



ROTARY TILLER

**Operation, Service
& Parts Manual For
"L" Series**

December 1995 (rev. 3-05)

TABLE OF CONTENTS

Preparation	1
Assembly Instructions	2
Connection to Tractor	3
General Maintenance	4
Safety Information	5
Troubleshooting	6
Replacing Clutch Linings	7
Tiller Assembly	8-12
Tine Chart/Safety Shields	13
PTO Driveline Assembly	14-15
Limited Warranty	16

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

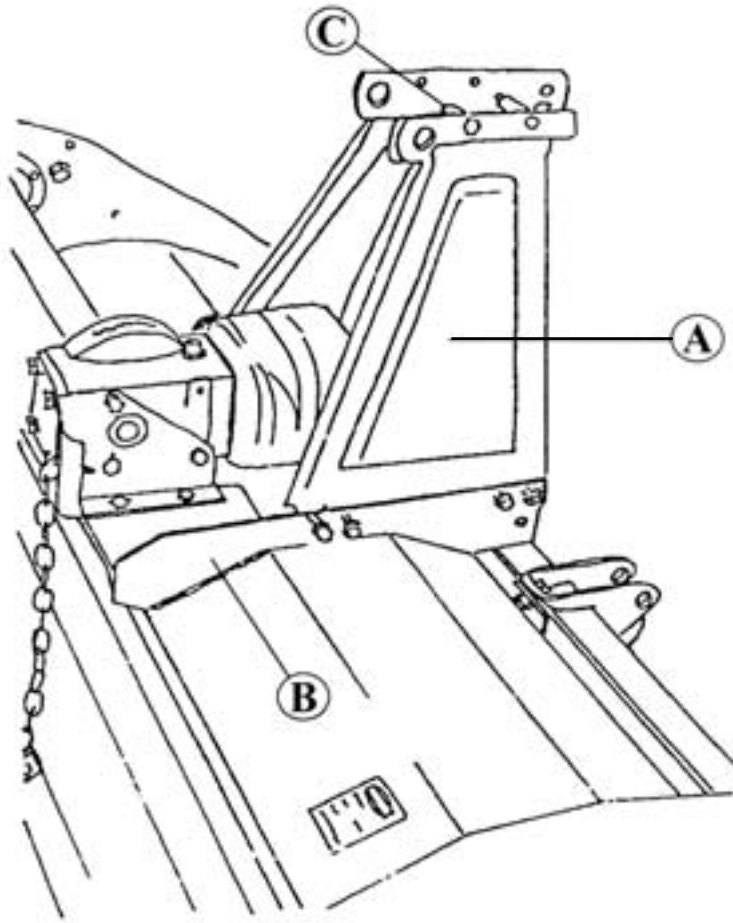
TRAINING

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.

ASSEMBLY INSTRUCTIONS



1. With tiller on bottom pallet, install a-frame mast (Ref. A).
Note: The mast mounts on the outside of the rails (Ref. B).
2. Install spacer (Ref. C) between the two a-frame masts using supplied bolt and nut.
3. Tighten all bolts and nuts.
4. Install PTO driveline to tiller gearbox. **Note:** The clutch half of the driveline assembly goes to the tiller gearbox.
5. Check oil in gearbox (140 SAE Lube).
6. Check oil in chain case (140 SAE Lube).

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 brackets of the tiller by inserting pins.

NOTE: Hitch brackets can be adjusted for offset. Loosen hitch brackets and rear strap and slide gearbox assembly left or right for offset. Check PTO length and clearance, then re-tighten bolts.

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.

SHEAR PIN DRIVESHAFT:

If your tiller has a driveshaft with a shear bolt, it has been calibrated for a certain overload. Should the bolt shear, due to meeting resistance, replace it with a new one of the same specification.

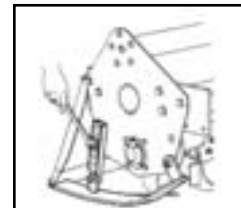
NOTE: For bolt size, refer to page 14, reference #11.

