is abnormal, adjust it until it is qualified.
2. When the Inter-cultivator is running, loosen the reversing handle, the reversing gears should return to its original position and ensure that there is no abnormal sound made by gears colliding in the gear-box, otherwise, it may cause damage to the gear.

Troubleshooting of Clutch Cables:

After some time use, the clutch does not perform well any more due to the weariness of friction piece and fork of clutch. As for how to adjust cable of the clutch, refer to instructions below.

1. Grasp and loosen the clutch handle for 2-3 times to confirm the clutch status. If abnormal, readjust it.
2. If repeated adjustment cannot solve the problem, excess abrasion of fork or friction piece of the clutch can be confirmed. The machine should be sent to special service center for replacing with a new fork of friction piece of the clutch.
3. Dismounting the clutch by unspecialized person, which may cause damage to the clutch and the machine is forbidden.

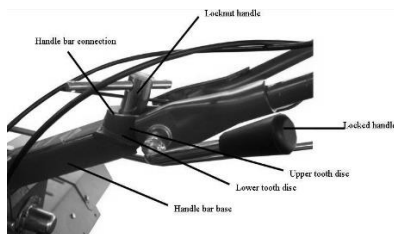
Troubleshooting of Accelerator Cables:

When spinning the throttle switch, check if the acceleration or deceleration performance of the diesel engine is good or not, adjust the throttle switch if necessary. Refer to instructions for measures.

1. Repeatedly spin the throttle switch for 2-3 times and confirm whether the acceleration or deceleration performance of the diesel engine is ok.
2. Joint of the cable must be firmly connected to the throttle cable.

Use & Troubleshooting of Handle Bar Frame:

According to your height, farming and other special requirements, the handle bar connection can be adjusted up and down, left and right appropriately as following: (see figure below)



1. The up and down debugging for the handle bar connection
 - a) Unscrew the Locked handle of the handle bar connection, and make the terminal tooth between the handle bar connection and the handle bar base separated.
 - b) Select the best position for the handle bar connection according to your height and comfort.
 - c) Then spin the handle to make the terminal teeth between the handle bar connection and handle bar base engage well with each other.
2. The left and right debugging for the handle bar connection.
 - a) Unscrew the locknut handle of the handle bar base and the upper and lower terminal teeth.
 - b) Spin the handle bar left or right to the desired position.
 - c) Then screw the locknut handle to make the higher and lower terminal teeth of the handle bar base engage well with each other.

Troubleshooting of Clutch:

NOTE: Please do not dismantle the clutch assembly yourself. You should contact our dealers for such repairs

Symptom	Cause	Remedy
Clutch fails	Failure of the clutch handle	Repair or replace the clutch handle
	Damage of the clutch Cables	Replace the clutch cables
	Fork not in the right position	Re-adjust the cable or replace the fork
	Welding points between fork shaft and arm base break off	Repair or replace the clutch cables
	Fork pin is bent or broken	Replace the fork pin
	Malfunction of the friction piece	Replace the friction piece
	Malfunction of spring	Replace the spring
	The friction piece fails to touch the bearing face of the clutch cover	Add some adjustment pads to the back of the bearing
Skidding/Slipping (after loosening the clutch, the diesel engine runs normally, but the main shaft of the	Bearing is burnt in the clutch	Replace the bearing Pay attention to refilling engine oil into the gear-box
	The spring does not function due to tiredness	Replace the spring
	Fork shaft's failure to turn around freely makes the fork fail to reset completely	Clean the combined face between positioning shaft and pushing plate to make the fork move freely.
	Cable adjustment is not right	Re-adjust the clutch Cables.

Symptom	Cause	Remedy
transmission shaft stops running or runs slowly)		

Troubleshooting Bevel Gears Mesh:

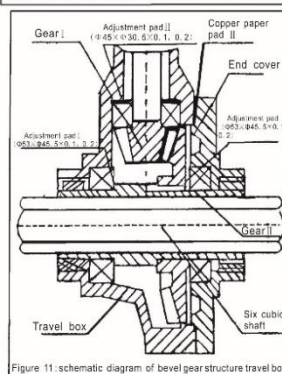
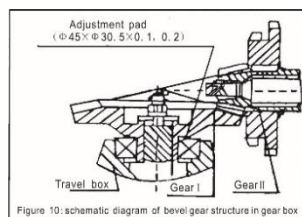
When the abnormal transmission of mesh of bevel gear of sound is confirmed, stop the machine and check as follows:

1. Clearance adjustment of mesh of angel gear in gear-box (See Figure 10)

- When lateral clearance of mesh of the gear $\Delta < 0.05\text{mm}$, we should put some vulcanized paper to enlarge the clearance between the gear-box and the traveling box.
- When lateral clearance of mesh of the gear $\Delta > 0.3\text{mm}$, we should reduce the clearance to $0.05\text{--}0.10\text{ mm}$ between the bearings and gear II shaft

2. Clearance adjustment of mesh of the gear in the running case.(See Figure 11)

- When lateral clearance of mesh of the gear $\Delta < 0.05\text{mm}$, we should increase adjustment pad I by $0.2\text{--}0.3\text{mm}$ to enlarge the clearance, and change vulcanized paper board II and adjustment pad. To ensure the axial clearance of the gear is $0.05\text{--}0.15\text{mm}$.
- When lateral clearance of mesh of the gear $\Delta > 0.3\text{mm}$, we should reduce adjustment pad I, meanwhile the axial clearance of gear II is $0.05\text{--}0.15\text{mm}$, or increase the adjustment pad II, meanwhile ensure the axial clearance of gear I is $0.05\text{--}0.15\text{mm}$.



Troubleshooting of Gear-box:

Symptom	Cause	Remedy
Failure of fast, slow and neutral shift	Bolts and nuts for the main shaft are loose	Dismount the bolts, keys cover at the back of the main shaft, screw the round nuts tight, then fix back the bolts and keys cover and screw them tight.
Failure to shift to the right position	Excess abrasion of puller	Replace the puller
	Driving angle gear is loose	Tighten the round nuts
	Excess abrasion of the upper hole in the connection piece of support arm	Replace the support arm assembly

Symptom	Cause	Remedy
	Positioning spring inside the main shaft does not function	Replace the shaft
	Main shaft is moving, the bolts for tightening the cover for the rear of the gear-box body are loose.	Screw the bolts tight
	Deformation of shift bar brings about interference when you shift	Adjust the shift bar or Replace it
Failure to shift the reversing shift to the right position	Abrasion of reversing fork	Re-adjust the cable of reversing shift Replace the reversing fork
	Malfunction of reversing cable	Re-adjust the cable Replace the cable
	The reversing shaft is loose	Screw the bolts tight at the back of the reversing shaft
	The reversing fork is blocked to a standstill	Clean the combined face between reversing fork and reversing pushing plate to make the fork move freely
The reversing gears do not reset	The loosening of reversing shaft makes the gear be blocked to a standstill	Screw the bolts tight at the back of the reversing shaft.
	Malfunction of spring of the reversing shaft	Replace the spring
	The reversing shaft is bent and deformed	Replace the reversing shaft
The reversing shaft is loose	Rear bolts of reversing shaft are loose	Screw the reversing shaft
	The matching between reversing shaft and gear-box body is too loose	Replace the shaft
Too much noise from the gears	Deformation and bend of the angle gear and reversing shaft	Replace the shaft
	Too much lateral clearance due to excess abrasion of gears	Replace the gears
	The matching between bevel gear and reversing shaft and gear-box body is too loose	Replace the shaft
Oil leakage of the main shaft's rear cover	Malfunction of O-shaped ring for the main shaft	Replace with O-shaped ring $\phi 17 \times 1.8$
	Malfunction of lip-shaped oil seal in the main shaft	Replace with lip-shaped oil seal B25407
	Malfunction of O-shaped ring for the cover	Replace with O-shaped ring $\phi 46 \times 1.8$
Oil leakage of the reversing shaft	Loosening of bolts at the back of reversing shaft	Screw the bolts tight
	Malfunction of O-shaped ring of the reversing shaft	Replace with O-shaped ring $\phi 18 \times 1.8$

Symptom	Cause	Remedy
Oil leakage of the fork shaft of the reversing shaft	Malfunction of O-shaped ring	Replace with O-shaped ring $\phi 1.2 \times 1.8$
Oil leakage of the fork shaft of the clutch	Malfunction of O-shaped ring	Replace with O-shaped ring $\phi 1.2 \times 1.8$
Oil leakage of the shift shaft	Malfunction of O-shaped ring	Replace with O-shaped ring $\phi 1.2 \times 1.8$
Oil leakage of the flange connection	The bolts are loose there	Screw the bolts tight
	The vulcanized paper board is damaged there	Replace the paper board
Leakage of the gear-box body	The gear-box body has tiny hidden holes	Re-welding or brush base paint to stop the leaking
Oil leakage of the fork shaft of the clutch	Malfunction of O-shaped ring	Replace with O-shaped ring $\phi 1.2 \times 1.8$
Oil leakage of the shift shaft	Malfunction of O-shaped ring	Replace with O-shaped ring $\phi 1.2 \times 1.8$
Oil leakage of the flange connection	The bolts are loose there	Screw the bolts tight
	The vulcanized paper is damaged	Replace the paper board
Leakage of the gear-box body	The gear-box body has tiny hidden holes	Re-welding or brush base paint to stop the leaking

Troubleshooting of Traveling Mechanism

Symptom	Cause	Remedy
Too much noise from the gear	Excess abrasion or error repairing of the gear	Re-fix and re-adjust or replace the gear
Gears are blocked to standstill when running	Error in fixing	Re-fix the gears.
Overheating	No enough lubricant in the box	Re-fill oil according to the request
	The lateral clearance of gear is too small	Re-fix
	The axial clearance is too small	Re-adjust the clearance value
Oil leakage of the gear-box connection	The connection bolt is loose	Screw the bolt tight
	The seal gasket is damaged	Replace with lip-shaped oil seal B45628
The oil leakage of the output shaft casing	The lip-shaped oil seal there is damaged	Replace with lip-shaped oil seal B45628

Symptom	Cause	Remedy
Serious oil leakage of the hexagonal hole in the output shaft casing	The shaft casing there is broken	Replace the shaft
Oil leakage of oil hole	The O-shaped ring there is damaged	Replace with O-shaped ring $\phi 10 \times 1.8$
	The bolts are loose	Screw the bolts tight
Leakage of the Traveling box body	The Traveling box body has tiny hidden holes	Re-welding or brush base paint to stop the leaking

Engine Troubleshooting:

Difficulty in starting or failure to start:

Cause	Remedy
A. Extremely cold weather	Pour in 3-5g engine oil in air intake pipe or spray hot water at the top of the cylinder head.
B. Failure of fuel system	
1. Fuel is frozen	Replace the fuel, apply proper fuel type.
2. Water in fuel	Clean oil tank and replace fuel
3. Failure of injector	Adjust pressure or clean up carbon deposit, grind or replace parts
4. Injector doesn't work or bad fuel supply of oil pump	Fasten type T bolt of oil supply pipe, evacuate air in the pipe.
C. Insufficient compression force	
1. Nuts of cylinder head is loosened or cylinder gasket is damaged	Fasten nuts or replace gasket
2. Piston ring, piston, or cylinder liner is worn out.	Repair or replace the part whichever is necessary.
3. Piston ring is banded or broken	Clean or replace the piston ring
4. Bad sealing of throttle and throttle seat causes gas leakage.	Grind throttle.
5. Improper clearance of air intake and exhaust valve.	Adjust as per relevant requirements
6. Throttle stem is seized in duct	Remove throttle and clean it
7. Too much drop of compression ratio even after adjusting throttle seat several times.	Replace throttle seat.
D. Improper oil supply advance angle	Adjust as per relevant requirements
E. Viscosity of engine oil is too large	Fill engine oil of right type and right grade.

Insufficient Engine Power:

Cause	Remedy
A. Failure of oil passage system	
1. Oil passage is blocked, unsmooth oil supply	Check the oil passage
2. Bad oil supply of injection pump	Repair or replace the necessary parts
3. Failure of injector	Refer to "difficulty in starting"
B. Insufficient compression force	Refer to "difficulty in starting"
C. Air filter is blocked	Clean or replace filter element
D. Rotary speed is too low	Throttle up
E. Improper oil supply advance angle	Adjust as per the requirements
F. Improper clearance of air intake and exhaust valve.	Adjust as per the requirements
G. Parts of injection pump or injector is worn out or injection pressure is insufficient	Replace parts and adjust injection pressure.

