

Operating/Service Instructions

ROTARY TILLER FOR GARDEN TRACTORS

Model Nos.
192-766, 193-966-760
and 193-967-770

WARRANTY

For one year from date of purchase, MTD Products Inc, will replace for the original purchaser, free of charge, F.O.B. factory or authorized service firm, any part or parts found to be defective in material or workmanship. All transportation charges on parts submitted for replacement under this warranty must be paid by the purchaser. This warranty does not include replacement of parts which become inoperative through misuse, excessive use, accident, neglect, improper maintenance or alterations by unauthorized persons. This warranty does not include the engine, motor, battery, battery charger or any component parts thereof. For service on these units refer to the applicable manufacturer's warranty.

The above warranty will apply only to the original owner and will be effective only if the warranty card has been properly processed. It will not apply where the unit has been used commercially.

Warranty service is available through your local authorized service dealer or distributor. UNDER NO CIRCUMSTANCES WILL THE RETURN OF A COMPLETE UNIT BE ACCEPTED BY THE FACTORY UNLESS PRIOR WRITTEN PERMISSION HAS BEEN EXTENDED.

SAFETY RULES

Your rotary tiller is a precision built machine designed to take the work out of gardening and other related chores. It can be used for seed bed preparation, tilling, cultivating, furrowing, composting and mulching. Like any other piece of power equipment, it requires a certain amount of care and maintenance. In return for this, it will give a maximum of service and efficiency. Read these instructions carefully before assembling or operating your tiller. Through proper care and operation, you will obtain long, efficient service and trouble free operation.

1. Your tiller is a precision piece of power equipment. Exercise extreme caution at all times.
2. Do not attempt to start engine with the clutch control in engages or "Forward" position.
3. Stand clear of tines when starting engine. Never stand in front of, or work on tines while the engine is running.
4. **NEVER** place hands or feet in the vicinity of the tines while the engine is running.
5. Always stop engine when tiller is not in actual use.
6. Always disconnect spark plug wire during repairs or refueling operations.
7. Do not fill gas tank while engine is running. Do not spill gasoline on hot engine.

192-766 Tiller Attachment is for 10, 12, and 14 HP Tractors built before 1971.

193-966 Tiller Attachment is for the 1971 through 1973 10, 14, 15 and 16 HP Tractors. (Models 141-760, 141-960, 142-760, 142-960, 143-860 and 143-960).

193-967 Tiller Attachment is for the Hydrostatic Tractors. (Model 141-900, 142,990 and 143-990).

ASSEMBLY INSTRUCTIONS FOR MODELS 193-966 and 193-967. (Refer to Fig. 2)

1. Assemble outer tine assemblies complete to the inner tine assemblies complete with four spirol pins 5/16 diameter x 2-1/2" long Heavy Duty. (Ref. 28).
2. Assemble pivot bracket assembly (Ref. 24) to the power input side of the gear case with two bolts 5/8-11 x 1-1/2" long (Ref. 67) and lockwashers 5/8 diameter (Ref. 25).
3. Assemble other pivot bracket assembly (Ref. 24) to the right hand side of gear case.
4. Assemble the universal drive shaft assembly (Ref. 26). To the gear case with spirol pin (Ref. 22). Drive pin into the shaft with a hammer. The end of the universal drive shaft assembly with the square head set screw attaches to the power take off on tractor.
5. Assemble cover bracket (Ref. 20) to cover bracket assembly (Ref. 5) with one carriage bolt 1-1/2" long (Ref. 15).
6. Assemble cover bracket assembly (Ref. 5) to cover assembly (Ref. 1) with six carriage bolts 5/16-18 x 1" long (Ref. 4) lockwashers 5/16 diameter (Ref. 6) and nuts 5/16-18 thread (Ref. 7). Assemble bolts and nuts loose until all six are started, then tighten.
7. Assemble cover and bracket assembly to gear case with four bolts 1/2-13 x 7/8 long. (Ref. 9) and lockwashers 1/2 diameter (Ref. 10). Assemble bolts loose until all four are started, then tighten.
8. Remove the solid pipe plug in the hole above the input shaft in the gear case and replace it with the vented pipe plug (Ref. 21). Refer to Figure 2 for proper location of the vented plug. This vented plug allows the gear case to breathe.
9. The lubricant level in the gear case should be checked after it is attached to the tractor.

