Ariens Service Repair Manual

924

924000 SERIES
SNO-THRO MODELS

NON-CURRENT MODELS

924013
924016
924018
924020
924022
924023
924024
924025
924026
924027
924032
924033
924036
924038
924039
924040
924042
924044
924052
924054
924056

CURRENT MODELS

Model 924046 5 H.P. 24"
Serial no. 000101 and up

Model 924048 7 H.P. 24"
Serial no. 000101 and up

Model 924050 8 H.P. 24"
Serial no. 000101 and up

Model 924058 7 H.P. 24"
Serial no. 000101 and up
Export only

Model 924071 11 H.P. 36"
Serial no. 000101 and up

Model 924072 8 H.P. 24"
Serial no. 000101 and up
Export only

Model 924073 10 H.P. 32"
Serial no. 000101 and up

ATTACHMENTS

Model 824004 36" Rotary Brush
Attachment for 924000 Series
Serial no. 000101 and up

Model 824005 26" Rotary Mower
Attachment for 924000 Series
Serial no. 000101 and up

Model 824006 24" Sno-Thro
Attachment for small wheel tractor
Serial no. 000101 and up

Model 824007 24" Sno-Thro
Attachment for large wheel tractors
Serial no. 000101 and up

Model 824008 32" Sno-Thro
Attachment for large wheel tractors
Serial no. 000101 and up

Model 824009 36" Sno-Thro
Attachment for large wheel tractors
Serial no. 000101 and up

A message to the Ariens Dealer

This Repair Manual has been prepared to assist the Ariens Dealer in providing quality service for the products listed. Additional information on these products is available from AriensService, Ariens Company, Brillion, Wisconsin 54110-1098. Telephone: (414) 756-2141. Refer also to Parts Manual.

⚠ SAFETY MESSAGE ⚠

The product for which you have requested information or replacement parts is not a current product. The replacement models incorporate product designs, safety features, safety instructions or warnings which represent the latest "State Of The Art" developments. For your safety and those around you please contact your nearest Ariens/Gravely Dealer for a demonstration of the current product safety provisions and features.

A warning and message to the Ariens' Customer

This Repair Manual is intended for use by Ariens' Dealers' trained servicemen. The information and instructions contained herein serve as a supplement to and reminder of training sessions conducted by Ariens Company. Before you attempt any repair, adjustment or maintenance project outlined in this manual, be certain of the following:

1. That you have read and fully understand the instructions in this manual.
2. That you have all of the tools, replacement parts and other materials required to complete the project.
3. Follow all instructions exactly as given.

All fittings, measurements, torque recommendations and the like are significant and approximations or substitutions must be avoided. Improper repair, maintenance and/or adjustments or service attempted by anyone other than an authorized Ariens Service Dealer could void future warranty claims, and cause damage to the unit and/or result in injury to the operator and/or bystanders.

Ariens

ARIENS COMPANY
655 West Ryan Street
Brillion, Wisconsin
54110-1098 U.S.A.

Part No. RM924-1983
Printed in U.S.A.

CONTENTS

924000 SNO-THROS

924000 Sno-Thros	Sales No.		Owner's Manual	Parts Manual	French Owner's Manual	French Decal Instructions
924046	ST524	Tec. 5 HP - 24" small wheels	24532	PM-24-80,82	24469A	79477A
924048	ST724	Tec. 7 HP - 24" sm. wheels w/diff	24532	PM-24-80,82	24469A	79477A
924050	ST824	Tec. 8 HP - 24" lg. wheels w/diff	24449E	PM-24-80,82	24469A	79477A
924054	ST832	Tec. 8 HP - 32" lg. wheels w/diff	24449E	PM-24-80	24469A	79477A
924056	ST1032	Briggs 10 HP lg. wheels w/diff	24511A	PM-24-80	24482	79597
924058	ST724	Tec. 7 HP - 24" Finland only, lg wheels w/diff	24490			
924071	ST1136	Briggs 11 HP lg. wheels, diff., headlight, remote control deflector	24534	PM-24-82		
924072	ST824L	Tec. 8 HP - 24" lg. wheels w/diff.	24538	PM-24-82		
924073	ST1032	Tec. 10 HP - 32" lg. wheels, diff., headlight	24532	PM-24-82		
924047	TT5	Tec. 5 HP Trac-Team, sm wheels	24532	PM-24-80,82	24469A	79477A
924049	TT7	Tec. 7 HP Trac-Team sm wheels w/diff	24532	PM-24-80,82	24469A	79477A
924051	TT8	Tec. 8 HP Trac-Team lg wheels w/diff	24532	PM-24-80-82	24469A	79477A
924055	TT8	Tec. 8 HP Trac-Team lg wheels w/diff	24449E	PM-24-80	24469A	79477A
924057	TT10	Briggs 10 HP Trac-Team lg whls, w/diff	24511A	PM-24-80	24482	79597

Attachments	Sales No.	Requirements (for attachment to Product)	Owner's Manual	Parts Manual
824004 - 36" Rotary Brush	RB36	Air Cleaner Kit (supplied with Brush)*	24416B	PM-24-82
824005 - 26" Rotary Mower	RM26	Air Cleaner Kit (supplied with Mower)*	24421A	PM-24-82
824006 - 24" Sno-Thro			24449E	PM-24-80,82
824007 - 24" Sno-Thro			24449E, 24538	PM-24-80,82
824008 - 32" Sno-Thro			24449E, 24511A, 24532	PM-24-80,82
824009 - 36" Sno-Thro			24534	PM-24-82

Accessories	Sales No.	Requirements (for attachment to Product)	Owner's Manual	Parts Manual
703944 Tire Chains		Fits 924050, 51, 58, 72		PM-24-82
703985 Tire Chains		Fits 924054, 55, 56, 57, 71, 73		PM-24-82
710983 Diff. Kit.		Fits 924046		PM-24-82
710997 Slicer Bar		Fits all Models		PM-24-82
722007 & 722009 120 Volt Starter		Fits 924046, 48	79290D	Pm-24-82
724007 & 724008 120 Volt Starter		Fits 924050, 54, 72, 73	79290D	PM-24-82
724010 Headlight Kit		Fits 924054, 56, 58	24355E	PM-24-82
724011 Tire Chains		Fits 924046, 48		
724012 Homeowner's Kit		Fits 924046, 48	79443B	PM-24-82
724013 Homeowner's Kit		Fits 924050, 72	79443B	PM-24-82
724014 Homeowner's Kit		Fits 924054, 73	79443B	PM-24-82
724016 12 Volt Starter		Fits 924046, 48	24473	PM-24-82
724017 12 Volt Starter		Fits 924050, 54, 72, 73	24473	PM-24-82
724018 12 Volt Starter		Fits 924056, 71	79607A	PM-24-82
724019 12 Volt Starter		Fits 924056, 71		
724020 Homeowner's Kit		Fits 924056, 71	79443B	PM-24-82
724028 Air Cleaner & Adaptor		Fits 924056, 71	79595A	PM-24-82

*724028 Required for Model 924056 and 924071 When Using Brush or Mower Attachments

1979-1980, 1981, 1982, 1983 MODELS

CAUTION: WET SNOW TENDS TO INCREASE THE CHANCE OF CLOGGING AND TO DECREASE THE DISCHARGE DISTANCE. IF A CLOG OCCURS, STOP ENGINE, REMOVE SPARK PLUG WIRE, AND TURN DISCHARGE CHUTE TO RIGHT. POKE OUT WET SNOW WITH A BROOM HANDLE, STICK, OR SIMILAR OBJECT. IF AN OBSTRUCTION BECOMES LODGED IN IMPELLER OR AUGER USE THE BROOM HANDLE (NOT YOUR HANDS!) TO PUSH AND ROTATE THE IMPELLER BACKWARDS (COUNTER-CLOCKWISE VIEWED FROM OPERATOR POSITION) AND CLEAR CLOG. IF THIS IS UNSUCCESSFUL, REMOVE DISCHARGE CHUTE FOR ACCESS TO CLOG.

SHEAR BOLT REPLACEMENT

Occasionally an object may enter the collector and jam the rakes. When this occurs, the shear bolts securing the rakes to the shaft will break and allow the rake to turn freely on the shaft preventing damage to the gear drive. When this happens, turn off the engine, remove wire from spark plug, remove the broken shear bolt and replace with a new ARIENS shear bolt. Use of any other type of shear bolt may result in severe damage to the machine. USE ONLY ARIENS SHEAR BOLTS FOR REPLACEMENT. Lubricate rakeshaft.

RUNNERS AND SCRAPER BLADE — FIGURES 1 & 13

The runners on each side of the blower housing, and the scraper blade, along the bottom of the housing, are all adjustable to suit conditions. Raising or lowering the runners controls the distance the scraper blade is held above the surface being cleared. Runners are adjusted by loosening the two nuts securing each runner. Move the runner to the desired position and retighten the nuts. Be sure to adjust both runners to the same height to keep blower housing level. Uneven runners make the machine difficult to steer and will result in an uneven clearing job.

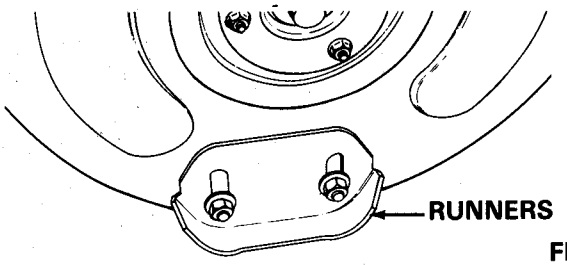


FIGURE 1

Adjustment of the runners is critical to good cleaning. If the machine is to be used on a gravel surface lower the runners so the blower will not pick up gravel then after the remaining snow is packed down, the runners may be raised for close scraping. On smooth concrete or blacktopped surfaces, the runners may be raised so the scraper blade rests on the surface and scrapes clean.

The runners may be removed from the blower housing and re-installed in upside-down position to reduce contact area and thus reduce tendency to ride up when clearing hard-packed snow.

The scraper is adjustable so it may be lowered to compensate for wear. If the blade is allowed to wear down too far the blower housing may be damaged.

ATTACHMENT CLUTCH ADJUSTMENT — DIAG. C

The Attachment Clutch is adjusted by connecting the chain to the spring just below the attachment clutch rod. Connect the spring to a chain link so the chain is snug but so the attachment idler (Figure 8) drops away from the belt with the lever all the way up.

TRACTION CLUTCH ADJUSTMENT — FIGS. 2,3,4

When making friction wheel adjustments, first check position of the clutch handle, as this affects the pressure being applied to the friction wheel. Adjust clutch handle so it is positioned as shown in Figure 2 or 3.

With clutch handle position correct, proceed with the adjustment of the friction wheel as described in following section.

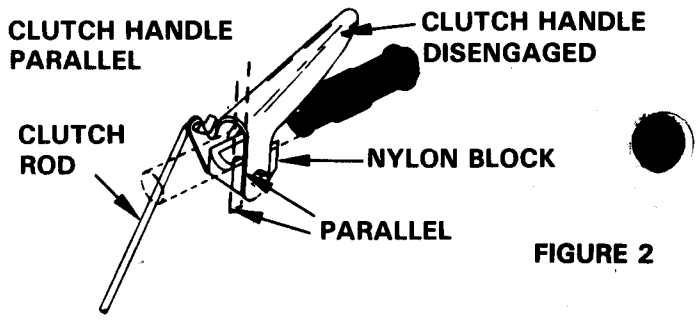


FIGURE 2

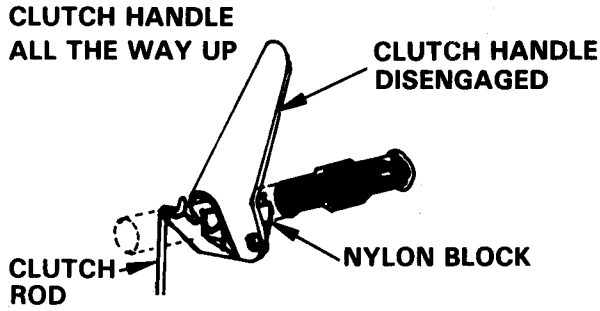


FIGURE 3

MODELS 924016 & UP

"Lock in" the differential. A drive disc adjustment is provided to compensate for wear on the friction wheel. If slippage occurs when the traction clutch is engaged, tighten the drive disc adjustment. This adjustment is accessible without removing the bottom cover. See Figure 4 and Diagram A.

Adjust as follows: Place Speed Selector in First. Tip machine forward on blower housing. Tighten the adjustment nut while turning the wheels until the wheels

begin to drag. When wheels begin to drag, the clutch lever should be engaged and released to realign clutch linkage prior to adjustment. It may be necessary to repeat this procedure until proper adjustment is obtained. Turn nut back three turns. Wheels should then turn easily.

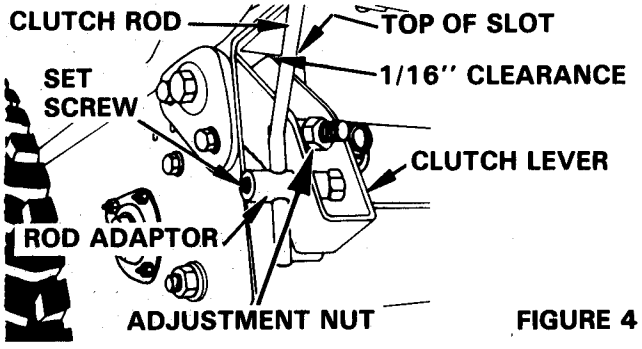


FIGURE 4

CHUTE CRANK ADJUSTMENT — FIG. 5 & DIAG. C

In the event the chute crank fails to rotate smoothly, loosen the nut securing the worm clevis to the bracket. This hole in the bracket is slotted to permit adjustment. Position the worm so there is a little clearance between worm and the gear teeth on the blower. Tighten the nut. Rotate the discharge chute through its full travel to see that it turns easily. Readjust if required. Lubricate as described in "LUBRICATION" section. Model 924071: Tension on chute crank may be adjusted to prevent Discharge Chute from rotating without crank. Tighten the chute crank adjustment nuts on the end of the crank to put increased tension on the washers and wave washers.

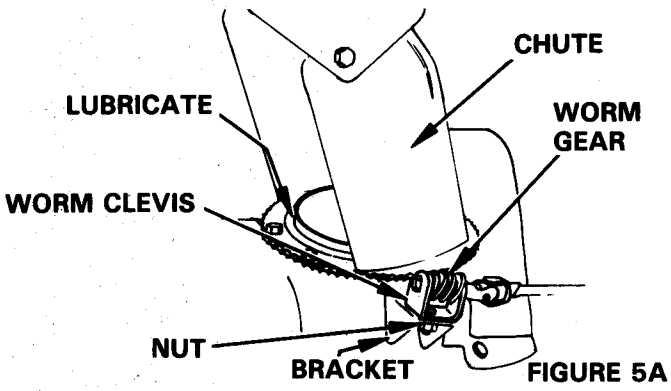


FIGURE 5A

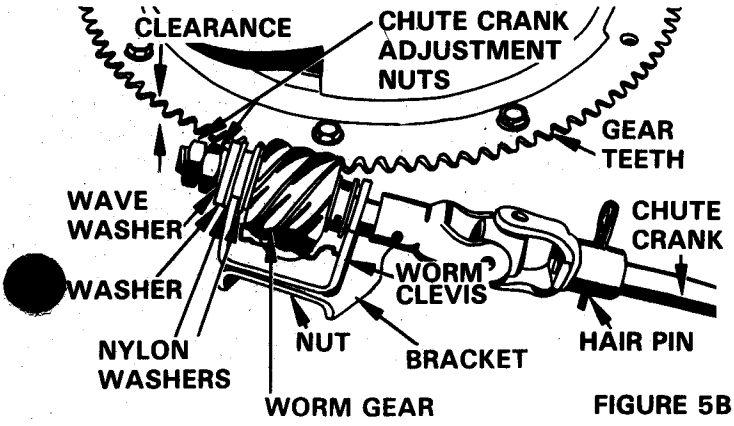


FIGURE 5B

INFLATE TIRES

Tires should be inflated to 12 to 20 PSI. If tire chains are used, a pressure of 20 PSI is recommended.

BLOWER HOUSING REMOVAL AND BELT REPLACEMENT

CAUTION: SINCE REPLACING THE BELTS WILL INVOLVE TURNING THE ENGINE OVER WITH THE STARTER, AND THE ENGINE MIGHT ACCIDENTALLY START RESULTING IN INJURY, THE SPARK PLUG WIRE MUST BE DISCONNECTED DURING THIS PROCEDURE.

The traction drive belt and the blower drive belt are both accessible by removing the blower housing as follows:

1. Remove the hair pin cotter in the chute crank assembly. Separate the chute crank.

2. Remove the two flanged whizlock screws securing the belt guard to the tractor. Remove the belt guard.

NOTE: TIPPING THE TRACTOR BACK ON THE HANDLEBARS WHEN SEPARATING THE UNITS MAY RESULT IN BENDING THE BOTTOM COVER. TO AVOID THIS SITUATION, EITHER TIP THE UNIT UP ON THE BLOWER HOUSING AND REMOVE THE BOTTOM COVER BEFORE SEPARATING THE UNITS; OR SUPPORT THE HANDLEBARS SO THE TRACTOR DOES NOT TIP ALL THE WAY OVER; THEN LIFT OFF THE BLOWER HOUSING.,

3. Remove the screws on each side that secure the blower housing to the frame. As the blower housing and tractor are tipped apart, roll the belt off the engine sheave between the sheave and belt finger. This can be easily done by pulling the recoil starter rope to rotate the engine sheave. With the belt disconnected, the blower housing may then be lifted from the frame.

A NOTE ABOUT ARIENS BELTS

ARIENS BELTS are individually engineered to the highest standards of material quality, design, and construction including special cording locations for strength and stability. This assures that the belts will deliver maximum performance and durability for each product's specific applications.

The selling price of **ARIENS BELTS** reflects these quality features. Our name and number stamped on your replacement belt is your assurance of receiving the quality you are paying for.

The drive belt and the attachment drive belt are both accessible by removing the blower housing as follows:

REPLACEMENT OF THE BLOWER DRIVE BELT

The Sno-Thro blower drive belt is on the sheave on the blower housing. To replace this belt, hold the impeller brake away from the belt and slip the belt from the sheave. See Figure 6 and Diagram C.

Replace the belt by slipping it into position on the sheave; positioning the brake shoe on the belt.

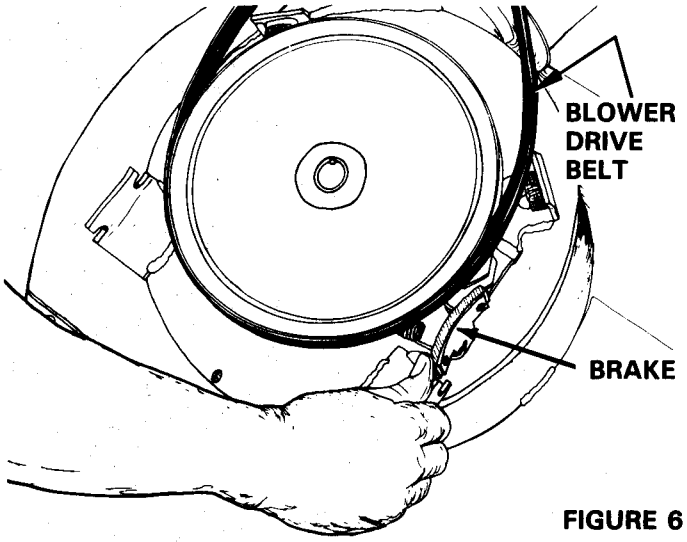


FIGURE 6

REPLACEMENT OF TRACTION DRIVE BELT — FIGURE 7 AND DIAGRAM A

CAUTION: SINCE REPLACING THE BELTS WILL INVOLVE TURNING THE ENGINE OVER WITH THE STARTER, AND THE ENGINE MIGHT ACCIDENTALLY START RESULTING IN INJURY, THE SPARK PLUG WIRE MUST BE DISCONNECTED DURING THIS PROCEDURE.

The drive belt is held in place on the sheaves by an idler pulley. To free the belt, the idler can be pulled from the belt and the belt removed from the sheave. Activate traction clutch to gain clearance. It may be necessary to pull back blower idler arm clevis pin for additional clearance.

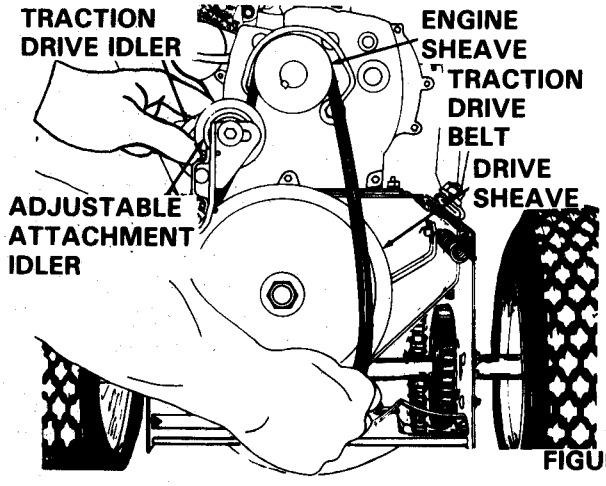


FIGURE 7

To replace the belts, position on the engine sheave first, then on the drive sheave. Position the idler carefully on the belt.

With the belt in position and the idler in place, check the belt alignment. The engine sheave and the traction sheave must align with one another WITH THE TRACTION CLUTCH ENGAGED. If the sheaves are not properly aligned, loosen the setscrews on the engine sheave and align the sheaves. Re-tighten the setscrews. Recheck the belt alignment WITH THE TRACTION CLUTCH ENGAGED.

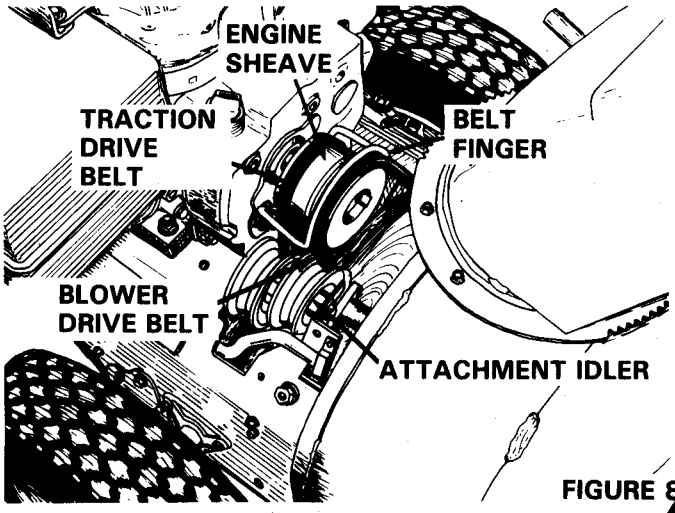


FIGURE 8

REPLACEMENT OF BLOWER HOUSING — FIGURE 8

CAUTION: SINCE REPLACING THE BELTS WILL INVOLVE TURNING THE ENGINE OVER WITH THE STARTER, AND THE ENGINE MIGHT ACCIDENTALLY START RESULTING IN INJURY, THE SPARK PLUG WIRE MUST BE DISCONNECTED DURING THIS PROCEDURE.

Position the blower housing on the rod in the tractor frame and secure as follows:

1. Tip the blower and tractor together. Hold the attachment drive belt up as the units are tipped together. Secure with two screws into the frame. As the cap screws are tightened, hold up on the handlebars to be sure the two units are secured together.

2. Roll the blower drive belt on to the engine sheave. Pull the recoil starter rope to turn the engine sheave and roll the belt into place under the belt finger.

3. Check the belt finger spacing. There should be 1/8 inch clearance all around the belt finger and belt with the attachment clutch engaged. Readjust the belt finger if required.

4. Check the sheave alignment with the blower drive belt in place. Readjust the position of the blower sheave as required to align the sheaves. Be sure the brake pad aligns with the blower sheave.

5. The idler on the blower drive belt is adjustable. If the belt slips, adjust the idler in the slot in the idler arm to apply more tension to the belt. Belt should declutch when attachment clutch is disengaged.

6. Replace the belt guard and chute crank assemblies. Readjust the chute crank as described in the paragraph above. Replace the spark plug wire.

REPLACEMENT OF FRICTION WHEEL — FIGURE 9

1. Tip the machine up on the blower housing and brace securely. Remove two top screws and loosen the other two securing the bottom cover. Remove the cover.

2. Place the Speed Selector in "FIRST" position. Depress the Traction Clutch Lever to hold the friction wheel while the five bolts securing the friction wheel to the hub are loosened. Remove the five bolts, shift to "THIRD" position and disconnect the shift link.

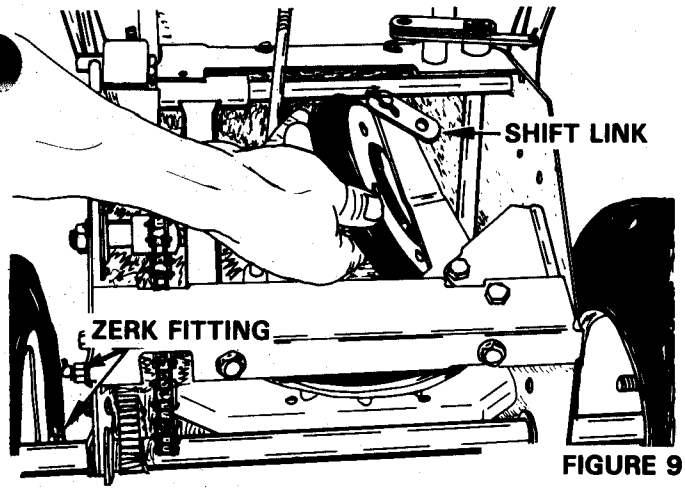


FIGURE 9

3. Position a new friction wheel on the hub and replace the five bolts. Tighten these bolts to 8-10 foot pounds with a torque wrench. Replace the shift links.

4. Replace the bottom cover. Readjust the drive disc as described in the "TRACTION CLUTCH ADJUSTMENT" section. See also Diagram A.

DRIVE CHAIN ADJUSTMENT — MODELS 924050, 52, 54, 56, 71, 72 & 73 — FIG. 10 & DIAG. A

If Sno-Thro is difficult to push because of tight or interfering drive chains, proceed as follows:

1. Stand unit up on blower housing and remove bottom cover.

2. Chain tension is adjusted by loosening the two nuts on the 24364 Reduction Shaft. Adjust reduction sprocket up or down in slot to obtain proper tension (chain should be snug). Retighten both nuts. Torque to 170-180 inch lbs.

3. Chain interference with the 3085 Bearing Flange on 24045 Hex Shaft can occur if there is no 64058 Washer between the 10276 Sprocket and 54079 Bearing. Make sure washer is installed.

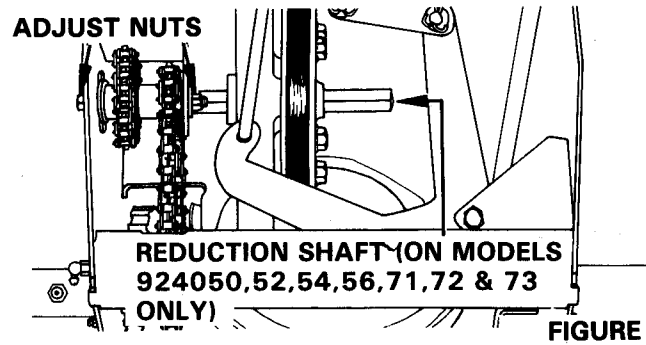


FIGURE 10

NOTE: CHECK INTERLOCK MECHANISM TO ENSURE PROPER OPERATION AS FOLLOWS:

1. Check both clutches to be sure they operate freely without binding.

2. Release traction clutch lever ("UP" position). Pull bellcrank down until slider is at end of slot. See Figure below. Secure clevis to traction clutch rod at this position with setscrew.

3. Engage both clutch levers ("DOWN" position). Adjust clevis on attachment clutch rod to where it clears roller in slider by 1/16". Secure clevis with setscrew at this position. See Figure below.

4. Release clutch levers. Check latching of interlock for proper operation.

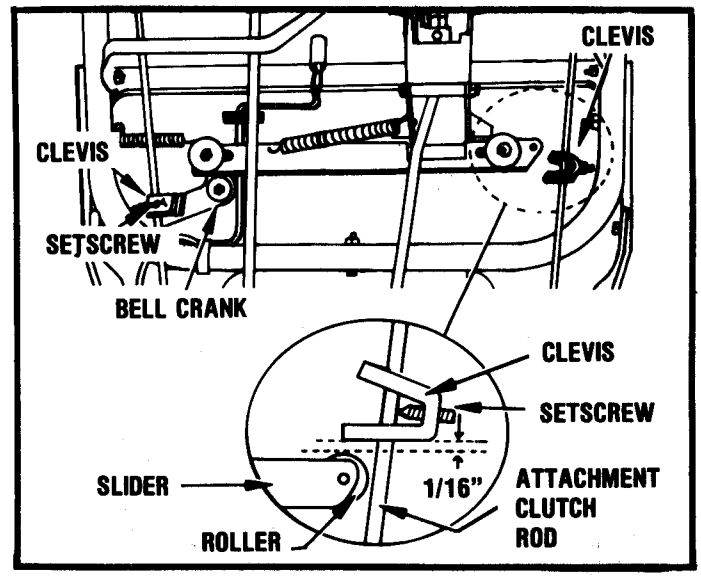


FIGURE 11

LUBRICATION

ENGINE

Fill Crankcase with oil as recommended below. Refer also to Engine Manufacturer's Instructions supplied with the product. Check oil level before each use and change oil regularly according to Engine Manufacturer's Instructions.

924000 SERIES EXCEPT 924056 AND 924071

SEASON	ENGINE OIL RECOMMENDATIONS
SUMMER: (Above 32° F)	SAE 30W or Substitutes: 10W30, 10W40
WINTER: (Below 32° F)	SAE 5W20, 5W30 or Substitute: SAE 10W

Crankcase capacity is 1 1/8 pints for Models 924046, 48 and 58, 1½ pints for Models 924050, 52, and 54. Trac-Team Tractor Crankcase capacities are 1 1/8 pints for Model 924049 and 1½ pints for Model 924051

MODELS 924056 AND 924071

SEASON	ENGINE OIL RECOMMENDATIONS
SUMMER: (Above 32°F)	SAE 30W or Substitutes: SAE 10W30, 10W40
WINTER: (Below 32°F)	SAE 5W20, 5W30 or Substitute: SAE 10W

Crankcase capacity is 3 pints.

SNO-THRO TRACTION DRIVE — FIGURE 12

At the start of each operating season, grease gears, pinion sprocket, hex and axle shaft as indicated in Figure 12. Put two or three drops of oil on the Speed Selector linkage and other linkage points.

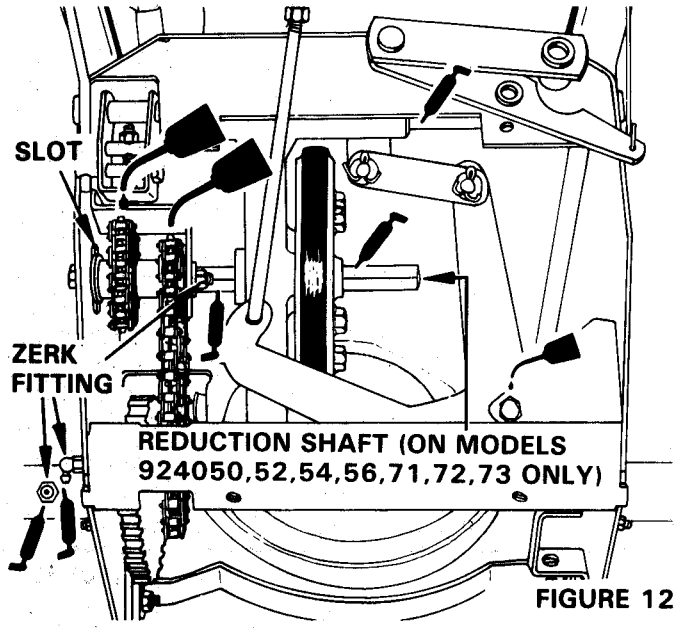


FIGURE 12

CAUTION: DO NOT ALLOW GREASE OR OIL TO COME IN CONTACT WITH FRICTION WHEEL, DRIVE DISC, OR BELTS. DO NOT APPLY OIL TO A HOT AREA.

SNO-THRO UNIT — FIGURES 13 & 14

Grease rake shaft at beginning of season, or each time a shear bolt is replaced. At the end of the season, remove shear bolts, use a grease gun on zerk fittings to grease rake shaft, turn rakes on shaft several times and replace shear bolts. See Figure 13. Use Ariens Multi-Purpose grease (Part No. 000150).

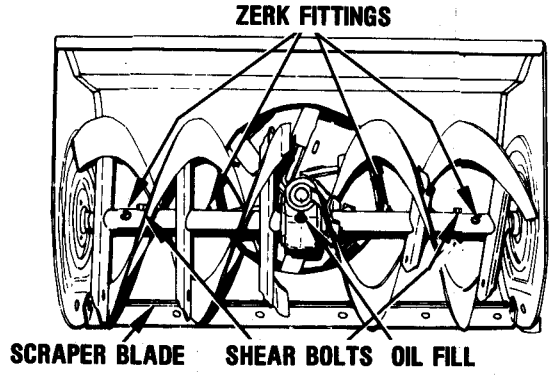


FIGURE 13

Oil the discharge chute with several drops of oil. See Figure 14.

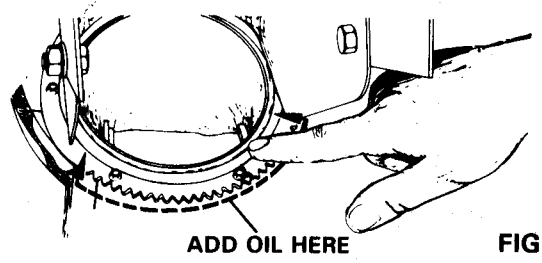


FIGURE 14

MODEL 924052, 54, 56, 71 & 73 GEARCASE — FIGURE 15A

Check oil level periodically. Oil level must be up to oil fill hole. Change oil every 25 hours or once each season which ever comes first. Fill with Ariens Special L-2 Gear Lubricant (Part No. 000080). Use approximately 5 oz.

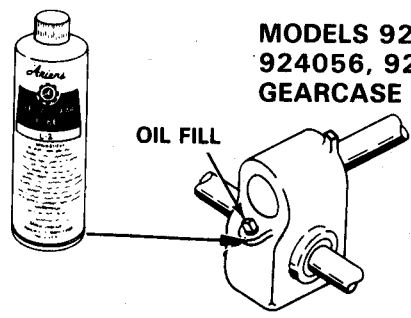
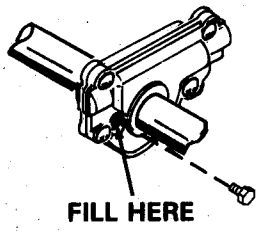


FIGURE 15A

MODELS 924046, 48, 50, 58 & 72 GEARCASE

The blower gear case is lubricated with Ariens Liquid Grease (Part No. 000070). This grease will not flow at lower temperatures. It is therefore difficult to check the lubricant level. Best method for checking is to place the unit in a warm location overnight. This allows the grease to flow to level. Check the lubrication by removing the filler plug on the side of the gear case just above the left auger shaft. Lubrication should be even with the hole with the machine sitting level. It may be necessary to insert a wire into the hole to check level. The unit will not be damaged by over lubricating.



MODELS 924046, 48, 50, 58 & 72 GEARCASE FIGURE 15B

MODELS 924042 & 44 GEARCASE

Check oil level periodically. Oil level must be up to oil fill hole. Change oil every 25 hours or once each season which ever comes first. Fill with Ariens Special L-2 Gear Lubricant. Approximately 8 oz.

MODELS 924036, 38, 39 & 40 GEARCASE

The blower gearcase is lubricated with Ariens Liquid Grease (Part No. 000070). This grease will not flow at lower temperatures. It is therefore difficult to check the lubricant level. Best method for checking is to place the unit in a warm location overnight. This allows the grease to flow to level. Check the lubrication by removing the filler plug on the side of the gear case just above the left auger shaft. Lubrication should be even with the hole with the machine sitting level. It may be necessary to insert a wire into the hole to check level. The unit will not be damaged by over lubricating.

