



ROTARY TILLER

Operation, Service
& Parts Manual For
“E” Series

November 2000



WARNING



**TILLER SHIPPED WITH NO OIL IN
GEARBOX OR SIDE TRANSMISSION.
SEE OPERATION & SERVICE MANUAL
FOR LEVELS AND LOCATIONS.**

**TILLER ALSO SHIPPED WITH
NO GREASE IN ROTOR HUB
OR DRIVELINE CROSS KITS.
SEE OPERATION & SERVICE
MANUAL FOR LOCATIONS.**

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Date of Purchase: _____

Model Number: _____

Serial Number _____

PREPARATION

WARNING

To prevent possible personal injury or death during assembly, installation, operation, adjustment, or removal of implement, **DO NOT** wear loose clothing, always wear gloves and safety glasses or face shield. **Keep other persons a minimum of twenty-five (25) feet away from any unit under power.**



READ THIS BEFORE OPERATING TILLER

TRAINING

Know your controls. Read this operator's manual and the manual provided with your tractor. Learn how to stop the tractor engine and tiller quickly, in case of an emergency. **DO NOT** allow children to operate machine, or adults to operate it without proper instructions.

PREPARATION

- Clear area of debris.
- Never permit any person other than the operator to ride on board the tractor at any time.
- **DO NOT** allow riders on tiller at any time.
- Operate only in daylight or good artificial light.
- Ensure all safety shielding is properly installed.
- Always wear relatively tight and belted clothing when operating tiller. Loose clothing should not be worn, as it could get caught in the moving parts or controls.

CONNECTION TO TRACTOR

Your Gearmore Rotary Tiller can be attached to tractors having a 3-point hitch with category "I" length arms and category "I" hitch balls.

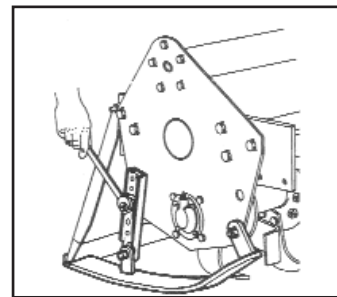
1. Attach the lower link arms of the tractor to the lower attaching pins of the tiller.
2. Attach the top link of the 3-point hitch to the tiller. Next, tighten the lower link arm check chains to prevent any horizontal movement of the tiller, which could cause damage during operation. Adjust the unit so the drive shaft is parallel to the ground in the working position. Adjust the tractor lift linkage or the hydraulic lever lifting stops to prevent the tiller being lifted more than 6" from the ground. This will avoid any damage to the universal joints.
3. Attach the drive shaft, first to the tiller input shaft and then to the PTO of the tractor. Make sure the yokes are locked on to the tractor and tiller shaft.

SLIP CLUTCH DRIVE SHAFT:

Your tiller is equipped with a slip clutch drive shaft, it should be checked after the first 10 minutes of operation. See Page 6, number 7 to adjust the clutch. **Never** over tighten or the clutch will lock and not slip under stress, which could cause damage to the tiller or tractor.

SET SIDE SKIDS FOR WORKING DEPTH:

To regulate working depth, loosen the nuts of the skids and adjust them to the desired position. Set skids equally on both sides. (See Picture)



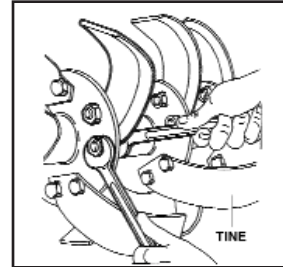
TINES:

When the complete set of tines has to be replaced, it is advisable to replace one at a time to insure that the new tines are mounted in the same position as the old ones. It is also recommended to replace all washers with new ones at the time of tine replacement.

GENERAL MAINTENANCE

Carefully follow all instructions as stated in this operator's manual, this includes safety, assembly, operation, lubrication and maintenance of the tiller.

1. Check lubrication - See Lubrication Section.
2. Check bolts and nuts for tightness (Ref. A).
3. Check tiller daily for loose, worn or broken tines (Ref. A).
4. Replace, immediately, any damaged or worn parts.

