

Redline



Implements

Tel: 0800 872 2767

www.jinma.co.za/implements.html

Model: RT-125L
RT-150L
RT-180L
RT-150S



Important:

Read these instructions before installing and using this implement.

Rotovator

CONTENTS

CONTENTS	1
PRODUCT SPECIFICATIONS	2
SAFETY INSTRUCTIONS	2
OPERATION	7
SERVICE AND MAINTENANCE	8
PARTS LIST	11

PRODUCT SPECIFICATION

Product Models

ROTARY HOE MODELS

- RT-125L PTO driven, adjustable rear flap for safety as well as providing a smooth finish
 ~ 4 extra strong blades per flange for a more thorough tilling of top soil
 ~ Height adjustable skids for depth control
- RT-125H PTO driven, adjustable rear flap for safety as well as providing a smooth finish
 ~ 6 extra strong blades per flange for a more thorough tilling of top soil
 ~ Height adjustable skids for depth control
- RT-150H PTO driven, adjustable rear flap for safety as well as providing a smooth finish
 ~ 6 extra strong blades per flange for a more thorough tilling of top soil
 ~ Height adjustable skids for depth control
- RT-180H PTO driven, adjustable rear flap for safety as well as providing a smooth finish
 ~ 6 extra strong blades per flange for a more thorough tilling of top soil
 ~ Height adjustable skids for depth control

MODELS	RT-125L	RT-125H	RT-150H	RT-180H
Tractor HP	15-30hp	25-35hp	35-50hp	35-55hp
3-point linkage	Cat-1	Cat-1	Cat-1	Cat-1
Length	210mm	770mm	770mm	800mm
Width	28mm	1480mm	1720mm	2020mm
Height	8-12mm	970mm	970mm	1070mm
Weight	25-30kg	285kg	320kg	355kg
Digging Width	158mm	1250mm	1500mm	1800mm
Digging Depth	192mm	180mm	180mm	180mm

The Rotary hoe has six models, available in category I three point linkages, from 3 to 6 foot for tractors up to 55 hp.

Uses:

Whether you are laying turf around a golf course or growing small crops, the rotary hoe is perfect for preparing your top soil for planting ~ creates a seed bed finish and is ideal for crop and preparation ~ improving productivity, as well as presentation.

Features:

Adjustable rear flap for safety as well as providing a smooth finishing ~ 6 extra strong blades per flange for a more thorough hoeing of top soil ~ height adjustable skids for depth control ~ extra strong design for long life & reliability.

SAFETY INSTRUCTIONS



Before operating the Rotary Hoe read the following safety instructions.
 Failure to comply with these warnings may result in serious injury or death.

SAFETY INSTRUCTIONS

CONGRATULATIONS! On the purchase of your New Redline Rotary hoe. This information is to assist you in preparing, operating and maintaining your Rotary hoe. Please read and understand the information completely before operating your Rotary hoe, paying special attention to all the safety details. Keep this manual handy for a ready reference.

1.1 SAFETY FIRST

YOU are responsible for the SAFE operation and maintenance of your Rotary hoe. YOU must ensure that you and anyone else, who is going to operate, maintain or work around the Rotary Hoe is familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alert you to all good safety practices that should be adhered to while operating the Rotary hoe.

Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety practices.

- 1 Rotary hoe owners must give operating instructions to operators or employees before allowing them to operate the machine.
- 2 The most important safety feature on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.
- 3 A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator jeopardizes himself and bystanders to possible serious injury or death.
- 4 Do not modify the equipment in any way. Unauthorized modifications may weaken the function and/or safety and could affect the life of the equipment.
- 5 Think SAFETY! Work SAFETY!

1.2 GENERAL SAFETY

1. Read the operator's Manual and all safety signs carefully before operating, maintaining, adjusting or removing the Rotary hoe.
2. Do not allow passengers to ride on the Rotary hoe.
3. Operate only at safe distance from bystanders. Clear the area of people, especially small children, before starting.
4. Stop PTO before dismounting tractor.
5. Keep feet and hands from under rotary hoe at all times.
6. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
7. Do not stay between the tractor and the Rotary hoe.
8. Do not approach the Rotary hoe until all has stopped.
9. All rotary blades have the ability to discharge objects at high speeds, which could result in serious injury to bystanders or passers-by, use with extreme caution.
10. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, attaching or removing.
11. Review safety related items annually with all personnel who will operate or maintain the Rotary hoes.
12. Do not operate machine if you feel unwell or physically unfit, in which case you should stop working.

SAFETY INSTRUCTIONS

13. This machine was designed with safety very much in mind. However, there is no real substitute for caution and attention in preventing accidents. Once an accident has happened, it is too late to think about what you should have done.
14. Use a tractor equipped with a Roll Over Protective Structure (ROPS). Always wear your seat belt. Serious injury or even death could result from falling off the tractor-particularly during a turnover when the operator could be pinned under the ROPS or the tractor.
15. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question – **DON'T TRY IT.**
16. Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.

