

OWNER'S MANUAL

- ASSEMBLY
- OPERATION
- MAINTENANCE
- PARTS LIST

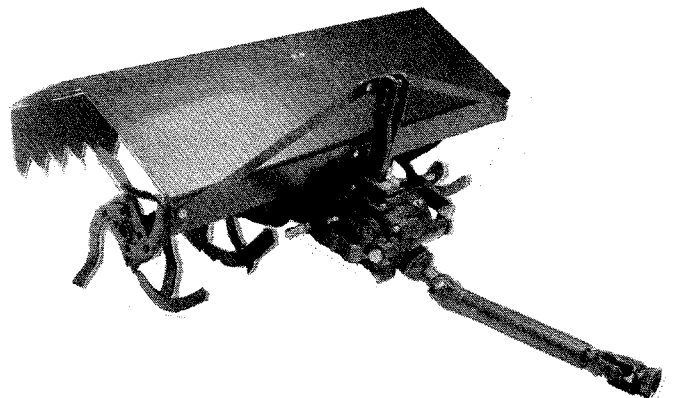
Model Nos.
197-987A
197-989A

*(967-1N 1976
Book.)*

Important:

Instructions Carefully

**40" TILLER
ATTACHMENT**



Your new tiller attachment comes unassembled from the factory. You will need two adjustable wrenches and one hammer to complete the assembly of your tiller.

LIST OF CONTENTS IN HARDWARE PACK.

(See figure 1)

- A (4) Hex Screws 5/8-11 x 1-1/2" long
- B (6) Lockwashers for 5/8" screw
- C (4) Hex Screws 1/2-13 x 1-1/4" long
- D (4) Lockwashers for 1/2" screw
- E (4) Spring pins 3/8" Dia. x 2" long
- F (3) Hair pin cotters for 5/8" Dia.
- G (2) Link Clevis Pins
- H (2) Hex Lock Nuts 5/8-18 Thread
- I (1) Clevis Pin 5/8" Dia. x 2" long
- J (4) Hex Screws 5/16-24 x 3/4" long
- K (4) Lockwashers for 5/16" screw
- L (4) Hex Nuts 5/16-24 Thread
- M (2) Hair Pin Cotters for 3/8" Dia.
- N (2) Clevis Pins 3/8" Dia. x 1-1/4" long
- O (1) Spring Pin 5/16" Dia. x 1-3/4" long
- P (1) Square Head Pipe Plug-Vented
- Q (10) Carriage Bolts 5/16-18 x 1" long
- R (10) Lockwashers for 5/16" Screw
- S (10) Hex Nuts 5/16-18 Thread

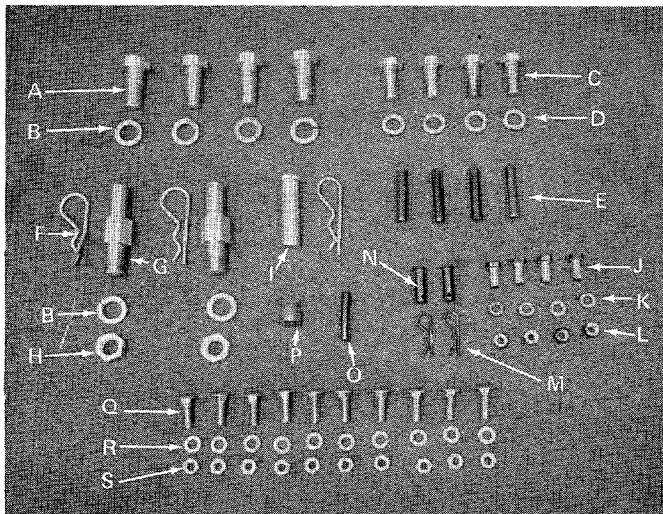


FIGURE 1

ASSEMBLY INSTRUCTIONS

1. Remove the tiller, all loose parts and hardware parts pack from the carton before discarding the carton.
2. Place the gear box so that the pipe plug is up, as shown in figure 2.

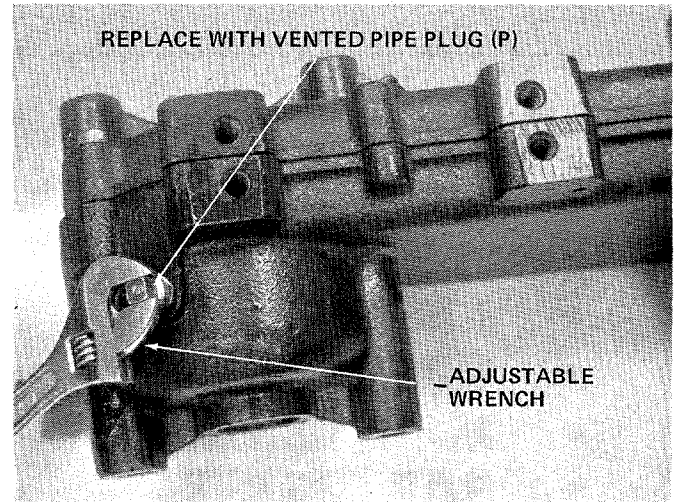


FIGURE 2

3. With an adjustable wrench remove the pipe plug and replace with vented pipe plug (P) provided in hardware parts pack. See figure 2.
4. Assemble the right and left hand tine assemblies to gear box, with four spring pins (E). A hammer is required. See note below before continuing.



Right and left hand is determined from behind the gear box. The sharp edge of the tines must enter the soil first. See figures 3 and 4.