ASSEMBLY INSTRUCTIONS FOR MODEL 192-766. (Refer to Figs. 1 and 2)

1. Assemble outer tine assemblies complete to the inner tine assemblies complete with four spirol pins 5/16 diameter x 2-1/2" long Heavy Duty. (Ref. 28).
2. Assemble flat bracket L.H. (Ref. 69) to the power input side of the gear case with two bolts 5/8-11 x 1-1/2" long (Ref. 67) and lockwashers 5/8 diameter (Ref. 25).
3. Assemble offset bracket R.H. (Ref. 68) to the right hand side of the gear case with two bolts 5/8-11 x 1-1/2" long (Ref. 67) and lockwashers 5/8 diameter (Ref. 25).
4. Assemble the universal drive shaft assembly (Ref. 26) to the gear case with spirol pin (Ref. 22). Drive pin into the shaft with a hammer. The end of the universal drive shaft assembly with the square head set screw attaches to the power take off on the tractor.
5. Assemble cover bracket (Ref. 5) to the cover assembly (Ref. 1) with six carriage bolts 5/16-18 x 1" long (Ref. 4), lockwashers 5/16 diameter (Ref. 6) and nuts 5/16-18 thread (Ref. 7). Assemble bolts and nuts loose until all six are started, then tighten.
6. Assemble cover and bracket assembly to the gear case with four bolts 1/2-13 x 7/8 long (Ref. 9) and lockwashers 1/2 diameter (Ref. 10). Assemble bolts loose until all four are started, then tighten.
7. Remove the solid pipe plug in the hole above the input shaft in the gear case and replace it with the vented pipe plug (Ref. 21). Refer to Figure 2 for proper location of the vented plug. This vented plug allows the gear case to breathe.
8. The lubricant level in the gear case should be checked after it is attached to the tractor.

ATTACHING YOUR ROTARY TILLER TO YOUR TRACTOR (Models 193-966 and 193-967)

1. Before attaching your rotary tiller to your 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. Remove the draw bar assembly from the three point hitch of your tractor by removing the two cotter-hairpins.
3. Place the rotary tiller behind the tractor in the approximate position shown in Fig. 2.
4. Attach universal drive shaft (Ref. 26) to the tractor power take off. Tighten set screw (Ref. 27).
5. Move the lift lever on the tractor until the draft bar assemblies line up with pivot brackets (Ref. 24).
6. Assemble pivot brackets (Ref. 24) to the rear of the tractor with washers and cotter-hairpins.

ATTACHING YOUR ROTARY TILLER TO YOUR TRACTOR (Model 192-766).

1. Before attaching your rotary tiller to your 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. Remove the "U" part of the plow hitch from your tractor by removing the two cotter-hairpins on the loose clevis pins and the two cotter-hairpins from the hitch adjusting rods. Refer to Fig. 1.

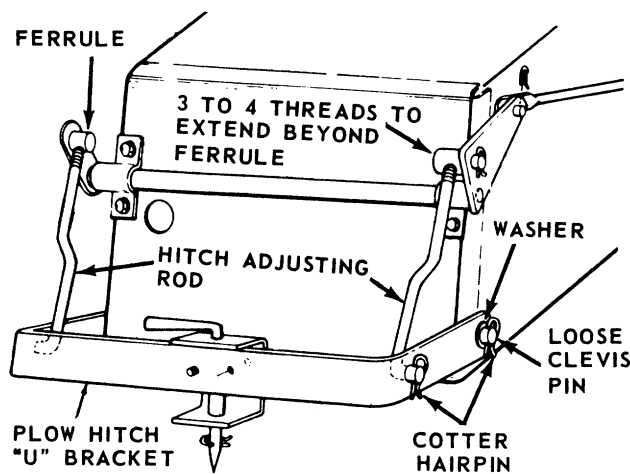


FIG. 1

3. Adjust the hitch adjusting rods until 3 or 4 threads extend beyond the rear hitch ferrule.
4. Place the rotary tiller behind the tractor in the approximate position shown in Fig. 2.
5. Attach universal drive shaft (Ref. 26) to the tractor power take off. Tighten set screw (Ref. 27).
6. Assemble brackets (Ref. 68 & 69) to the rear of the tractor with the loose clevis pins, washers and cotter-hairpins.