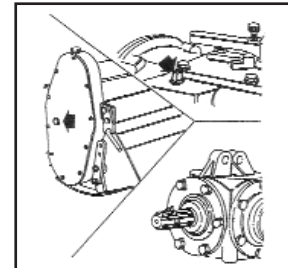


Ref. A

LUBRICATION

GEARBOX & SIDE TRANSMISSION:

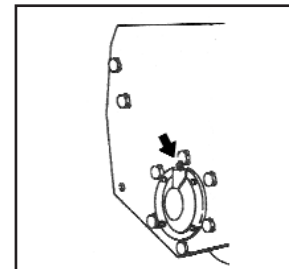
Fill gearbox until oil level is 1/2 full and side transmission to level plug (Ref. B) with gear oil. Use SAE #140 multi-gear lubricant or equivalent. Gear oil should be checked weekly and changed every 100 hours of use.



Ref. B

ROTOR SHAFT:

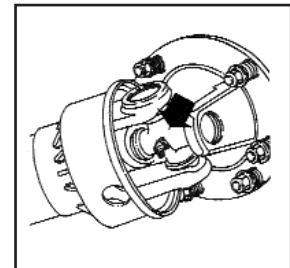
Lubricate rotor spindle (Ref. C) daily. NOTE: Grease zerk located on the side of the tiller.



Ref. C

DRIVE SHAFT:

Grease cross and bearing (Ref. D). After that grease every 8 hours of use. It is also necessary, from time to time, to untelescope the drive shaft to clean and re-grease tubing.



Ref. D

WARNING - DO NOT OPERATE TILLER UNLESS ALL SHIELDS ARE IN PLACE

SAFETY INFORMATION

Guards and safety shields are for your protection. **DO NOT** operate equipment unless they are in place.

Always operate tractor PTO (power take-off) at recommended RPM (revolutions per minute).

Disengage tractor PTO and shift into neutral before attempting to start engine.

Read and observe all safety decals on the tractor and tiller.

NEVER allow anyone within 25' of machine while it is in operation.

Do not stop or start suddenly when going uphill or downhill. Avoid operation on steep slopes.

Be alert for holes in terrain and other hidden hazards. Always drive slowly over rough ground.

Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Be careful when changing direction on slopes.

Stop tiller and tractor immediately upon striking an obstruction. Turn off engine, inspect tiller, and repair any damage before resuming operation.

Disengage power to tiller and stop engine before dismounting from tractor, before making any repairs or adjustments, transporting, or unclogging tiller.

Take all possible precautions when leaving tractor unattended: Disengage PTO, lower tiller, shift into neutral, set parking brake, stop engine and remove key from ignition.

Front tractor weights or front tire ballast should be used to enhance front end stability on small tractors.

Check to make sure PTO is properly connected and that the driveline is correct to prevent bottoming out or pulling apart during the full lift range of the hitch.

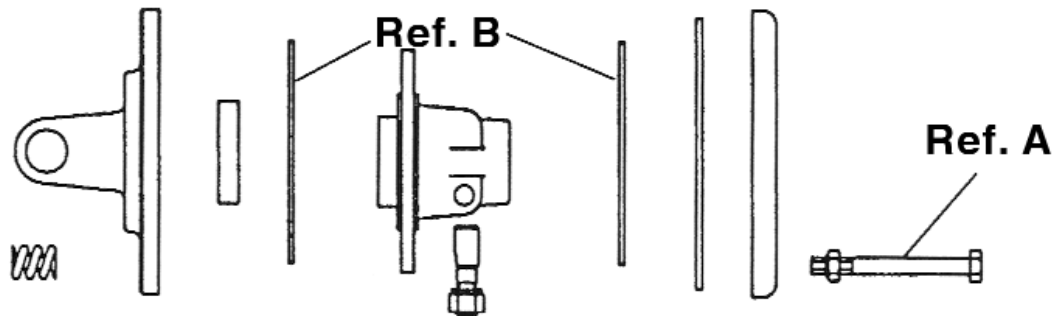
Never work under tiller without safety blocks.