1.3 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing or removing.
2. Do not allow riders.
3. Install and secure all guards and shields before starting or operating.
4. Keep hands, feet, hair and clothing away from moving parts.
5. Place all controls in neutral, stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, attaching or removing.
6. Place all tractor and machine controls in neutral before starting.
7. Never start or operate machine unless sitting on tractor seat.
8. Clear the area of bystanders, especially small children, before starting.
9. Stay away from PTO shaft and machine when engaging PTO. Keep others away.
10. Using warning lights on tractor when transporting.
11. Do not put hands or feet under machine while tractor engine or machine is running.
12. Do not operate Rotary hoe in the raised position.
13. Objects can be thrown out from under machine with sufficient force to severely injure people. Stay away from machine when it is running. Keep others away.
14. Always know what you are hoeing. Never operate Rotary hoe in an area that has hidden obstacles. Remove sticks, stones, wire or other objects from working area before starting.
15. Review safety instructions with all operators annually.

1.4 STORAGE SAFETY

1. Store the machine in an area away from human activity.
2. Do not permit children to play on or around the stored machine.
3. Store the machine in a dry, level area.
4. Clean grease and oil as required and protect it from the elements.

1.5 MAINTENANCE SAFETY

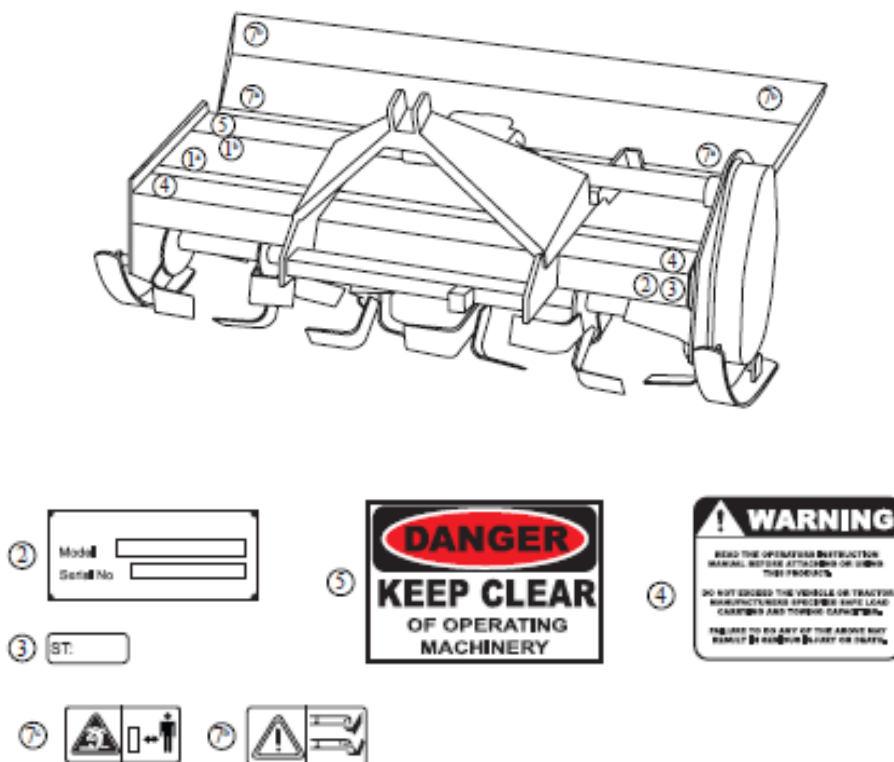
1. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
2. Follow good shop practices.
3. Keep service area clean and dry.
4. Be sure electrical outlets and tools are properly grounded.