SLIP CLUTCH DRIVESHAFT:

If your tiller is equipped with a slip clutch driveshaft, it should be checked after the first 10 minutes of operation. To adjust the clutch, tighten or loosen bolts equally. Don't overtighten 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)



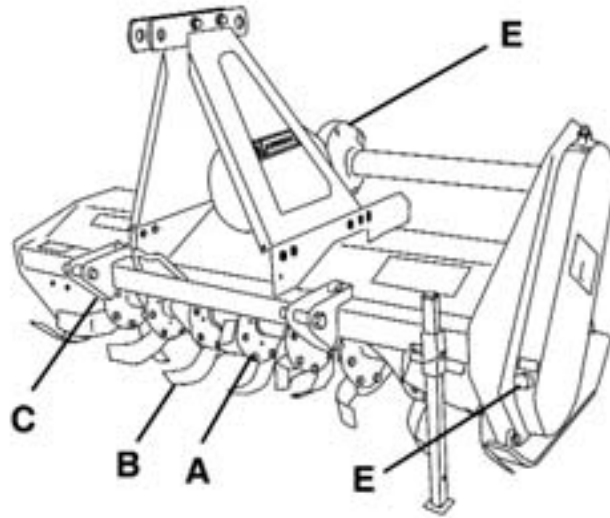
TRANSMISSION CHAIN TENSION:

Your Gearmore Rotary Tiller has an automatic chain tensioner, so no adjustment is necessary.

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 important to fit the bolts with the heads to the side of the tine and the nuts and washers to the side of the flange. 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 bolts and nuts for tightness (Ref. A).
2. Check tiller daily for loose, worn or broken tines (Ref. B).
3. Replace, **immediately**, any damaged or worn parts.
4. Check lubrication - *See Lubrication Section.*

LUBRICATION

GEARBOX & CHAIN CASE:

Fill gearbox to level plug (Ref. E) with gear oil. Use SAE#140 multi-gear lubricant or equivalent. Gear oil should be checked weekly and changed *every 400 hours* of use.

ROTOR SHAFT:

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

DRIVESHAFT:

Grease both cross and bearing and shear bolt yoke. After that grease *every 8 hours* of use. It is also necessary, from time to time, to untelescope the driveshaft to clean and re-grease tubing.

NOTE: Driveshafts with a slip clutch do not have a grease zerk on the clutch assembly.



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

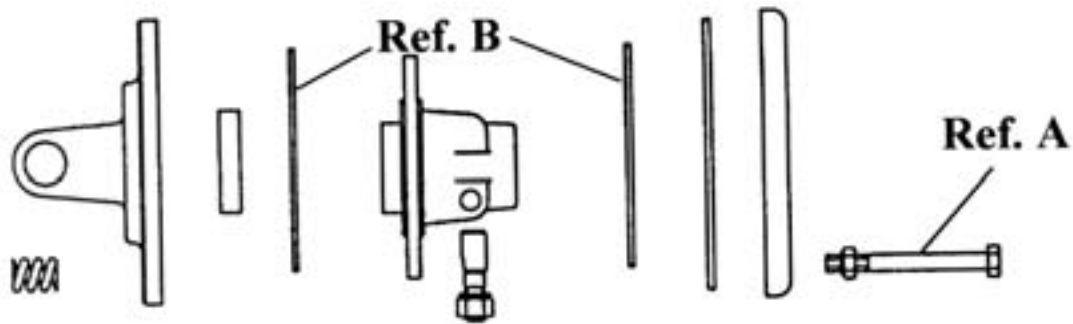
SAFETY INFORMATION

- Guards and safety shields are for your protection. **DO NOT** operate equipment unless they are in place.
- Always** engage the tractor's PTO with the tiller off the ground and at a low engine speed. Bring the engine speed up and lower the tiller onto the ground. The tiller operates more efficiently at the 540 RPM PTO speed. **Always** operate tractor PTO (power take-off) at recommended RPM (revolutions per minute), or 540 RPM.
- 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. Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Be careful when changing direction on slopes. Always raise tiller when backing up.
- Be alert for holes in terrain and other hidden hazards. Always drive slowly over rough ground.
- 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