This implement is designed for a one-man operation. It is the responsibility of the tractor operator to see that no one is in the proximity of the implement when it is started. **DO NOT** operate the implement with another person within 25' of the implement or PTO drive.

TROUBLESHOOTING CHART

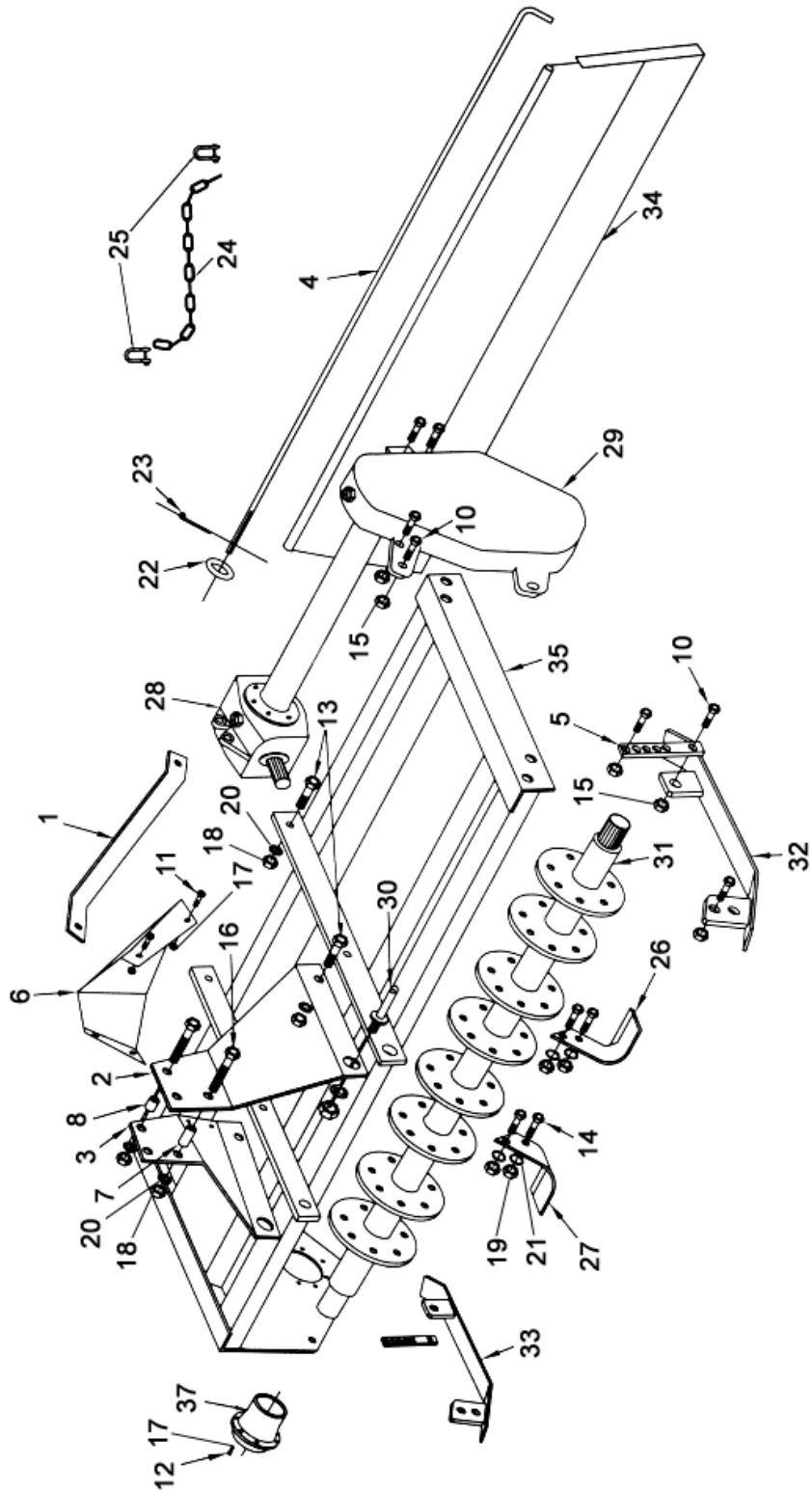
PROBLEM	CAUSE	SOLUTION
Excessive vibration	Drive shaft damaged	Replace worn drive shaft
	Tines broken off	Replace damaged tines
	Bent rotor shaft	Replace rotor shaft
Rotor shaft does not turn	PTO Clutch slipping	Check slip clutch adjustment
		Replace clutch discs
Tilling deeper on one side	Tractor lower lift arm out of adjustment	Adjust lift arm
	Tiller depth skid not properly adjusted	Adjust skids to level depth
Tiller bouncing	Trying to go too deep on first pass	Raise tiller so tilling 3" deep
	Tractor in too high a gear	Tiller runs smoother in first or second gear
Leaving tire tracks	Tires set out too wide	Set in tractor tires
	Tractor too large	Offset tiller to cover right tire tracks
PTO will not untelescope	Improper lubrication	Separate and grease both halves
	PTO twisted	Replace twisted parts
	Shields damaged	Replace shields