SAFETY INSTRUCTIONS

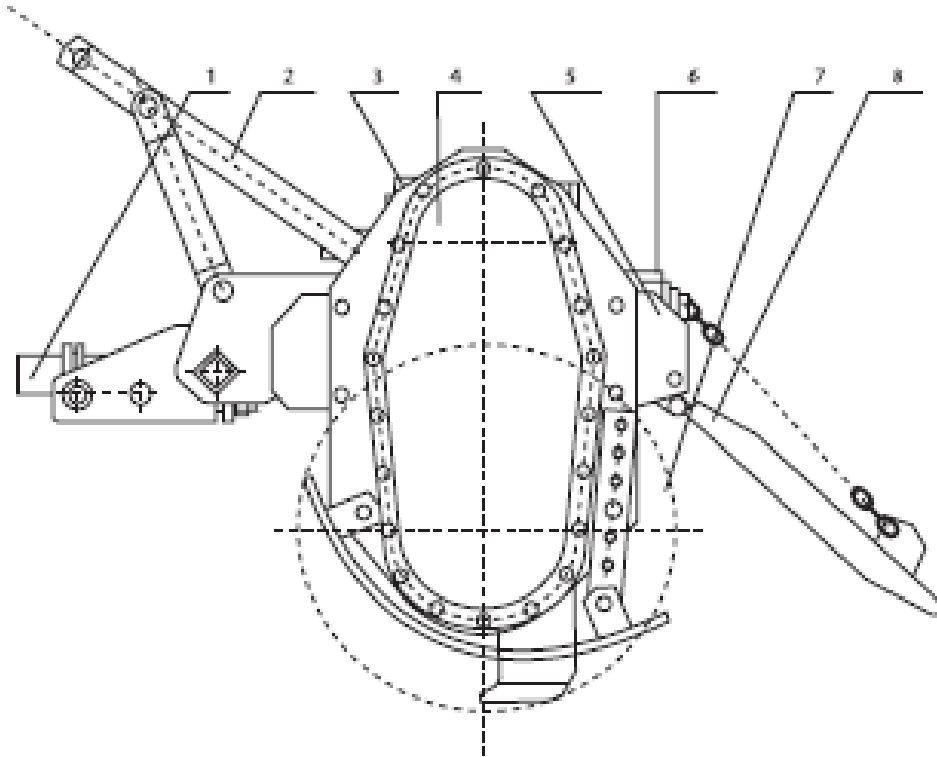
5. Use adequate light for the job at hand.
6. Make sure there is plenty of ventilation. Never operate the engine of the tractor in a closed building. The exhaust fumes may cause asphyxiation.
7. Before working on this machine, shut off the engine, set the brakes, and remove the ignition key.
8. Never work under equipment unless it is secured by a mechanical stand.
9. Use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work. Use heavy gloves when handling blades.
10. Only use genuine parts for service and maintenance.
11. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
12. Periodically tighten all bolts, nuts and screws and check that all pins are properly installed to ensure unit is in a safe condition.
13. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing machine in service.

1.6 SAFETY & MODEL DECAL

The position of safety decals are shown in the illustrations. Good safety requires that you familiarize yourself with the various safety signs, and increase your **SAFETY AWARENESS**.

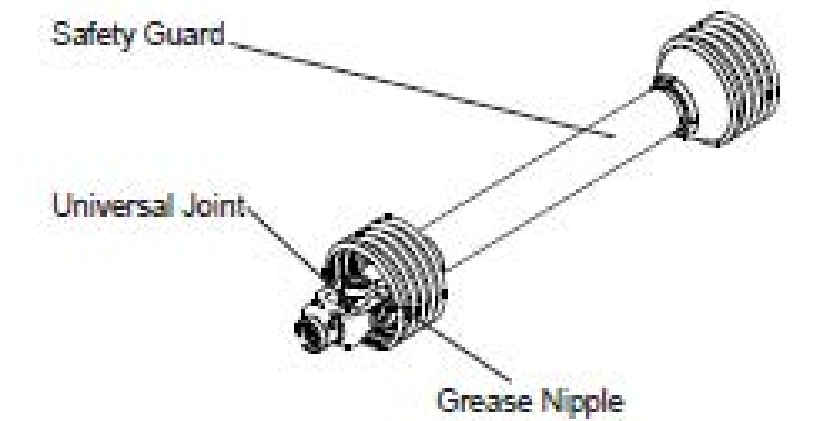


SAFETY INSTRUCTIONS



1. PTO Shaft	2. Head Stock	3. Gear box	4. Pulley Gear box
5. Right side plate	6. Cover	7. Blade Shaft	8. Trailing Bar

PTO Shaft



OPERATION

2.1 BLADE MOUNTING

Each rotary hoe has the same number of left and right blades. The outer flanges have three blade end turned inward. The inner flange carry six blades consist of three left and three right. Make sure the front or sharpened edge of the blades enter the blades enter the soil first.

2.2 CONNECTING WITH THE THREE-POINT LINKAGE OF TRACTOR

The Rotary hoe is connected to the tractor by the three-point linkage. Its installing step is as follows:

1. Align the center of headstock by reversing the tractor, raise the link arm to appropriate height, reverse the tractor to make the link arm of tractor joint with the left and right pin of rotary tiller.
2. First install the left lower linkage arm, then install right lower linkage arm. (Because the leveling lift rod has screw that can be adjusted length.) Finally inert the pins.
3. Install the upper linkage arm, and then insert the pin.
4. Mount the universal coupling, and then insert the pins, poke the cotter pin.

2.3 ADJUSTMENT BEFORE WORKING

1. On a flat surface, lower the implement to the ground. If not sitting level side to side, adjust the vertical linkage arms on the three point linkage till the implement is sitting level on the ground.
2. Adjust the top link to reduce the angle at the PTO shaft universal to the minimum at working depth. The angle of the universal should not exceed 10° when it is working and 30° when it is lifting for transport. Do not engage and operate the PTO at angle of greater then 10° at the universal.
3. Adjust the working depth by setting the adjustable skids to the required height.

