



Warranty Certificate

(KISANKRAFT COPY)

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

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

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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.

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Warranty Certificate

(DEALER COPY)

Product	Agricultural Inter-Cultivator/Power Weeder	KisanKraft Invoice Date	
Brand	KisanKraft	KisanKraft Invoice No.	
Model	<input type="checkbox"/> KK-IC-205 (Heavy Duty)P <input type="checkbox"/> KK-IC-235P		
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

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- (1) Operation of product with incorrect fuel or lubricants, (2) Incorrect usage of machine or misuse, (3) Lack of maintenance, (4) Negligence, (5) Accident or physical damage, (6) Repairs made by unauthorized parties and/or with unauthorized parts, (7) Improper set up, adjustments, tampering or altered products (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 tears 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.

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Wide Range of Products for Every Need



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Many of our products have BIS: ISI certification.



User Manual



KisanKraft Limited

Warehouse: 818 3B1 to 818 3B18, Podalukur - Sangam Road, Prabagiripatnam, Podalukur, Nellore - 524345, Andhra Pradesh, INDIA
Head Office: #4, 1st Main, 7-A Cross, Maruthi Layout, Dasarahalli, HAF Post, Hebbal, Bangalore 560024, Karnataka, INDIA

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



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Scan the QR code for KisanKraft Youtube Channel

YouTube

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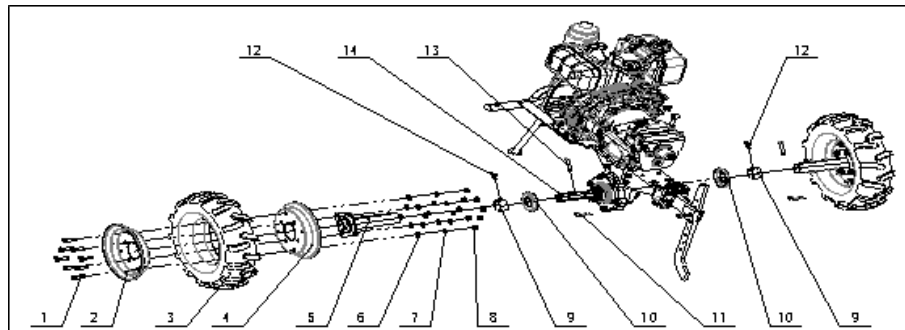
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KisanKraft has a large range of products to serve the farmers. A list of our products is given below:

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



Ref No	Material code	Description	Qty	Remarks
1	360250034	Bolt M10x25	16	
2	2800900001-0030	Outside rim	2	4.00-8
3	2800500006-0002	Wheel and tyre	2	4.00-8
4	2800800001-0030	Inner rim	2	4.00-8
5	2801000001-0001	Wheel axle	2	4.00-8
6	360660024	Gasket 10	16	
7	360620015	Spring washer 10	16	
8	360010008	Nut M10	16	
9	2110200001-0003	Hexagons fasten sheath	2	
10	2408200001-0004	Dustproof cover	2	
11	3402200004-0001	Clip B	2	
12	360220039	Bolt M8x16	2	
13	361020032	Pin 8x50	2	
14	2113600013-0001	Hexagon output shaft	1	

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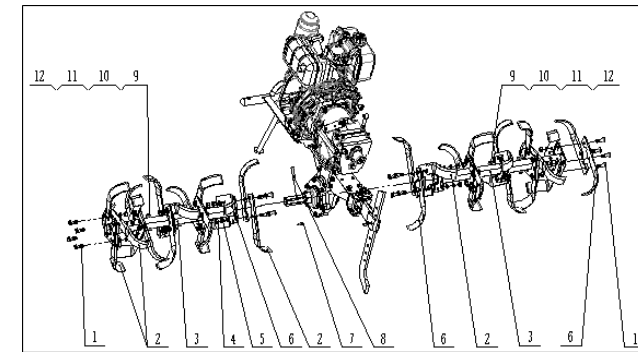
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14	2413100001-0012	Dust fender back frame	1	4.00-8/4.00-10
15	2601600085-0001	Right fender	1	4.00-8/4.00-10
16	2604600004-0002	Right vice fender	1	

Rotary parts (R)





Ref No	Material code	Description	Qty	Remarks
1	3421300001-0001	Bolt M10x32	32	1100A/C/D-6
	3421300001-0001	Bolt M10x32	40	1100B/-6
2	2700400014-0003	Right blades	16	1100A/C/D-6
	2700400014-0003	Right blades	20	1100B/-6
3	2706800009-0001	3+1 cylinder	2	1100A/C/D-6
4	360620015	Spring washer 10	32	1100A/C/D-6
	360620015	Spring washer 10	40	1100B/-6
5	360010008	Nut M10	32	1100A/C/D-6
	360010008	Nut M10	40	1100B/-6
6	2700400013-0003	Left blades	16	1100A/C/D-6
	2700400013-0003	Left blades	20	1100B/-6
7	3402200004-0001	Clip B	2	
8	361020032	Pin 8x50	2	
9	360040010	Nut M8	2	1100A/C/D-6
	360040010	Nut M8	4	1100B/-6
10	360300125	Bolt M8x55	2	1100A/C/D-6
	360300125	Bolt M8x55	4	1100B/-6
11	360620011	Spring washer 8	2	1100A/C/D-6
	360620011	Spring washer 8	4	1100B/-6
12	360660021	Gasket 8	2	1100A/C/D-6
	360660021	Gasket 8	4	1100B/-6

BEFORE GETTING STARTED

Thank you for purchasing our Inter-cultivator.

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

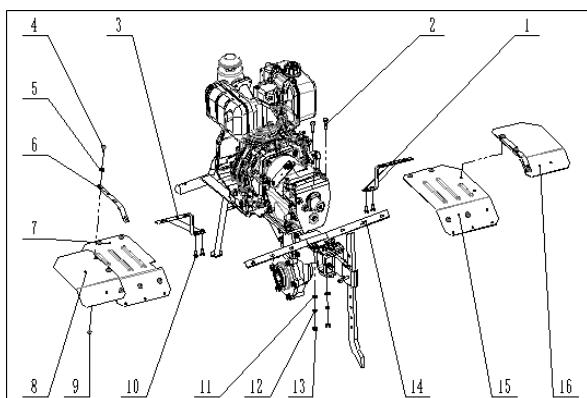
 WARNING	Indicates a strong possibility of severe personal injury or death if instructions are not followed.
 CAUTION	Indicates a possibility of personal injury or equipment damage if instructions are not followed.
NOTE	Gives helpful information.

APPLICATION

The Inter-cultivator is suitable for cultivating the sandy soil and clay soil of canopied vegetables base, slopes with gradient less than 10%, paddy field with the depth of water surface to hard layer not more than 250mm. For weedy and deep plots, remove the weeds before using the Inter-cultivator to cultivate the land. Assemble blades on both side of Inter-Cultivator and use pin to fixed blades to do Intercultural/Weeding operations. Take off resistance rod and assemble ditching blade, for ditching work.

Ref No	Material code	Description	Qty
1	360250039	Bolt M10x30	2
2	361020031	Pin 8x43	1
3	360010011	Nut M10	5
4	2415400006-0003	Connection frame	1
5	3402200004-0002	Clip B	2
6	2425300001-0003	Tow bar	1
7	360250094	Bolt M10x50	3
8	360620013	Spring washer 10	3
9	2123400001-0001	Pin with ring	1
10	2401300001-0002	Resistance rod	1

Fender parts



Ref No	Material code	Description	Qty	Remarks
1	2605300001-0013	Right support frame	1	4.00-8/4.00-10
2	360250038	Bolt M10x30	2	
3	2605300002-0013	left support frame	1	4.00-8/4.00-10
4	360300007	Bolt M6x16	14	
5	360590005	Big gasket 6	14	
6	2415200002-0003	Press piece	2	
7	2601600093-0001	Left fender	1	4.00-8/4.00-10
8	2604600003-0002	Left vice fender	1	
9	360040004	Nut M6	14	
10	360250019	Bolt M8x12	4	
11	360660024	Gasket 10	2	
12	360620013	Spring washer 10	2	
13	360010011	Nut M10	2	

SAFETY INSTRUCTION AND LABELS

Training

- 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. Local regulations can restrict the age of the operator.
- Never work while people, especially children, or pets are nearby.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