MODELS 924026, 28 & 32 GEARCASE

Check the oil level in the snow rotor gearcase. Tip the machine back on the handlebars. Remove the filler and drain plugs. Fill with Ariens Gear Oil (SAE MP90) through on the filler hole until it runs out the drain. Replace drain and filler plugs.

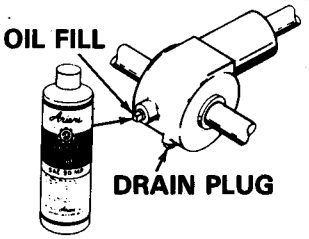


FIGURE 16

MODEL 924026, 924028 AND 924032

STORAGE

NOTE: THESE INSTRUCTIONS WILL ASSIST YOU IN PREPARATION BEFORE AND AFTER STORAGE.

WARNING: NEVER STORE PRODUCT IN AN ENCLOSED AREA WHERE FUEL FUMES MAY REACH AN OPEN FLAME, SPARK, OR PILOT OF FURNACE, ETC. DRAIN FUEL OUTDOORS, AWAY FROM OPEN FLAME, AND USE ONLY AN APPROVED FUEL CONTAINER.

ENGINE

Refer to Engine Manufacturer's Instructions supplied with the product.

If product is to be un-used for thirty days or more, prepare as follows:

1. Run engine until fuel tank is empty and engine stops due to lack of fuel.
2. Be sure all fuel is removed from fuel tank (as well as any contamination). The carburetor and fuel tank must be clean and dry to prevent gum deposits from forming and the engine from malfunctioning.
3. If gasahol has been used, complete the steps above, then put a small amount of regular gasoline into the fuel tank and repeat the steps.
4. Remove all oil, grease, dirt and debris from the engine.
5. Change the engine oil. See "LUBRICATION" section of this manual.
6. Check and, if necessary, clean the air filter and fuel filter.
7. For extra protection remove the spark plug and pour one tablespoon of oil into the cylinder. Turn engine over manually (two revolutions of crankshaft.)
8. Regap the spark plug. See "SPECIFICATIONS" section of this manual. Replace spark plug if required.

GENERAL

Store product in a cool, dry place.

Inspect product for visible signs of wear, breakage or damage. Order any parts required and make necessary repairs to avoid delays when beginning use again.

Clean the product thoroughly. Touch up all unpainted and exposed areas with paint to avoid rust.

NOTE: ARIENS RECOMMENDS USING A HIGH QUALITY PRIMER AS A BASE FOR THE TOUCH-UP PAINT. THE TOUCH-UP PAINT WILL NOT PROVIDE THE HIGH GLOSS FINISH OF ORIGINAL BAKED-ON PAINT. COLOR MAY VARY SLIGHTLY, ALSO.

CAUTION: STOP THE ENGINE WHENEVER YOU LEAVE THE OPERATING POSITION, BEFORE UNCLOGGING THE BLOWER/IMPELLER HOUSING OR DISCHARGE GUIDE, AND WHEN MAKING REPAIRS, ADJUSTMENTS OR INSPECTIONS. WHEN CLEARING, REPAIRING, OR INSPECTING, MAKE CERTAIN THE BLOWER/IMPELLER AND ALL MOVING PARTS HAVE STOPPED. DISCONNECT THE SPARK PLUG WIRE.

IMPORTANT: CHECK FOR FROZEN IMPELLER (FAN) BEFORE STARTING ENGINE. IF FAN IS FROZEN FREE IT BY THAWING THE SNO-THRO IN A HEATED BUILDING. THE BEST METHOD IS TO PREVENT FREEZING BY ALLOWING THE ENGINE TO RUN FOR A SHORT TIME AFTER SNOW THROWING TO ALLOW SLUSH AND WATER TO BLOW OUT.

CAUTION: WET SNOW TENDS TO INCREASE THE CHANCE OF CLOGGING AND TO DECREASE THE DISCHARGE DISTANCE. IF A CLOG OCCURS, STOP ENGINE, REMOVE SPARK PLUG WIRE, AND TURN DISCHARGE CHUTE TO RIGHT. POKE OUT WET SNOW WITH A BROOM HANDLE, STICK, OR SIMILAR OBJECT. IF AN OBSTRUCTION BECOMES LODGED IN IMPELLER OR AUGER USE THE BROOM HANDLE (NOT YOUR HANDS!) TO PUSH AND ROTATE THE IMPELLER BACKWARDS (COUNTER-CLOCKWISE VIEWED FROM OPERATOR POSITION) AND CLEAR CLOG. IF THIS IS UNSUCCESSFUL, REMOVE DISCHARGE CHUTE FOR ACCESS TO CLOG.

CURRENT MODELS

WARNING: FAILURE TO FOLLOW ALL INSTRUCTIONS FOR ASSEMBLY AND PRE-SERVICE COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO THE SNO-THRO. CHECK AND TEST THE FUNCTION OF ALL CONTROLS BEFORE STARTING ENGINE AND BE SURE TO FILL ENGINE WITH OIL.

WARNING: ALL ASSEMBLY AND ADJUSTMENT PROCEDURES ARE TO BE MADE WITH ENGINE STOPPED AND SPARK PLUG WIRE DISCONNECTED.

NOTE: MAKE SURE ALL SAFETY DEVICES AND GUARDS ARE IN POSITION AND OPERATING PROPERLY. READ THE OWNER'S MANUAL AND ITS INSTRUCTIONS FOR SAFE OPERATION BEFORE USING UNIT.

NOTE: FOR MODELS 924071 & 924056, SEE "ENGINE, MODEL 924071" SECTION PRIOR TO ASSEMBLY.

GENERAL

All hardware and parts required for assembly are shipped in the parts bag or are located, in place, on the machine. The upper handlebars and panel are assembled at the factory with the two clutch rods and interlock system in place and adjusted. The lower handlebars must be installed. The snow head and tractor are shipped assembled with lower shift rod in place. Attachment clutch rod is in place on handle panel assembly.

36" and 32" Models are shipped with the runners and discharge chute detached and they will have to be installed.

NOTE: FOR THROTTLE CONTROL INSTALLATION OF MODEL 924056 AND EARLIER PRODUCTION MODELS, REFER TO FIGURE 18 AND ROUTE THE THROTTLE CONTROL (18) UNDER HANDLEBAR AND INTO POSITION IN PANEL. SECURE WITH MACHINE SCREWS (91), KEPS NUTS (22). INSTALL KNOB (17) ON THROTTLE LEVER.

HANDLEBAR — FIGURE 18

Install the lower handlebars on the frame using the studs and hardware in place on the frame. (Leave the hardware loose on the studs until the upper handlebars are installed). Be sure to install the chute crank bracket on the left rear stud of handlebar. See Step 10.

Install the upper handlebar and panel on the lower handlebars. Use a 5/8" carriage bolt and locknut in each of the top holes, and a 1½" carriage bolt and locknut in each of the lower holes. With everything in place, tighten all handlebar hardware.

NOTE: SEE REMOTE CONTROL DEFLECTOR INFORMATION FOR MODEL 924071, PAGES 12 AND 13, BEFORE SECURING UPPER HANDLE ON THAT MODEL.

SPEED SELECTOR — FIGURE 18

Place the shift lever in REVERSE position. Pull up on the lower shift rod which is already installed in the frame.

Hold the lower shift rod up while screwing the upper rod in place. Turn the upper rod into the lower until the end of the upper rod lines up with the hole in the shift handle. Install the upper rod in the shift handle and tighten the locknut joining the upper and lower shift rods.

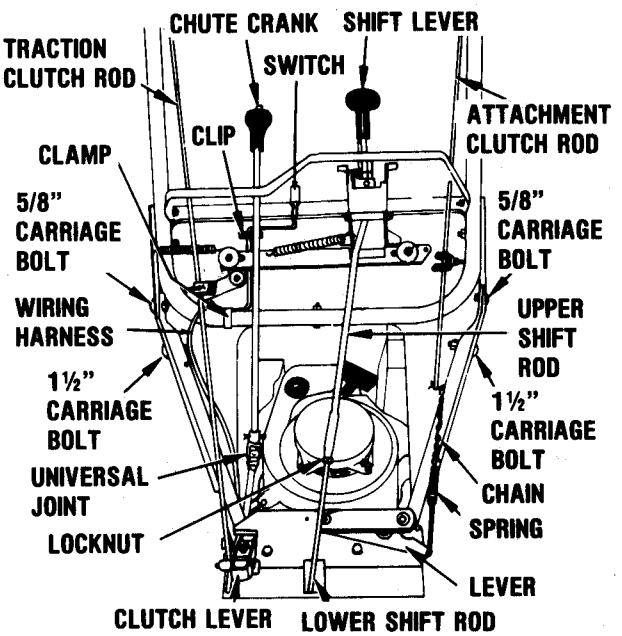
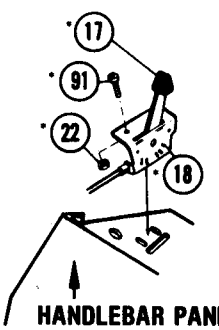


FIGURE 18A



*NOTE: THROTTLE CONTROLS ON MODEL 924056 AND EARLIER PRODUCTION MODELS ARE LOCATED ON THE HANDLEBAR PANEL. BECAUSE OF THIS THE PARTS (17, 18, 22, 91) ABOVE ARE REQUIRED. PARTS ARE LISTED BELOW:

17 — KNOB, 75019
18 — THROTTLE CONTROL, 69105 (MODELS 924046, 924048), 69124 (MODELS 924050, 51, 54, 56)
22 — KEPS NUT, 65051, (2)
91 — MACHINE SCREW, 61057 (2)

FIGURE 18B

ATTACHMENT CLUTCH ROD — FIGURE 18

The attachment clutch rod is installed in the upper handlebars but the chain must be hooked to the spring on the clutch bell crank. Connect the spring to a link in the chain that will keep the chain snug without pulling up on the bell crank. The attachment clutch idler (Figure 8) must tighten up on the belt when the lever is down and must fall away from the belt when the lever is upright. Adjust chain as required.

TRACTION CLUTCH ADJUSTMENT — FIGURES 18 & 19

a. The clutch lever is already positioned on the handlebar and the traction clutch rod is in place in the handle. Check to be sure that the clutch lever is free to fall down on the grip.

b. Insert the lower end of the traction clutch rod into the rod adapter.

c. Position the clutch lever so that it is all the way up. See Figure 19. Tighten the traction clutch rod in the rod adapter with the setscrew. With handle down, clutch lever should come within 1/16" of top of slot in frame. Adjust as required. Place Speed Selector in First. Tip machine forward on blower housing. Tighten the adjustment nut while turning the wheels until the wheels begin to drag. When wheels begin to drag, engage and release clutch lever to check drag before adjusting. Back off 3 turns. Wheels should then turn easily. See Figure 19.

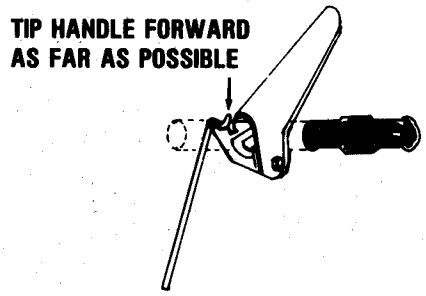


FIGURE 19A

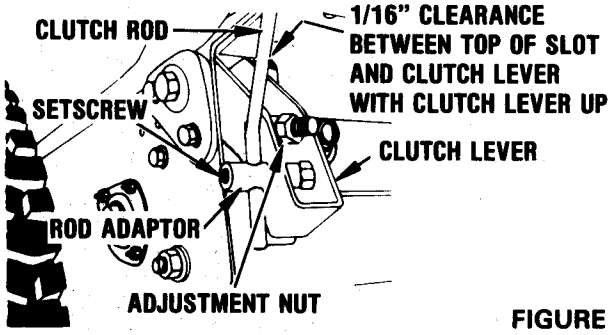


FIGURE 19B

KEY SWITCH CONNECTION — FIGURE 18

The key switch is factory installed in the handlebar panel and the wiring is connected to the engine. Route the wiring harness up the inside of the panel, alongside the lower handlebar. Position wire in clip. Install clamp as shown in Figure 18. Connect wire harness to switch. Wires can be connected to either terminal.

MECHANICAL INTERLOCK — FIGURE 20

CAUTION: CHECK INTERLOCK MECHANISM TO ENSURE PROPER OPERATION AS FOLLOWS. FAILURE OF INTERLOCK OPERATION COULD RESULT IN DANGER TO OPERATOR.

a. Check both clutches to be sure they operate freely without binding.

b. Release Traction Clutch Lever ("UP position). Pull bell crank down until slider is at end of slot. See Figure 20. Secure clevis to traction clutch rod at this position with setscrew.

c. Engage both clutch levers ("DOWN position). Adjust clevis on attachment clutch rod to where it clears roller in slider by 1/16". Secure clevis with setscrew at this position. See Figure 20.

d. Release clutch levers. Check latching of interlock for proper operation.

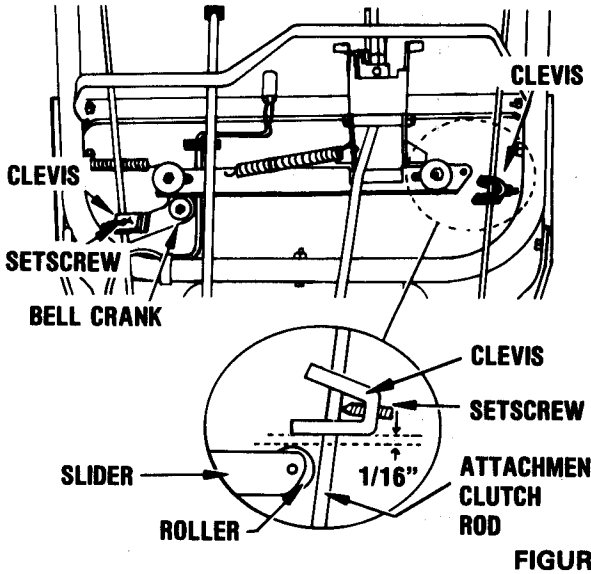


FIGURE 20

DISCHARGE CHUTE (32" MODELS)

The Discharge Chute is shipped with the four mounting clips attached to the chute. Remove the clips and hardware. Position the discharge chute on the blower housing. Secure with the clips and hardware. Be sure the chute rotates freely.

DEFLECTOR — FIGURE 21

The Deflector is installed on the Discharge Chute but must be raised into operating position. Remove the hardware. Rotate Deflector up into operating position. Reinstall the hardware.

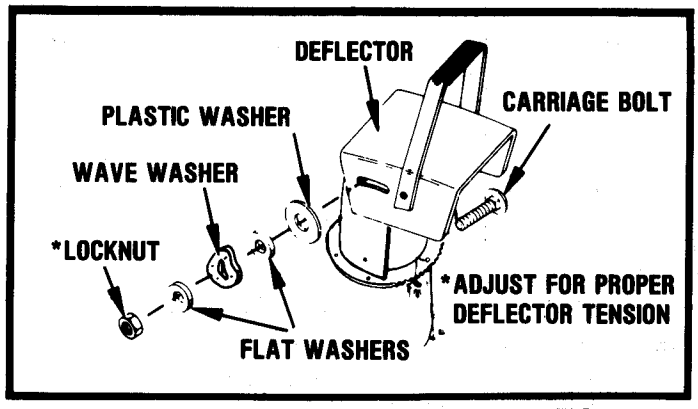


FIGURE 21

REMOTE CONTROL DEFLECTOR, MODEL 924071 — FIGURE 22

Install the bracket of the Remote Control Deflector assembly to the upper left portion of the handlebar

panel with screws and nuts securing the upper handlebars to the lower handlebar and panel assembly.

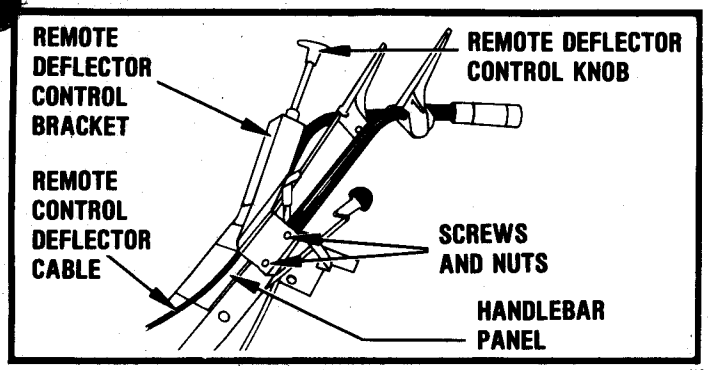


FIGURE 22

DISCHARGE CHUTE & DEFLECTOR CABLE, MODEL 924071 — FIGURE 23

The Deflector and discharge chute are assembled and shipped with the four mounting clips attached to the chute. Remove the clips and hardware. Position the discharge chute on the blower housing. Secure with the clips and hardware. Be sure the chute rotates freely. Route remote deflector cable through the retainer mounted to the engine as shown in Figure 23A. Install deflector cable as shown in Figure 23B to Deflector and discharge chute. Use jam nuts on cable to secure cable to chute bracket and cotter pin to attach cable to bracket on deflector.

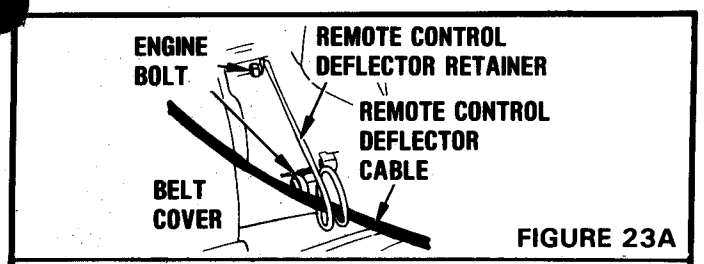


FIGURE 23A

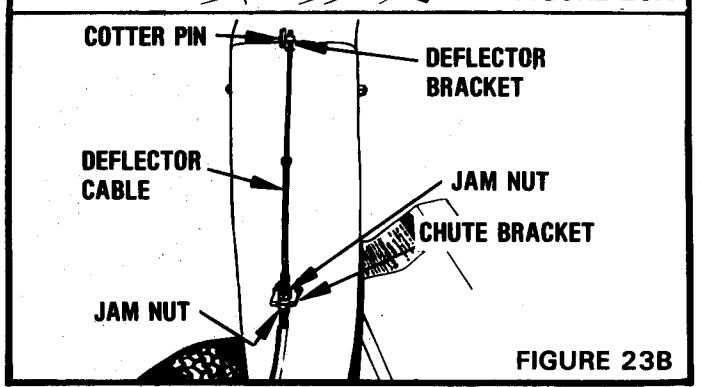


FIGURE 23B

FIGURE 23

CHUTE CRANK — FIGURES 18 & 24

The chute crank is packed separately in the carton. The intermediate shaft, universal joints and chute crank bracket are in place on the machine. The chute crank bracket should be installed on the rear, left hand stud at the time the handlebars are installed. Insert the chute crank down into the hole in the handlebar panel and connect to the universal joint on the intermediate shaft with the hairpin cotter provided. On all models, after completing the chute crank connection, check the alignment of worm and chute by rotating the discharge chute through its full travel. Chute should rotate easily. If not, reposition worm as required.

RUNNERS (32" MODELS ONLY) — FIGURE 24

Install runners on each side of the blower housing. Use longer carriage bolts (62013) in the rear holes, shorter carriage bolts (62010) in the front holes. Use a washer (64002) and locknut (65039) on each bolt outside the housing. Adjust the runners to equal height on each side. See "ADJUSTMENTS-MAINTENANCE" section of this manual.

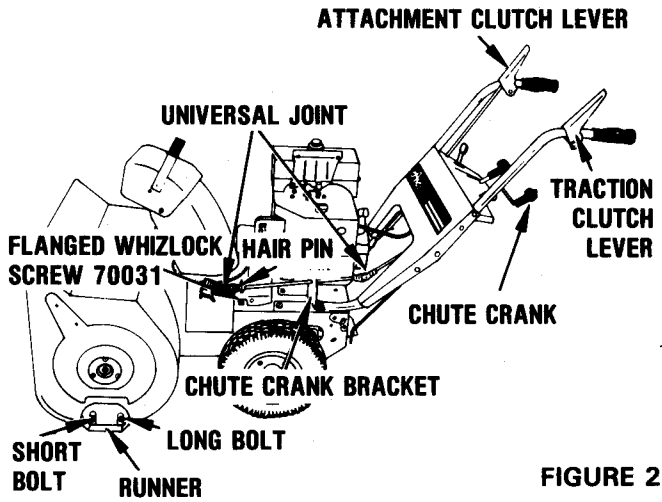


FIGURE 24

ENGINE, MODELS 924071 & 924056 — FIGURE 25

1. After installing handlebars, remove oil drain plug from the right hand side of engine base. Install reducer and elbow and tighten until elbow outlet is toward rear of machine. Install drain hose with clamp onto elbow. See Figure 25. Remove plastic cover on oil fill tube and discard.

2. Add oil according to engine manufacturer's instructions provided with the Sno-Thro. After filling crankcase, insert dipstick into the oil fill tube. See Figure 25. The dipstick is shipped with loose parts in the parts container.

3. Model 924071: Install throttle control knob from parts bag by screwing it onto the rod protruding through the top of the engine.

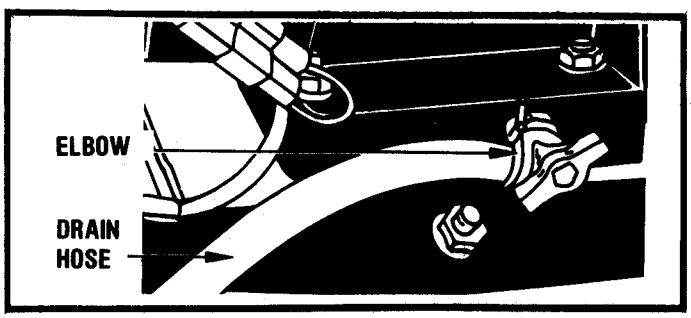


FIGURE 25

BLOWER GEAR CASE

On 32" & 36" Models 924054, 924056, 924071 & 924073: Check the oil level in the auger gear case. Oil level must be even with the oil filler hole. Fill with Ariens Special L-2 Gear Lubricant. Replace the filler plug. See "LUBRICATION" section of this manual.

On 24" Models 924046, 924048, 924050 and 924072: The blower gear case is factory lubricated and should require no lubrication by the dealer. See "LUBRICATION" section of this manual.

TIRE PRESSURE

Models except 924056 and 924071: For operation, adjust tire pressure to 12 to 20 PSI. If tire chains are used, a pressue of 20 PSI is recommended for proper operation.

Models 924056 and 924071 Only: Tires have been under inflated for shipping purposes. For operation, increase tire pressure to 12 to 20 PSI. If tire chains are used, a pressure of 20 PSI is recommended for proper operation.

BELT ADJUSTMENT

Check the position of the belt fingers on the engine sheave and the alignment of the sheaves. Adjust according to "REPLACEMENT OF TRACTION DRIVE BELT" section of this manual.

DRIVE CHAIN ADJUSTMENT

If 32" Models 924050, 52, 54, 56, 71 or 73 are difficult to push becuase of tight or interferring drive chains, readjust as described in "DRIVE CHAIN ADJUSTMENT" section of this manual.

NOTE: THIS PRODUCT IS EQUIPPED WITH AN INTERNAL COMBUSTION TYPE ENGINE. DO NOT USE UNIT ON OR NEAR ANY UNIMPROVED, FOREST-COVERED OR BRUSH-COVERED LAND UNLESS THE EXHAUST SYSTEM IS EQUIPPED WITH A SPARK ARRESTER MEETING APPLICABLE LOCAL, STATE OR FEDERAL LAWS. A SPARK ARRESTER, IF IT IS USED, MUST BE MAINTAINED IN EFFECTIVE WORKING ORDER BY THE OPERATOR. SEE YOUR ARIENS DEALER OR ENGINE MANUFACTURER'S SERVICE CENTER.

HEADLIGHT INSTALLATION MODELS 924071, 72 & 73 – FIGURE 26

The bracket (24351) is fastened to the right handlebar using the two cap screws (59062) and two washers (64044) (washers not required on Models 924034 and 924044) supplied with the kit. Adjust the bracket so that its top surface is parallel to the ground and tighten the hardware.

Install the headlight on the bracket with the hex nut supplied.

Run the wire harness and connector down behind the name-plate and along the handlebar. Plug the connector into the connector for the alternator on the engine. Secure to handlebar tube with the (2) clamps (69012) supplied with the kit. The connector on the engine will be found on the right side just under the fuel tank.

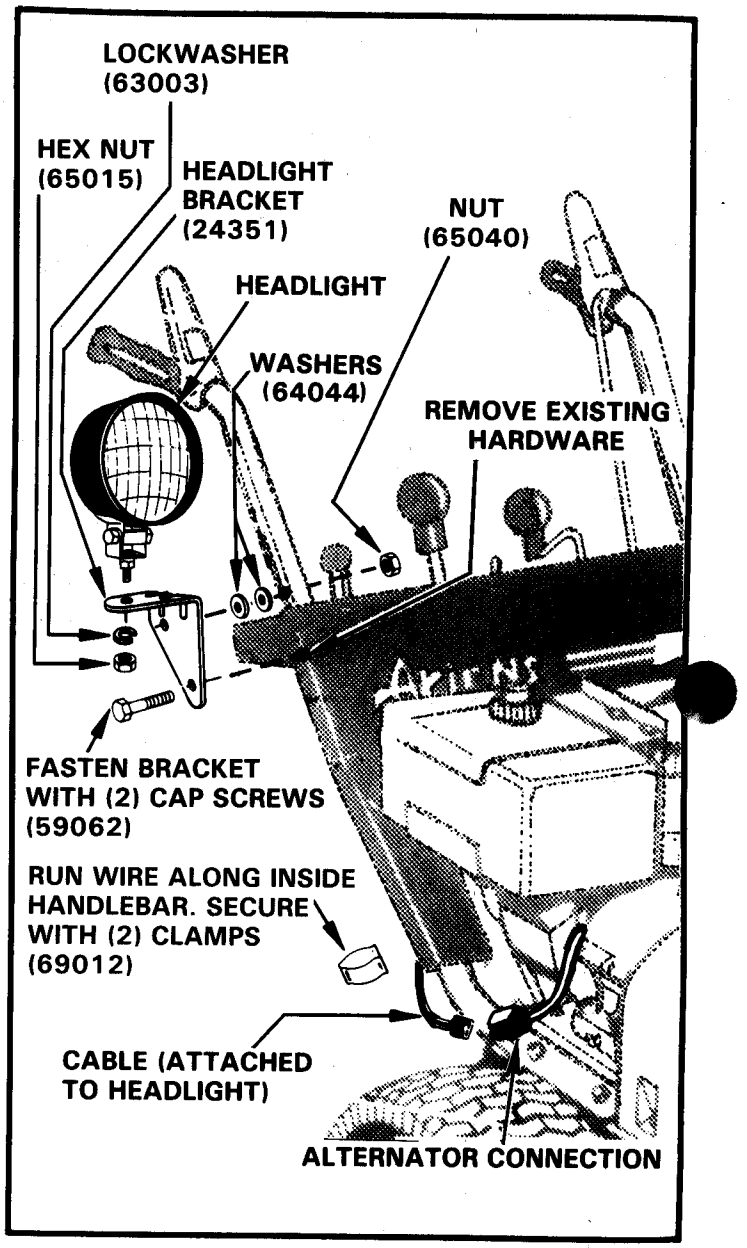


FIGURE 26

NON-CURRENT MODELS

1. GENERAL

All hardware and parts required for pre-service procedures are shipped in the parts bag or in place on the machine. The tractor and handlebars are assembled. On 24" Models 924036, 924038, 924039 and 924040 the control handles must be bolted in place. On all models the control rods must be connected as described below and the snow head must be attached to the tractor. All adjustments have been made at the factory. Be sure to check adjustments as the pre-service procedures are followed.

2. ATTACHMENT CLUTCH

On 32" Models 924042 and 924044: The Attachment Clutch handle has been shipped fastened in position on the dash panel with rods attached. Attach the lower end of the attachment rod to the lever with the cap screw already in place on the lever. Just tighten the cap screw in the rod adapter to install. The rod has been assembled to proper length at the factory.

On 24" Models 924026, 924038, 924039 and 924040: The attachment handle has been shipped loose in the dash panel. To install, place the handle in the "OUT" position. Line up the holes in the handle and panel, secure the handle in the panel with the 5/16-18 x 2" pivot bolt (59057) and the 5/16-18 locknut (65042). Do not overtighten.

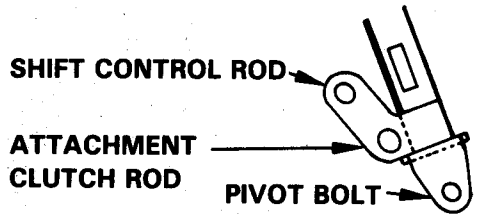


FIGURE 27

3. SHIFT CONTROL

On 32" Models 924042 and 924044: The Shift Control and Shift Rod are installed and require no adjustment.

On 24" Models 924036, 924038, 924039 and 924040: The shift handle has been shipped loose in the dash panel with Shift Rod installed. To install, position the shift handle in the panel so the holes line up and secure with a 5/16-18 x 2" pivot bolt (59057) and a 5/16-18 locknut. Do not overtighten.

4. TRACTION CLUTCH — FIGURES 28 & 29

a. The clutch handle is already positioned on the handlebar and the Tractor Clutch Rod is in place on the handle. Check to be sure the Clutch Handle is free to fall down on the grip.

b. Insert the lower end of the Tractor Clutch Rod into the rod adapter.

c. Position the clutch handle so that it is all the way up. See Figure 29. Tighten the Tractor CLutch Rod in the rod adaptor with the setscrew.

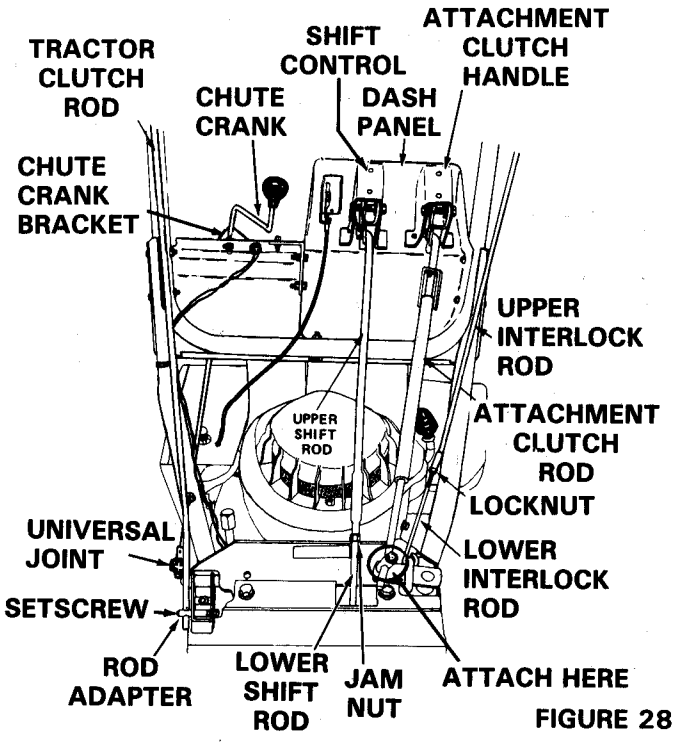


FIGURE 28

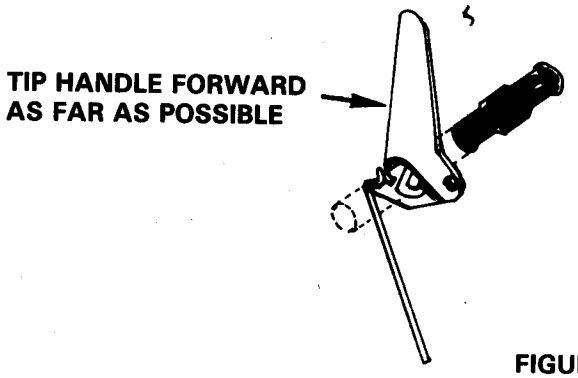


FIGURE 29

5. ATTACHING THE SNOW HEAD

a. Remove the belt guard from the front of the tractor. The belt is shipped in place on the snow head sheave.

b. Position the snow head on the front of the tractor. Notches on the bottom of the snow head fit on rod across the bottomof the tractor.

c. With the belt in place on the snow head sheave, tip the snow head up into position in the tractor frame. Secure with a 3/8-16 x ¾" flanged whizlock screw (70031) on each side of the frame.

d. Install the drive belt on the engine sheave. Belt finger must clear belt by 1/8" all around the sheave. Adjust if required.

NON-CURRENT MODELS CONT'D

e. Engage and disengage Attachment Clutch and see that the idler tightens belt and clears belt properly. If necessary adjust the idler by loosening the center bolt and moving it in the slotted hole in the idler bracket.

f. Replace the belt cover.

6. DISCHARGE CHUTE

The discharge chute is shipped with the mounting clips attached to the chute. Remove the clips and hardware. Position the discharge chute on the blower housing. Secure with the clips and hardware. Be sure the chute rotates freely.

7. DEFLECTOR

The deflector is installed on the discharge chute but must be raised into operating position. Remove the carriage bolt and wing nut. Rotate the deflector up into operating position. Reinstall the carriage bolt and wing nut.

8. CHUTE CONTROL CRANK

The Chute Control Crank must be installed. Slip a washer on the crank rod up to the roll pin. Slide the end of the crank rod down through the chute crank bracket and eye bolt. Secure to the universal joint with a hair pin. On 24" Models 924036, 924038, 924039 and 924040 the Intermediate Shaft with U-Joint, packed separately in carton, must be installed. Attach the intermediate shaft to the sleeve on the worm with a hair pin cotter. Attach the U-Joint on the opposite end to the chute crank with another hair pin cotter. Check alignment of worm and chute by rotating discharge chute through its full travel. Chute should rotate easily, if not, reposition worm as required.

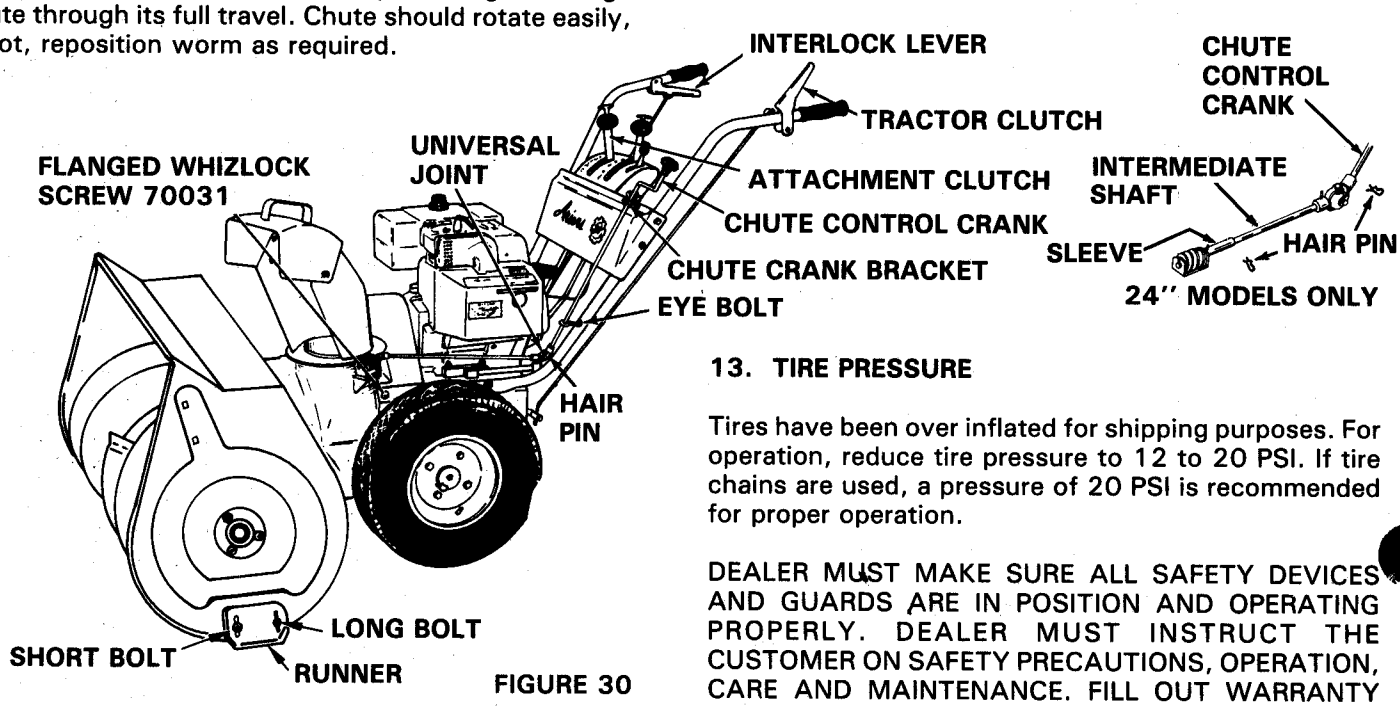


FIGURE 30

9. RUNNERS — ON MODELS 924042 AND 924044 ONLY

Install runners on each side of the blower housing. Use longer carriage bolts (62013) in the rear holes; shorter carriage bolts (62010) in the front holes. Use a washer (64002) and locknut (65039) on each bolt outside the housing. Adjust the runners to equal height on each side.

