

# RT 400 RT 500 ROTARY RT 450 RT 600 TILLER



## Operator's Manual

***MechMaxx***

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## SPECIFICATIONS

Model	RT400	RT450	RT500	RT600
Power Required	18-35HP	25-45HP	25-50HP	30-60HP
Working Width	48 in	53 in	60 in	72 in
Overall Width	57 in	60 in	66 in	78 in
Working Depth	1in,2.1in,3.1in,5.1in			
Number Of Flanges	6		7	8
Number Of Blades	30		36	42
Blade Type	C type			
Blade Material	60SI2MN			
Rotor Bearing	NSK bearing			
Rotor Diameter	3in			
Rotor Swing Diameter	19.5in			
Rotor Thickness	0.3in			
Rotor Shaft Speed	215 RPM			
Rotor Rotation	Forward			
Drive Type	Gear Drive			
Main Gearbox	ASAE 1- 3/8" – 6 spline shaft, proven cast iron, oil bath gearbox; ratio is 1.69:1			
Drive Gear Ratio	1:52:1			
Gearbox Oil Type	SAE 85W-90			
Deck Thickness	0.16in			
Side Plate Thickness	0.31in			
PTO Shaft RPM	540 RPM			
PTO Shaft	T4-31in 8 Bolt non-removable slip clutch			
Spline End	1.375in X Z6			
3-Point Hitch	CAT 1		CAT 1/2	CAT 2
Deflector	Rear Hinged			
Finish	Powder Coating			
Dimensions (L x W x H)	57 X 31.5 X 30.7in	60 X 32 X 31 in	66 X 31.5 X 30.7 in	78 X 31.5 X 30.7 in
Warranty	1 year			
Net Weight	628 lbs	643 lbs	690 lbs	785 lbs
Gross Weight	720 lbs	760 lbs	793 lbs	860 lbs

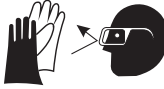
## SAFETY SIGNS

The rating plate on your machine may show symbols. These represent important information about the product or instructions on its use.

**⚠ DANGER ⚠**



High Pressure Fluid Hazard.  
High pressure fluid leak will pierce skin.  
Release pressure before working on system.  
Detect leaks with wood or cardboard.  
Wear sturdy gloves and goggles.  
**NEVER** use fingers.  
Fluid injected in skin must be surgically removed by trained doctor immediately or gangrene will result.  
Fluid injected into skin will injure or kill.



**⚠ WARNING**


**ENGAGE TRACTOR CLUTCH SLOWLY DURING START UP OR DAMAGE WILL OCCUR. KEEP PTO SHAFT WITH 25° OF LEVEL DURING OPERATION.**

**⚠ WARNING ⚠**

**To Prevent Serious Injury Or Death:**

- Read and understand Operator's manual before using.
- Do not permit riders on the tractor or mower. Never carry child on tractor seat.
- Operate with guards installed and in good condition.
- Operate only with tractor equipped with ROPS and seatbelts.
- Keep away from moving parts.
- Stop engine, set brake and wait for all moving parts to stop before dismounting.
- Be sure lights and reflectors required by law are clean and in good working order before transporting.
- Do not allow children to operate mower.
- Travel with SMV and lights that follow local codes.
- Clean debris from mowing area.
- Do not operate in the raised position.
- Support securely before working beneath unit.
- Review safety instructions annually.

**⚠ WARNING**



Read and understand operators manual before using this machine.

**⚠ WARNING**

The PTO Driveline **MUST** be measured and cut (if required) as per the Owner's Manual. Failure to do so will result in damage to both the tractor and the implement.

**⚠ CAUTION**



GREASE

**⚠ DANGER**

**GUARD MISSING WHEN THIS IS VISIBLE DO NOT OPERATE ENTANGLEMENT HAZARD**

**⚠ WARNING**



**BELT DRIVE: HAND AND ARM ENTANGLEMENT HAZARD.**

Do not open or remove safety shields while engine is running.

