ARO
Tool & Hoist Products

OPERATOR'S MANUAL

SECTION M50
MANUAL 16
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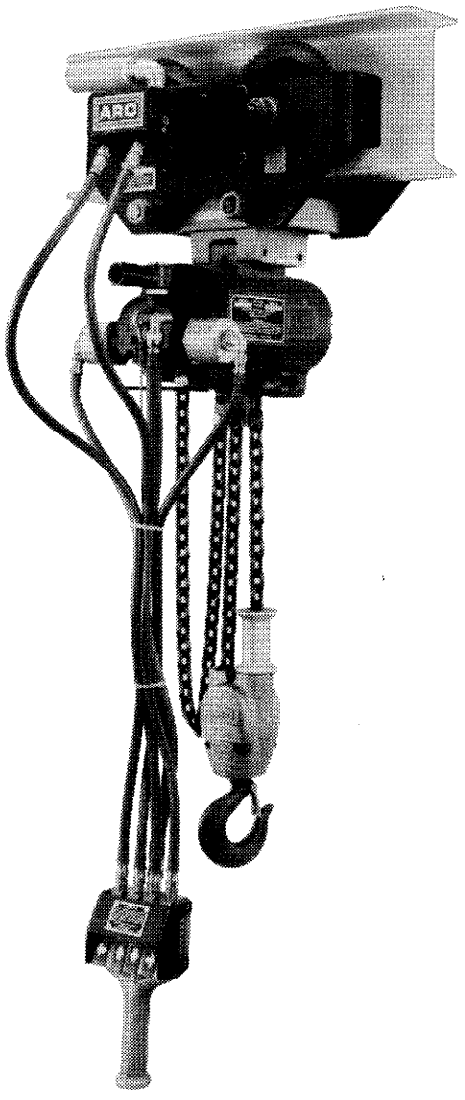
INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

POWER TROLLEY HOIST MODELS
7700-EPT SERIES 1/2 AND 1-TON MODELS



FEATURES:
1/2 OR 1-TON MODELS
LINK OR ROLLER TYPE LOAD CHAIN
POWER TROLLEY SUSPENSION MOUNTING
PENDENT TYPE THROTTLE CONTROL

INDEX PAGE

IMPORTANT: READ THIS MANUAL CAREFULLY BEFORE INSTALLING, OPERATING OR SERVICING THIS TOOL.

For parts and service information, contact your local ARO distributor, or the Customer Service Dept. of the Ingersoll-Rand Distribution Center, White House, TN at PH: (615) 672-0321, FAX: (615) 672-0601

ARO Tool & Hoist Products
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INGERSOLL-RAND®
PROFESSIONAL TOOLS

MODEL IDENTIFICATION

MODEL NO. 1/2-TON	MODEL NO. 1-TON	DESCRIPTION	TYPE LOAD CHAIN
7708-EPT-A	7732-EPT-A	FOR I-BEAM INSTALLATION	ROLLER
7708-EPT-B	7732-EPT-B	FOR H-BEAM INSTALLATION	ROLLER
7756-EPT-A	7776-EPT-A	FOR I-BEAM INSTALLATION	LINK
7756-EPT-B	7776-EPT-B	FOR H-BEAM INSTALLATION	LINK

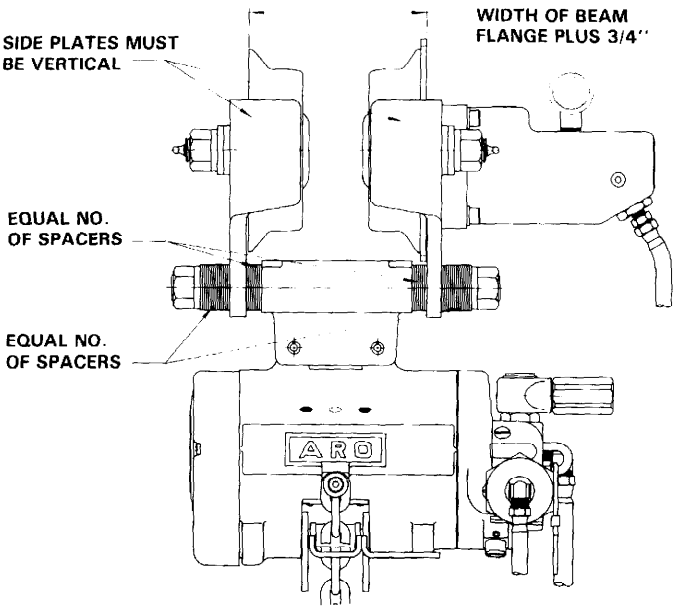
INSTALLATION

WARNING: THE HOISTING EQUIPMENT SHOWN AND DESCRIBED IN THIS MANUAL SHALL NOT BE USED TO LIFT OR TRANSPORT HUMAN CARGO.

HOIST SHALL BE INSTALLED ONLY IN LOCATIONS THAT WILL PERMIT THE OPERATOR TO STAND FREE OF THE LOAD AT ALL TIMES.

Your ARO Hoist is completely lubricated and load tested before being shipped from factory. To place in service:

POWER TROLLEY HOIST MODELS are shipped from factory with the trolley Power Unit Assembly (motor and gearing unit) removed from the trolley side plate. Assemble the Power Trolley side plates to hoist and beam before assembling the power unit section to the trolley side plate.
The trolley side plates must be spaced so the trolley wheels properly engage the beam on which the trolley will be operated. Adjustment for various beam sizes is accomplished by arrangement of the spacer washers on the shafts which connects the trolley side plates. The distance between the outside edges of the trolley wheels should be approximately 3/4" greater than the width of the beam flange (figure 1). The number of spacers used to space the side plates out must be the same on each side of the shaft between the trolley side plates and the trolley adapter (45591-2) and the remaining spacers must be equally distributed on the shafts outside the side plates between the side plates and lock nuts (figure 1). Side plates must be vertical.
Determine the number of spacer washers needed to properly space side plates for beam to be used and assemble Shafts (43009) and spacer washers to Trolley Adapter (45591-2). Assemble one (1) Side Plate, spacer washers, lock washer and nuts to shaft. Position trolley and hoist on beam and assemble spacer washers, other side plate, spacer washers, lock washers and nuts to shafts. Tighten nuts 25 to 30 ft. lbs. torque. The lock nuts must properly engage shafts with the shaft extending all the way through the lock nut.
The trolley wheels should be positioned as close as possible to the edge of the beam flange. Operate the trolley over the entire length of the beam track and observe operation. If it appears the trolley side plates can be moved closer together and freedom of movement maintained, remove an equal number of spacer washers from between the side plates and trolley adapter at each side and assemble these spacers to the outside of the side plates between the side plate and lock nuts.



TROLLEY WHEEL SPACING

FIGURE 1

The beam on which the Trolley is to be used must safely support the combined weight of the Hoist, Trolley and the Capacity Load. Minimum turning radius of the trolley is 48 inches.

