

R.E.I. 4' TILLER

SUB-COMPACT ROTARY TILLER

Operator's Manual

INTRODUCTION

Your rotary tiller is design to be used on Cat. 1 tractors and at 540. It is important to properly maintain in keep in place all safety guards and shields that came with your spreader.

SAFETY

Read and understand this manual and all safety signs before operating and maintaining. Review the safety instructions and precautions annually.

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



THIS SYMBOL MEANS

**ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!**



SAFETY SIGNAL WORDS

Note the use of the signal words DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:



DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.



WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



GENERAL SAFETY GUIDELINES

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decals is indicated in this booklet.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**

To prevent injury or death, use a tractor equipped with a Roll Over Protective System (ROPS). Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

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.**



SAFETY DECAL CARE

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from your Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.



BEFORE OPERATION

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing, which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- Assure that all tires are inflated evenly.
- Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
- Be sure that there are no tools lying on or in the equipment.
- Do not use the unit until you are sure that the area is clear, especially children and animals.

- Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.
- Use a tractor equipped with a Roll Over Protective System (ROPS) and fasten your seat belt prior to starting the engine.
- The manufacturer does not recommend usage of tractor with ROPS removed.
- Move tractor wheels to the widest recommended settings to increase stability.
- Securely attach to towing unit. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chain.
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.



DURING OPERATION

- Children should not be allowed on the product.
- Clear the area of small children and bystanders before moving the tractor.
- If using a towing unit, securely attach to tractor by using a hardened 3/4" pin, a metal retainer, and safety chains if required. Shift towing unit to a lower gear before going down steep downgrades, thus using the engine as a retarding force. Keep towing vehicle in gear at all times. Slow down for corners and rough terrain.
- Make sure you are in compliance with all local and state regulations regarding transporting equipment on public roads and highways. Lights and slow moving signs must be clean and visible by overtaking or oncoming traffic when rotary tiller is transported.
- Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
- **NO PASSENGERS ALLOWED** - Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it is moving.
- When halting operation, even periodically, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine and **remove the ignition key.**
- Be especially observant of the operating area and terrain - watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation.

- **DO NOT** operate near the edge of drop-offs or banks.
- **DO NOT** operate on steep slopes as overturn may result.
- Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.



HIGHWAY AND TRANSPORT OPERATIONS

- Adopt safe driving practices:
 - ⇒ Keep the brake pedals latched together at all times. **NEVER USE INDEPENDENT BRAKING WITH MACHINE IN TOW AS LOSS OF CONTROL AND/OR UPSET OF UNIT CAN RESULT.**
 - ⇒ Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.
 - ⇒ Reduce speed prior to turns to avoid the risk of overturning.
 - ⇒ Avoid sudden uphill turns on steep slopes.
 - ⇒ Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
 - ⇒ Do not drink and drive!
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport. Various safety lights and devices are available from your dealer.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- When driving the tractor and equipment on the road or highway under 40 kph (20 mph) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight as which you are operating.

- Watch for obstructions overhead and to the side while transporting.
- Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.
- Pick the levellest possible route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.
- Be extra careful when working on inclines.
- Maneuver the tractor or towing vehicle at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose fill, rocks and holes; they can be dangerous for equipment operation or movement.
- Allow for unit length when making turns.
- Operate the towing vehicle from the operator's seat only.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- Never leave running equipment attachments unattended.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

Operation

Before attaching the rotary tiller to the tractor, check the unit to ensure there is oil in the top and side gearbox. See Maintenance section for lubricant specifications.