CHECK LUBRICANT LEVEL at this time. The gear case is lubricated at the factory but should be checked for proper lubricant level before each operation. Remove plug (Ref. 61) on side of gear case. Lubricant should be at this level, if not, fill through the vented pipe plug hole (Ref. 21) with SAE 140 oil until the lubricant overflows through the hole in the side of the gear case. Replace the pipe plugs. **BE SURE THE VENTED PIPE PLUG IS IN THE OIL FILL HOLE.** Refer to Fig. 3.

Lift the rotary tiller with the lift handle on the tractor to transport it to and from the work area. Use caution when transporting the rotary tiller since your ground clearance has been reduced.

The entire tiller unit is offset to the left to allow closer tilling with the left side.

NOTE: BE SURE THE POWER TAKE OFF HANDLE IS IN THE "OFF" POSITION BEFORE STARTING THE TRACTOR ENGINE. Refer to the tractor manual for proper position of the PTO handle.

GENERAL ROTARY TILLER OPERATION

ALWAYS shut the engine off when removing a stone or anything that becomes entangled in the tines.

All large stones or rocks should be removed from the area before you begin tilling.

Tilling can be done with or without the outer tine assemblies. You can till 32½" wide with the outer tines and 17" wide with only the inner tines.

Use rear wheel weights when tilling. Part number 191-776.

Maximum tilling depth is approximately 10" 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.

The more passes you make with the tiller over the same area, the deeper you can till and the finer you pulverize the soil. Change directions as often as you can to level out the ground and to prevent furrows.

When tilling, the tiller will push the tractor and the transmission on the tractor will hold the tractor back.

For easy lifting of the rotary tiller from the ground, shut off the power by disengaging the PTO handle and continue to drive the tractor forward. The tines will climb out of the hole when you pull the lift lever handle back.

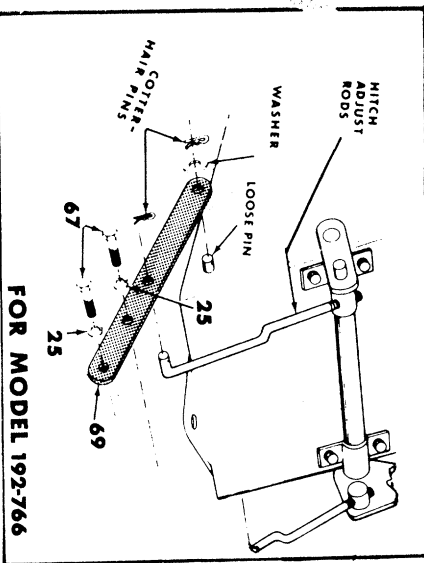
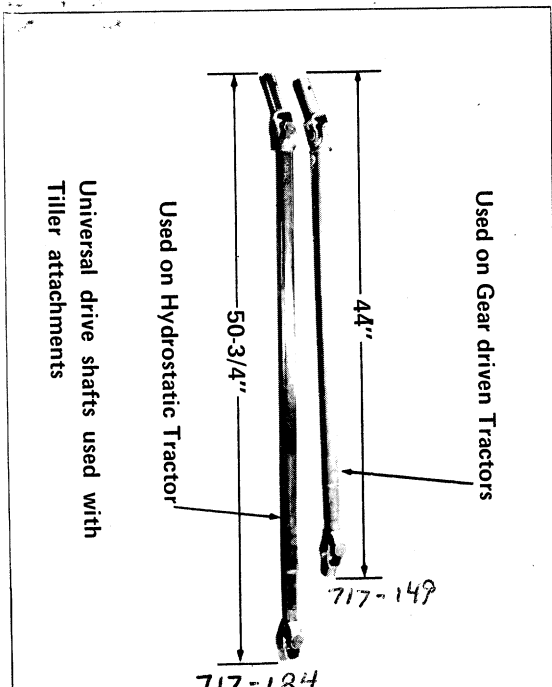
LUBRICATION

Gear Case - Lubricated with three quarts of SAE 140 oil. It is lubricated at the factory. Be sure to check the lubricant level before each use.