**⚠ WARNING**



**PINCH POINT HAZARD**  
Keep clear

**⚠ DANGER ⚠**

**ROTATING KNIVES HAZARD**

To prevent serious injury or death from rotating knives:

- DO NOT go under frame when rotor is turning or engine is running. Keep others away.
- Disconnect & lockout power source BEFORE adjusting or servicing.
- Keep hands, feet, hair, and clothing away from moving parts.

**⚠ WARNING**



**HIGH PRESSURE FLUID HAZARD**

Relieve pressure before disconnecting lines.  
Do Not use hands to check for leaks.  
Consult physician immediately if skin penetration occurs.

**⚠ CAUTION**

To avoid Injury or Machine Damage: \*Operate only with 540 rpm PTO

**540 RPM ONLY**

**LIFT POINT**



**⚠ DANGER**



**ROTATING DRIVELINE CONTACT CAN CAUSE DEATH KEEP AWAY! DO NOT OPERATE WITHOUT :**

- All driveline guards, tractor, and equipment shields in place.
- Drivelines securely attached at both ends.
- Driveline guards that turn freely on driveline.

**⚠ DANGER! STAY BACK 150 FEET AT ALL TIMES**

**⚠ WARNING! DO NOT MOW IN REVERSE OR DAMAGE WILL OCCUR TO YOUR MOWER!**

**⚠ DANGER**



**ROTATING BLADES KEEP HANDS AWAY**

**⚠ WARNING**



**FLYING OBJECTS HAZARD**  
Keep clear.

## 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.**

CONGRATULATIONS! On the purchase of our 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.

### 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 precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good 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 jeopardise himself and bystanders to possible serious injury or death.

4. Do not modify the equipment in any way. Unauthorized modification may weaken the function and/or safety and could affect the life of the equipment.

5. Think SAFETY! Work SAFELY!

### 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 motion 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.
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.

## **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 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.

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. Use 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

## **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

## **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.

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. Keep fire extinguisher and first aid kit in an easily accessible place when performing maintenance on 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.

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## OPERATION

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### BLADE MOUNTING

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

### 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.

### 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  $10^{\circ}$  when it is working and  $30^{\circ}$  when it is lifted for transport. Do not engage and operate the PTO at angle of greater then  $10^{\circ}$  at the universal
3. Adjust the working depth by setting the adjustable skids to the required height

### STARTING OF THE TILLER

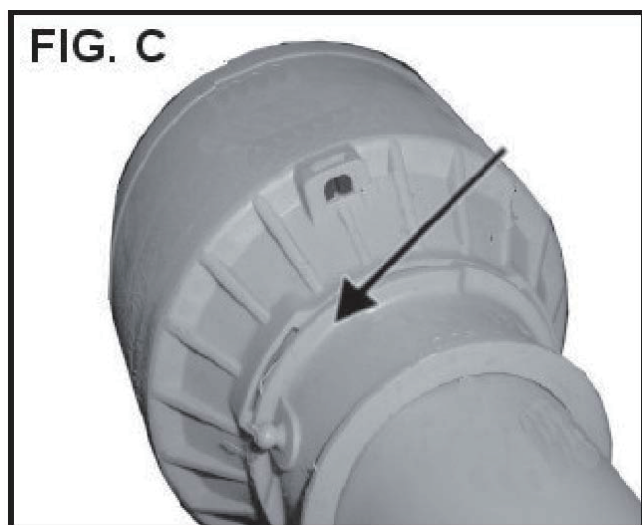
First, check the level of the gear oil in the gearbox and the side chain box, grease the PTO Shaft and the bearing seat of the blade shaft. Then check for the looseness of all connecting bolts and nuts, if loose, tighten it at once. If a crack or bent blades are found they must be replaced.

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 speed1(540RPM) & select low creeper gear. Increase rev and lower the hoe gradually until desired depth is met, then proceed forward.



## SIZING PTO SHFAT



STEP 1 Cutting the PTO shaft to length.