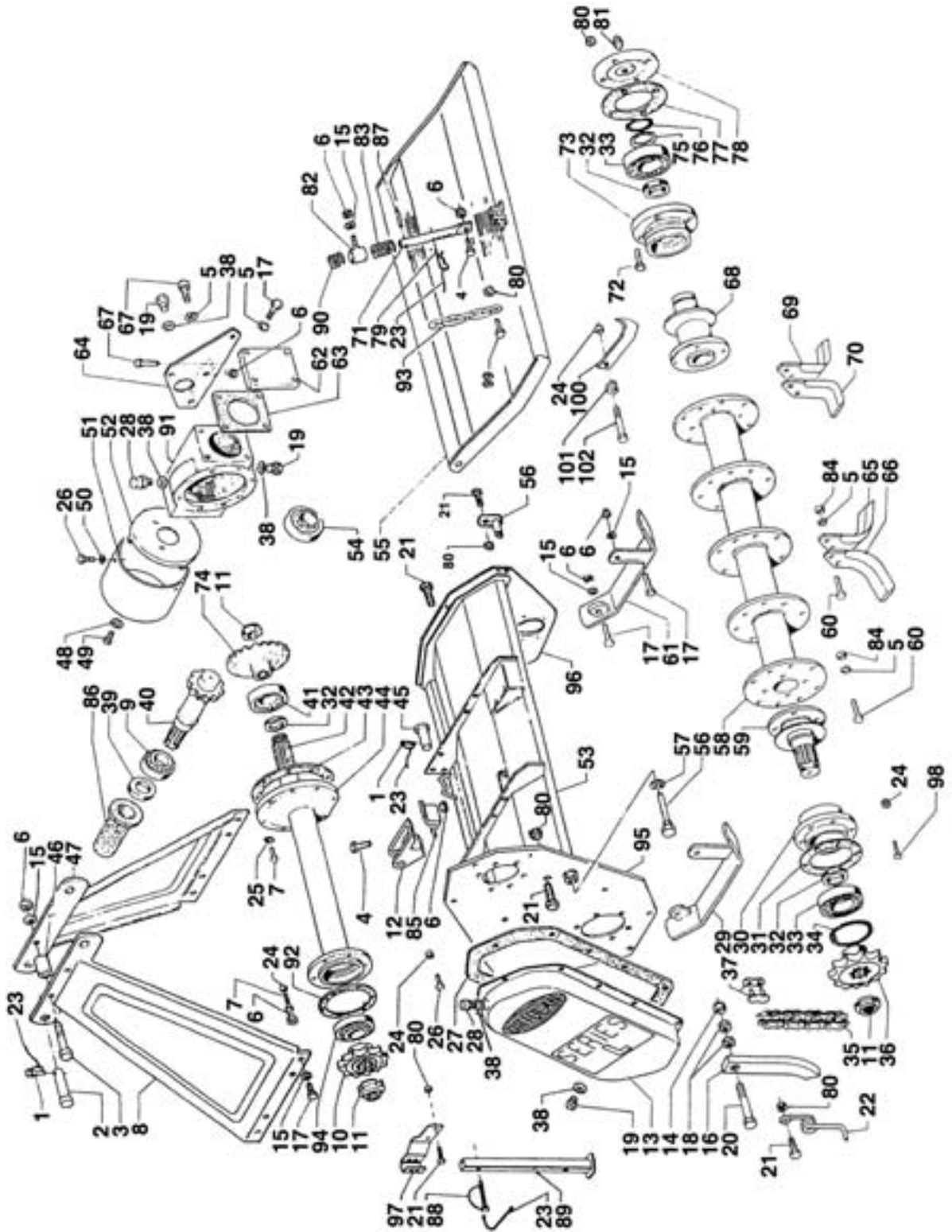
PROBLEM:	CAUSE:	SOLUTION:
Excessive vibration:	Driveshaft damaged	Replace worn driveshaft
	Tines broken off	Replace damaged tines
	Bent rotor shaft	Replace rotor shaft
Rotor shaft does not turn:	Shear bolt broken	Replace shear bolt
	Clutch linings slipping	Replace clutch linings
	Transmission chain broken	Replace transmission chain
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 the 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 telescope:	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.