REPLACING CLUTCH LININGS



1. Mount clutch assembly in vise.
2. Remove all bolts and nuts (Ref. A).
3. Disassemble all components.
4. Check the condition of all parts.
5. Replace clutch linings (Ref. B).
6. Reassemble the components, install spring with their corresponding bolts and nuts.
7. Tighten nuts following an alternating cross pattern until reaching a height of 27 mm (1.063”).
8. Check that the height is the same for all springs.
9. Reinstall driveline, making sure all shields are in place.

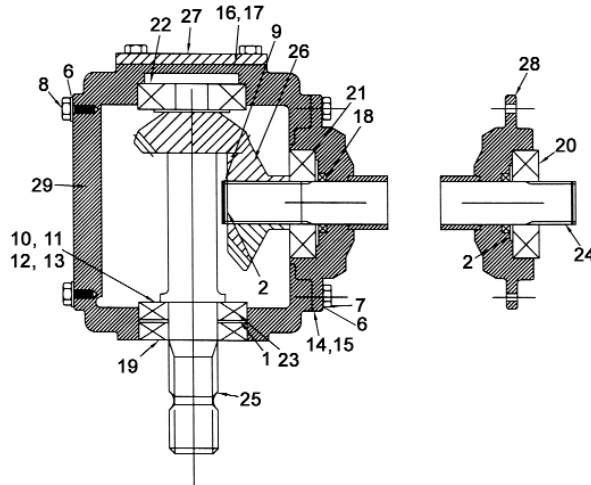
PARTS BREAKDOWN



PARTS BREAKDOWN

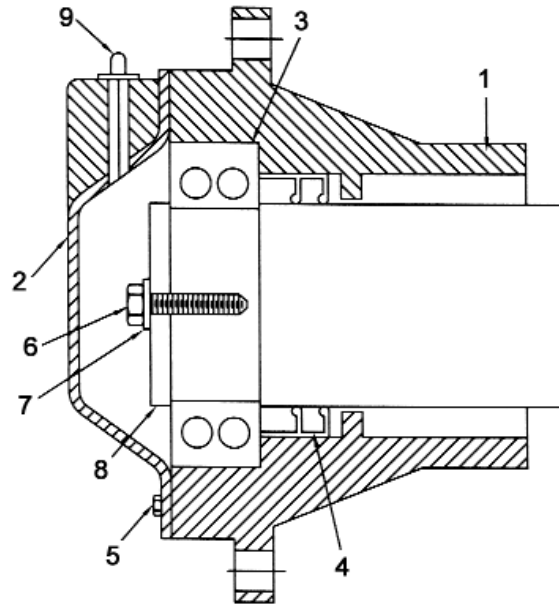
<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	380108	Lift Arm Brace
2	1	310085	A-frame LH
3	1	310086	A-frame RH
4	1	380116	Tail Rod E48
4	1	380016	Tail Rod E60
4	1	380014	Tail Rod E72
5	2	380020	Skid Adjustment Bar
6	1	380025	Center PC
7	1	380030	Lift Arm Spacer 2 1/4" L
8	1	380031	Lift Arm Spacer 1 1/2" L
10	10	101025	1/2-13-1 1/2" L Bolt Grade 5
11	4	101110	3/8-16-1" L Bolt Grade 5
12	6	101112	3/8-16-1 1/4" L Bolt Grade 5
13	4	101175	5/8-11-2" L Bolt Grade 5
14	As Req'd	101198	9/16-18-1 3/4" L Bolt Grade 5
15	10	102020	1/2-13 Grade C Cone Locknut
16	2	102065	5/8-11-4" L Bolt Grade 5
17	10	102112	3/8-16" Locknut
18	6	102165	5/8-11" Nut
19	As Req'd	102170	9/16-18" Nut
20	6	103165	5/8" Lockwasher
21	As Req'd	103166	9/16" Lockwasher
22	1	104005	1/2" Flat Washer (Zinc)
23	1	105005	3/16 x 2" L Cotter Pin
24	1	131005	Chain, 14 Links
25	2	131143	Shackle 1/4" Pin
26	As Req'd	173007	Tine 220 Left Hand
27	As Req'd	173008	Tine 220 Right Hand
28	1	184064	E48 Top Transmission Assy.
28	1	184066	E60 Top Transmission Assy.
28	1	184067	E72 Top Transmission Assy.
29	1	184069	Side Transmission Assy.
30	2	194101	Lift Pin Cat. 1
31	1	402038	E48 Rotor Assy.
31	1	402042	E60 Rotor Assy.
31	1	402053	E72 Rotor Assy.
32	1	402050	Skid Assy. LH
33	1	402057	Skid Assy. RH
34	1	402041	E48 Back Plate Assy.
34	1	402046	E60 Back Plate Assy.
34	1	402052	E72 Back Plate Assy.
35	1	402039	E48 Frame Assy.
35	1	402043	E60 Frame Assy.
35	1	402054	E72 Frame Assy.
36	1	147122	22" Slip Clutch PTO Shaft (not shown)
37	1	184070	Outboard Hub Assy.