To check the oil level, remove plug (Ref. 61) on the side of the gear case. See Fig. 3. Lubricant should be at this level. If not, fill through the vented pipe plug hole (Ref. 21) until it overflows through the hole in the side of the gear case. Replace both plugs. **BE SURE THE VENTED PIPE PLUG IS IN THE OIL FILL HOLE.**

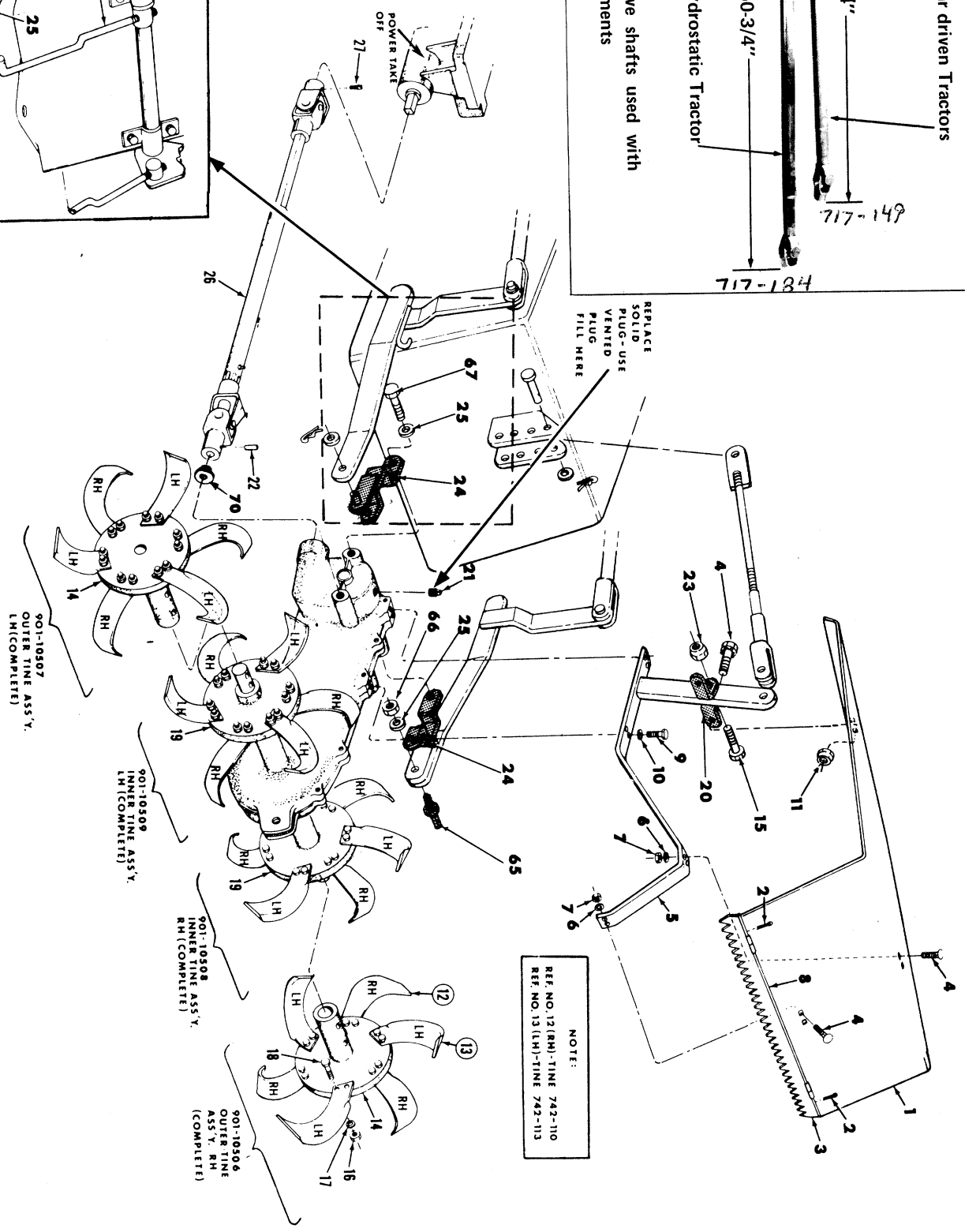
Grease Fittings - There are three grease fittings on the universal drive shaft assembly. Lubricate after each 25 hours of use with an automotive multi-purpose type grease. Apply grease with grease gun provided with your tractor. Lubricate until the old grease is pushed through and clean grease appears.