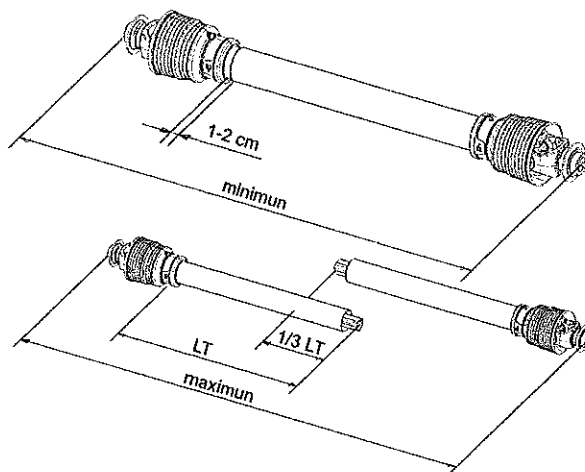


Attaching to the tractor

1. With the Rotary Tiller on a level surface, back the Cat. 1 tractor so the tractor lift arms are even with the unit's lower hitch pins. Lower or raise the tractor hitch arms until the 7/8" bushing in the arm is inside the clevis of lower hitch points. **Be sure nothing is between the tractor and the tiller before backing up.**
2. Insert the lower hitch pin through the lower hitch blocks and the tractor arm. The YCT series tillers have adjustable lower hitch blocks that can be slide to facilitate usage on larger tractors.
3. Secure the lift arm in place by using a 7/16" lynch pin or other fastener.
4. Repeat with the other arm.
5. Connect the driveline to the tractor's PTO output shaft. Secure it in place.
6. Connect the tractor top link to the upper hitch point of the rotary tiller.
7. Start the tractor and slowly raise the tiller. Check for drawbar interference. Be sure that the PTO driveline does not bottom out when lifting the machine to it's maximum height. If it does appear that it could bottom out, it is necessary to shorten the PTO driveline. (See Shortening a PTO Driveline section). Ensure that in the working position there is an overlap of a minimum of 1/3 the length of each profile.

Shortening a PTO Driveline

1. With the implement attached to the tractor's three point hitch, and the PTO driveline not installed, separate the PTO driveline. Attach the implement end to the implement and the other end to the tractor PTO input shaft.
2. Raise the implement by using the tractor's hydraulic 3-point hitch to it's maximum lift height.
3. Hold the half shafts next to each other and mark them so each end is approximately 1/2" from hitting the end of the telescopic profiles.
4. Shorten the inner and out guard tubes equally.
5. Shorten the inner and outer profiles by the same length as the guard tubes. Using a rattle file, round off all sharp edges and burrs. Grease the telescopic profile generously before reassembling.



Do not shorten too much, the proper overlap is a minimum of 1/3 the length of each profile.

Working Depth Adjustment

The working depth is controlled by raising or lowering the side skids. If the skids are raised, the working depth increases. By lowering the skids, the tilling depth with decrease.

Tailgate adjustment

The tailgate can be adjusted to help smooth and compact the tilled ground. Release the chain and secure to the desired height.



Start up

After making the necessary adjustments, lower the rotary tiller until the blades are a couple of inches from the ground. Engage the PTO and slowly lower the tiller to begin working.

Removal and Storage

After finishing, remove the rotary tiller from the tractor.

1. Put the PTO driveline in a safe location so it will not become damaged.
2. Clean and dry the equipment.
3. Replace any damaged or worn parts.
4. Check all bolts and nuts for tightness.
5. Lubricate and protect the machine from the elements.



FOLLOWING OPERATION

- Following operation, or when unhitching, stop the tractor or towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and **remove the ignition keys**.
- Store the unit in an area away from human activity.
- Do not park equipment where it will be exposed to livestock for long periods of time. Damage and live-stock injury could result.
- Do not permit children to play on or around the stored unit.
- Make sure all parked machines are on a hard, level surface and engage all safety devices.
- Wheel chocks may be needed to prevent unit from rolling.



PERFORMING MAINTENANCE

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.
- Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.
- Always use the proper tools or equipment for the job at hand.
- Use extreme caution when making adjustments.
- Never replace hex bolts with less than grade five bolts unless otherwise specified.
- After servicing, be sure all tools, parts and service equipment are removed.

- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty.