Unstable working or discontinuous eruption noise

Cause	Remedy
A. Failure of fuel system	
1. Air mixing in fuel system	Evacuate the air
2. Bad fuel quality or water mixing in fuel	Check the fuel and replace it if necessary
3. Injector parts are jammed or excessive injection pressure	Check injector and adjust injection pressure
4. Needle valve parts of injector is worn out or parts are blocked by injector stem	Check the parts and replace if necessary.
B. Speed regulating system is seized	Check, repair or replace the regulating valve.

Self-Shutdown of Diesel Engine:

Cause	Remedy
A. Failure of fuel system	
1. Insufficient fuel in oil tank	Refill the fuel
2. Diesel oil filter and oil supply duct are blocked or gas leakage	Clean or evacuate the air
3. Injector parts are seized	Clean or grind parts and replace if necessary
B. Failure of lubrication system	

Cause	Remedy
1. Insufficient engine oil in crank case causes damages of mechanical parts	Fill engine oil, repair damaged parts and replace if necessary
2. Bad lubrication of crank journal damages the bushing	Clean oil passage, repair damaged parts

Other Failures:

Cause	Remedy
A. Injector is seized often	
1. High temperature crash stop	Crash stop is not allowed.
2. Unclean fuel or damaged fuel filter.	Clean oil tank, replace fuel filter
B. Engine oil overflows from exhaust	
1. Piston or cylinder head is worn out	Check, repair and replace the piston or cylinder if necessary
2. Throttle duct is worn out	Check, repair and replace the throttle duct if necessary.
3. Piston ring is bonded or damaged	Clean or replace the piston ring
4. Excessive engine oil	Discharge engine oil until normal level is reached
C. Fluctuating rotary speed	
1. Gas leakage at the joint of oil supply pipe	Fasten the joint or replace gasket
2. Adjusting bolt on speed regulating spring is loosened.	Adjust and fasten
D. Black smoke in exhaust	
1. Overload	Reduce load
2. Improper power	Select proper power
3. Improper oil supply advance angle	Adjust as per relevant requirements
4. Incomplete combustion	Check injector quality and if compression force is sufficient
E. Stop the engine immediately in case of any of the following circumstances:	
1. Fluctuating rotary speed	Check speed regulating system, air mixing in fuel passage and evacuate the air.
2. Abnormal noise suddenly	Check each moving part for any damage
3. Black smoke in exhaust	Check the fuel system for normal oil supply, particularly the injector.

Other Troubleshooting:

Symptom	Cause	Remedy
The Intercultural/Weeding Operations blade is broken	Collision with the hard things like stones when working	Replace the blade. Avoid colliding with hard things like stones in the earth when working
The manipulation cable is broken	Long-time abrasion in work	Replace the cable

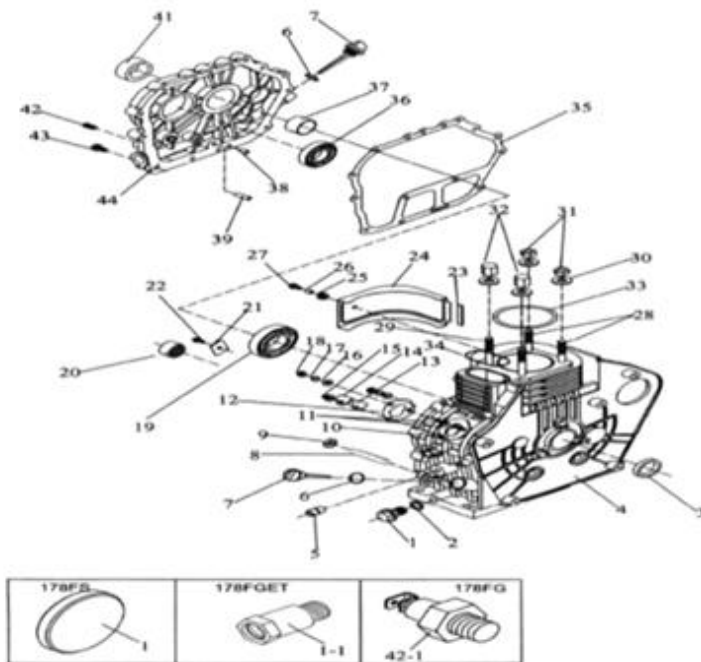
Technical Specifications

Specification	KK-CRT-550D	KK-IC-350D	KK-IC-357D
Rated Power	3.8 Kw (5.17 hp)	4.3 kW(5.76 hp)	4 kW (5.4 hp)
Displacement	296cc		
Engine Type/Fuel Used	4-Stroke single cylinder / Diesel		
Type of cooling	forced air cooling		
Bore/Stroke	78/62		
Rated Speed (RPM)	3600	1800	1800 RPM(Eng), 300 RPM(Rota)
Fuel Tank Capacity	3.5 L		4 L
Oil	Engine-1000ml (20W40 Grade)	Gear box-800ml (140 Grade)	Air filter-100ml (20W40 Grade)
Intercultural/Weeding Operations Width	0.51 to 0.62 m	59.8-60.2 cm	24-65 cm
Intercultural/Weeding Operations Depth	4.0 to 5.7 cm	4.1-5.3 cm	10-24 cm
Number of Gears	1 Reverse, 1 Forward	2 Forward, 1 Reverse (in high) &2 Forward, 1 Reverse (in low)	
Special Feature	CRT & SRT	Ditcher Function	
Fuel Consumption	0.58L/hr	1.57 L/hr	295 g/kWh
Type of Soil	Soft and medium hard soil		
Note: This machine is for Intercultural/Weeding operations			

		Parameter	KK-IC-300D	KK-IC-307D
	Rated Power		4.3 kW (5.76 hp)	4 kW (5.4 hp)
	Rated speed		3600 RPM	3600 RPM /115 RPM(Rota)
	Displacement		296 cc	
	Ignition mode		Compression ignition	
	Type		diesel engine, 4 stroke, single cylinder	
	Type of cooling		forced air cooling	
	Bore/Stroke		78/62 mm	
	Start mode		Recoil	
	Fuel tank capacity		3.5 Ltr	
	Engine oil capacity		1.1 Ltr	
		Fuel Consumption	0.65 L/hr	430 g/kWh
Intercultivator	Machine's dimension(length×width×height)		1030x570x880 Mm	
	Machine's weight		≤105 Kg	
	Transmission System		Full Gear Transmission	
	Connection mode		Direct Connection	
	Speed	Running speed	Fast	10
			Slow	5
		Working Speed	Intercultural/Weeding Operations	0.5-1.3
	Blades	Reversing speed		2
		Rotate speed		115 R/min
		Max. Radius of gyration		188 Mm
		Total blades quantity		32 Pcs
		Total groups of blades		8 Pcs
		Blades for each group		4 Pcs
		Distance between 2 neighboring faces are cut		150 Mm
		Diameter of the farming blades		36 Cm
	Rotary blade type		Bent blade for dry land	
	Clutch mode		Wet multiple disc clutch land manual control	
	Weeding Depth		≥10 Cm	
	Weeding Width		105 Cm	
	Working efficiency		0.053-0.099 H m ² /h	
	Specific fuel consumption		430 g/kWh	
	Gear-box's oil capacity		2.4 Ltr	
	Sound pressure level		≤86 Db(A)	
	Sound power level		≤93 Db(A)	
	Number of Gears		2 Fwd, 1 Rev	
	Intercultural/Weeding Operations Width		109.5-126 cm	105 cm
	Intercultural/Weeding Operations Depth		6 to 9 cm	2.5-15.2 cm

Parts Diagram & List- Engine

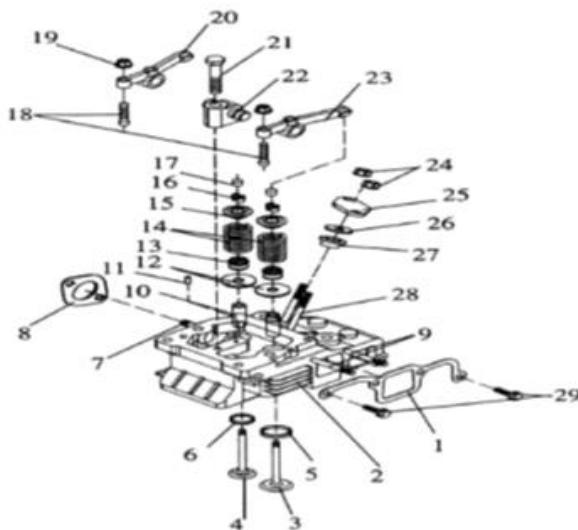
CYLINDER BLOCK ASSEMBLY



Part No	Part Name	Part No	Part Name
E1-01	Drain Plug	E1-24	Governor
E1-02	Washer (Drain Plug)	E1-25	Vibration Isolation Cushion Block
E1-03	Oil Seal Sg30*45*8	E1-26	Sheath
E1-04	Cylinder Block.	E1-27	Bolt M6*20
E1-05	Needle Bearing/Hk081410	E1-28	Cylinder Head Stud/M9*87
E1-06	O-Ring 24*2.4	E1-29	Cylinder Head Stud/M9*104.5
E1-07	Oil Filler cap	E1-30	Washer (Head Nut)
E1-08/9	Fuel Controller	E1-31	Cylinder Head Nut (short)
E1-10	Stud AM6*30	E1-32	Cylinder Head Nut (Long)
E1-11	Stud AM6*40	E1-33	Cylinder Head Shim

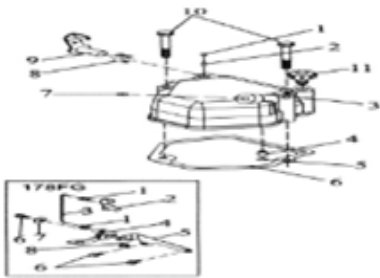
Part No	Part Name	Part No	Part Name
E1-12	Fuel Injection Pump Gasket	E1-34	Cylinder Rubber Ring
E1-13	Seal Gasket(Fuel Pump)	E1-35	Crank Case Gasket
E1-14	Seal Plate(Fuel Pump)	E1-36	Ball Bearing 6206/P5
E1-15	Nut M6	E1-37	Main Bearing
E1-16	Washer 6	E1-38	Pin 8*12
E1-17	Spring Washer 6	E1-39	Oil Pipe
E1-19	Ball Bearing 6307/P5	E1-40	Oil Seal SG30*45*10
E1-20	Needle Bearing HM1512	E1-41	Plug
E1-21	Retainer(Bearing)	E1-43	Bolt M8 * 33.5
E1-22	Bolt M8*16	E1-44	Crank Case Cover
E1-23	Cushion Blocking		

CYLINDER ASSEMBLY



Part No	Part Name	Part No	Part Name
E2-01	Air Intake Gasket	E2-15	Valve Spring Retainer
E2-02/5/6/10	Cylinder Head	E2-16	Cotter
E2-03	Intake Valve	E2-17	Valve Adjusting Plate
E2-04	Exhaust Valve	E2-18/19/20/22/23	Rock Arm Assy
E2-07	Stud AM 8*32	E2-21	Bolt M8*45
E2-08	Silencer Gasket	E2-24	Nut M6
E2-09	Stud AM 6*72	E2-25	Nozzle Retainer
E2-11	Pin 4*8	E2-26	Spacer Washer(Injector)
E2-12	Valve Spring Washer	E2-27	Insulation Sleeve
E2-13	Valve Conduit Oil Seal	E2-28	Stud AM6*60
E2-14	Valve Spring	E2-29	Bolt M6*25