Preparation

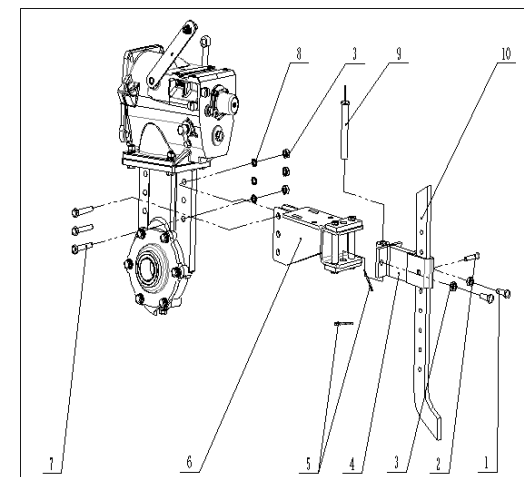
- While working, always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
- Thoroughly inspect the area where the equipment is to be used and remove all objects which can be thrown up by the machine.
- WARNING – Petrol is highly flammable:
 - Store fuel in container specifically designed for this purpose.
 - Refuel outdoors only and do not smoke while refueling.
 - add fuel before starting the engine. Never remove the cap of the fuel tank or add petrol while the engine is running or when the engine is hot.
 - if petrol 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 petrol vapors have dissipated.
 - replace all fuel tanks and container caps securely.
- Replace faulty silencers.
- Before using, always visually inspect to see that the tools are not worn or damaged. Replace worn or damaged elements and bolts in sets to preserve balance.

Operation

- Do not operate the engine in a confined space where dangerous carbon. Monoxide fumes can collect.
- 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.
- Do not work on excessively steep slopes.
- Use extreme caution when reversing or pulling the machine towards you.
- Do not change the engine governor settings or over speed the engine.
- start the engine carefully according to manufacturer instructions and with feet well away from the tool(s).
- When starting the engine, ensure the Gearshift is in neutral position. Do not put hands or feet near or under rotating parts.

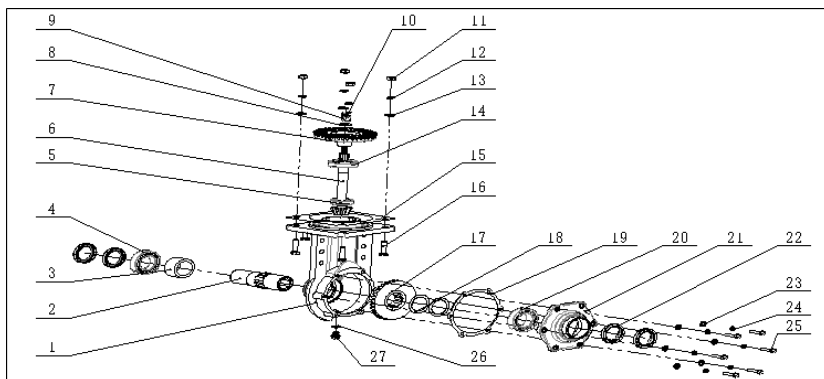
9	360070007	Slotted nut M12	1
10	360560015	Split pin 2.5x30	1
11	360010011	Bolt M10	4
12	360660024	Gasket 10	4
13	360620013	Spring washer 10	4
14	360750002	Tapered roller bearing 30206	1
15	3401400001-0001	Gasket, Gearbox0.5	On Demand
16	360250046	Bolt M10x40	4
17	2119100001-0001	Walking umbrella gear	1
18	3417000016-0001	Adjustment gasket 60x45.5x0.5	On Demand
	3417000017-0001	Adjustment gasket 60x45.5x0.2	
	3417000021-0001	Adjustment gasket 60x45.5x0.1	
19	3416300002-0001	End cover gasket	1
20	360750003	Tappered roller bearing 32009	1
21	2124700003-0007	Walking case end cover	1
22	3408800013-0001	Lip seal TC45x62x8	4
23	361250005	Spring washer 10	6
24		Bolt M8x30	6
25		Gasket 10	6
26	360710054	O-ring 10*2.65	1
27	3403900002-0001	Drain bolt M12x1.25x10	1

Tow bar comp



60	2106400034-0001	Shell	1
61	360250046	Bolt M10x40	4
62	3401400001-0001	Gasket, Gearbox 0.5	1
63	360710018	O-Ring25x1.8	1
64	2119900001-0001	Shaft	1
65	360760002	Bearing51104	1
66	3410800006-0001	Bush32x38x17.5	1
67	2117100001-0001	Gear	1
68	360770002	Centripetal needle roller and holder	2
69	2120600001-0001	Bevel Gear	1
70	360060001	Nut M10	1
71	360710014	O-Ring18x1.8	1
72	2116100001-0001	Reverse Gear Shaft	1
73	2116000001-0001	Reverse Thrust Plate	1
74	2117900002-0001	Gear	1
75	3404900001-0001	Spring	1
76	2115800001-0001	Collar	1
77	2115900001-0001	Spring	1
78	360060007	Gasket 12	1
79	360060004	Nut M12	1
80	360560014	Pin 2x30	2

Transmission Case Parts



Ref No	Material code	Description	Qty
1	2124500001-0012	Walking case	1
2	2114300001-0001	Inner hexed output sheath	1
3	2114800001-0001	Output shaft sheath	1
4	360720014	Ball bearing 6009	1
5	360750001	Tapered roller bearing 30204	1
6	2110000001-0001	Umbrella gear shaft	1
7	2119000001-0001	Driven umbrella gear	1
8	360620029	Spring washer 12	1

- k) Never pick up or carry a machine while the engine is running.
- l) Stop the engine:
 - Whenever you leave the machine.
 - Before refueling.
- m) 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.
- n) Never load people, when starting at cobbled road sidewalk or on the road, please keep watch, and note the traffic situation in case of the potential dangers!
- o) once abnormal condition happens, immediately close the engine! Look for the reason, vibration is often the beginning of the fault.
- p) When weeding in the hard land, the blades may go low to the ground, be more careful. If happens, go off the handlebar and not go to control machine.

Maintenance and storage

- a) Keep all nuts, bolts, and screws tight to ensure the equipment is safe working conditions.
- b) Never store the equipment with petrol in the tank inside a building were fumes can reach an open flame or spark.
- c) Allow the engine to cool before storing it in any enclosure.
- d) To reduce the fire hazard, keep the engine, silencer, and petrol storage area free of vegetative material and excessive grease.
- e) Replace worn or damaged parts for safety.
- f) If the fuel tank has to be drained, this shall be done outdoors.

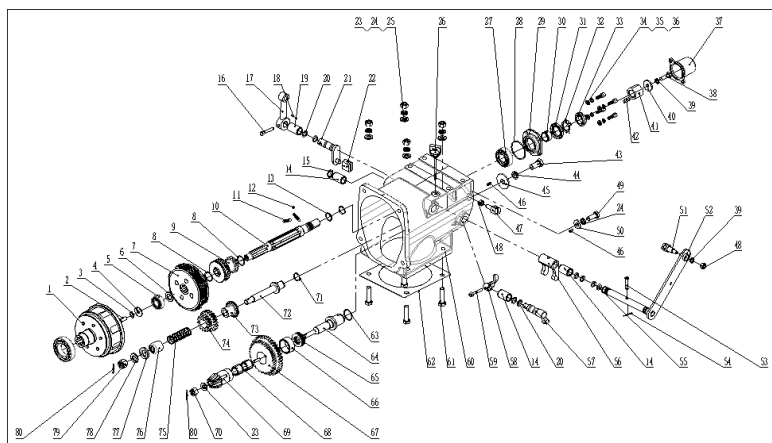
Matters need attention during the use of Intercultivator.

- a) Operator should read this manual before using the machinery , and do the Adjustment and maintenance according to the manual.
- b) Before using the machinery, following items should be paid attention to:
- c) Please add clean fuel, make sure the engine is stopped and in well-ventilated Condition, never let fuel get in touch with high temperature surface rotating. Parts or electrical components, never add too much oil in order to avoid. Overflowing, if there is fuel spillage or leakage, dry it up before starting the machine, cover up fuel tank cap and tighten it. In case of fire, storage sites and venues are strictly prohibited fireworks,
- d) Check whether the bolt is fixed; any parts are loose, or scratches stuck Phenomenon, whether the direction of rotation is consistent with the label mean to.
- e) Check whether external moving parts and rotating parts have reliable safety protection device and safety signs,
- f) Minors without training and master, is not allowed to operate the machine.