MAINTENANCE

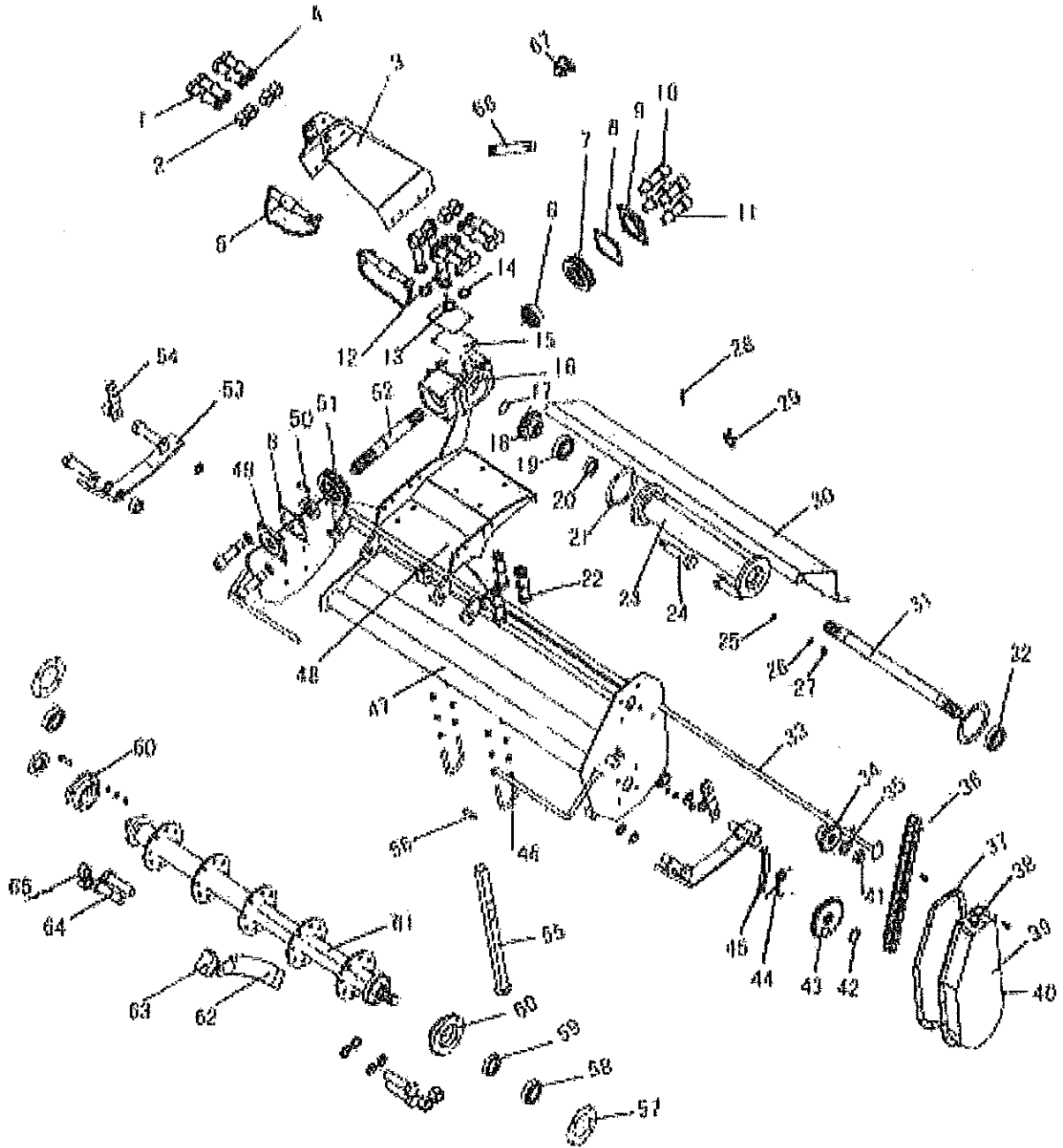
8 hours	Grease the Rotor support (<i>GP grease</i>) Grease PTO shaft cross & bearings (<i>GP grease</i>) Check Hardware for tightness
16 hours	Check oil level in center gearbox (<i>90wt</i>) Check oil level in side gearbox (<i>140wt</i>) Check Hardware for tightness
200 hours	Replace oil in center gearbox (<i>90wt</i>) Replace oil in side gearbox (<i>140wt</i>) Change chain tensioner spring (DLT model only) Check Hardware for tightness