"L" TILLER ASSEMBLY



TILLER ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	3	80.S.77.015	Click Pin D10 x 37
2	1	76.65.0014	Pin, Top Link
3	2	80.Z.01.094	Bolt M12 x 80
4	4	80.Z.03.160	Bolt M12 x 35
5	As Req'd	80.S.35.112	Lock Washer
6	20	80.Z.11.015	Nut M12
7	24	80.R.03.112	Bolt M8 x25
8	1	73.68.0003	A-frame Mast L.H.
9	1	30208	Bearing 40-80-19.75
10	1	76.75.0003	Upper Sprocket Z10
11	3	80.Z.55.012	Lock Nut M35 x 1.5
12	2	71.46.0001	Bracket, 2-pt. Hitch
13	1	72.14.0008	Cover, Chain Case
14	1	80.Z.11.017	Lock Nut M14
15	16	80.Z.30.012	Washer D.12
16	1	78.63.0003	Arm, Tension
17	16	80.Z.03.159	Bolt M12 x 30
18	1	80.S.02.011	Nut M14 UNI 5588
18	1	80.S.01.011	Nut M14 UNI 5587
19	2	80.F90.553	Plug, Level 1/2"
20	1	80.R.03.188	Bolt M14 x 60
21	15	80.Z.03.136	Bolt M10 x 25
22	1	75.85.0005	Spring, Tension
23	4	80.P.05.001	Wire Retainer
24	23	80.Z.11.009	Lock Nut M8
25	8	80.S.35.108	Washer D.8
26	13	80.Z.03.110	Bolt M8 x 20
27	1	74.41.0002	Gasket
28	2	80.F90.116	Plug, Fill 1/2"
29	1	78.16.0015	Skid L.H.
30	1	78.48.0005	Hub, L.H. Rotor Support
31	1	74.41.0009	Gasket
32	3	50X65X8	Oil Seal
33	2	6308	Bearing 40-90-23
34	1	47290	Circlip I90
35	1	80.A.31.026	38 Link Chain ASA100 (Incl. #37 master link)
36	1	76.75.0004	Lower Sprocket Z14
37	1	80.A.31.920	Master Link ASA100
38	4	80.S.38.232	Gasket
39	1	40X52X7	Oil Seal
40	1	76.75.0001	Input Shaft w/Pinion, Z15