2.4 STARTING OF THE TILLER

First, check the level of the gear oil in the gearbox and the side chain box, grease the PTO Shaft and the bearing seat of the blade shaft. Then check for the looseness of all connecting bolts and nuts, if loose, tighten it at once. If a crack or bent blades are found they must be replaced.

Starting tractor: Lift the hoe so the blades clear the ground, engage the PTO and run at low revs to ensure there is no jamming.

Soil penetration: Use PTO speed 1(540RPM) & select low creeper gear. Increase rev and lower the hoe gradually until desired depth is met, then proceed forward.

SERVICE AND MAINTNANCE

3.1 SERVICE

3.1.1 FLUIDS AND LUBRICANTS

1. Grease:
Use multi-purpose lithium based grease.
2. Gear Box Oil:
Use SAE 90 Gear oil.
3. Strong Lubricants:

SERVICE AND MAINTNANCE

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

3.1.2 GREASING

1. Used a hand-held grease gun for all greasing.
2. Wipe grease nipple with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken nipples immediately.
4. If nipples will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace nipple if necessary.

3.2 MAINTENANCE

The recommended period is based on normal operating conditions. Severe or unusual conditions may require more frequent maintenance.

3.2.1 8 HOURS OR DAILY MAITENANCE

1. Check all nuts and bolts in connection parts, replace if required.
2. Check the oil in gearbox. Fill up to line if required.
3. Pump grease into each grease nipple three to five times.
4. Clean the implement; take away all debris and residue.

3.2.2 SEASON MAINTENANCE

1. Check the machine as above for daily maintenance.
2. Check the oil in gearbox; replace if contained.
3. Check the bearings of blade spindles for wear and tear. If warn, disassemble, clean and replace them if it is necessary, grease as required.

3.2.3 ANNUAL MAINTENANCE

1. Thoroughly clean the wood chipper of debris and residue.
2. Drain the gearbox and clean it thoroughly. Fill with new gear oil up to the dedicated oil level.
3. Check and clean blade axles. Check oil seals and replace if necessary.
4. Check all blades, replace them if they are worn out or damaged.
5. Repair the side skirts; return them to original technical condition. Replace damaged or broken protective devices.
6. Remove the drive shaft from the machine. Pull the PTO shaft apart. Check and replace any components that are damaged or worn. Install the PTO shaft on the machine. The PTO shaft should telescope easily and the guard turn freely on the shaft, grease if necessary.

SERVICE AND MAINTNANCE

	8hrs/ Daily			40hrs/ Weekly			Annually		
Lubricate PTO Shaft	X			X			X		
Lubricate Caster Wheels	X			X			X		
Lubricate Blade Spindle	X			X			X		
Check Gear Box OIL Level				X			X		
Clean Machine							X		
Lubricate and PTO Shaft Cover							X		

3.2.4 PTO SHAFT MAINTENANCE

The PTO shaft is designed to telescope to allow for dimensional changes as the machine goes through its operating range. A tubular guard encloses the driving components and is designed to remain stationary on a turning shaft when required. The shaft should telescope easily and the guard turn freely on the shaft at all times. Annual disassembly, cleaning and lubrication is recommended to insure that all components function as intended. To maintain the shaft, follow this procedure:

1. Remove the shaft from the machine.
2. Pull shaft apart.
3. Used a screwdriver to pry the tabs out of the sleeves on each end. There are 3 tabs per guard.
4. Pull the shaft out of the plastic tubular guard.
5. Use a solvent to clean the male and female portions of the telescoping ends.
6. Apply a light coat of grease to each end.
7. Clean grooves on each end where the tabs are located. Clean each tab also.
8. Apply a light coat of grease to each groove.
9. Insert the shaft into its respective guard and align the slots with the groove.
10. Insert the tabs through the slots and seat in the groove.
11. Check that each guard turns freely on the shaft.
12. Assemble the shaft.
13. Check that the shaft telescopes easily.
14. Replace any components that are damaged or worn.
15. Install the shaft on the machine.

3.2.5 GEARBOX MAINTENANCE

The gearbox used on the Rotary hoe will give many years of trouble-free service with minimal maintenance requirements. Maintenance the gearbox by following this procedure:

Oil level:

- Remove the level plug from the rear or side of the gearbox.
- Add oil through the filler plug located on top of gearbox until oil comes out of level plug.
- Add through the fill plug if required.
- If gearbox has a dipstick on filler plug, then fill to indicator mark.

IMPORTANT: Check the oil level only when the unit is cold and the machine is on the level.