8	360930006	Snap Ring25	2
9	2118100004-0001	Gear	1
10	2121800001-0001	Shaft	1
11	3404800001-0001	Spring	2
12	360970002	Steel Ball SΦ6.35	4
13	360710012	O-Ring17x1.8	2
14	3410800007-0001	Bush20x16x31.5	3
15	360920070	Circlip	1
16	361020015	Pin6x40	1
17	2116300001-0001	Shift arm	1
18	3402200003-0001	Clip A	1
19	3410800002-0001	Bush20x16x35.5	1
20	360710053	O-Ring11x2.8	4
21	2101700001-0001	Axle	1
22	2110400004-0001	Block	1
23	360660013	Gasket 10	4
24	360620015	Spring washer 10	5
25	360010008	Nut M10	4
26	1104700012-0001	Gauge, Oil Level	1
27	360720032	Bearing 6204	1
28	360710028	O-Ring45x1.8	1
29	2110500001-0001	Radial Seal	1
30	2122300001-0001	Shaft Sleeve	1
31	3408800003-0001	Sear B25x40x7	1
32	360600006	Washer, Tab 20	1
33	360110004	Nut, Round M20x1.5	1
34	360660004	Gasket 6	4
35	360620006	Spring washer 6	4
36	360380007	Bolt Hex M6x20	4
37	2116700002-0002	Shaft Cover	1
38	360250028	Bolt M8x25	1
39	360620008	Spring washer 8	2
40	360590002	Washer 8	1
41	3416900001-0001	Nylon Bush	1
42	360980063	Key, Flat A6x6x20	2
43	360280002	Bolt M12x1.25x25	1
44	360620029	Spring washer 12	1
45	3412100009-0001	Gasket 12.5x40x4	1
46	360850013	Pin Roll A 5x10	2
47	3005300010-0001	Wire Holder	1
48	360010003	Nut M8	2
49	360250034	Bolt M10x25	1
50	2116200001-0001	Washer	1
51	3005300006-0001	Wire Holder	1
52	2102400001-0012	Fork Axle	1
53	361020011	Pin Roll B 6x30	1
54	360560021	Pin 1.6x20	1
55	360710003	O-Ring10.2x2.65	4
56	2102500001-0001	Clutch Fork	1
57	2102300001-0001	Fork Axle	1
58	2101800001-0001	Fork, Reverse	1
59	360300029	Bolt M5x30	1

14	301180002-0001	Flameout switch (With cable)	1	The gasoline engine is normally closed
15	3000500032-0001	φ25 handle rubber	2	
16	3010700004-0001	Reverse/clutch handle	2	
17	3012300001-0001	Clutch clip	1	Clutch handle
18	3000800001-0001	Fameout cable	1	For diesel engines
19	2400600001-0001	Cable clip	4	
20	3009200117-0001	Usually closed clutch cable	1	
21	3002100025-0001	Locked grip	1	
22	360620022	Spring washer 20	1	
23	360220169	Bolt M6x35	4	
24	360660013	Nut M10	4	
25	360620015	Spring washer 10	4	
26	360010008	Gasket 10	4	

Gearbox Parts



Ref No	Material code	Description	Qty
1	2101400024-0001	Clutch housing assembly	1
2	360250024	Bolt M8x20	1
3	360890004	Lock washer8	1
4	360640005	Gasket 8	1
5	360720019	Bearing 6202	1
6	3411800016-0001	Washer 15.5x26x2.6	1
7	2101200015-0001	Clutch Assy	1

Safety Labels

- 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.



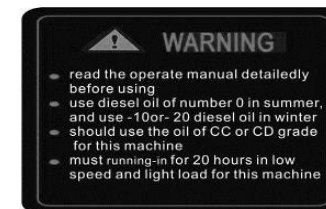
- Keep this machine stabilization Before Use and Read the instruction carefully



- Please refuel in time



- Please pay attention to warning signs



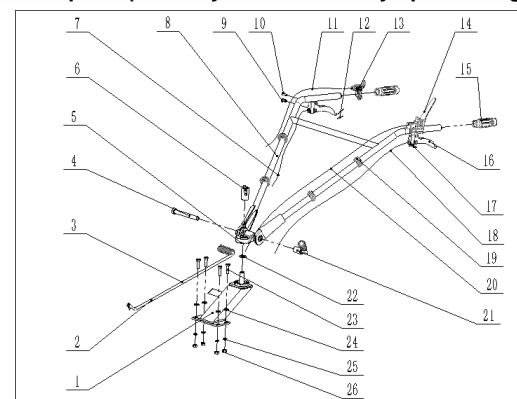
TECHNICAL SPECIFICATION

Model	KK-IC-205P (heavy duty)	KK-IC-235P
Displacement	212cc	223cc
Rated Power	4kw/3600rpm	4.4kw/3600rpm
Max tilling width	1350mm	1350mm
Tilling depth	150-300mm	150-300mm
Tilling blades	32nos	32nos
Tine diameter	360mm	360mm
Transmission	Gear	Gear
Wheels	4.0-7 solid tyre	4.0-7 solid tyre
Net weight	104kg	105kg
Oil capacity	0.6L	0.6L
Fuel tank capacity	3.6L	3.6L
Bore stroke	70*55mm	70*58mm
Torque	12/2800rpm	13/2800rpm

* Specifications may change due to improvements, and for reference only, not as the acceptance basis

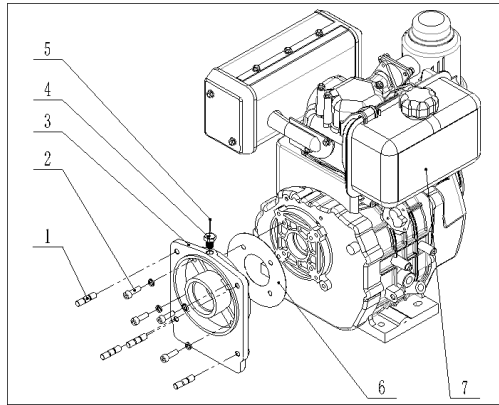
Ref No	Material code	Description	Qty	Remarks
1	360010011	Nut M10	7	
2	360620013	Spring Washer 10	11	
3	360660024	Gasket 10	11	
4		Engine 170F/P or 170FB/P	1	
5	2401200113-0001	Engine frame	1	1100BL
6	2602900099-0001	Bumper	1	1100BL
7	2601800001-0001	Bumper stud	2	
8	360250094	Bolt M10x50	4	
9	3401200013-0001	fl flange gasket	1	
10	360250046	Bolt M10x40	7	

Handrail control parts (normally closed/normally open for regular version)



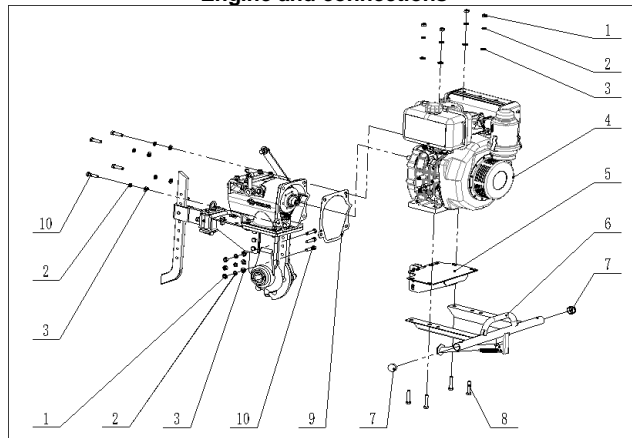
Ref No	Material code	Description	Qty	remark
1	2401400094-0002	Handle seat	1	
2	3015600070-0001	Shift gear rod	1	
3	3402200004-0001	Clip B	1	
4	360260052	Bolt M16x120	1	
5	2414900010-0002	Tooth plate	1	
6	3002000009-0001	Locked turning handle	1	
7	3010400001-0001	Reverse cable	1	
8	2402300210-0002	Handle frame	1	
9	2113100009-0001	Cable tie-in	2	
10	2113100005-0001	Pin 7x24	2	
11	3000200011-0001	Oil cable	1	For gasoline engines
12	360560021	Split pin 1.6x20	4	
13	1815700001-0001	Oil switch	1	