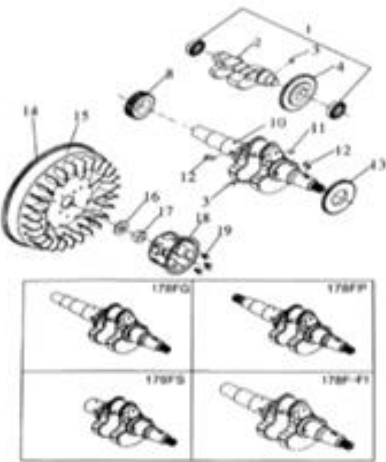
CYLINDER HEAD BONNET ASSEMBLY

Part No	Part Name	
E3-03	Bonnet Assy	
E3-06	Bonnet Gasket	
E3-10	Bolt M6*55	

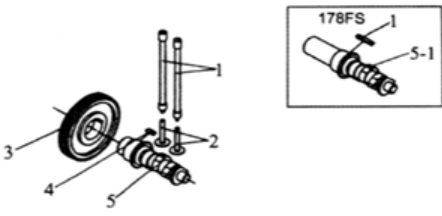
PISTON & CONNECTING ROD ASSEMBLY

Part No	Part Name	
E4-01	Piston Ring Set	
E4-02	Piston	
E4-03	Piston Pin	
E4-04	Circlip Piston Pin	
E4-05	Connecting Rod Assy	
E4-06	Crank Pin Bearing	

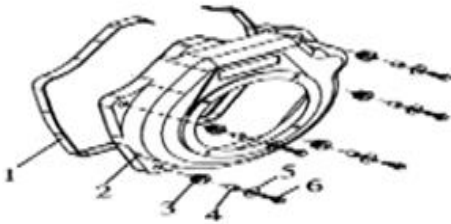
CRANK SHAFT & FLYWHEEL ASSEMBLY

Part No	Part Name	
E5-01	Ball Bearing 6202/P5	
E5-02	Balancer Shaft	
E5-03	Key 5x7	
E5-04	Timing Gear Of Balance Shaft	
E5-08	Crankshaft Timing Gear	
E5-10	Crank Shaft	
E5-11	Steel Ball	
E5-12	Key 5x12	
E5-13	Drive Gear Of Balance Shaft	
E5-15	Fly Wheel	
E5-16	Fly Wheel Nut Washer	
E5-17	Fly Wheel Nut	
E5-18	Starter Pulley	
E5-19	Bolt M6x12	

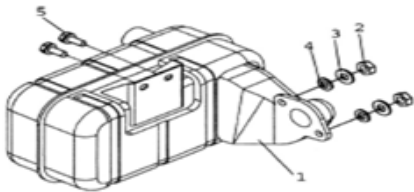
CAMSHAFT ASSEMBLY

Part No	Part Name	
E6-01	Valve Rod Assy	
E6-02	Valve Tappet	
E6-03	Camshaft Timing Gear	
E6-04	Key 5x14	
E6-05	Camshaft	

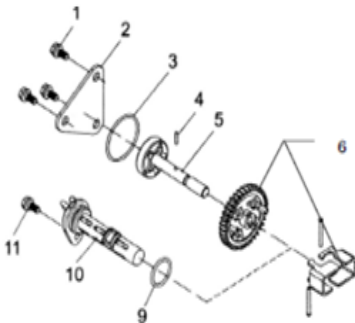
AIR CLEANER ASSEMBLY

Part No	Part Name	
E7-01	Shock Absorber Seat	
E7-02	Fan Case Welded Assy	
E7-03	Shock Absorber	
E7-04	Collar 10x10	
E7-05	Washer 6	
E7-06	Bolt M6x25	

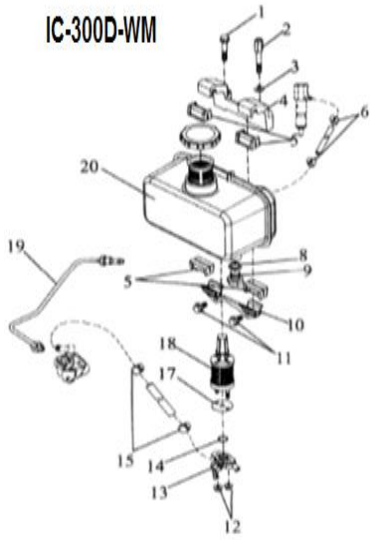
SILENCER /MUFFLER ASSEMBLY

Part No	Part Name	
E8-01	Silencer Assy	
E8-02	Nut 8	
E8-03	Spring Washer 6	
E8-04	Washer 8	
E8-05	Bolt M6x14	

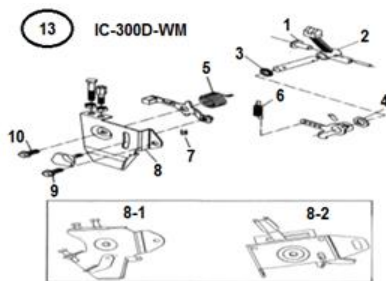
LUBE OIL SYSTEM /Oil Pump Assy

Part No	Part Name	
E10-01	Bolt M6x12	
E10-02	Oil Pump Cover	
E10-03	O-Ring 34.8x1.8	
E10-04	Pin 3x16	
E10-05	Oil Pump Assy	
E10-06	Oil Pump Gear	
E10-09	O-Ring 242.4	
E10-10	Oil Filter Assy	
E10-11	Bolt M6x14	

FUEL TANK & FUEL PIPE ASSEMBLY

Part No	Part Name	
E11-01	Bolt M8x45	
E11-02	Upper Stay Bolt	
E11-03	Washer 8	
E11-04	Upper Stay	
E11-05	Fuel Tank Damper	
E11-06	Fuel Return Pipe Assy	
E11-08	Fuel Tank Plug Seat	
E11-09	Fuel Tank Plug	
E11-10	Lower Stay Assy	
E11-11	Bolt M6x14	
E11-12	Nut 6	
E11-13	Fuel Tank Cock Assy	
E11-14	O-Ring 13.2x1.8	
E11-15	Fuel Pipe Assy	
E11-17	Fuel Filter Gasket	
E11-18	Fuel Filter Assy	
E11-19	Fuel Injection Pipe Assy	
E11-20	Fuel Tank Assy	
E11-21	Fuel Tank Cap Assy	

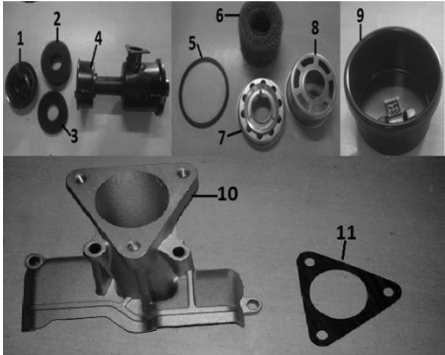
GOVERNOR&CONTROL SYSTEM



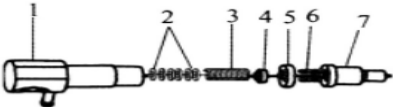
Part No	Part Name	Part No	Part Name
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E13-01	Tappet 25.5	E13-06	Governor Spring
E13-02	Lever Fork	E13-07	Fine Spring
E13-03	Oil Seal 8x14x4	E13-08-1	Control Lever Assy.
E13-04	Lever Washer	E13-09	Nut M6x12
E13-05	Return Spring	E13-10	Nut M6x25

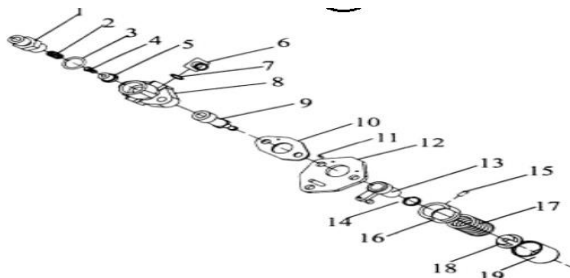
AIR CLEANER ASSEMBLY

Part No	Part Name	
E14-00	Air Filter Assy(Oil Bath)	
E14-01	Air Filter Top Cover	
E14-02	Air Filter sponge(Big)	
E14-03	Air Filter sponge(Small)	
E14-04	Air Filter Body	
E14-05	O-Ring(Air Filter)	
E14-06	Metal Filter(Air Filter)	
E14-07	Metal Filter Body (Small)	
E14-08	Metal Filter Body (Big)	
E14-09	Air Filter Sump	
E14-10	Intake Pipe	
E14-11	Air Cleaner Gasket	

FUEL NOZZLE ASSEMBLY

Part No	Part Name	
E15-00	Fuel Injector	
E15-07	Nozzle(Fuel Injector)	

FUEL INJECTION PUMP ASSEMBLY



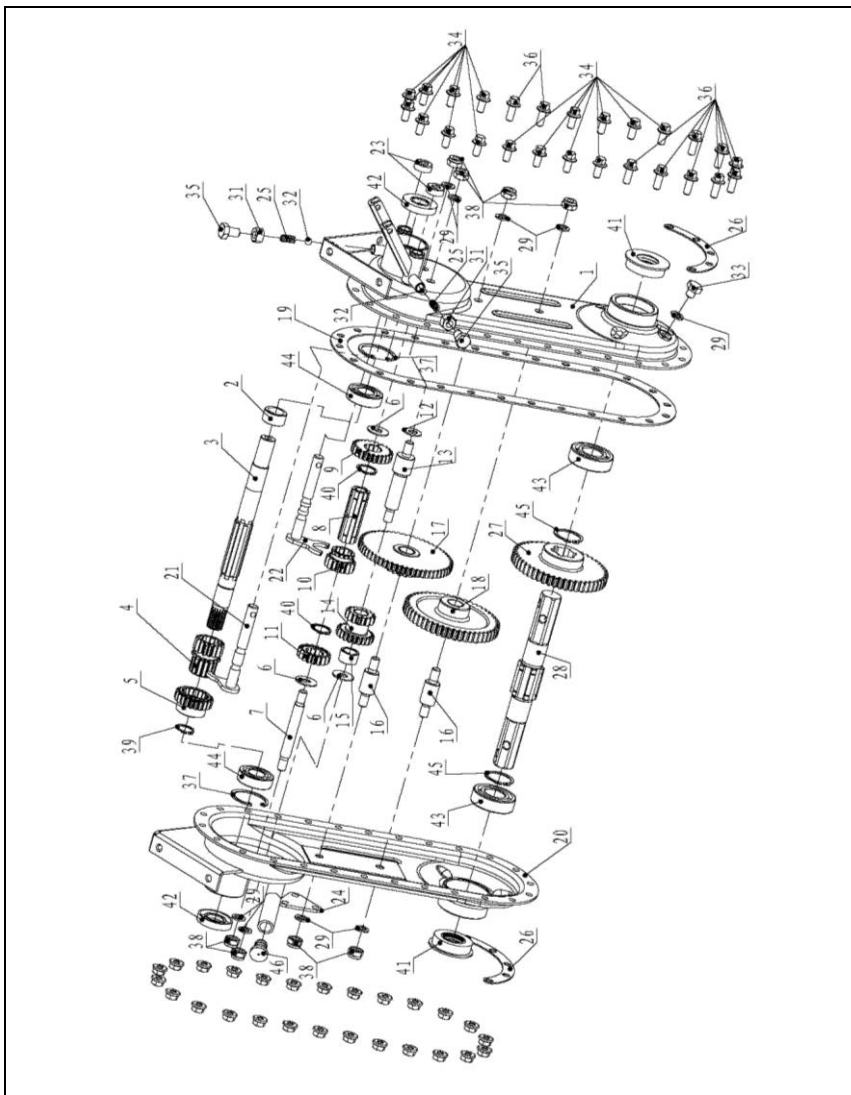
Part No	Part Name	Part No	Part Name
E16-00	Fuel Injector Pump Assy	E16-10	Gasket (Flip Block)
E16-08/9	Plunger Set	E16-19	Tappet

RECOIL STARTER ASSEMBLY

Part No	Part Name	
E17-00	Recoil Starter Assy	
E17-01	Nut M8	
E17-02	Washer(Starter)	
E17-03	Friction Plate	
E17-04	Starter Ratchet Reel	
E17-05	Return Spring	
E17-06	Compression Spring	
E17-07	Ratchet	
E17-08	Starter Reel	
E17-09	Spiral Spring	
E17-10	Outer Case Assy	
E17-11	Bolt M6 x 10	
E17-12	Starter Rope	
E17-13	Starter Handle	