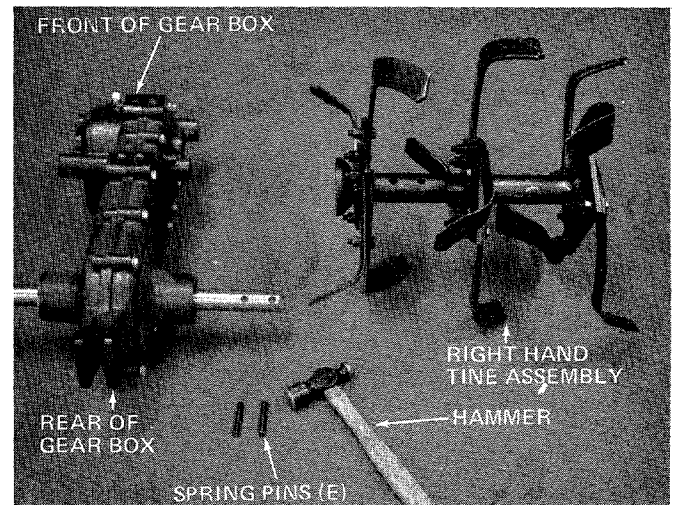


FIGURE 3

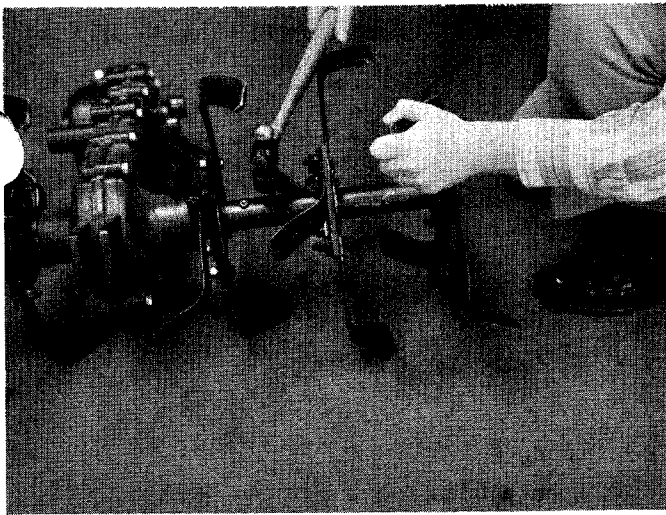


FIGURE 4

5. Install tiller pivot bracket assemblies. An adjustable wrench is required. Place pivot bracket in position on gear box as shown in figure 5. Secure with four hex screws (A) and lockwashers (B). See figure 5.

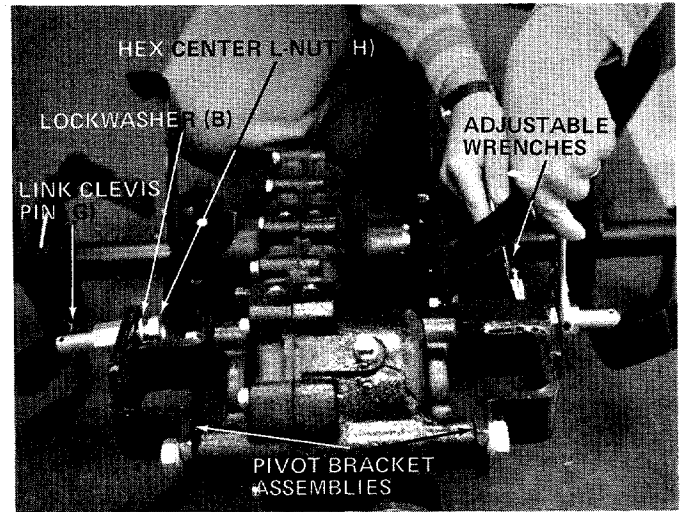


FIGURE 6

7. Install cover bracket assembly to gear box (as shown in figure 7) using four hex screws 1/2-13 x 1-1/4" (C) and 1/2" lockwashers (D). An adjustable wrench is required.



All hex screws should be hand tightened. When all screws are in place, then tighten with adjustable wrench.

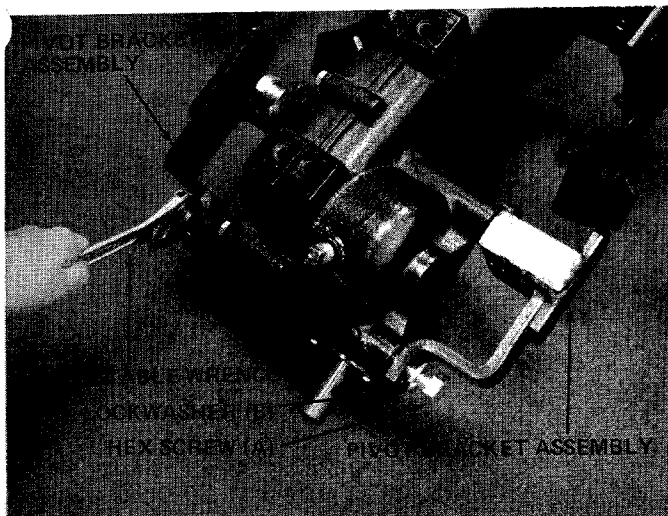


FIGURE 5

6. Insert link clevis pins (G) through outside holes of pivot bracket assemblies. Using two adjustable wrenches, tighten link clevis pins in place with lockwashers 5/8" (B) and hex center lock nuts 5/8-18 (H). See figure 6.

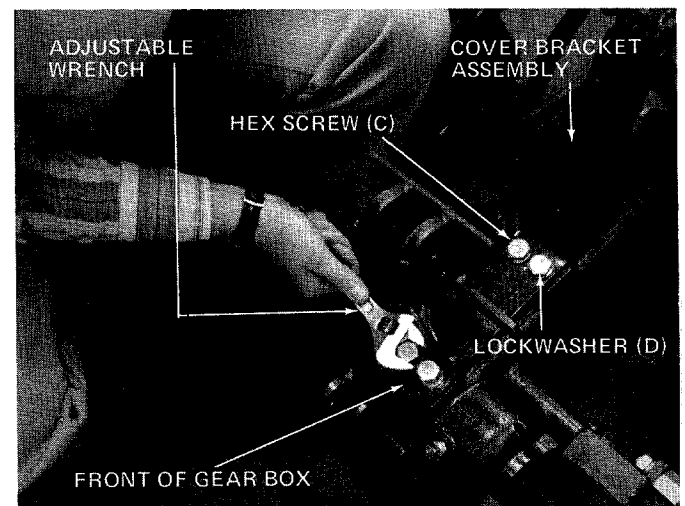


FIGURE 7

8. Place tiller cover assembly in position on the tiller cover bracket as shown in figure 8. Using six 1" carriage bolts (Q), six 5/16" lockwashers (R) and six 5/16-18 hex nuts (S) start by hand. **Do Not Tighten.**
 - a. Place two of the carriage bolts in the top center of the cover first. See figure 8.
 - b. Place the next two carriage bolts in the rear of the cover as shown in figure 8.
 - c. Place two more carriage bolts in the front of the cover as shown in figure 8.
 - d. Do not tighten any of the six bolts in step 8 until step 9 is completed.