10. ENGINE

Before starting the engine, fill the crankcase with SAE 5W-20 oil for snow blower operation below 40 degrees F. Use Ariens SAE 10W-30 oil for operation at temperatures above 40 degrees F.

11. BLOWER GEARCASE

On 32" Models 924042, 924044 and 824003: Check the oil level in the snow rotor gearcase. Oil level must be even with the oil filler hole. Fill with Ariens Special L-2 Gear Lubricant. Replace the filler plug.

On 24" Models 924036, 924038, 924039, 924040, 824001 and 824002: The blower gearcase is factory lubricated and should require no lubrication by the dealer. See "LUBRICATION" section.

12. INTERLOCK LEVER

To minimize the chances for injury while the auger and blower are operating (Attachment Clutch - engaged) either the Interlock Lever — or the Tractor Clutch — must be depressed or the engine will stop. Engine should run with Interlock Lever depressed; stop with Lever released. Loosen locknut and adjust length of Interlock Rod if required. Retighten locknut.

13. TIRE PRESSURE

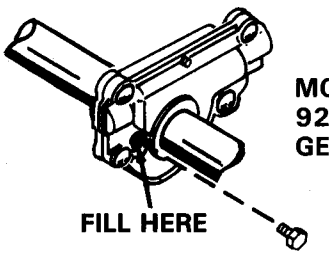
Tires have been over inflated for shipping purposes. For operation, reduce tire pressure to 12 to 20 PSI. If tire chains are used, a pressure of 20 PSI is recommended for proper operation.

DEALER MUST MAKE SURE ALL SAFETY DEVICES AND GUARDS ARE IN POSITION AND OPERATING PROPERLY. DEALER MUST INSTRUCT THE CUSTOMER ON SAFETY PRECAUTIONS, OPERATION, CARE AND MAINTENANCE. FILL OUT WARRANTY REGISTRATION AND MAIL TO ARIENS COMPANY.

DISASSEMBLY & ASSEMBLY OF THE MODEL 924046, 924048, 924050 & 924072 (24" – 524030) GEARCASE

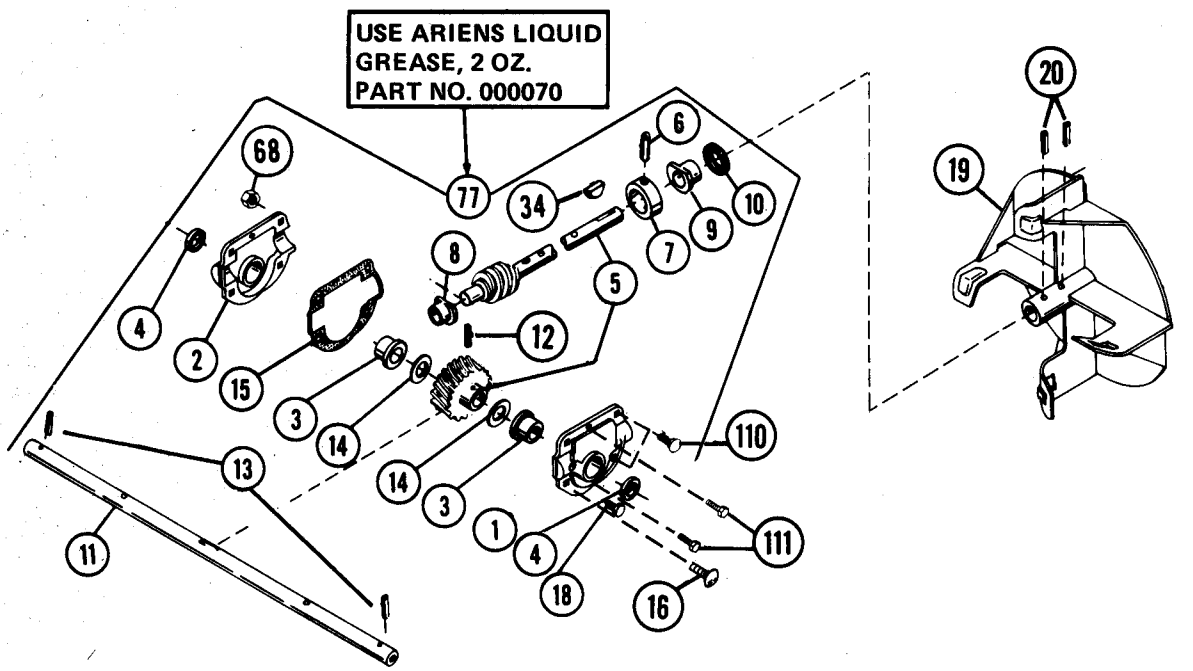
The blower gearcase is lubricated with Ariens Liquid Grease (Part No. 000070). This grease will not flow at lower temperatures. It is therefore difficult to check the lubricant level. Best method for checking is to place the unit in a warm location overnight. This allows the grease to flow to level. Check the lubrication by removing the filler plug on the side of the gearcase just above the left auger shaft. Lubrication should be even with the hole with the machine sitting level. It may be necessary to insert a wire into the hole to check level. The unit will not be damaged by over lubricating.

1. Remove the (6) six bolts that hold the right and left gearcase halves together.
2. If the flange bushings need replacement, first remove the seals from the outside of the gearcase halves with a screwdriver. The flange bushings can tghen be pressed out from the outside in with a bearing driver. The bushings are very lightly pressed in.
3. When replacing bushings make sure the flat on the flange of the bushing fits in the inside notch of the case.
4. There are (2) 64166 special washers, one on either side of the bronze gear. If burred or worn they should be replaced.
5. Holding the bronze gear on the rake shaft is a groove pin. When driving out, drive in direction of least resistance. Flat on bronze gear face's fill hole side of gearcase.
6. Remove the bronze bushing from the front of the worm shaft by sliding it off. If replacement is necessary, replace. Notice a flat on the bushing flange when installed sets against flat in gearcase.
7. Behind the rear bronze bushing is a "O-Ring" which fits into a groove in the gearcase. It should be replaced at time of repair.
8. The rear bushing is a larger diameter than the one in front, but are identical in design. Replace if necessary.
9. If replacement of the thrust collar is necessary, again drive out groove pin towards direction of least resistance.
10. Inspect the worm for burrs or black coloration. If either show up, replace shaft.
11. To assemble make sure you replace the case gasket and make sure the flats on the bushings are in their proper place.
12. This case requires No. 70 Liquid Grease and should be half full.
13. If after assembly is completed you should be able to turn the input shaft freely.



MODELS 924046, 924048, 924050 & 924072 GEARCASE

FIGURE 31



DISASSEMBLY AND ASSEMBLY OF 924000 SERIES MODELS 924052, 924054, 924056, 924071 & 924073 (32" – 524035) GEARCASE

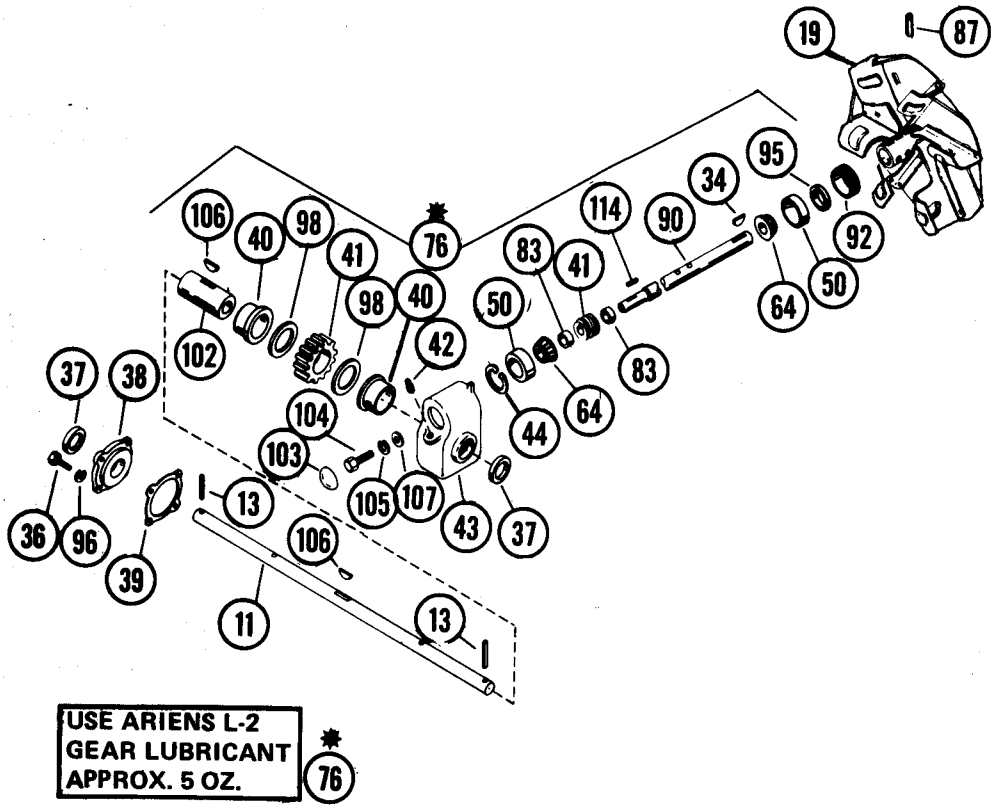
1. Remove four bolts from bearing flange.
2. Remove flange and gasket.

NOTE: AT THIS POINT BRONZE GEAR CANNOT BE REMOVED.

3. Using #90 bearing adjustment wrench remove adjustment plug.
4. While holding the input shaft in one hand and using a mallet, strike the case until the bearing cone pops out of the case.
5. Bronze gear can then be removed from case.
6. After bronze gear is removed, the input shaft can then be removed.

NOTE: IT IS NOT NECESSARY TO REMOVE THE END CAP FROM CASE.

7. To remove the worm gear and bearings, simply remove the bolt and washer from end of shaft.
8. Assembly is done by inserting the bronze and worm gear at the same time.
9. Using #90 adjustment wrench, tighten down on the adjustment plug until input shaft is snug.
10. Replace side cover using a sealant on the threads of the two bottom bolts.
11. Fill gear case with L-2 oil until level reaches the bottom of the threads in the filler hole.



DISASSEMBLY & ASSEMBLY OF GEARCASE (CASES MANUFACTURED BEFORE JULY 1965)

Tools Required:
Open End Wrench — 7/16"
Ratchet Wrench with 7/16" socket
Hammer
Punch — 5/16", 3/8"
Screwdriver (two required)
Ariens Tools #37, #90, #130, & #131

1. Remove pipe plug and drain oil. Use 7/16" Open End Wrench.
2. Remove cap screws holding flange and remove flange and gsket. Use 7/16" Ratchet Wrench.
3. Insert punch through oil filler hole and drive roll pin out of helicon gear just far enough to clear shaft. Use 5/16" Punch and Hammer.
4. Pull out front gear shaft.
5. After shaft is removed, it is possible to remove helicon gear by tipping to clear pinion shaft.
6. Pry oil seal and snap ring out of gearcase housing. Use two Screwdrivers.
7. Insert punch through the oil filler hole and drive pinion shaft assembly out of gearcase. Use 3/8" Punch and Hammer.
8. Remove bearing cup and snap ring from inner portion of gearcase only if necessary.

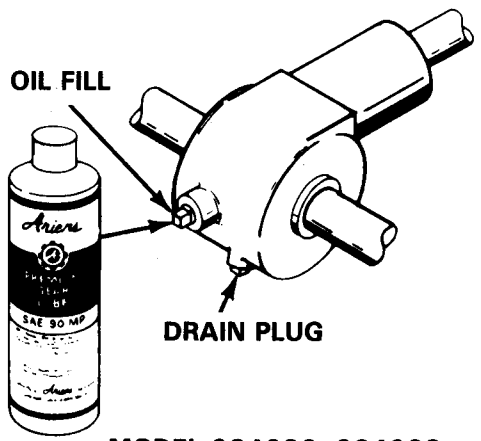
TO REASSEMBLE

1. Pin helicon gear on front gear shaft.
2. Insert front gear shaft assembly into gearcase.
3. Put in helicon pinion shaft assembly and drive in bearing cup. Use No. 131 Bearing Driver.
4. Check for snap ring thickness required for proper assembly with snap ring gauges. These four gauges are .042, .047, .052 and .062 inches thick. Drop the point into the snap ring groove without any end play to determine which thickness of snap ring is required. Use No. 37 Snap Ring Gauges.
5. Install proper size snap ring and oil seal.

DISASSEMBLY AND ASSEMBLY OF GEARCASE MANUFACTURED AFTER JULY 1965 IS THE SAME EXCEPT FOR:

1. Unscrew adjustment plug. Use No. 90 Bearing Adjustment Wrench.
2. IN REASSEMBLING: first install new seal against shoulder in adjustment plug. On adjustment nuts used prior to this year, insert the seal so that top of the seal is flush with bottom of the spanner slot or about 1/32 of an inch below the bottom of the nut. We recommend replacing with the new style nut. Use No. 130 Seal Driver.
3. Seal the adjusting nut in position by putting a small bed of gasoila sealer in the gearcase. The nut will drag the sealer around threads. Retighten adjsutment nut until a slight drag is felt when turning the pinion shaft. Do not back off the tightness.

   Use No. 90 Bearing Adjustment Wrench.



MODEL 924026, 924028 AND 924032

FIGURE 32

SNO-THRO SERVICE GUIDE

PROBLEM	POSSIBLE CAUSE	CORRECTION
Difficult starting, engine runs poorly.	1. Defective spark plug	1. Replace spark plug, check connections of plug wire.
	2. Engine is not getting fuel.	2. Fill fuel tank; check and clean fuel line.
Engine stalls or looses power.	1. Choke is on after engine is warm.	1. Turn Choke Lever to "OFF".
	2. Impeller is blocked.	2. Turn off Sno-Thro, remove obstruction.
	3. Water in fuel.	3. Follow Engine Instructions to drain tank and refill.
Excessive vibration	1. Loose hardware securing components.	1. Do not run unit. Stop and tighten all hardware, check for damage.
	2. Damage to unit.	2. Service at dealer.
Sno-Thro will not move.	1. Traction Clutch is not adjusted correctly.	1. Adjust Clutch, see "ADJUSTMENTS" section of Owners Manual.
	2. Loose or damaged drive belt.	2. Replace belt - see "MAINTENANCE" section.
Sno-Thro will not discharge snow.	1. Attachment Clutch is not adjusted correctly.	1. Adjust Clutch, see "ADJUSTMENTS" section of Owner's Manual.
	2. Attachment drive belt is loose or damaged.	2. Replace belt - see "MAINTENANCE" section.
	3. Broken shear bolt.	3. Replace with Ariens shear bolt - see "MAINTENANCE" section.
	4. Chute or auger is clogged.	4. Turn off Sno-Thro, remove clog.
Discharge Chute does not operate smoothly or remain in position selected with chute crank.	1. Worm clevis is not positioned properly on bracket.	1. Adjust worm clevis. See "CHUTE CRANK ADJUSTMENT" in "ADJUSTMENTS-MAINTENANCE" section of this manual.

924000 SERIES TROUBLESHOOTING GUIDE

	TYPE OF FAILURE	POSSIBLE CAUSE AND CORRECTION
1.	Jumping out of gear.	a. Check 24443 pivot. b. Weak or broken spring.
2.	Pulley hits cover plate on bottom.	a. Realign
3.	Blower Sheave not lined up.	a. Realign.
4.	Friction wheel not adjusted.	a. See set up instructions.
5.	Throttle not adjusted.	a. See set up instructions.
6.	524026 gear set failed.	a. Seal bore off center. b. Housing broken. c. Low oil.
7.	24364 reduction shaft broken off.	a. Replace part.
8.	Binding of hex shaft, chain hits flange bushing.	a. Washers missing.
9.	Tire chains hit blower housing (924050).	a. Add 24453 spacer to move out wheels.
10.	Differential hitting blower sheave.	a. Pulley not adjusted properly. (73070)
11.	Blower sheave wobbles.	a. Replace same.
12.	Starter will not engage.	a. Installed over engine shroud or not to instructions.
13.	Blower brake not dissengaging.	a. Bent brake arm.
14.	Discharge chute ring gear cuts into belt cover.	a. Replace belt cover.
15.	End plug in gear case shaft.	a. Check for proper assembly.
16.	U-joint hitting against heater box.	a. Readjust.
17.	Auger and fan hit housing.	a. Check welding and check for bent blower housing.
18.	624072 reduction sprocket out of round.	a. Replace sprocket.
19.	Soft pinion shaft.	a. Replace both pinion & shaft.
20.	Alum. shift fork hits stud on main frame.	a. Grind off stud.
21.	24442 rod ½" too short.	a. Replace.
22.	Friction wheel failure.	a. Improper pressure — Replace and consult B-105.
23.	Binding of drive.	a. 64058 washers missing from one or both sides of the 10276 sprocket. b. Improper reduction chain adjustment — readjust, See L-117.
24.	Sprocket misalignment 624072 sprocket.	a. Align.
25.	Friction wheel does not release from drive plate.	a. Crooked spindle. b. No lube on spindle, apply Loc-Tite Anti-Seize. c. Burrs on spindle.
26.	Belt failure.	a. Not aligned properly — wrong belt.
27.	Axles & differentials failure. (Use 524033 splined gear and spacer).	a. Large tires with chains.
28.	Gear case failures.	a. Soft pinion shaft. b. Seal failure.
29.	Tires	a. Low pressure — See "ADJUSTMENTS-MAINTENANCE" b. Paint on tire seal area.
30.	Safety interlock failure.	a. 25172 switch not functioning. b. Linkage not lined up. See "SNO-THRO SERVICE GUIDE"
31.	Idlers failing.	a. Check welding.
32.	Lack of neutral.	a. Not adjusted properly. b. 64071 spacer missing between aluminum drive disc and spindle.
33.	Poor shifting.	a. Check 24272 fork arm.

34. Shear bolt failure.	a. Check for correct part no. shear bolt. b. Replace with Ariens shear bolt.
35. Oil seals leaking in helicon gear case.	a. Not installed properly. b. Seal area bored off center.
36. Rake hitting carriage bolts securing scraper blade.	a. Check rake - grind edge of rake for clearance, if necessary. b. Housing bent up.
37. Rake hard to get off.	a. Tight hub. b. Not lubricated. Properly lubricate per manual instructions.
38. Retainer clips coming off on roller drive chains.	a. Not secured properly — replace.
39. 24435 panel stud breaking off.	a. Replace panel. Approximate serial number range where suspect panels could be is as follows: (24046-5001/5980)-(24048-6031-7773)-(924050-12974-14659)
40. Failure of Sno-Thro auger gear sets in split aluminum gear cases. GEARS WILL BE SOLD IN SETS ONLY. Individual part number with respective gear set number is listed below: ORDER GEAR SET NUMBER ONLY — INDIVIDUAL GEAR NUMBER 532001 Gear Set — 32034/32037 524026 Gear Set — 24381/24382	a. Low on #70 grease. b. Burrs on shafts or gear. c. Check assembly.
41. Binding of discharge worms.	a. For left hand worm use Part No. 24427. b. For right hand worm use Part No. 22110. c. Not adjusted properly.

NOTE: REFER TO SERVICE LETTERS FOR ANY INFORMATION NOT SHOWN IN THIS TROUBLE SHOOTING GUIDE. FOR DRIVE ADJUSTMENTS SEE SERVICE BULLETINS.

ENGINES

MODEL YEAR	MICRO FICHE CARD NO.	SERIAL MODEL NUMBER UP	ENGINE NUMBER AND STARTER	ARIENS H.P. MAKE NUMBER	ORIGINAL IBM NUMBER PARTS	ENGINE NUMBER PARTS	REPLACEMENT ENGINE			REPLACEMENT SHORT BLOCK		
							ENGINE NUMBER	REMOVE PARTS	ADD PARTS	SHORT BLOCK	REMOVE	ADD
1972-1973	9	924013	000001	8 Tec. Recoil	82051	HM80-155020	908360			756218		
1973-1974	9	924013	000201	8 Tec. Recoil	82051	HM-80-155020	908360			756218		
1974-1975	9	924016	000101 Tec.	8 Tec. Recoil	82051	HM80-155020A	908360			756218		
1974-1975	9	924018	000101	6 Tec. Recoil	82094	H60-75381K	None			756206	32542	32514
1974-1975	9	924020	000101	8 Tec. Recoil	82051	HM80-155020A	908360			756218		
1975-1976	9	924022	000101	6 Tec. Recoil	82106	H60-75381K	None			756206	32542	32514
1975-1976	9	924023	000101	6 Tec. Recoil	82106	H60-75381K	None			756206	32542	32514
1975-1976	9	924024	000101	8 Tec. Recoil	82107	HM80-155020B	908360			756218		
1975-1976	9	924025	000101	8 Tec. Recoil	82107	HM80-155020B	908360			756218		
1975-1976	9	924026	000101	8 Tec. Recoil	82107	HM80-155020B	908360			756218		
1975-1976	9	924027	000101	8 Tec. Recoil	82107	HM80-155020B	908360			756218		
1976-1977	9	924024	005401	8 Tec. Recoil	82107	HM80-155020B	908360			756218		
1976-1977	9	924025	000301	8 Tec. Recoil	82107	HM80-155020B	908360			756218		
1976-1977	9	924026	008001	8 Tec. Recoil	82107	HM80-155020B	908360			756218		
1976-1977	9	924027	000401	8 Tec. Recoil	82107	HM80-155020B	908360			756218		
1976-1977	9	924032	000101	7 Tec. Recoil	82115	H70-130210D	907300A	32680A	34234	756245		
1976-1977	9	924033	000101	7 Tec. Recoil	82115	H70-130210D	907300A	32680A	34234	756245		
1977-1978	9	924024	012001	8 Tec Recoil	82107	HM80-155128D	908360			756218		
1977-1978	9	924025	000301	8 Tec Recoil	82107	HM80-155128D	908360			756218		
1977-1978	9	924026	022001	8 Tec Recoil	82107	HM80-155128D	908360			756218		

924000 SERIES CROSS-REFERENCE GUIDE

ENGINES

MODEL YEAR	MICRO FICHE CARD NO.	MODEL NUMBER	SERIAL NUMBER AND UP	ENGINE H.P. MAKE STARTER	ARIENS IBM NUMBER	ORIGINAL ENGINE NUMBER	REPLACEMENT ENGINE			REPLACEMENT SHORT BLOCK		
							ENGINE NUMBER	REMOVE PARTS	ADD PARTS	SHORT BLOCK NUMBER	REMOVE PARTS	ADD PARTS
1977-1978	9	924032	008001	7 Tec Recoil	82115	H70-130210D	907300A	32680A	34234	756154A	32587	34234
1977-1978	9	924033	000101	7 Tec Recoil	82115	H70-130210D	907300A	32680A	34234	756154A	32587	34234
1977-1978	9	924034	000101	10 Tec Recoil	82122	HM100-159024C	910300			756221		
1977-1978	9	924035	000101	10 Tec Recoil	82122	HM100-159024C	910300			756221		
1978-1979	9	924027	000101	8 Tec Recoil	82107	HM80-155128E	908360			756243		
1978-1979	9	924036	000101	5 Tec Recoil	82130	H50-65422K	907300A	32680A	34234	757086		8008/ 35214
1978-1979	9	924038	000101	7 Tec Recoil	82115	H70-130210D	907300A	32680A	34234	756245		
1978-1979	9	924039	000101	8 Tec Recoil	82107	HM80-155128E	908360			756243		
1978-1979	9	924040	000101	8 Tec Recoil	82107	HM80-155128E	908360			756243		
1978-1979	9	924042	000101	8 Tec Recoil	82107	HM80-155128E	908360			756243		
1978-1979	9	924044	000101	10 Tec Recoil	82122	HM100-159024C	901300			756221		
1979-80,81	9	924046	000101	5 Tec Recoil		H50-65422L						
1979-80,81	9	924048	000101	7 Tec. Recoil		H70-130210E						
1979-80,81	9	924049	000101	7 Tec. Recoil		H70-130210E						
1979-80,81	9	924050	000101	8 Tec. Recoil		HM80-155128F						
1979-80,81	9	924051	000101	8 Tec. Recoil		HM80-155128F						
1979-80	9	924052	000101	10 Tec. Recoil		HM100-159024D						
1980-81	9	924054	000101	8 Tec. Recoil		HM80-155207G						
1980-81	9	924056	000101	10 B & S Recoil	82157	222416-0150-01						
1980-81	9	924058	000101	7 Tec. Recoil		H70-130210E						

ENGINES

MODEL YEAR	MICRO FICHE CARD NO.	MODEL NUMBER	SERIAL NUMBER AND UP	ENGINE H.P. MAKE STARTER	ARIENS IBM NUMBER	ORIGINAL ENGINE NUMBER	REPLACEMENT ENGINE			REPLACEMENT SHORT BLOCK		
							ENGINE NUMBER	REMOVE PARTS	ADD PARTS	SHORT BLOCK NUMBER	REMOVE PARTS	ADD PARTS
1982-83		924046 ST524	014501	Tec. 5 Recoil	82137	HSK50-65422P						
1982-83		924048 ST824	024501	Tec. 7 Recoil	82138	HSK70-130210H						
1982-83		924050 ST824	036501	Tec. 8 Recoil	82139	HMSK80- 155207H						
1982-83		924058 ST724 Finland	001101	Tec. 7 Recoil	82158	HSK70-130244G						
1982-83		924071 ST1136	000101	Briggs 11 Recoil	82174	252416-0632-01						
1982-83		924072 ST824L Europe	000101	Tec. 8 Recoil	82152	HMSK80- 155207H						
1982-83		924073 ST1032	000101	Tec. 10 Recoil	82173	HMSK100- 159024G						

924000 SERIES CROSS-REFERENCE GUIDE

924000 SERIES BELT CROSS-REFERENCE

MODEL NUMBER	TRACTION DRIVE	ATTACHMENT DRIVE
924013	72066	72072
924016	72066	72072
924018	72084	72083
924020	72084	72083
924022	72084	72083
924023	72084	
924024	72066	72108/72
924025	72066	72072
924026	72098/84	72108/83
924027	72098/84	72072
924028		72108/83
924029		72108/72
924030	72083	
924031	Sm. Wh. 72083	72045
	Lg. Wh. 72086	72045
924032	72098/84	72108/83
924033	72098	
924034	72066	72108
924035	72066	
924046	72098	72108
924048	72098	72108
924049	72098	
924050	72066	72086
924051	72066	
924052	72066	72108
924054	72066	72108
924056	72131	72130
924058	72066	72086
924071	72131	72130
924072	72066	72086
924073	72066	72108

A NOTE ABOUT ARIENS BELTS

ARIENS BELTS are individually engineered to the highest standards of material quality, design, and construction including special cording locations for strength and stability. This assures that the belts will deliver maximum performance and durability for each product's specific applications.

The selling price of **ARIENS BELTS** reflects these quality features. Our name and number stamped on your replacement belt is your assurance of receiving the quality you are paying for.

924000 SERIES SNO-THRO SPECIFICATIONS 924
MODEL NO'S 924056, 924058, 924071, 924072, 924073

Model	ST1032 (924056)	ST724 (924058)**	ST824L (924072)**	ST1136 (924071)	ST1032 (924073)
Engine	10 hp Briggs & Stratton	7 hp Tecumseh	8 hp Tecumseh	11 hp Briggs & Stratton	10 hp Tecumseh
Clearing Width	32" (81 cm)	24" (61 cm)	24"	36"	32"
Speeds: Forward Reverse	5 1	5 1	5 1	5 1	5 1
Tires	Pneumatic 16/6.50 x 8	Pneumatic 4.80/4.00 x 8	Pneumatic 4.80/4.00 x 8	Pneumatic 16/6.50 x 8	Pneumatic 16/6.50 x 8
Gas Tank Capacity	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)
Adjustable Skids	Standard	Standard	Standard	Standard	Standard
Disc-O-Matic Drive	Standard	Standard	Standard	Standard	Standard
Lockout Differential	Standard	Standard	Standard	Standard	Standard
Dimensions: Length Height Width	60" (152 cm) 40" (101.6 cm) 34½" (87.6 cm)	63" (160 cm) 40" (101.6 cm) 26¼" (67 cm)	60" (152 cm) 40" (101.6 cm) 26¼" (67 cm)	40" (101.6 cm)	60" (152 cm) 40" (101.6 cm) 34½" (87.6 cm)
Shipping Weight	340 lbs. (154 Kg.)	255 lbs. (115.7 Kg.)	280 lbs. (127 Kg.)		340 lbs. (154 Kg.)
Optional Accessories*:					
Electric Starter	Available	N/A	Available	Available	Available
Slicer Bar	Available	N/A	Available	Available	Available
Homeowner's Kit	Available	Available	Available	Available	Available
Tire Chains	Available	Available	Available	Available	Available
Light Kit	Available	Standard	Standard	Standard	Standard
12 Volt Starter Kit	Available	Available	Available	Available	Available
Optional Attachments*:					
Rotary Brush 36" 824004 (RB36)	Available	N/A	Available	Available	Available
Rotary Mower 26" 824005 (RM26)	Available	N/A	Available	Available	Available

***Available at Extra Cost. ****These Models are European Export Models Only.**
Consistent with Ariens policy of continuing product improvement, specifications shown herein are subject to change without notice.

924000 SERIES SNO-THRO SPECIFICATIONS
MODEL NO'S 924046, 924048, 924050 & 924054

Model	ST832 (924054)	ST824 (924050)	ST724 (924048)	ST524 (924046)
Engine	8hp Tecumseh	8 hp Tecumseh	7 hp Tecumseh	5 hp Tecumseh
Clearing Width	32" (81 cm)	24" (61 cm)	24" (61 cm)	24" (61 cm)
Speeds: Forward	5	5	5	5
Reverse	1	1	1	1
Tires	Pneumatic 16/6.50 x 8	Pneumatic 4.80/4.00 x 8	Pneumatic 4.10/3.50 x 6	Pneumatic 4.10/3.50 x 6
Gas Tank Capacity	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)
Adjustable Skids	Standard	Standard	Standard	Standard
Disc-O-Matic Drive	Standard	Standard	Standard	Standard
Lockout Differential	Standard	Standard	Standard	Kit Available
Dimensions: Length	60" (152 cm)	60" (152 cm)	63" (160 cm)	63" (160 cm)
Height	40" (101.6 cm)	40" (101.6 cm)	40" (101.6 cm)	40" (101.6 cm)
Width	34½" (87.6 cm)	26¼" (67 cm)	26¼" (67 cm)	26¼" (67 cm)
Shipping Weight	330 lbs. (149.7 Kg.)	280 lbs. (127 Kg.)	255 lbs. (115.7 Kt.)	255 lbs. (115.7 Kg.)
Optional Accessories*:				
Available for all models: Electric Starter, Slicer Bar, Homeowner's Kit, Tire Chains.				
Optional Attachments*:				
Rotary Brush 36" 824004 (RB36)	Available	Available	Available	Available
Rotary Mower 26" 824005 (RM26)	Available	Available	Available	Available

***Available at Extra Cost.**

Consistent with Ariens policy of continuing product improvement, specifications shown herein are subject to change without notice.

924000 SERIES SNO-THRO SPECIFICATIONS
MODEL NO'S 924046, 924048, 924050, 924052
(1979 - 1980 MODELS)

924

Model	ST1032	ST824	ST724	ST524
Engine	10 hp Tecumseh	8 hp Tecumseh	7 hp Tecumseh	5 hp Tecumseh
Clearing Width	32" (81 cm)	24" (61 cm)	24" (61 cm)	24" (61 cm)
Speeds: Forward Reverse	5 1	5 1	5 1	5 1
Tires	Pneumatic 16/6.50 x 8	Pneumatic 4.80/4.00 x 8	Pneumatic 4.10/3.50 x 6	Pneumatic 4.10/3.50 x 6
Gas Tank Capacity	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)	1 Gallon (3.8 Liters)
Adjustable Skids	Standard	Standard	Standard	Standard
Disc-O-Matic Drive	Standard	Standard	Standard	Standard
Lockout Differential	Standard	Standard	Standard	Kit Available
Dimensions: Length Height Width	60" (152 cm) 40" (101.6 cm) 34½" (87.6 cm)	60" (152 cm) 40" (101.6 cm) 26¼" (67 cm)	63" (160 cm) 40" (101.6 cm) 26¼" (67 cm)	63" (160 cm) 40" (101.6 cm) 26¼" (67 cm)
Shipping Weight	330 lbs. (149.7 Kg.)	280 lbs. (127 Kg.)	255 lbs. (115.7 Kg.)	255 lbs. (115.7 Kg.)
Optional Accessories*:				
Electric Starter	Available	Available	Available	Available
Slicer Bar	Available	Available	Available	Available
Maintenance Kit	Available	Available	Available	Available
Tire Chains	Available	Available	Available	Available
Optional Attachments*:				
Rotary Brush 36" 824004 (RB36)	Available	Available	Available	Available
Rotary Mower 26" 824005 (RM26)	Available	Available	Available	Available

***Available at Extra Cost.**

Consistent with Ariens policy of continuing product improvement, specifications shown herein are subject to change without notice.