Parts Diagram -Body-KK-CRT-550D/KK-IC-350D

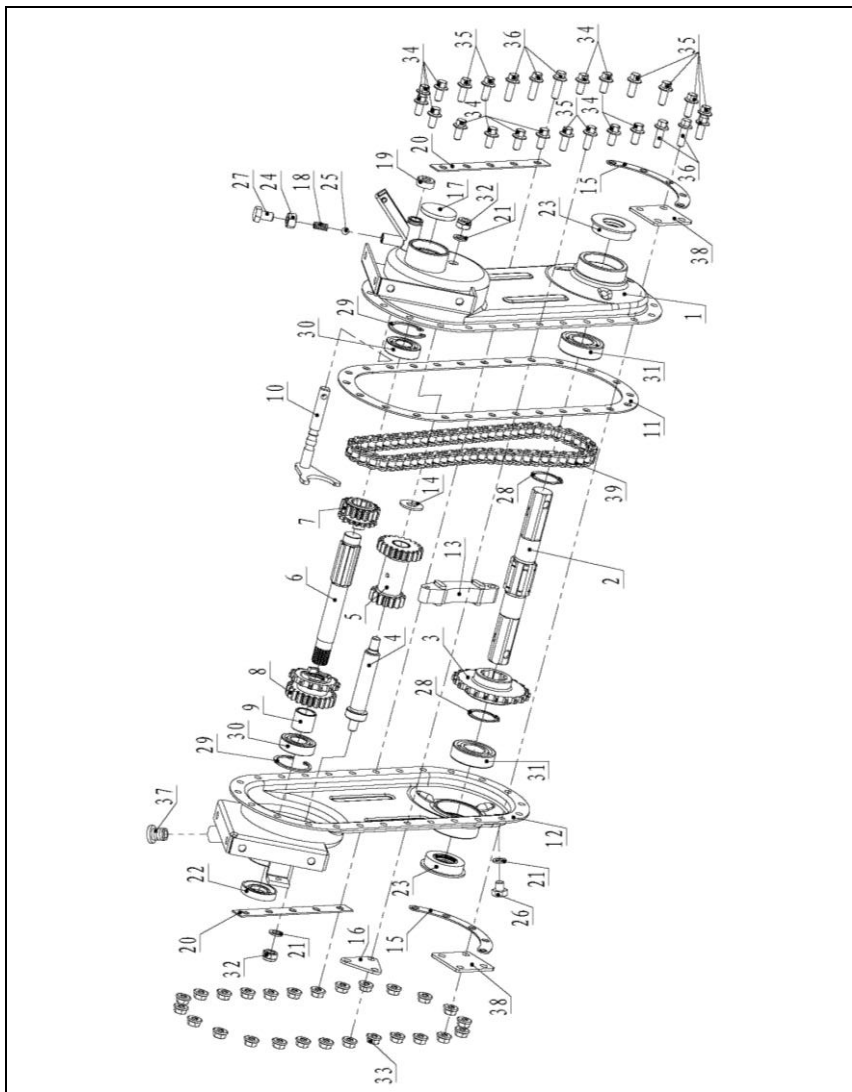
Gear Box Parts



Ref No	Part No	Description	Ref No	Part No	Description
1	T2207300	left Gear box	24	T2207023	Triangle connecting plate
2	T2207019	Distance sleeve B	25	T2207010	Gear shifting spring
3	T2207020	Gear box main shaft	26	T2207012	Arc strengthening plate
4	T2207018	Gear box slow gear driving gear	27	T2207024	Gear box output shaft gear
5	T2207022	Gear box fast gear driving gear	28	T2223008	output shaft
6	T2207001	Gasket 10.5X26X1.5	29	T2207013	Aluminum gasket 10X16X1.6
7	T2207005	Walking countershaft	30	GB/T 6177.1-2000	Flange nut M8
8	T2207100	Walking countershaft spline components	31	GB/T6170 -2000	Hexangular nuts M10
9	T2207006	Walking countershaft slow gear	32		Steel ball S Φ 8
10	T2207003	Walking countershaft transmission gear	33		Flange bolt M8X16
11	T2207002	Gear box countershaft fast gear	34	GB/T5787 -1986	Hexangular flange nuts M8X16
12	T2207017	Gasket 10.5X20X1.5	35		Hexangular bolt M10X16
13	T2207016	Reverse gear shaft	36	GB/T5787 -1986	Hexangular flange bolt M8X20
14	T2207600	Reverse double gear components	37	GB/T893.1 -1986	Hole ring 42
15	T2207015	Distance sleeve A	38	GB/T889.1 -2000	Nonmetal hexangular Nut M10
16	T2207004	Middle axles	39	GB/T894.1 -2000	Spring ring 20 for shaft
17	T2207200	Double gear component	40	GB/T894.1 -2000	Spring ring 22 for shaft

Ref No	Part No	Description	Ref No	Part No	Description
18	T2207500	Transmission gear components	41		Oil sealTC6Y25 × 47 × 54 × 13 × 4
19	T2207011	Closing box Seal	42		Oil sealTC20 × 42 × 8 × 2
20	T2207700	Right gear box components	43	GB/T276-1994	Axletree 6205
21	T2207021	Gear box gear shifting fork	44	GB/T276-1994	Axletree 6004
22	T2207008	Gear box direction shift fork	45	GB/T894.1-1986	Spring ring 32 for shaft
23	T2207009	Fork shaft oil seal	46		WM500Am oil filling rubber plug

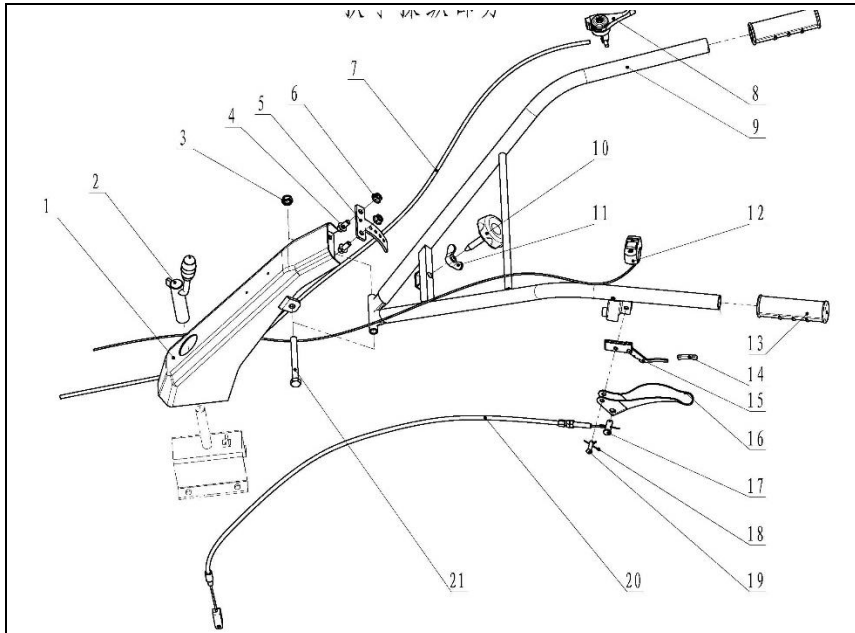
Parts



Ref No	Part No	Description	Ref No	Part No	Description
1	T2223400	left box components	21	T2207013	Aluminum cushion 10×16×1.6
2	T2223008	output shaft	22		Oil seal TC20×42×8×2
3	T2223009	driven sprocket wheel	23		Oil seal TC6Y25×47×54×13×4
4	T2223007	axle	24	GB/T6170-2000	Hexangular nuts M10
5	T2223300	slow gear double gear components	25		Steel ball S Φ 8
6	T2223004	main shaft	26		Hexangular bolt M10X10
7	T2223005	slow gear driving gear	27		Hexangular bolt M10X16
8	T2223200	driving sprocket component	28	GB/T894.1-1986	Spring ring 32 for shaft
9	T2223001	Distance sleeve C	29	GB/T893.1-1986	Hole ring 42
10	T2223002	gear shifting fork	30	GB/T276-1994	Axletree 6004
11	T2207011	Close box seal	31	GB/T276-1994	Axletree 6205
12	T2223100	right box component	32	GB/T889.1-2000	Nonmetal hexangular Nut M10
13	T2223010	chain tension plate	33	GB/T 6177.1-2000	Hexangular flange nuts M8
14	T2223006	Copper washer 12.5×28×2	34	GB/T5787-1986	Hexangular flange bolt M8X16
15	T2207012	Arc strengthening plate	35	GB/T5787-1986	Hexangular flange bolt M8X20
16	T2207023	Triangle connecting plate	36	GB/T5787-1986	Hexangular flange bolt M8X25
17	T2223003	Oil plug	37		WM500Am Oil filling rubber plug
18	T2207010	Gear shifting spring	38	T2223012	Ground breaking scoop fixing plate

Ref No	Part No	Description	Ref No	Part No	Description
19	T2207009	Fork shaft oil seal	39	GB/T1243-1997	Chain 08B-1-64
20	T2223011	Strip cushion plate			

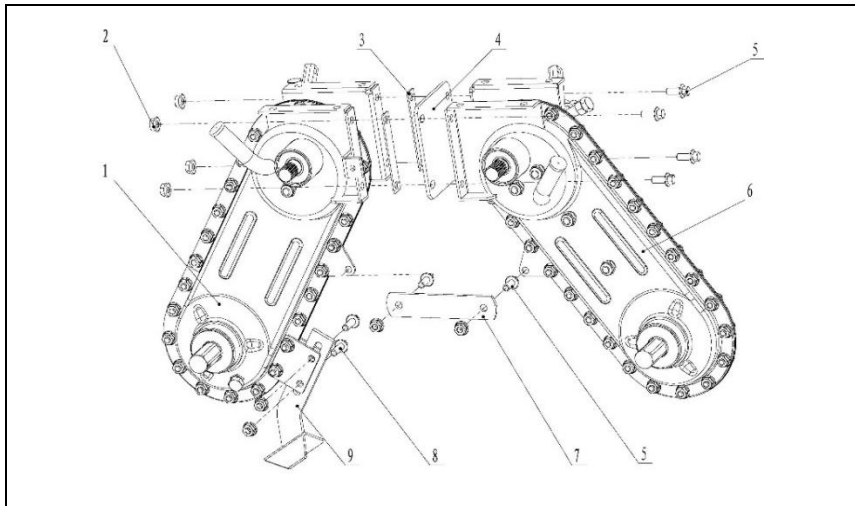
Handle Control Parts



Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2204001	Vertical pipe	12		On and off switch ϕ 25
2	T2203000	Vertical pipe lock handle	13		Grib ϕ 25
3	GB/T889.1	Nonmetal hexangular Nut M10	14	T2215007	Lock clip rubber sleeve
4	GB/T1667 4.1	Hexangular flange bolt M8X16	15	T2215100	Handle lock clip components
5	T2204002	handle bar restriction plate	16	11.1010.0005.0009	

Ref No.	Part No.	Description	Ref No.	Part No.	Description
6	GB/T6177 .1	Hexangular flange nuts M8	17		1100 cable
7		Throttle Cable Comp (900M model)	18	GB/T91	Split pin 1.6*25
8		Throttle switch φ 25	19	GB/T882	Pin 6*22
9	T2215001	Handle bar Assy	20	T221500 6	Clutch cable
10	T2215002	Handle adjustment bar	21	GB/T578 2	Hexangular bolt M10X100
11	GB/T62	Butterfly nuts M10X1.5			