TILLER ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
41	1	30210	Bearing 50-90-21.75
42	1	71.12.0005	Extension Shaft L90
42	1	71.12.0006	Extension Shaft L100
42	1	71.12.0007	Extension Shaft L120
42	1	71.12.0008	Extension Shaft L135
42	1	71.12.0009	Extension Shaft L150
42	1	71.12.0010	Extension Shaft L165
43	As Req'd	74.41.0025	Gasket 1.0
43	As Req'd	74.41.0026	Gasket 0.3
43	As Req'd	74.41.0027	Gasket 0.5
44	1	76.87.0014	Extension Tube L90 (Before s/n 01146)
44	1	76.87.0015	Extension Tube L100 (Before s/n 01146)
44	1	76.87.0016	Extension Tube L120 (Before s/n 01146)
44	1	76.87.0017	Extension Tube L135 (Before s/n 01146)
44	1	76.87.0018	Extension Tube L150 (Before s/n 01146)
44	1	76.87.0019	Extension Tube L165 (Before s/n 01146)
44	1	76.87.0101	Extension Tube L90 (After s/n 01147)
44	1	76.87.0102	Extension Tube L100 (After s/n 01147)
44	1	76.87.0103	Extension Tube L120 (After s/n 01147)
44	1	76.87.0104	Extension Tube L135 (After s/n 01147)
44	1	76.87.0105	Extension Tube L150 (After s/n 01147)
44	1	76.87.0106	Extension Tube L165 (After s/n 01147)
45	2	76.65.0006	Lift Pin, Cat. I D.21
46	2	72.80.0014	Spacer
47	1	73.68.0002	Bracket, Support Tube
48	2	80.Z.31.108	Washer
49	2	80.Z.03.108	Bolt M8 x 16
50	3	80.Z.30.008	Washer D.8
51	1	72.48.0003	Shield, PTO
52	1	78.48.0111	Mount Plate, Shield
53	1	78.60.0009	Frame L90 (Before s/n 00779)
53	1	78.60.0010	Frame L100 (Before s/n 00779)
53	1	78.60.0011	Frame L120 (Before s/n 00779)
53	1	78.60.0012	Frame L135 (Before s/n 00779)
53	1	78.60.0013	Frame L150 (Before s/n 00779)
53	1	78.60.0014	Frame L165 (Before s/n 00779)
53	1	78.60.0015	Frame L90 (After s/n 00780)
53	1	78.60.0016	Frame L100 (After s/n 00780)
53	1	78.60.0017	Frame L120 (After s/n 00780)
53	1	78.60.0018	Frame L135 (After s/n 00780)

TILLER ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
53	1	78.60.0019	Frame L150 (After s/n 00780)
53	1	78.60.0020	Frame L165 (After s/n 00780)
54	1	30209	Bearing 45-85-20.75
55	1	72.30.0009	Tailboard L90
55	1	72.30.0010	Tailboard L100
55	1	72.30.0011	Tailboard L120
55	1	72.30.0012	Tailboard L135
55	1	72.30.0013	Tailboard L150
55	1	72.30.0014	Tailboard L165
56	1	76.65.0009	Special Pin (Before s/n 00779)
56	2	76.65.0024	Special Pin (After s/n 00780)
57	1	80.S.35.118	Lock Washer
58	1	77.85.0005	Rotor Shaft L90
58	1	77.85.0006	Rotor Shaft L100
58	1	77.85.0007	Rotor Shaft L120
58	1	77.85.0008	Rotor Shaft L135
58	1	77.85.0009	Rotor Shaft L150
58	1	77.85.0010	Rotor Shaft L165
59	1	75.92.0001	Drive Hub L.H.
60	As Req'd	80.Z.00.022	Bolt M12 x 35 x 1.25
61	1	78.16.0014	Skid R.H.
62	1	72.44.0004	Cover, Gearbox Rear
62	1	72.44.0020	Cover, Gearbox Rear Thru Shaft
63	1	74.41.0006	Gasket 1.0
63	1	74.41.0024	Gasket 0.3
63	1	74.41.0028	Gasket 0.5
64	1	78.48.0034	Bracket, Support (Before s/n 03922)
64	1	78.48.0033	Bracket, Support (After s/n 03923)
65	See Chart	79.66.0003	Blade R.H.
66	See Chart	79.66.0004	Blade L.H.
67	5	80.R03.158	Bolt M12 x 25
68	1	75.92.0002	Hub, Idler
69	See Chart	79.62.0003	Blade R.H. (L Style)
70	See Chart	79.62.0004	Blade L.H. (L Style)
71	1	71.42.0014	Rod Support (Before s/n 03922)
72	4	80.Z.03.137	Bolt M10 x 30
73	1	78.48.0006	Hub, R.H. Rotor Support
74	1	72.46.0001	Bevel Gear Z23
75	1	80.S.45.297	Shim D.40 x 50 x 1.0
76	1	47140	Circlip E40

