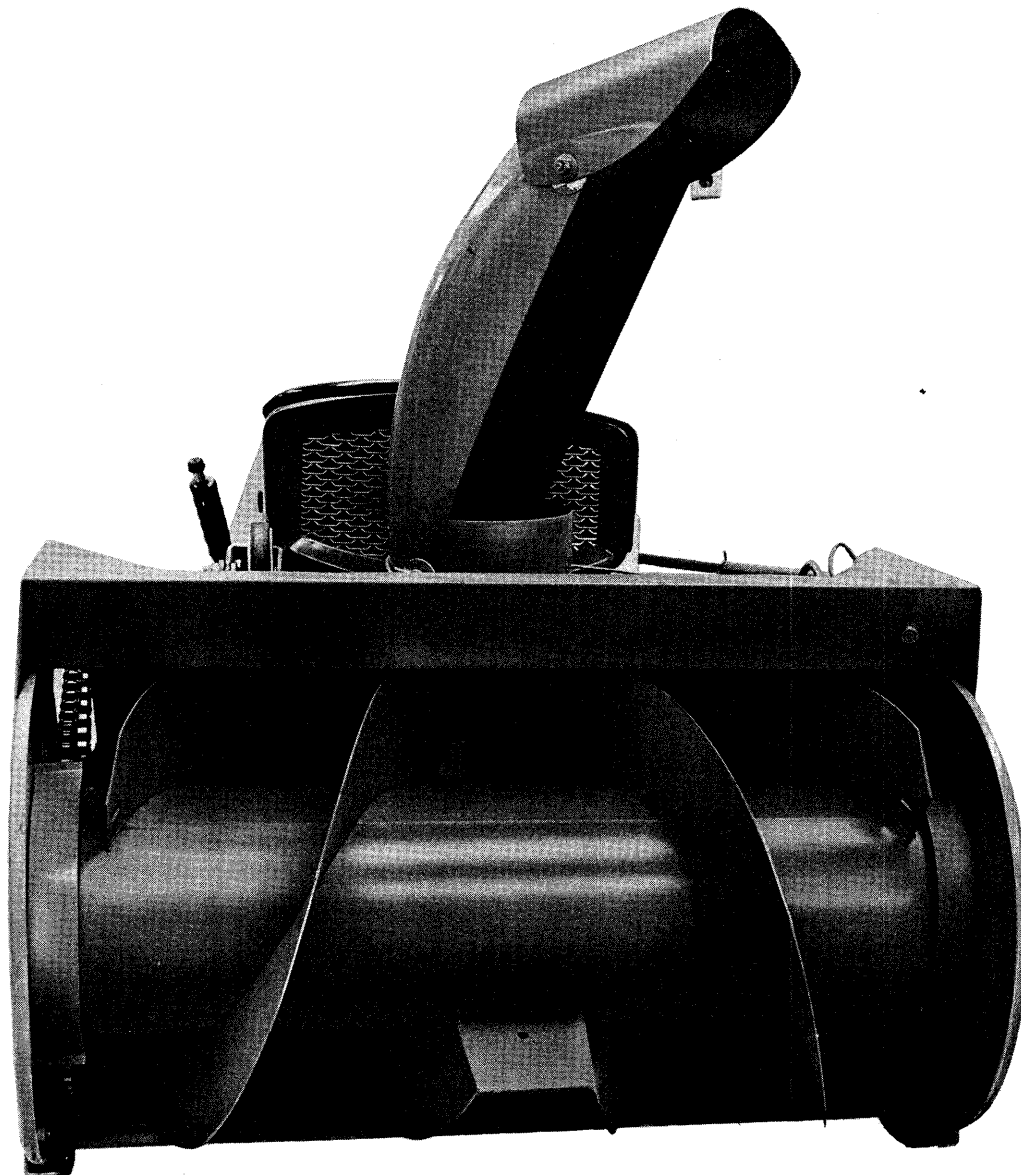


199-658

Your New



30" SNOW THROWER



Manufactured by

MTD PRODUCTS INC • 5389 WEST 130th ST. • P. O. BOX 2741 • CLEVELAND, OHIO 44111

Safety Rules for the Operation of Snow Throwers

BEFORE STARTING:

1. Read the instruction manual and safety precautions furnished with your snow thrower before attempting to assemble or start it.
2. Familiarize yourself with the controls and use of the equipment.
3. Check the fuel level before each use to avoid refilling the tank while the engine is hot. Wipe off any gasoline spills and be sure the tank cap is snug.
4. Keep the area to be plowed free of sticks, stones, toys and other obstacles which could be picked up and thrown by the impeller.
5. If your thrower is electrically powered, assure yourself that the unit is effectively and continuously grounded and that the power and extension cords are in good condition.
6. If your engine has a wind-up (ratchet or impulse) starter, assure yourself that the engine will operate freely before actuating the starter release.
7. Before starting the engine, be sure to disengage all clutches and check to see that all rotors, augers, and impellers are free to rotate.
8. Assume a firm stance and keep your feet at a safe distance from the auger before pulling the starter rope.
9. **Do not** loan your snow thrower to any person who is not familiar with its operation or the safety rules concerning it, and don't allow children or young teenagers to operate it.

DURING OPERATION:

1. **Never** attempt to clear debris from your snow thrower, make adjustments, or change the "throw" direction of the discharge chute (unless a control is provided for this purpose near the handle), without first shutting off the engine and disconnecting the spark plug wire. The wire should be kept at least two inches from the spark plug. If the thrower is electrically powered, unplug the power cord.
2. Keep children and pets away from the area being plowed, and never walk in front of the discharge chute while the unit is running.
3. Do not place hands, feet, and loose clothing near any moving parts and always keep all guards in place.
4. Never leave the thrower running unattended.
5. Be sure of your footing at all times and never operate the unit on precarious surfaces.
6. Never attempt to scrape off **all** the snow from gravel and crushed rock surfaces. Instead, adjust the height to approximately an inch above the surface.
7. If it is necessary to operate the engine in a garage or other enclosed space, open doors and windows to provide sufficient ventilation.
8. Never attempt to operate the unit faster than the speeds specified by the manufacturer.
9. Keep all nuts and bolts tight. If undue vibration is noted, do not use until the condition has been corrected.
10. Learn how to stop the engine and moving parts quickly in case of emergency.