With Trolley and Hoist properly installed on beam, assemble the Power Unit Section to the trolley side plate. Insure splines of gear are properly aligned with gear teeth of trolley wheels and secure with four (4) Washers (Y14-516-C) and Cap Screws (Y99-53). Assemble Elbow (Y43-3-C), Muffler (43874-1) and Connectors (Y54-3) to Power Unit.
Assemble Hose Assembly (45602-6) to Pendent Control Handle. Assemble Strain Cable to U-Bracket (45599) and assemble U-Bracket to handle securing with Fasteners (33330). Assemble opposite end of Strain Cable to U-Bracket (33989) and assemble U-Bracket to hoist — page 12. Assemble pendent hoses to hoist and power unit of trolley — figure 2.
Connect hoist to the nearest air source using a minimum 1/2" I.D. air hose assembly. Sufficient air hose must be provided to reach the farthest point of travel of the trolley.

POWER TROLLEY CONVERSION KITS 7797-1 AND 7797-FT-1

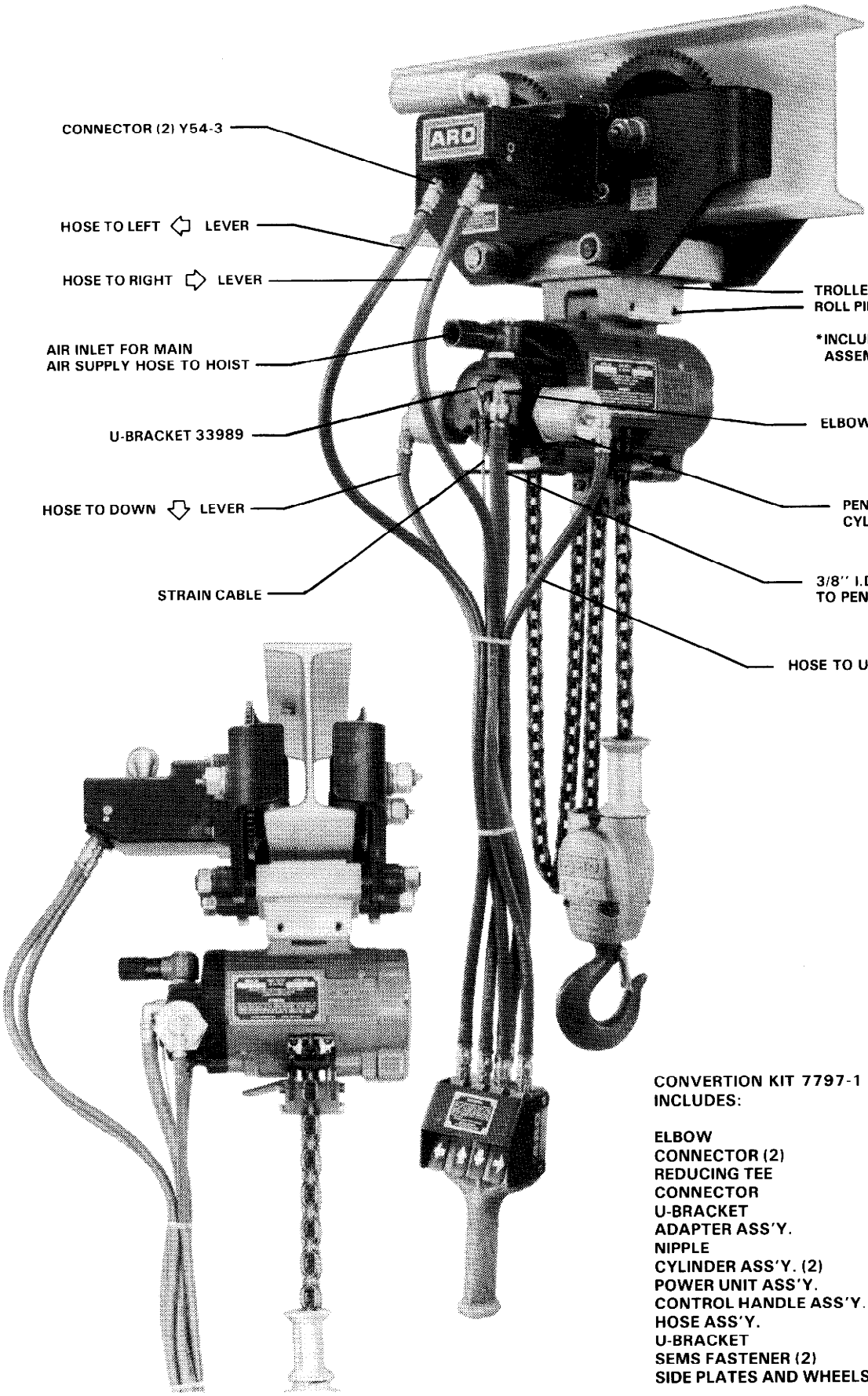
CONVERSION KIT NO. 7797-1 (TAPERED TROLLEY WHEEL FOR I-BEAM INSTALLATION).
CONVERSION KIT NO. 7797-FT-1 (FLAT TREAD TROLLEY WHEEL FOR H-BEAM INSTALLATION).

To convert a 7700-E Series 1/2 ton or 1-ton hoist from PULL-CHAIN type controls or from a 3-HOSE type PENDENT CONTROL to a POWER TROLLEY MODEL:
Remove the Upper Suspension (hook assembly or manually operated trolley and trolley adapter) from hoist housing and assemble Trolley Adapter (45591-2) to hoist housing with two (2) Roll Pins (45628) supplied with kit. NOTE: assemble Roll Pins with split side either pointing directly up or down.

When converting from Pull Chain type control models; remove the Valve Caps (34026), "O" Rings (Y325-116), and Springs (38966) from the Head Assembly and replace with Pendent Cylinder Assemblies (45801) supplied with kit. Remove the Pull Chain Control Assembly (40004) from Control Arm (37719).

When converting from 3-Hose type Pendent Control models; remove the Pendent Control Assembly (46094-6) and the two (2) Cylinder Assemblies from hoist head and replace with Cylinder Assemblies (45801) supplied with kit.
NOTE: Nipple (Y27-4-C), Tee (Y130-4-C) and Connector (Y54-7) are not used in -E Series conversion.

The balance of the installation instructions will be the same as outlined in "Installation" above.



CONVERTION KIT 7797-1 AND 7797-FT-1 INCLUDES:

ELBOW	Y54-27
CONNECTOR (2)	Y54-3
REDUCING TEE	Y130-4-C
CONNECTOR	Y54-7
U-BRACKET	33989
ADAPTER ASS'Y.	45592
NIPPLE	Y27-4-C
CYLINDER ASS'Y. (2)	45801
POWER UNIT ASS'Y.	45615, p. 10
CONTROL HANDLE ASS'Y.	45597, p. 12
HOSE ASS'Y.	45602-6, p. 12
U-BRACKET	45599, p. 12
SEMS FASTENER (2)	33330, p. 12
SIDE PLATES AND WHEELS,	p. 13

AIR AND LUBE REQUIREMENTS

AIR PRESSURE of 90 p.s.i.g. (6 bar) at the air inlet of the hoist is required for maximum motor efficiency. If necessary, an air regulator should be installed to maintain this pressure when hoist is in operation.