TRACTION DRIVE SYSTEM

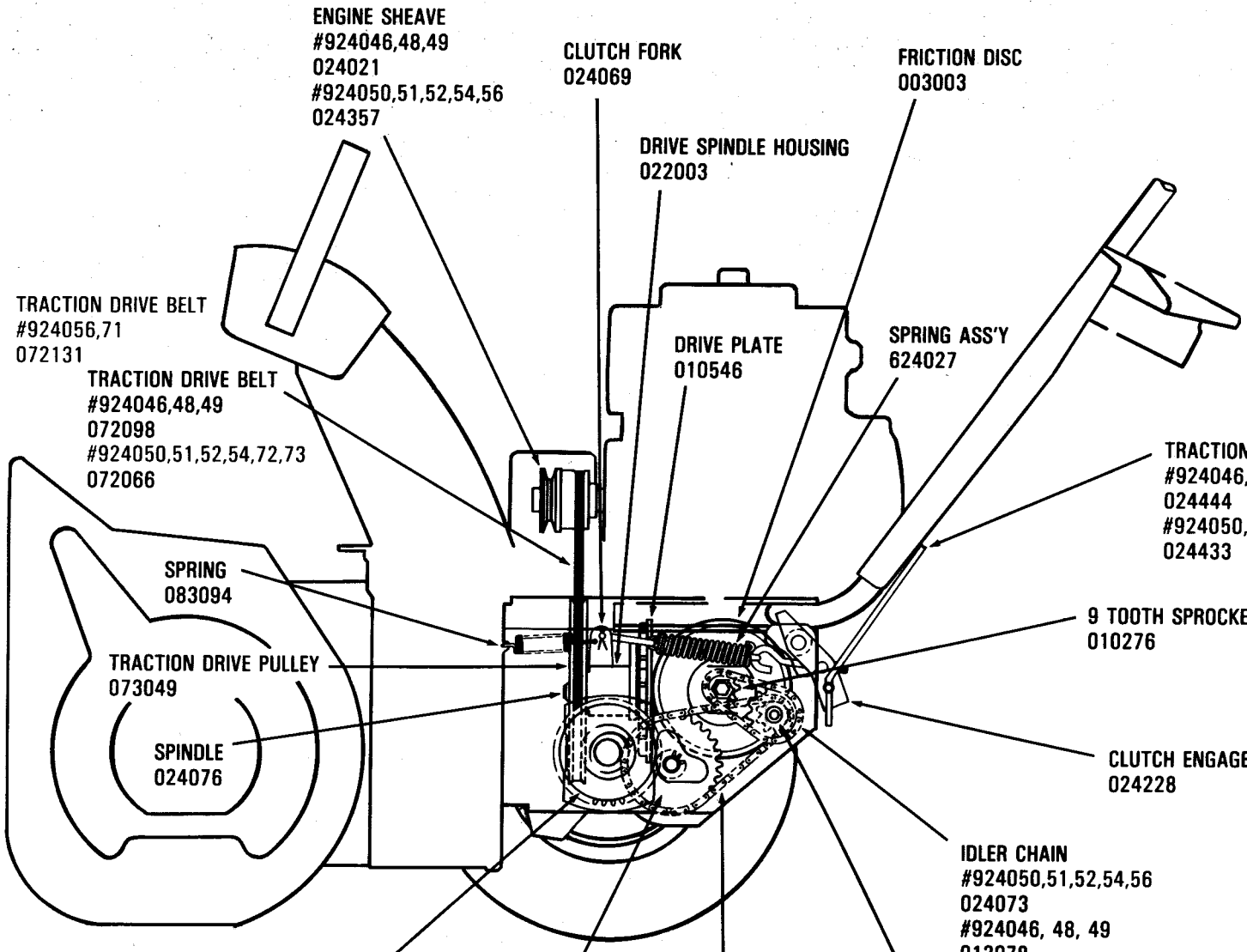


DIAGRAM A-1

TRACTION DRIVE SYSTEM

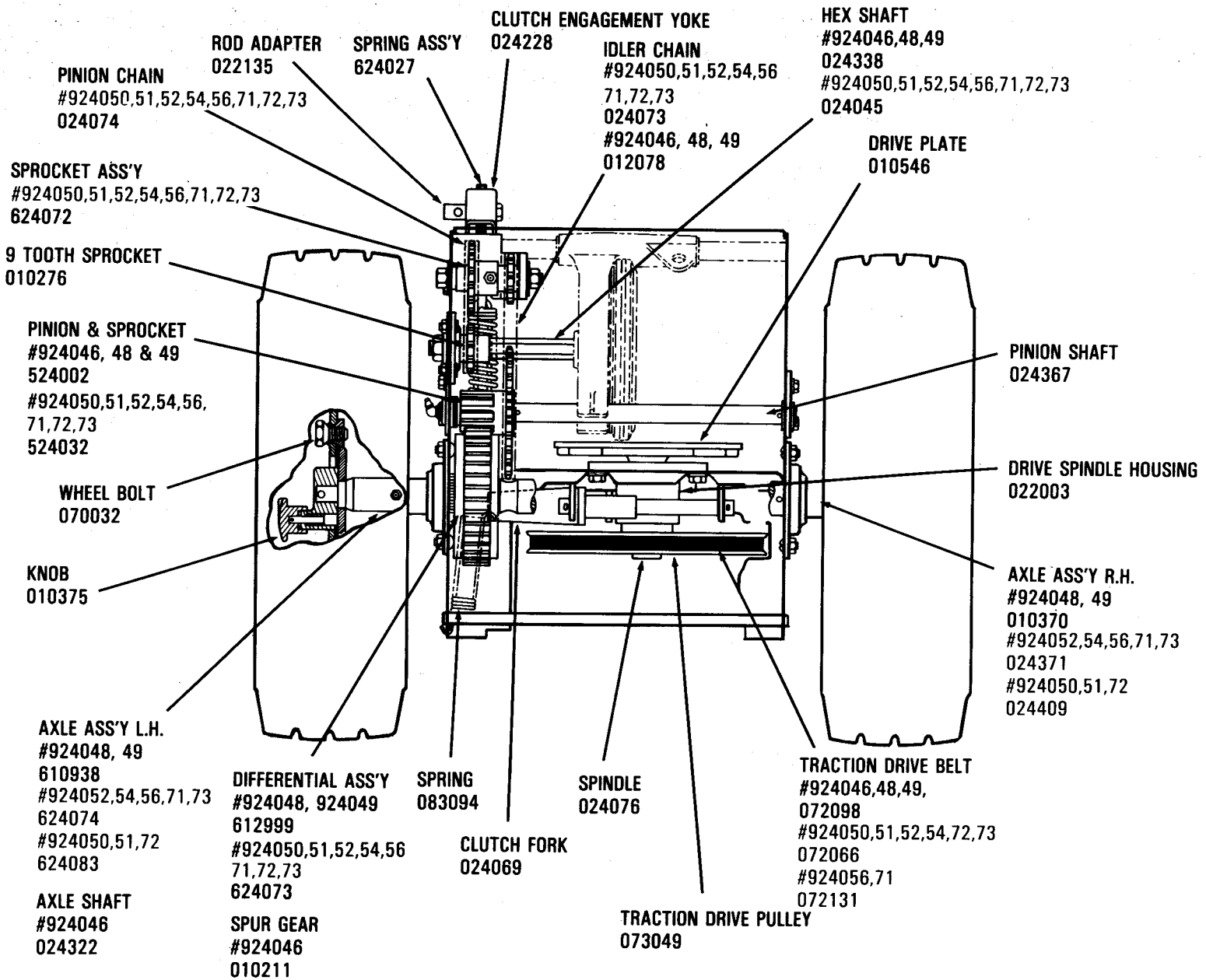


DIAGRAM A-2

SPEED SELECTOR SYSTEM

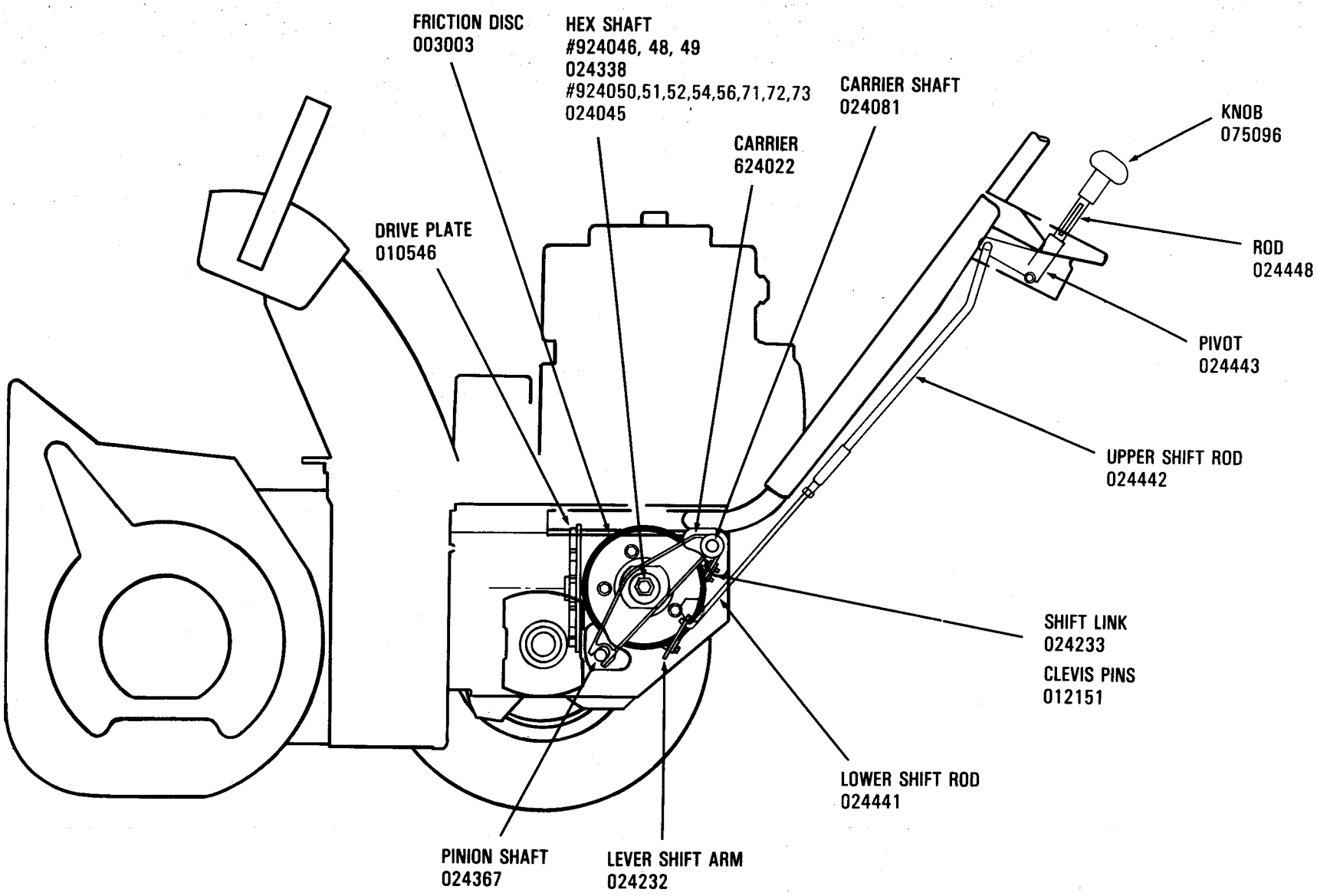
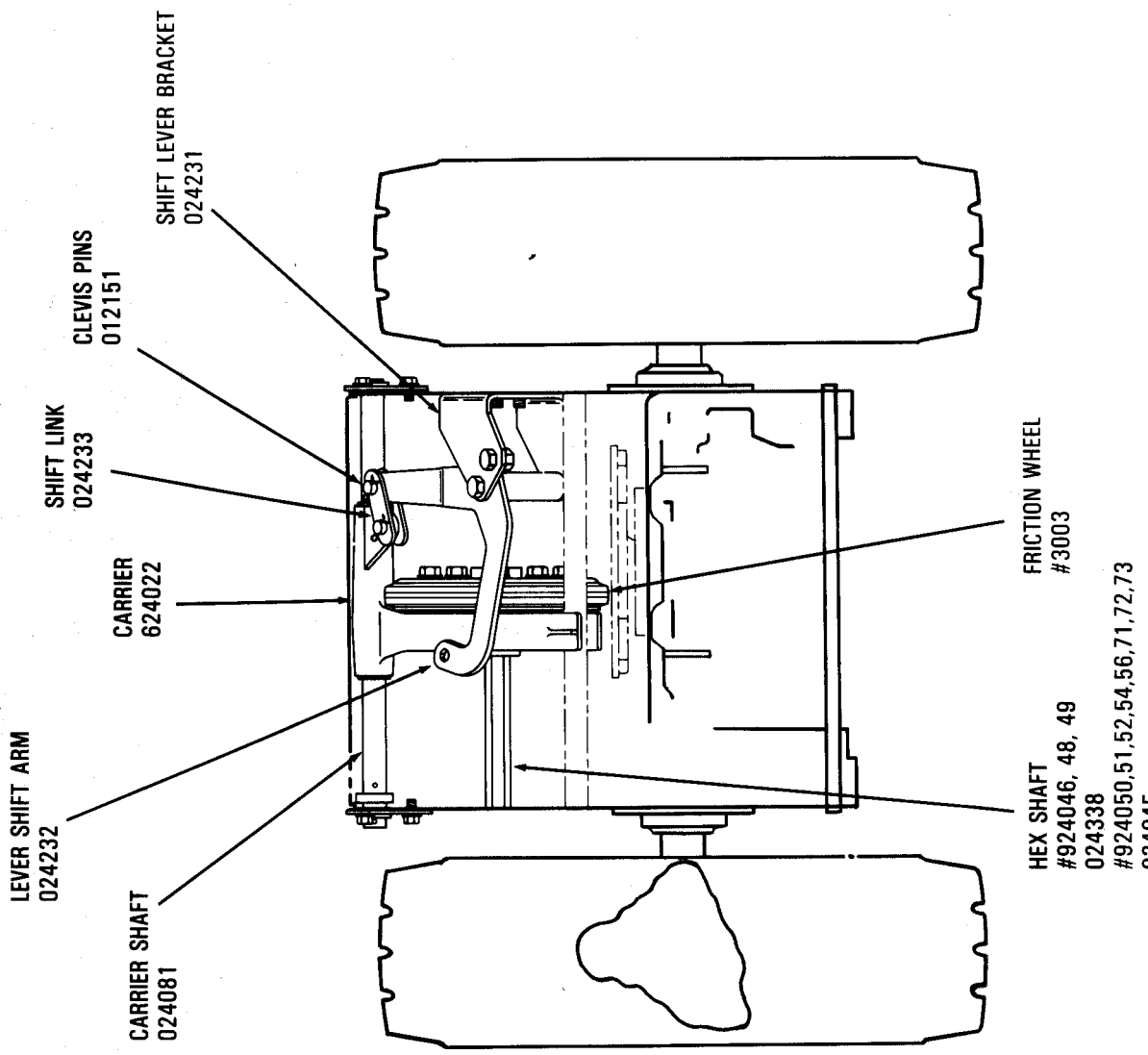


DIAGRAM B-1

SPEED SELECTOR SYSTEM

DIAGRAM B-2



ATTACHMENT DRIVE & DISCHARGE SYSTEMS

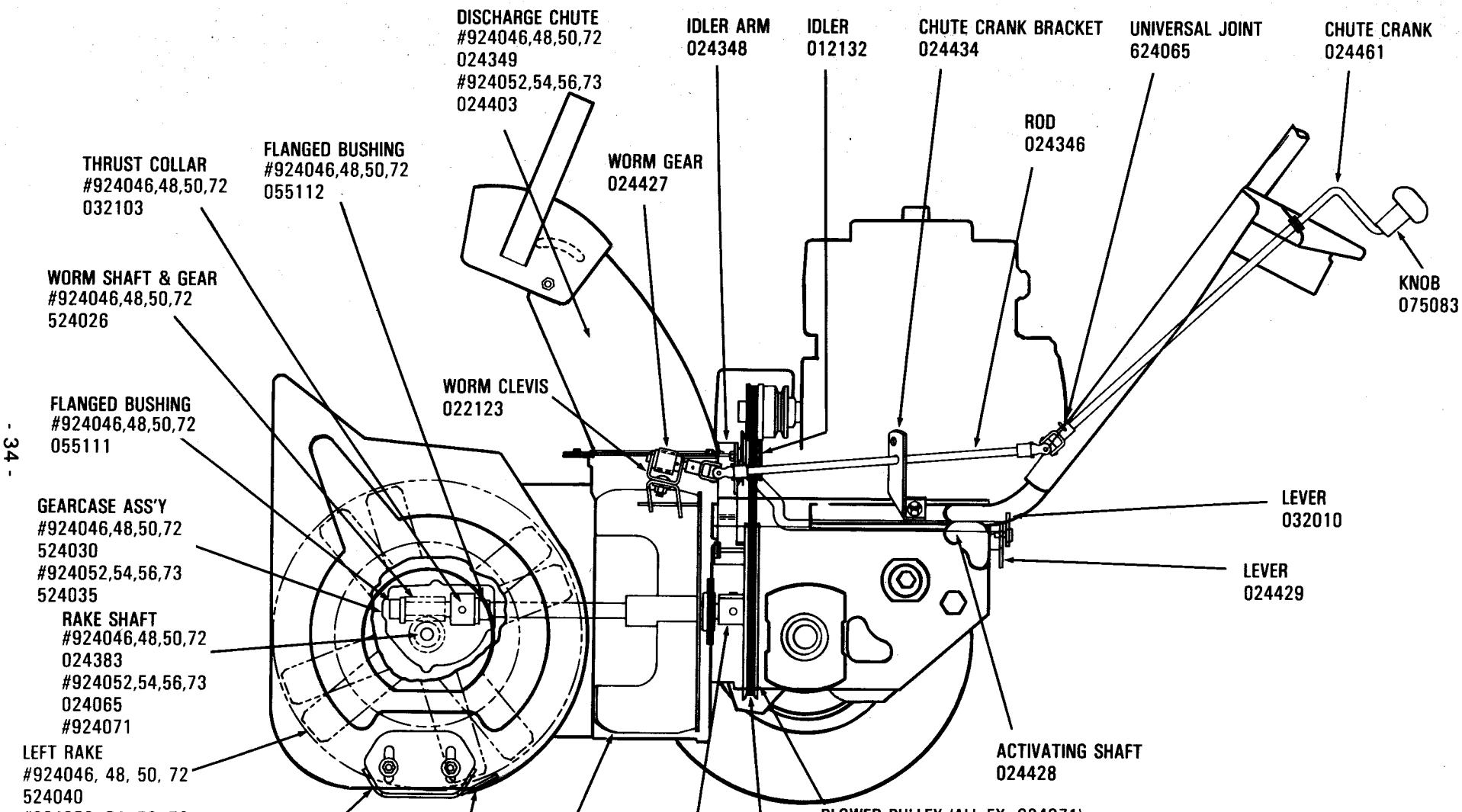
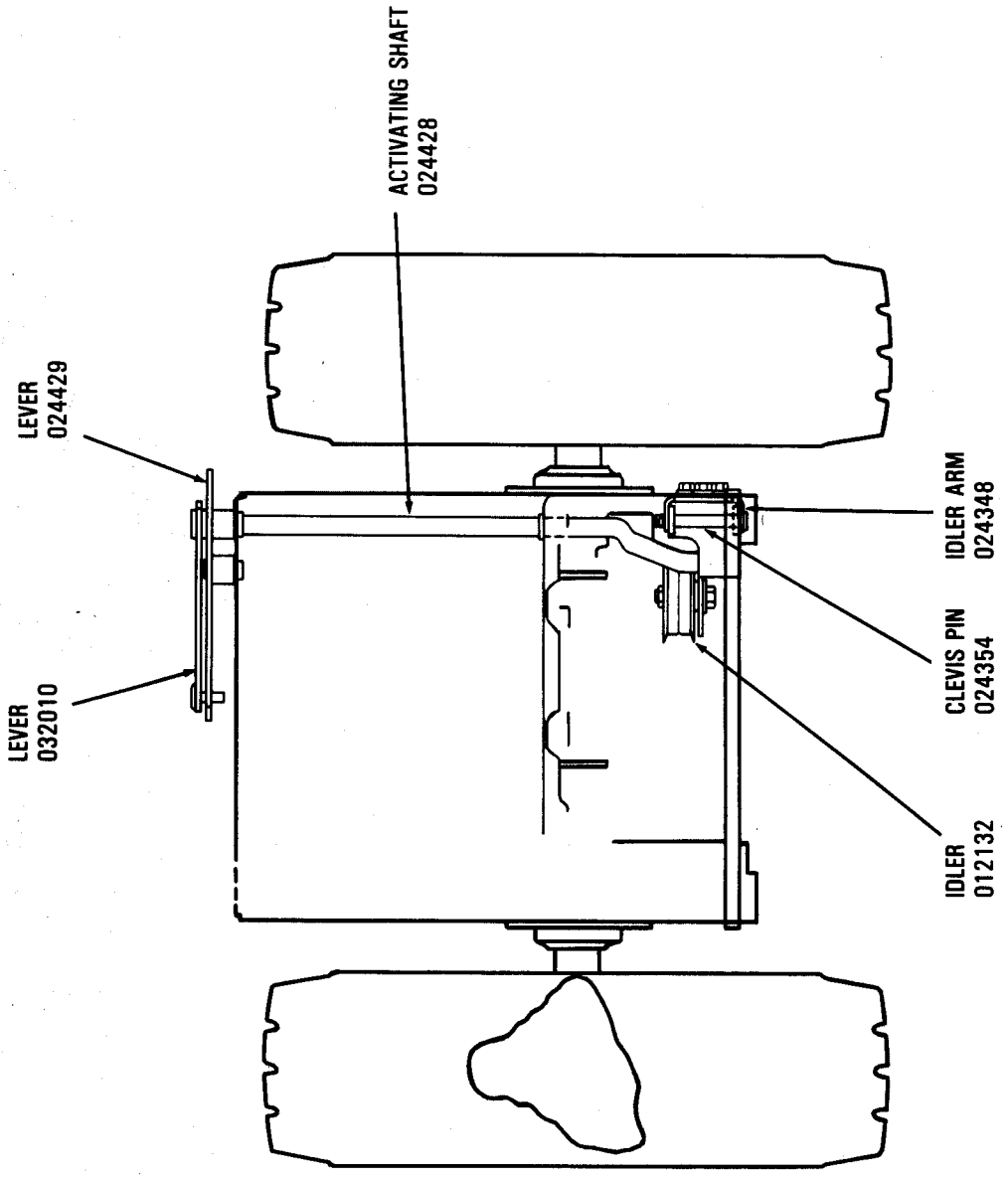