ASSEMBLY INSTRUCTIONS

1. Open snow thrower carton.
2. A) Remove clutch rod
B) Remove cardboard insert 1, 2, & 3.
C) Remove bag of parts which is packed inside of insert #3.
D) Remove elbow & elbow insert.
E) Remove snow thrower.
 - 1) Remove insert from underneath jackshaft pulley.
 - 2) Remove last insert.
- F) Open small carton.
 - 1) Remove push rod, stack control and lift spring.
3. Remove belt guard from tractor.
4. Remove hex bolt and sleeve holding the front of the belt guard to the engine. **Do not** remove the belt trapout. Remove bolt and rubber washers holding the rear of the belt guard to the frame. Depress the Clutch-Brake Pedal and lock in the brake position (fully depressed pedal) with the parking brake. Loosen the bolt holding the spring tension idler and belt clip. Mark position of belt clip. Roll belt off pulley **TOWARDS** the engine. Remove set screws (2) and pull off engine pulley. Refer to Fig. 1. Replace bolt and two rubber washers in the frame.

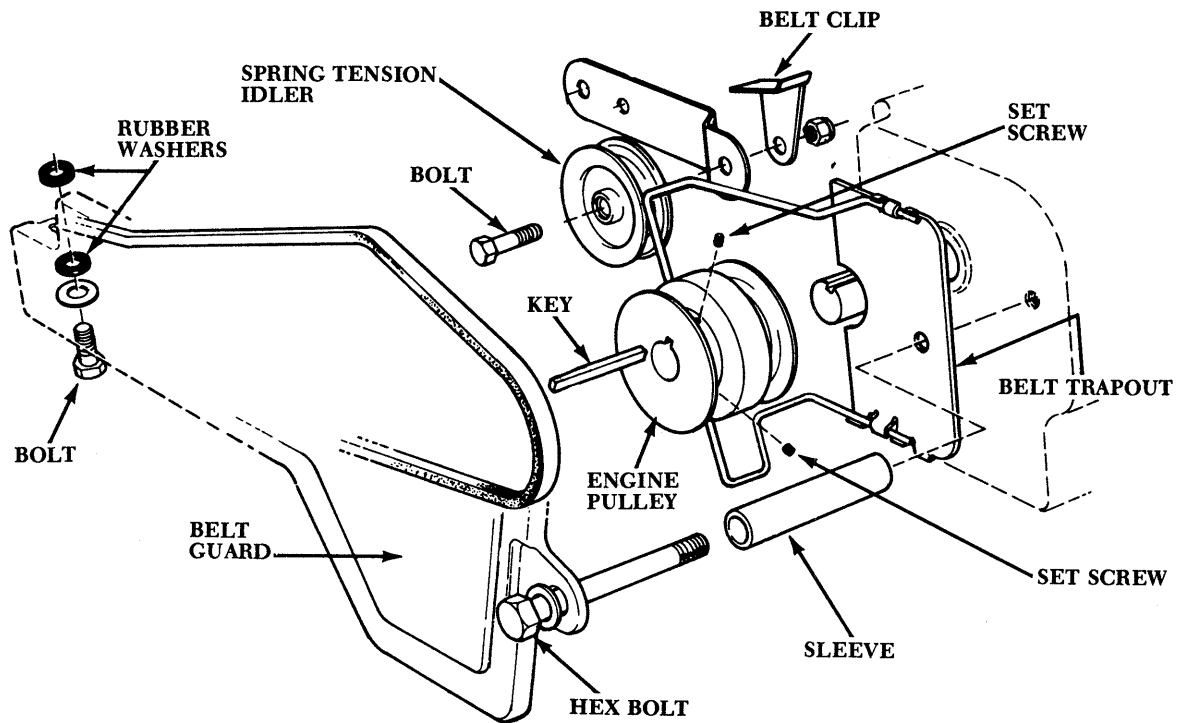
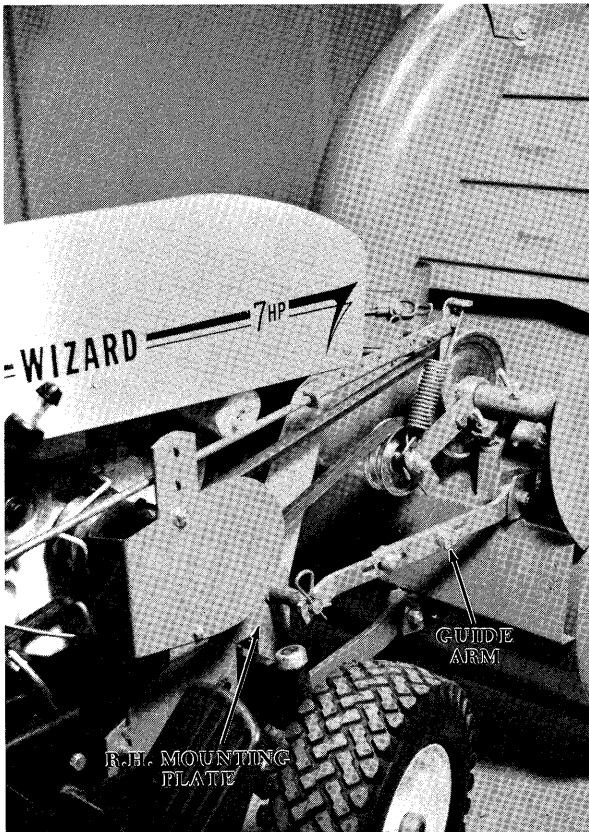