NOTE: Be sure to cut equal lengths of each PTO shaft section. Clamp end of PTO shaft in a vice and cut off shield where marked. (Figure 1-A & 1-B)



Figure 1-A

STEP 2 Using cut section of the shield as a guide cut shaft off the same amount. (Figure 2)



Figure 1-B

STEP 3 Repeat steps 1 and 2 for other PTO shaft section.



Figure 2

STEP 4 Use a file to deburr PTO shafts. Clean up all chips, burrs and filings from both ends of the PTO shaft.

## MAINTENANCE & LUBRICATION

### MAINTENANCE

Proper servicing and adjustment is the key to the long life of any implement. With careful inspection and routine maintenance, you can avoid costly downtime and repair the parts on your rotary tiller. Do not alter the tiller in a way which will adversely affect its performance.

Check all bolts and pins after using the unit for several hours and on a regular basis thereafter to ensure they are tight and secured. Replace worn, damaged, or illegible safety labels by obtaining new labels from the dealer.



**For safety reasons, each maintenance operation must be performed with tractor PTO disengaged, tiller lowered completely to the ground or onto support blocks, tractor engine shut off, and ignition key removed.**

### STORAGE

Clean, inspect, service, and make necessary repairs to the Rotary Tiller when parking it for long periods and when parking it at the end of a working season. This will help ensure that the tiller is ready for field use the next time you hook-up to it.



**Always disconnect main driveline from tractor PTO and secure tiller in the up position with solid supports before servicing underside of tiller. PTO can be engaged if tractor is started resulting in damage to tiller, bodily injury, or death**

1. Clean off any dirt and grease that may have accumulated on the Rotary Tiller. Scrape of compacted dirt and then wash surfaces thoroughly with a garden hose.
2. Check the tines for wear and replace if necessary.
3. Inspect the tiller for loose, damaged or worn parts and adjust or replace if needed.
4. Lubricate as noted in "Lubrication"
5. Drain and refill gearbox and Gear case oil. Be sure to replace all oil plugs. Drain oil in gearbox by removing the bottom drain plug or right-hand cap. Drain oil in Gear case by removing the bottom plug and tipping tiller backwards.

6. Replace all damaged or missing decals.
7. Store tiller on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer tiller life.
8. Repaint parts where paint is worn or scratched to prevent rust.