SERVICE AND MAINTENANCE

3.3 STORAGE

After the season's use, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the start of next season. To insure a long, trouble free life, follow the procedure outlined below:

1. Thoroughly wash the machine using a pressure washer to remove all dirt, mud, debris and residue.
2. Inspect the blades and rotor for damage or entangled material. Repair or replace damaged parts. Remove all entangled material.
3. Lubricate all grease nipples. Make sure that all grease cavities have been filled with grease to remove any water residue from the inside.
4. Touch up all point nicks and scratches to prevent rusting.
5. Move to storage area.
6. Select an area this is dry, level and free of debris.
7. Unhook from tractor.
8. If the machine cannot be placed inside, cover with a waterproof tarpaulin and tie securely in place.

Store the machine in an area away from human activity. Do not allow children to play on or around the stored machine.

3.4 TROUBLE SHOOTING

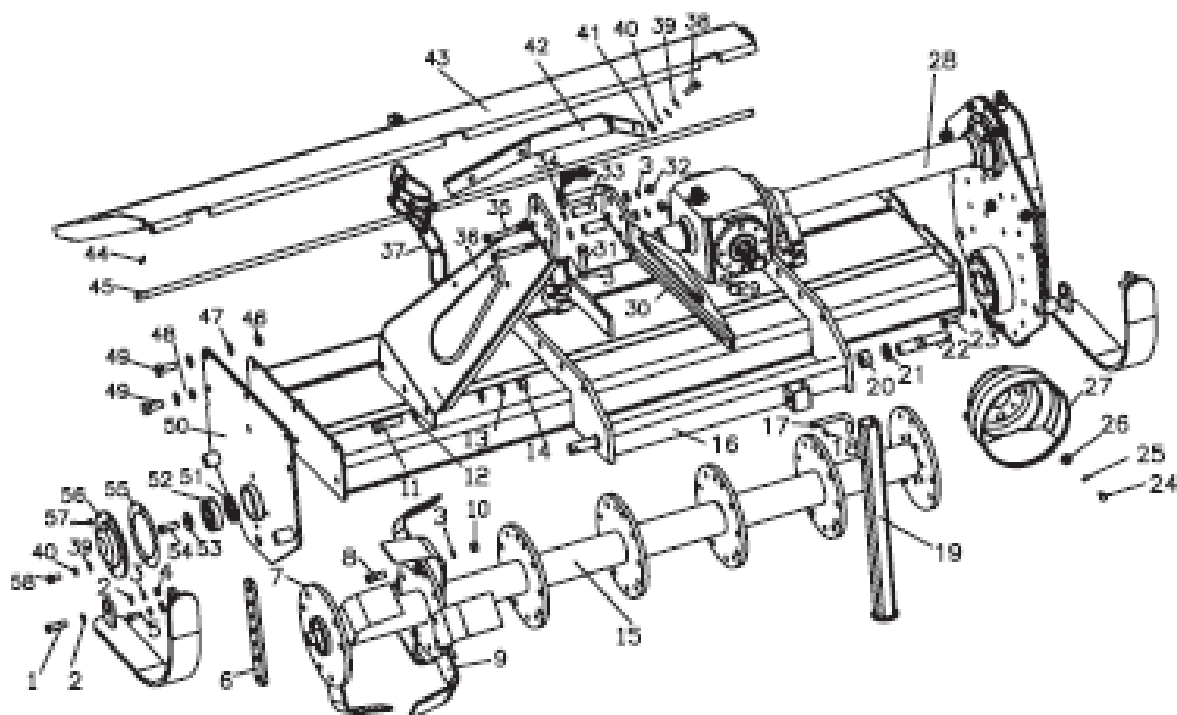
The Rotary hoe is designed to work on unplowed and plowed field. It is a simple and reliable system that requires minimal maintenance.

In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

Problem	Possible Cause	Solution
PTO Shaft inclined too much	Rotary hoe failed horizontal level	Adjust the horizontal level of the hoe
	One side sway chain of tractor is too short	Adjust the chain
PTO Shaft injured	Direction mistaken	Re-assemble correctly
	Grease deficient	Rinse needle and pump grease sufficiently
	Angle of PTO Shaft is too big or is gripped	Limit the rising position and re-lock the position
	Rotary hoe fallen down the soil sharply	Fall the hoe down the soil smoothly
Noise in gearbox	The clearance between the two helical bevel gears is too large	Adjust this clearance
	Bearing injured	Replace bearing
	Tooth of gear broken	Replace gear
Noise in side gear box	Foreign matter dropped in gear box	Take foreign matter out of the gear box
	Bearing on the third shaft injured	Replace bearing
	Bearing on the middle shaft injured	Replace bearing
Problem	Possible Cause	Solution
Trouble rotation of cultivator shaft	Gear or bearing injured or gripped	Replace gear or bearing
	There was no clearance between the two helical bevel gears	Adjust the clearance of the helical bevel gear pair
	Out of shape of level side plane	Correct side plane
	Cultivator shaft crooked or out of shape	Correct or replace cultivator shaft