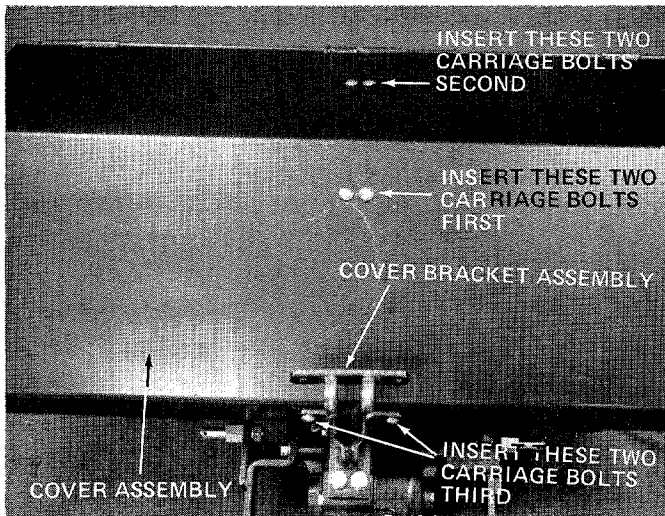


FIGURE 8.

9. Using the four remaining carriage bolts (Q), lockwashers (R) and hex nuts (S), assemble tiller cover straps to cover bracket and cover. See figure 9.

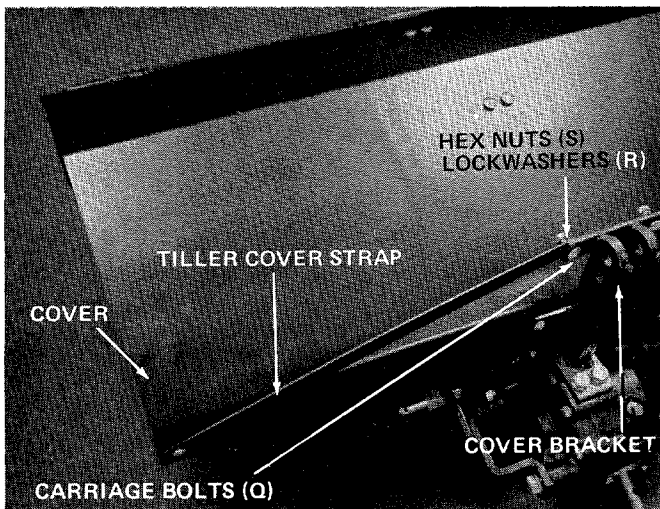


FIGURE 9.

10. Using an adjustable wrench, tighten all ten carriage bolts used in steps 8 and 9.
11. Block up the front of the tiller so that the input shaft is clear of the ground. Place the universal drive shaft in position on input shaft of gear box and secure with spring pin (O). See figure 10. A hammer is required.

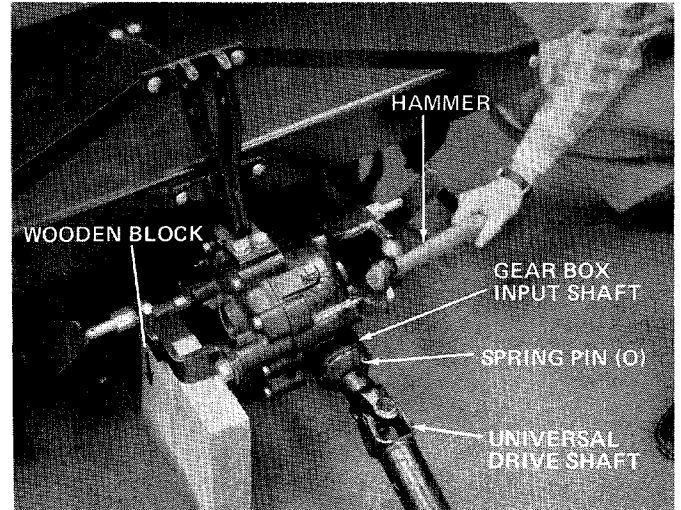


FIGURE 10.

ATTACHING TILLER TO TRACTOR

1. Before attaching the rotary tiller to the tractor, be sure the rear wheels on the tractor are all the way into the minimum rear wheel width. Refer to your tractor manual.
2. Raise the undercarriage on the tractor, by pulling the lift lever back.
3. Remove the locking clip on each side of the tractor. See figure 11.
4. Turn locking clips around and reassemble to tractor as shown in figure 12. Be sure the locking clip is under edge of undercarriage.