ROTARY TILLER 192-766, 193-966 and 193-967



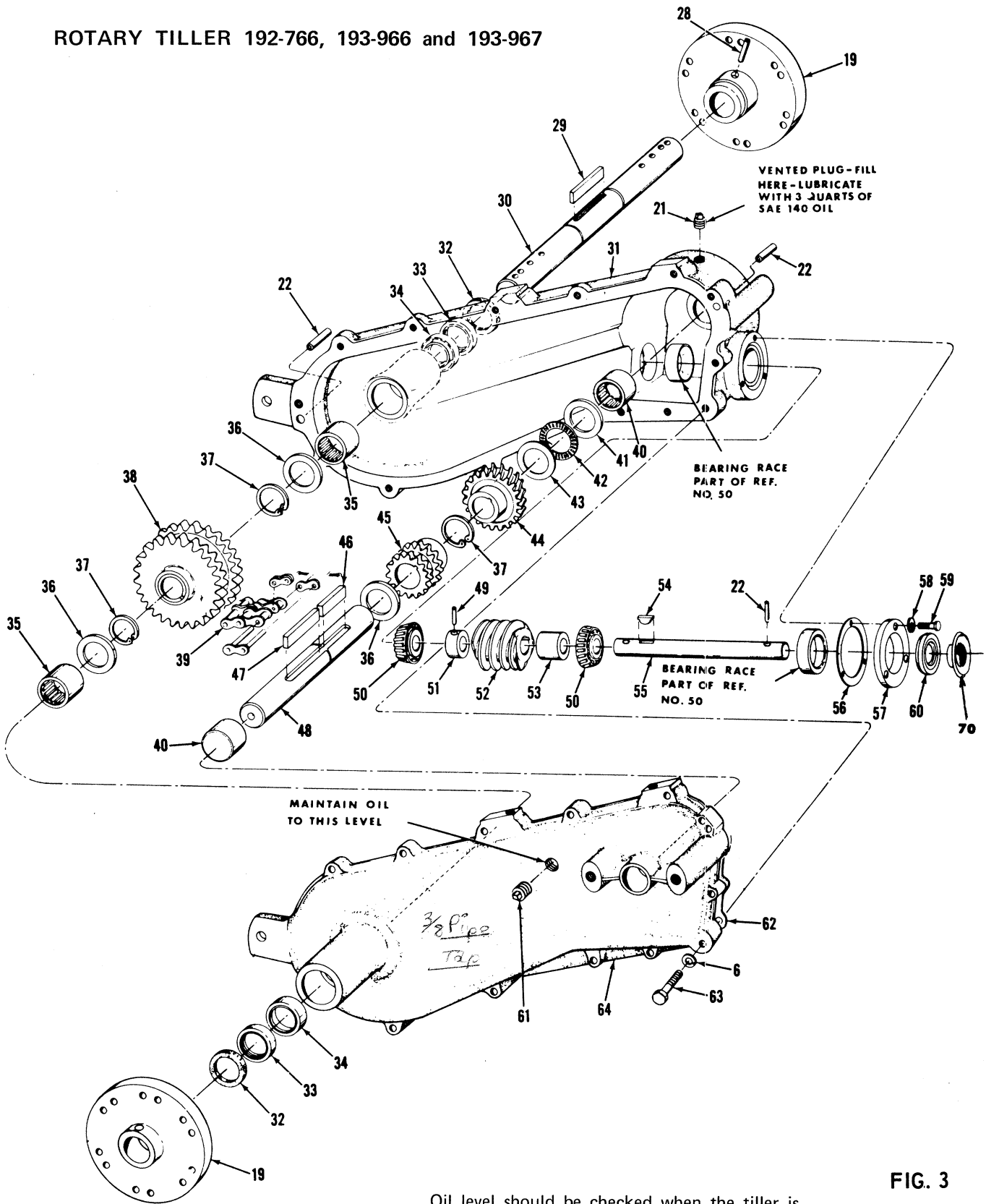
FOR MODEL 192-766

FIG. 2



NOTE:
 REF. NO. 12 (RH)-TINE 742-110
 REF. NO. 13 (LH)-TINE 742-113

ROTARY TILLER 192-766, 193-966 and 193-967



Oil level should be checked when the tiller is mounted on the tractor with the tines touching the ground.

Place a 6 inch block under the front of the case to check oil level with the tiller off the tractor.