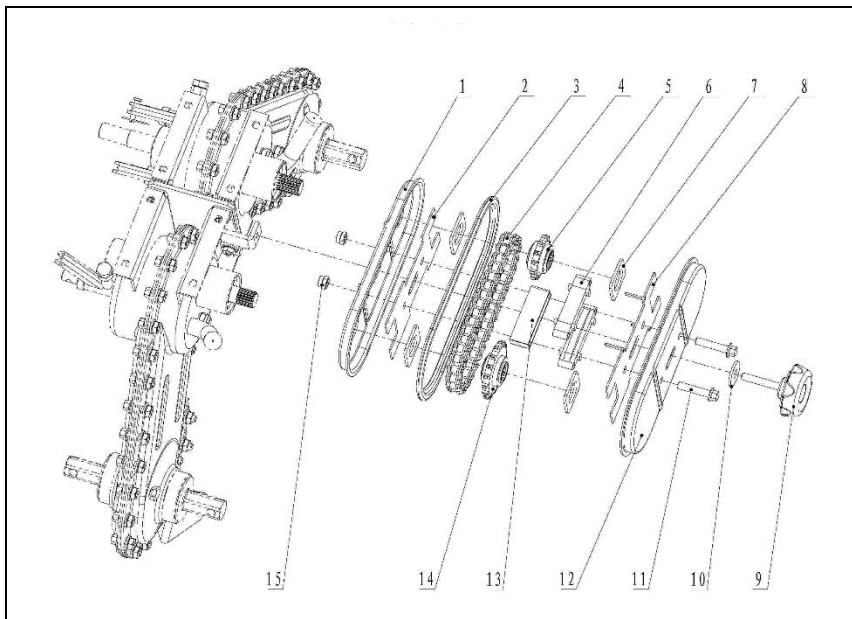
Gear Box



Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T222300 0	parts	6	T220700 0	Gear box parts
2	GB/T617 7.1	Hexangular flange nuts M8	7	T220000 2	Box connecting plate
3	T220000 4	Box connecting narrow plate	8	GB/T166 74.1	Hexangular flange bolt M8X25
4	T220000 3	Box connecting wide plate	9	T220001 5	Ground breaking scoop

Ref No.	Part No.	Description	Ref No.	Part No.	Description
5	GB/T166 74.1	Hexangular flange bolt M8X20			

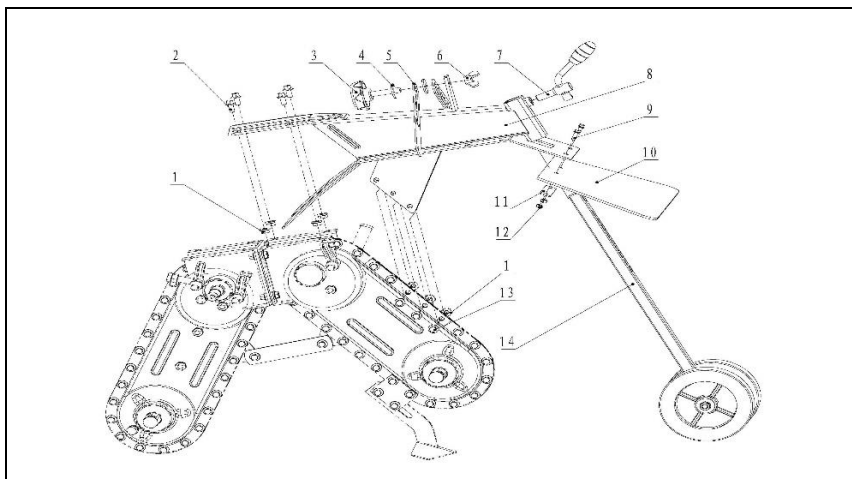
Chain box



Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2209001	Chain box left cover	9	T220000 5	Chain box lock handle
2	T2209009	Supporting bottom plate 2	10	GB/T96. 2	Big washer 10
3	T2209010	Rubber seal	11	GB/T166 74.1	Hexangular flange bolt M8X40
4	GB/T1243	Chain 08B-1-38	12	T220900 2	Chain box right cover
5	T2209008	Chain box small chain wheel	13	T220900 5	Bolt supporting plate
6	T2209006	Chain box tension plate	14	T220900 7	Chain box big chain wheel

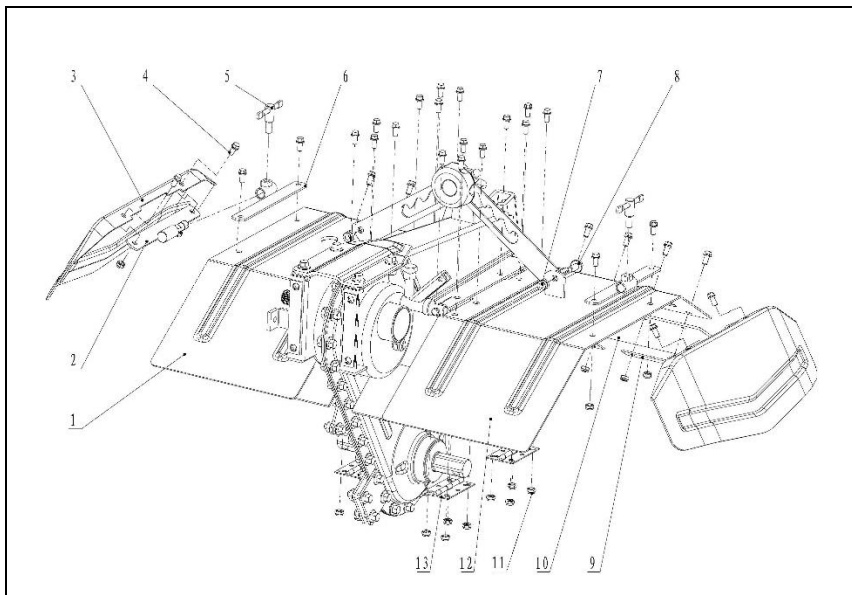
Ref No.	Part No.	Description	Ref No.	Part No.	Description
7	T2209004	Copper washer	15	GB/T889 .1	Nonmetal hexangular Nut M8
8	T2209003	Supporting bottom plate 1			

Dragging Assembly



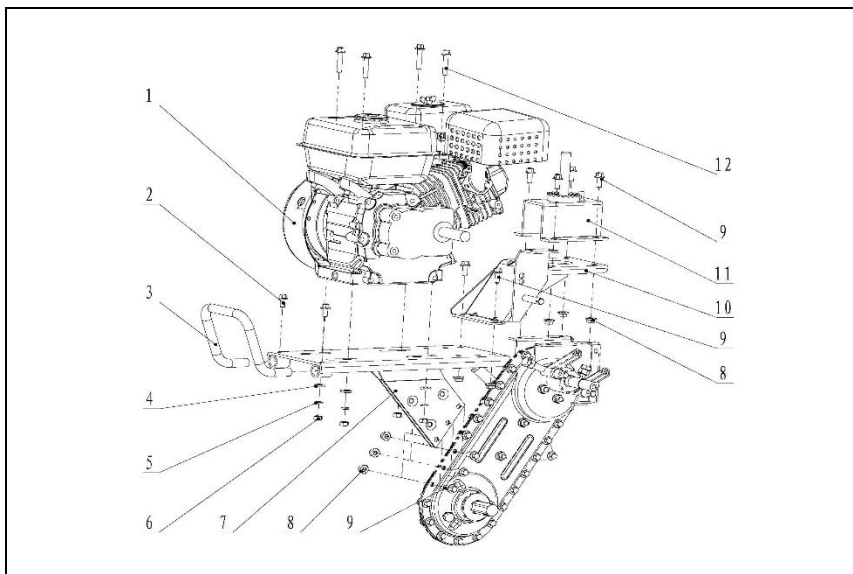
Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	GB/T617 7.1	Hexangular flange nuts M8	8	T221200 1	Dragging components
2	GB/T166 74.1	Hexangular flange bolt M8X16	9	GB/T166 74.1	Hexangular flange bolt M6X16
3	T220000 6	Adjusting lock handle	10	T221200 2	Dust rubber cover
4	GB/T96. 2	Big washer 10	11	T221300 2	Rubber pressing strip
5	T220000 7	Dust cover adjusting plate	12	GB/T889 .1	Nonmetal hexangular Nut M6
6	GB/T62	Butterfly nuts M10X1.5	13	GB/T166 74.1	Hexangular flange bolt M8X25
7	T221600 0	Resistance bar lock handle			

Dust Cover



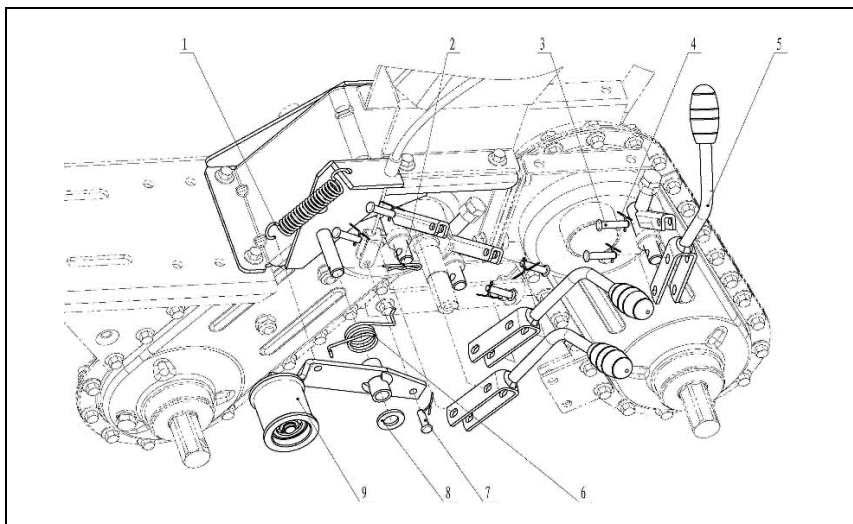
Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2211001	Right dust cover	8	GB/T1667 4.1	Hexangular flange bolt M8X16
2	T2228002	Side dust cover connecting hinge A	9	T2213002	Rubber pressing strip
3	T2228001	Side dust cover	10	T2213001	Dust rubber cover 2
4	GB/T1667 4.1	Hexangular flange bolt M6X12	11	GB/T889. 1	Nonmetal hexangular Nut M6
5	T2200014	Lock small handle	12	T2213003	Left side dust cover
6	T2200013	Side dust cover connecting hinge B	13	T2214000	Ordinary hinge 75
7	GB/T889. 1	Nonmetal hexangular Nut M8			

Engine, Toothed-Disc Seat



Ref No.	Part No.	Description	Ref No.	Part No.	Description
1		170F-L engine	7	T2201000	Engine supporting frame
2	GB/T16674.1	Hexangular flange bolt M8X16	8	GB/T6177.1	Hexangular flange bolt M8
3	T2200001	Lifting handle	9	GB/T16674.1	Hexangular flange bolt M8X20
4		Flat gasket 8X18X3	10	T2206000	Handle bar bottom seat
5	GB/T93	Spring gasket 8	11	T2205000	Toothed-disc seat component
6	GB/T6170	Hexangular nuts M8	12	GB/T16674.1	Hexangular flange bolt M8X40

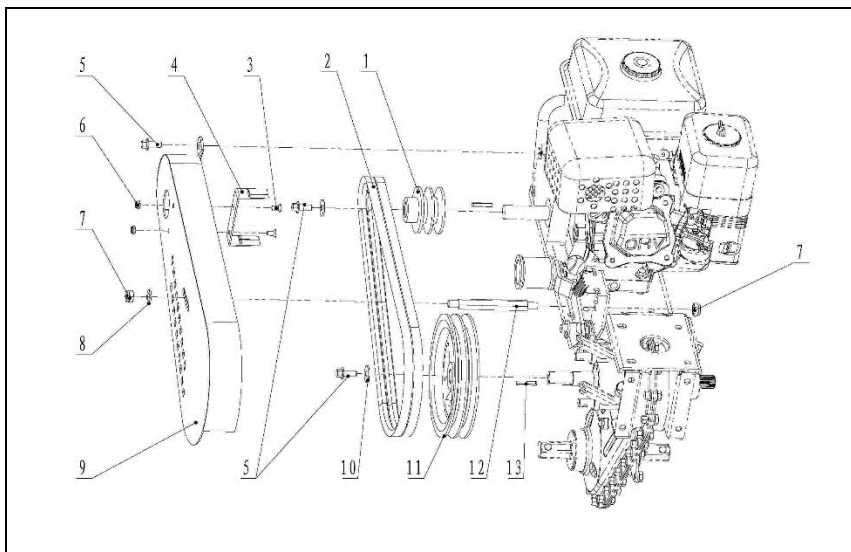
Handle, Tension Wheel Parts



Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2200009	Tension wheel return spring	6	T2300008	Tension wheel torsion spring (650A)
2		Circlip F	7	GB/T882	Pin 6*20
3	GB/T882	Hinge pin 6X26	8	GB/T97.1	Flat washer 12

Ref No.	Part No.	Description	Ref No.	Part No.	Description
4	GB/T91	Split pin 1.6X25	9	T221800 0	Tension wheel components
5	T2219000	Gear shifting handle			