TOP TRANSMISSION



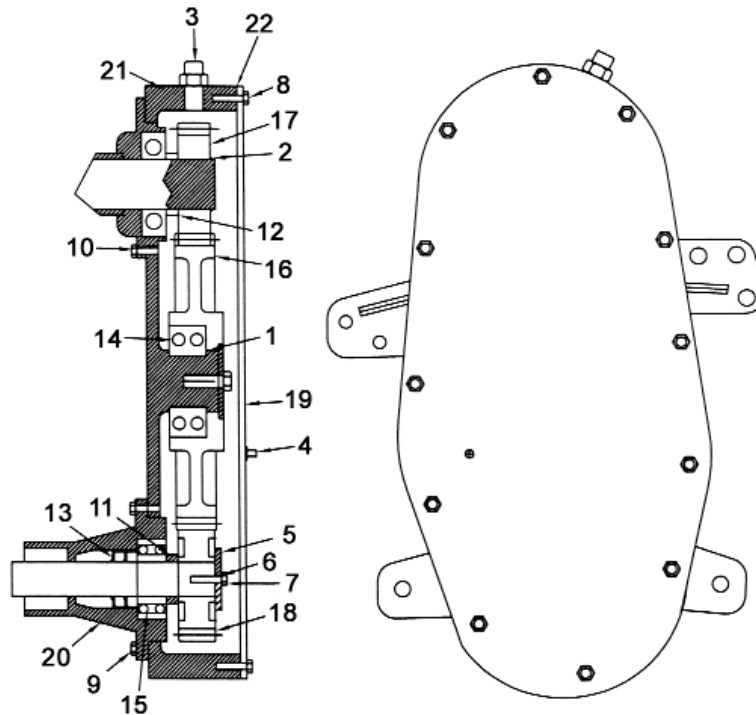
<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	200146	Retaining Ring 72mm
2	1	200130	Retaining Ring 40mm
3	1	190028	I.D. Tag
4	1	140033	Pressure Relief Plug 1/2"-14NPT (not shown)
5	1	140010	Square Head Plug 1/4"-18NPT (not shown)
6	10	130060	Lockwasher 10
7	6	110196	Bolt M-10-25
8	4	110190	Bolt M-10-30
9	1	090243	Spacer (Output)
10	As Req'd	090242	Shim 1.0mm
11	As Req'd	090241	Shim .8 mm
12	As Req'd	090240	Shim .5mm
13	As Req'd	090239	Shim .3mm
14	1	070278	Output Gasket .8mm
15	1	070277	Output Gasket .5mm
16	1	070276	Input Gasket .4mm
17	1	070275	Input Gasket .2mm
18	1	55x75x10	Seal Output (Double Lip)
19	1	35x80x10	Seal Input (Double Lip) 35 x 80 x 10
20	1	6308-2RS	Sealed Ball Bearing (6308)