FILTERED AND OILED AIR will allow the Hoist to operate more efficiently and yield a longer life to operating parts and mechanisms. A line filter capable of filtering particles larger than 50 microns should be used with a line oiler.

FILTER-REGULATOR-LUBRICATOR (F-R-L) assembly Model 128241-300 is recommended for use with each hoist. The capacity of the individual Filter-Regulator-Lubricator is adequate to provide clean (40 micron) oiled and regulated air for the hoist. The Filter-Regulator-Lubricator must be installed on the stationary air line, in that order, with the Lubricator nearest to the the hoist.

LOAD CHAIN LUBRICATION — Chain should be lubricated periodically with heavy "EP" Gear Oil. Occasional cleaning of the chain under normal operating conditions, will tend to reduce wear and prolong chain and pocketwheel (or sprocket) life. To properly clean, remove chain from hoist (see page 7) and wash in an oil solvent. Lubricate chain.
Under highly contaminated operating conditions, the load chain should be cleaned and relubricated with greater frequency to remove grit, sand and other contaminants.

OIL RESERVOIR in Head should be filled with spindle oil (29665) after each 40 hours of operation.

INJECT GREASE (33153), 2 to 3 strokes, thru grease fitting in Hoist housing to provide lubrication for gearing, and thru fittings of trolley wheels a minimum of every 160 hours of operation.

LOWER BLOCK ASS'Y. should be lubricated at any time the lower block is disassembled either for inspection or for maintenance or for chain replacement. See pages 20 and 21 for lubrication instructions.

RECOMMENDED HOSE SIZE — 1/2" (13 mm) nominal inside diameter.

RECOMMENDED LUBRICANTS: Spindle Oil 29665, 1 qt. (.9 liter) container for oiler and air inlet; Grease 33153, 5 lb. (2.3 kg) can for gears, lower block and bearings; "O" Ring Lubricant 36460, 4 oz. (113 g) tube for lubrication and installation of "O" Rings.

PART NO.	WHERE USED	DESCRIPTION
29665	AIR MOTOR	A HIGH QUALITY LIGHT TURBINE OR SPINDLE OIL. RUST INHIBITED, WITH VISCOSITY OF 100-150 S.U.S. AT 100°F. OIL IS COMPATIBLE WITH POLYCARBONATE TYPE AIR LINE LUBRICATOR BOWLS.
33153	GEARS & BEARINGS	A HIGH QUALITY "EP" EXTREME PRESSURE ANTI-FRICTION BEARING AND GEAR GREASE, NLGI NO. 1. FREE OF CORROSIVE MATTER AND FILLERS, WITH A VISCOSITY OF APPROX. 750 S.U.S. AT 100°F.
36460	O-RINGS & LIP TYPE SEALS	A STRINGY LUBRICANT FOR RUBBER SEALS, WITH GOOD ADHESIVE QUALITIES.

OPERATION

OPERATE HOIST CAUTIOUSLY to become familar with the performance of the hoist. Hoist shall be operated from a position that will not be hazardous to the operator. Abrupt operation, resulting from "jerking" of controls, should be avoided.

The rate of lift or descent of the hoist can be governed manually by the operator. The pendent controls provide unlimited variation between full speed and the slowest "inching" movement. This is accomplished by movement of the pendent levers. Depressing pendent levers fully will result in maximum hoist speed.

On pendent control models the control handle is supported by a strain cable to prevent stress on hoses.

BEFORE STARTING TO LIFT, insure chain is properly seated in the sprockets (or pocketwheel). Do not lift or move load more than a few inches until load is well balanced in sling or lifting device. Care shall be taken in hoisting to insure that chain is not kinked or twisted and load does not contact any obstruction. Be certain hoist is centered over load to prevent danger of load swinging when lifted. Side or end pulling should always be avoided. Take up slack chain carefully to avoid overstress caused by jerking load when lifting. Be certain that safety latch on load hook is properly closed. On 1-Ton Link Chain Models; to avoid jamming of chain in lower block; allow only sufficient slack in chain to permit attaching hook to load.

DO NOT wrap the hoist chain around the load. The load shall be attached to the hook by means of slings or other approved devices and shall be properly seated in the saddle of the hook.

The maximum lift rate of a hoist is constant provided that air pressure and load are also constant. The maximum descent rate of hoist can be varied within fixed limits by means of regulating valves located on the underside of the Head Housing (figure 3).

Hoists are shipped from factory with regulator valves pre-set for slowest rate of descent and fastest rate of lift. If a faster rate of descent is desired, turn regulator valve clockwise by small increments while testing with desired or rated load attached. If a slower rate of lift is desired, turn regulator valve counter-clockwise by small increments while testing with desired or rated load.

OPERATION CONT'D.

The operator shall test the brakes each time a load approaching the rated load is handled by raising the load just enough to clear floor, or supports, and checking for proper brake action and lift continued only if brake is functioning properly.

CAUTION: DO NOT OPERATE HOIST WITHOUT CHAIN STOP ATTACHED PROPERLY TO HOIST LOAD CHAIN. DO NOT USE CHAIN STOP AS ALIMITSWITCH (to stop hoist when operating in the "up" mode). The chain stop function is to keep the lower hook components (lower block on one-ton models) from striking Control Arm 37719 should an over-run condition ever occur.

DO NOT EXCEED RATED LOAD CAPACITY OF HOIST.

DO NOT OPERATE HOIST OVER PEOPLE.

WARNING: DO NOT USE HOIST FOR HUMAN TRANSPORT.

DO NOT LEAVE LOAD SUSPENDED FOR EXTENDED OR UNATTENDED PERIODS.

INSURE LOAD CHAIN IS HANGING PROPERLY AND IS FREE OF TWISTS, LOOPS OR KINKS.

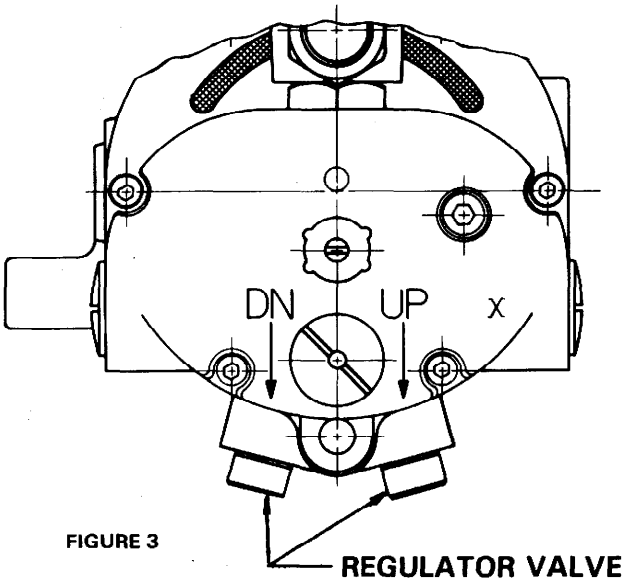


FIGURE 3

WARNING: MAXIMUM LOWERING SPEED WITH RATED CAPACITY LOAD IS VERY HIGH. ADJUST WITH CARE.