PARTS LIST FOR TILLER ATTACHMENT MODELS 192-766, 193-966 and 193-967

Ref. No.	Part No.	Color Code	DESCRIPTION	Ref. No.	Part No.	Color Code	DESCRIPTION
1	9844A		Cover Assembly	34	721-110		Oil Seal 1-1/4 I.D. x 2.004 O.D.
2	714-111		Cotter Pin 3/32 Dia. x 1" Lg.*	35	742-126		Needle Bearing 1-1/4 I.D.x 1.625 O.D.
3	9846		Cover Flap Assembly	36	748-159		Thrust Bearing
4	710-276		Carriage Bolt 5/16-18 x 1" Lg. *	37	716-116		Truarc Snap Ring No.5100-125
5	10981		Cover Bracket Assembly	38	717-148		Sprocket - 25 Teeth
6	736-119		Spring Lockwasher 5/16 Scr. *	39	713-119		Chain w/master Link No. 60 x 39 lg.
7	712-267		Hex Nut 5/16-18 Thread *	40	741-127		Needle Bearing 1.25 I.D. x 1.625 O.D.
8	9850		Rod	41	741-130		Thrust - Race 1.25 I.D. x 1.23
9	710-365		Hex Hd.Cap Scr.1/2-13 x 7/8" Lg.*	42	741-128		Thrust Bearing 1.25 I.D. x 1.927 O.D.
10	736-921		Spring Lockwasher 1/2-13 Thread *	43	741-129		Thrust - Race 1.25 I.D. x .030
11	712-267		Hex Nut 5/16-18 Thread *	44	717-146		Worm Wheel
12	742-110		Tine R.H. Slasher	45	717-147		Sprocket 13 Teeth
13	742-113		Tine L.H. Slasher	46	714-125		Square Key 5/16 x 1-1/4 Lg. *
14	10502		Extension - Tine	47	714-124		Square Key 5/16 x 1-3/4 Lg. *
15	710-431		Carriage Bolt 3/8-16 x 1-1/2"Lg.*	48	711-325		Worm Gear Shaft
16	712-711		Hex Nut 3/8-24 Thread *	49	715-108		Spirol Pin 1/4 x 1" Lg.
17	736-169		Spring Lockwasher 3/8 Scr. *	50	741-107		Timken Roller Bearing 3/4" Bore
18	710-113		Hex Hd.Cap Scr.3/8-24 x 1-5/8" Lg.*	51	711-329		Spacer
19	10501		Mounting Tine	52	717-145		Worm
20	10984		Cover Bracket (966 and 967 only)	53	711-328		Spacer
21	737-102		Square Hd. Pipe Plug w/Vent 3/8 Thd.	54	714-314		Key Hi Pro No.HP 505 3/4" *
22	715-118		Spirol Pin 5/16 x 1-3/4" Lg. *	55	711-324		Worm Shaft
23	712-798		Hex Nut 3/8-16 Thread *	56	721-108		Gasket - Worm
24	10982		Pivot Bracket Assembly (966 and 967 only)	57	711-327		Case Cover
25	736-158		Spring Lockwasher 5/8 Scr. *	58	736-329		Spring Lockwasher 1/4" Scr. *
26	717-149		Universal Drive Shaft Assembly (766 and 966 only)	59	710-206		Hex Hd.Cap Scr. 1/4-20 x 7/8"Lg. *
	717-184		Universal Drive Shaft Assembly (967 only)	60	721-111		Oil Seal 3/4 I.D. x 1.503 O.D.
27	710-357		Square Hd.Set Scr.3/8-16 x 1/2" Lg.*	61	737-103		Square Hd. Pipe Plug 3/8 Thread *
28	715-113		Spirol Pin 5/16"Dia.x 2-1/2"Lg. Heavy Duty	62	721-107		Gasket - Gear Case
29	714-123		Square Key 5/16 x 2" Lg. *	63	710-380		Hex Hd. Cap Scr.5/16-18 x 1-3/4" Lg. *
30	711-451		Shaft	64	719-146		Tiller Gear Case - R.H.
31	719-145		Tiller Gear Case - L.H.	65	711-497		Clevis Pin (966 and 967 only)
32	736-124		Felt Dust Pad - Small	66	712-923		Hex Locknut 5/8-18 Thread *
33	721-109		Oil Seal 1-1/4 I.D. x 2.004 O.D.	67	710-367		Hex Hd. Cap Scr.5/8-11 x 1-1/2"Lg.
				68	9841		Bracket - L.H. (Not shown For 192 - 766 only)
				69	9842		Bracket - R.H. For 192-766 only)
				70	11566		Input Shaft Seal

* 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 the parts list.

NOTE: Parts shown on drawings that do not have reference numbers are tractor parts. Refer to your tractor manual.

ASSEMBLY INSTRUCTIONS FOR BOOSTER SPRINGS 732-246
(USED WITH TILLER ATTACHMENTS 192-766 and 193-966)

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 42" mowing deck attachment.