Replacing Blades

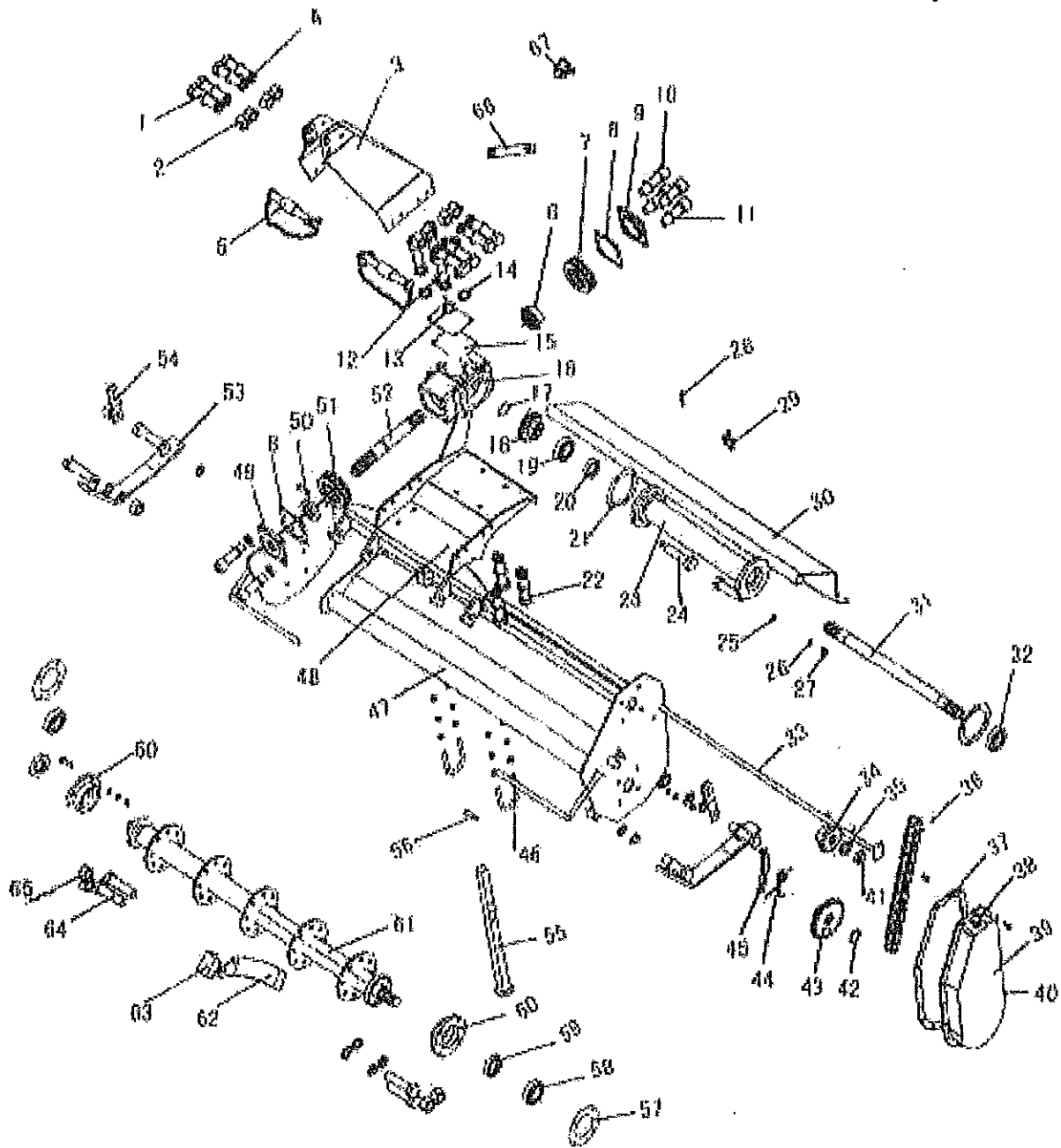
In order for the tiller to perform optimally, make sure the tiller blades are in good working condition and their bolts and nuts tight. Always replace the blades with the bolt head against the blade and the washer and nut on the flange side to help prevent the blades from loosening.