FIG. 1

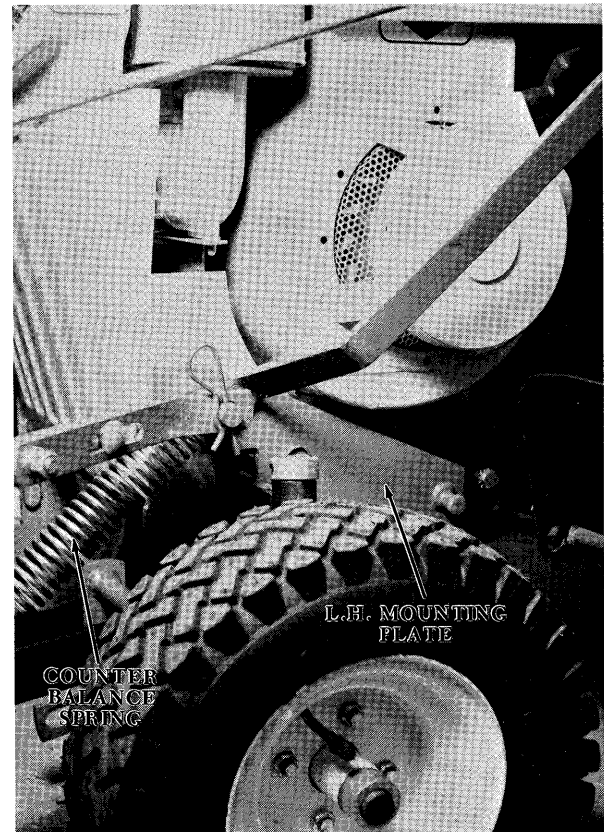
5. Remove mowing unit.
6. Install new engine pulley. Position 5/16" from end of shaft. Square key must not protrude from the pulley. Secure pulley with set screws.

In the event that your tractor is already equipped with the engine sheave that is tapped, you can eliminate loosening spring tension idler and belt clip and Step 5.

7. Attach engine pulley extension. Allen wrench and Allen head screws are provided.
8. Position snow thrower in front of tractor. Move idler and "V" belt to position idler under "B" belt.
9. Place "V" belt on engine pulley extension.
10. Open bag of parts.
11. Mount R.H. and L.H. on to tractor. Service with hair pin cotter. See Figs. 2 and 3.

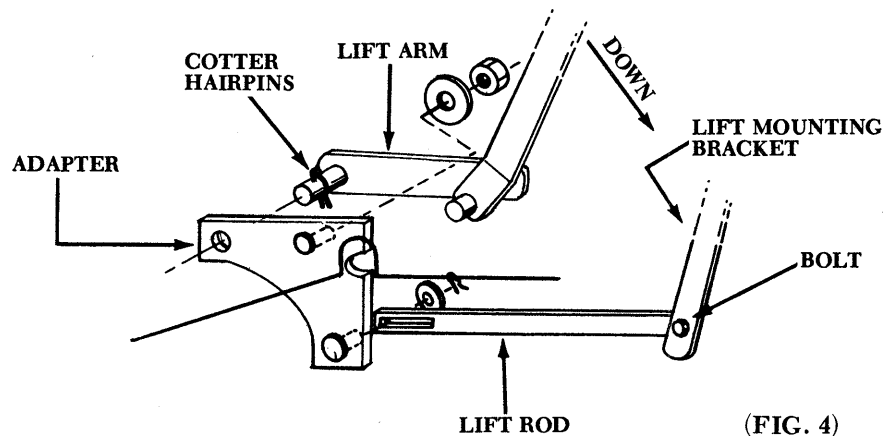


(FIG. 2)



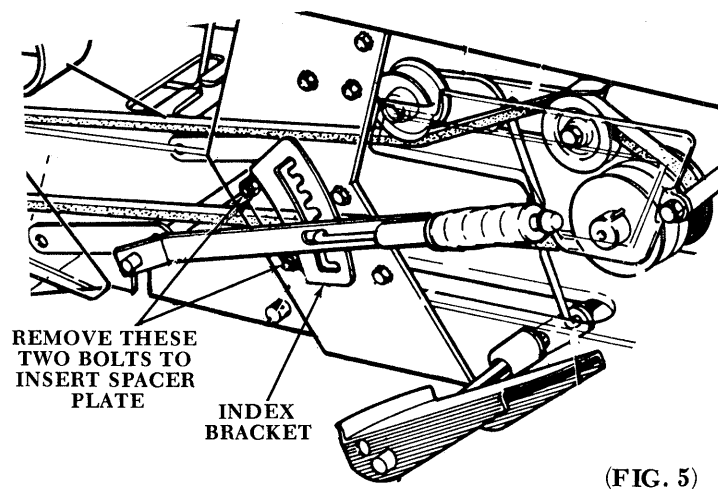
(FIG. 3)

12. Attach snow blower to tractor by connecting guide arms to the mounting plates and lift pivot bar to the mounting plates. Secure with hair pin cotter.
13. Attach extension plate (adapter) to tractor lift arm by placing the notched end over the rod, fastening the rear of the adapter over the weld pin on the lift arm. Secure with cotter pin. Use washer and wing nut to hold adapter tight against lift arm. See Fig.

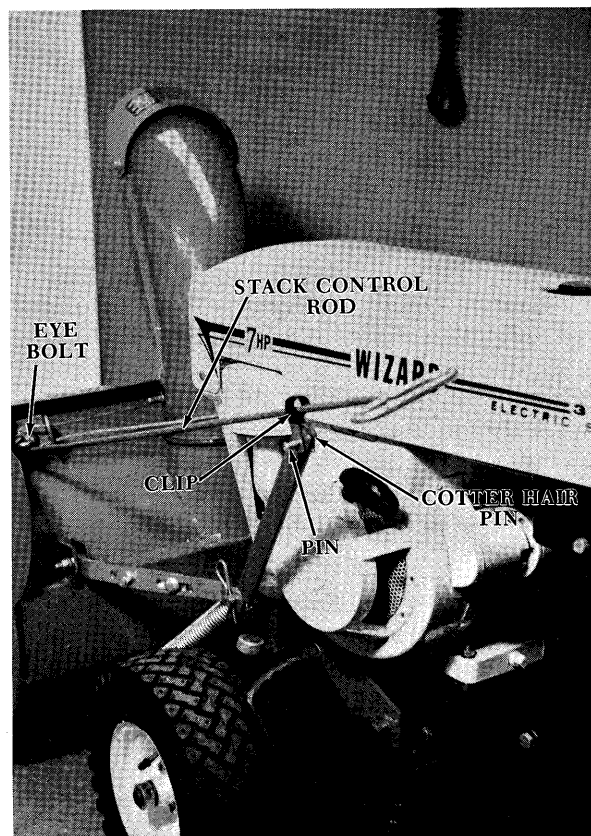


14. Attach lift rod to the lift mounting bracket with nut and bolt provided. Attach slotted end of the lift rod over the adapter stud and fasten with a washer and cotter pin.
15. Attach counter balance spring to the stud on the L.H. mounting plate. Be sure that the lower end of spring is connecting between the inside nut and the flat washer.
16. Remove index bracket on tractor by removing the two hex head cap screws. Insert spacer plate behind index plate and re-assemble to tractor with bolts provided.