	Cultivator shaft twined with grass or hold soil seriously	Clear away grass or soil
Blade slot injured	Blade run foul of stone so that it suffers too much force	Clear away the stone from the field
	Blade assembled on opposite direction so that it suffers too much force	Assemble the blades correctly
	Rotary hoe fallen down the soil sharply so that it suffers too much force	Fall the hoe down the soil smoothly
Blades crooked or broken	Blades run foul of stone	Replace the blades and clear away the stones from the field
	Doing plough when tractor turns a corner in the field	Rise the tiller and do not plough when the tractor turns a corner in the field
	Rotary hoe fallen down the hard ground	Fall the hoe down smoothly

PARTS LIST RT125H → RT180H

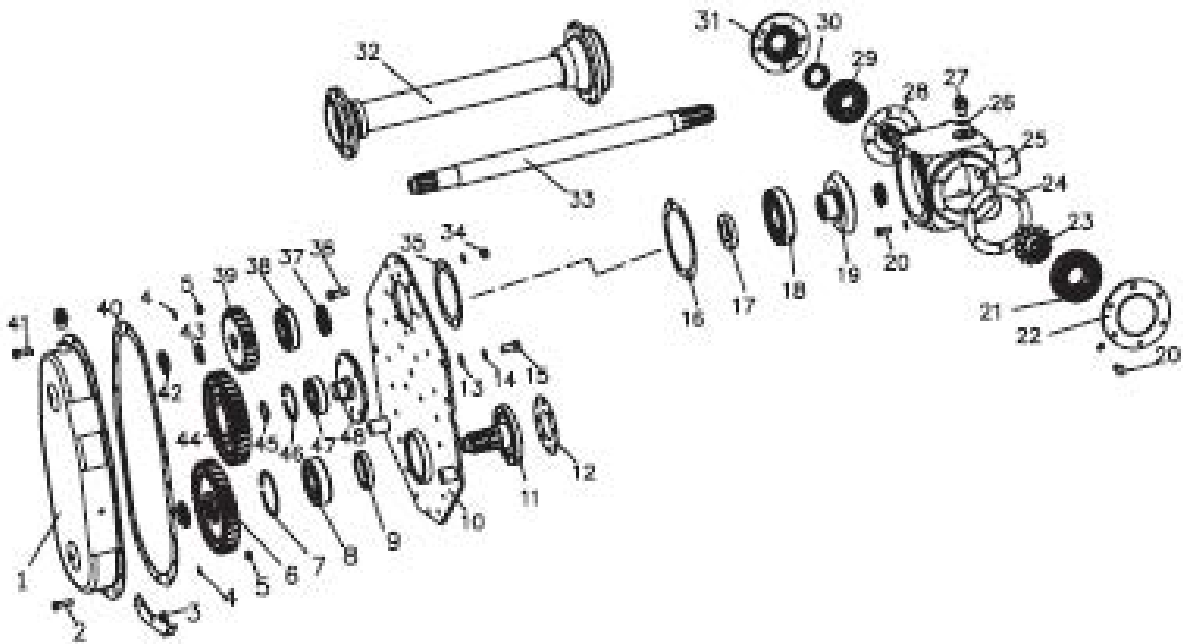


PARTS LIST RT125H → RT180H

No	Part NO.	Name & Specifications	Qty
1	GB 5783-86	Bolt M12X40	2
2	GB 97.1-85	Plain washer 12	10
3	GB 93-87	Spring washer 12	90
4	GB 6184-86	Locked nut M12	2
5	GB 5783-86	Bolt M12X35	2
6	1G-150.00.101	Adjustment plate	2
7	1G-150.00.103	Left blade	18
8	GB 5784-86	Bolt M12X1.25X35	72
9	1G-150.00.102	Right blade	18
10	GB 6184-86	Locked nut M12 X1.25	72
11	GB 5782-86	Bolt M16X55	6
12	GB 97.1-85	Plain washer 16	12
13	GB 93-87	Spring washer 16	6
14	GB 889-86	Locked nut M16	6
15	1G-150.00.011	Blade axle weldment	1
16	1G-150.00.015	Upper cover plate weldment	1
17	ZL-25.103	Right-angle	1
18		R Pin	1
19	1G-150.00.018	The brace weldment	1
20	GB 6170-86	Nut M12	2
21	GB 93-87	Spring washer 24	2
22	SL-140A.00.109	Bolt	2
23	GB 5783-86	Bolt M12X30	8
24	GB 5783-86	Bolt M8X16	2
25	GB 93-87	Spring washer 8	2
26	GB 96-85	Washer 8	2
27	FM 120.00.401	Guard shade	1
28	1G-150.00.001	Gear Box Assembly	1
29	CBW-00.112	Oil plug	1
30	1G-150.00.017	Hanging left side panel	1
31	GB 5782-86	Bolt M12X70	4
32	GB 6170-86	Nut M12	2
33	MZ 105.130	Sleeve	2
34	EF 100.00.019	Upper hanging pin	1
35	GB 5782-86	Bolt M12X100	2
36	1G-150.00.016	Hanging right side panel	1
37		Chain Φ 10X18	1
38	GB 5783-86	Bolt M10X30	4
39	GB 97.1-85	Plain washer 10	12
40	GB 93-87	Spring washer 10	8
41	GB 6170-86	Nut M10	4
42	1G-150.00.106	Hanging belaying cleat	1
43	1G-150.00.012	Rear protecting plate	1
44	GB 91-86	Forelock 2.5X30	2
45	1G-150.00.105	Rear protecting plate shaft	1
46	GB 889-86	Locked nut M14	5
47	GB 97.1-85	Plain washer 14	15