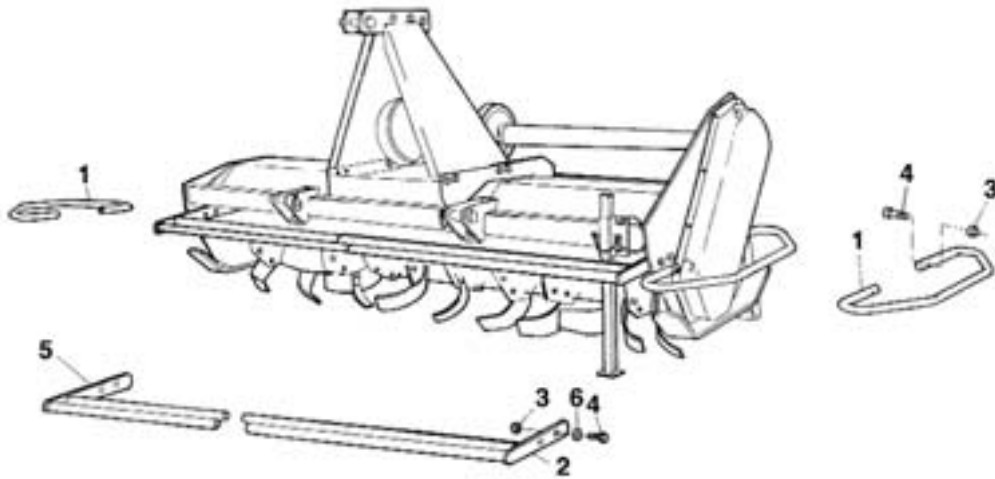
TILLER ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
77	1	74.41.0030	Gasket
78	1	72.44.0017	Cover
79	1	80.Z.75.506	Hair Pin D.5
80	17	80.Z.11.012	Nut M10
81	1	80.Z.61.010	Grease Zerk M8
82	1	78.48.0113	Bracket Support Tube (Before s/n 03922)
83	1	75.85.0006	Spring (Before s/n 03922)
84	See Chart	80.Z.08.110	Nut M12 x 1.25
85	2	78.44.0001	Clamp
86	1	80.P.09.001	Cover, Rubber
87	1	80.Z.62.252	Roll Pin 6 x 35 (Before s/n 03922)
88	1	80.S.77.021	Lock Pin D10 x 70, Jackstand
89	1	76.74.0001	Jackstand (Before s/n 03546)
89	1	76.74.0003	Jackstand (After s/n 03547)
90	1	75.85.0007	Spring (Before s/n 03922)
91	1	78.04.0008	Housing
92	1	74.41.0055	Gasket
93	1	72.20.0005	Chain Tailboard
94	1	2208-EC	Bearing, 40-80-23 (Before s/n 01146)
94	1	30208	Bearing, 40-80-23 (After s/n 01147)
95	1	73.68.0052	Side Plate L.H. (Before s/n 00779)
96	1	73.68.0053	Side Plate R.H. (Before s/n 00779)
97	1	78.44.0056	Jackstand Bracket (After s/n 03547)
98	6	80.R.03.113	Bolt M8 x 30
99	1	80.Z.03.138	Bolt M10 x 35
100	1	73.58.0012	Tailboard Lock Bracket
101	1	75.85.0022	Spring Tailboard Lock Bracket
102	1	80.Z.01.047	Bolt M8 x 45
	1	72.41.0018	Gearbox Assembly Only
	1	72.41.0005	Gearbox & Transmission Shaft L90
	1	72.41.0006	Gearbox & Transmission Shaft L100
	1	72.41.0007	Gearbox & Transmission Shaft L120
	1	72.41.0008	Gearbox & Transmission Shaft L135
	1	72.41.0009	Gearbox & Transmission Shaft L150
	1	72.41.0010	Gearbox & Transmission Shaft L165