It may be necessary to bend the lift arm slightly outwards in order to allow clearance for the hand between belt guard and lift lever.

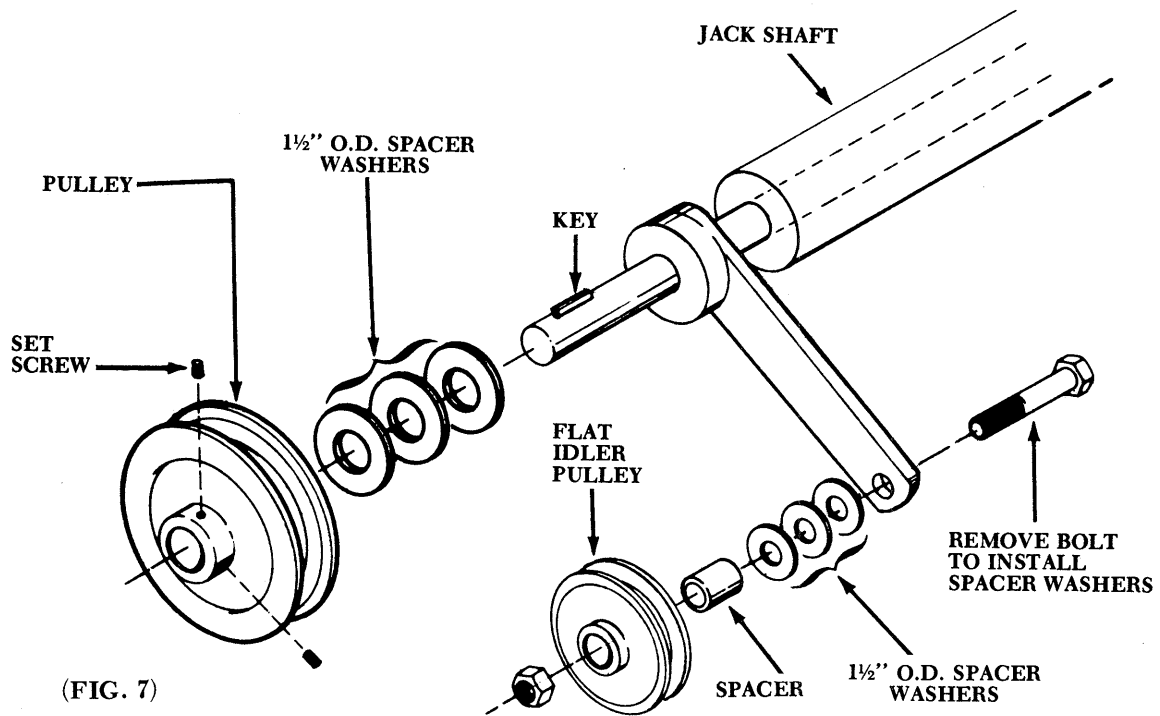


17. Attach clutch rod to clutch extension in the second hole from the front and secure with cotter hair pin. See Fig. 2.
18. Insert hook end of stack control rod into eye bolt on auger. Attach clip to arm over control rod which is part of L.H. mounting plate with pin and cotter pin provided. See Fig.
19. Attach stack to blower and attach stack control cable assembly to stack. Attach one loop of the cable over the stud on the stack.



(FIG. 6)

ADJUSTMENTS



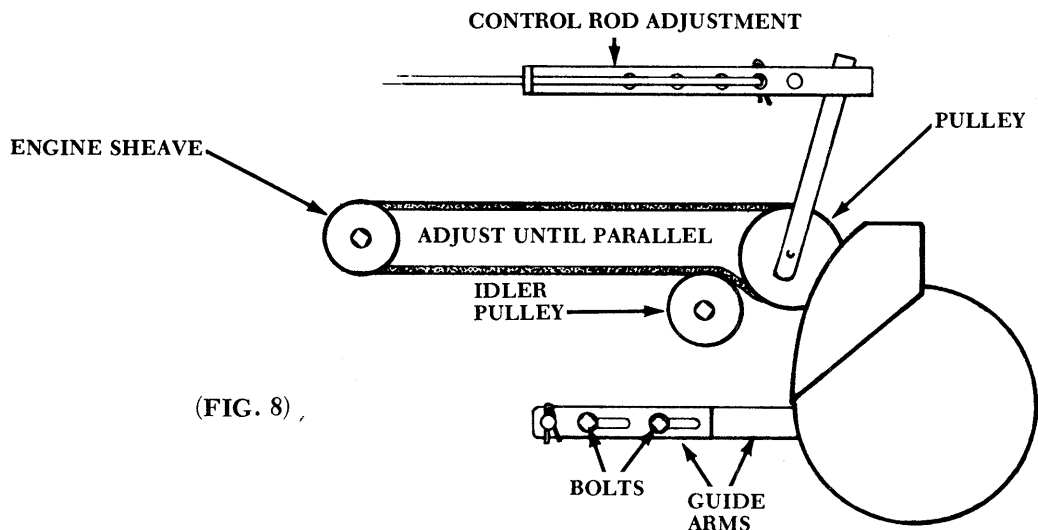
(FIG. 7)

If the snow thrower pulley and the new engine pulley do not line up, remove the snow thrower pulley by loosening the two square head set screws, removing the pulley from the jackshaft and placing AS MANY SPACER WASHERS 1-1/2" O.D. AS NEEDED to align the two pulleys. It is not necessary to remove the key in the jackshaft as the spacer washers will easily slip over it. Use 1" O.D. spacer washers to align the flat idler pulley with the two other pulleys. Refer to Fig. 9.

BELT

Before operating your snow thrower you must adjust your belt. The belt adjustment is made by loosening the bolts in the guide arms and pivoting the snow thrower forward or backward until the upper and lower portion of the belt between the engine pulley and the idler pulley runs parallel.

If proper adjustment cannot be made, change the length of the control rod by removing the cotter hair-pin and moving the rod to a different adjusting hole.