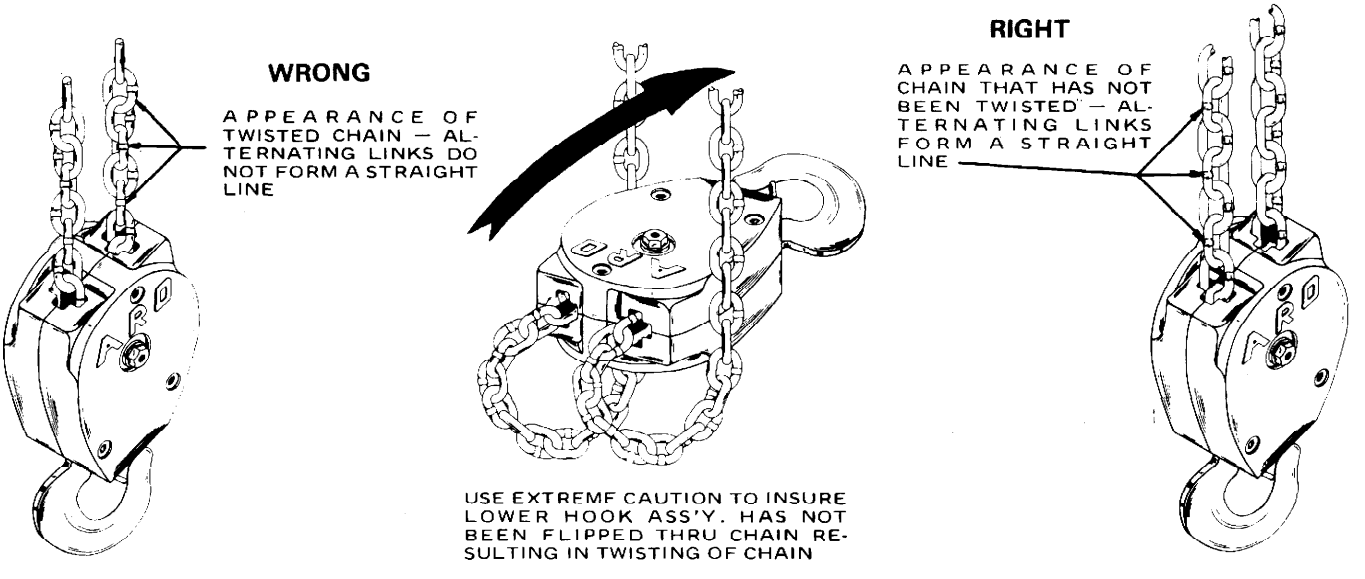


FIGURE 4

Safe and efficient operation of your ARO HOIST can best be attained by observing proper operating, inspection and maintenance procedures. Allow only competent and qualified people to operate hoist and subject each Hoist to a regular inspection and maintenance procedure. The qualified Hoist operator must be carefully instructed in the safe operation of the Hoist, including a study of the manufacturer's literature, and must thoroughly understand proper methods of hitching loads. The operator should have a good attitude regarding safety.

To aid in better understanding of proper and safe use of hoists; the publication "Overhead Hoists", ANSI B30.16 1981, can be purchased from the American Standards Institute, Inc., 1430 Broadway, N.Y., N.Y. 10018.

INSPECTION AND MAINTENANCE

INSPECTION

ARO recognizes the need for periodic inspection of hoist components as an important step in preventive maintenance.

The type of application for a hoist varies so greatly it is impractical to recommend an exact time-table for inspection of the hoist. Where hoist is subjected to continuous operation with capacity loads, it is recommended the unit be inspected twice a week. If the application is less demanding, the unit should be inspected twice a month. In general, the frequency of inspection should be determined by the severity of the application. The user of a hoist should be guided by any existing federal, state or local regulations governing the use, testing or inspection of the hoist.

The following points and areas are recommended for inspection:

LOAD CHAIN AND ANCHORS

a. Visually check for nicked, gouged, twisted, bent, corroded, rusted, worn or broken links. Check ends of chain where chain is anchored to hoist frame and where chain is fastened to lower hook.Check anchors and pins.
b. Check chain elongation with a vernier caliper as shown in figure 5.

IT IS NOT INFERRED that a chain is safe prior to the occurence of elongation of the chain. It is inferred ONLY, that when said elongation is evident, the chain must be replaced. Other factors, such as those mentioned as a visual check, may render chain unsafe long before replacement due to elongation is necessary.

NOTE: New chain should never be used on a worn pocketwheel, replace chain and pocketwheel as a pair. Chain should also be replaced when replacing brake shoes.

GEARS, BEARINGS AND SPROCKET

a. Check condition of teeth on gears and motor shaft pinion.
b. Check condition of sprocket teeth or pockets of pocketwheel.
c. Check condition of bearings.
d. Replace any worn or damaged parts.

BRAKE

a. Check brake linings and components.
b. Check brake operation.

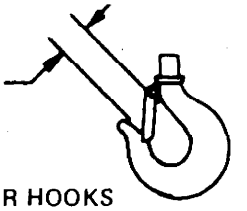
NOTE: When replacement of brake shoes is indicated, they must be replaced as a pair. Also replace chain at this time.

THROTTLE VALVE HEAD AND GEARS

a. Check condition of valve body, valves, and "O" rings on valves.
b. Check condition of gear teeth and bearings.
c. Replace any worn or damaged parts.

HOOKS AND SUSPENSION

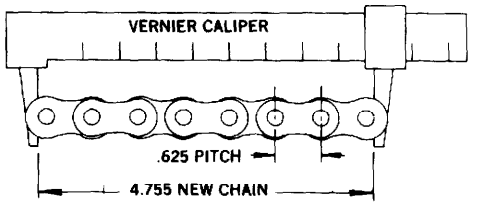
a. Check upper and lower hooks and component parts for bent, worn, cracked, broken or otherwise damaged parts.
b. On trolley suspended models, check conditions of trolley parts, trolley adapter and component parts. Replace any damaged parts.



CORRECT HOOK OPENING
1-1/8" ON 1/2 TON MODELS (LOWER HOOKS)
1-1/4" ON UPPER & 1-TON LOWER HOOKS

AIR MOTOR

a. Check end faces of rotor for roughness and blade slots for wear or burrs. A new blade should slide in and out of slots without binding.
b. Check blades for wear, warpage or other damage.
c. Check cylinder bore diameter for rough circular grooves from scoring. A badly scored cylinder cannot be restored by honing since it will only enlarge bore diameter, widening seal point between rotor and cylinder, hindering free exhaust of air and result in loss of speed and power.
d. Check end plates for wear or scoring. Check bearings.
e. Replace any excessively worn or damaged parts.