TINE CHART / SAFETY SHIELDS

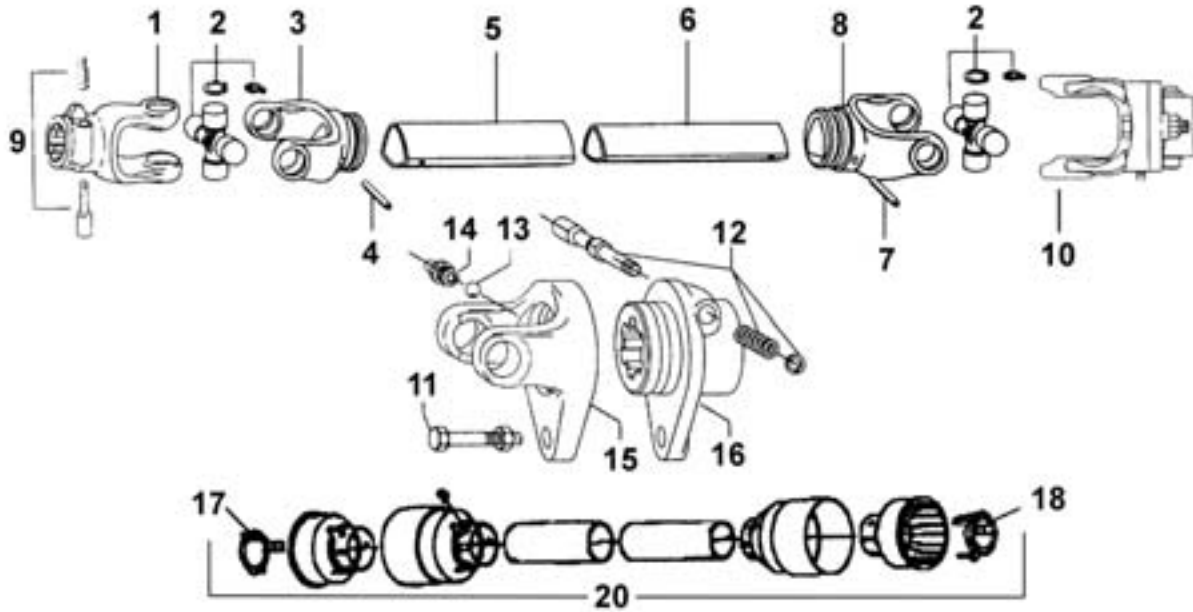
MODEL NO.	NUMBER OF TINES		NUMBER OF BOLTS & NUTS
	R.H.	L.H.	
L90	10	10	40
L100	12	12	48
L120	14	14	56
L135	16	16	64
L150	18	18	72
L165	20	20	80

<u>PART NO.</u>	<u>DESCRIPTION</u>
79.66.0003	Tine R.H.
79.66.0004	Tine L.H.
80.Z.00.022	Bolt M12 x 35 - 1.25
80.Z.08.110	Nut M12 x 1.25
80.Z.35.112	Lockwasher



<u>REF. #</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	76.90.0001	Side Protection Bar
2	1	76.90.0012	L.H. Front Guard Bar
3	8	80.Z.11.012	Locknut M10
4	8	80.Z.03.137	Bolt M10 x 30
5	1	76.90.0011	R.H. Front Guard Bar
6	8	80.Z.30.010	Flat Washer M10
	1	65.15.0011	Complete Guard