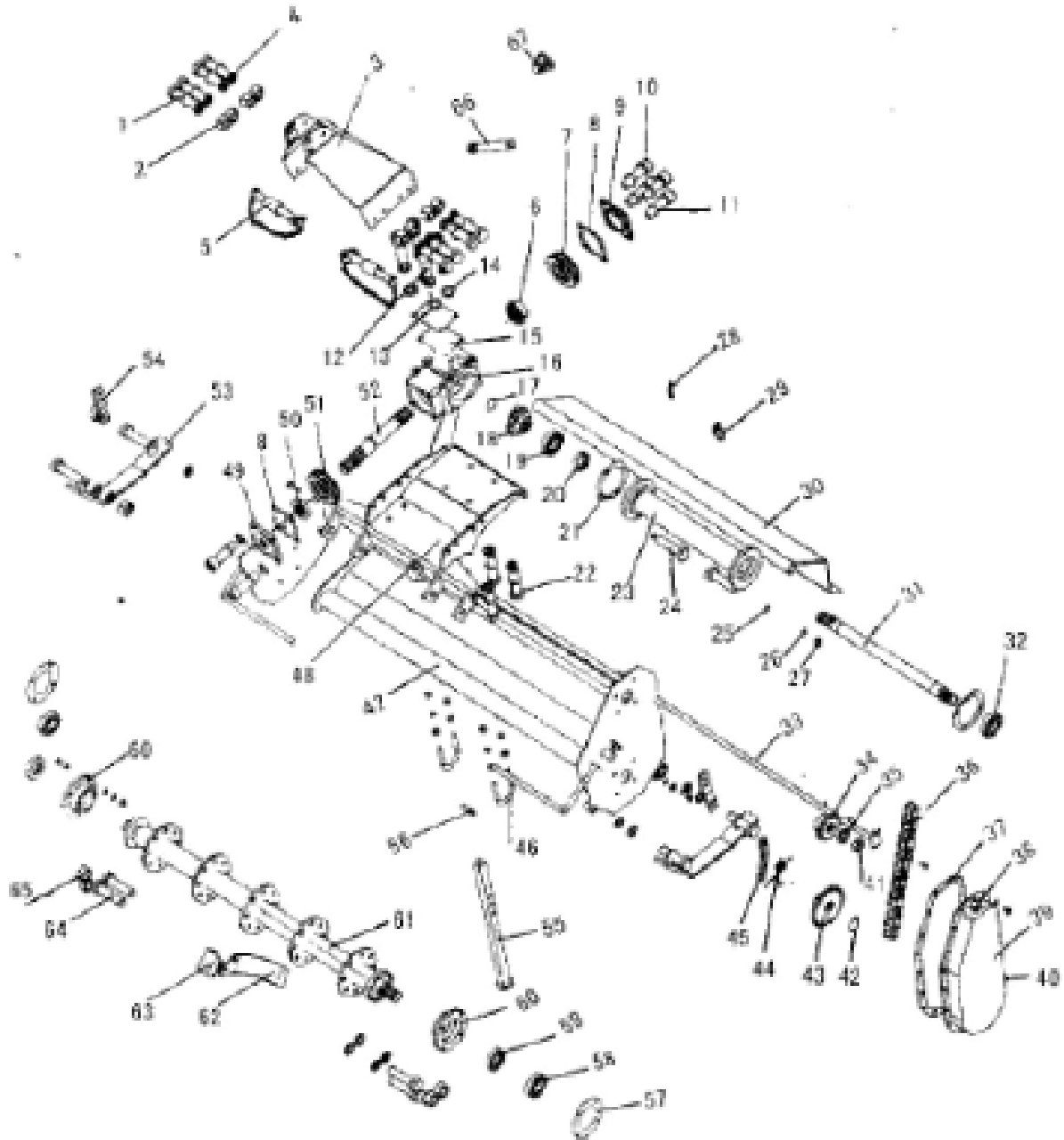
PARTS LIST

No	Part NO.	Name & Specifications	Qty
48	GB 93-87	Spring washer 14	5
49	GB 5783-86	Bolt M14X35	10
50	1G-150.00.014	Right side panel	1
51	HG4-692-67	Oil seal PD35X62X12	1
52	GB 276-94	Bearing 306	1
53	MZ105.115	Locked carrier ring	1
54	GB5783-86	Bolt M12X25	1
55	1G-150.00.143	Paper washer	1
56	1G-150.00.104	Right bearing cover plate	1
57	GB 1152-79	Grease nipple M8X1	1
58	GB 5783-86	Bolt M10X20	4