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 1.
4. Hook one end of spring on clevis pin as shown in figure 1.
5. Place the pull rod, flat washer and cotter pin back on the clevis pin as shown in figure 1.
6. With a screwdriver or tube (as shown in figure 2), extend spring forward and hook over the welded clevis pin on the frame. (See figure 2)
7. Secure the spring with a flat washer (310-7387) and a cotter pin (714-117), which is provided with the springs. (See figure 1)

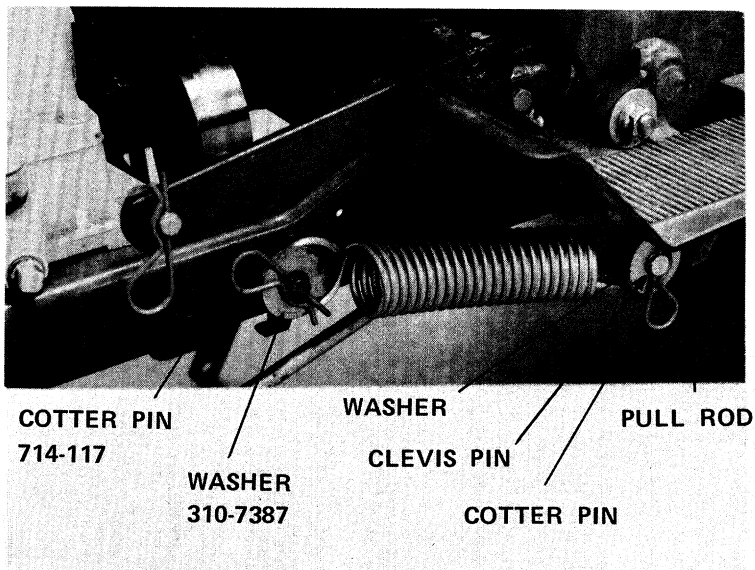


Figure 1

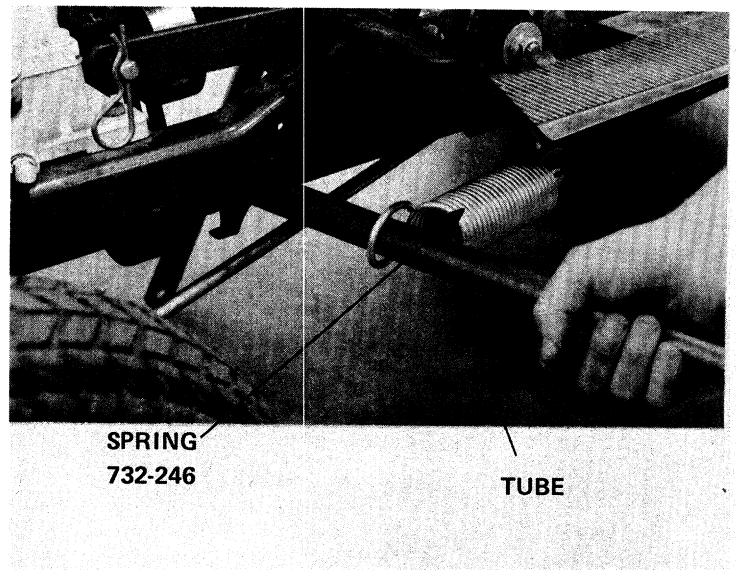


Figure 2

PARTS INFORMATION

DEFECTIVE OR MISSING PARTS must be reported to the factory immediately. Such claims must include your model number and date of purchase.

MOWER, TILLER, SNOW THROWER, TRACTOR, TRAIL BIKE AND MUD BUG PARTS

Mower, tiller, snow thrower, tractor, trail bike and mud bug parts are available through the authorized service firms listed below. All orders should specify the model number of your unit, parts numbers, de-

scription of parts and the quantity of each part required.

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 - Power Products.