(FIG. 8)

ELBOW AND DEFLECTOR

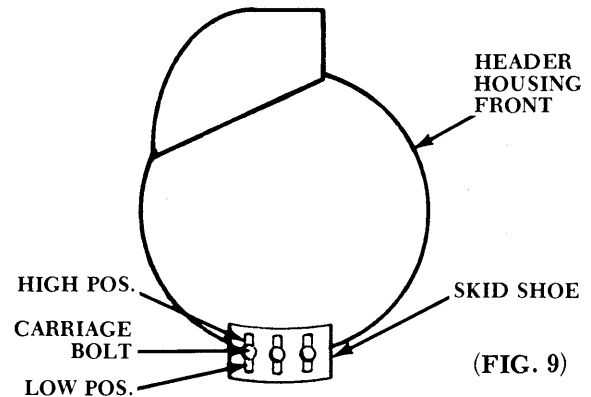
If adjustment becomes necessary loosen the screw on the right side of the elbow, take up the slack in the cable and tighten the screw. Do not pull the cable too tight, just enough to remove the slack. See Fig. 10. The deflector on top of the elbow is adjusted semi-tight so the angle of discharge can be made by hand. If the deflector will not stay in position, tighten the locknuts. See Fig. 0.

SKID SHOES

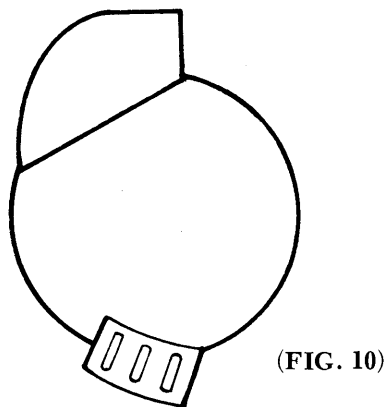
The skid shoes on each side of the header housing are adjustable by loosening the carriage bolts and nuts Low Position — Close snow removal.

Middle or High Position — Use when road is uneven.

The skid shoes and scraper blade (Fig. 0) should be replaced when worn. Excessively worn skid shoes or scraper blade should be replaced when worn. Excessively worn skid shoes or scraper blade could cause damage to the auger or header housing.

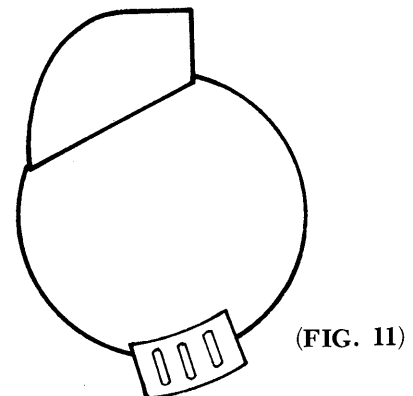


The skid shoes may be tipped for better operation.



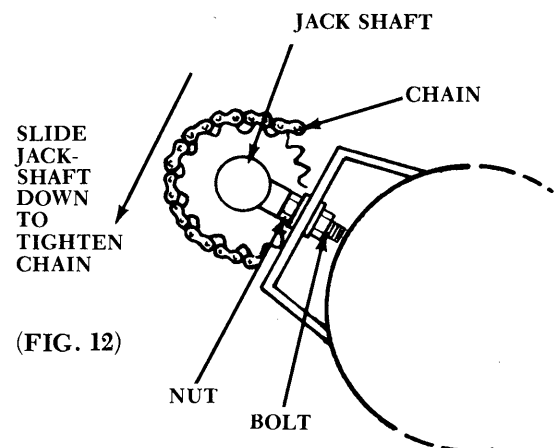
Tip front of skid shoe down when operating in hard packed snow.

Tip front of skid shoe up when operating in loose stone or soft areas.



CHAIN

The normal stretch of the chain can be taken up by LOOSENING the two bolts and nuts under the jackshaft and sliding the jackshaft down until the chain is tight. Tighten the bolts and nuts. There should be a slight amount of slack in the chain. An over-tightened chain will cause excessive chain and bearing wear.



PRE-OPERATING INSTRUCTIONS

1. Read and understand the safety rules on page two of this manual.
2. Clear the area of all sticks or stones before the first snow if possible. Small obstacles that might be covered by snow should be marked with a stake.
3. A light coat of automotive wax should be placed on the auger, inside the header housing, deflector and elbow. The deflector and elbow should be waxed several times during the season.

CONTROLS

Throttle Control — The engine speed is regulated by moving the throttle control. Use a high RPM for maximum snow removal. Keep engine operating from 3/4 to full RPM.

Gear Shift Lever — Use first gear for maximum snow removal and safest operation.

Clutch Control Rod — Used to engage and disengage the auger. Clutch Control Rod should be all the way out when starting your tractor. To engage the auger push the clutch control rod in until it hooks behind the bracket.

Elbow and Deflector — Turn elbow crank to change direction of discharge. Elbow will rotate 180°.

Lift Lever — Depress thumb button on top of lift lever and pull lift lever back to raise the snow thrower off the ground for transporting.

OPERATION

1. After your tractor engine has warmed up . . .
 - A. Depress clutch-brake pedal on your tractor.
 - B. Shift into first gear.
 - C. Increase engine speed to at least 3/4 RPM.
 - D. Engage clutch control rod to start auger rotating.
 - E. Slowly release clutch-brake pedal on tractor.

NOTE

Do not try to clear auger or stack while the engine is running. Always stop engine when cleaning snow from snow thrower. Do not discharge snow towards people or buildings.

2. Do not discharge snow into the wind if possible.
3. If auger or elbow freezes, stop the engine before trying to free it.
4. Overlap each pass to remove all snow.
5. If conditions allow, make your first pass down the center of the area to be cleared. Do not change direction of elbow and plow from one end of the area to the other discharging snow to the right and left.
6. Adjust deflector up or down to increase or decrease the distance the snow is thrown.