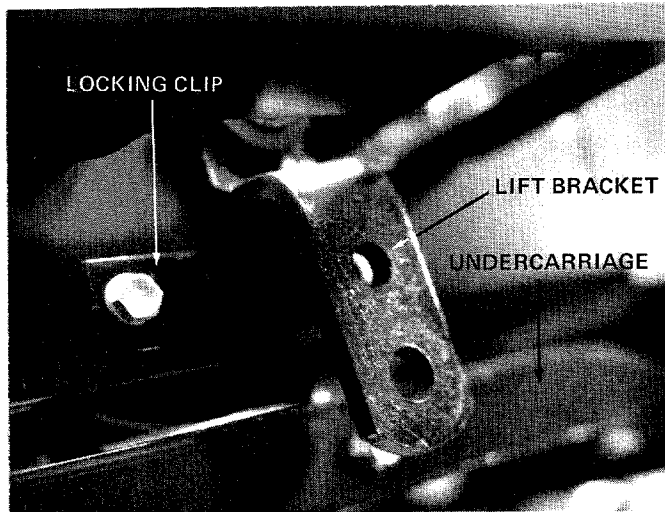


FIGURE 11

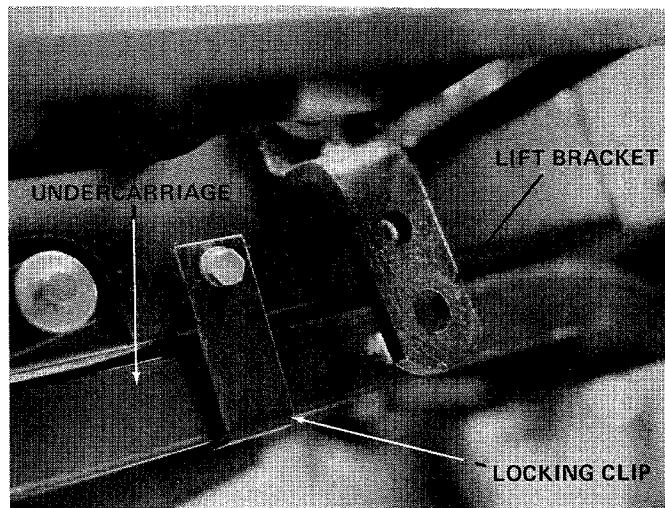


FIGURE 12

5. Remove the draw bar assembly from the three point hitch of your tractor by removing the two cotter hairpins.
6. Place tiller behind the tractor.
7. Remove the turn buckle from the tractor. Remove chains and hook bolts from three point hitch.

8. Slide the tiller forward so the universal drive shaft can be attached to the P.T.O. shaft. See figure 13.
9. Slide end of universal drive shaft over end of P.T.O. shaft and secure with set screws. See figure 13.
10. Preset the pull rods on the tractor, so you have 32-3/4 inches from hole center to hole center. See figure 13.
11. Preset turn buckle to 12-1/2 inches as shown. See figure 13.
12. Assemble turn buckle to tractor using the top hole of bracket on tractor. See figure 13.
13. Assemble other end of turn buckle to tiller cover bracket, using the top hole. Secure with clevis pin (I) and hair pin (F). See figure 13.
14. After completing step 13, raise and lower the tiller attachment with the tractor lift lever, to make certain the universal drive shaft does not hit on bottom of transaxle.
15. Maximum tilling depth is approximately 7" depending on the type of soil. This cannot be accomplished in one pass. Maximum tilling depth may be only 2-1/2" on extremely hard soil on the first pass.

ADJUSTMENTS

The dimensions shown in figure 13 will allow approximately seven inches of tilling depth, and approximately five inches of ground clearance.

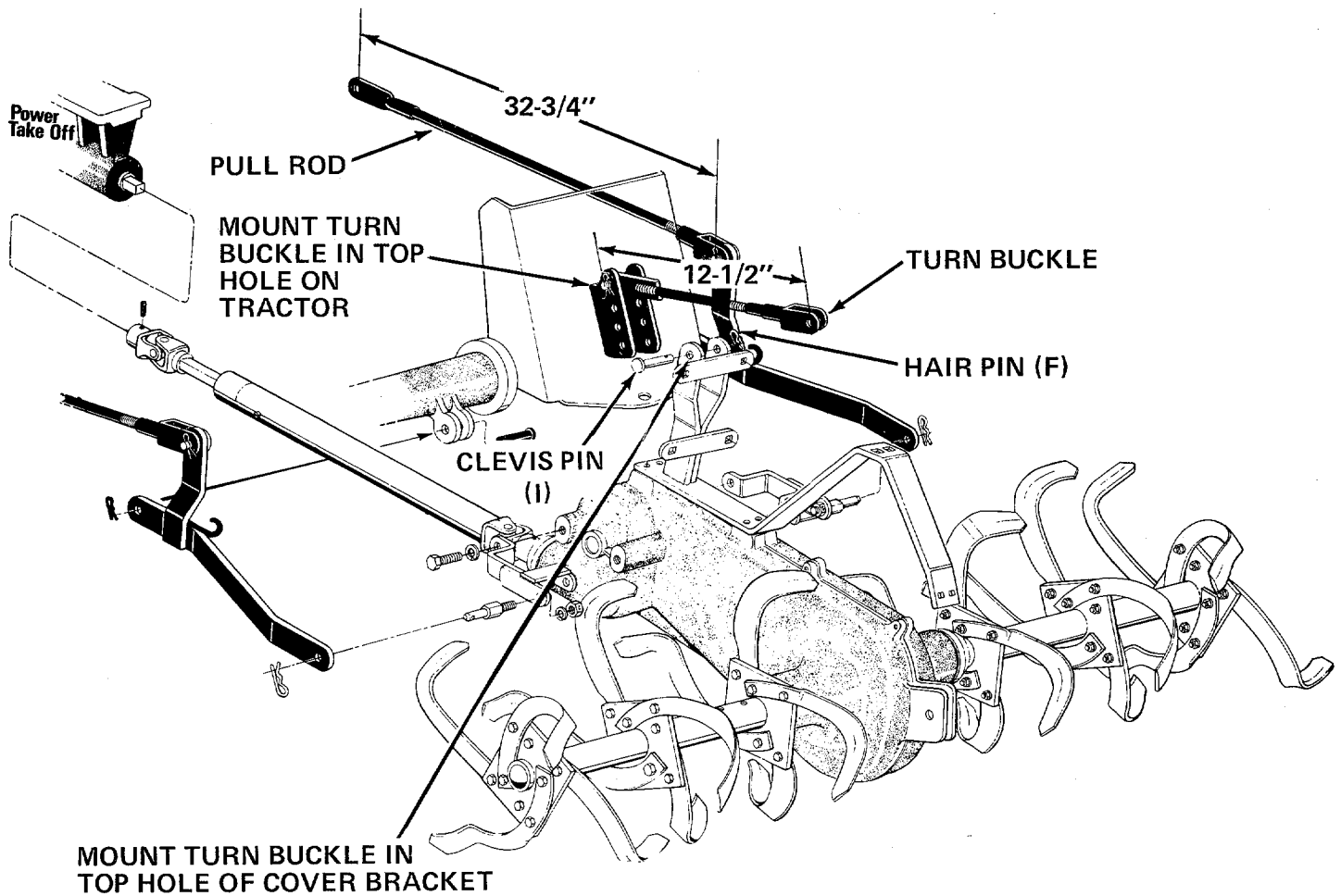


FIGURE 13

ASSEMBLY INSTRUCTION FOR BOOSTER SPRINGS 732-0246

(Used with Tiller Attachment 197-989A only)

Booster springs may be used with any accessories which can be attached at the rear of the tractor.