21	1	6308	Ball Bearing
22	1	6307	Ball Bearing
23	1	6207	Ball Bearing
24	1	040367	Output Shaft E48 500mm
24	1	040371	Output Shaft E60 700mm
24	1	040373	Output Shaft E72 900mm
25	1	030482	Pinion Shaft 13 Teeth
26	1	030481	Output Gear 19 Teeth
27	1	020243	Cap Blank
28	1	020242	Cap Hub E48 500mm
28	1	020246	Cap Hub E60 700mm
28	1	020248	Cap Hub E72 900mm
29	1	010189	Housing RTA-50

OUTBOARD HUB ASSEMBLY



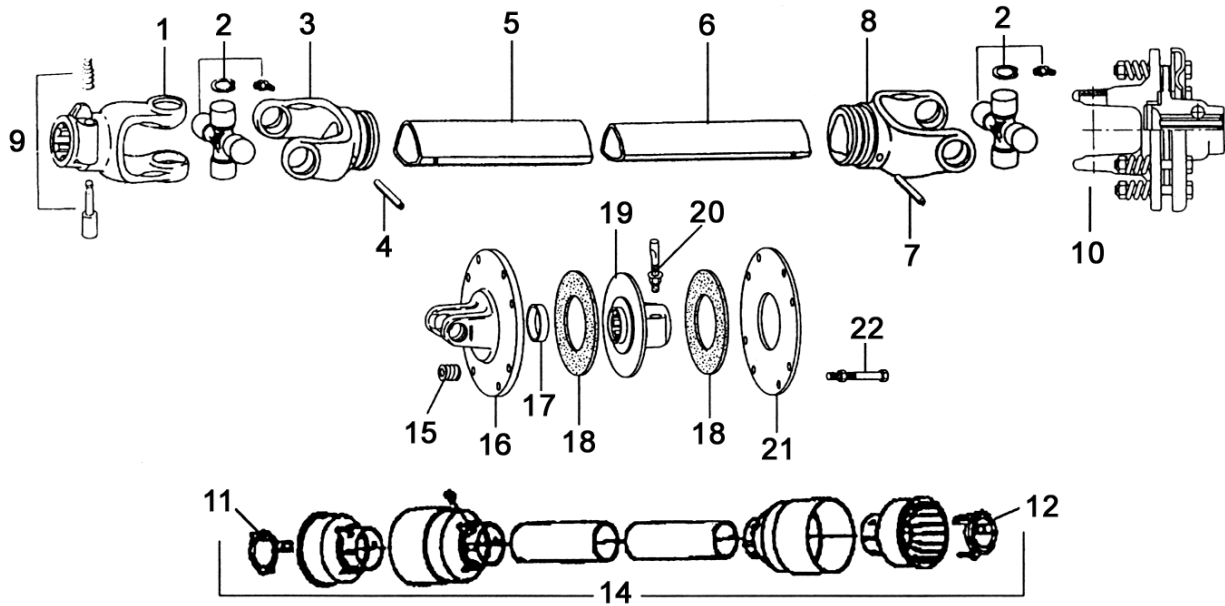
<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	020249	Hub Housing
2	1	020250	Cap
3	1	1310	Self-Aligning Ball Bearing (1310)
4	2	55x75x10	Seal Double Lip
5	4	110146	Bolt M-6-16
6	1	110203	Bolt M-12-25
7	1	130048	Lockwasher M12
8	1	130111	Washer
9	1	140031	Grease Zerck 1/4" - 28