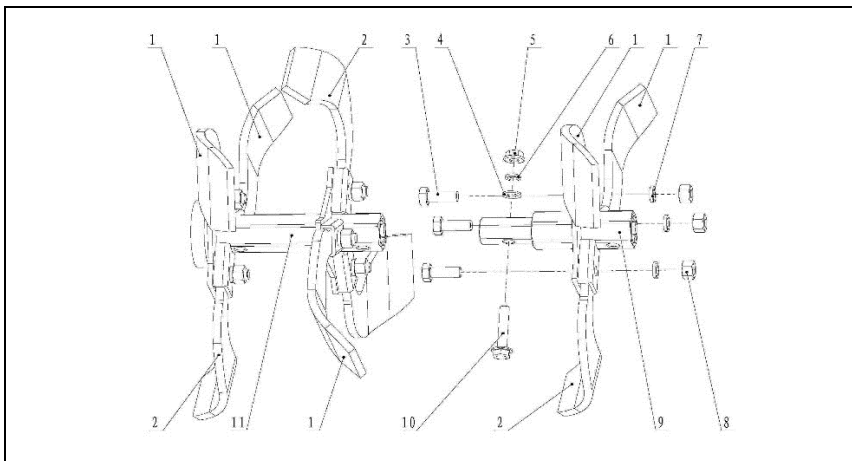
Pulley, Belt Guard Parts



Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2200008	Driving pulley	8	GB/T97. 1	Flat washer 10
2		V belt 13X990 (Li)	9	T220200 1	Belt guard
3	GB/T819.1	Cross recessed countersunk head screws M6*12	10	GB/T96. 2	Big washer 8
4	T2202002	Belt restriction plate	11	T220001 0	Driven pulley
5	GB/T1667 4.1	Hexangular flange bolt M8X20	12	T220001 1	Belt guard connecting rod
6	GB/T889.1	Nonmetal hexangular Nut M6	13	GB/T109 6	Key 5X30

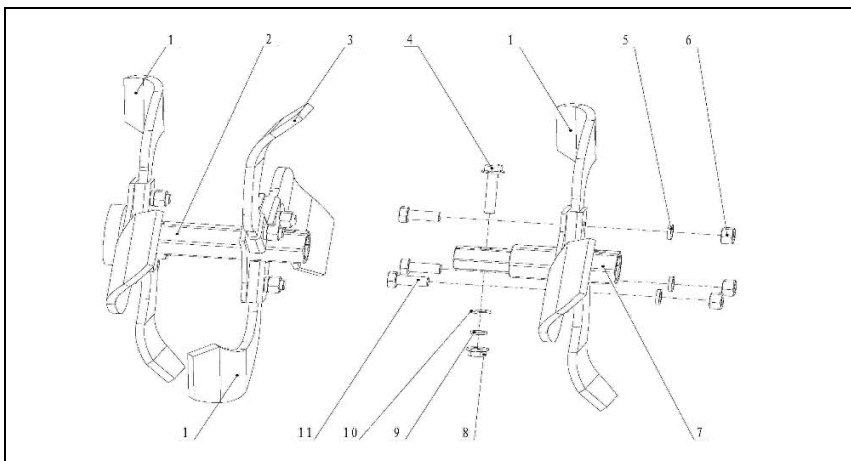
Ref No.	Part No.	Description	Ref No.	Part No.	Description
7	GB/T889.1	Nonmetal hexangular Nut M10			

Right Blades



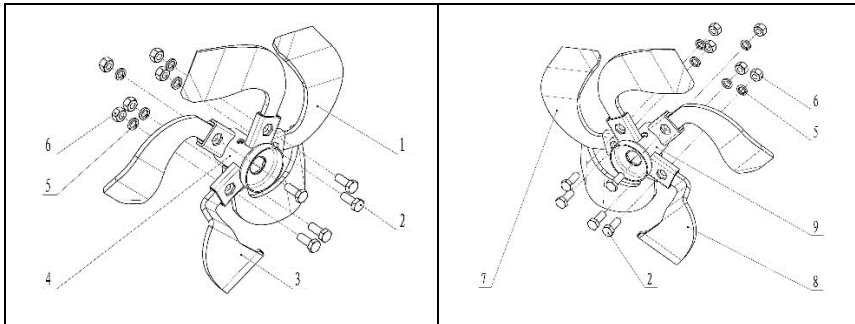
Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2004028	420 rotary blade right knife	7	GB/T97.1	Spring washer 10
2	T2004027	420 rotary blade left knife	8	GB/T6170	Hexangular nuts M10
3	GB/T5783	Hexangular bolt M10X25	9	T2226004	Three knives (2+1)group vice sleeve
4	GB/T97.1	Flat washer 8	10	GB/T5789	Hexangular flange bolt M8X40
5	GB/T6177.1	Hexangular flange bolt M8	11	T2226001	Three knives (2+1)group main sleeve
6	GB/T93	Spring washer 8			

Left Blades



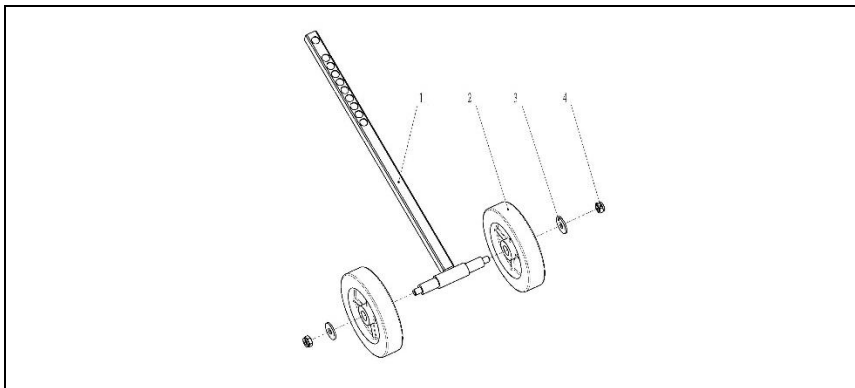
Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2004028	420 rotary blade right knife	7	T2226004	Three knives (2+1)group vice sleeve
2	T2226001	Three knives (2+1)group main sleeve	8	GB/T617 7.1	Hexangular flange nuts M8
3	T2004027	420 rotary blade left knife	9	GB/T93	Spring washer 8
4	GB/T5789	Hexangular flange bolt M8X40	10	GB/T97. 1	Flat washer 8
5	GB/T93	Spring washer 10	11	GB/T578 3	Hexangular bolt M10X25
6	GB/T6170	Hexangular nuts M10			

Five Knives Ditching Blades



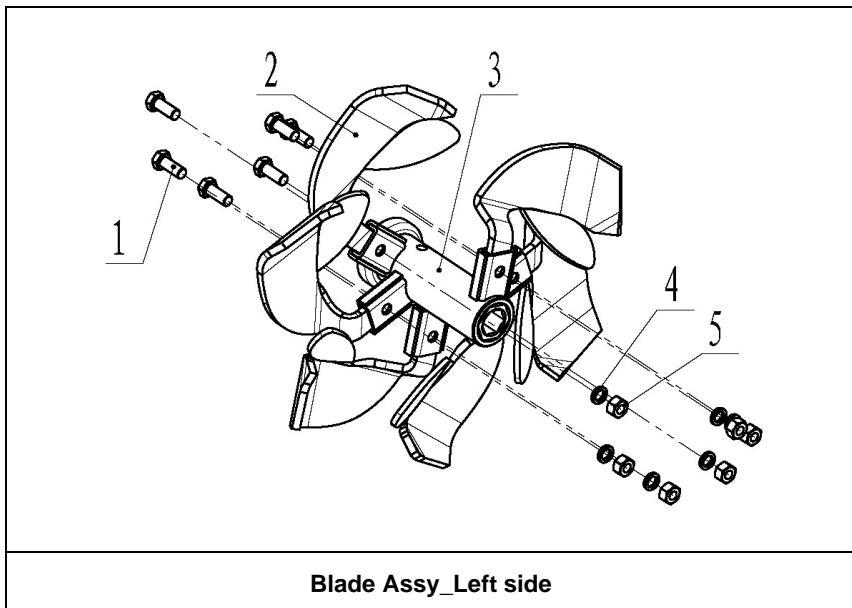
Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2222003	Parallel ditching left blade	6	GB/T6170	Hexangular nuts M10
2	GB/T5783	Hexangular bolt M10X25	7	T2210003	Parallel ditching right blade
3	T2222002	Bowel shape ditching left blade	8	T2210002	Bowel shape ditching right blade
4	T2222001	Five knives ditching left sleeve	9	T2210001	Five knives ditching right sleeve
5	GB/T93	Spring washer 10			

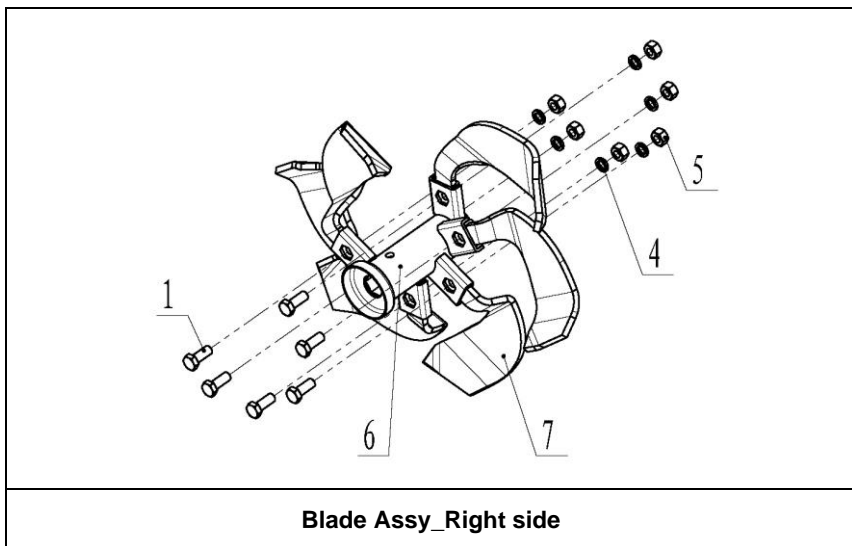
Back Wheel Parts



Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	T2217001	Back wheel stick components	3	GB/T96.2	Big washer 10
2	T2217002	Back wheel	4	GB/T889.1	Nonmetal hexangular Nut M10

Grape Vine Covered Blades Assy (Left & Right)

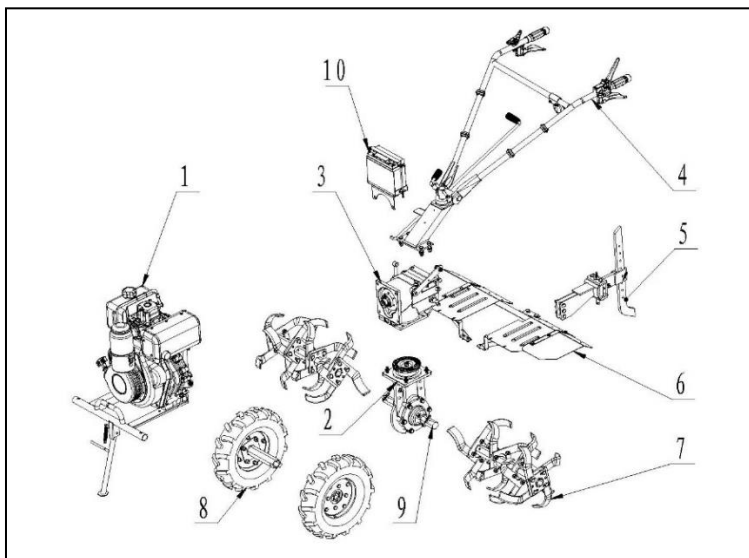




Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	GB/T5783	Hex bolt M10*25	5	GB/T6170	Nut M10
2		Ridging blade left	6		Blade axle right
3		Blade axle left	7		Ditching blade left
4	GB/T93	Spring washer 10			