NOTE

Booster springs cannot be used when using the mowing deck attachment.

4. Hook one end of spring on clevis pin as shown in figure 14.
5. Place the pull rod, flat washer and cotter pin back on the clevis pin as shown in figure 14.
6. With a tube (as shown in figure 15), extend spring forward and hook over the welded clevis pin on the frame. (See figure 15.)
7. Secure the spring with a flat washer (07387) and a cotter pin (714-0117) which is provided with the springs. See figure 14.

1. Remove any attachment which may be on the tractor.
2. Pull the lift lever all the way back to disengaged position.
3. Remove cotter pin, flat washer and pull rod from clevis pin at location shown in figure 14.

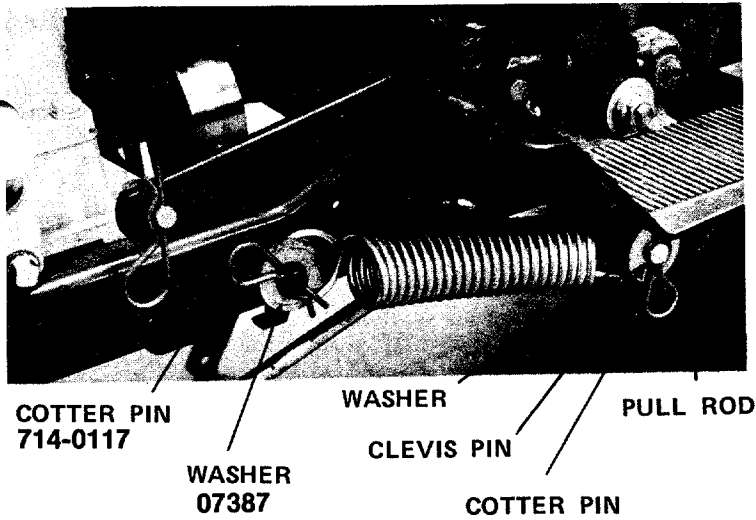


FIGURE 14

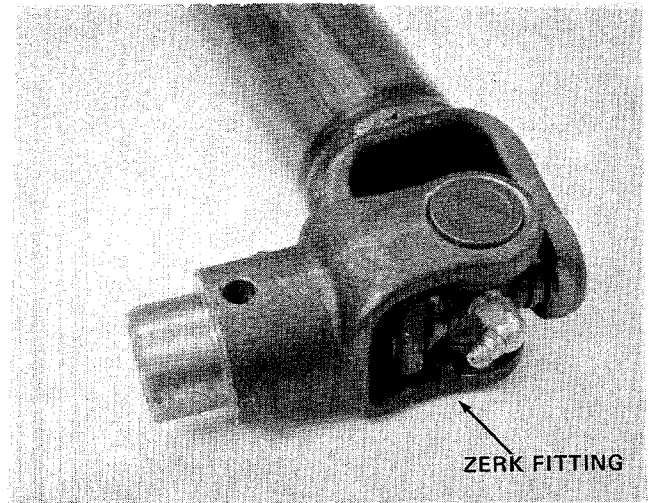


FIGURE 16

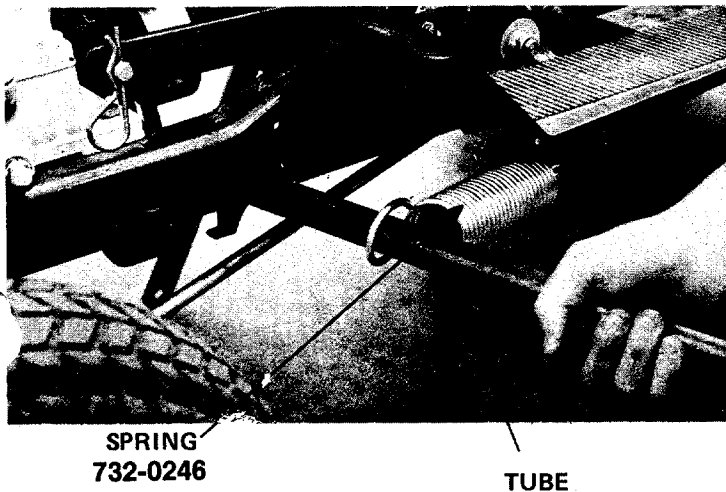


FIGURE 15

TILLING HINTS

Soil conditions vary greatly. For this reason, the depth and number of passes needed to obtain the desired soil requirements will also differ from region to region.

The dimensions given under adjustments and in figure 13, may also vary depending upon soil conditions.