LUBRICATION

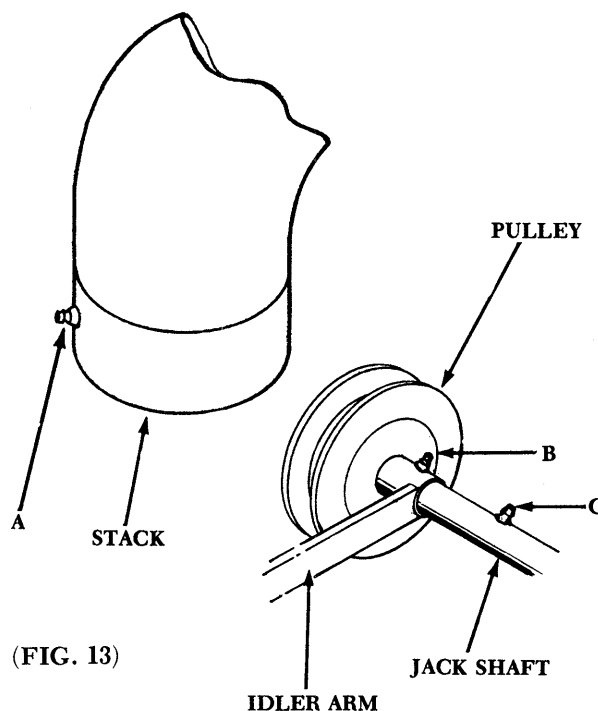
Lubricate the following parts with a grease gun using an automotive multi-purpose type grease before each season and after every 25 hours of operation.

- A. Elbow Collar See Fig. 16
- B. Idler Bracket See Fig. 16
- C. Jackshaft Housing See Fig. 16

Pivot Points — Lubricate all pivot points with SAE 30 oil to maintain smooth operation and to prevent rust.

Chain — Lubricate drive chain after each 25 hours of operation. Use SAE 30 oil. Wipe excess oil from chain.

Auger Bearings and Idler Bearings — The Auger bearings and idler bearings are self-lubricating and require no additional lubrication.



(FIG. 13)

STORAGE

1. Drive the tractor as close to the storage area as possible.
2. Disconnect the elbow crank and the clutch control rod.
3. Disconnect the adapter on the lift lever.
4. Remove special engine sheave and replace with original sheave:
5. Remove spring on left adapter plate.
6. Remove the right and left adapter plates. (It is not necessary to remove the guide arms from the adapter plates.)
7. Wash off any dirt or salt on the snow thrower.
8. Paint or grease any bare metal.
9. Grease and lubricate the snow thrower as explained in the Lubrication section of this manual.

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.

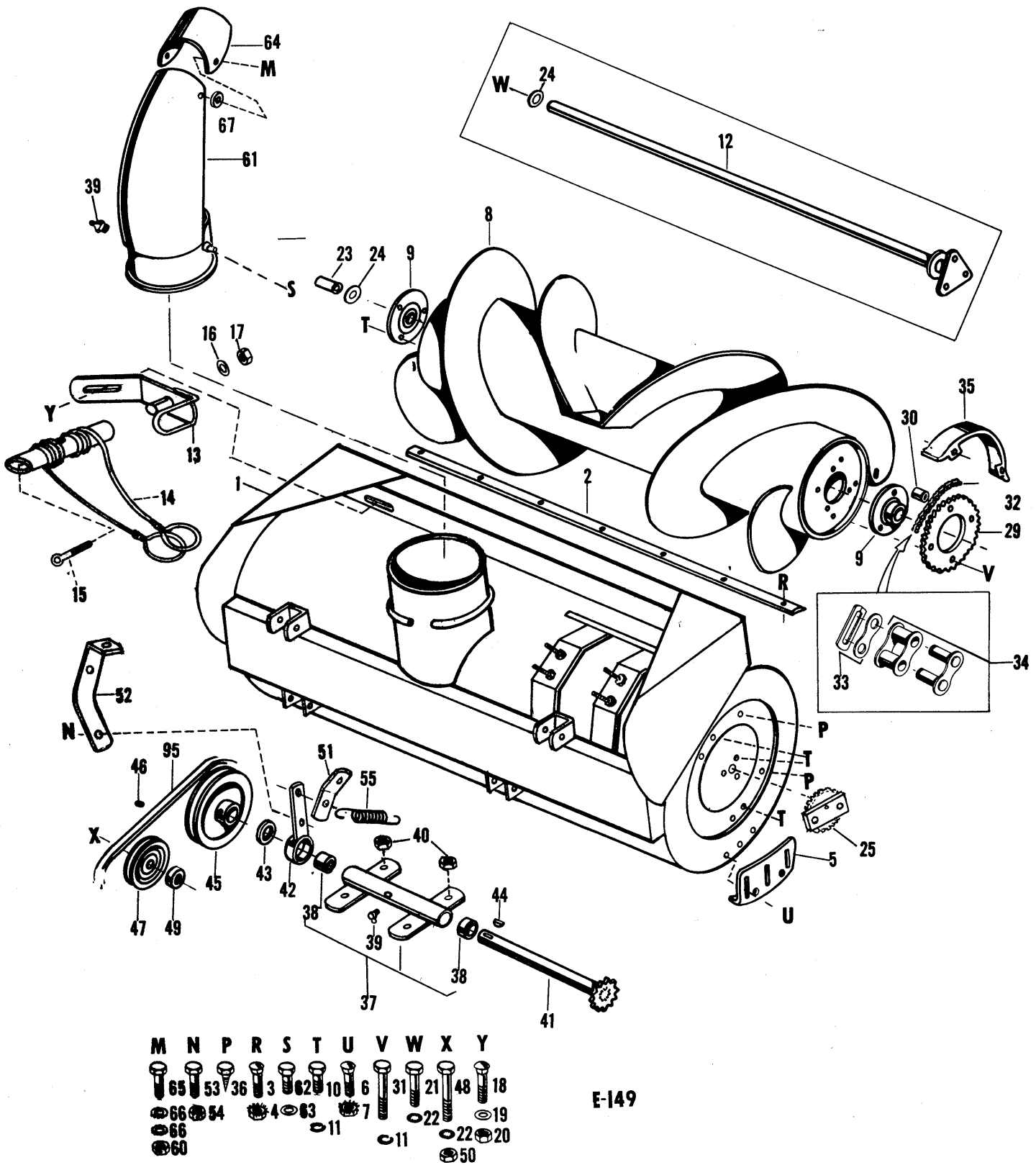
Warranty service is available through your local authorized service dealer or distributor. **UNDER NO CIRCUMSTANCES WILL THE RETURN OF A COMPLETE UNIT BE ACCEPTED BY THE FACTORY UNLESS PRIOR WRITTEN PERMISSION HAS BEEN EXTENDED.**

When ordering replacement parts, please order from:
Haban Manufacturing Company
Mound and Marquette Street
Racine, Wisconsin 53404