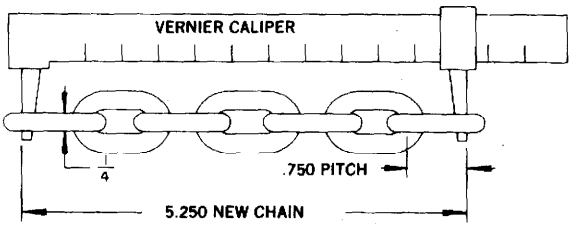


IF VISUAL CHECK REVEALS NO DEFECTS, PROCEED AS FOLLOWS:

LAY USED CHAIN ON FLAT SURFACE AND MEASURE OVER EIGHT (8) ROLLS, WHILE CHAIN IS PULLED TAUT, AS SHOWN. MEASUREMENT SHOULD BE TAKEN ON PORTION OF CHAIN WHICH HAS MOST PASSED OVER THE SPROCKET.

IF MEASUREMENT TAKEN IS 4.810 INCHES OR MORE, CHAIN SHOULD BE REPLACED.

FIGURE 5



IF VISUAL CHECK REVEALS NO DEFECTS, PROCEED AS FOLLOWS:

LAY USED CHAIN ON FLAT SURFACE AND MEASURE BETWEEN SEVEN (7) LINKS AS SHOWN. MEASUREMENT SHOULD BE TAKEN ON PORTION OF CHAIN WHICH HAS MOST PASSED OVER THE POCKET WHEEL.

IF MEASUREMENT TAKEN IS 5.355 OR MORE, CHAIN SHOULD BE REPLACED.

GENERAL MAINTENANCE

AIR HOISTS are made of precision parts and should be handled with reasonable care when servicing. Excessive pressure exerted by a holding device may cause distortion of a part. Apply pressure evenly when disassembling (or assembling) parts which have a press fit. When removing or installing bearings, apply pressure to the bearing race that will be the press fit to the mating part; if this is not practiced, Brinelling of the bearing races may occur making replacement necessary. It is important that the correct tools and fixtures are used when servicing this Air Hoist.

DISASSEMBLY should be done on a clean work bench with a clean cloth spread to prevent the loss of small parts. After disassembly is completed; all parts should be thoroughly washed in a clean solvent, blown dry with air and inspected for wear levels, abuse and contamination. Double sealed or shielded bearings should never be placed in solvent unless a good method of re-lubricating the bearing is available. Open bearings may be washed but should not be allowed to spin while being blown dry. When REPLACEMENT PARTS are necessary, consult drawing containing part.

BEFORE REASSEMBLING, lubricate parts where required. Use 33153 Grease,or equivalent,in bearings. Use 36460 Lubricant for "O" Ring Assembly. When assembling "O" rings or parts adjacent "O" rings, care must be exercised to prevent damage to the rubber sealing surfaces. A small amount of grease will usually hold steel balls and other small parts in place while assembling.

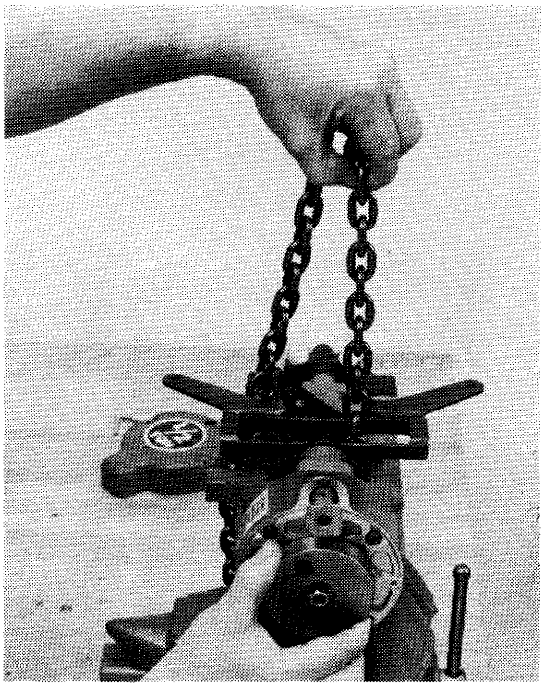
WHEN ORDERING PARTS, be sure to list PART NUMBER, PART NAME and MODEL NUMBER OF HOIST. USE ONLY GENUINE ARO REPLACMENT PARTS.

REMOVAL AND INSTALLATION OF LOAD CHAIN

REMOVAL

LINK CHAIN MODELS — A new chain should never be used on a worn pocketwheel. Replace chain and pocketwheel as a pair. To remove chain; disconnect end of load chain from anchor lug on housing by removing Screw (Y157-51) and Washer (Y13-4-C). NOTE: Models employing a chain basket, remove Chain Stop from end of chain. Chain can be pulled thru housing by hand while holding brake open, by pulling (or pushing) on Control Arm (either end). On 1-Ton models, disconnect opposite end of load chain from Anchor Bracket (41624) by removing Nut (Y109-524) and Bolt (41625). Remove Chain Stop and Lower Hook Assembly.

ROLLER CHAIN MODELS — disconnect end of load chain from Anchor Block (44686) by removing Connecting Link (33363). NOTE: models employing a chain basket, remove Chain Stop (ring) from end of chain. Chain can be pulled thru housing by hand while holding brake open, by pulling (or pushing) on Control Arm (either end). On 1-Ton models, disconnect opposite end of load chain from Anchor Bracket (37579) by removing Bolt (37580) and Anchor Pin (34316). Remove Chain Stop and Lower Hook Assembly.



INSTALLING LOAD CHAIN

INSTALLATION

LINK CHAIN MODELS — position hoist in a vise or other suitable holding device (figure 6) and remove Housing Cap, Brake Spring and Brake Shoes. Turn Brake Wheel by hand to rotate Pocketwheel while carefully feeding chain thru Chain Guide and around Pocketwheel. Pull sufficient chain thru housing to allow end link of chain to be attached to anchor lug on housing.

IMPORTANT NOTICE: The link chain must be positioned around the Pocketwheel so the weld on the standing links of chain face outward from pocketwheel (figure 6). ALSO, the end link of chain must be fed over pocketwheel so it will be positioned properly to permit attaching chain to anchor lug on housing without twisting of chain (figure 20).

WARNING: DO NOT attempt to feed chain over Pocketwheel or Sprocket by air power as chain will be pulled thru at a very fast rate.

ROLLER CHAIN MODELS — remove Housing Cap, Brake Spring and Brake Shoes. Turn Brake Wheel by hand to rotate Sprocket while carefully feeding chain thru guide and around Sprocket. Pull sufficient chain thru housing to allow end link of chain to be attached to Anchor Block and anchor lug on housing.

TO ASSEMBLE CHAIN TO LOWER BLOCK ON 1-TON MODELS, SEE PAGES 20 AND 21.