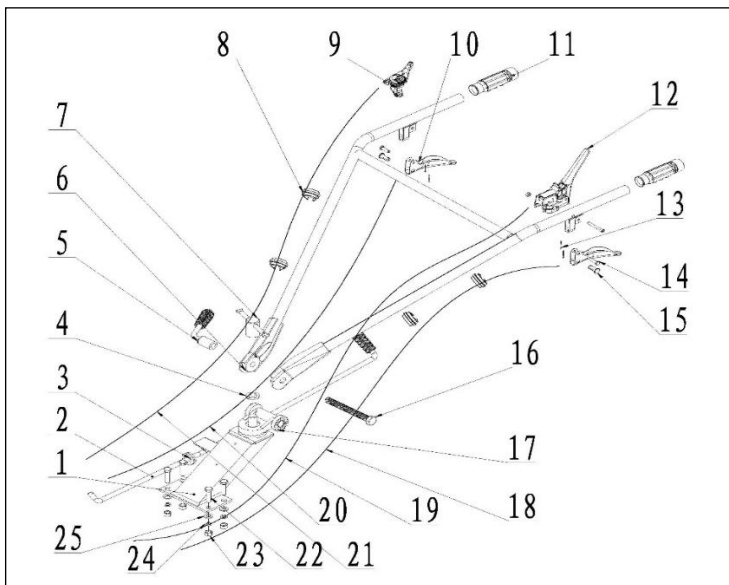
Parts Diagram - Body IC-300D

Intercultivator Exploded View



Ref No	Description	Ref No	Description
1	Handrail parts	6	Bumper, engine support frame and flange parts
2	Shifting Gearbox Assy	7	Fender parts
3	Walking case Assy	8	Dragging bar, connecting frame and resistance rod parts
4	Rotary blades parts	9	Output shaft parts
5	Wheels parts		

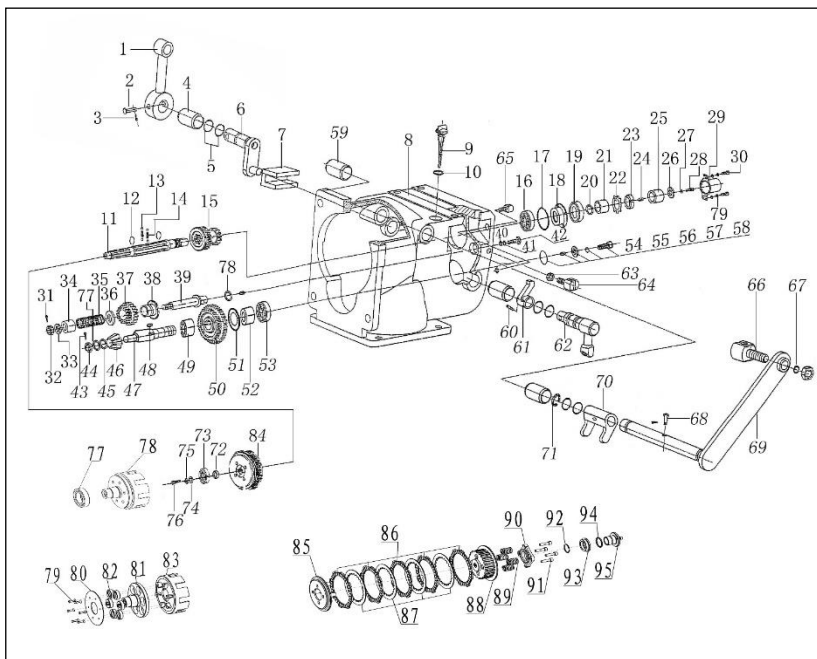
Handrail Parts



Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 1-01	Handrail seat	14	G/B 1-14	Pin 8*24
2	G/B 1-02	Shift lever	15	G/B 1-15	Lacing cord connector
3	G/B 1-03	Scuff sleeve, handrail seat	16	G/B 1-16	Hexagon head bolts- M16*150
4	G/B 1-04	Spring washer20*5(standard type)	17	G/B 1-17	Tray, gear
5	G/B 1-05	Locked lever	18	G/B 1-18	Clutch cable
6	G/B 1-06	Handrail	19	G/B 1-19	Flameout switch cable
7	G/B 1-07	T figure locked lever	20	G/B 1-20	Reverse cable
8	G/B 1-08	Cable clip	21	G/B 1-21	Throttle cable
9	G/B 1-09	Throttle switch Φ25(MF type)	22	G/B 1-22	Hexagon head bolts- M10*40

Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
10	G/B 1-10	Reverse/clutch handlebar	23	G/B 1-23	Hex nut M10(C grade 1 type)
11	G/B 1-11	Handlebar rubber sleeve $\Phi 25$	24	G/B 1-24	Spring washer 10*2.6(standard)
12	G/B 1-12	Flameout switch	25	G/B 1-25	Washer 10*2(C grade)
13	G/B 1-13	Cotter pin 1.6*20(B type)			

Shifting Gearbox Assy



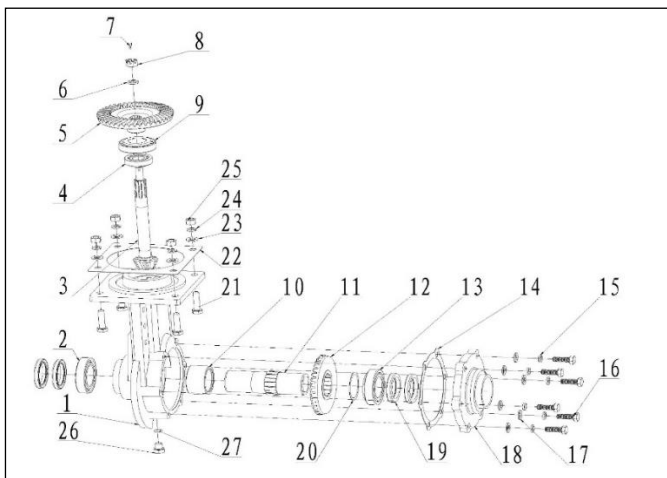
Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 2-1	Sheath, Shift rod	49	G/B 2-48	needle bearing K182420
2	G/B 2-2	Pin 6x40, Shift rod	50	G/B 2-49	Double gear, countershaft

Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
3	G/B 2-3	Clip A	51	G/B 2-50	adjusting Gasket, countershaft
4	G/B 2-4	shift shaft sleeve 20*16*35.5	52	G/B 2-51	Sheath, countershaft
5	G/B 2-5	O-ring 11.2x2.65	53	G/B 2-52	Thrust ball bearing 51104
6	G/B 2-6	shift shaft/shift fork shaft	54	G/B 2-53	O-ring 25x1.8
7	G/B 2-7	Shift block	56	G/B 2-54	Gasket 41x12.5x4
8	G/B 2-8	gear box	57	G/B 2-55	Spring washer 12
9、 10	G/B 2-9	dipstick(with O-ring)	58	G/B 2-56	hexagon Bolt M12x1.25x25
11	G/B 2-10	Principal axes	59	G/B 2-57	reverse gear/clutch fork shaft sheath 20x16x31.5
12	G/B 2-11	steel wire retainer ring for axe	60	G/B 2-58	Worm column pin 5x30
13	G/B 2-12	Steel ball SΦ6	61	G/B 2-59	Reverse gear fork
14	G/B 2-13	Spring , Principal axes	62	G/B 2-60	Axes, reverse gear fork
15	G/B 2-14	Initiative gear	63	G/B 2-61	Nut M8
16	G/B 2-15	Bearing 6204	64	G/B 2-62	Seat, reverse gear cable
17	G/B 2-16	O-ring 45x1.8	65	G/B 2-63	Seat, clutch cable
18	G/B 2-17	Pushing panel	66	G/B 2-64	Seat, clutch cable
19	G/B 2-18	lip Oil seal B25x40x7(propylene)	67	G/B 2-65	Spring washer 8
20	G/B 2-19	O-ring 17x2	68	G/B 2-66	Pin 6x20, clutch fork
21	G/B 2-20	Sheath, principal axes	69	G/B 2-67	Axes, clutch fork
22	G/B 2-21	thrust-washer 20	70	G/B 2-68	Clutch fork

Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
23	G/B 2-22	Round Nut M20x1.5	71	G/B 2-69	Ring 16
24	G/B 2-23	Key A6x6x20	72	G/B 2-70	Clutch washer 26*15.3*2.7
25	G/B 2-24	Sheath, Key	73	G/B 2-71	deep groove ball bearing 6202
26	G/B 2-25	Gasket 8x28x3	74	G/B 2-72	Gasket 8
27	G/B 2-26	Spring washer 6	75	G/B 2-73	External teeth serrated lock washer
28	G/B 2-27	Hex bolts M6x20	76	G/B 2-74	Hexagon bolt M8x20
29	G/B 2-28	Protect cover, principal axes	77	G/B 2-75	deep groove ball bearing 6007
30	G/B 2-29	Inner hexagon Screw M6x20	78	G/B 2-76	clutch cover assy
31	G/B 2-30	Cotter pin 2.5x30	79	G/B 2-77	Countersunk rivet 6
32	G/B 2-31	Hexagon slotted nut M12	80	G/B 2-78	Cover, cushion
33	G/B 2-32	Washer 12	81	G/B 2-79	Spline plate, clutch
34	G/B 2-33	Restrict cover, reverse gear	82	G/B 2-80	Cushion
35	G/B 2-34	Reverse gear Spring	83	G/B 2-81	Cover, clutch
36	G/B 2-35	Spring seat, reverse gear	84	G/B 2-82	Core comp, clutch
37	G/B 2-36	Double gear, reverse gear	85	N/A	
38	G/B 2-37	Pushing plate, reverse gear	86	G/B 2-83	Friction piece
39	G/B 2-38	Axes, reverse gear	87	G/B 2-84	steel piece
40	G/B 2-39	counter shaft adjusting washer/counter shaft washer	88	N/A	
41	G/B 2-40	Spring washer 10	89	N/A	

Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
42	G/B 2-41	Bolt M10×25	90	N/A	
43	G/B 2-42	cotter pin 2×30	91	N/A	Inner hexagon screw M5×20
44	G/B 2-43	Hexagon slotted nut M10	92	N/A	steel wire retainer ring for axe
45	G/B 2-44	Adjusting gasket	93	N/A	Hexagon Fixed sheath
46	G/B 2-45	Initiative umbrella gear	94	N/A	Ball bearing SΦ3.5
47	G/B 2-46	Countershaft	95	N/A	Active Pushing cover
48	G/B 2-47	Key A6×6×20			

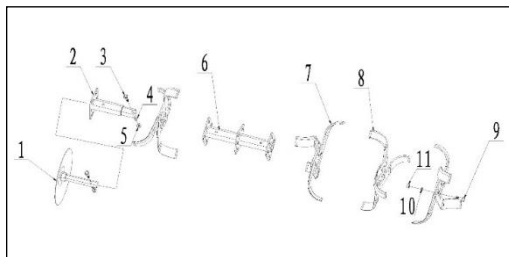
Walking Case Assy



Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 3-1	Walking case	15	G/B 3-15	spring washer 10*2.6
2	G/B 3-2	Deep groove ball bearing 6009	16	G/B 3-16	Hexagon bolt M10*30
3	G/B 3-3	Umbrella gear axes	17	G/B 3-17	gasket 10*2

Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
4	G/B 3-4	Taper roller bearing 30204	18	G/B 3-18	walking case cover
5	G/B 3-5	Driven umbrella gear	19	G/B 3-19	lip seal 45*62*8
6	G/B 3-6	Spring washer 12*3.1	20	G/B 3-20	adjusting gasket 0.1 for umbrella gear
7	G/B 3-7	Cotter pin 2*30			adjusting gasket 0.5 for umbrella gear
8	G/B 3-8	Thin slotted nut M12	21	G/B 3-21	gasket of walking case
9	G/B 3-9	Taper roller bearing 30206	22	G/B 3-22	Hexagon head bolts M10*40
10	G/B 3-10	Output shaft bush	23	G/B 3-23	washer 10*2
11	G/B 3-11	hexagonal output shaft sleeve	24	G/B 3-24	standard spring washer 10*2.6
12	G/B 3-12	Walking umbrella gear	25	G/B 3-25	hexagon nut M10
13	G/B 3-13	Taper roller bearing 32009	26	G/B 3-26	hexagon bolt M12*1.25*12
14	G/B 3-14	gasket of walking case cover	27	G/B 3-27	O-ring 10.2*2.65