A 1 Engine & Mower Co.
327 East 9th Street
Salt Lake City, Utah 84102

American Electric Ignition Co.
124 N. W. 8th Street
Oklahoma City, Oklahoma 73102

Auto Electric & Carburetor Co.
2625 4th Avenue, S.
P. O. Box 1948
Birmingham, Alabama 35233

Automotive Equipment Service Co.
3117 Holmes Street
Kansas City, Missouri 64109

Bailey's Rebuild Inc.
1325 E. Madison Street
Seattle, Washington 98102

Brown Equipment Distributor Inc.
110 Beech Street
Corydon, Indiana 47112

Bullard Supply
2409 Commerce Street
Houston, Texas 77003

Catto & Putty, Inc.
P. O. Box 2408
510 Soledad Street
San Antonio, Texas 78205

Center Supply Company
6867 New Hampshire Avenue
Takoma Park, Maryland 20012

Charles B. Wright Co.
309 4th Avenue, South
Nashville, Tennessee 37201

W. B. Clements
400 Salem Avenue
Roanoke, Virginia 24016

Morton B. Collins Co.
300 Birnie Avenue
Springfield, Massachusetts 01107

Dixie Sales Company
P. O. Box 1408
327 Battleground Avenue
Greensboro, North Carolina 27402

East Point Cycle & Key Shop
1617 Whiteway
East Point, Georgia 30044

Gamble Distributors
West End Avenue
Carthage, New York 13619

Garden Equipment Co., Inc.
6600 Cherry Avenue
Long Beach, California 90805

Henzler, Inc.
2015 Lemay Ferry Road
St. Louis, Missouri 63125

Frank E. Ives & Son
1101 Lincoln Avenue
Prospect Park, Pennsylvania 19076

J. W. Jewett Co.
981 Folsom Street
San Francisco, California 94107

Kenton Supply
8216 North Denver Avenue
Portland, Oregon 97217

Kimber's Inc.
115 W. Geddes St.
Syracuse, New York 13204

The Lawnmower Shop
1340 El Camino Real
San Carlos, California 94070

Marr Brothers
423 E. Jefferson
Dallas, Texas 75203

Mathews Auto Electric Co.
420 East 2nd Street
Tulsa Oklahoma 74120

McClure Lawn & Garden Supply
1114 Lexington Avenue
Mansfield, Ohio 44907

Memphis Cycle & Supply Co.
421 Monroe Avenue
Memphis Tennessee 38103

Moz-All of Florida, Inc.
365 Greco Avenue
Coral Gables, Florida 33146

National Central, Div. of
Joe Sterling, Inc.
Drawer "D" 687 Seville Rd.
Wadsworth, Ohio 44281

Power Equipment Distributor
36463 So. Gratiot Avenue
Mt. Clemens, Michigan 48043

Parts & Sales Inc.
2101 Industrial Pkwy.
Elkhart, Indiana 46514

Parts & Sales Inc.
335 West St. Charles Road
Villa Park, Illinois 60181

Power Lawn & Garden Equip. Co.
2551-2571 J. F. Kennedy Road
Dubuque, Iowa 52001

Raub Supply Company
James & Mulberry Sts.
Lancaster, Pennsylvania 17604

Radco Distributors
2403 Market Street
P. O. Box 3216
Jacksonville, Florida 32206

Richmond Battery & Ignition
P. O. Box 25369 - 957 Myers St.
Richmond, Virginia 23260

Smith Hardware Company
515 N. George Street
Goldsboro, North Carolina 27530

South Denver Lawn Equip. Co.
527 West Evans
Denver, Colorado 80223

Suhren Engine
8330 Earhart Blvd.
New Orleans, Louisiana 70118

Sutton's Lawn Mower Shop
Route 4, Box 343
North Little Rock, Arkansas 72117

Warner Equipment
7520 Lyndale Avenue, So.
Minneapolis, Minnesota 55423

WARRANTY PARTS AND SERVICE POLICY

The purpose of warranty is to protect the customer from defects in material and workmanship, defects which are not detected at the time of manufacture.

Our aim is to build into our product quality and reliability. Considerable emphasis is placed on quality control in order to assure our customer of satisfactory product performance. To achieve this goal, it is necessary to gain the cooperation of all concerned, MTD, our sales force and our customers.

MTD's responsibility is to build a quality product and to back up that product. MTD must build this quality product at a competitive price. This cannot be achieved without production in quantity. Quantity production is mass production. In mass production it is always possible for undetected defects to be present when the product reaches the customer. Our warranty is extended to assure the customer that any such defects will be corrected.

Use and maintenance are the responsibility of the customer. MTD cannot assume responsibility for conditions over which it has no control. MTD's responsibility does not cover misuse, excessive use, accident neglect, improper maintenance or alterations by unauthorized persons. Satisfactory product performance can only result when a manufacturer provides and backs up a quality product and the customer follows through with proper use and proper maintenance of that product. When both the manufacturer and the customer recognizes and assumes his responsibility, satisfactory product performance and customer satisfaction are assured.