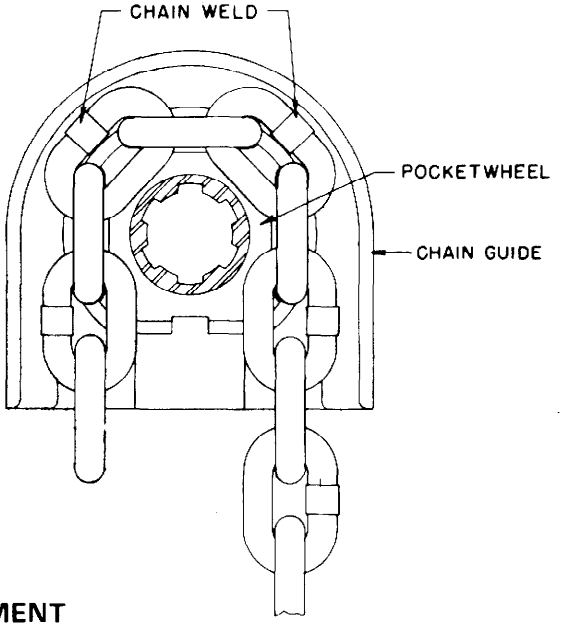


FIGURE 6

BRAKE ADJUSTMENT

To adjust Brake, insert screwdriver thru hole in Housing Cap. Turn Screw (37701) counter-clockwise to tighten brake, clockwise to loosen brake.

Brake adjustment should be made with air turned on and with rated load attached to lower hook. Operate hoist to raise load applying slight pressure to pendent control. If load starts to lower before it is raised by motor, tighten brake until no slippage is evident. Care should be taken not to tighten brake more than necessary to hold load. If brake is too tight, it will cause erratic hoist control.

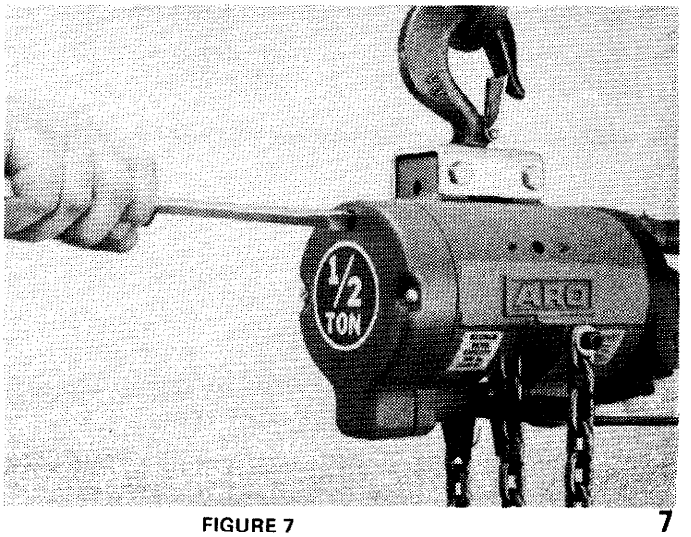


FIGURE 7

DISASSEMBLY AND REASSEMBLY

To minimize the possibility of parts damage and for convenience, the steps for disassembly or reassembly listed on the following pages are recommended.

REMOVAL OF HOIST

a. Lower and disconnect load from hoist.
b. Shut off air at source and operate hoist control to bleed air from hoist and line.
c. Disconnect air hose at inlet swivel (on pendent control models, remove pendent control hoses also) and remove hoist from overhead suspension.
d. If chain basket is being used, remove from hoist.
e. Drain oil from reservoir in head.
f. Remove trolley from hoist housing.
g. Place hoist upside-down in vise and clamp on upper mounting on housing.
h. If hoist is to be completely disassembled, it is recommended the load chain be removed. For removal of chain, see page 7.

HEAD SECTION

a. Remove roll pin (Y178-56) from gear (34022) and control rod (34021). NOTE: If head assembly is not to be disassembled, control rod may be removed with head, thereby making it unnecessary to re-time gear (34022) with throttle valves (see "Timing of Head", figure 8). To remove control rod with head, remove roll pin (Y178-55) from control arm (37719), remove roll pin (Y178-60) from brake block (34029) and remove brake block.
b. Remove screws (Y154-54) and washers (Y14-10).
c. Remove head assembly from housing.

BRAKE AND GEARING SECTION

a. Remove screws (Y19-113-C) and housing cap assembly.
b. Slide brake spring (33281) part way off brake shoes (33387 or 33387-1) and remove spring with brake spring spreader (33541). This will release brake shoes and steel balls (Y16-10).
c. Place a pin thru hole in brake wheel (33376) to keep from turning and remove nut (Y12-106) and washer (Y117-616). Remove brake wheel.
d. Remove roll pin (Y178-60) from brake block (34029) and remove brake block from control rod (34021).
e. Remove screws (Y99-41) and washers (30997) and remove gearing assembly.

MOTOR SECTION

a. After removal of head assembly, housing cap, nut (Y12-106) and washer (Y117-616), motor assembly may be removed from housing.

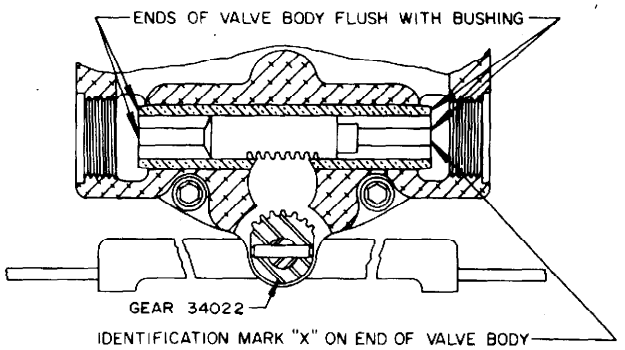
HOUSING SECTION

a. Follow disassembly procedures as outlined in "Head Section", "Brake and Gearing Section" and "Motor Section".

for further disassembly of sections, see pages 10 thru 21.

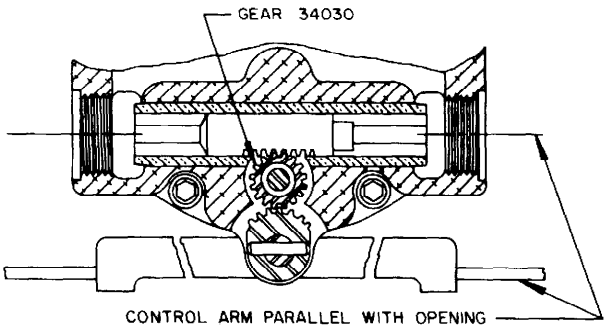
"TIMING OF HEAD"

STEP 1



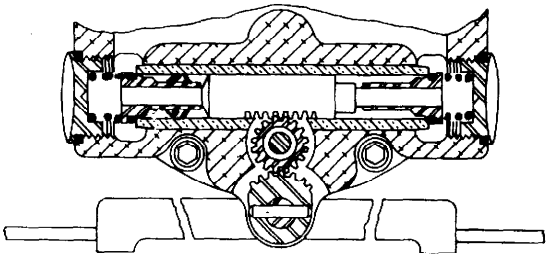
POSITION HOIST SO YOU ARE FACING END WITH AIR INLET.
WITH VALVE PARTS AND GEAR 34030 REMOVED, PLACE VALVE BODY IN VALVE OPENING. INSERT FINGER IN EACH END OF VALVE OPENING AND ALIGN ENDS OF VALVE BODY WITH ENDS OF BUSHING.
NOTE: VALVE BODY MUST BE INSTALLED WITH IDENTIFICATION MARK AS SHOWN.