No	Part NO.	Name & Specifications	Qty
1	1G-150.00.012	Cover weldment of gear box	1
2	GB 5783-86	Bolt M10X35	3
3	1G-150.00.101	Guard plate for cover of gear box	1
4	GB 93-87	Spring washer 10	38
5	GB 6170-86	Nut M10	20
6	1G-150.04-01	Down gear	1
7	GB 893.1-86	Circlip 100	1
8	GB 276-94	Baring 309	1
9	HG4-692-67	Oil seal PD55X80X12	1
10	1G-150.01.011	Left side panel weldment	1
11	1G-150.01.104	No.III shaft	1
12	1G-150.01.105	Paper washer for blade axle	1
13	GB 97.1-85	Plain washer 12	5
14	GB 93-87	Spring washer 12	13
15	GB 5783-86	Bolt M12X30	5
16	1G-150.01.114	Right paper washer for spigot	1
17	HG4-692-67	Oil seal PD42X75X12	1
18	GB 297-84	Bearing 7311E	1
19	1G-150.04-08	Large angle gear	1
20	GB 5783-86	Bolt M10X25	18
21	GB 297-84	Bearing 7310E	1
22	1G-150.01.110	Rear-cover of gear box	1
23	1G-150.02-04	Small anger gear	1
24	1G-150.01.111	Paper washer for rear-cover	1
25	1G-150.01.118	Gear box case	1
26	CBW-00.103	Washer	2
27	CBW-00.011	Oil plug	2
28	1G-150.01.115	Paper washer for rear-cover	1
29	GB 297-84	Bearing 7208E	1
30	HG4-692-67	Oil seal PD38X55X8	1
31	1G-150.01.116	The cover of input shaft	1
32	1G-150.01.013	Spigot for transmission shaft	1
33	1G-150.01.109	Transmission shaft	1
34	GB 889-86	Lucked Nut M12	8
35	1G-150.01.108	Left paper washer for spigot	1
36	GB 5783-86	Bolt M12X35	8
37	HG4-692-67	Oil seal PD40X70X12	1
38	GB 297-84	Bearing 7308E	1
39	1G-150.04-03	Up-gear	1
40	1G-150.01.102	Lignum washer for gear box	1
41	GB 5783-86	Bolt M10X30	17
42	GB 810-88	Clamp nut M30X1.5	3
43	GB 856-88	Outer lock washer	3
44	1G-150.04-02	Mid-gear	1
45	GB 894.1-86	Circlip 35	1
46	GB 893.1-86	Circlip 80	1
47	GB 276-94	Bearing 308	1
48	1G-150.01.106	Mid-gear shaft	1

PARTS LIST RT125L



PARTS LIST RT125L

SER. NO:	NAME:	QTY	SER. NO:	NAME:	QTY
1	Bolts	8	35	Stop Washer	1
2	Nuts	8	36	Chain	1
3	Shield Protective cover	1	37	Oil seal ring	1
4	Washer	8	38	Oil Filter plug	1
5	Lower suspension pin	2	39	Side chain gearbox	1
6	Small bevel gear	1	40	Loil drain plug	1
7	Bearing	1	41	Circular Nut	1
8	Oil seal ring	2	42	Circlip	1
9	Cap	1	43	Big sprocket wheel	1
10	Bolts	8	44	Spring	1
11	Washer	8	45	Tension Plate	1
12	Bolts	4	46	u-Bolts	2
13	Cap	1	47	Main frame Pipe	1
14	Washer	4	48	Foot Pedal	1
15	Oil seal ring	1	49	Cap	1
16	intermediate Gearbox	1	50	Oil Seal	1
17	Circlip	1	51	Bearing	1
18	Big Bevel Gear	1	52	First Shaft	1
19	Bearing	1	53	Anti-Friction Plate	2
20	Oil seal	1	54	Connection plate	2
21	Oil seal ring	2	55	Stay Bar	1
22	Bolts	4	56	Pin	1
23	Main frame pipe	1	57	Oil seal Ring	2
24	Bolts	8	58	Bearing	2
25	Washer	8	59	Oil seal	2
26	Washer	8	60	Bearing Seat	2
27	Nut		61	Blades Shaft	1
28	Chain	1	62	Left bent blade	
29	Hook	1	63	Right Bent Blade	
30	Tail Plate	1	64	Blades Bolt	
21	2nd Shaft	1	65	Blades Nut	
32	Bearing	1	66	Upper suspension	1
33	Rod	1	67	spring lock pin	1
34	Small Sprocket Wheel	1	68		