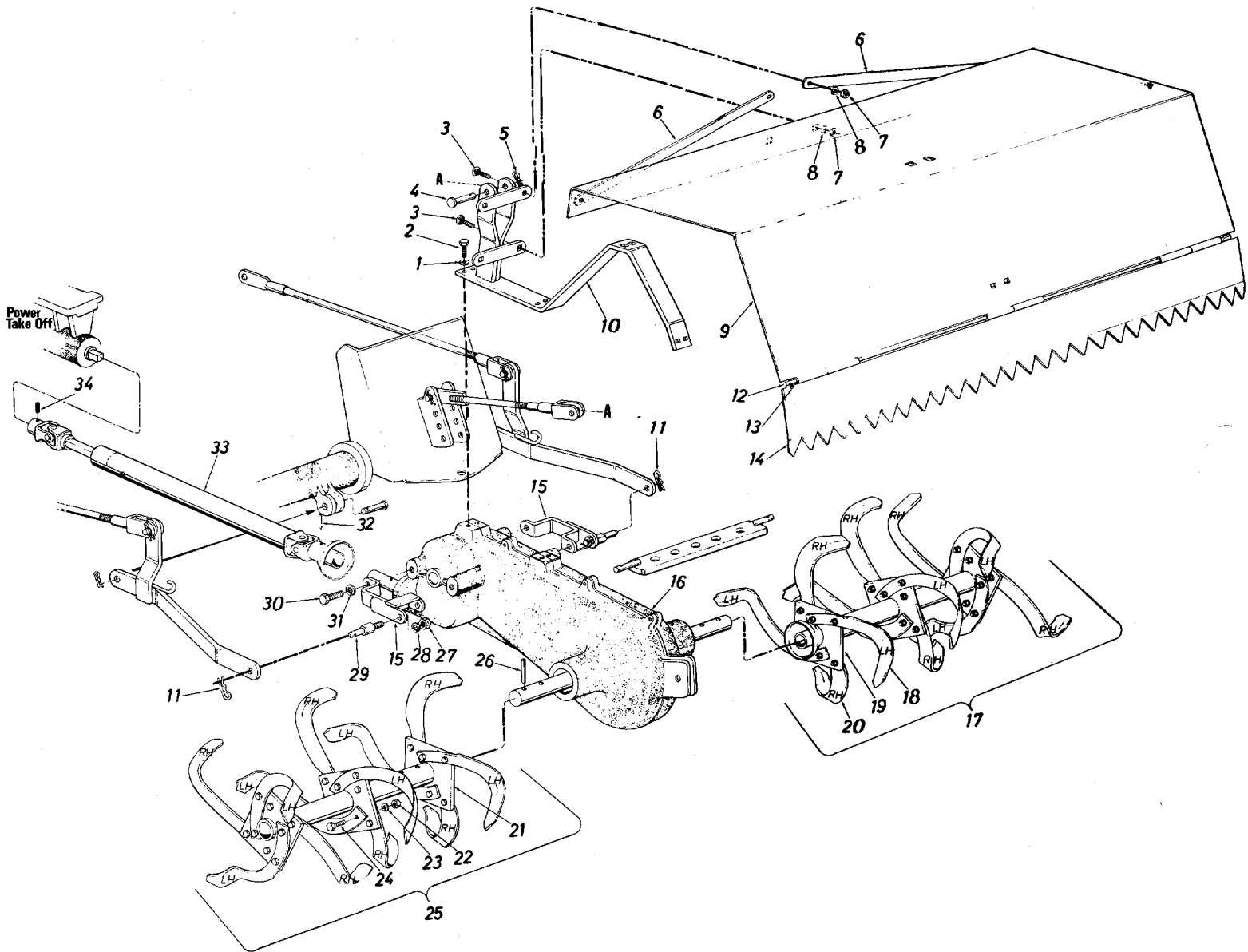
LUBRICATION

The gear box is prelubricated at the factory with 3 quarts of SAE 140 oil. Check the oil level when the tiller is not attached to the tractor. Remove the breather plug, located on top front of gear box.

When the breather plug has been removed, oil should be up to the top of breather plug hole.

The universal joints on the drive shafts have grease fittings and should periodically be greased. See figure 16.

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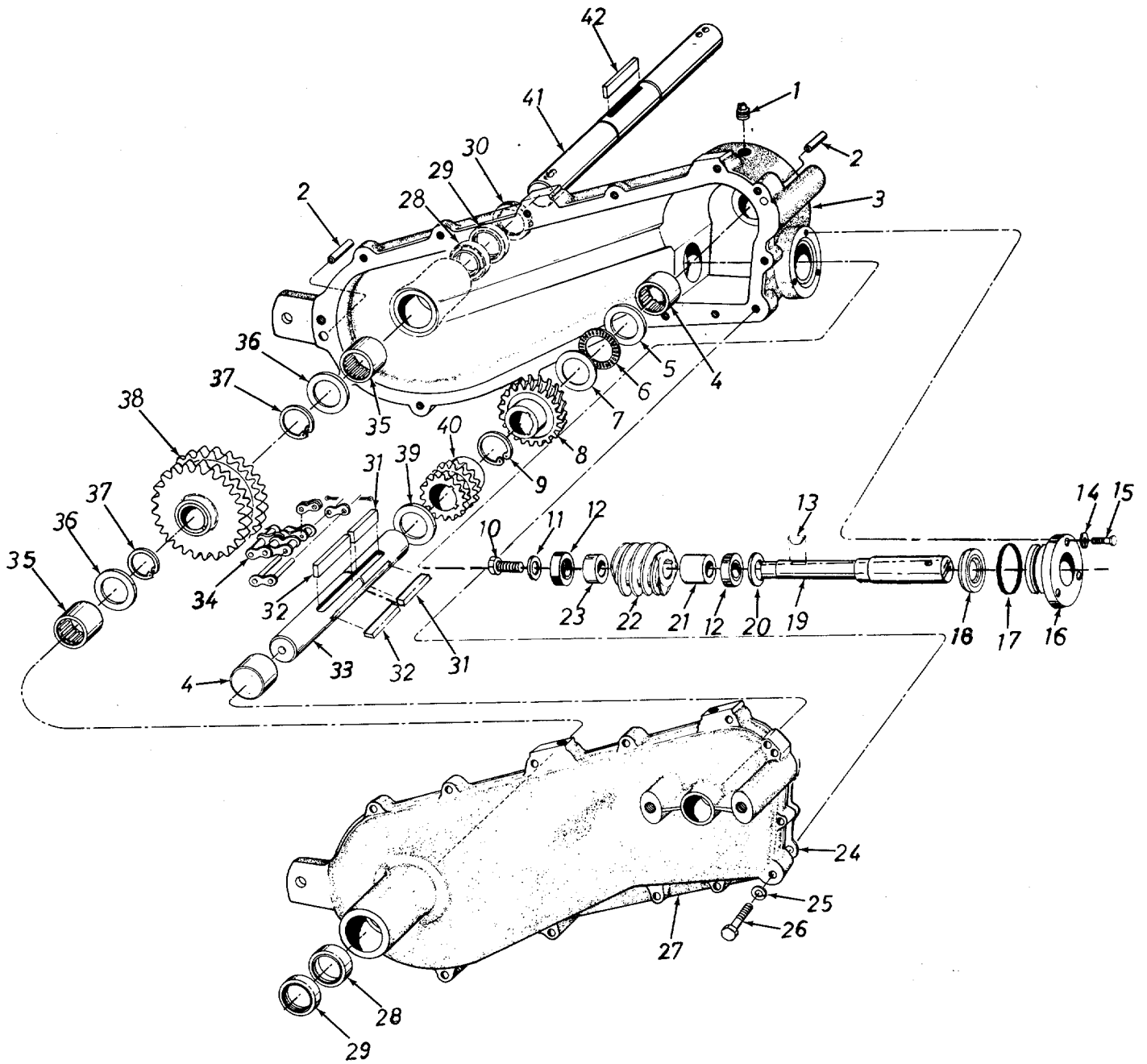