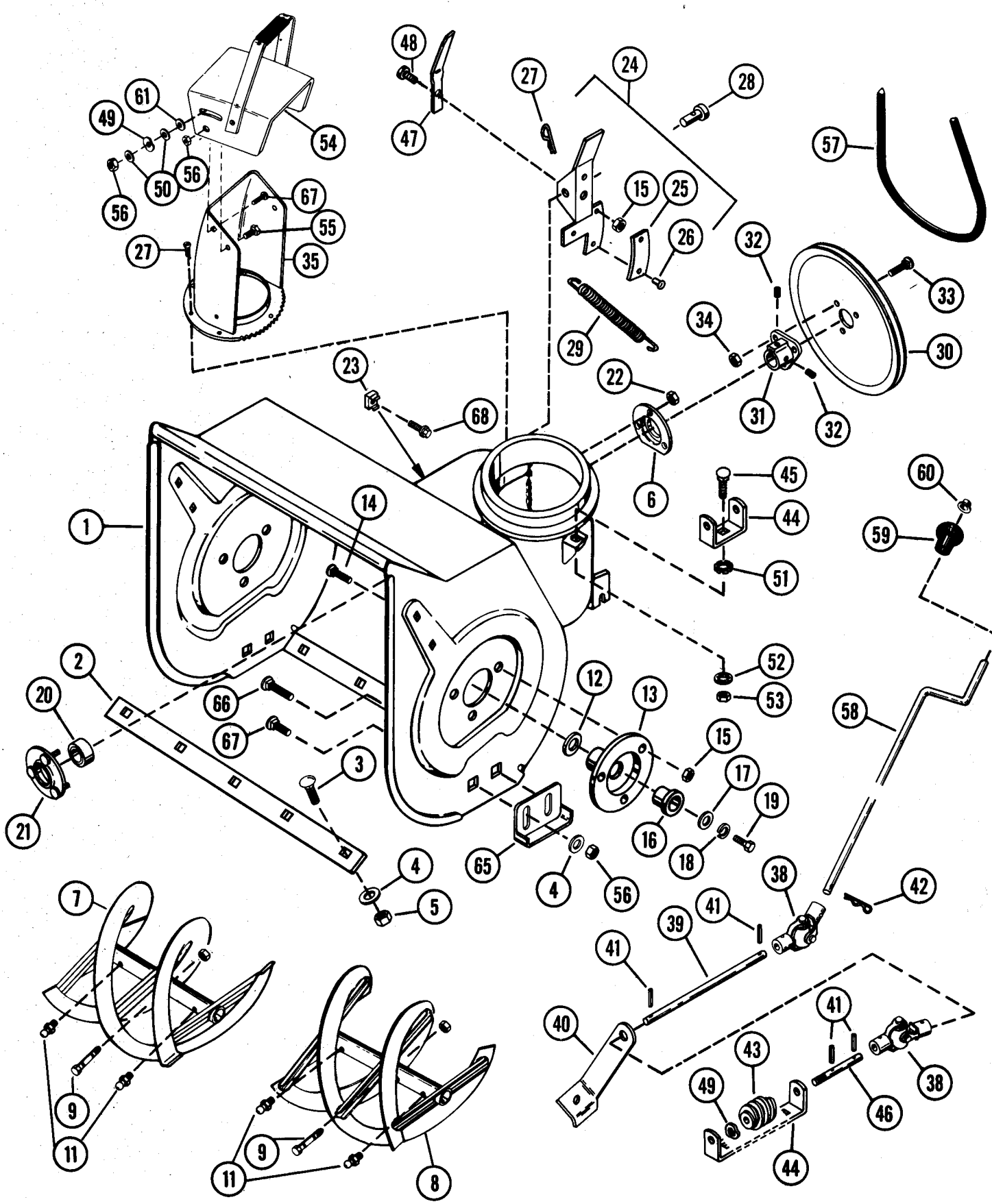
DIAGRAM C-1

ATTACHMENT DRIVE SYSTEM

DIAGRAM C-2

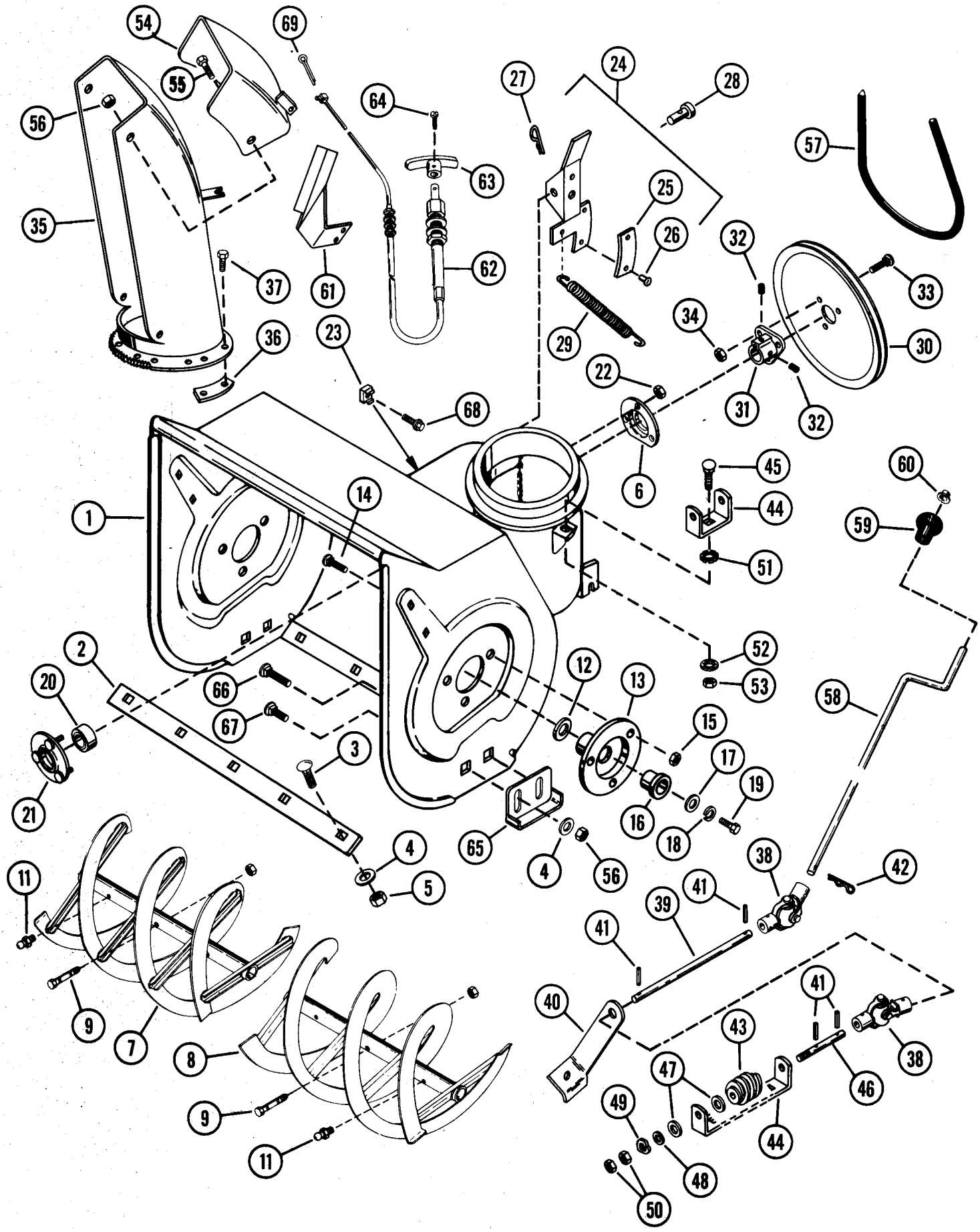


24" & 32" SNO-THRO — LATER MODELS
MODELS 924046, 48, 50, 72 & 73

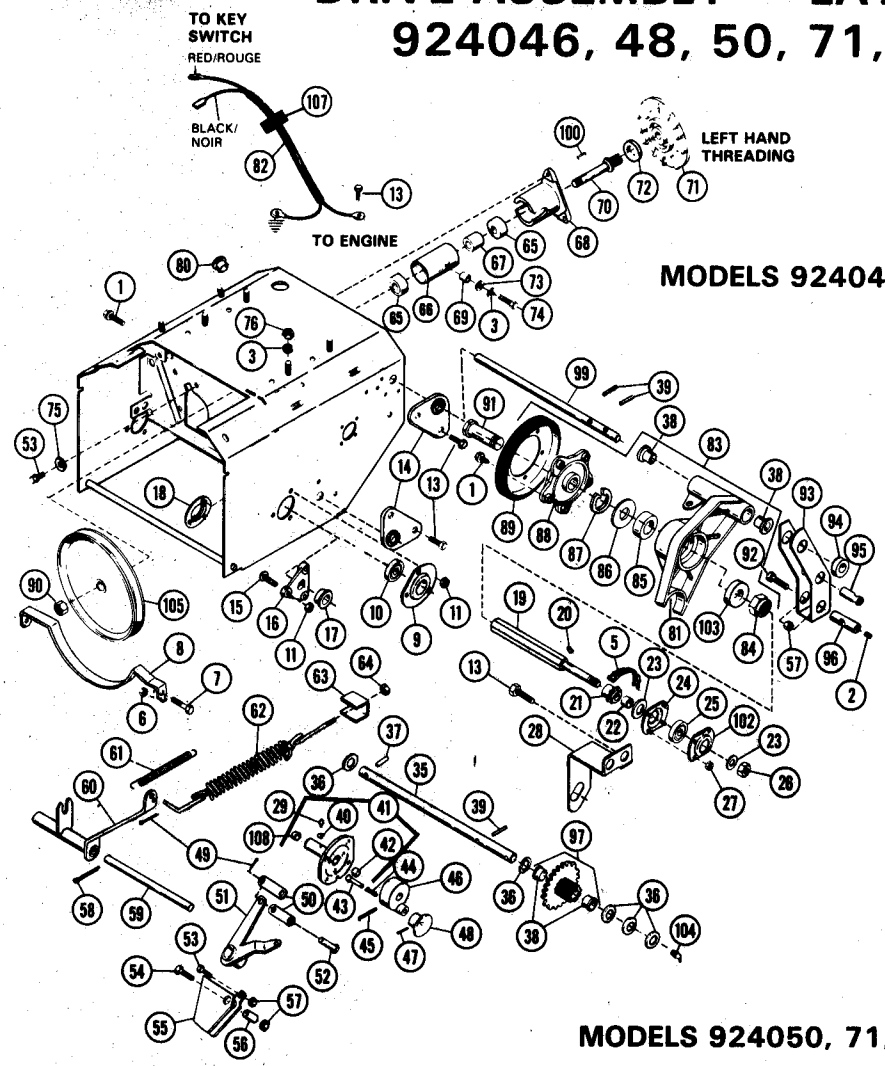


36" SNO-THRO MODEL 924071

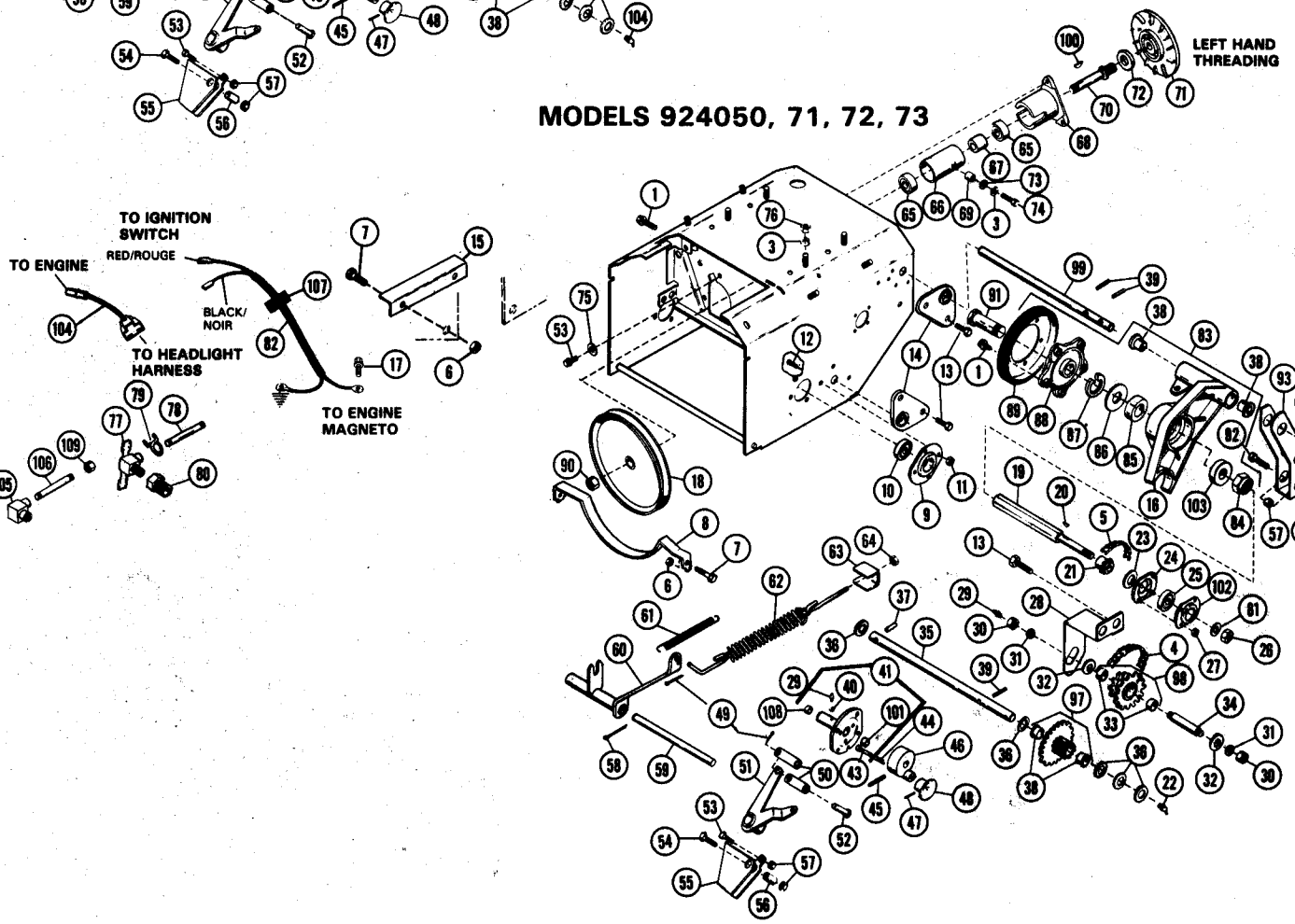
924



DRIVE ASSEMBLY — LATER MODELS
924046, 48, 50, 71, 72 & 73

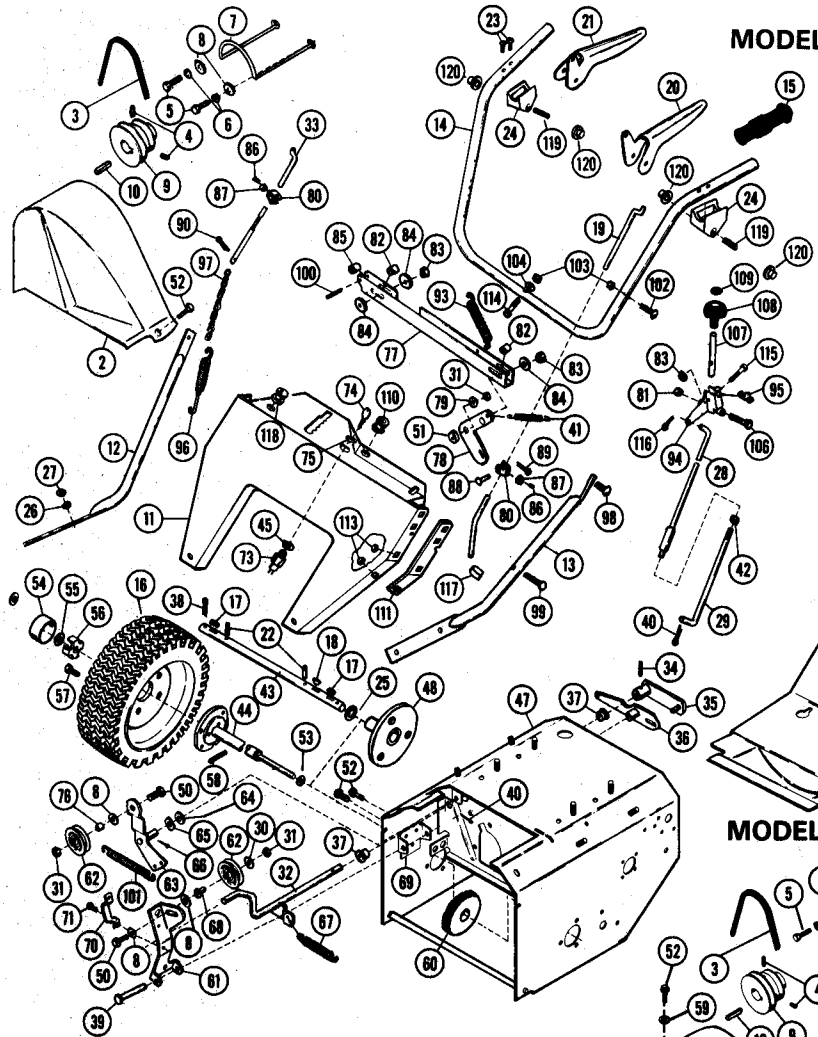


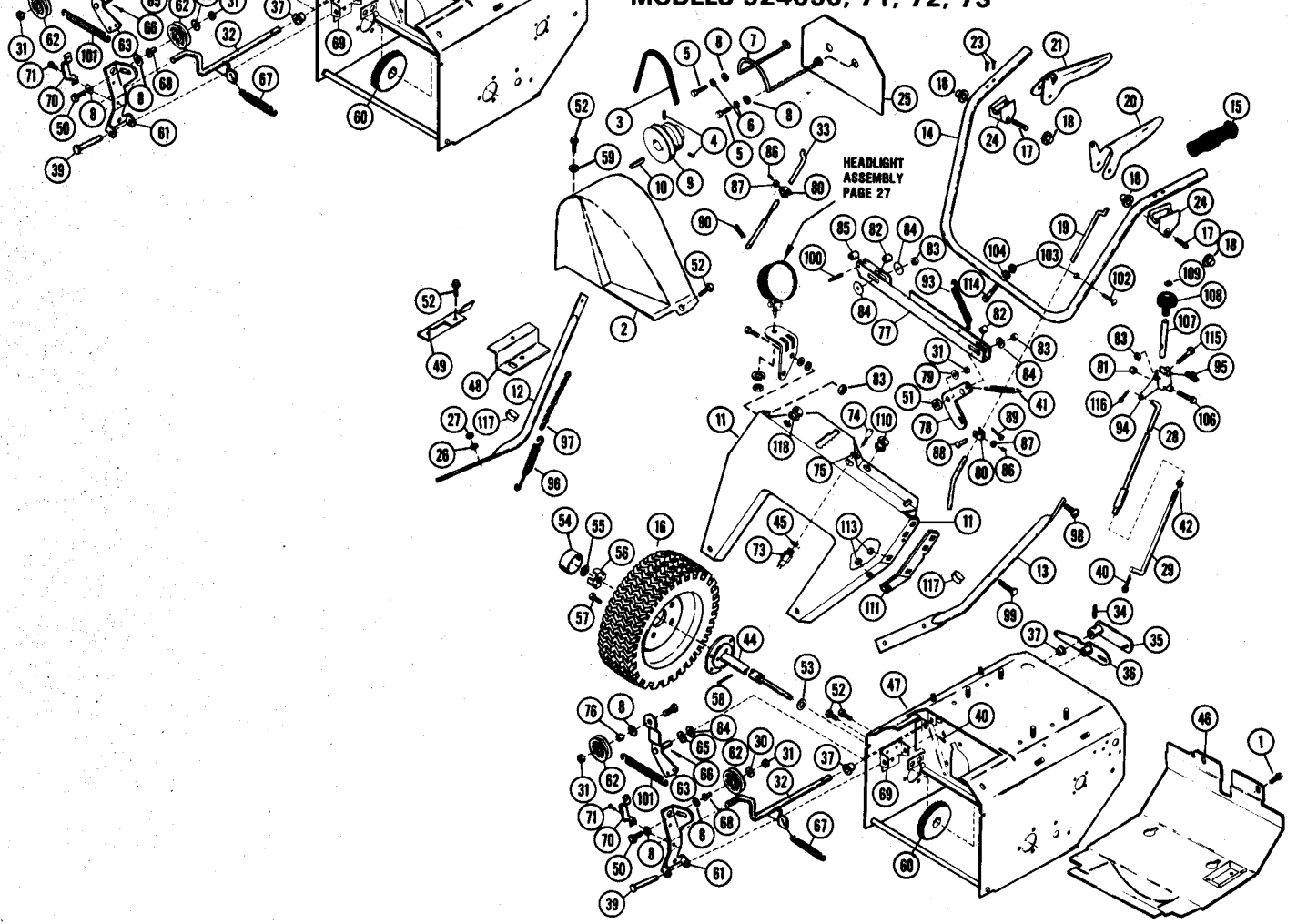
MODELS 924046, 48



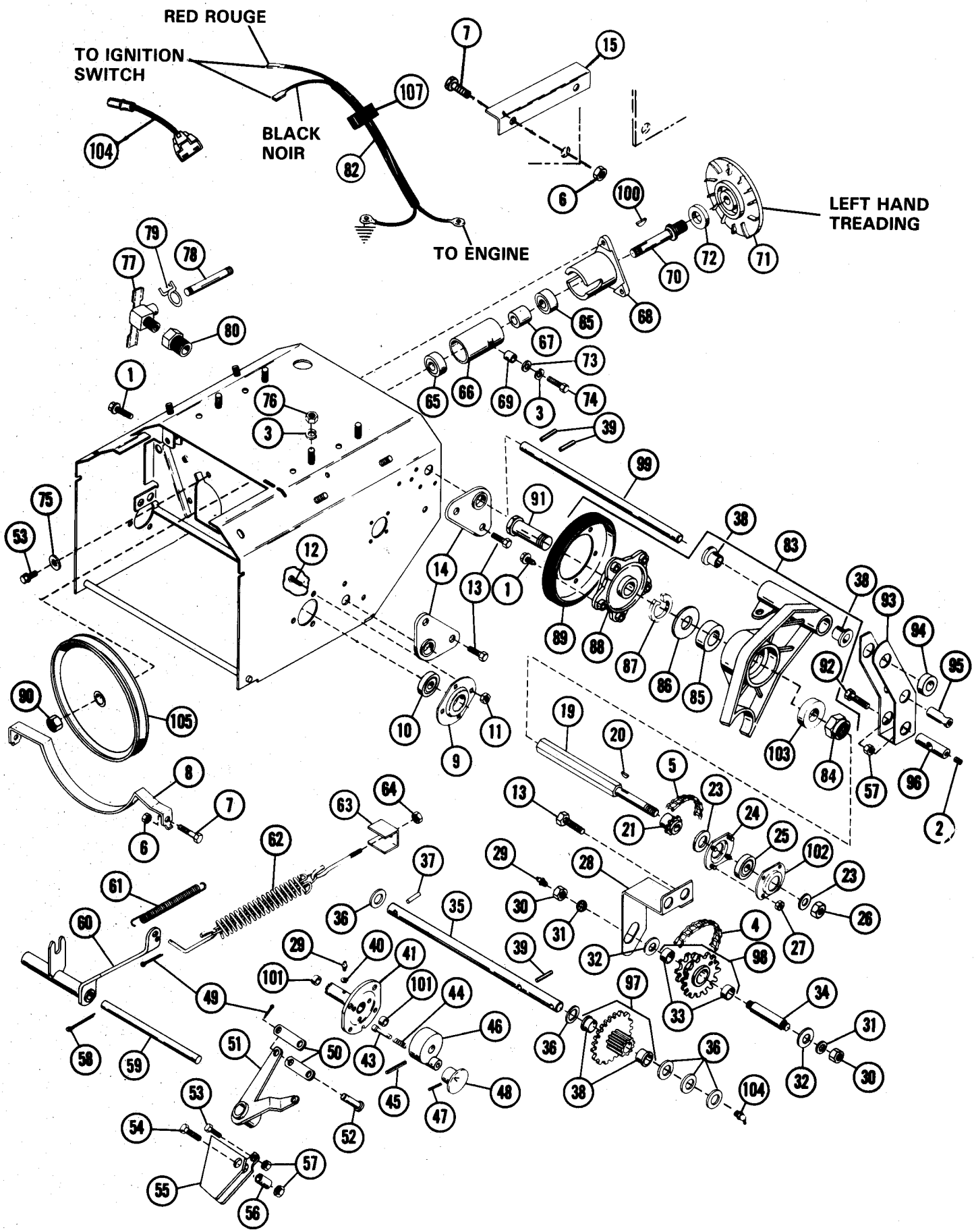
MODELS 924050, 71, 72, 73

TRACTOR PARTS — LATER MODELS
924046, 48, 50, 71, 72, 73



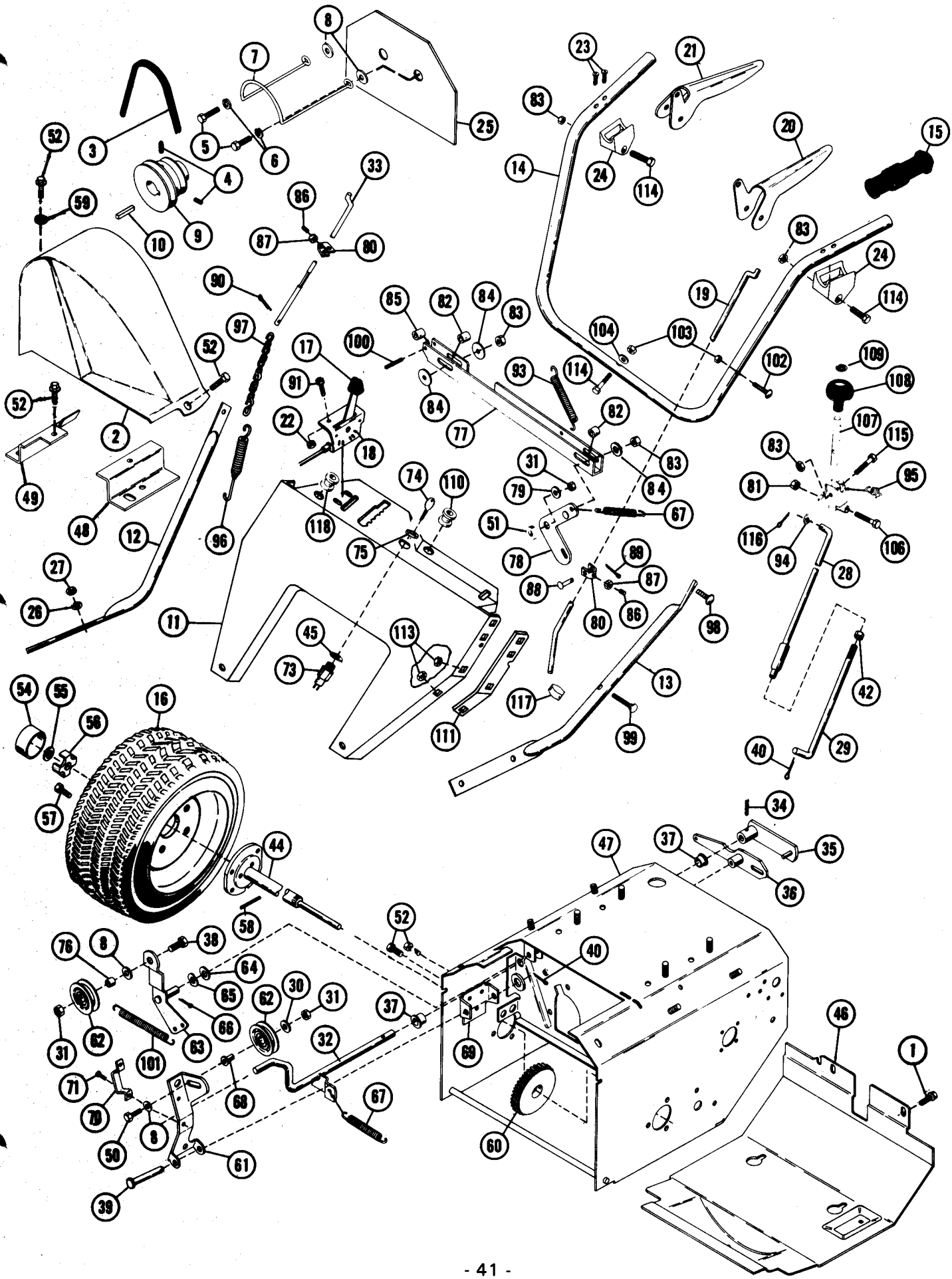


DRIVE ASSEMBLY – MODEL 924056

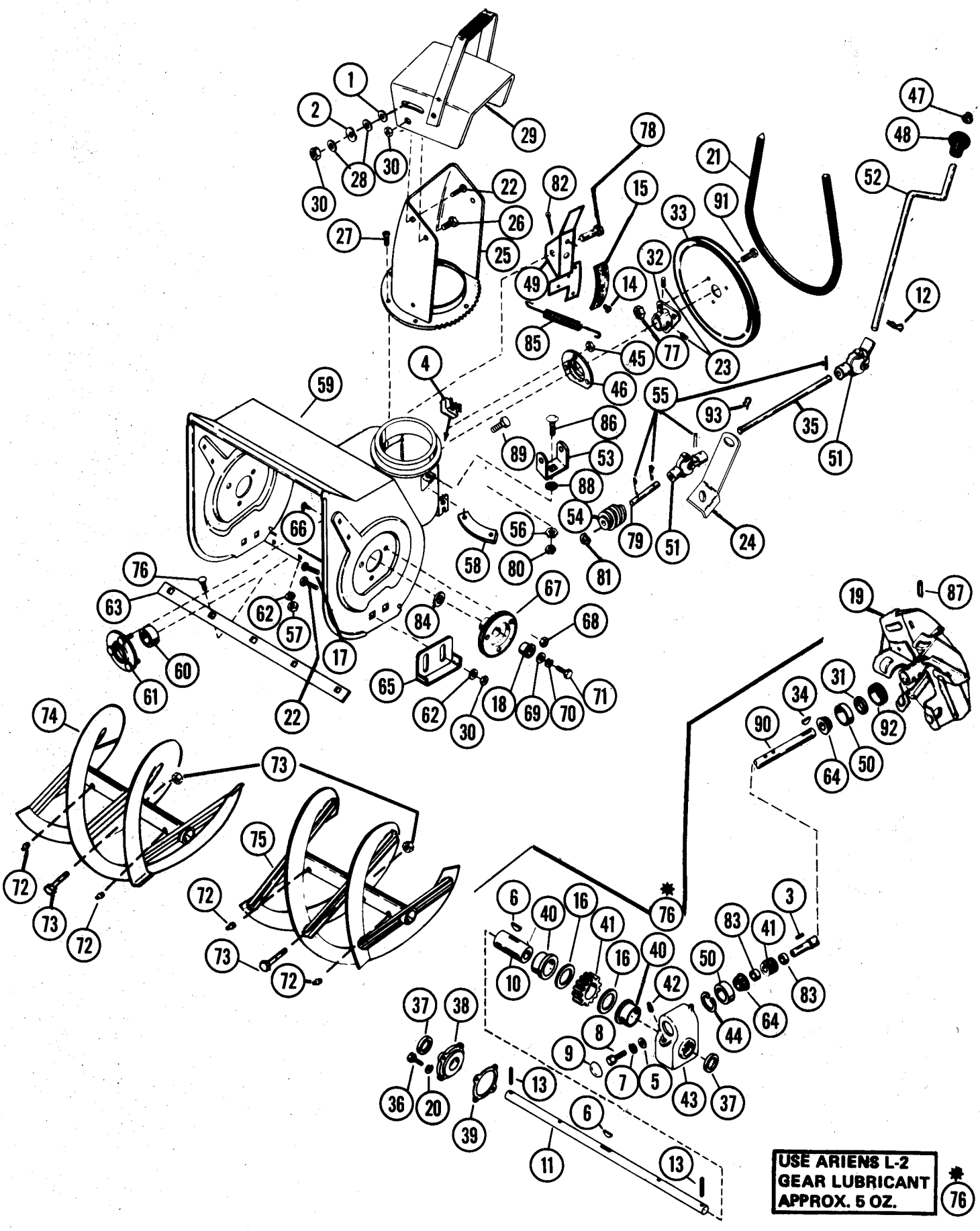


TRACTOR PARTS — MODEL 924056

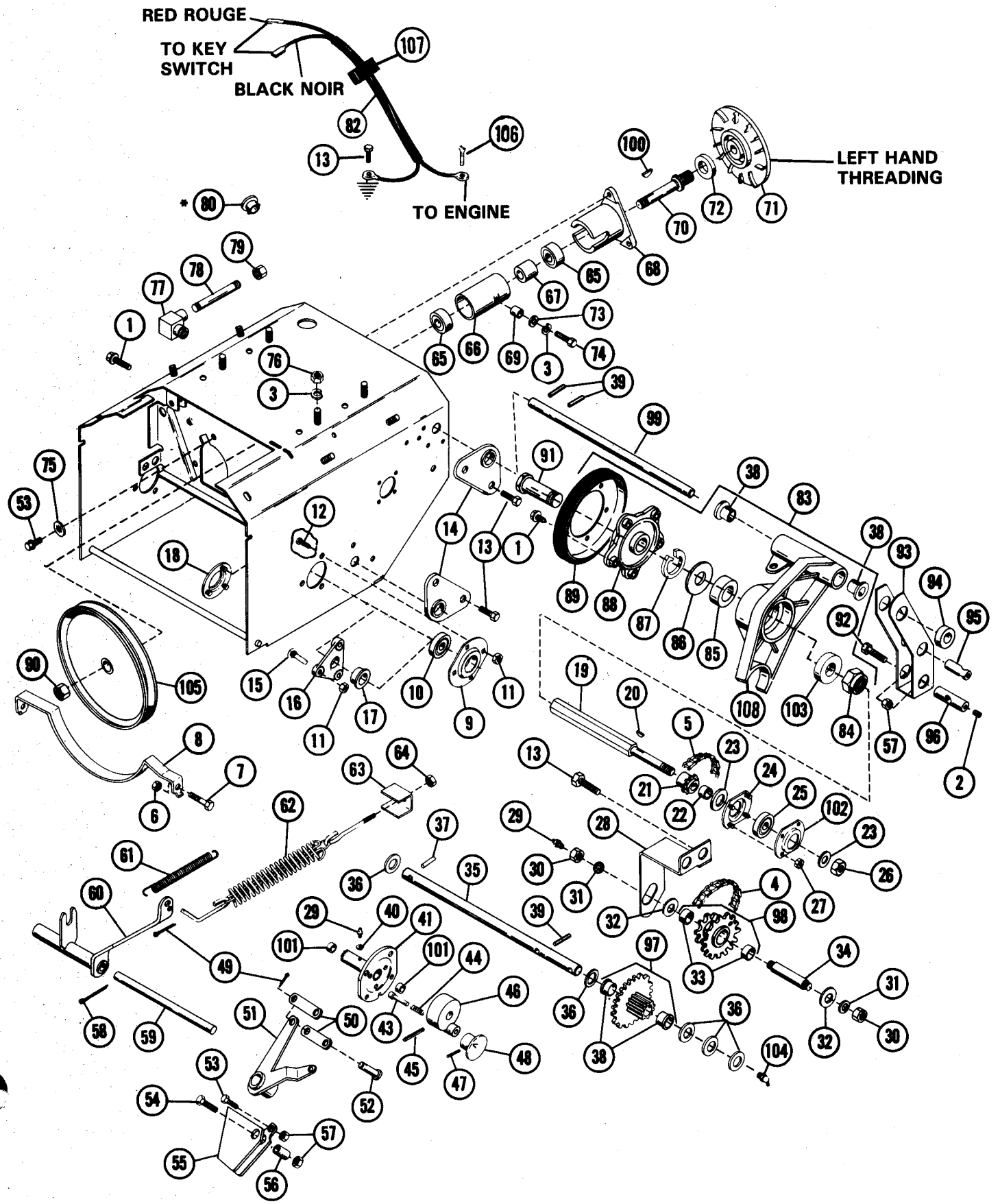
924



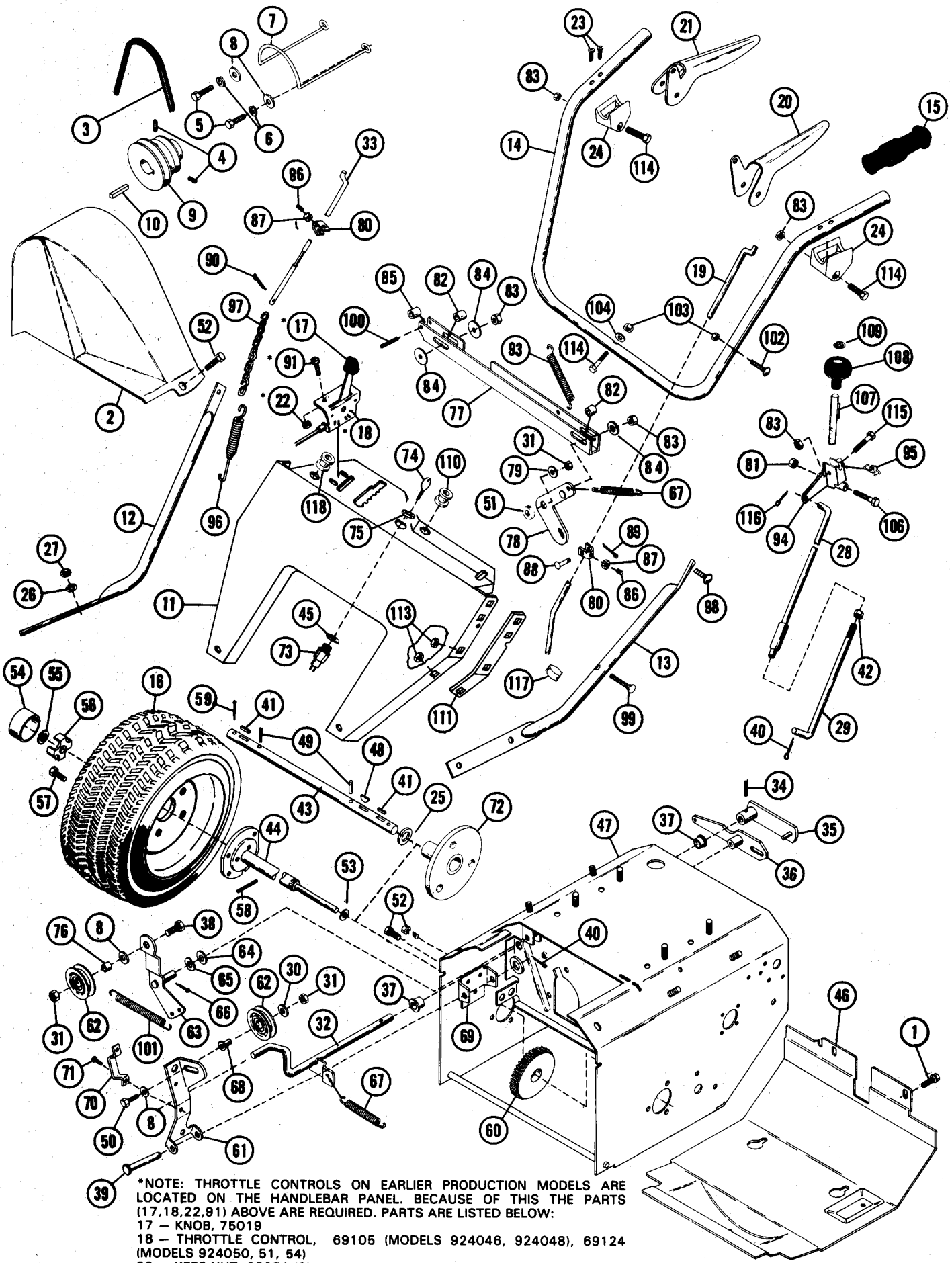
32" SNO-THRO — MODEL 924056



DRIVE ASSEMBLY — EARLY MODELS
924046, 48, 49, 50, 51 & 54



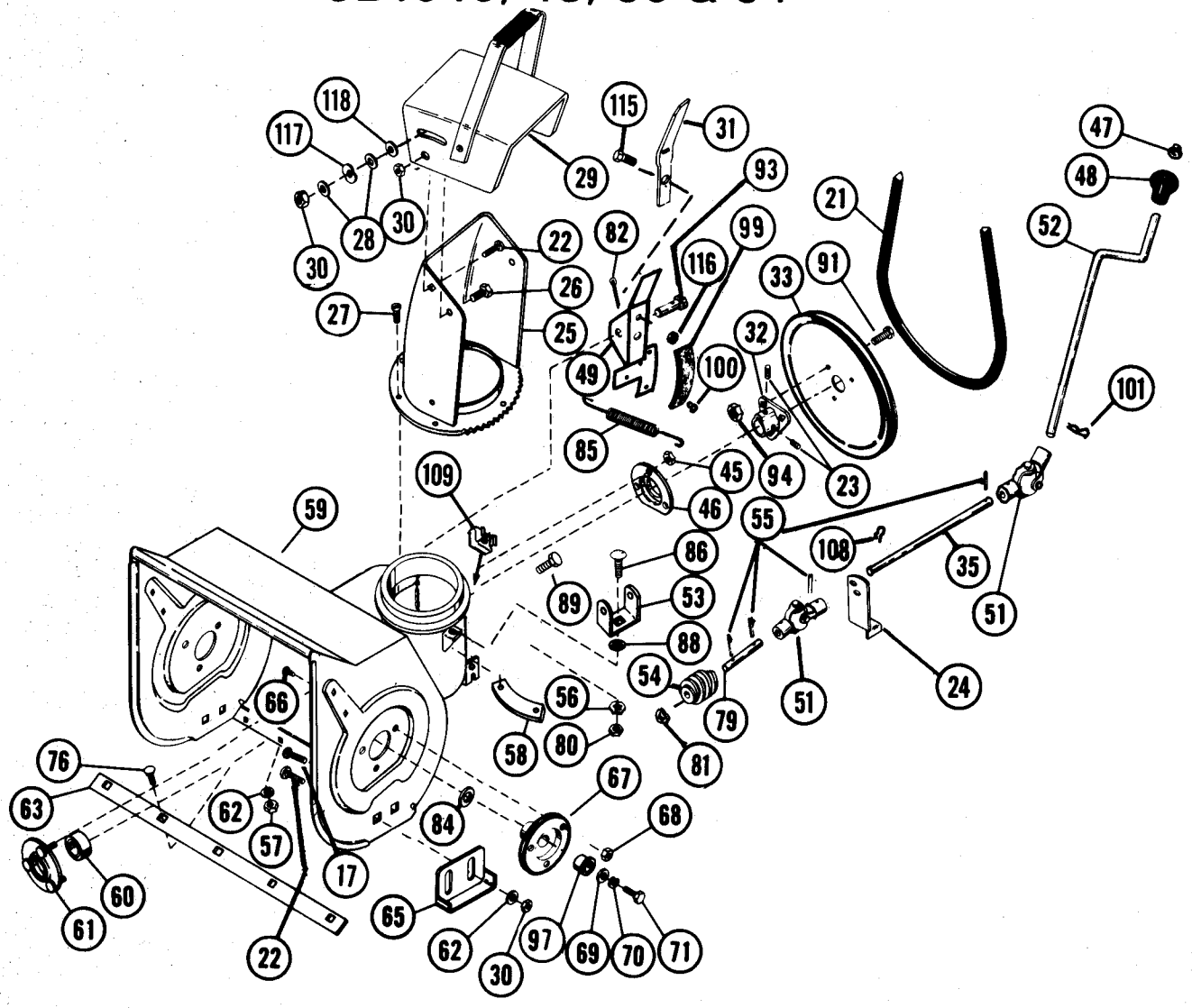
TRACTOR PARTS — EARLY MODELS
924046, 48, 49, 50, 51 & 54

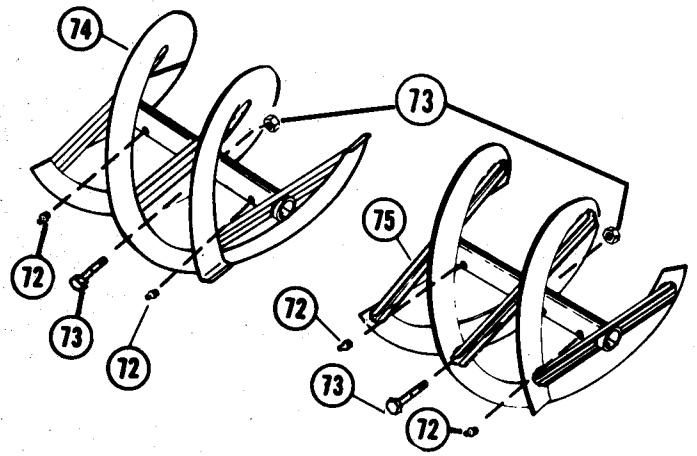


*NOTE: THROTTLE CONTROLS ON EARLIER PRODUCTION MODELS ARE LOCATED ON THE HANDLEBAR PANEL. BECAUSE OF THIS THE PARTS (17,18,22,91) ABOVE ARE REQUIRED. PARTS ARE LISTED BELOW:
17 — KNOB, 75019
18 — THROTTLE CONTROL, 69105 (MODELS 924046, 924048), 69124 (MODELS 924050, 51, 54)
22 — KEPS NUT, 65051 (2)
91 — MACHINE SCREW, 61057 (2)

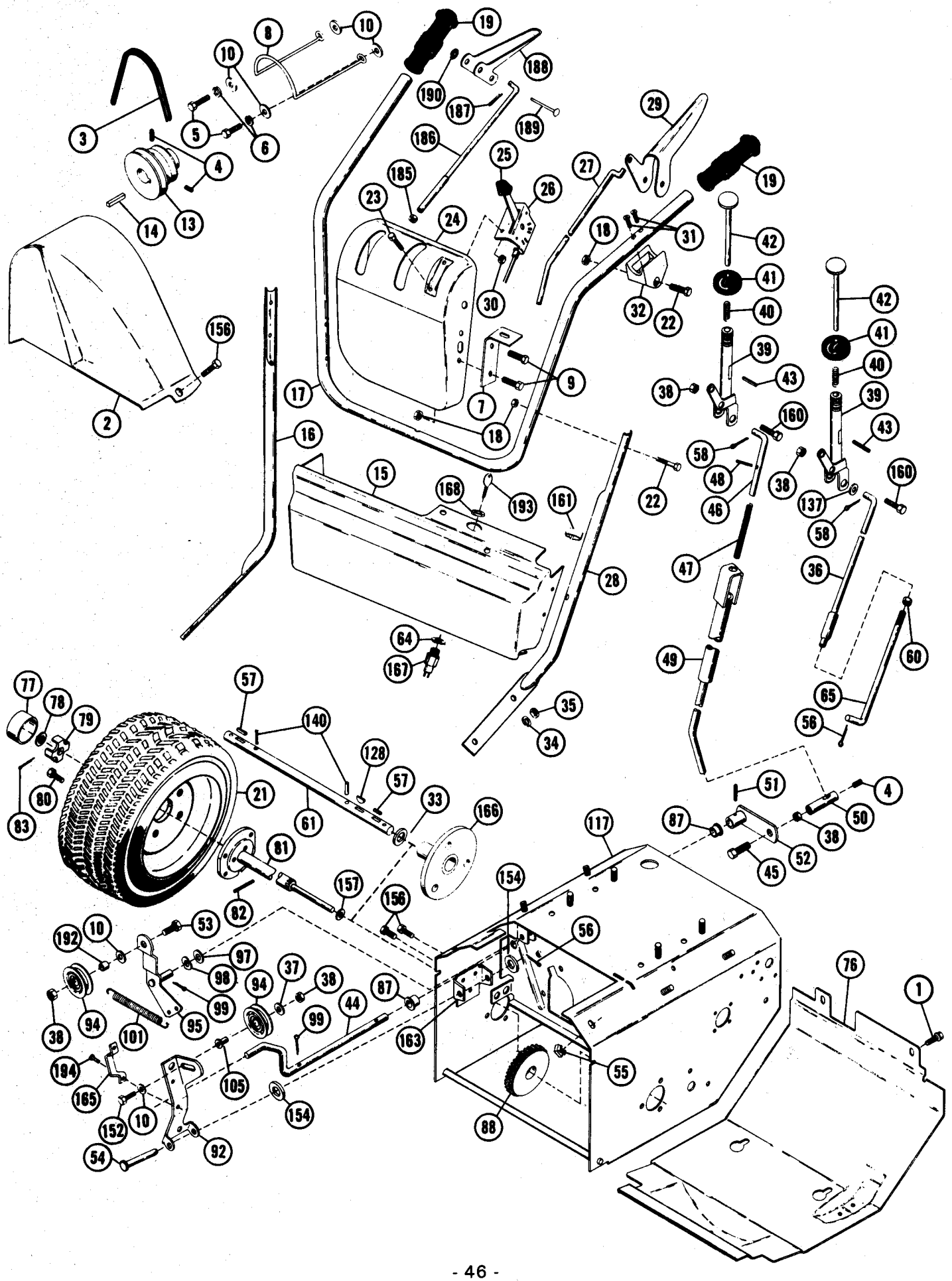
24" & 32" SNO-THRO — EARLY MODELS
924046, 48, 50 & 54