Flang Part

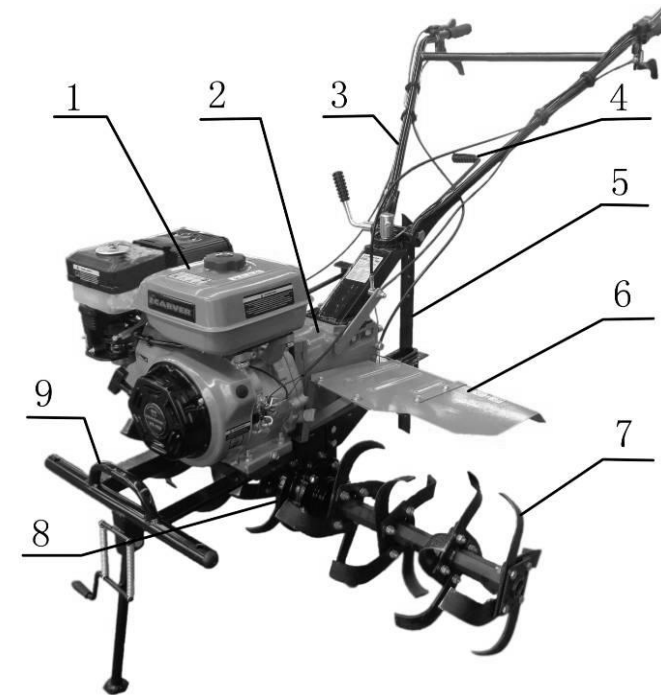


Ref No	Material code	Description	Qty
1	360540007	Bolt Hex M10x40	4
2	361280001	Bolt Hex M8x25	8
3	2109300046-0001	Flange	1
4	3414100001-0001	Bolt	1
5	360560015	Pin 2.5x30	1
6	3401100024-0001	Gasket	1
7		Engine 170F/P or 170FB/P	1

Engine and connections



.Product Overview



- 1: Fuel engine 2: gear shifting box 3: handle comp 4: Shift lever
5: deep furrowing resistance part 6: fender 7: blade 8: walking crankcase
9: bumper

APPLICABLE SCOPE

I. Rotary tillage

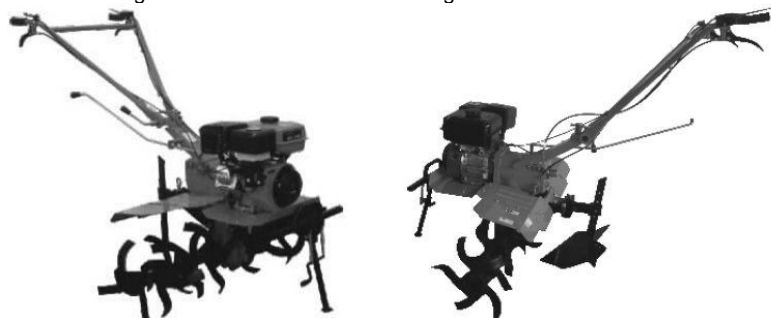
Rotary tillage components are installed on both sides of the driving shaft of Mini Power weeder running gear. Tighten the shaft with two bolts M8x55. Then the Mini Power weeder can work. (Look at table2 and Picture2).

Table 2

Tilling device mode	3groups		4groups	
	3blades	4blades	3blades	4blades
Tilling blades	3x6	4x6	3x8	4x8
Tilling scope(mm)	800		1100	
Suitable soil	Paddy field with insufficient water; clayed soil	solid soil	Wet soil	Dry soil

Picture2: tilling device

Picture3: ditching device



II. Ditching and ridge forming

Take away deep furrowing resistance part, install ditching device and adjust the width and height of ditching device. (Picture3)

III. Short distance transportation

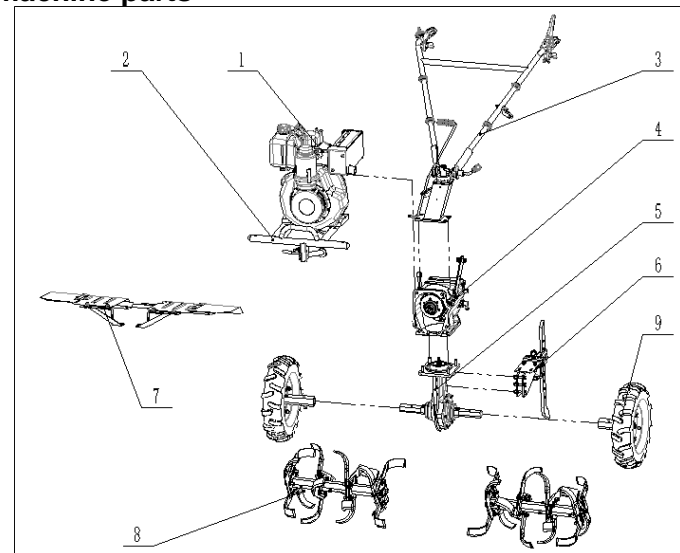
Install trailer on the drag body and wheels on the driving shaft. The loading capacity is 250kg. At the rated speed of gasoline engine, fast shift speed is about 10km/h and slow shift speed is 5km/h.

IV. Multifunctional work

Take away the safety cover of gear box (num.2 in picture 1), and the back bolt of main shaft, the key sleeve of the shaft, then install the attaching belt pulley and coupling on the main shaft of gear box and fasten with bolts. Ordinary V-belt A-model is used for the cross section of belt pulley. The rated speed of belt pulley is 3600r/m. When it is attached with relative machine tools, auxiliary tools, you can carry out such multifunctional work: bailing, sprinkling, chemical spraying, threshing, reaping, and generating power.

PART DIAGRAM AND LIST

The machine parts



Ref No	Description
1	Engine and Flange
2	Engine and connections
3	Control parts
4	Gearbox Parts
5	Transmission Case Parts
6	Tow bar comp
7	Safety Shield
8	Rotary tiller parts
9	Wheel Parts

4	Throttle switch	Handle frame assy.
5	Rubber handlebar	Handle frame assy.
6	Rubber sleeve	Shift lever, tighten handlebar
7	Oil seal 45x62x8	Gear box assy.
8	Oil seal 25x40x7	Transmission box assy.
9	Easily damaged parts of engine	Refer to instruction and picture of engine

Bearings

Table 10

Number	Model	Name	Specification	Quantity	Remark
1	GB276-82	Radial ball bearing	6204	1	Used for main shaft
			6202	3	Used for the clutch, gasoline engine
			6206	1	Used for gasoline engine
			6009	1	Used for crankshaft sleeve
2	GB297-84	Thrust bearing	30204	1	Used for driving bevel gear
		Thrust bearing	32009	1	Used for crankshaft sleeve
		Thrust bearing	30206	1	Used for driven bevel gear
		Plane bearing	51104	1	Used for driven shaft

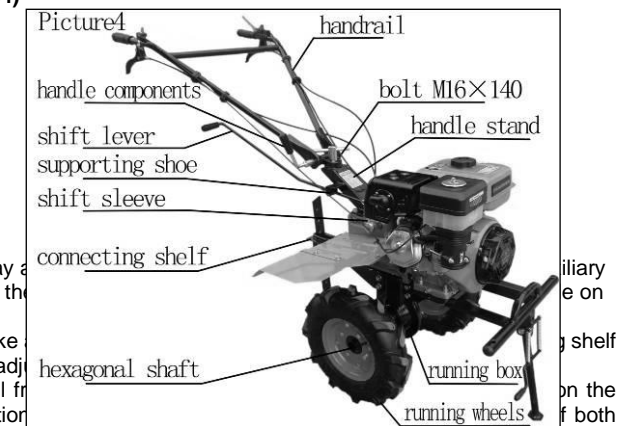
INSTALLATION

Number	Name	Unit	Usage
1	Rotary tilling wheels of paddy field	Set	Tilling in paddy field
2	Water pumping device(centrifugal water pump3-stroke)	Set	Water pumping
3	Ditcher	Set	Ditching

OPERATION AND APPLICATION

I. Un packing assembly(Picture4)

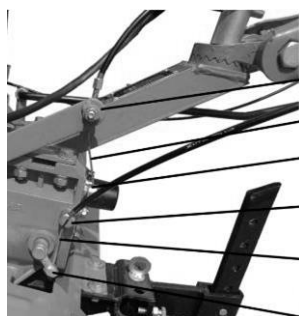
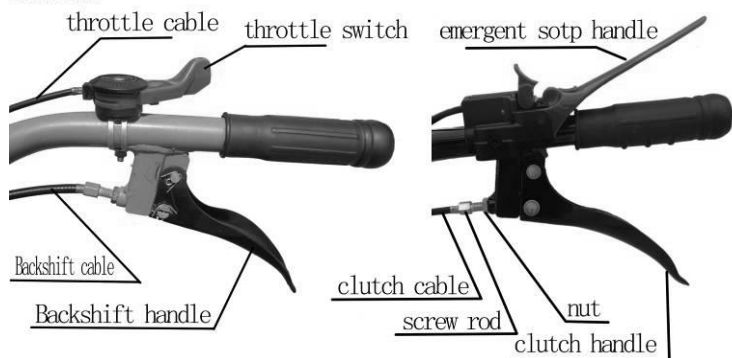
1. Fix the body of mini tiller, install running wheels on both sides of hexagonal shaft and fix the wheels with 2 bolts M8x55, 2 nuts M8.
2. Handlebar installation: turn the two fluted discs on the handlebar to right with the fluted discs on both sides of the disc plate. Pay attention to install 2 bolts M16x140 and gasket 16, then install the handlebar with wire dip.
3. Resistance rod installation: take the resistance rod and adjust it to get the resistance rod and adjust the handlebar.
4. Mud fender installation: install from the mini tiller. Then install protection disc.