STEP 2



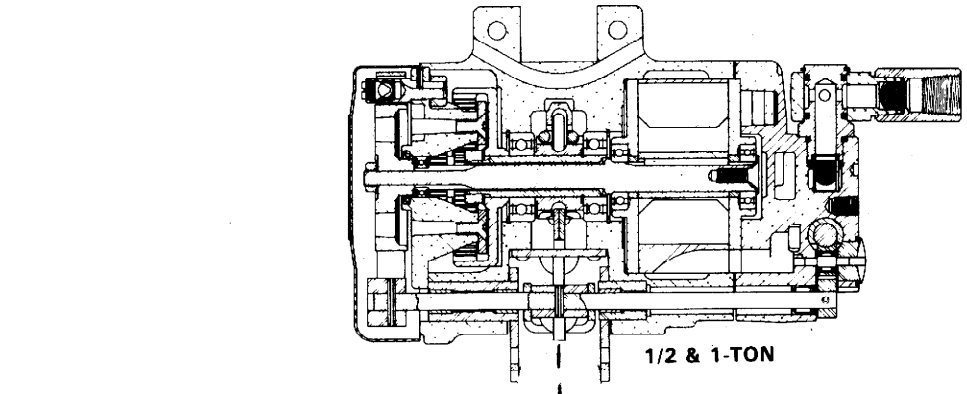
POSITION CONTROL ARM PARALLEL WITH OPENING.
DROP GEAR 34030 INTO PLACE AND SECURE WITH SHAFT 34025 AND LOCK SCREW.

STEP 3

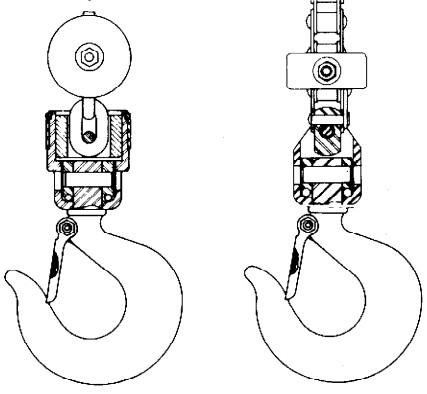


ASSEMBLE BALANCE OF VALVE PARTS.

FIGURE 8



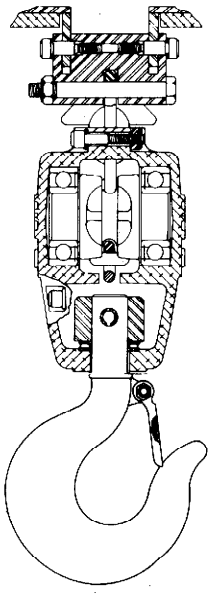
1/2 & 1-TON



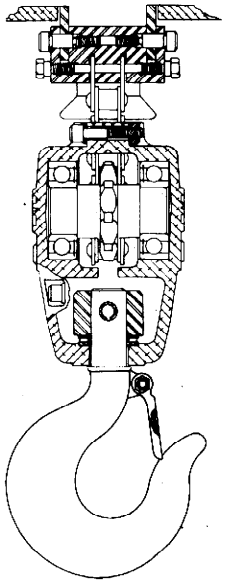
LINK CHAIN

ROLLER CHAIN

1/2-TON



LOWER BLOCK
LINK CHAIN



LOWER BLOCK
ROLLER CHAIN

1-TON

FIGURE 9

POWER TROLLEY SECTION

POWER UNIT

DISASSEMBLY

Remove four (4) Cap Screws (Y99-53) and Washers (Y14-516-C) releasing Power Unit Ass'y. from Trolley. Remove four (4) Cap Screws (Y99-42) and Washers (Y14-416-C) releasing Plate (45614) and Gears.

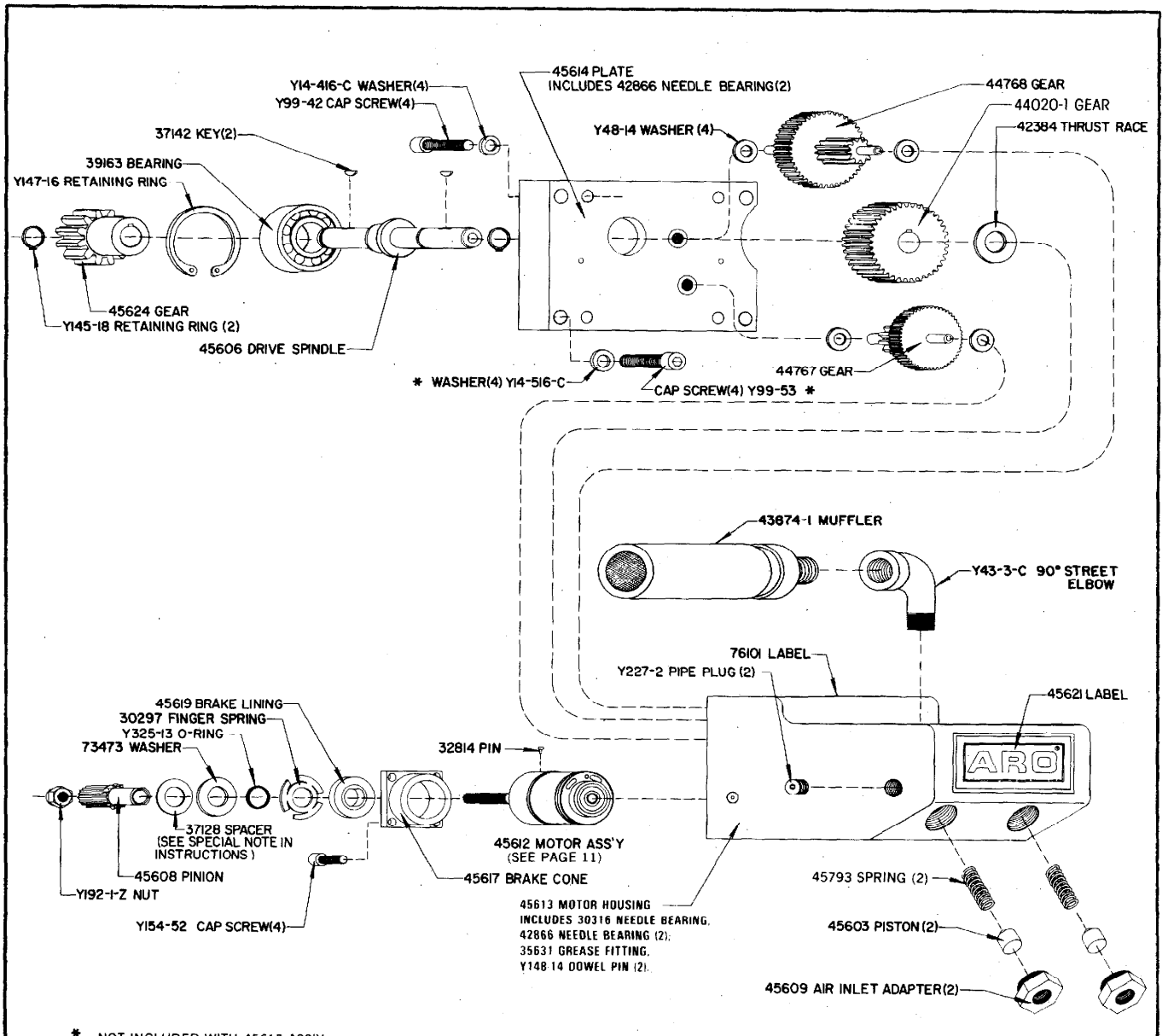
Spindle (45606) and components should not be disassembled further unless it is necessary to replace a part as Brinelling of the Bearing races may occur making replacement necessary.