When several blades are to be replaced, replace them one blade at a time in order maintain the scroll pattern on the rotor.

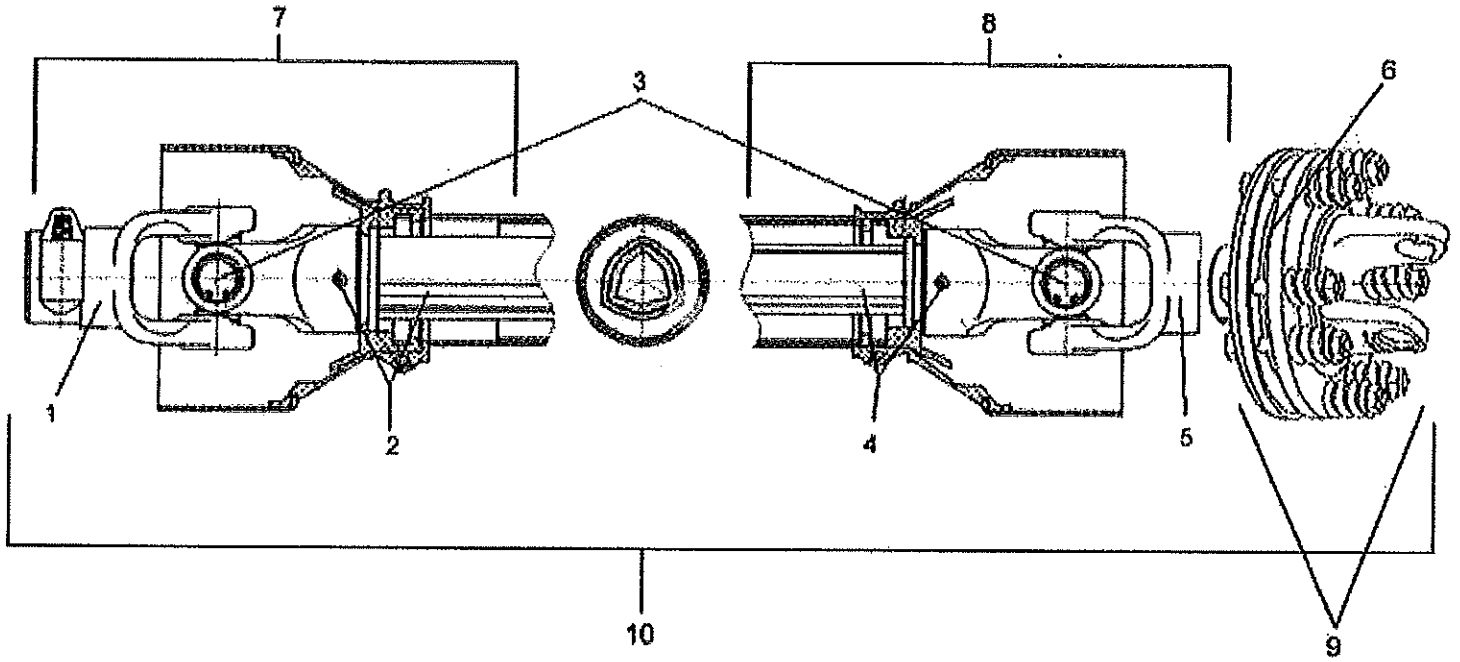
Rotary Tiller



Position	Part #	Description	Qty
1	DP1001	Bolts--M 10 x 30	8
2	DP1002	Nuts--M 10	8
3	DP1003	A-Frame	1
4	DP1004	Washer--Dia. 10	8
5	DP1005	Lower Suspension Pin	2
6	DP1006	Small Bevel Gear	1
7	DP1007	Bearing--32010	1
8	DP1008	Oil Seal Ring--Dia. 80	2
9	DP1009	Cap--Dia. 80	1
10	DP1010	Bolts--M 10 x 25	8
11	DP1011	Washer--Dia. 10	8
12	DP1012	Bolts--M 6	4
13	DP1013	Cap	1
14	DP1014	Washer	4
15	DP1015	Oil Seal Ring	1
16	DP1016	Center Gearbox	1
17	DP1017	Circlip--Dia. 32	1
18	DP1018	Big Bevel Gear	1
19	DP1019	Bearing--Dia. 30207	1
20	DP1020	Oil Seal--35 x 55 x 12	1
21	DP1021	Oil Seal Ring--Dia. 90	2
22	DP1022	Bolts--M 10 x 25	4
23	DP1023	Driveshaft Tube Housing - 48" (105 cm)	1
23	DP10231	Driveshaft Tube Housing - 50" (125 cm)	1
24	DP1024	Bolts--M 10 x 30	8
25	DP1025	Washer--Dia. 10	8
26	DP1026	Washer--Dia. 10	8
27	DP1027	Nut--M 10	-
28	DP1028	Chain	1
29	DP1029	Hook	1
30	DP1030	Tail Plate (105 cm)	1
30	DP10301	Tail Plate (125 cm)	1
31	DP1031	Second Shaft (105 cm)	1
31	DP10311	Second Shaft (125 cm)	1
32	DP1032	Bearing--32010	1
33	DP1033	Rod (105 cm)	1
33	DP10331	Rod (125 cm)	1
34	DP1034	Small Sprocket Wheel	1