II. Installation and adjustment of cables

1. clutch cable adjustment(look at picture5 and 6)

Picture5



Picture6

clutch fork arm
clutch cable
clutch cable holder
Backshift wire holder
Backshift cable
Backshift fork shaft

- ①. Unlock nuts on the screw rod.
 - ②. Instantaneously rotate the screw rod to show the shortest part of the handlebar.
 - ③. Thread the cable head into clutch plug behind the gear box Assy and make sure the head is in the big hole of the plug.
 - ④. Thread the steel wire-rope into the M8 hole of arm plug, and then properly press down the clutch fork arm to insert the cable head into clutch plug.
 - ⑤. Rotate out the screw rod and clip it repeatedly, unlock the clutch handlebar until spring force of clutch can reposition the bar, and then fasten the nuts.
2. backshift cable adjustment(Picture5 and 6)
- ①. Unlock the fasten nuts on the screw rod.
 - ②. Instantaneously rotate the screw rod to show the shortest part of the handlebar.
 - ③. Thread the cable into the backshift shaft at the side of gear box and make sure the cable head is in the big hole of shaft.
 - ④. Properly counterclockwise rotate the backshift fork shaft, thread the cable into the narrow slit of backshift plug through the side of the gear box and make sure the cable head is in the big hole of the plug.
 - ⑤. Rotate out the screw rod and holdfast it repeatedly, unlock the backshift bar. When spring force

IV. Troubleshooting of running gear

Table 7

Phenomenon	Reason	Solution
Gear noise is too big	Gear is heavily fretted or repaired improperly	Readjust or change the gear
Gear is seized	Gear installation is incorrect	Reinstall
Overheat	Lube in the case is insufficient	Refuel lube according to the requirement
	Gear side clearance is too narrow	Reinstall
	Shaft windage is too narrow	Readjust
There is oil leakage of gear box	Bolts become loose	Tighten
	Seal gasket is damaged	Change
There is oil leakage of outer section of crankshaft	Oil seal is damaged	Change oil seal B45×62×8
There is oil leakage of hexagonal hole in the crankshaft	The shaft sleeve is broken	Change
There is oil leakage of oil drain hole	O-ring is damaged	Change O-ring φ10×1.8
	Bolts become loose	Tighten according to the requirement
There is oil leakage of the case	There are hidden micro holes in the case	Weld or paint to stop leakage

V. Troubleshooting of other parts

Table 8

Phenomenon	Reason	Debugging method
Rotary blades are broken	Collide with stones in the course of using	Change, pay attention not to collide with the stones in the soil
The operating cable is broken	Long period abrasion	Change

Easily damaged parts

Table 9

Number	Name	Assy
1	Clutch cable	Handle frame assy.
2	Back shift clutch	Handle frame assy.
3	Gun clutch	Handle frame assy.

Back shift cannot be positioned	Abrasion of backshift fork	Readjust shift cable; change shifting fork
	Backshift cable becomes useless	Readjust cable; change cable
	Backshift shaft becomes loose	Tighten screws behind the shift shaft
	Backshift fork is seized	Check the section between backshift fork and pusher to make it flexible
Back shift gear cannot be positioned	Backshift shaft becomes loose, making gear seized	Tighten the screws behind the backshift shaft
	The spring on the backshift shaft becomes useless	Change the spring
	The backshift shaft becomes curved	Change the backshift shaft
Backshift shaft becomes loose	Bolts behind the backshift shaft become loose	Tighten the bolts
	The backshift shaft and case are not well fitted	Change
Gear noise is too big	Bevel gear shaft and backshift shaft become curved	Change
	Gears are heavily fretted	Change gear
	Bevel gear shaft and backshift shaft are not well fitted	Change
There is oil leakage of back cover on the main shaft	O-ring on the main shaft becomes useless	Change O-ringφ17×1.8
	Oil seal on the main shaft becomes useless	Change oil seal B25×40×7
	O-ring on the cover becomes useless	Change O-ringφ46×1.8

There is oil leakage of backshift shaft	Bolts behind the backshift shaft become loose	Tighten bolts
	O-ring on the backshift shaft becomes ineffective	Change O-ringφ18×1.8
There is oil leakage of backshift fork shaft	O-ring becomes useless	Change O-ringφ1.2×2.65
There is oil leakage of clutch shift fork	O-ring becomes useless	Change O-ringφ1.2×2.65
There is oil leakage of shift shaft	O-ring becomes useless	Change O-ringφ1.2×2.65
There is oil leakage of flange	Bolts become loose	Tighten bolts
	Steel gasket is damaged	Change
There is oil leakage of case	There are hidden micro holes in the case	Weld or paint to stop leakage

can reposition the bar, you should fasten the nuts.

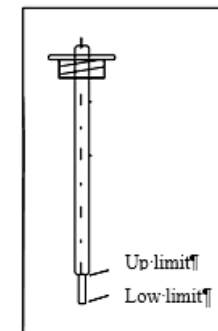
Checking and refueling

1. Check whether the connection bolts are loose or not and fasten the loose bolts according to the bolt moment in the following table3 (gasoline engine bolts and nuts moment is in gasoline engine instruction).

Table 3

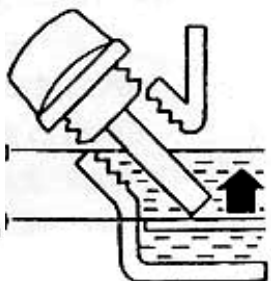
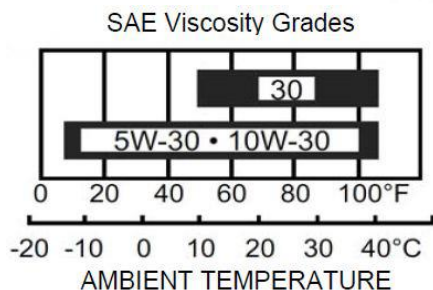
Name	Moment(N.M)
Flange and gasoline engine	20~25
Flange and gear box	35~40
Bolts behind the main shaft of gear box	10~12
Bolts on the backshift shaft of gear box	26~40
Bolts between the engine frame and running case	35~40
Bolts on the end cover of running gear	10.6~15
Bolts on the drag bar of running gear	50~60
Bolts between the running gear and gear box	35~40
Drag bar	45~60
Bolts on the bottom plate of gasoline engine	35~40
Bolts on the handlebar frame	35~40

2. Check if the handlebars of the operation system (gun, clutch, shift lever, backshift) are flexible. If they are not in their positions, please adjust them.
3. Turn lever to the neutral position.
4. Refueling:
 - ①. SAE10w-30 oil is recommended. Please refer to picture8.
 - ②. Refuel the gear box with oil num20. Lay down the machine, and refuel through the hole upper the gear box. Checking oil level by dipstick (attention: not rotate the oil ruler). The oil level should be in the range of the dipstick showed in the picture7. Refuel air cleaner with oil, take away the synthetic glass cover tent below the cleaner and refuel. proper num.20 oil.

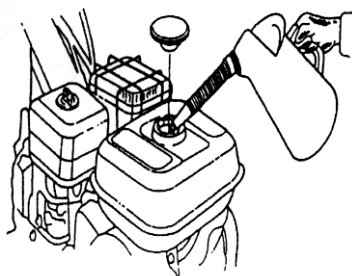


Picture7

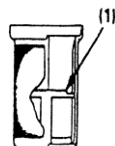
- ③. Choose gasoline engine oil according to the working environment(Picture8)



Picture 8



Picture 9



5. Refuel the oil tank with num.90. (please refer to Picture 9)

Attention: fuel level should not exceed the mark (1).