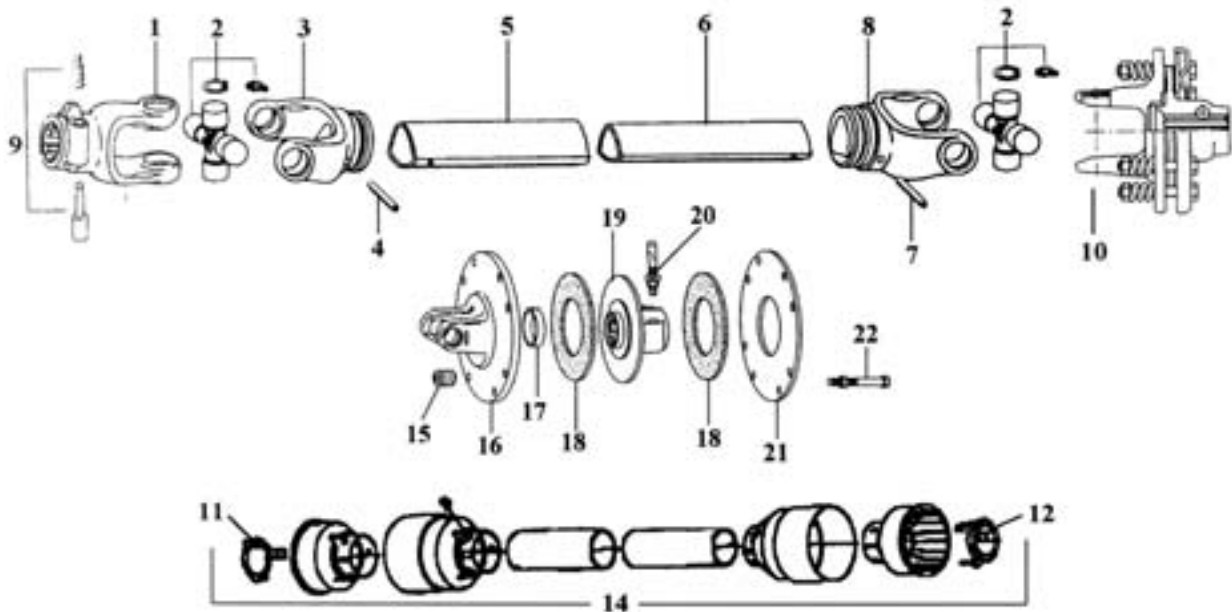
SHEAR BOLT DRIVELINE ASSY 80.A.10.402



NOTE: Triangular Drive Tubing

REF#	QTY.	PART NO.	DESCRIPTION
1	1	5720E0376	Yoke, 1-3/8" 6-Spline Ball Collar
2	2	41204R	Cross Journal Kit #4
3	1	204046851	Yoke, Outer Drive Tube
4	1	341038000	Roll Pin O.T. 8 x 60
5	1	225120860	Outer Drive Tube
6	1	225100860	Inner Drive Tube
7	1	341048000	Roll Pin I.T. 8 x 55
8	1	204046852	Yoke, Inner Drive Tube
9	1	403000001	Push Pin Kit
10	1	606404001	Clutch Assembly SB4
11	1	433033003	Bolt M8 x 45
12	1	401000001	Push Pin Kit
13	1	362002000	Steel Ball
14	1	348012000	Grease Zerk M10 x 1 Straight
15	1	213040020	Flange, Yoke
16	1	513070324	Hub 1-3/8" 6- Spline
17	1	255040005R02	Bearing, Outer Shield
18	1	255040006R02	Bearing, Inner Shield
19	2	252000001	Safety Chain (not shown)
20	1	5F04086F6	Complete Shield
21	1	80.A.10.402	Complete Driveline

SLIP CLUTCH DRIVELINE ASSY 80.A.10.403



NOTE: Triangular Drive Tubing

REF#	QTY.	PART NO.	DESCRIPTION
1	1	5720E0376	Yoke, 1-3/8" 6-Spline Ball Collar
2	2	41204R	Cross Journal Kit #4
3	1	204046851	Yoke, Outer Drive Tube
4	1	341038000	Roll Pin O.T. 8 x 60
5	1	225120860	Outer Drive Tube
6	1	225100860	Inner Drive Tube
7	1	341048000	Roll Pin I.T. 8 x 55
8	1	204046852	Yoke, Inner Drive Tube
9	1	403000001	Push Pin Kit
10	1	637141001	Clutch Assembly FF-1
11	1	255040005R02	Bearing, Outer Shield
12	1	255040006R02	Bearing, Inner Shield
13	2	252000001	Safety Chain (not shown)
14	1	5F04086F6	Complete Shield
15	8	351022370	Spring 6mm
16	1	253042001	Flange
17	1	258005320	Bushing
18	2	247000054R08	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	80.A.10.403	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.