35	DP1035	Stop Washer	1
36	DP1036	Chain--12A	1
37	DP1037	Oil Seal Ring	1
38	DP1038	Oil Filler Plug	1
39	DP1039	Side Chain Gear Box	1
40	DP1040	Oil Drain Plug	1



Position	Part #	Description	Qty
41	DP1041	Circular Nut—M 24 x 1.5	1
42	DP1042	Circlip—Dia. 32	1
43	DP1043	Big Sprocket Wheel	1
44	DP1044	Spring	1
45	DP1045	Tension Plate	1
46	DP1046	U-Bolts—M 12	2
47	DP1047	Main Frame Pipe	1
48	DP1048	Foot Pedal	1
49	DP1049	Cap	1
50	DP1050	Oil Seal—35 x 65 x 12	1
51	DP1051	Bearing—30307	1
52	DP1052	First Shaft	1
53	DP1053	Anti-Friction Plate	2
54	DP1054	Connection Plate	2
55	DP1055	Stay Bar	1
56	DP1056	Pin	1
57	DP1057	Oil Seal Ring	2
58	DP1058	Bearing—6207	2
59	DP1059	Oil Seal—40 x 65 x 12	2
60	DP1060	Bearing Seat	2
61	DP1061	Blades Shaft (105 cm)	1
61	DP10611	Blades Shaft (125 cm)	1
62	DP1062	Left-Bent Blade	12, 14
63	DP1063	Right-Bent Blade	12, 14
64	DP1064	Blades Bolt	24, 28
65	DP1065	Blades Nut	24, 28
66	DP1066	Upper Suspension Pin	1
67	DP1067	Spring Lock Pin	1



Position	Part #	Description	Qty
1	DP1075	PTO Yoke	1
2	DP1079	Female Yoke and Tube (tractor end)	1
3	DP1076	Cross and Bearings	2
4	DP1078	Male Yoke and Tube (implement end)	1
5	180-510	Friction Disc	2
6	DP1074F	Complete Female End (tractor end)	1
7	DP1074M	Complete Male End (implement end)	1
8	DP1098	Slip Clutch Complete	1
9	147-122	Complete PTO	1