924

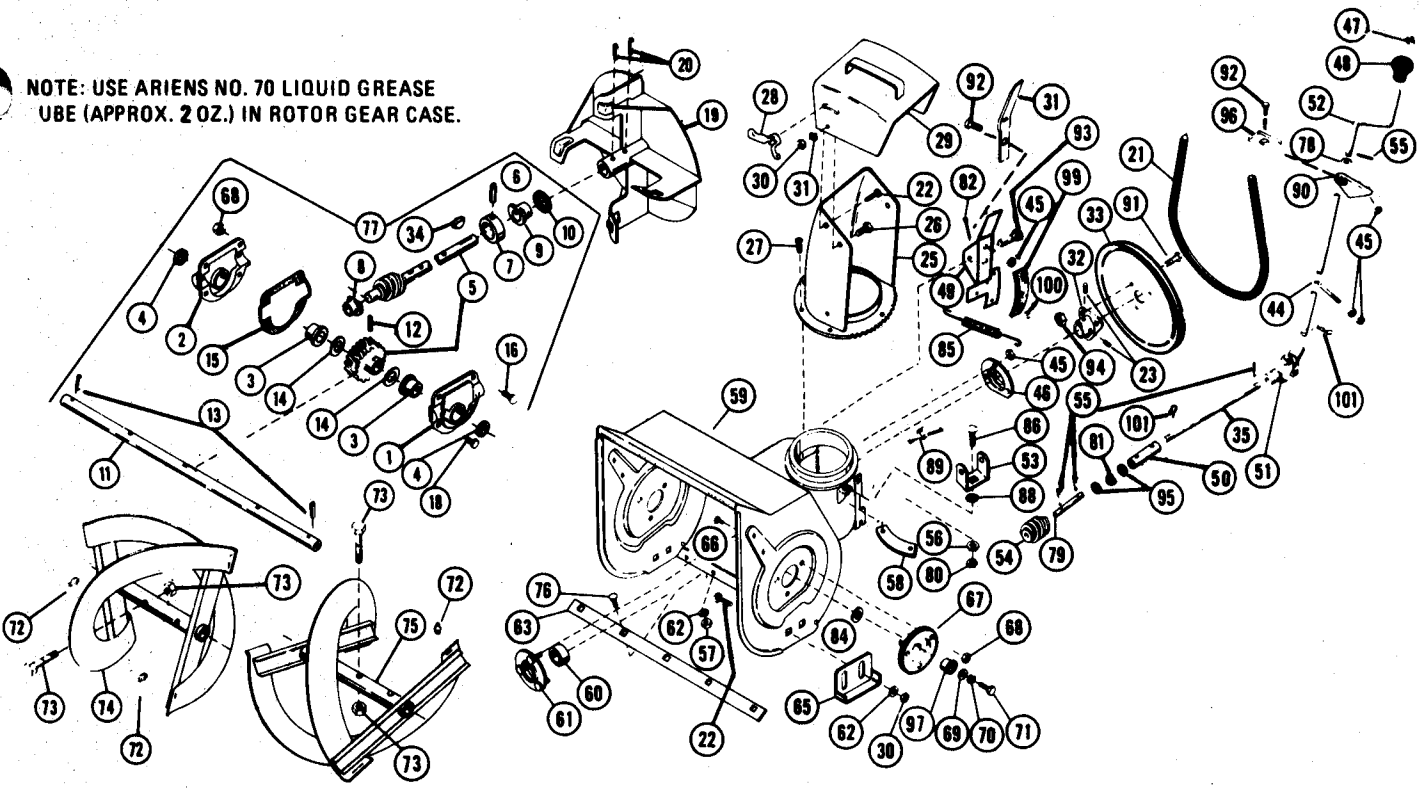




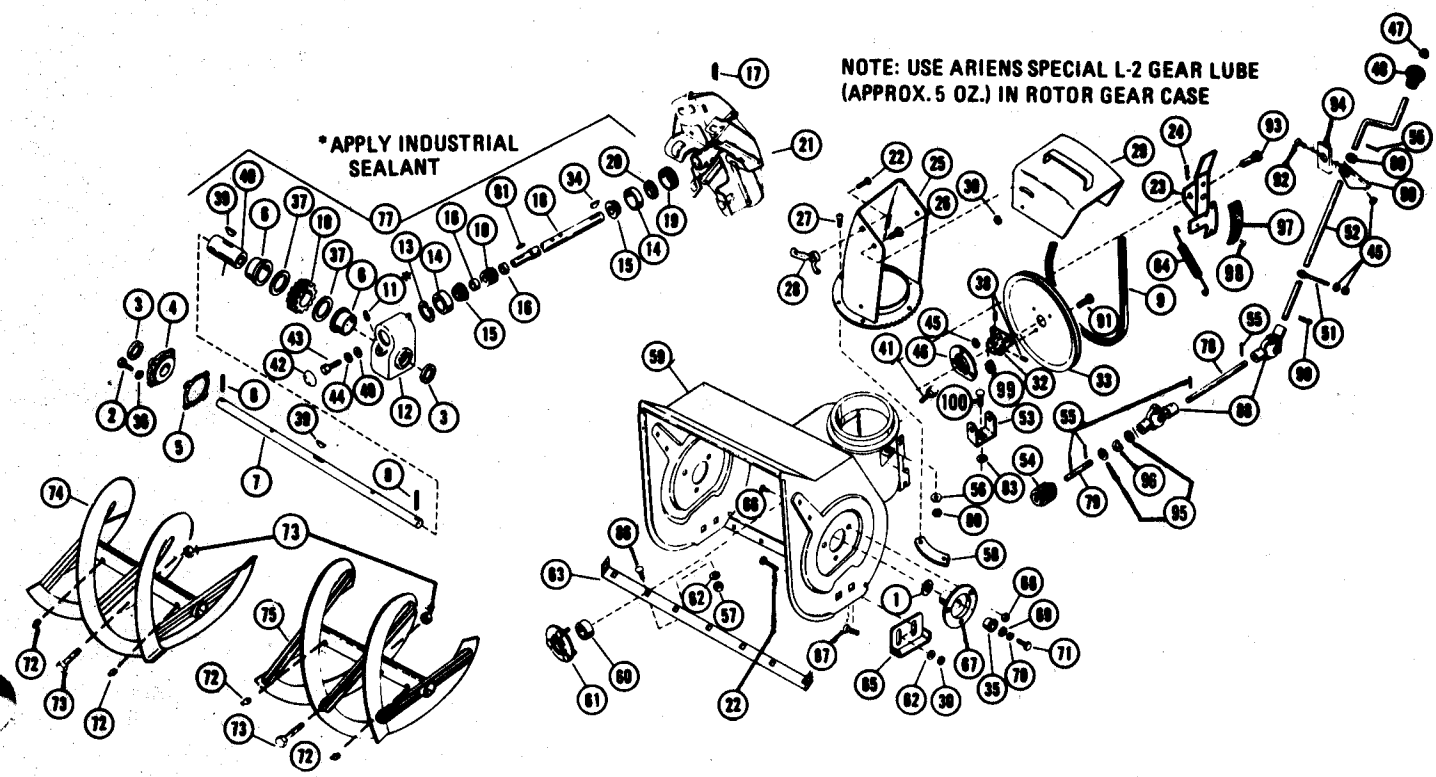
TRACTOR PARTS — MODELS 924027, 36, 38, 39, 40, 42 & 44



24" SNO-THRO — MODELS 924036, 38, 39 & 40



32" SNO-THRO — MODELS 924042 & 44



ROTARY BRUSH MODEL 824004

ASSEMBLY

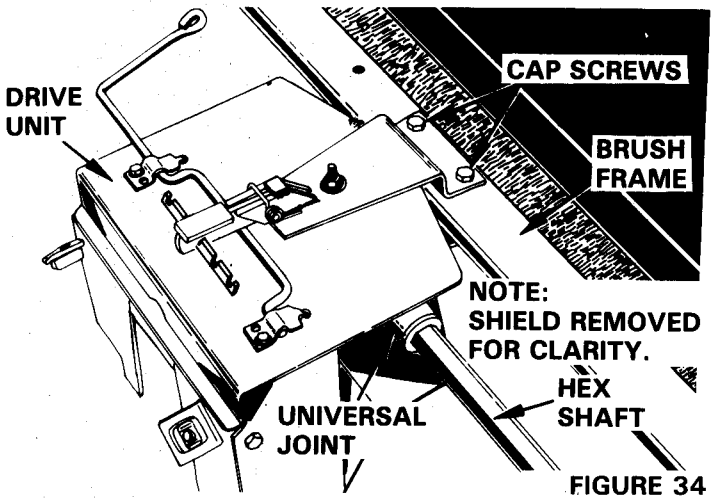


FIGURE 34

MODEL 824004 ROTARY BRUSH

The rotary brush is shipped in a single carton with the drive unit separated from the brush. Open the carton and remove all items. Proceed as follows:

1. The Hex Drive Shaft is attached to the brush. As the drive is assembled to the brush, slip the drive shaft into the end of the universal joint on the drive unit.

2. Attach the brush drive to the brush frame with two 3/8-16 x 3 inch cap screws. See Figure 34. Note that the right hand cap screw is also used to hold the shaft guard. A third cap screw secures the opposite end of the shaft guard to the frame. Assemble these parts, then tighten the hardware. Use three flanged whizlock nuts to secure the cap screws.

NOTE: THE BRUSH MOUNTING PLATE AND ADAPTER FRAME (FIGURE 2) ARE SHIPPED ASSEMBLED FOR USE ON TRACTORS WITH SMALL (4.10/3.50 x 6) TIRES. IF THE BRUSH IS TO BE USED ON A TRACTOR WITH LARGE TIRES (16/6.50 x 8 & 16/4.80 x 8), REMOVE THE FOUR CAP SCREWS HOLDING THE MOUNTING PLATE IN THE FRAME AND MOVE THE MOUNTING PLATE UP AND OUT AND REPLACE THE CAP SCREWS IN THE LOWER, OUTER HOLES.

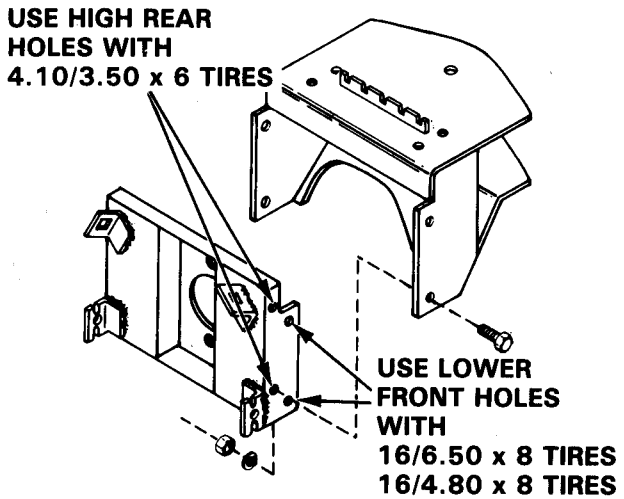


FIGURE 35

3. Install decal on right hand side of tractor dash panel. See Figure 38. Must be readable from operator's position.

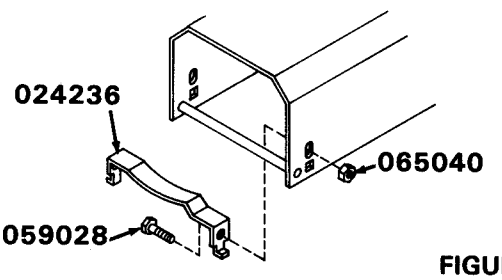


FIGURE 36

NOTE: INSTALLATION OF BELT RETAINER REQUIRED WHEN BRUSH MODEL 824004 IS TO BE MOUNTED ON SNO-THRO TRACTOR MODELS 924040 AND 924050.

After Sno Head is removed, install the Belt Retainer AS SHOWN placing the tabs on the retainer into the square holes in the frame. Insert the cap screws through the holes in the retainer and the slots in the frame. Secure with locknut. When brush attachment is removed, the retainer must also be removed before assembly of the Sno-Head.

INSTALLATION

1. If using broom for other than snow removal, remove the carburetor heater box from engine and install the air cleaner packed with the attachment or the optional accessory Adaptor and Air Cleaner Kit for models with Briggs and Stratton Engines.,

2. Remove belt guard on tractor. Hook the notches in the lower position of the rotary brush frame over the rod passing through the forward section of the tractor frame.

3. Position the vee belt on the rotary brush drive sheave. The vee belt supplied with the brush attachment will fit all units. It is the same vee belt (72108) used on the small wheel sno-thro (4.10/3.50-6 tires). Tip the two sections together.

4. Now roll the belt on the engine pulley. Check the alignment of engine sheave and drive sheave. Loosen setscrews on drive sheave, and move drive sheave in or out to align sheave. Retighten setscrews. Check the belt and belt fingers to be sure they are positioned properly. Belt fingers should clear the belt by 1/8 inch all around with attachment clutch engaged.

INSTALLATION

5. Insert and tighten the two 3/8-inch flange whizlock screws through the top of the tractor frame and into the rotary brush frame. Replace the belt guard on tractor.

6. Install the Position Support Bracket on the left side of the handlebar panel. See Figure 37, using carriage bolt (62022) and locknut (65042).

7. Slip the Position Rod into the support bracket and install the knob on the rod. Insert the bent end of the position rod into the loop on the release rod. Secure with a washer (64002) and the bent end of the latch spring (83033). See Figure 37. Secure the other end of the latch spring to the capscrew on the left side of the mounting plate.

Check the action of the position rod. Pulling the rod should lift the latch bar and allow the broom to be swiveled to either side.

ADJUSTMENTS

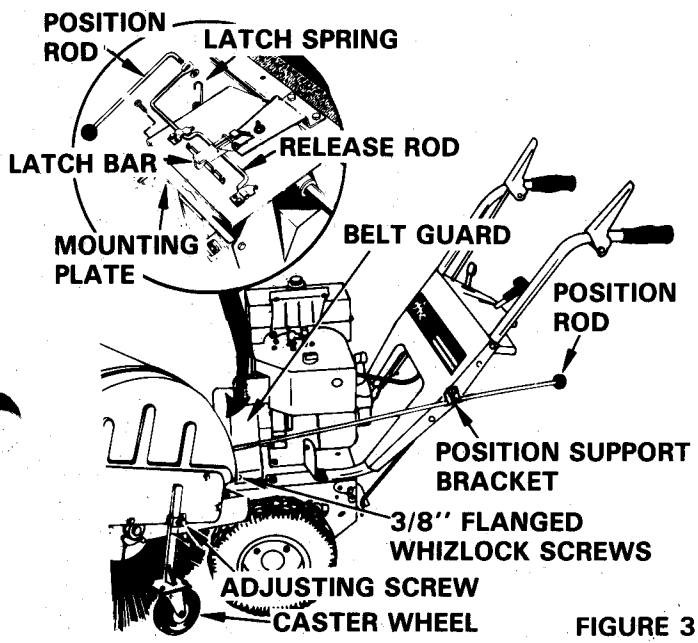


FIGURE 37

1. Caster Wheels — Adjust the caster wheels by loosening the cap screw on each side of the brush, and sliding the caster wheel support up or down as required. Casters must be adjusted so that the brush cleans properly, but does not "dive" into the grass and stall the tractor.

2. Brush Angle — The brush can be adjusted from a straight ahead position to a ten or twenty degree angle to either side. To change the angle, pull the position rod to raise the latch bar; turn the tractor by swinging the handlebars until the broom is in the desired position. Then release the latch bar for entry in the retaining notch to hold it in position.

LUBRICATION

A few drops of oil applied to the chain, idler pivot and other pivot points every 25 hours will keep these items operating freely.

The gear box (62041) is lubricated at the factory and should require no additional lubrication.

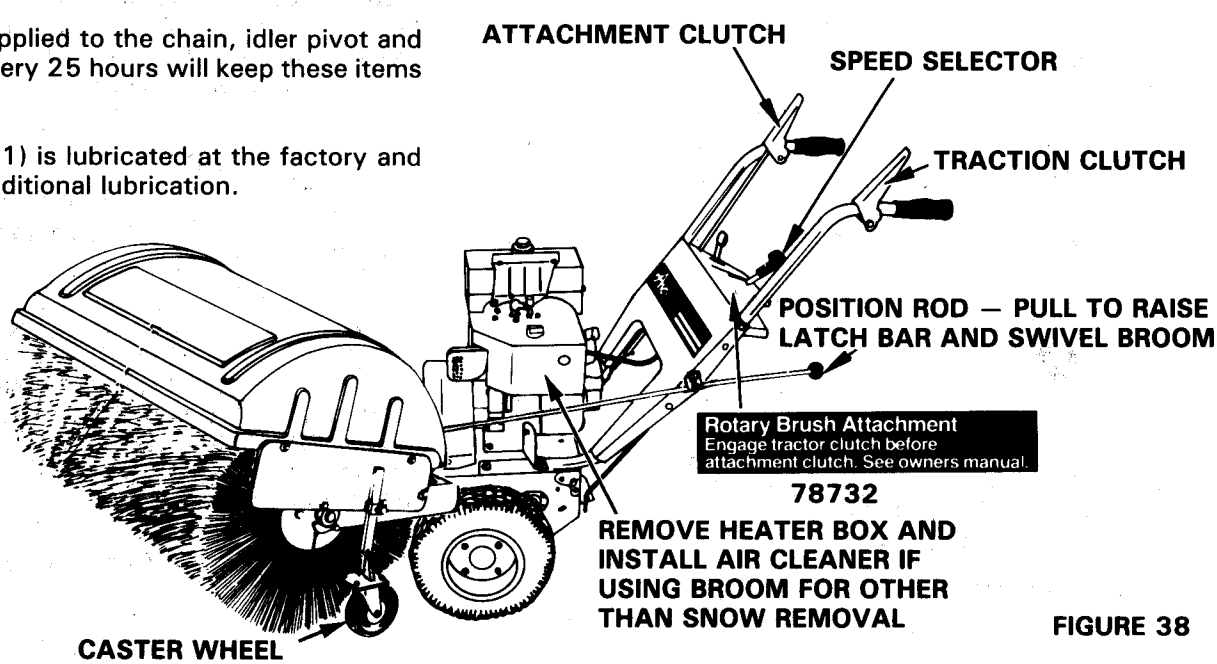


FIGURE 38

INSTALLATION

AIR CLEANER INSTALLATION - TECUMSEH ENGINES

Air cleaner installation varies slightly depending upon the engine involved. For models equipped with Tecumseh engines select the category which describes the Tecumseh engine on your Sno-Thro and install as follows:

1. **8 HP AND 10 HP ENGINES — MODELS 924050, 924052 AND 924054**

   a. Remove choke knob (may require prying on underside of knob with flat blade screw driver).

   b. Remove (4) screws that attach carburetor cover to engine and remove cover.

   c. Remove (2) screws that attach carburetor cover bracket to carburetor and remove. Figure 39. Replace screws being careful to lift up on upper right hand corner of inner bracket.

   d. Remove (2) screws that attach choke assembly to carburetor and remove assembly (choke, brake and rod). Retain choke bracket, carburetor cover bracket, rod and hardware for Sno-Thro operations.

   e. Attach 90° elbow to front of carburetor with one 2½" long and one ¾" long screw with gasket located between elbow and the front of carburetor.

   f. Attach air filter and air filter cover to the back plate with (2) 2½" long screws. Install choke decal on top of air filter cover.

   g. Attach air filter and air filter cover to back plate with (2) ½" screws. Install choke decal on top of air filter cover.

   h. Install choke rod in kit to choke lever on carburetor with hairpin.

   i. This completes the installation. Figure 39. Reverse this procedure for converting to snow thrower.

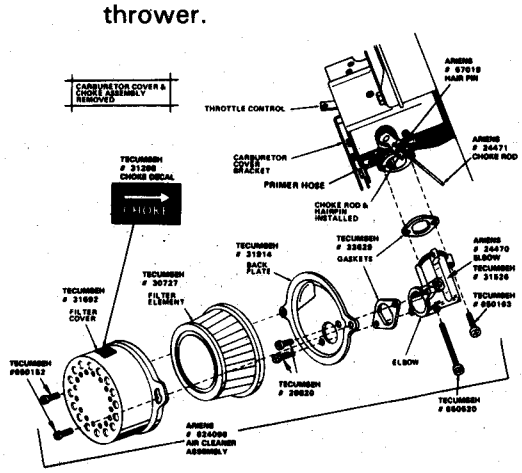


FIGURE 39

NOTE: THE AIR CLEANER KIT INSTALLED ON THESE ENGINES DOES NOT UTILIZE ALL PARTS IN KIT. THEY ARE PROVIDED TO MAKE THIS KIT USABLE OVER A WIDE RANGE OF ENGINES.

2. **5 HP AND 7 HP ENGINES — MODELS 924046 AND 924048.**

   a. Remove choke knob (may require prying on underside of knob with flat blade screw driver).

   b. Remove (3) screws that attach carburetor cover to engine and remove cover.

   c. Remove (2) screws that attach carburetor cover bracket to carburetor. Retain bracket and hardware for Sno-Thro operations.

   d. Locate primer hose on top of carburetor as shown. Figure 39.

   e. Attach air filter back plate on carburetor with two ½" long screws and gasket located between back plate and carburetor.

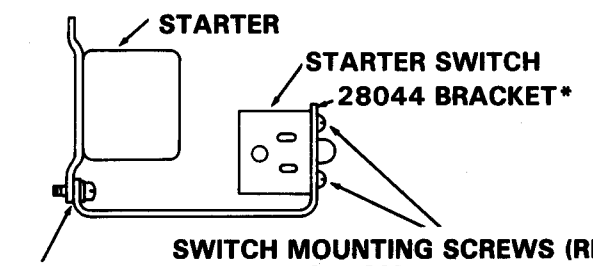
   f. Attach air filter and air filter cover to back plate with (2) ½" long screws. Install choke decal on top of air filter cover.

   g. Reinstall plastic choke knob.

   h. This completes the installation, Figure 39. Reverse this procedure for converting to snow thrower.

ENGINES EQUIPPED WITH ELECTRIC STARTERS

On tractors using the electric starter, with the starter switch mounted on the heater box. (These are all models produced prior to 1975). To remove the heater box and install the air cleaner, it is necessary to install the switch bracket (28044) for switch mounting. Install as illustrated below.

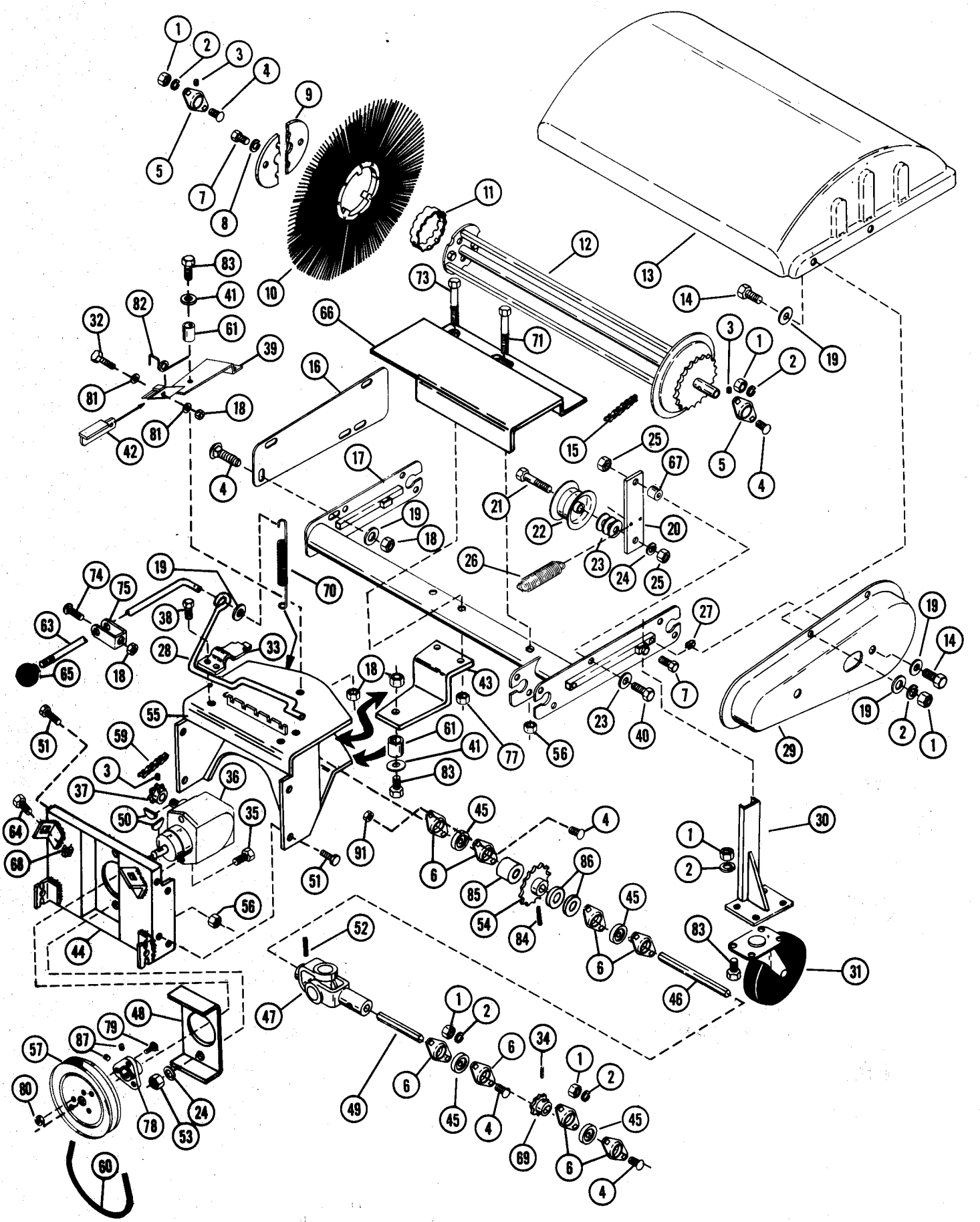


*THESE PARTS MAY BE ORDERED FROM ARIENS DEALER.

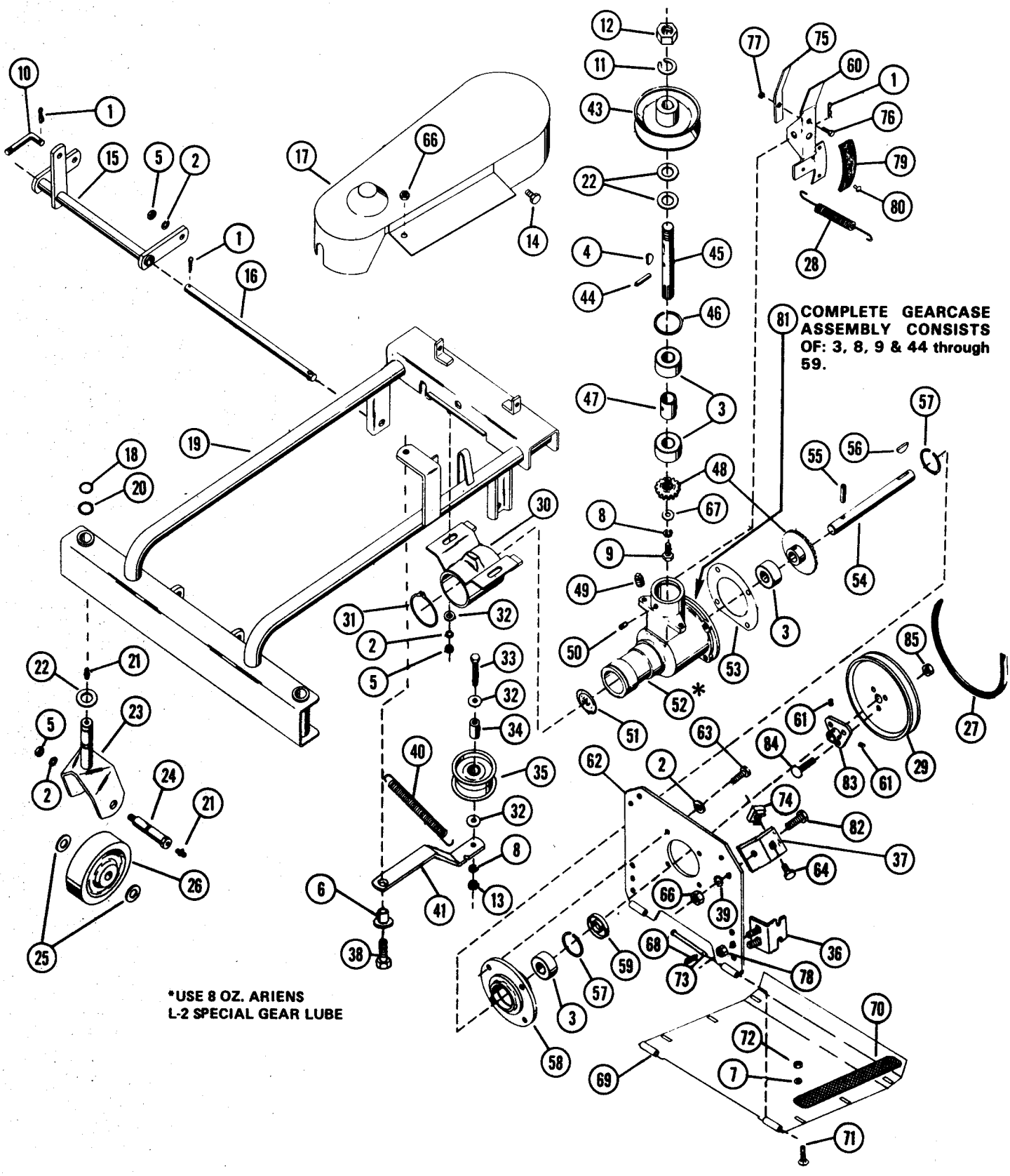
FIGURE 40

ROTARY BRUSH MODEL 824004

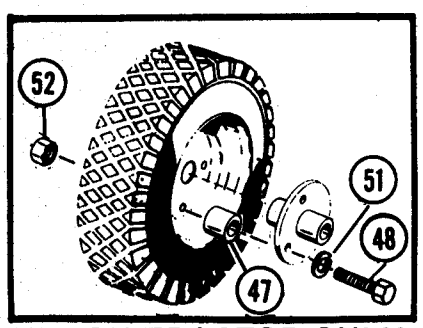
924



ROTARY MOWER MODEL 824005

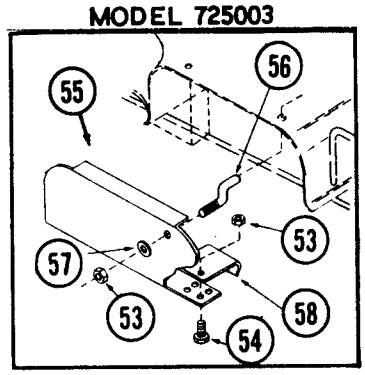


ROTARY MOWER MODEL 824005

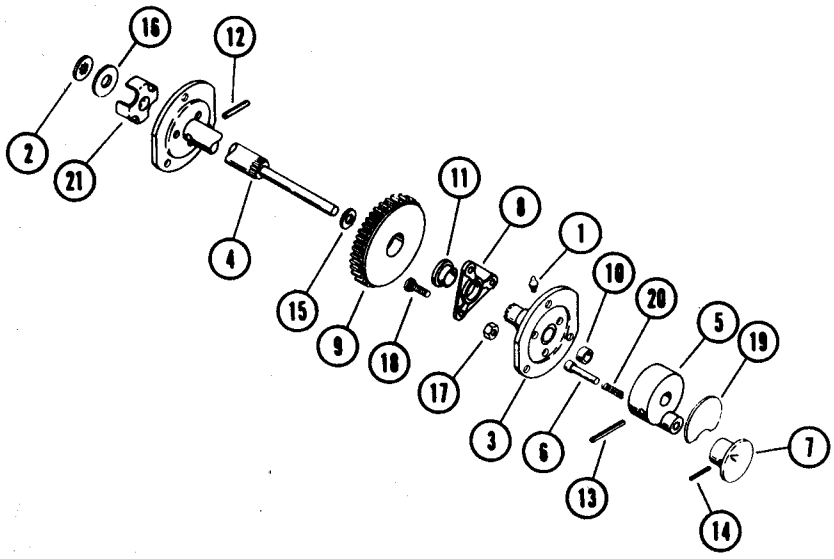


USE ON TRACTOR ONLY

LEAF MULCHER KIT
MODEL 725003

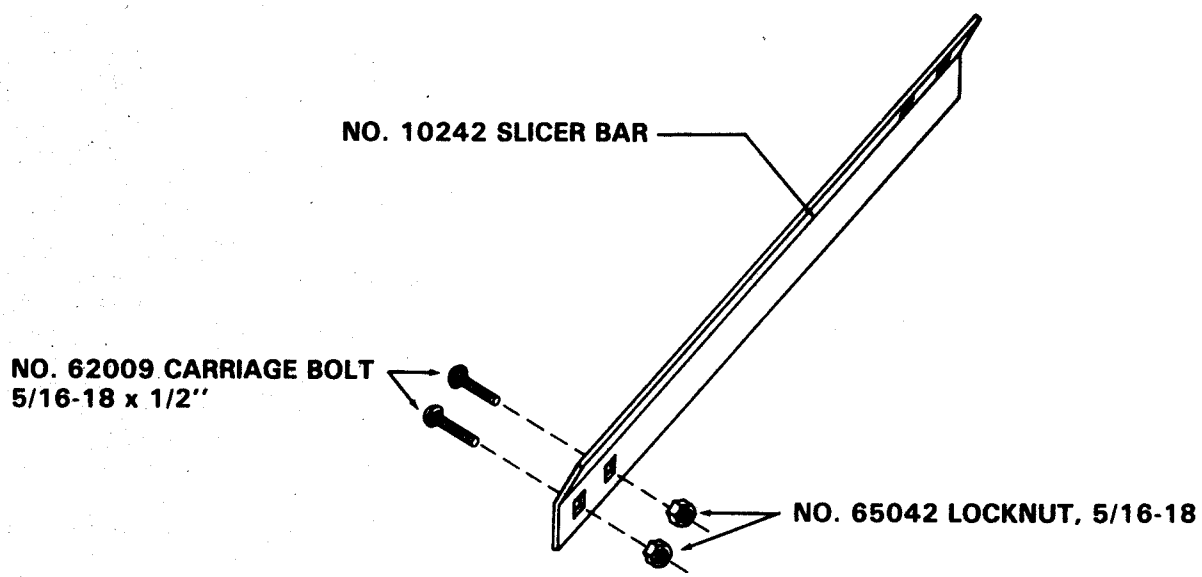


SNO-THRO DIFFERENTIAL MODEL 710983
FOR MODEL 924046



REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	010354	Zerk Fitting	1
2	010366	Push Nut	1
3	610938	L.H. Axle	1
4	010370	R.H. Axle Shaft	1
5	010372	Lockout Hub	1
6	010374	Pin	1
7	010375	Knob	1
8	012023	Bearing Support	2
9	612999	Differential Assembly	1
10	055029	Bushing (In 12008)	2
11	055030	Bushing (In 12023)	2
12	058003	Roll Pin 3/16 x 1¼	1
13	058037	Roll Pin ¼ x 1¾	1
14	058032	Roll Pin 3/32 x 1	1
15	064036	Washer 1.380 O.D. x .880 I.D. x .062	1
16	064042	Washer 2" O.D. x ¾" I.D. x 1/8"	1
17	065056	Whizlock Nut ¼-20	6
18	070011	Ribbed Neck Bolt ¼-20	6
19	078038	Differential Lock Decal	1
20	083007	Spring	1
21	003376	Spindle Cup	1

SLICER BAR MODEL 710997 FOR ALL MODELS



ATTACHMENT CONVERSION KIT MODEL 724005 FOR TRAC-TEAM

The Trac-Team conversion kit is designed to adapt the following Trac-Team attachments:

Reel Mower - Model 910973
Rotary Mower - Model 910011
Vacuum - Model 910975
Rotary Brush - Model 910012

to be used on the following Sno-Thro Models:

8 HP, 24", Model 924020
6 HP, 24", Model 924018

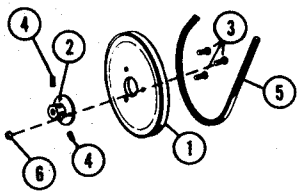


FIGURE 41

REF.NO.	PART NO.	DESCRIPTION	QTY.
1	073070	Sheave	1
2	024215	Pulley Hub - Splined	1
2	024216	Pulley Hub - Plain	1
3	070027	Flange Whizlock Screw	3
4	060012	Set Screw	2
5	072083	V-Belt	1

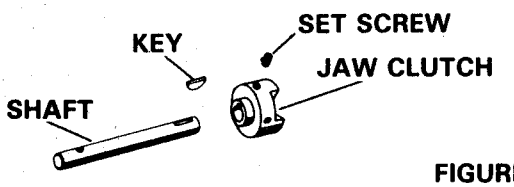


FIGURE 42

ROTARY MOWER AND VACUUM — FIGURE 42

1. Remove the 1038 Jaw Clutch by loosening the two set screws and pulling the jaw clutch from the shaft.

2. Install the plain pulley hub (24216) on the sheave (73070) and fasten with the three whizlock screws (70027) all supplied with the kit.

3. Install the assembled sheave and hub on the attachment shaft. Position the hub to the inside and fasten loosely with the two set screws (60012) supplied. The attachment is now ready for installation on the tractor.

4. Remove the chute crank by disconnecting the crank at the blower housing. Remove the Sno-Thro head from the tractor by removing the two whizlock screws, tipping the units apart and removing the belt from the sno head sheave.

5. Position the attachment in the tractor frame, tip the units together and check to see that the attachment sheave and engine sheaves line up with each other.

6. Position the belt around the attachment sheave, tip the units together and secure with the whizlock screws. A V-belt (072083) is supplied for use as required. With clutch engaged, check the belt fingers on the engine to be sure they clear the belt by 1/8" all around.

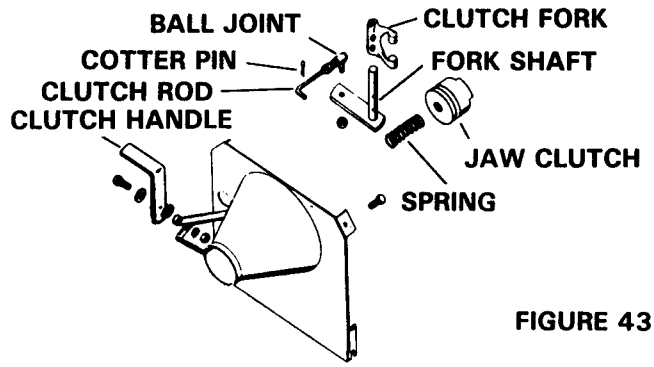


FIGURE 43

REEL MOWER — FIGURE 43

The jaw clutch and clutching mechanism must be removed to permit installation of the drive sheave. The attachment clutch lever on the reel mower will no longer operate. Clutching of the reel mower will be accomplished by the Attachment Clutch lever on the Sno-Thro tractor. To remove the jaw clutch proceed as follows:

1. Drive out the two roll pins securing the clutch fork to the fork shaft at the rear of the reel mower. Turn the clutch fork and pull the jaw clutch and spring from the splined shaft.

2. Remove the hex nut on the ball joint and remove the fork shaft by pulling it from the clutch fork. Remove the cotter pin holding the clutch rod to the clutch handle. Pull out the clutch rod. Remainder of the clutch can be left in place.

3. Install the splined pulley hub (24215) on the sheave (73070) and fasten with the three whizlock screws (70027) all supplied with the kit.