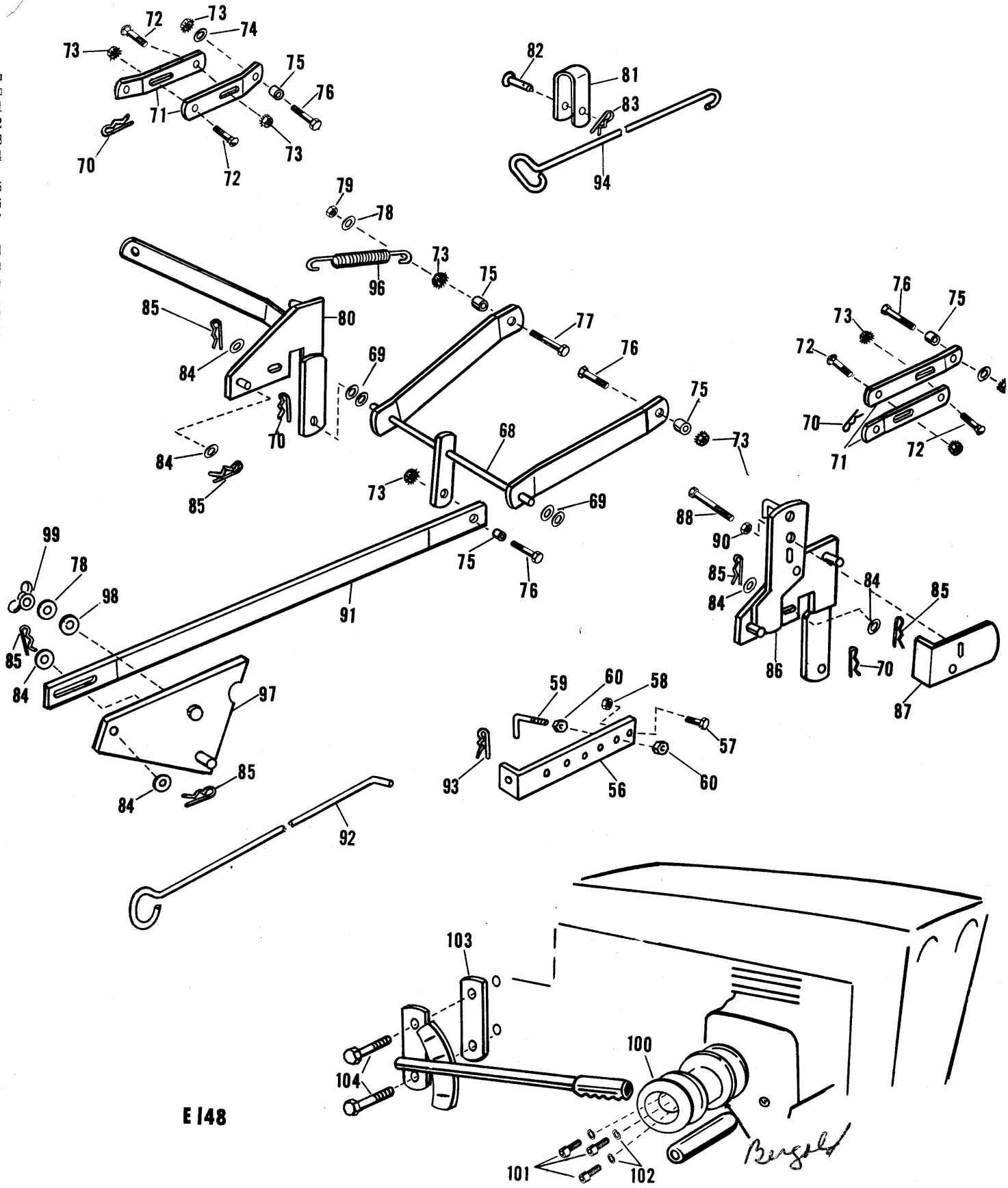
PARTS LIST FOR SNOW THROWER, MODEL 199-658

Illus. No.	Part No.	DESCRIPTION ()-No. Required Per Assembly	Illus. No.	Part No.	DESCRIPTION ()-No. Required Per Assembly
1	6412	Assem. — Header Housing (30" RH) (AW)	58	GM-9413534	Nut — (Ext. to Idler Spring Anchor Strap) 5/16-18 Hex. Lock
2	3013-C	Blade — Scraper (30")	59	6381	Stud — Belt Retainer (Assem. in (2) Hole From Front of Extension)
3	GM-126203	Bolt — (Blade to Header) 1/4-20 x 5/8 Carr.	60	4119	Nut — (Stud to Clutch Rod Ext.) 1/4-20 Hx. Lock
4	GM-271178	Nut & Lock Washer Assem. — (Blade to Header) 1/4-20 Hex.	61	4957	Assem. — Deflector (SW)
5	3045	Shoe — Skid	62	GM-180016	Bolt — (Cable) 1/4-20 x 1/2 Hx. Hd.
6	GM-126216	Bolt — (Shoe to Header) 5/16-18 x 3/4 Carr.	63	GM-120386	Washer — (Cable) 1/4 Flat (5/16 x 3/4 .065)
7	GM-271184	Nut & Lock Washer Assem. — (Shoe to Header) 5/16-18 Hex.	64	3052	Deflector — Elbow
8	3014-C	Assem. — Auger (30") (AW)	65	GM-180020	Bolt — (Deflector to Elbow) 1/4-20 x 3/4 Hex. Hd.
9	3919-A	Assem. — Auger Bearing (30")	66	3903	Washer — (Deflector to Elbow) 3/8 x 7/8 Concave Tooth
10	GM-180075	Bolt — (Auger Bearing) 5/16-18 x 5/8 Hex. Hd.	67	4506	Washer — (Deflector to Elbow) 3/8 Flat Special (13/32 x 1-1/2 x 16 Ga.)
11	GM-120214	Washer — Auger Bearing) 5/16 Med. Lock	68	5928	Assem. — Lift Pivot (AW)
12	5871	Assem. — Auger Shaft (30") (AW)	69	3396	Washer — Lift Spacing (3/4 Flat)
13	6336	Assem. — Stack Drive Bracket (AW)	70	3341	Pin — Hair Cotter (Mtg. Brk'ts. to Lift)
14	6338	Assem. — Tube & Cable (Complete)	71	6424	Arm — Guide
15	3955	Eye Bolt — (Drive Tube)	72	GM-120915	Bolt — (Guide Arms) 3/8-16 x 1 Carr.
16	GM-120388	Washer — (Eye Bolt) 3/8 Flat 7/16 x 1 x .083	73	GM-271190	Nut & Lock Washer Assem. (Guide Arms) 3/8-16 Hex.
17	GM-9413534	Nut — (Eye Bolt) 3/8-16 Hex. Lock	74	5682	Washer — (Guide Arm Spacing) (21/32 x 1 x 16 Ga. Flat) (Use (1) over each trunnion after it is assembled in guide arm & slip between Mtg. Lugs on header — Top (2) Header Lugs Only)
18	GM-120915	Bolt — (Bracket to Header) 3/8-16 x 1 Carr.	75	3700	Trunnion
19	4506	Washer — (Brk't. to Header) 3/8 Flat 13/32 x 1-1/2 .0598	76	GM-180126	Bolt — (Pivot & Guide Arms to Header) 3/8-16 x 1-1/2 Hex. Hd.
20	GM-271190	Nut & Lock Washer Assem. — (Brk't. to Header) 3/8-16 Hex.	77	GM-180130	Bolt — (Pivot & Guide Arms to Header) 3/8-16 x 2" Hx. Hd. (Assem. in Lower L. H. Mtg. Lug of Header — From Center Out)
21	GM-180175	Bolt — (Shaft to Header) 1/2-13 x 1-1/4 Hex. Hd.	78	4506	Washer — (Pivot & Guide Arms to Header) 3/8 Flat (Special)
22	GM-138549	Washer — (Shaft to Header) 1/2 Shakeproof Lock	79	GM-9413534	Nut — (Pivot & Guide Arms to Header) 3/8-16 Hex. Lock
23	3946	Spacer — Auger Shaft (End Opposite Sprocket)	80	6426	Assem. — Pivot Mtg. Brk't. (LH) (AW)