SIDE TRANSMISSION



<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	902005	Retaining Ring 90mm
2	1	902006	Retaining Ring 40mm
3	1	902007	Pressure Relief Plug 1/2" 14NPT
4	1	902008	Square Head Plug 1/4" 18NPt
5	2	902009	Flat Washer (Main)
6	2	902010	Lockwasher M12
7	2	902011	Bolt M-12-25
8	12	S02247	Bolt M-8-16
9	6	S02296	Bolt M-10-25
10	6	S02207	Bolt M-10-20
11	1	902015	Spacer (Output)
12	1	902016	Spacer (Input)
13	2	55x75x10	Seal Double Lip
14	1	3210C	3210C Double Ball Bearing
15	1	1310	1310 Self-Aligning Ball Bearing
16	1	902021	Gear 34 Teeth
17	1	902022	Gear 16 Teeth
18	1	902020	Gear 28 Teeth
19	1	902001	Cover
20	1	902002	Side Box Outboard Hub Housing
21	1	902003	Housing
22	1	902004	Gasket

PTO DRIVELINE ASSEMBLY



<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	507040351	Yoke, 1-3/8" 6-Spline
2	2	41204	Cross Journal Kit #4
3	1	204046851	Yoke, Outer Drive Tube
4	1	341038000	Roll Pin O.T.
5	1	125080950	Outer Drive Tube
6	1	125070950	Inner Drive Tube
7	1	341048000	Roll Pin I.T.
8	1	204046852	Yoke, Inner Drive Tube
9	1	403000001	Push Pin Kit
10	1	637141001	Clutch Assembly FF-1
11	1	255040005	Bearing, Outer Shield
12	1	255040006	Bearing, Inner Shield
13	2	252000001	Safety Chain (not shown)
14	1	5N04095N6	Complete Shield
15	8	351022370	Spring 06
16	1	253042001	Flange
17	1	258005320	Bushing
18	2	247000054	Lining
19	1	515200311	Hub 1-3/8" 6-Spline
20	1	408000060	Push Pin Assembly
21	1	248220008	Pressure Plate
22	8	432000006	Bolt
23	1	147122	Complete Driveline w/Slip Clutch

LIMITED WARRANTY



GEARMORE, INC., warrants each new Gearmore product to be free from defects in material and workmanship for a period of twelve (12) months from date of purchase to the original purchaser. This warranty shall not apply to implements or parts that have been subject to misuse, negligence, accident, or that have been altered in any way.

Our obligation shall be limited to repairing or replacement of any part, provided that such part is returned within thirty (30) days from date of failure to Gearmore through the dealer from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render us liable for injury or damages of any kind or nature, direct, consequential or contingent, to person or property. This warranty does not extend to loss of crops, loss because of delay in harvesting or any other expenses, for any other reasons.

Gearmore in no way warrants engines, tires, or other trade accessories, since these items are warranted separately by these respective manufacturers.

Gearmore reserves the right to make improvements in design or changes in specification at any time, without incurring any obligations to owners or units previously sold.

GEARMORE, INC.
13477 Benson Ave.
Chino, CA 91710

Always refer to and heed machine operating warning decals on machine.

The serial number of this product is stored in our computer database, thus submitting a warranty registration card is not required.