PARTS LIST FOR MODEL 197-987A and 197-989A

Ref. No.	PART No.	DESCRIPTION	New Part	Ref. No.	PART No.	DESCRIPTION	New Part
1	736-0921	L-Wash. 1/2" Scr.*		19	04788	Mounting Adapter — R.H.	N
2	710-0474	Hex Scr. 1/2-13 x 1.25" Lg.*		20	742-0174	14" Tine — R.H.	
3	710-0276	Carriage Bolt 5/16-18 x 1.00" Lg.*		21	04749	Mounting Adapter — L.H.	N
4	711-0299	Clevis Pin 5/8" Dia. 2.4" Lg.		22	712-0241	Hex Nut 3/8-24 Thd.*	
5	714-0117	Internal Cotter Pin 5/8" Dia.		23	736-0169	L-Wash. 3/8" Scr.*	
6	04784	Tiller Cover Strap	N	24	710-0191	Hex Scr. 3/8-24 x 1.25" Lg.*	
7	712-0267	Hex Nut 5/16-18 Thd.*		25	04787	Left Hand Tine Ass'y.—Comp.	N
8	736-0119	L-Wash. 5/16" Scr.*		26	715-0125	Spring Pin Spirol 3/8" Dia. x 2.00" Lg.	
9	04780	Tiller Cover Ass'y.	N	27	712-0923	Hex Cent. L.-Nut 5/8-18 Thd.	
10	10981	Cover Brkt. Ass'y.		28	736-0158	L-Wash. 5/8" Scr.*	
11	714-0117	Internal Cotter Pin 5/8" Dia.		29	711-0497	Link Clevis Pin	
12	747-0251	Cover Flap Rod	N	30	710-0367	Hex Scr. 5/8-11 x 1.50" Lg.*	
13	714-0115	Cotter Pin 1/8" Dia.x1.00" Lg.*		31	736-0158	L-Wash. 5/8" Scr.*	
14	04782	Cover Flap Ass'y.	N	32	715-0118	Spring Pin Spirol 5/16" Dia. x 1.75" Lg.	
15	10982	Tiller Pivot Brkt. Ass'y.		33	717-0184	Universal Drive Shaft Ass'y. (987A only)	N
16	717-0386	Gear Box Ass'y. — Comp.	N		717-0149	Universal Drive Shaft Ass'y. (989A only)	N
17	04786	Right Hand Tine Ass'y. — Comp.	N		710-0357	Sq. Hd. set scr. 3/8-16 x .50" Lg. Cup	
18	742-0175	14" Tine — L.H.		34	732-0246	Booster Springs (2 req'd.) (989A only) (not shown)	

*For faster service obtain standard nuts, bolts, and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

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PARTS LIST FOR GEAR BOX ASSEMBLY 717-0386

Ref. No.	PART No.	DESCRIPTION	Ref. No.	PART No.	DESCRIPTION
1	737-0102	Sq. Hd. Pipe Plug with Vent	22	717-0145	Worm Gear
2	715-0118	Spring Pin Spiral 5/16" Dia. x 1.75" Lg.	23	750-0115	Spacer
3	717-0379	Gear Case - L.H. Half	24	721-0107	Gasket
4	741-0127	Needle Bearing	25	736-0119	L.-Wash. 5/16" Scr.*
5	741-0130	Thrust Race 1.25" I.D. x .126 THK.	26	710-0380	Hex Scr. 5/16-18 x 1.75" Lg.*
6	741-0128	Thrust Bearing 1.25" I.D. x 1.977 O.D.	27	717-0376	Gear Case - R.H. Half
7	741-0129	Thrust Race 1.25" I.D. x .303 THK.	28	721-0110	Oil Seal 1.25" I.D. x 2.004" O.D.
8	717-0146	Worm Wheel	29	721-0109	Oil Seal 1.25" I.D. x 2.004" O.D.
9	715-0116	Snap Ring-for 1.25" Dia. Shaft			
10	710-0627	Hex Lock Scr. 5/16-24 x .75" Lg.	31	714-0125	Sq. Key 5/16 x 1.25" Lg.*
11	736-0242	Belleville Wash. 5/16" Dia.	32	714-0124	Sq. Key 5/16 x 1.75" Lg.*
12	741-0241	Ball Bearing	33	711-0325	Worm Gear Shaft
13	714-0126	#9 Hi-Pro-Key 3/16" x 3/4" Dia.	34	713-0119	Chain w/master link #60 x 39
14	736-0329	L.-Wash. 1/4" Scr.*	35	741-0126	Needle Brg. 1.25" I.D. x 1.927" O.D.
15	710-0206	Hex Scr. 1/4-20 x .88" Lg.*			
16	711-0661	End Cap	36	748-0159	Thrust Bearing
17	721-0160	"O"-Ring	37	716-0116	Tru arc Snap Ring
18	721-0161	Oil Seal .875" I.D. x 1.503 O.D.	38	717-0148	Sprocket - 25 Teeth
19	738-0370	Worm Input Shaft	39	748-0159	Thrust Bearing
20	736-0287	Fl.-Wash. .793 I.D. x 1.240 O.D.	40	717-0147	Sprocket 13 Tooth
21	750-0341	Clutch Idler Bushing	41	738-0374	Tine Shaft
			42	714-0123	Sq. Key 5/16" x 2.0" Lg.*

*For faster service obtain standard nuts, bolts, and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

PARTS INFORMATION

POWER EQUIPMENT PARTS AND SERVICE

Parts and service for all MTD manufactured power equipment are available through the authorized service firms listed below. All orders should specify the model number of your unit, parts numbers, description of parts and the quantity of each part required.