4. Remove the chute crank by disconnecting the crank at the blower housing. Remove the Sno-Thro head from the tractor by removing the two whizlock screws, tipping the units apart and removing the belt from the sno head sheave.

5. Position the attachment in the tractor frame, tip the units together and check to see that the attachment sheave and engine sheaves line up with each other.

6. Position the belt around the attachment sheave, tip the units together and secure with the whizlock screws. A V-belt (072083) is supplied for use as required. With clutch engaged, check the belt fingers on the engine to be sure they clear the belt by 1/8" all around.

ATTACHMENT CONVERSION KIT
MODEL 724005 FOR TRAC-TEAM

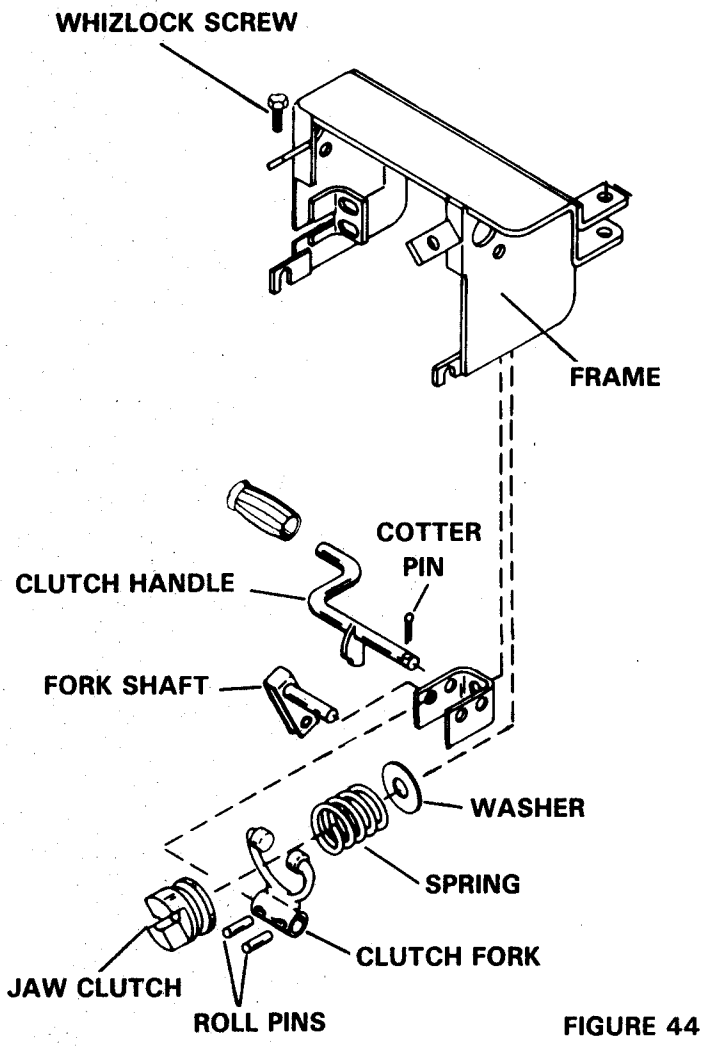


FIGURE 44

NOTE: WHEN OPERATING THE SNO-THRO TRACTOR WITH TRAC-TEAM ATTACHMENT: REMOVE THE CARBURETOR HEATER BOX AND INSTALL THE AIR CLEANER. SEE ATTACHMENT OWNER'S MANUAL. DRAIN AND REFILL THE ENGINE CRANKCASE WITH ARIENS GARD-N-YARD OIL MS CLASSIFICATION SAE-30 OR EQUIVALENT.

ROTARY BRUSH ATTACHMENT — FIGURE 44

The jaw clutch and clutching mechanism must be removed to permit installation of the drive sheave. The attachment clutch lever will no longer operate. Clutching of the rotary brush attachment will be accomplished by the Attachment Clutch lever on the Sno-Thro tractor. To remove the jaw clutch proceed as follows:

1. Drive out the two roll pins securing the clutch fork to the fork shaft. Pull out the fork shaft and remove the clutch fork. The jaw clutch, spring and washer may now be pulled from the splined shaft.

2. If desired, the clutch handle may be removed by removing the cotter pin and pulling the handle from the clutch rod holder.

3. Install the splined pulley hub (24215) on the sheave (73070) and fasten with the three whizlock screws (70027) all supplied with the kit.

4. Install the assembled sheave and hub on the attachment shaft. Position the hub to the inside and fasten loosely with the two set screws (60012) supplied. The attachment is now ready for installation on the tractor.

5. Remove the chute crank by disconnecting the crank at the blower housing. Remove the Sno-Thro head from the tractor by removing the two whizlock screws, tipping the units apart and removing the belt from the sno head sheave.

6. Position the attachment in the tractor frame, tip the units together and check to see that the attachment sheave and engine sheaves line up with each other.

7. Position the belt around the attachment sheave, tip the units together and secure with the whizlock screws. A V-belt (072083) is supplied for use as required. With clutch engaged, check the belt fingers on the engine to be sure they clear the belt by 1/8" all around.

ATTACHMENT CONVERSION KIT MODEL 724006 FOR SHREDDERS

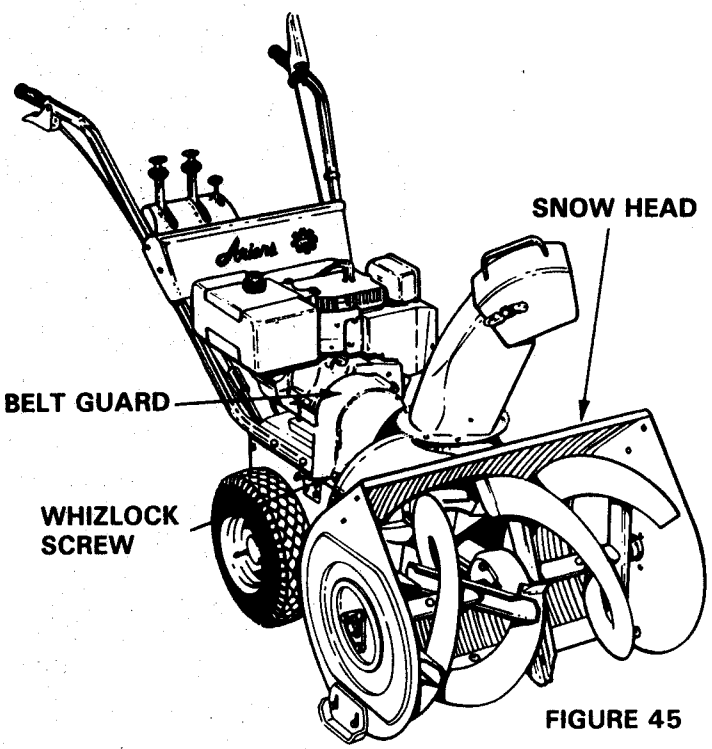


FIGURE 45

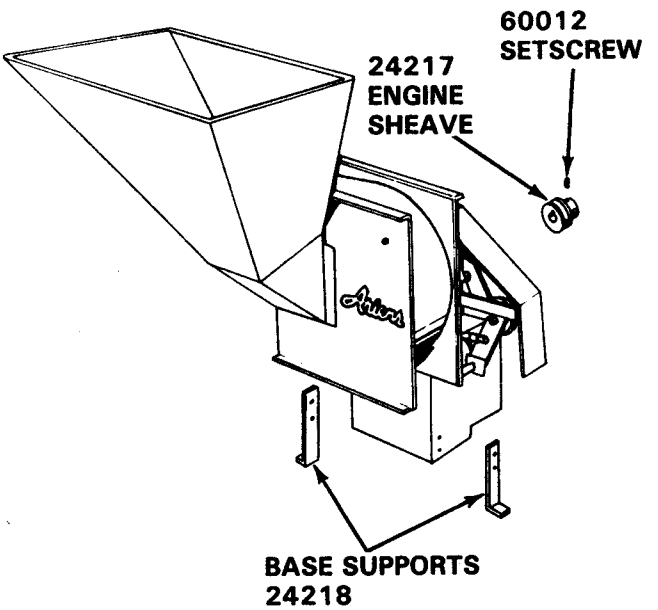


FIGURE 46

GENERAL

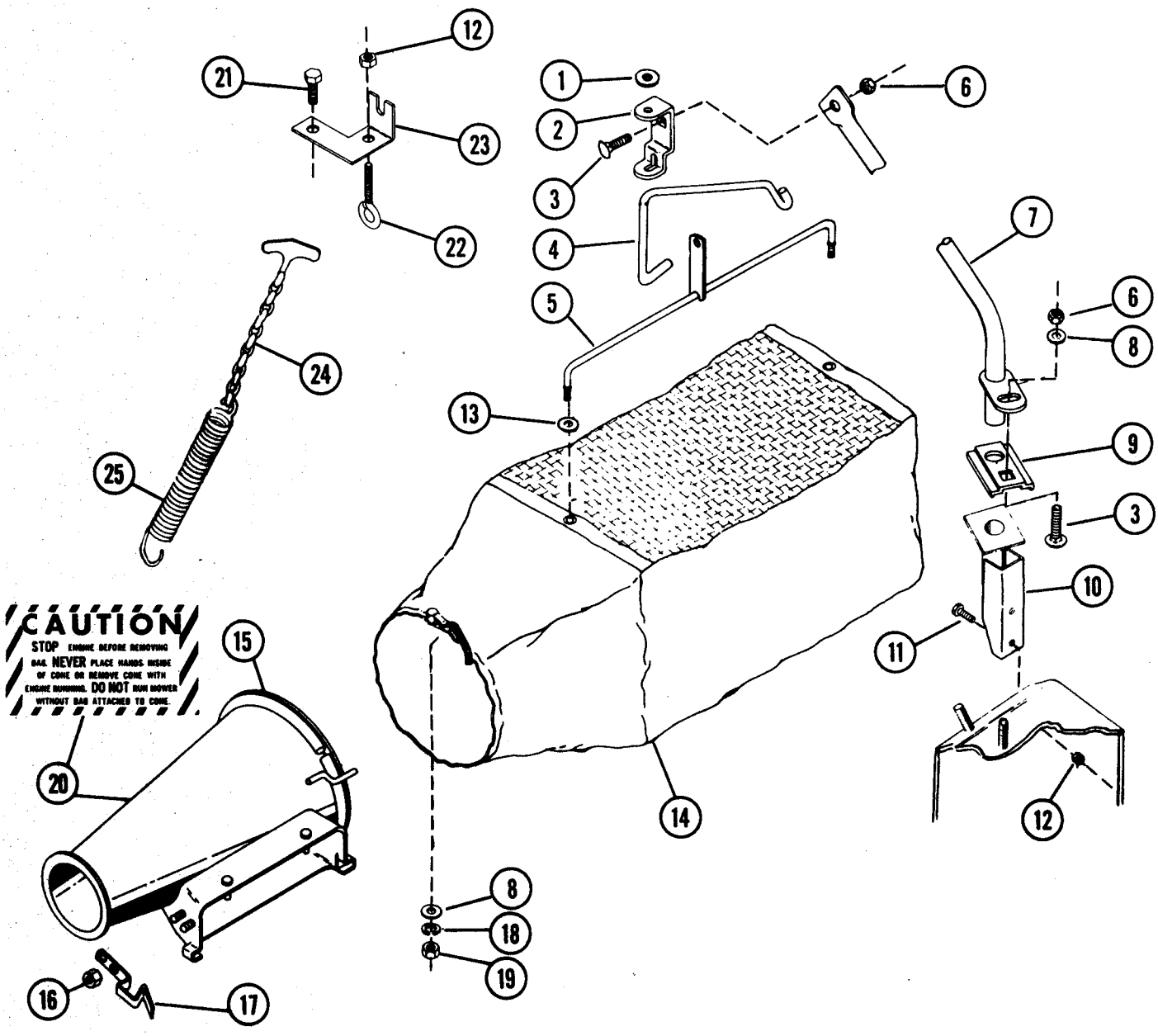
The Model 724006 attachment conversion kit is designed to adapt the Model 928003 and 928008 Shredder-Bagger and the Model 928002 and 928005 Shredder-Grinder attachments to all 924000 Series Sno-Thros.

The conversion kit consists of the following parts:

024217	Engine Sheave	1
024218	Base Support	2
060012	Setscrew	2

GRASS CATCHER MODEL 724009

FOR TRAC-TEAM 26" ROTARY MOWER ATTACHMENT
(Model 910001 Serial Number 000001 and up)
(Model 924031 Serial Number 000101 and up)



HOMEOWNER'S KIT 724012-Fits Models 924036,38,39,46,48

KIT CONTAINS THE FOLLOWING:
- 1 Tube of Ariens Multi-Purpose Grease
- 1 Grease Gun
- 1 Bottle Liquid Grease for Blower Gear Case
- 1 V Belt (Part No. 72108 — Blower Drive)
- 1 V Belt (Part No. 72098 — Traction Drive)
- 2 Shear Bolts and Nuts (Part No. 510015)

HOMEOWNER'S KIT 724013-Fits Models 924040,50,72

KIT CONTAINS THE FOLLOWING:
- 1 Tube of Ariens Multi-Purpose Grease
- 1 Grease Gun
- 1 Bottle Liquid Grease for Blower Gear Case
- 1 V Belt (Part No. 72066 — Traction Drive)
- 1 V Belt (Part No. 72086 — Blower Drive)
- 2 Shear Bolts and Nuts (Part No. 510015)

HOMEOWNER'S KIT 724014-Fits Models 924042,44,52,54,73

KIT CONTAINS THE FOLLOWING:
- 1 Tube of Ariens Multi-Purpose Grease
- 1 Grease Gun
- 1 Bottle Ariens L-2 Lubricant for Blower Gear Case
- 1 V Belt (Part No. 72066 — Traction Drive)
- 1 V Belt (Part No. 72108 — Blower Drive)
- 2 Shear Bolts and Nuts (Part No. 510015)

HOMEOWNER'S KIT 724020-Fits Models 924056,71

KIT CONTAINS THE FOLLOWING:
- 1 Tube of Ariens Multi-Purpose Grease
- 1 Grease Gun
- 1 Bottle Ariens L-2 Lubricant for Blower Gear Case
- 1 V Belt (Part No. 72131 — Traction Drive)
- 1 V Belt (Part No. 72130 — Blower Drive)
- 2 Shear Bolts and Nuts (Part No. 510015)

12 VOLT STARTER MODELS 724016 & 17

FOR USE ON 924000 SERIES SNO-THRO'S EQUIPPED WITH TECUMSEH ENGINES

INSTALLATION

1. Remove "bubble cover screw" and "bubble cover," if so equipped, discard both parts. See Figure 48.
2. Locate the four (4) "starter mounting holes" on engine, see Figure 48. Position starter on engine as shown in Figure 49 and attach starter to engine with four (4) "starter mounting screws." The 2 lower screws will also be used to attach the solenoid starter bracket as shown in Figure 49. Tighten screws securely, 50 to 60 inch pounds.
3. Attach heavy solenoid cable with red rubber protector to terminal on starter. Tighten securely and snap rubber protector over terminal. See Figure 49.
4. Attach remaining heavy cable from battery connector to engine mounting stud, for ground, tighten securely. See Figure 50.
5. Route the wiring harness around the back of the engine as shown in Figure 50. Attach the terminal of the green wire with the Phillips screws to engine as shown and tighten securely. Attach red wire to engine as shown with taptite and tighten securely.
6. Route wiring harness up the underside of left handle bar. Secure harness with clip provided.
7. Remove standard key switch, mount new key switch using the original hardware and plug wiring harness connector into key switch. Connect terminal of red wire to the outer most connection on the key switch.
8. Affix new start decal to panel.

8 AND 10 HP STARTER KIT MODEL NO. 724017

1. Remove "bubble cover screw" and "bubble cover" if so equipped (See Figure 51). Discard both parts.

STARTER INSTALLATION

Refer to Figures 52 and 53 and determine the type of "fuel tank bracket" with which your engine is equipped.

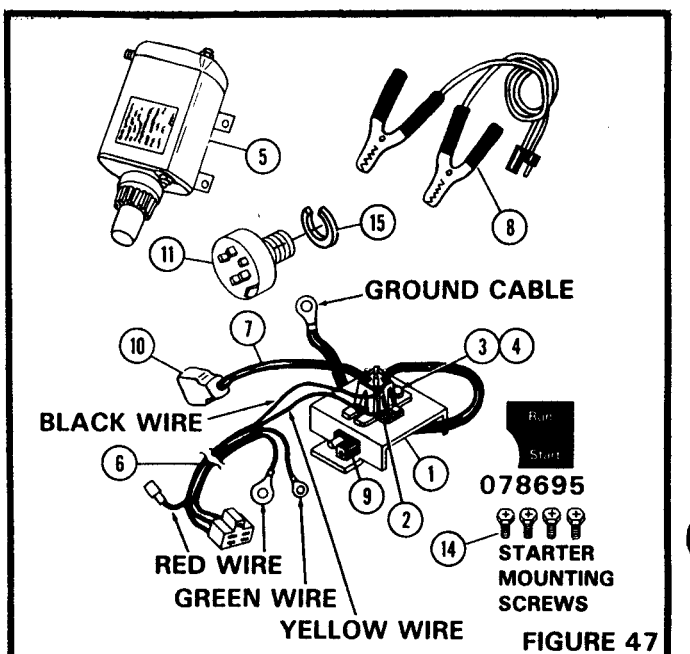
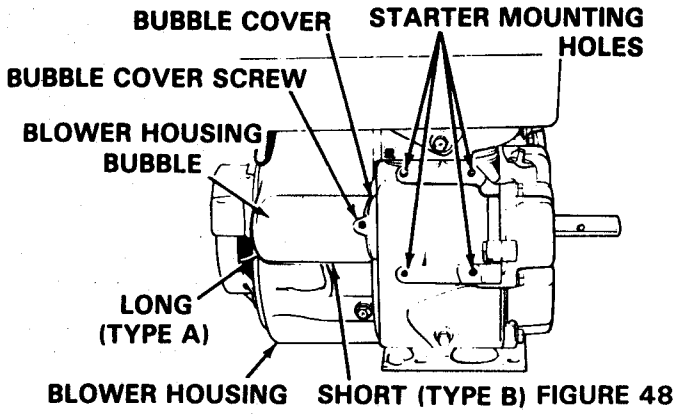


FIGURE 47

REF NO	PART NO	DESCRIPTION	NO REQ'D 724016	NO REQ'D 724017
1	024464	Bracket	1	1
2	030387	Solenoid	1	1
3	059028	Cap Screw, ¼-20 x ½	2	2
4	065040	Locknut, ¼	2	2
5		Starter Motor, Tecumseh # 33606	1	–
5	025361	Starter Motor, Tecumseh # 33605	–	1
6	024465	Wiring Harness	1	1
7	025133	Starter Cable	1	1
8	024462	Jumper Cable	1	1
9	024463	Adapter Lead	1	1
10	075057	Insulator	1	1
11	625009	Ignition Switch Assembly	1	1
13	078695	Decal	1	1
14	070045	Sems Cap Screw	4	4
15	063019	Lockwasher	1	1
16	013157	Keys (not shown)	1	1
17	063003	Lockwasher, 5/16-24 (sol. cable mtg)	2	2
18	065100	Nut, 5/16-24 (sol. cable mtg)	2	2
19	063011	Lockwasher, 3/16 (sol. wiring mtg)	1	1
20	065026	Nut, 10-32 (sol. wiring mtg)	1	1

INSTALLATION

A. NOTE: CHECK TO SEE IF THE TOP HOLES (Ⓑ), FIGURE 51 FOR MOUNTING STARTER HAVE SHOULDER BOLTS INSTALLED. IF SO, DISREGARD STEPS 1 THRU 5 (DO NOT REMOVE FUEL TANK).



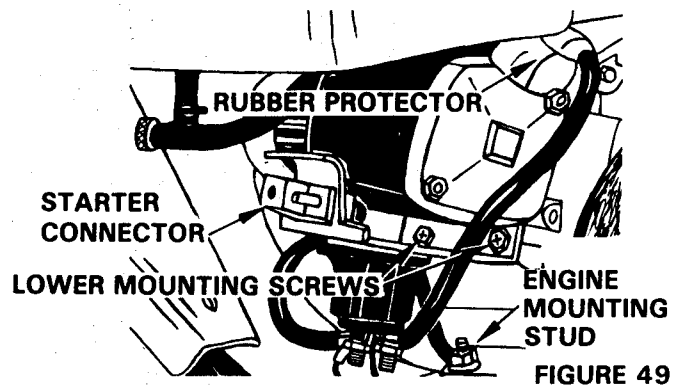


FIGURE 49

B. FOR "FUEL TANK BRACKET" AS IN FIGURE 52, PROCEED AS FOLLOWS:

1. Remove all gasoline from tank.
2. Remove two (2) screws marked Ⓐ in Figure 52.
3. Remove "top tank bracket" and fuel tank.
4. Mark "blower housing extension" with a pencil along upper edge of "lower tank bracket" (Figure 51) to insure replacement of bracket into the same position.
5. Remove "lower fuel tank bracket."

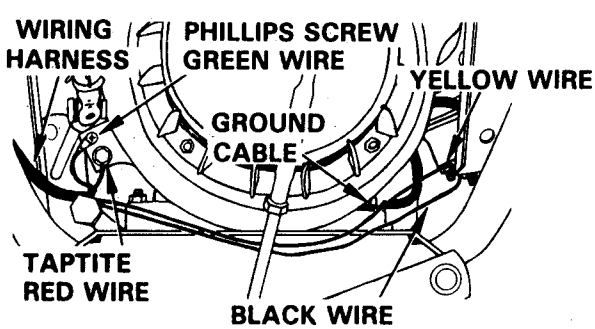


FIGURE 50

6. Locate the four (4) "starter mounting holes" on engine, see Figure 48. Position starter on engine as shown in Figure 51 and attach starter to engine with four (4) "starter mounting screws." The 2 lower screws will also be used to attach the solenoid starter bracket as shown in Figure 51. Tighten screws securely, 50 to 60 inch pounds.

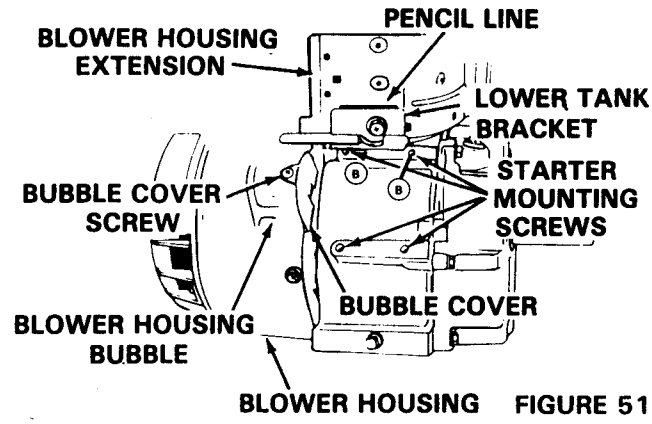


FIGURE 51

7. Reassemble "lower tank bracket." Be sure bracket is mounted in the same position, as before removal (see Figure 51).
8. Reassemble fuel tank. Be sure all fasteners are tightened securely.
9. Attach heavy solenoid cable with red rubber protector to terminal on starter. Tighten securely and snap rubber protector over terminal. See Figure 49.
10. Attach remaining heavy cable from battery connector to engine mounting stud, for ground, tighten securely. See Figures 49 and 50.

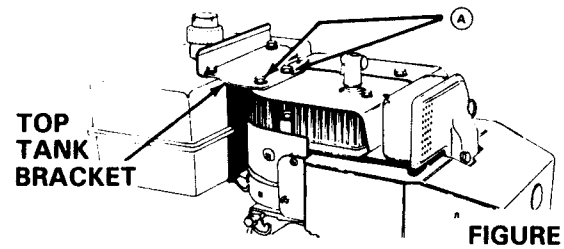


FIGURE 52

11. Route the wiring harness around the back of the engine as shown in Figure 50. Attach the terminal of the green wire with the Phillips screw to engine as shown and tighten securely. Attach red wire to engine as shown with taptite and tighten securely.
12. Route wiring harness up the underside of left handle bar. Securely harness with clip provided.
13. Remove standard key switch, mount new key switch using the original hardware and plug wiring harness connector into key switch. Connect terminal of red wire to the outer most connection on the key switch.
14. Afix new starter decal to panel.

12 VOLT STARTER MODELS 724016 & 17

INSTALLATION

For "Fuel Tank Bracket" as shown in Figure 52, proceed as follows:

1. Remove all gasoline from fuel tank.
2. Remove the two (2) screws marked Ⓐ in Figure 52.
3. Remove "top tank bracket" and fuel tank.
4. Remove "lower tank bracket" by removing the three (3) screws marked Ⓒ in Figure 53.

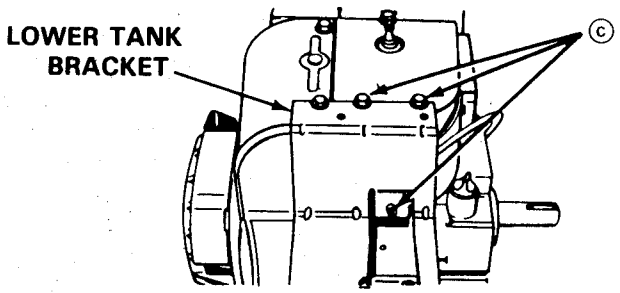


FIGURE 53

5. Locate the four (4) "starter mounting holes" on engine, see Figure 48. Position starter on engine as shown in Figure 51 and attach starter to engine with four (4) "starter mounting screws." The 2 lower screws will also be used to attach the solenoid starter bracket as shown in Figure 51. Tighten screws securely, 50 - 60 inch pounds.
6. Reassemble lower fuel tank bracket and fuel tank. Be sure all fasteners are tightened securely.
7. Attach heavy colenoid cable with red rubber protector to terminal on starter. Tighten securely and snap rubber protector over terminal. See Figure 49.
8. Attach remaining heavy cable from battery connector to engine mounting stud, for ground, tighten securely. See Figures 49 and 50.
9. Route the wiring harness around the back of the engine as shown in Figure 50. Attach the terminal of the green wire with the Phillips screw to engine as shown and tighten securely. Attach red wire to engine as shown with taptite and tighten securely.
10. Route wiring harness up the underside of left handle bar. Securely harness with clip provided.
11. Remove standard key switch, mount new key switch using the original hardware and plug wiring harness connector into key switch. Connect terminal of red wire to the outer most connection on the key switch.
12. Afix new starter decal to panel.

Operating Instructions:

1. Unwind jumper cables.

CAUTION :

2. Be sure Sno-Thro is not in contact with any other metal object to prevent a possible electrical short circuit.
3. Connect red clamp on jumper cable to positive terminal of battery. Connect black clamp to negative terminal of battery.
4. Plug rubber connector to mating connector on Sno-Thro located above R. H. wheel.
5. Move choke lever to choke position.
6. Move throttle to fast position.
7. Push primer bulb two times.
8. Turn key switch to start position.
9. Release switch when engine starts.
10. As engine warms up gradually move choke to off position.
11. Disconnect jumper cables from Sno-Thro.
12. Disconnect clamps from battery and store in a dry location.

12 VOLT STARTER MODEL 724018

924

FOR USE ON 924000 SERIES SNO-THRO'S EQUIPPED WITH BRIGGS & STRATTON ENGINES

INSTALLATION

NOTE: FOR YOUR PERSONAL SAFETY READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE INSTALLING THE STARTER KIT. THIS STARTER MAY BE USED ONLY ON ENGINES WHICH HAVE AN ALUMINUM RING GEAR ON THE FLYWHEEL. DO NOT USE THIS KIT ON ENGINES WITH A STEEL RING GEAR ON THE FLYWHEEL.

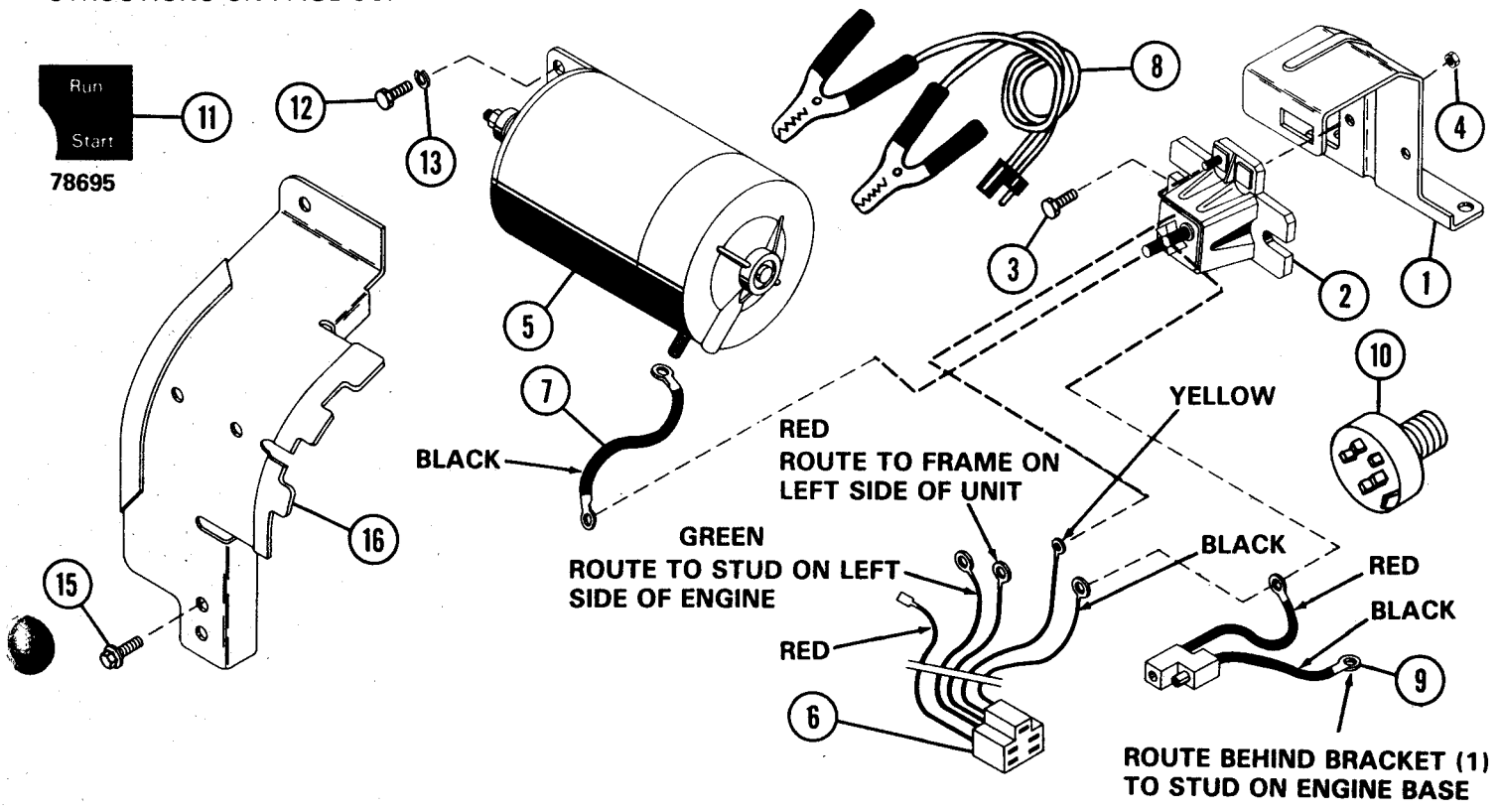
REVIEW THE PARTS SHOWN IN THE ILLUSTRATION ON THIS PAGE BEFORE BEGINNING THE INSTALLATION.

PROCEED WITH THE STEPS IN THE ORDER THEY ARE PRESENTED ON THE FOLLOWING PAGE. YOUR ARIENS DEALER CAN PROVIDE ASSISTANCE IN THE INSTALLATION OF THE STARTER.

BE SURE TO READ AND FOLLOW THE OPERATION INSTRUCTIONS ON PAGE 65.

REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	024512	Bracket	1
2	030387	Solenoid	1
3	059028	Cap Screw, ¼-20 x ½	2
4	065040	Locknut, ¼	2
5	024513	Starter Motor, B & S No. 392749*	1
6	024465	Wiring Harness	1
7	025133	Starter Cable	1
8	024462	Jumper Cable	1
9	024463	Adapter Lead	1
10	625009	Ignition Switch Assembly	1
11	078695	Decal	1
12	059135	Cap Screw, 5/16-18 x ¾ (for Starter Motor)	2
13	063003	Lockwasher (for Starter Motor)	2
14	013157	Keys (not shown)	1
15	074035	Tapping Screw (for Cover-Shield)	2
16	024525	Cover-Shield, B & S No. 390233*	1
17	063003	Lockwasher, 5/16-24 (Solenoid Cable Mtg.)	2
18	065100	Nut, 5/16-24 (Solenoid Cable Mtg.)	2
19	063011	Lockwasher, 3/16 (Solenoid Wiring Mtg.)	1
20	065026	Nut, 10-32 (Solenoid Wiring Mtg.)	1

* Order replacement from Briggs & Stratton dealer only.



INSTALLATION

1. Remove 2 screws holding ring gear guard to engine cylinder. Discard guard and screws. See Figure 54. DO NOT RE-USE ROUND-HEAD SCREWS WHICH ORIGINALLY HELD THE GUARD.

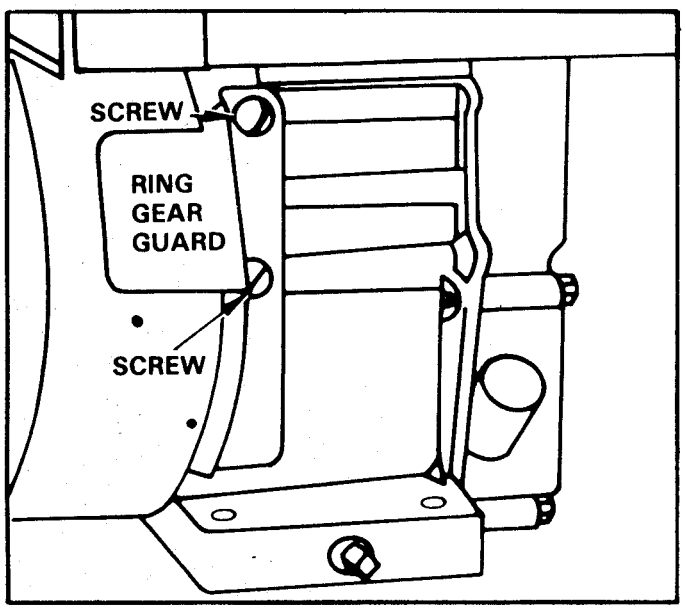


FIGURE 54

NOTE: TO PROVIDE ACCESS TO TOP HEX HEAD STARTER MOUNTING SCREW, ENGAGE GEARS AS SHOWN IN FIGURE 55.

2. Attach Starter Motor (5) to engine with 2 hex-head capscrews (12) and lockwashers (13). Be sure Starter Motor touches both lugs of cylinder. See Figure 55. Be sure to tighten screws securely.