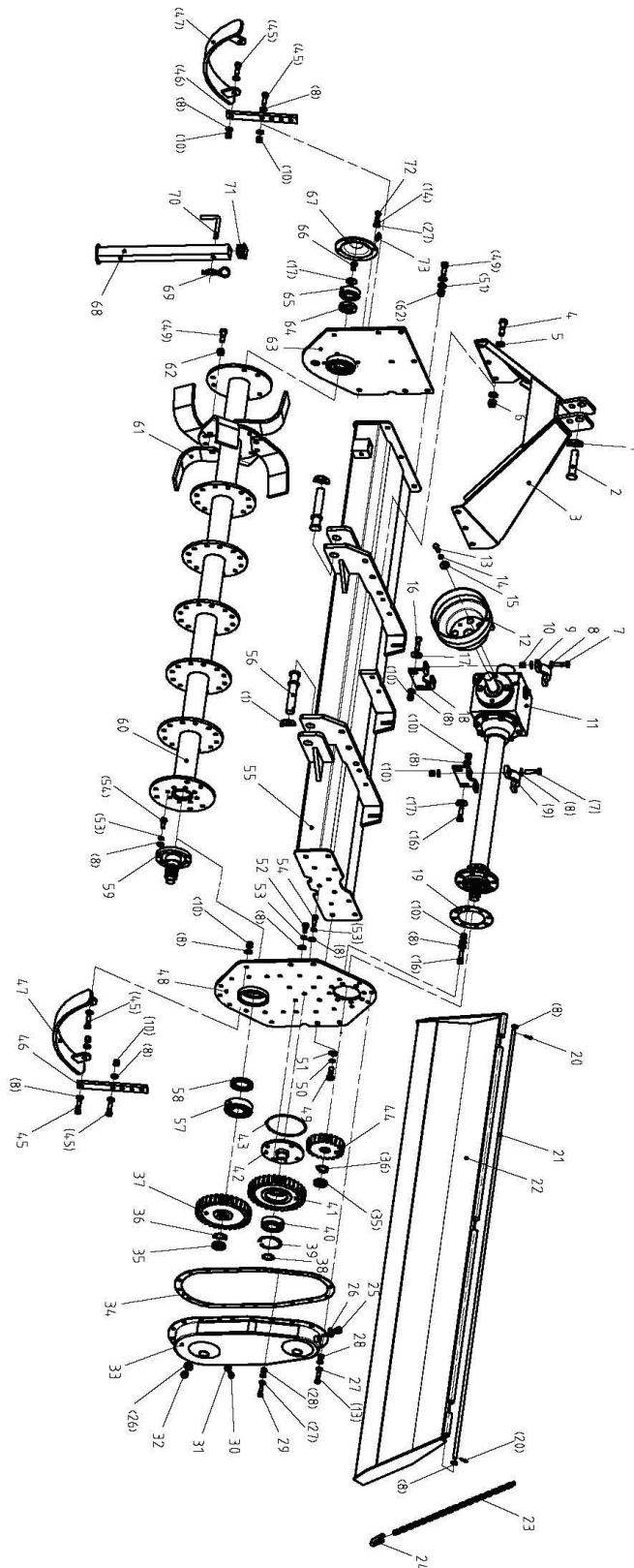
### LUBRICATION

Lubrication Parts	Time
Driveline U-Joint	8 hours
Driveline Shaft	20 hours
Gear Case	As Required
Bearing Of Rotor Shaft	8 hours
Gearbox	50 hours



**Tiller should be level when checking oil level in Gear case. Check oil level in gear case by removing lower plug. Oil should reach bottom of plug hole. Add recommended oil as needed. Retighten plug when oil is level with bottom of hole.**