24	5429	Washer — (Auger Shaft) 3/4 Flat 49/64 x 1-1/16 x .1196 (Between Bearing & Welded Spacer)	81	6521	Guide — Crank Rod
25	3358	Assem. — Idler Bracket (Complete)	82	3694	Pin — Clevis (Guide to Brk't.)
29	3026	Sprocket — Auger Driven (35 Tooth)	83	3090	Pin — Hair Cotter (Guide to Brk't.)
30	3027	Spacer — Sprocket	84	GM-9417098	Washer — (Brk't. to Tractor) 1/2 Flat (17/32 x 1 x .063)
31	GM-180087	Bolt — (Sprocket to Auger) 5/16-18 x 2 Hx. Hd.	85	3926	Pin — Hair Cotter
32	3223	Chain — (Auger Drive) 82 Links	86	6429	Assem. — Pivot Mtg. Brk't. (RH) (AW)
35	3036	Guard — Chain (Galvanized)	87	6431	Cover — Engine Pulley
36	GM-9414012	Screw — Chain Guard (1/4 x 1/2 Hex. Washer Hd. Self Tapping)	88	GM-180046	Bolt — (Belt Retainer) 1/4-20 x 2-1/4 Hx. Hd.
37	6417	Assem. — Jackshaft Housing (Complete)	89	GM-120386	Washer — (5/16 x 3/4 x .065) 1/4 Flat
38	3034	Bushing — Jackshaft	90	4119	Nut — (Belt Retainer) 1/4-20 Hex. Lock
39	5074	Fitting — Grease (1/4-28 Self Tap. Str.)	91	5939	Bar — Lift
40	GM-120377	Nut — (J'shaft Hsg. to Header) 3/8-16 Lt. Hx.	92	6432	Assem. — Clutch Rod (SW)
41	3523	Assem. — Jackshaft & Sprocket (AW)	93	3090	Pin — Hair Cotter
42	3039	Assem. — Idler Arm	94	6378	Rod — Crank
43	3396	Washer — (Drive Pulley Spacer) 3/4 Flat 49/64 x 1-1/2 x 16 Ga.	95	6434	V-Belt — Main Drive (5L — 51") (Assem. on Jackshaft Pulley)
44	S-271	Key — (Drive Pulley Spacer) #9 Woodruff	96	3434	Spring — Lift
45	3035	Pulley — Main Drive (6" O.D. AB Groove) 3/4 Bore	97	5938	Assem. — Lift Lever Ext. Plate (AW)
46	GM-142671	Screw — Set (Pulley) 5/16-18 x 1/2 Sq. Hd. Cup Pt.	98	GM-120382	Washer — (Ext. Plate to Lift Lever) 3/8 Med. Lock (Assem. on Ext. Plate)
47	3042	Pulley — Idler (2-3/4 O.D. Flat) Riveted	99	GM-120362	Nut — (Ext. Plate to Lift Lever) 3/8-16 Wing (Assem. on Ext. Plate)
48	GM-180179	Bolt — (Idler Pulley to Arm) 1/2-13 x 2" Hex. Hd.	100	6435	Pulley — Engine Extension (Casting)
49	1094	Spacer — (Idler Pulley to Arm)	101	6436	Bolt — (Ext. Pulley to Engine Pulley)
50	GM-120378	Nut — (Idler Pulley to Arm) 1/2-13 Lt. Hx.	102	GM-120380	Washer — (Ext. Pulley to Engine Pulley) 1/4 Med. Lock
51	6347	Strap — (Idler Spring Anchor)	103	6438	Strap — Lift Lever Spacing
52	6348	Bracket — Idler Spring Mounting	104	GM-180124	Bolt — (Strap to Tractor) 3/8-16 x 1-1/4 Hx. Hd.
53	GM-180120	Bolt — (Brk't. to Idler Arm) 3/8-16 x 3/4 Hex. Hd. (Assem. From Outside Idler Arm In Towards Pulley)			
4	GM-9413534	Nut — (Brk't. to Idler Arm) 3/8-16 Hx. Lock			
5	3930	Spring — Idler			
56	4743	Extension — Clutch Rod			
57	GM-180077	Bolt — (Ext. to Idler Spring Anchor Strap) 5/16-18 x 3/4 Hx. Hd.			

199-658 30'' SNOW THROWER



199-658 30" SNOW THROWER



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