6. Make fore starting preparations according to the gasoline engine instruction.

starting(attention: the shift lever must be in the neutral position)

CAUTION: Be sure the clutch is disengaged, and the shift lever is in the neutral position to prevent sudden uncontrolled movement when engine starts. The clutch is engaged by pulling in the clutch lever and disengaged by releasing the lever.

(1)Turn the fuel valve to ON, check whether it is tightened.

- a. FUEL VALVE
- b. ON
- c. DRAIN BOLT

- If the engine still cannot be started, take tiller to an authorized dealer to check.

II. Troubleshooting of clutch(attention: never take part the clutch Assy just by yourself.

Table 5

Phenomenon	Reason	Solution
The clutch cannot be opened or closed.	Malfunction of clutch handlebar	Repair or change
	Damage of clutch cable	change
	Mis adjustment of clutch fork	Readjust cable or change clutch fork
	Failure welding of clutch fork shaft, arm and frame	Repair or change
	Warping or breaking of fork pins	Change clutch fork pin
	Friction plate becomes useless	Change
	Spring becomes useless	Change
	Friction plate cannot contact bearing cross section of clutch cover	Put gasket behind the bearing
	Burn-out of bearing in clutch	Change; refuel the gear box
Skidding(gasoline engine runs normally after unlocking the handlebar, but the main shaft of gear box does not run or runs slowly)	Spring becomes useless	Change
	Clutch fork shaft becomes useless	Check the jointing section between the locating bearing and pusher to make it flexible
	Maladjustment of clutch cable	Readjust clutch cable

III. Troubleshooting of gearbox

Table 6

Phenomenon	Reason	Solution
Fast, slow and neutral shift cannot be positioned	Screws and round nuts behind the shaft become loose	Take away screws and key sleeve behind the main shaft; reinstall key sleeve and screws after tightening the round nuts
Gear cannot be positioned	Auxiliary brick is severely fretted	change auxiliary brick
	Bevel gear becomes loose	Tighten the nuts
	Heavy abrasion on the hole of the arm	Change arm elements
	Spring in the main shaft becomes useless	change
	Main shaft moving: the cover screws behind the case becomes loose	Tighten the screws
	The distortion of the shift lever	Adjust the shift lever; change

- ① Unlock the nut on the handle frame. This is to unlock the terminal fangs.
- ② Set handlebar to the proper position on the left or right.
- ③ Tighten the nut to let terminal fangs meet.

TROUBLESHOOTING

I. Troubleshooting of gasoline engine

When the engine cannot start:

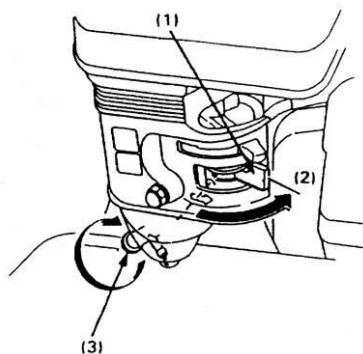
- Is there enough fuel?
- Is fuel valve on?
- Has gasoline reached the carburetor?

To check, loosen drain bolt with the fuel valve ON. Fuel can flow out freely.

Retighten drain bolt.

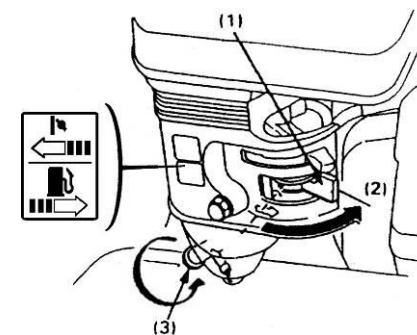
! WARNING If any fuel is spilled, make sure the surface is dry before testing the spark plug or starting the engine. Fuel vapor or spilled fuel may ignite.

- (1) Fuel valve.
- (2) ON
- (3) DRAIN BOLT



·If there is a spark from the spark plug?

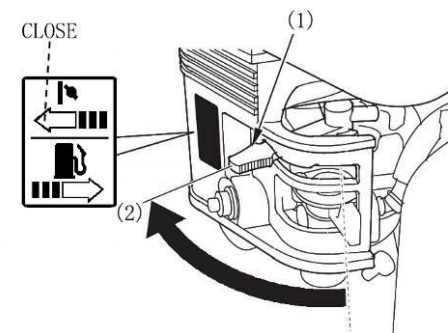
- Remove spark plug cap. Clean any dirt around the spark plug base, then remove the spark plug.
- Install spark plug to the plug cap.
- Turn engine switch on.
- Grounding side electrode to any engine ground, pull recoil starter to see if sparks jump across the gap.
- If there is no spark, replace the plug.
- If OK, try to start engine according to the instructions.



(2) Close the choke lever.

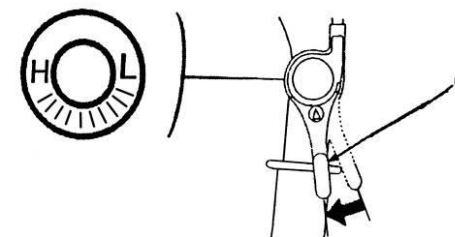
NOTE: Do not use choke if the engine is warm or the air temperature is high.

- a. CHOKE LEVER
- b. CLOSE



(3) Turn throttle lever slightly to the right.

- a. THROTTLE LEVER



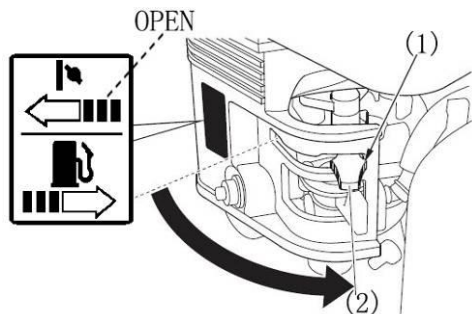
(4) Pull starter grip lightly until resistance is felt then pull briskly.

CAUTION: Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

(5) As the engine warms up, gradually open the choke.

- a. CHOKE LEVER
- b. OPEN

(6) The gasoline engine should run 2 to 3 minutes at the idle speed (1500 to 2000r/m) with no-load. Check if the gasoline engine runs normally. If not, it should stop working and be inspected.



(7) high altitude operation

At high altitude, the standard carburetor air-fuel mixture will be excessively rich. Performance and fuel consumption will increase.

High altitude performance can be improved by installing a smaller diameter main fuel jet in the carburetor and readjusting the pilot screw. If you always operate the tiller at altitude higher than 1,830m (6,000 feet) above sea level ask your authorized dealer to perform these carburetor modifications.

Even with suitable carburetor jetting, engine horsepower will decrease approximately 3-5% for each 305m (1,000 feet) increase in altitude.

The effect of altitude on the horsepower will be greater than this if no carburetor modification is made.

CAUTION: Operation of the tiller at an altitude lower than the carburetor is jetted for may result in reduced performance, overheating and serious engine damage caused by an excessively lean air/fuel mixture.

operation(attention: Mini Power weeder must go through running-in before operating. Please refer to chapter4)

1. Slow gear

- ① Hold the clutch bar with left hand to open the clutch.
- ② pull back the shift lever with right hand, meanwhile, pay attention if it is in the slow position, then hold the right bar with right hand(attention: do not hold the backshift bar).
- ③ Slowly unlock the clutch bar to close the clutch. In this situation, Mini Power weeder can run at slow gear.
- ④ Speed up properly with right hand, then Mini Power weeder can run at a low speed of 5km/h.

2. Fast gear

- ① Hold the clutch bar with left hand to open the clutch.

immediately, and there should not be abnormal collision noise in the gear box, otherwise, gear will be destroyed.

VII. Debugging method of clutch cable

Due to friction plate abrasion, clutch fork abrasion, function of the clutch become poor after a period of use. Therefore, you should debug the clutch cable. As for the debugging method, please refer to the manual.

Attention: 1. Hold, unlock the clutch handlebar twice to three times. This is to check working condition of clutch. If it is abnormal, you should debug the clutch.

2. If it is debugged several times, and it is still in bad condition, it is certain that clutch fork or friction plate is fretted severely. Therefore, you should change the friction plate or clutch fork with new parts in the special maintenance station. Never move clutch randomly in case of destroying the clutch and other parts.