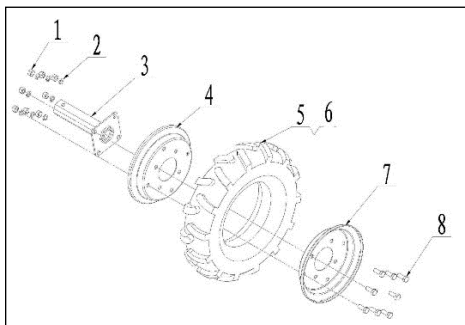
Rotary Blades Parts



Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 4-1	Side Disk	7	G/B 4-7	Dry land Blade(L)
2	G/B 4-2	Counter tube	8	G/B 4-8	Dry land Blade(R)
3	G/B 4-3	Bolt M8x55	9	G/B 4-9	Hex bolt M10x35

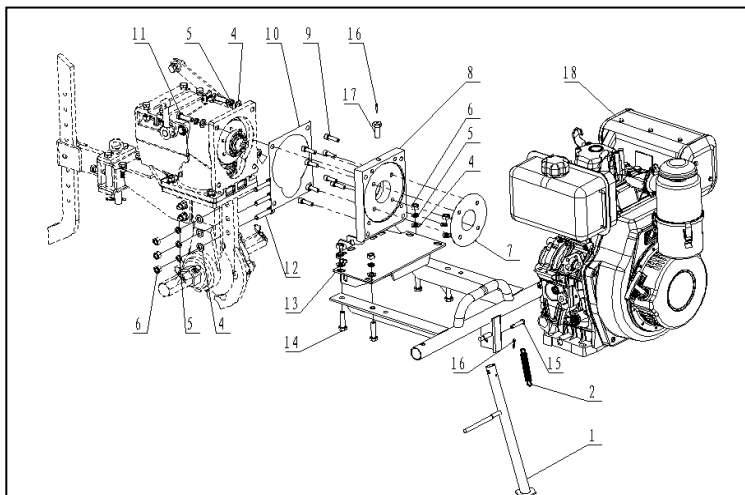
4	G/B 4-4	Spring washer 8	10	G/B 4-10	Nut M10
5	G/B 4-5	Nut M8	11	G/B 4-11	Spring washer 10
6	G/B 4-6	Main tube			

Wheels Parts



Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 5-1	Hex Nut M10	5	G/B 5-5	Inner tube
2	G/B 5-2	Spring washer 10	6	G/B 5-6	Outer rubber tyre 4.00-8
3	G/B 5-3	Wheel axle/black	7	G/B 5-7	Spoke (outer side with hole)
4	G/B 5-4	Spoke (inner side)	8	G/B 5-8	Hex bolt M10x30
Note	Ref no: 4.5.6.7. will be New type Tyre without inner tube in latest models				

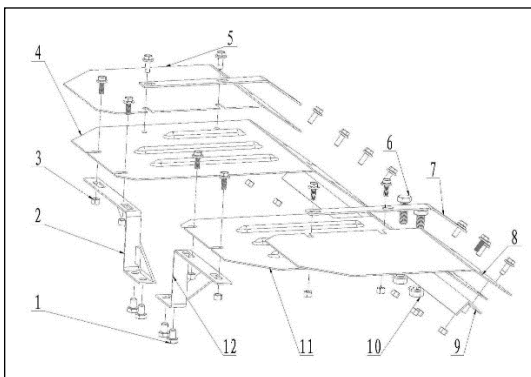
Bumper, Engine Support Frame and Flange Parts



Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 6-1	Support bar of bumper	11	G/B 6-12	Hexagon head bolts-full thread M10*40
2	G/B 6-2	Draw spring, support bar of bumper	12	G/B 6-13	Hexagon head bolts-full thread M10*40
3	G/B 6-3	bumper(WM11 00A)	13	G/B 6-14	Engine support frame(WM1100 A)
	G/B 6-4	bumper(WM11 00B)		G/B 6-15	Engine support frame(WM1100 B)
4	G/B 6-5	washer 10*2 (C grade)	14	G/B 6-16	Hexagon head bolts-full thread M10*50
5	G/B 6-6	gasket 10*2.6(Standard type)	15	G/B 6-17	Pin 8*43(B type)
6	G/B 6-7	hex nut M10(A and B grade)	16	G/B 6-18	Cotter pin 2*30(B type)
7	G/B 6-8	flange gasket	17	G/B 6-19	Hexagon bolt M12*1.25*25
8	G/B 6-9	flange(WM110 0A/B)	18	N/A	Diesel engine(WM178 F)

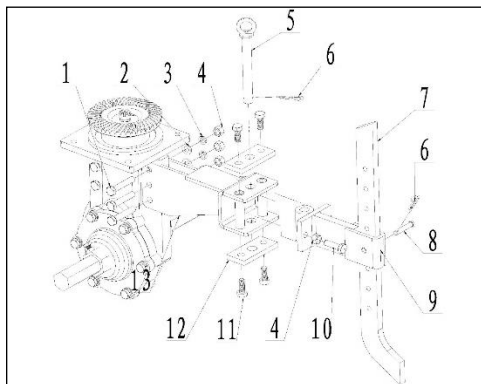
Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
9	G/B 6-10	Hexagon socket head cap screw M8*35		N/A	Diesel engine(WM186 FB)
10	G/B 6-11	Gear box gasket		N/A	Diesel engine(WM186 FBE)

Fender Parts



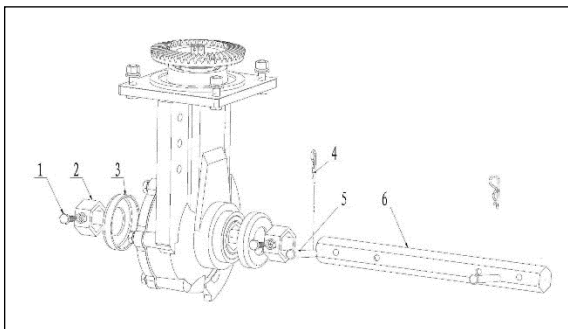
Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 7-1	Hexagon head bolts- M8*12	7	G/B 7-8	batten
2	G/B 7-2	Fender support(right)	8	G/B 7-9	vice fender(left)
3	G/B 7-3	Hexagon nut M6	11	G/B 7-10	fender (left)
	G/B 7-4	Hexagon head bolts- M6*16	9	G/B 7-11	fender back support
4	G/B 7-5	fender(right)	10	G/B 7-12	Hexagon nut M10
5	G/B 7-6	vice fender (right)	12	G/B 7-13	fender support(left)
6	G/B 7-7	Hexagon bolt M10*25			

Trailer Body, Connecting Frame and Resistance Rod Parts



Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 8-1	Hexagon head bolts-M10*50	8	G/B 8-8	Pin 8*43
2	G/B 8-2	washer 10*2	9	G/B 8-9	connecting frame
3	G/B 8-3	spring washer 10*2.6	10	G/B 8-10	Hexagon head bolts-M10*30
4	G/B 8-4	Hexagon not M10	11	G/B 8-11	Hexagon head bolts-M10*20
5	G/B 8-5	Pin with hoop	12	G/B 8-12	Strengthen plate, trailer body
6	G/B 8-6	Clip B	13	G/B 8-13	Dragging bar
7	G/B 8-7	resistance rod			

Output Shaft Parts



Ref No	KK Part No	KK Part Name	Ref No	KK Part No	KK Part Name
1	G/B 9-1	Hexagon head bolts- M8*16	4	G/B 9-4	clip B
2	G/B 9-2	hexagon retainer sleeve	5	G/B 9-5	Pin 8*50
3	G/B 9-3	dust cover	6	G/B 9-6	Hexagon output shaft

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

Brush Cutters and Accessories

- 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

Chainsaws

- Petrol Chainsaw
- Electric Chainsaw
- Chain Sharpening Machine

Engines and Water Pumps

- Engine –Diesel-(Horizontal)
- Engine –Diesel(Vertical)
- Engine-Kerosene
- Water Pump with Petrol Engine
- Water Pump with Kerosene Engine
- Water Pump with Diesel Engine

Hand Tools

- 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

Garden Tools

- Electric Pressure Washer
- Hedge Trimmer
- Lawn Mower (Electric, Petrol & Manual)
- Leaf Blower

Cultivators and Accessories

- Petrol and Diesel

Sprayers and Accessories

- 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

Milking Machine

- Wood Shredder
- Fodder Ensiling Chaff Cutter
- Fodder Grinder Chaff Cutter
- Fodder Mini Chaff Cutter

Harvester

- Maize Sheller
- Maize Sheller + Dehusker
- Maize Combine Harvester
- Onion Digger Carlotti Italy
- Tea Leaf Harvester
- Sugarcane Combine Harvester
- Sugarcane Leaf Stripper

Transplanter and Post Hole Digger

- Paddy Transplanter (2 & 8 Rows)
- Transplanter-Vegetable & Tobacco
- Post Hole Digger(4" to 14" Augers)

Wide Range of Products for Every Need



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



Many of our products have BIS: ISI certification.



Product	Agricultural Inter-Cultivator	KisanKraft Invoice Date	
Brand	KisanKraft	KisanKraft Invoice No.	
Model	<input type="checkbox"/> KK-IC-300D <input type="checkbox"/> KK-IC-357D <input type="checkbox"/> KK-IC-307D <input type="checkbox"/> KK-CRT-550D <input type="checkbox"/> KK-IC-350D		
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	

Warranty Policy

What is covered: KisanKraft Limited and its manufacturers warrant this product to be free from defects in material or workmanship. All parts defective in material and workmanship are covered.

This warranty will only cover defects arising under normal usage.

This warranty is limited to repair or replacement by KisanKraft Limited or its manufacturers of such parts as appear to KisanKraft or its manufacturers, upon inspection, to be defective in material and/or workmanship. KisanKraft or its manufacturers make no warranty with respect to items not manufactured or sold by them. No onsite warranty is provided by KisanKraft Limited or its manufacturers. Defective items must be brought/sent to our Authorized Dealer or KisanKraft Limited's office for service.

What is not covered: The *warranty shall become null and void* and neither KisanKraft Limited nor any of its manufacturers, nor its authorized dealers assumes any responsibility, if the failure was caused by the following:

(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 (8) Any modification to the product what-so-ever.

Important: (1) Normal maintenance and adjustments to the product is the responsibility of the customer. (2) Normal wear and tear are not covered under warranty. (3) Rubber/plastic parts and consumables such as blades, clutch and clutch-bell, sparkplugs, nylon line, air-filters, fuel-filters, oil seals and gaskets etc. are not covered under the warranty. (4) Electrical Motor, Electrical Parts, Battery Etc. are not covered under the warranty.

Incidental / Consequential Loss: KisanKraft Limited or its manufacturers will not be liable for general damages, including bodily injuries, or for incidental or consequential damages

This warranty is null & void, if you fail to register the warranty with KisanKraft by sending the KisanKraft Copy with dealer's stamp.

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.

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.

Assignment / Transfer of warranty: The warranty cannot be assigned and shall not transfer if the product is resold by the first buyer. The above warranties are extended to the first end user (original purchaser), and no warranty is made, nor authorized to be made assignable on resale by the first end user.

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, you must deliver the defective product, to the nearest Authorized Dealer, along with proof-of-purchase (invoice/receipt). 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.

After-sales Service (Including Warranty): KisanKraft Limited does not sell directly to consumers. All sales or supplies are made through Authorized Dealers. It is the responsibility of the Authorized Dealer to provide all after-sales service to consumers. Any warranty claim should be raised by dealer to KisanKraft Limited as per warranty policy.

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

Notes:

- This purchase is not contingent upon a product demonstration. The purchaser shall satisfy himself with the product, including any product demonstration or verification of any function, before buying. KisanKraft Limited or its authorized dealers, including online sellers, shall not be liable to give any on-site demonstration after purchase of any of the product.
- Any product once used will not be taken back by KisanKraft Limited.
- Warranty and After Sale Services (including but not limited to installation, Demonstration, Repair, Routine Maintenance etc.), should be done through the Authorized Dealer selling this product.
- Dealers should have their own technician to provide After Sales Services to their Customers. KisanKraft Limited provides free training to Authorized Dealer's technicians At KisanKraft Limited's head office, on request from Authorized Dealer.

This warranty is null & void, if you fail to register the warranty with KisanKraft by sending the KisanKraft Copy with dealer's stamp.