## PARTS DIAGRAM



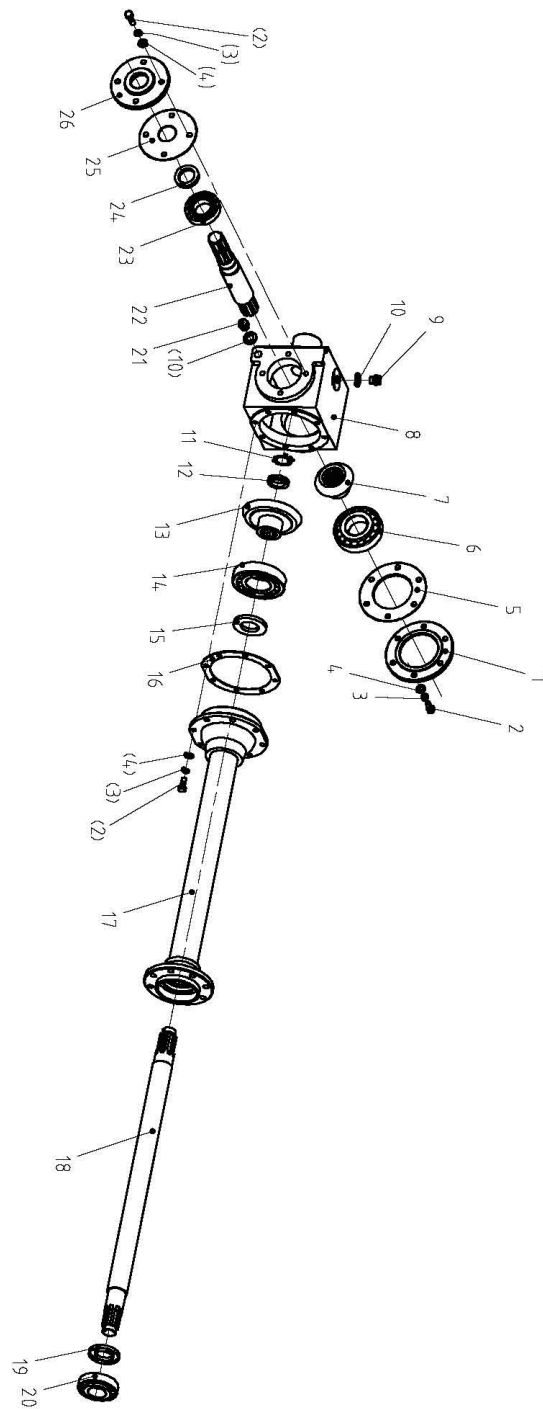
## PARTS LIST

REF	DESCRIPTION	QTY
1	Safety Pin 11	3
2	Upper Pin	1
3	Linkage	1
4	Bolt 16A50	6
5	PW16	12
6	Nylon Nut M16	6
7	Bolt M12*50	4
8	Plain Washer 12	55
9	Lock Plate	2
10	Nylon Nut M12	22
11	Hearbox Parts	1
12	PTO Cover	1
13	Bolt M10*35	18
14	Spring Washer 10	6
15	Big Plain Washer 10	2
16	Bolt M12*45	12
17	Big Plain Washer 12	5
18	Support Block	2
19	Splitter Pin	1
20	Gasket	2
21	Tailgate Weldment Axle	1
22	Tailgate Weldment	1
23	Chain 6	2
24	Shackle 6	2
25	Pressure Relief Plug M16*1.5	1
26	Bonded Washer 16	2
27	Plain Washer 10	44
28	Nylon Nut M10	20
29	Bolt M10*40	4

REF	DESCRIPTION	QTY
30	Plug M10*1.25	1
31	Bonded Washer	1
32	Plug M16*1.4	1
33	Gear Cover	1
34	Gear Cover Gasket	1
35	Round Nut 30*1.5	2
36	Tap Washer For Round Nut 30	2
37	Bottom Gear	1
38	Circlip For Hole 80	1
39	Bearing 6307	1
40	Middle Gear	1
41	Middle Shaft	1
42	O Ring 140*4	1
43	Upper Gear	1
44	Bolt M12*40	6
45	Adjusting Plate	2
46	Skider	2
47	Left Plate	1
49	Bolt M14*40	10
50	Spring Washer	4
51	Plain Washer 14	16
52	Bolt M12*25	2
53	Spring Washer 12	13
54	Bolt M12*30	11
55	Rotor Cover	1
56	Lower Pin	2
57	Bearing 6309	1
58	Oilseal 55*80*8	1
59	Rotor Shaft	1

REF	DESCRIPTION	QTY
60	Rotor	1
61	C Blade	42
62	Nylon Nut M14	90
63	Right Plate	1
64	Oilseal 35*62*8	1
65	Bearing 6306	1
66	Bolt M12*20	1
67	Rotor Cap	1
68	Supportor	1
69	R Pin	1
70	L pin	1
71	Rubber Cap	1
72	Bolt M10*20	4
73	Grease Fitting M8*1	1

## PARTS DIAGRAM



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REF	DESCRIPTION	QTY
1	Rear End Cap	1
2	Bolt M10*25	16
3	Spring Washer 10	16
4	Plain Washer 10	16
5	Rear Gasket	1
6	Bearing 30310	1
7	Driving Gear	1
8	Gearbox	1
9	Pressure Relief Plug	1
10	Bonded Washer	2
11	Tab Washer For Round Nut 30	1
12	Round Nut M30*1.5	1
13	Driven Gear	1
14	Bearing 30311	1
15	Oilseal 75*42*8	1
16	Shaft Cover Gasket	1
17	Shaft Cover	1
18	Shaft	1
19	Oilseal 70*40*8	1
20	Bearing 30308	1
21	Plug	1
22	Input Shaft	1
23	Bearing 30208	1
24	Oilseal 55*38*8	1
25	Front Gasket	1
26	Front End Cap	1

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