VIII. Debugging method of throttle cable

When revolving the throttle switch and finding accelerating and decelerating function of the gasoline engine is not good, you should debug the throttle cable. As for the method, please refer to chapter3.

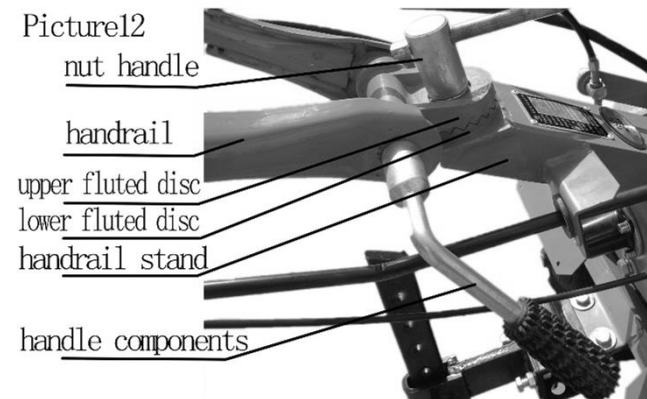
Attention: 1. Revolve the throttle switches twice or three times and check the accelerating and decelerating function of gasoline engine.

2. The throttle cable and connection head should be fastened with screws.

IX. Debugging method of handlebar

Four directions of handlebar can be properly set according to one's height and tilling requirement. The method is in the following (look at picture12)

1. Up-and-down debugging of handlebar:



- ① Unlock the handlebar elements, disengage the terminal fangs between the handlebar and handle frame.
 - ② Set the position of handlebar according to one's height and habits.
 - ③ Revolve the handlebar to let terminal fangs meet between the handlebar and handle frame.
2. Left-and-right debugging:

When Mini Power weeder needs storing for a long period, the following measures should be taken to prevent tarnishing.

1. Keep gasoline engine with seal according to its instruction.
2. Wash oil stain and clean dust on the machine.
3. Drain lube oil in the gear box and refuel new oil.
4. Paint pickling oil on non-aluminum parts where there is no paint.
5. Store Mini Power weeder in the dry, safe place where there is enough aeration.
6. Properly keep the attaching tools, certificates of conformity and instruction of mini tiller.

V. Debugging method of bevel gear Assy:

When bevel gear drives abnormally with loud noise, you should check and debug it immediately.

The debugging methods are as follows:

1. Bevel gear clearance debugging of gear box(look at picture10)

- ① when bevel gear assy. clearance $\Delta < 0.05$, you should increase clearance between gear box and running gear box with steel gasket.
- ② When bevel gear assy. clearance $\Delta > 0.3$, one should adjust the range $0.05 \sim 0.10$ between the bearing and gear II shaft.

2. Bevel gear clearance assy. debugging of running gear box(look at picture11)

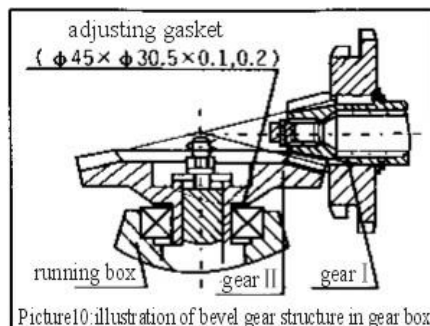
- ① when bevel gear clearance $\Delta < 0.05$, you should adjust the gasket range $0.2 \sim 0.3$ to increase clearance. Meanwhile, you should change steel gasket II and adjust gasket III to ensure clearance of gear shaft is $0.05 \sim 0.15$.
- ② When bevel gear assy. clearance $\Delta > 0.3$, you should decrease gasket I, meanwhile, ensure clearance of gear shaft is $0.05 \sim 0.15$; or increase gasket I, meanwhile, ensure clearance of gear I is $0.05 \sim 0.15$.

VI. Debugging method of backshift gear and cable

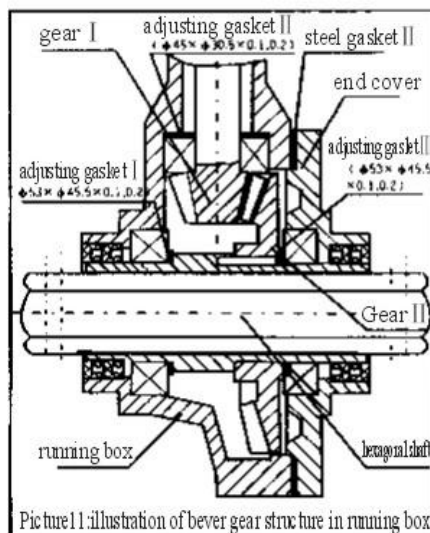
When reverse of Mini Power weeder is abnormal, you should debug the backshift handlebar and cable. As for the method, please refer to chapter 3.

Attention: 1. Hold, unlock backshift handlebar twice to three times, which is to put into gear. If the gear is not properly adjusted, please debug it until it is well done.

2. When driving the mini tiller, please unlock backshift handlebar. After finishing this, backshift gear should return to its original position



Picture10 illustration of bevel gear structure in gear box



Picture11 illustration of bevel gear structure in running gear box

②. Push the shift lever to the front with right hand, meanwhile, pay attention if it is in the fast position, then hold the bar with right hand (attention: do not hold the backshift bar)

③. Slowly unlock the clutch bar to close the clutch. In this situation, Mini Power weeder can run at fast gear.

④. Speed up properly with right hand, then Mini Power weeder can run at a speed of 10km/h.

3. Back gear

①. Hold the clutch bar with left hand to open the clutch.

②. Adjust the shift lever to the neutral position with right hand.

③. Slowly unlock the clutch bar to close the clutch, then Mini Power weeder will step back. (attention: do not unlock the backshift bar)

④. If it is unnecessary to step back, you should hold fast clutch bar slowly with left hand, then unlock the shift bar with right hand.

4. When shifting in the process of running, you should decelerate (the standard should be the continuous work of gasoline engine), then close the clutch. You should change the shift until the machine stops working.

5. When changing the direction, you should rotate the bar to left or right. (attention: do not mis-hold the bar, so as to avoid damaging the wheels when directing)

6. Stop working

①. Hold the clutch bar with left hand to open the clutch.

②. After adjusting the shift lever to the neutral position, you should unlock the clutch bar to make the machine stop working.

③. When it is necessary to stop working, the procedure should be done according to the gasoline engine instruction. (attention: this work is usually done on smooth ground.)

connection of attaching tools

1. When rotating, you should take away the wheels, fix hexagonal sleeve of rotary device on both sides of the hexagonal shaft with bolts M8×55. Attention: there are blade units on both sides; make sure the blade cutting edge works first when the Mini Power weeder runs. After the rotary blades are installed, you must install the safety panel to prevent injuries by blades. Tilling depth can be adjusted through adjusting resistance rod.

2. When ditching, you should take down resistance rod, install the ditcher and adjust its depth and height. After finishing these, you can do ditching work. (look at picture 3)

Range of ditching scope: 14cm-40cm

Range of ditching depth: 11cm-25cm

3. Short-distance transportation

Install deep furrowing resistance part on the drag bar of running gear and install wheels on the driving shaft of the running gear. After finishing these, you can transport. The rated load is 250kg. Under the rated rotary speed of gasoline engine, the fast speed is around 10km/h and slow speed 5km/h.

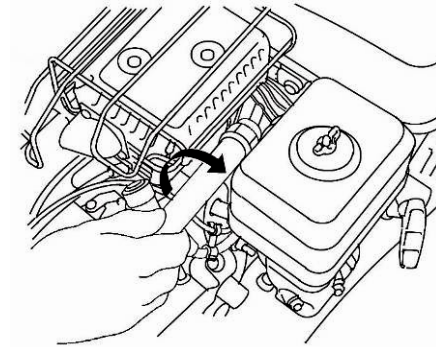
4. Multifunctional work

Take away safety cover behind gear box, bolts behind main shaft, take key sleeve of shaft, push the belt pulley or key slot of coupling into the key, then fasten it with bolt. V-belt A-model is used for the cross section of belt pulley slot. The rated rotary speed of belt pulley is 3000r/m. When it is attached with relative machine tools, you can carry out such multifunctional work: bailing, sprinkling, chemical spraying, threshing, reaping, and generating power.