ALABAMA	BIRMINGHAM	
	Auto Electric & Carburetor Co.	2625 4th Ave. S. 35233
ARKANSAS	NORTH LITTLE ROCK	
	Sutton's Lawn Mower Shop	Rt. 4, Box 368 72117
	FORT SMITH	
	Mity Mite Motors, Inc.	2515 Towson Ave. 72901
CALIFORNIA	SAN BERNARDINO	
	Lawn Mower Supply Co.	25608 E. Baseline 92410
	SAN FRANCISCO	
	J.W. Jewett Co.	981 Folsom St. 94107
	SACRAMENTO	
	Luttig & Severson	2030 28th St. 95818
COLORADO	DENVER	
	South Denver Lawn Equip.	527 West Evans 80223
CONNECTICUT	SUFFIELD	
	The Jones & Ramsey Co.	850 Thompsonville Rd. 06078
FLORIDA	JACKSONVILLE	
	Radco Distributors	2403 Market St. 32206
	CORAL GABLES	
	Moz-All of Florida, Inc.	365 Greco Ave. 33146
GEORGIA	EAST POINT	
	East Point Cycle & Key	2834 Church St. 30344
ILLINOIS	LYONS	
	Keen Edge Co.	8615 Ogden Ave. 60534
INDIANA	ELKHART	
	Parts & Sales Inc.	2101 Industrial Pkwy. ... 46514
IOWA	DUBUQUE	
	Power Lawn & Garden Equip. ...	2551 J.F. Kennedy 52001
KANSAS	WICHITA	
	Hixon, Inc.	3030 Mascot 67204
LOUISIANA	NEW ORLEANS	
	Suhren Engine Co.	8330 Earhart Blvd. 70118
MARYLAND	TAKOMA PARK	
	Center Supply Co.	6867 New Hampshire Ave. 20012
MASSACHUSETTS	SPRINGFIELD	
	Morton B. Collins Co.	300 Birnie Ave. 01107
MICHIGAN	MOUNT CLEMENS	
	Power Equipment Dist.	36463 South Gratiot ... 48043
	LANSING	
	Lorenz Service Co.	2500 S. Pennsylvania .. 48900
MINNESOTA	MINNETONKA	
	Hance Distributing Inc.	11212 Wayzata Blvd. ... 55343
MISSISSIPPI	BILOXI	
	Biloxi Sales & Service, Inc.	506 Caillavet St. 39533
MISSOURI	KANSAS CITY	
	Automotive Equip. Service	3117 Holmes St. 64109
	ST. LOUIS	
	Henzler, Inc.	2015 Lemay Ferry Rd. 63125
NEW YORK	CARTHAGE	
	Gamble Dist., Inc.	West End Ave. 13619
	SYRACUSE	
	Kimber's, Inc.	115 N. Geddes St. 13204

BRIGGS & STRATTON, TECUMSEH AND PEERLESS PARTS AND SERVICE

Briggs & Stratton, Tecumseh and Peerless parts and service should be handled by your nearest authorized engine service firm. Check the yellow pages of your telephone directory under the listing *Engines* — *Gasoline*, Briggs & Stratton or Tecumseh Lauson —

NORTH CAROLINA	GREENSBORO	
	Dixie Sales Company	327 Battleground Ave. .. 27402
	GOLDSBORO	
	Smith Hardware Co.	515 N. George St. 27530
OHIO	WADSWORTH	
	National Central	687 Seville Rd. 44281
	CLEVELAND	
	Bleckrie, Inc.	7900 Lorain Ave. 44102
	CARROLL	
	Stebe's Mid-State Mower Supply Box 366	43112
	WILLARD	
	Sunshine Wholesale Tire Outlet Route 224	44890
	MANSFIELD	
	McClure Lawn & Garden Supply ...	1114 Lexington Ave. . 44903
OKLAHOMA	MUSKOGEE	
	Victory Motors, Inc.	605 S. Cherokee 74401
	ADA	
	Ada Auto Supply	301 E. 12th St. 74820
OREGON	PORTLAND	
	Kenton Supply Co.	8216 N. Denver Ave. . 97217
PENNSYLVANIA	LANCASTER	
	Raub Supply Co.	James & Mulberry Sts. ... 17604
	PITTSBURGH	
	Bluemont Co.	11125 Frankstown Rd. .. 15235
TENNESSEE	KNOXVILLE	
	Master Repair Service	2423 Broadway, N.E. ... 37917
	MEMPHIS	
	Memphis Cycle & Supply Co.	421 Monroe Ave. 38103
	American Sales & Service, Inc. ...	1922 Lynnbrook 38116
TEXAS	DALLAS	
	Marr Brothers, Inc.	423 E. Jefferson 75203
	HOUSTON	
	Bullard Supply Co.	2409 Commerce St. 77003
	SAN ANTONIO	
	Catto & Putty, Inc.	P.O. Box 2408 78206
	FORT WORTH	
	Woodson Sales Corp.	1702 N. Sylvania 76111
UTAH	SALT LAKE CITY	
	A-1 Engine & Mower Co.	437 E. 9th St. 84111
VERMONT	BURLINGTON	
	Vermont Appliance Co.	44 Lakeside Ave. 05401
VIRGINIA	RICHMOND	
	RBI Corp.	963 Myers St. 23260
WASHINGTON	SEATTLE	
	Bailey's Rebuild, Inc.	1325 E. Madison St. 98102
WEST VIRGINIA	CHARLESTON	
	Young's, Inc.	233 Virginia St., E. ... 25301
WISCONSIN	APPLETON	
	Automotive Supply Co.	123 S. Linwood Ave. ... 54911

WARRANTY PARTS AND SERVICE POLICY

The purpose of warranty is to protect the customer from defects in workmanship and materials, defects which are NOT detected at the time of manufacture. It does not provide for the unlimited and unrestricted replacement of parts. Use and maintenance are the responsibility of the customer. The manufacturer cannot assume responsibility for conditions over which it has no control. Simply put, if it's the manufacturer's fault, it's the manufacturer's responsibility; if it's the customer's fault, it's the customer's responsibility.

CLAIMS AGAINST THE MANUFACTURER'S WARRANTY INCLUDES

1. Replacement of Missing Parts on new equipment.
2. Replacement of Defective Parts within the warranty period.
3. Repair of Defects within the warranty period.

All claims MUST be substantiated with the following information:

1. Model Number of unit involved.
2. Date unit was purchased or first put into service.
3. Date of failure.
4. Nature of failure.