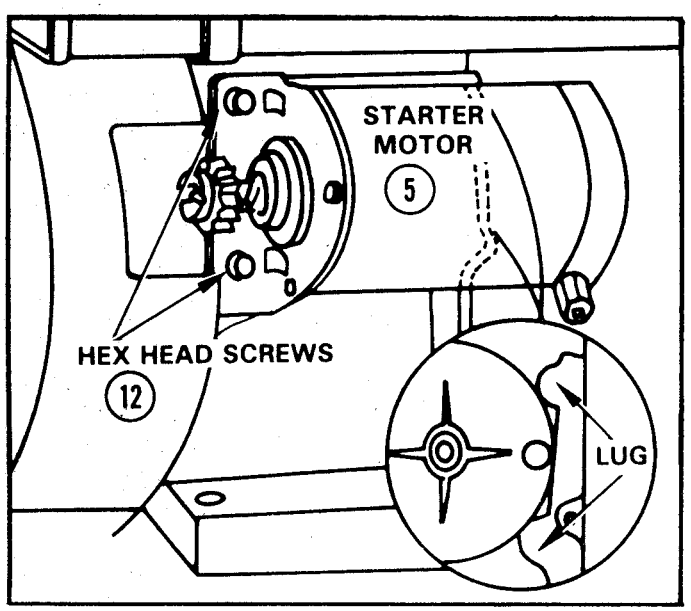


FIGURE 55

3. Fasten Cover-Shield (16) to the engine blower housing with two sheet metal screws (15). See Figure 56.

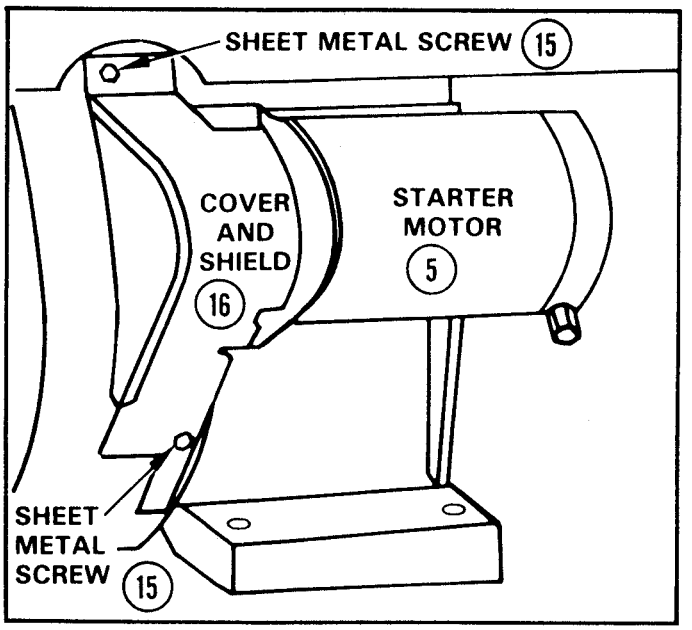


FIGURE 56

4. Remove nuts and lockwashers at the right side engine base. Install Bracket-Solenoid Assembly (1,2,3,4,9). Do not reinstall nuts and lockwashers at this point. See Figure 57.

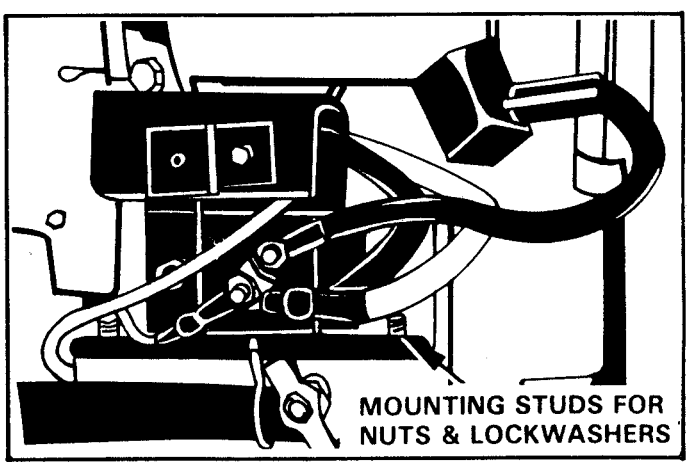


FIGURE 57

5. Place black cable from Adapter Lead (9) of Bracket-Solenoid Assembly onto the rear stud on the engine base. Reinstall the original two nuts and lockwashers. See Figure 58.

6. Attach Starter Cable (7) to the terminal on the lower right of the Starter Motor (5). Secure cable terminal with washer and nut provided on the Starter Motor. See Figure 58.

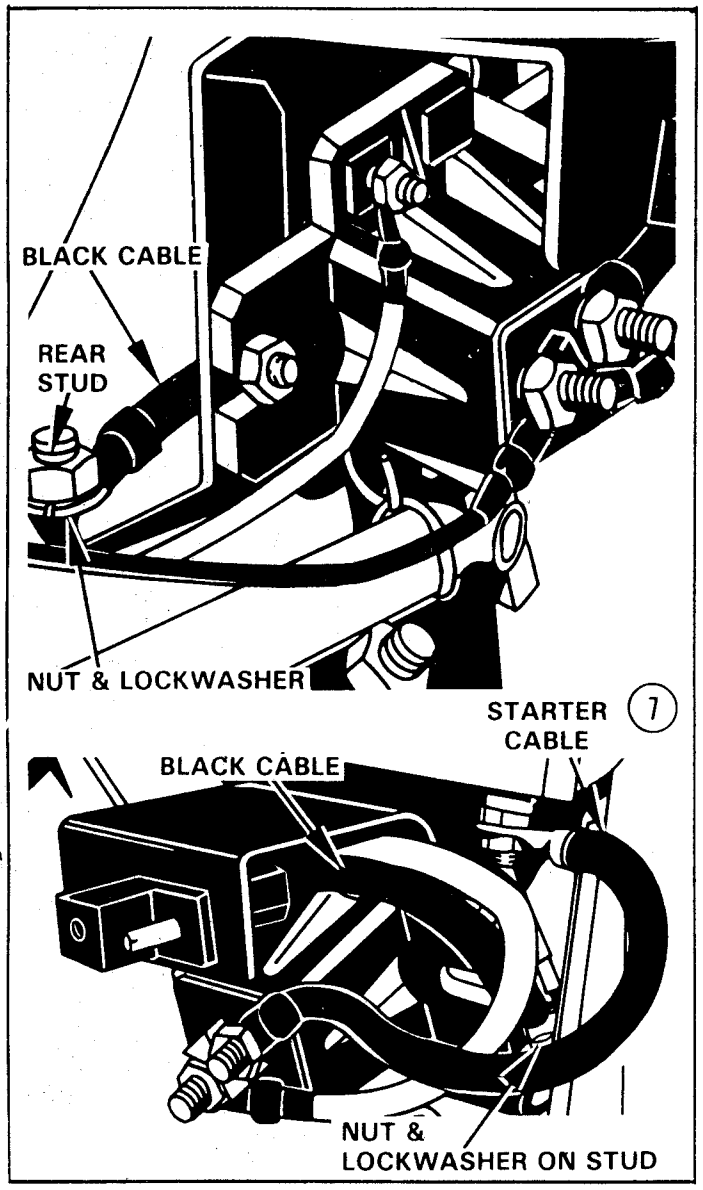


FIGURE 58

7. Remove existing wiring from engine rear. Route the Green and Red Wires around the back of the engine. Attach the terminal of the green wire to the stud on the engine as shown in Figure 59. Attach the terminal of the red wire under the existing screw which was removed when detaching the existing wire. See Figure 59.

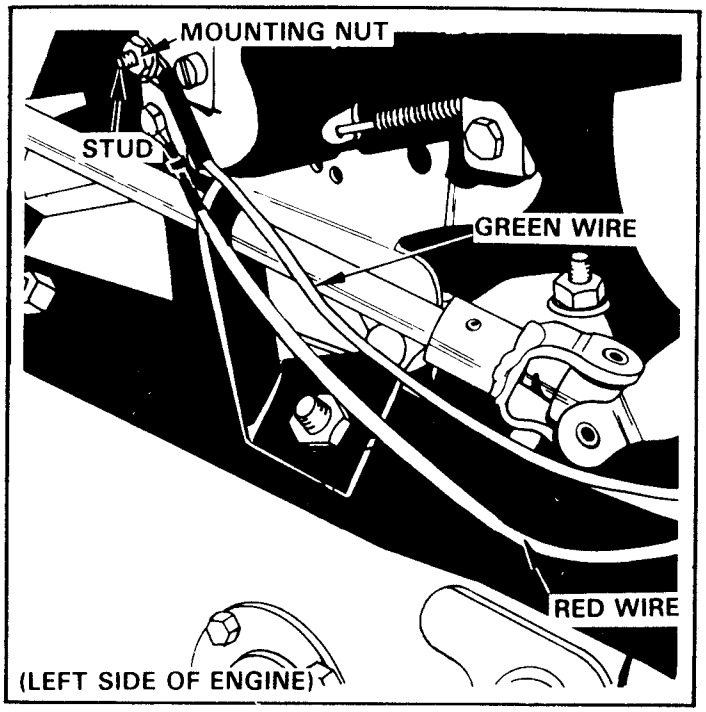


FIGURE 59

8. Route wiring harness up the underside of left handle bar. Securely harness with clip provided.

9. Remove standard key switch, mount new ignition key switch (10) using the original hardware and plug wiring harness connector into key switch. Connect terminal of red wire to the outer-most connection on the key switch.

10. Affix new start decal to panel.

OPERATION

1. Unwind jumper cables.

2. Be sure Sno-Thro is not in contact with any other metal object to prevent a possible electrical short circuit.

3. Connect red clamp on jumper cable to positive terminal of battery. Connect black clamp to negative terminal of battery.

4. Plug rubber connector to mating connector (Adapter Lead) on Sno-Thro.

5. Move choke lever to "FULL" position.

6. Move throttle to "FAST" position.

7. Turn key switch to "START" position.

8. Release switch when engine starts.

9. As engine warms up gradually move choke to "OFF" position. (See your Sno-Thro Owner's Manual, also.)

10. Disconnect jumper cables from Sno-Thro.

11. Disconnect clamps from battery and store in a dry location.

ADAPTOR & AIR CLEANER KIT MODEL 724028

FOR USE ON 924000 SERIES SNO-THRO'S EQUIPPED WITH BRIGGS & STRATTON ENGINES

INSTALLATION

NOTE: THIS KIT IS REQUIRED FOR ALL BRIGGS & STRATTON EQUIPPED SNO-THROS WHEN USING AN ATTACHMENT ABOVE 32° F. THE KIT IS DESIGNED FOR RE-USE EACH SEASON AS REQUIRED. THE FILTER ELEMENT SHOULD BE KEPT CLEAN. READ AND FOLLOW INSTRUCTIONS ON AIR CLEANER DECAL. PERIODICALLY CHECK MOUNTING HARDWARE TO INSURE PROPER SEALING WHICH PREVENTS DUST, ETC. FROM REACHING THE CARBURETOR. AN EXTRA GASKET IS INCLUDED; HANDLE GASKETS CAREFULLY.

REVIEW AND REFER TO THE PARTS ILLUSTRATION (FIGURE 60) AND PARTS LIST WHEN INSTALLING THE KIT.

STORE CARBURETOR COVER PARTS, WHEN REMOVED FROM SNO-THRO, IN A SAFE PLACE FOR FUTURE SNOW SEASON USE. CARBURETOR COVER MUST BE REINSTALLED FOR WINTER USE.

NOTE: IF THE ELECTRIC STARTER KIT IS INSTALLED ON YOUR SNO-THRO, THE STARTER SWITCH-RECEPTACLE MUST BE REMOVED BEFORE INSTALLING AIR CLEANER, AND THEN REINSTALLED, ACCORDING TO INSTRUCTIONS PROVIDED.

DUAL ELEMENT AIR CLEANER MAINTENANCE

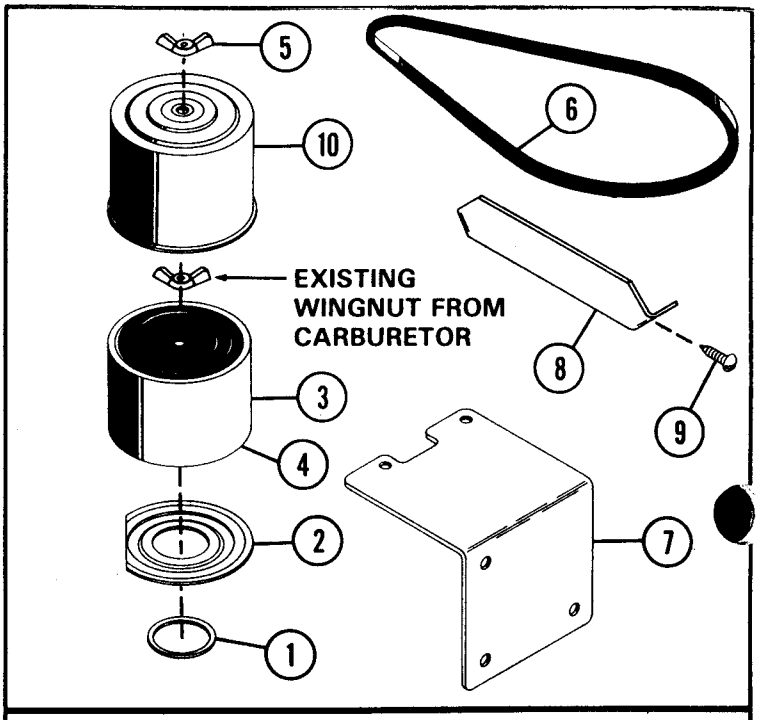
FOAM PRE-CLEANER: CLEAN EVERY 25 HRS. REMOVE AND WASH IN DETERGENT AND WATER. DRY THOROUGHLY AND RE-OIL. SQUEEZE TO DISTRIBUTE OIL EVENLY.

PAPER CARTRIDGE: CLEAN EVERY 100 HRS. TAP GENTLY TO REMOVE DIRT OR REPLACE.

OPERATING IN DUSTY CONDITIONS MAY REQUIRE DAILY CLEANING

BRIGGS & STRATTON CORPORATION

MAINTENANCE DECAL — B&S No. 271084



REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	024517	Air Cleaner Gaskets * (270986)	2
2	024522	Air Cleaner Base * (223268)	1
3	024518	Air Cleaner Foam Filter * (270782)	1
4	024519	Air Cleaner Cartridge * (390930)	1
5	065146	Wing Nut	1
6	072132	V Belt (Rotary Mower Attachment)	1
7	024515	Bracket (Electric Start Kit)	1
8	024516	Belt Guard Plate (Rotary Mower & Brush Attachment)	1
9	075035	Sheet Metal Screws	2
10	024521	Air Cleaner Cover * (222271)	1

* PARTS ARE AVAILABLE FROM BRIGGS & STRATTON DEALERS ONLY. ORDER BY BRIGGS PARTS NO. LISTED IN PARENTHESIS.

FIGURE 60

1. Remove capscrew on top of Carburetor Cover as shown in Figure 61.

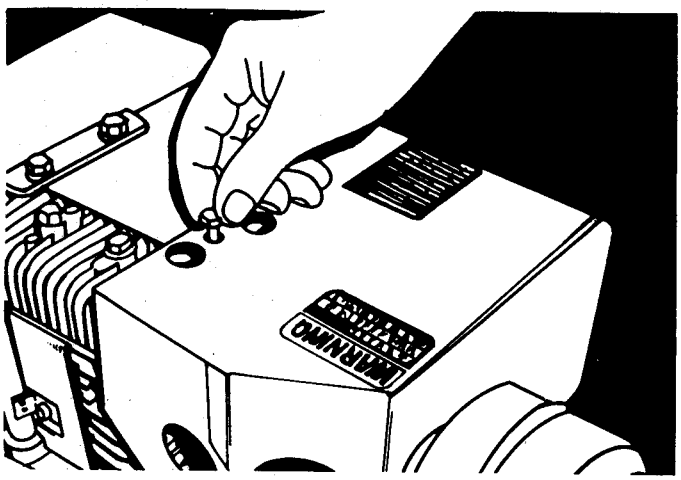


FIGURE 61

2. Remove nut and washer securing brace to engine. See Figure 62.

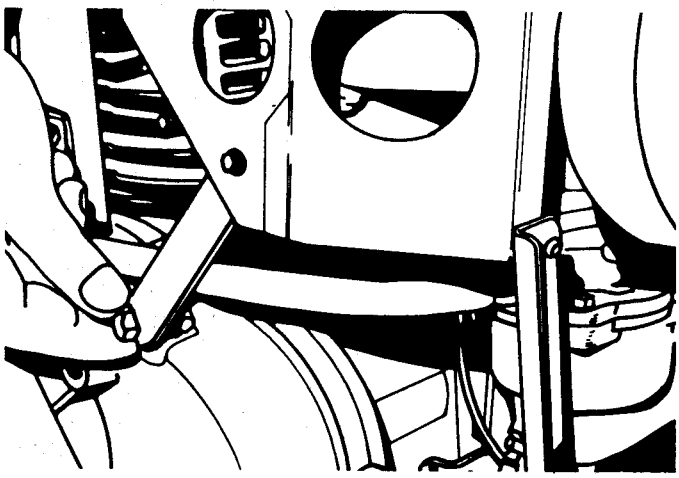


FIGURE 62

3. Remove screw at rear of Carburetor Cover as shown in Figure 63.

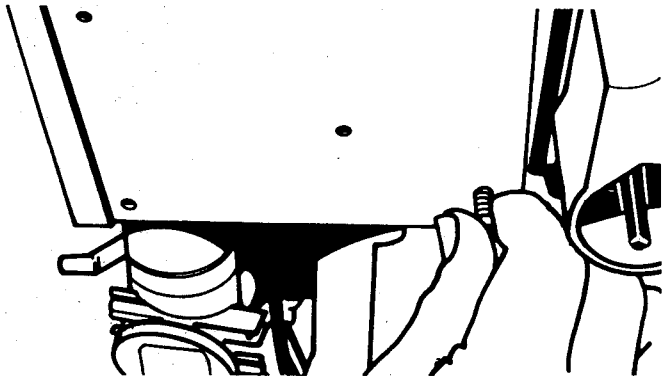


FIGURE 63

4. Remove screw securing side brace (under muffler) to Carburetor Cover as shown in Figure 64. Carburetor Cover will now lift off and out of the way. Store these parts with tape holding the hardware to them in proper position. This will assist you when reinstalling the Carburetor Cover for winter use.

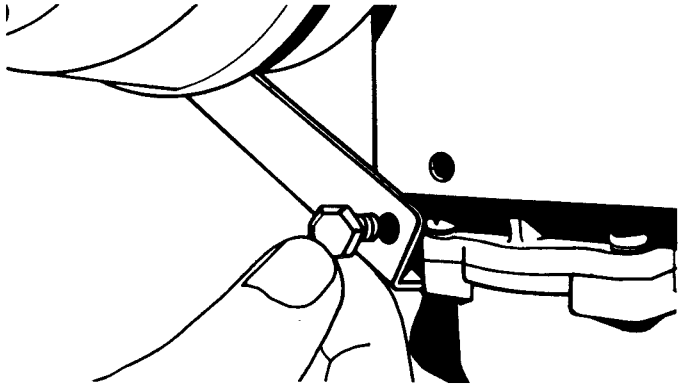


FIGURE 64

5. Remove Wingnut, Retainer Strap and Spacer Tube from top of Carburetor. See Figure 65. Retain the Wingnut for use with the Air Cleaner Kit.

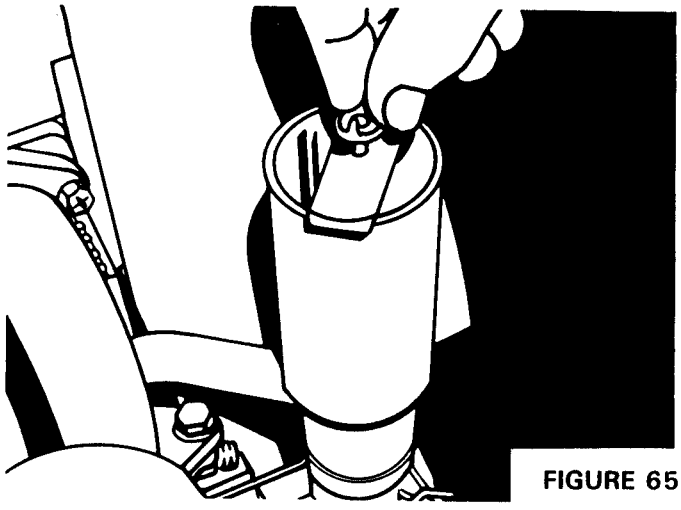


FIGURE 65

6. Once the Spacer Tube and parts securing it to the top of carburetor are removed install the Gasket (1) on top of the carburetor throat down to the lip on the throat exterior. See Figure 66. Handle Gasket with care. An extra Gasket is provided if damage should occur to the original.

FIGURE 66

7. Install Air Cleaner Base (2) on top of Gasket on carburetor throat as shown in Figure 67. Be sure to position the Air Cleaner Base with outside edge facing "up" and flat side toward manifold.

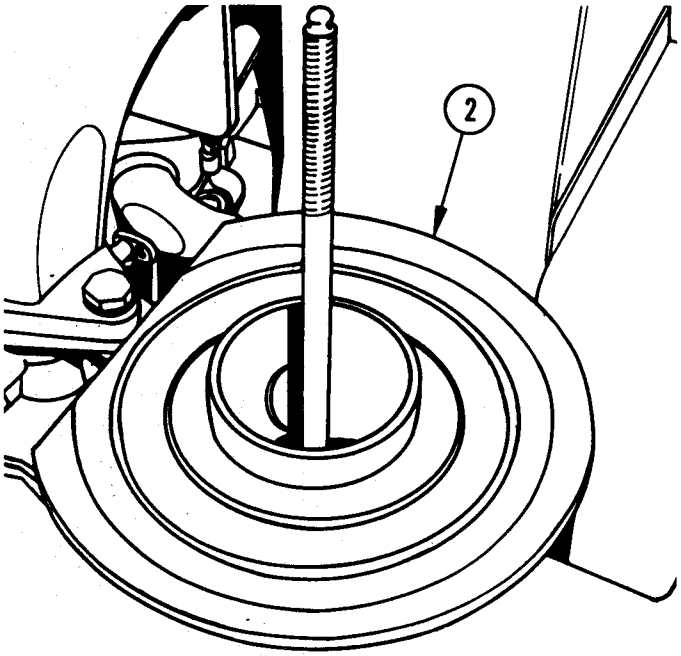


FIGURE 67

8. Install Air Cleaner Element (3) on top of the Air Cleaner Base as shown in Figure 68. Secure with Wingnut from the Carburetor Cover Assembly.

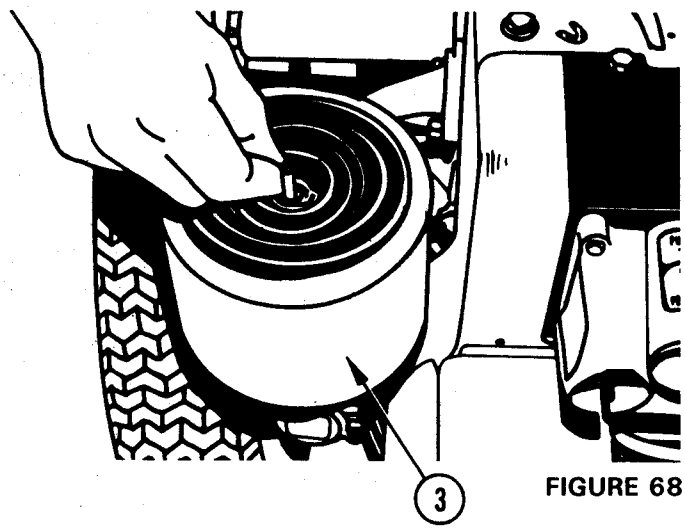


FIGURE 68

9. Install Air Cleaner Cover (4) on top of the Air Cleaner Filter Element and secure with Wingnut (5) provided with Air Cleaner Kit. See Figure 69. Install Decal provided with Kit on Air Cleaner Cover. This completes the installation of the Air Cleaner Kit. Reverse the procedure for converting to winter use.

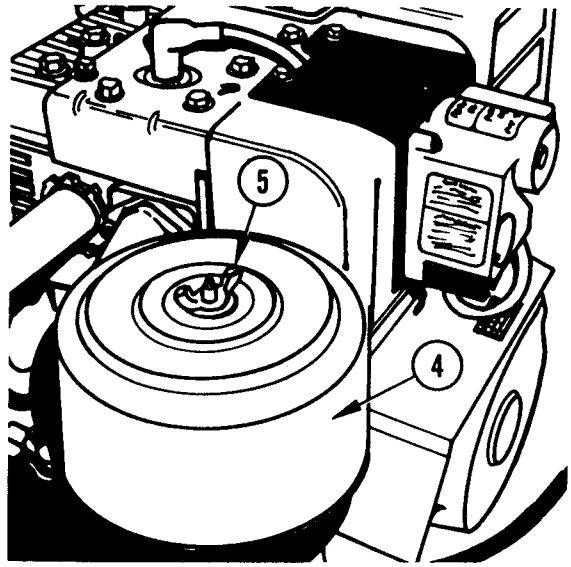


FIGURE 69

10. If an Electric Start Kit is installed on your Sno-thro, remove the starter switch-receptacle from the carburetor cover and reinstall it on the new Electric Starter Bracket (7) supplied with this kit. The starter switch-receptacle must be attached to the Bracket with the existing mounting hardware. The bracket mounts to the engine as shown wit existing hardware. See Figure 70.

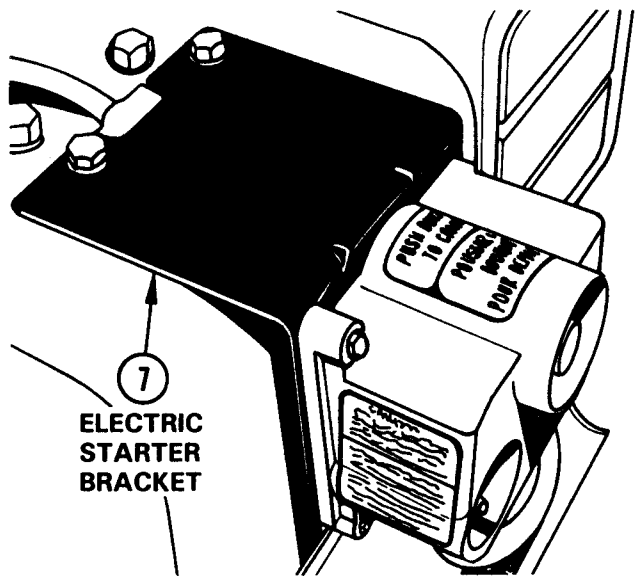


FIGURE 70

11. When using the Rotary Mower you must remov the Attachment Drive Belt from your Sno-Th and replace it with the V-Belt (6) for the Rotary Mower supplied with this kit. Refer to your Sno-Thro and Rotary Mower Owner's Manual for installation of the belt.

12. To install the Belt Guard Plate (8) supplied with this kit use the following procedure:

NOTE: BELT GUARD PLATE MUST BE INSTALLED WHEN USING ROTARY MOWER OR ROTARY BRUSH ATTACHMENTS. THE PLATE MUST BE REMOVED BEFORE REINSTALLING THE SNO-THRO ATTACHMENT.

a. Remove Belt Guard and Supports from the Sno-Thro as illustrated in Figure 71.

b. Before installing the Rotary Brush or Rotary Mower, assemble the two Supports to the Belt Guard Plate with the two Sheet Metal Screws (74035) provided as shown in Figure 72.

c. Attach the assembled Supports with Belt Guard Plate loosely to the Sno-Thro frame with the two original taptites. See Figure 71.

d. Following instructions provided in your Rotary Mower or Rotary Brush Owners Manual, complete the installation of the attachment. Secure the Attachment to the frame using existing Flange Whizlock Screws (70031) through the front slots at the Supports, through the front slots of the Sno-Thro Frame and into the Attachment. Tighten the Supports to the Sno-Thro Frame with the existing taptites. See Figure 71.

e. After installation of the Attachment Drive Belt, the Belt Guard may be secured to the Supports with the two remaining taptites. See Figure 71.

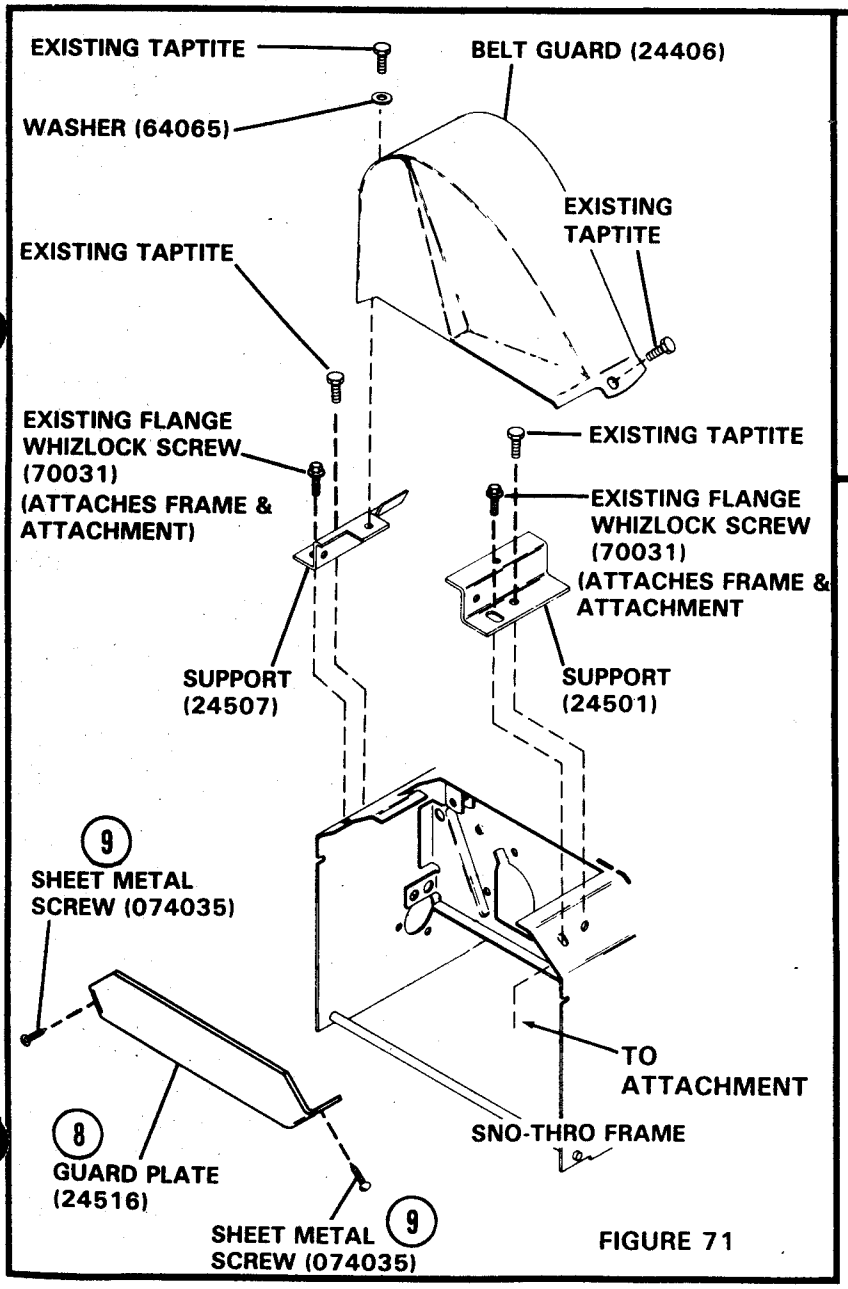


FIGURE 71

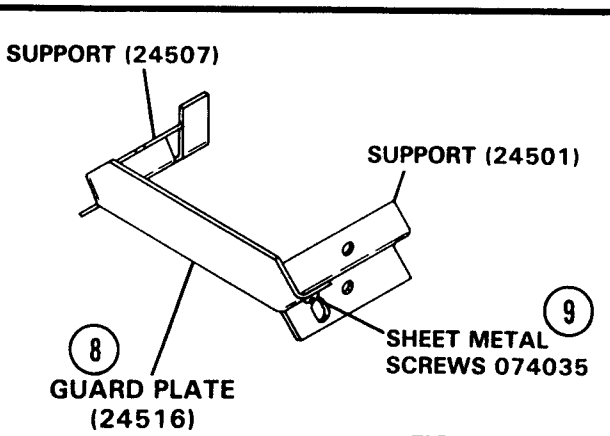


FIGURE 72

SPLINED SPUR GEAR AND SPACER KIT MODEL 524033

GENERAL

The Splined Spur Gear and Spacer Kit (Model No. 524033) is designed to replace the 612999 Differential for heavy duty application on 924000 Series large wheel Sno-Thro.

REMOVAL

Remove the differential as follows:

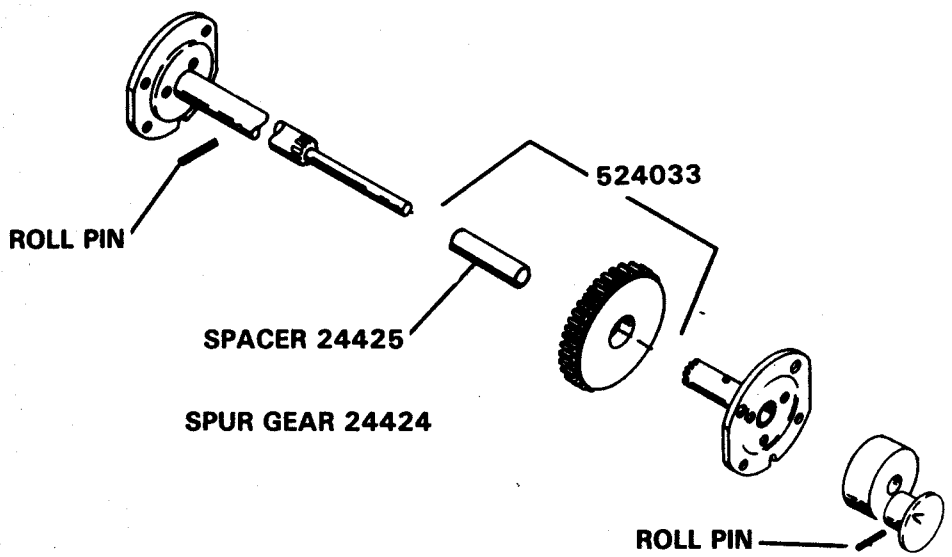
1. Remove bottom cover.
2. Remove L.H. wheel.
3. Remove lockout hub by driving out the roll pin.
4. Remove roll pin from R.H. axle. It is located inside the frame near the right end of the axle shaft.
5. Remove both axles and differential.

INSTALLATION

1. Install R.H. axle with spacer and spur gear in position. Install L.H. axle.
2. Install roll pin in R.H. axle.
3. Install lockout hub.
4. Install L.H. wheel.
5. Install bottom cover.

NOTE: THE SPACER IS DESIGNED TO HOLD THE SPUR GEAR CENTERED ON SPLINES OF BOTH AXLES.

NOTE: DIFFERENTIAL LOCK IS NOT USABLE WITH SPLINED SPUR GEAR. LEAVE IN "OUT" POSITION.



⚠ SAFETY INSTRUCTIONS

1. Before test operating or making repairs or adjustments to the unit, read and understand the operating and safety instructions in the Owner's Manual.

2. Stop the engine, disengage the clutches, remove the key and wait for moving parts to stop before performing any repair, or maintenance adjustment procedures. **Never** make any adjustment or perform any maintenance or repair procedures while the engine is running.

3. To prevent accidental starting, disconnect the spark plug wire.

4. Do repair work in well-lighted, ventilated area.

5. Always wear safety goggles when cleaning or making repairs to parts or machine.

6. Gasoline fumes are hazardous to health and are a fire hazard. Use non-flammable solvent to clean parts — DO NOT USE GASOLINE.

7. Use only Ariens original replacement parts in making repairs.

8. After repair procedures are performed, make sure the unit is in good operating condition and all safety devices and shields are in place and in good working condition. Be sure all fasteners are tight, all adjustments are correct and all tools are removed.

TORQUE VALUES

Common bolts and nuts.		Tightening Torque ± 20%	
SIZE	**GRADE 2**	**GRADE 5**	**GRADE 8**
1/4-20	70 in.-lb.	115 in.-lb.	165 in.-lb.
1/4-28	85 in.-lb.	140 in.-lb.	200 in.-lb.
5/16-18	150 in.-lb.	250 in.-lb.	350 in.-lb.
5/16-24	165 in.-lb.	270 in.-lb.	30 ft.-lb.
3/8-16	260 in.-lb.	35 ft.-lb.	50 ft.-lb.
3/8-24	300 in.-lb.	40 ft.-lb.	60 ft.-lb.
7/16-14	35 ft.-lb.	55 ft.-lb.	80 ft.-lb.
7/16-20	45 ft.-lb.	75 ft.-lb.	105 ft.-lb.
1/2-13	50 ft.-lb.	80 ft.-lb.	115 ft.-lb.
1/2-20	70 ft.-lb.	105 ft.-lb.	165 ft.-lb.
9/16-12	75 ft.-lb.	125 ft.-lb.	175 ft.-lb.
9/16-18	100 ft.-lb.	165 ft.-lb.	230 ft.-lb.
5/8-11	110 ft.-lb.	180 ft.-lb.	260 ft.-lb.
5/8-18	140 ft.-lb.	230 ft.-lb.	330 ft.-lb.
3/4-10	150 ft.-lb.	245 ft.-lb.	350 ft.-lb.
3/4-16	200 ft.-lb.	325 ft.-lb.	470 ft.-lb.