Attention items of using mini tiller

1. When using mini tiller, you should pay attention to the working situation and sound of every part, check if the connection is good. There mustn't be loosed connection. If there is abnormal

- situation, you should stop the Mini Power weeder and check.
2. Never carry out work with heavy load if Mini Power weeder has not been used for a long time, especially the new ones or the repaired ones.
 3. Pay attention to the oil level of gasoline engine and gear box. If they are insufficient, please refuel them.
 4. Never cool the gasoline engine in the way of water-pouring.
 5. Prevent Mini Power weeder from falling down when tilling.
 6. Never install mini tillers with rotary blades work on sand or stone to avoid damaging blades.
 7. After tilling, pay attention to clear away dirtiness on the mini tiller: mud, grass and oil stain.
 8. Frequently wash the sponge in the air filter and change oil more often.



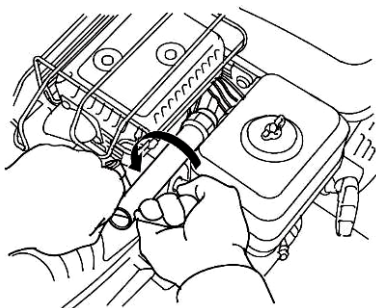
·When mounting a new spark plug, you should screw 1/2 more thread with the wrench after the washer is compressed. If you are mounting an old one, you should only screw 1/8-1/4 more thread.

III. Technical maintenance table of mini tiller(mark"0" indicates the maintenance contents)

Table 4

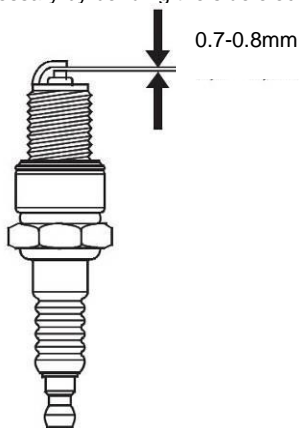
Working intervals and maintenance contents	Every day	Work with half load for 8 hours	Work for one month or 20 hours	Work for 3 months or 150 hours	Every year or 1000 hours	Per 2 years or 2000 hours
Check and tighten nuts, bolts	0					
Check and refuel lube	0					
Check and change lube		0(first time)	0(second time)	0(third time or more)		
Check if there is oil leakage	0					
Clean mud, grass, and oil stain	0					
Debug malfunction	0					
Adjust operation parts	0					
Friction plate of clutch						0
Gears and bearings					0	

IV. Long-period storage of mini tiller



- Visually inspect the spark plug. Discard it if the insulator is cracked or chipped.
- Measure the plug gap with a feeler gauge. The gap should be 0.7-0.8mm

(0.028-0.031 in), Correct as necessary by bending the side electrode.



- Attach the plug washer, thread the plug in by hand to prevent cross-threading.

MAINTENANCE

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

I. Running-in of mini tiller:

1. As for running-in of mini tiller, please refer to its instruction.
2. If Mini Power weeder is new or is just heavy repair, it should work without load for one hour. After the Mini Power weeder works with light load for five hours, all oil in gear box and crankcase of gasoline engine should be drained immediately. Afterwards, you should refuel adequate clean oil, run the Mini Power weeder at idle speed for 3 to 5 minutes to wash it, then drain oil completely. Please refuel oil and carry out running-in for 4 hours according to the fourth procedure of chapter3. By doing so, the Mini Power weeder can work in normal condition.

II. Technical maintenance of mini tiller

A. Every-time maintenance (before and after work):

1. Listen and check if there is malfunction of every part (such as abnormal noise, overheat, loose screw and so on).
2. Check if there is oil leakage from gasoline engine, gear box and running gear.
3. Check if the oil level of gasoline engine and gear box is between the upper and lower limit of dipstick.
4. Clean the whole machine and spare parts which are with mud, grass and oil stain regularly.
5. Do daily record.

B. Primary maintenance (per 150 hours)

6. Carry out maintenance work based on all contents of every-time maintenance.
 7. Wash gear box, running gearbox and change lube oil.
 8. Check and adjust clutch, shift system and reverse gear system.
- C. Secondary maintenance (per 800 hours)
9. Carry out maintenance work based on all contents of primary maintenance.
 10. Check all gears and bearings. If they are fretted severely, please replace them.
 11. Check other parts of mini tiller, such as: rotary blades or bolts and so on. If there is damage, please replace it.

D. Technical inspection (per 1500-2000 hours)

12. Take the whole machine to the specific maintenance station, to have a check. If the spare parts are severely fretted, they must be changed or repaired according to the situation.
13. Invite special technician to check friction plate and clutch.

E. As for the maintenance of gasoline engine, please refer to the following instructions.

NOTE: (1) Check more frequently when used in dusty areas.

(2) These items should be serviced by an authorized dealer unless the owner has the proper tools and is mechanically qualified.

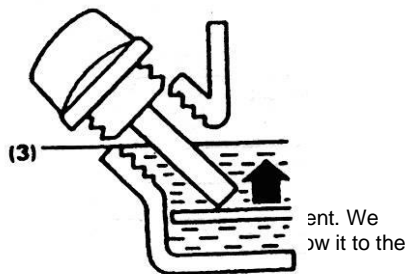
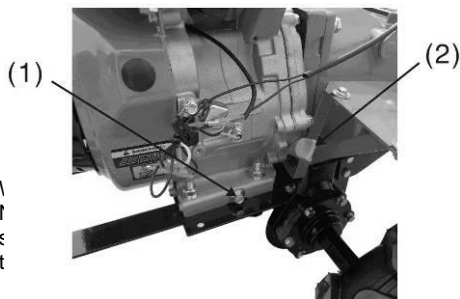
1. Changing engine oil

Drain the oil while the engine is still warm to assure rapid and complete drainage.

- Remove the oil filler cap and drain the oil.
- Refill with the recommended oil and check its level.

Oil capacity: 0.6 L (1100C) 、 1.1 L (1100D/F)

- (1) DRAIN PLUG
- (2) OIL FILLER CAP
- (3) UPPER LEVER



2.

A dirty air cleaner will block air flow into the carburetor. To prevent carburetor

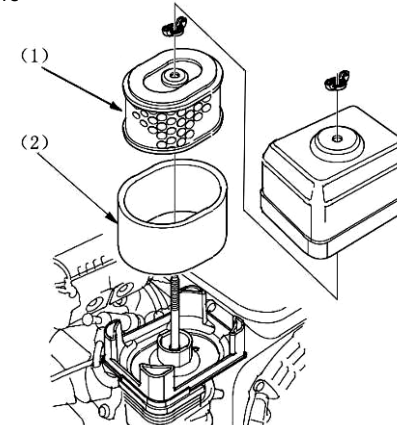
malfunction, service the air cleaner regularly. Service more frequently when operating the engine in extremely dusty areas.

! WARNING Never use gasoline or low flash point solvents to clean the air cleaner element. A fire or explosion could result in.

CAUTION: Never run the engine without air cleaner, or rapid engine wear will be the result.

- Remove the wing nut and the air cleaner cover. Remove the elements and separate them. Carefully check elements for holes and tears and replace if damaged.
- Foam element: clean in warm soapy water, risen and allow to dry thoroughly or clean in high flash-point solvent and allow to dry. Dip the element in clean engine oil and squeeze out all the excess. The engine will smoke during initial start –up if too much oil is left in the foam.
- Paper element: Tap the element lightly several times on a hard surface to remove excess dirt or blow compressed air through the filter from the inside out. Never try to brush the dirt off, for doing so will force dirt into the fibers.

- (1) PAPER ELEMENT
- (2) FOAM ELEMENT

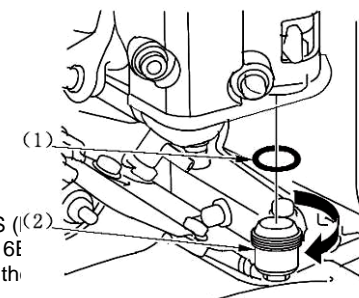


3. Fuel Strainer Cup Cleaning

! WARNING Gasoline is highly flammable and explosive under certain conditions. Do not smoke or allow flames of sparks in the area.

Turn fuel valve to the OFF position and remove fuel strainer cup and O-ring. Wash the removed parts in solvent, dry them thoroughly and reinstall them securely. Turn the fuel valve ON and check for leaks.

- (1) O-RING
- (2) FUEL STRAINER CUP



4. Spark plug service

Recommended spark plug: BPR5ES ((2) W16f

To ensure proper engine operation, the spark plug should be checked and free of deposits.

! WARNING If the engine has been running the muffler will be very hot. Be careful not to touch the muffler.