To further disassemble – remove Retaining Ring (Y145-18), Gear (45624), and Retaining Ring (Y147-16). Tap Spindle (45606) on end with Gear (44020-1) using a non-metallic hammer, Spindle and Bearing (39163) will loosen from plate. Bearing (39163) is pressed fit onto spindle and should be replaced if removed.

REASSEMBLY

Pack Ball Bearings and lubricate Needle Bearings and Gears liberally with grease 33153, or equivalent, when assembling. Gearing should contain approximately 2 oz. grease.

Press Bearing (39163) onto Spindle (45606). Reassemble Spindle and Bearing through front of Plate (45614) and secure with Retaining Ring (Y147-16). Reassemble Key (37142), Gear (45624), and Retaining Ring (Y145-18). Reassemble Gear (44768) with Spacers (Y48-14) into Plate (45614). Assemble Retaining Ring (Y145-18), Gear (44020-1), and Thrust Race (42384) onto Spindle. Place Gear (44767) with Spacers (Y48-14) into Plate, assemble Plate and components to Housing and secure with four (4) Cap Screws (Y99-42) and Washers (Y14-416-C). Secure unit to Trolley Plate using four (4) Cap Screws (Y99-53) and Washers (Y14-516-C).



POWER UNIT ASSEMBLY 45615

FIGURE 10

BRAKE SECTION

DISASSEMBLY

Remove Power Unit Section.
Remove Nut (Y192-1-Z), Brake components will come apart.

REASSEMBLY

Assemble Brake Lining (45619) into Brake Cone (45617). Assemble Spacer (37128), if used, onto Pinion (45608). Assemble Washer (73473), O-Ring (Y325-13), and Finger Spring (30297) — with fingers facing out — onto Pinion (45608).

Assemble Pinion (45608) and components onto Motor Spindle and secure with Nut (Y192-1-Z).

SPECIAL NOTE: Brake components must be so assembled as to require a torque of 30-50 in.-oz. (2-3 in.-lbs.) to rotate Spindle of rotor in either direction. It may be necessary to use a .010 in. thick Spacer (37128) to achieve required torque. (In some cases the Spacer may not be necessary for proper torque setting).

MOTOR SECTION

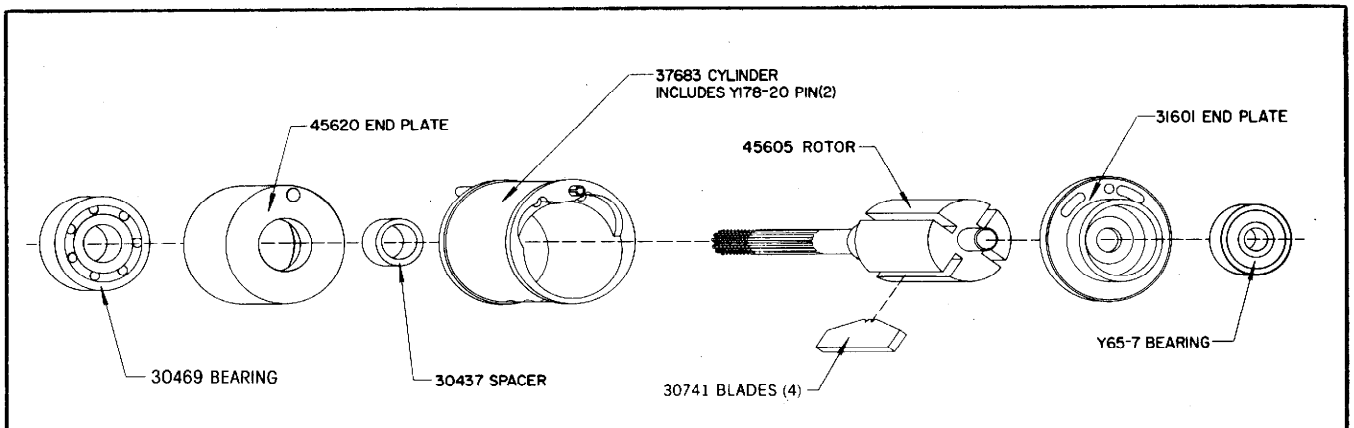
DISASSEMBLY

Remove Power Unit and Brake Sections.
After removing Brake parts from Motor Spindle, remove four (4) Cap Screws (Y154-52), releasing Brake Cone (45617). Motor Ass'y. can now be removed from Housing. After removing Motor from Housing grasp Cylinder in one hand and tap Splined end of Rotor with a non-metallic hammer; motor will come apart.

REASSEMBLY

Pack Bearing (30469) with grease and coat I.D. of cylinder with spindle oil upon assembly.

Assemble Bearings into End Plates and assemble End Plate (31601) to Rotor (45605). Assemble Cylinder over Rotor aligning air inlet holes of Cylinder with air inlet slot of End Plate and assemble Blades to Rotor. Assemble Spacer (30437) to Rotor and assemble End Plate (45620) with Bearing (30469) to Rotor and Cylinder, aligning Roll Pin with hole in End Plate. Assemble Pin (32814) to Motor Ass'y. Insure Rotor does not bind (if Rotor binds, tap splined end of Rotor with a non-metallic hammer to loosen) and assemble motor to Housing. Secure with Brake Cone (45617) and four (4) Cap Screws (Y154-52).



45612 MOTOR ASSEMBLY

FIGURE 11

PENDENT CONTROL

DISASSEMBLY

a. To remove from hoist, shut off air and disconnect hoses from cylinder assemblies.
b. Remove U-Bracket (33989) from head, releasing cable.
c. To disassemble Cylinders, unscrew and remove from head.
d. Remove Adapter (41067), releasing Spring, Piston, Piston Rod and "O" Ring.
e. To disassemble control handle, remove Screws (37511) with "O" Rings (Y325-111), releasing Spring (32858). Valves (34757) with "O" Rings (Y325-6), and Valves (36602) with "O"Rings (Y325-7).

REASSEMBLY

a. Assemble "O" Ring (Y325-13) into Adapter (41067).
b. Assemble Piston Rod (45799) and "O" Ring (Y325-222) to Piston (41066) and assemble with Spring (33981) into Cylinder (41064-1). Secure with Adapter (41067).
c. Assemble with "O"Ring (Y325-116) to head.
d. To reassemble control handle, reverse disassembly procedure.

Lubricate "O" Rings and walls of Cylinder (41064-1) when assembling.

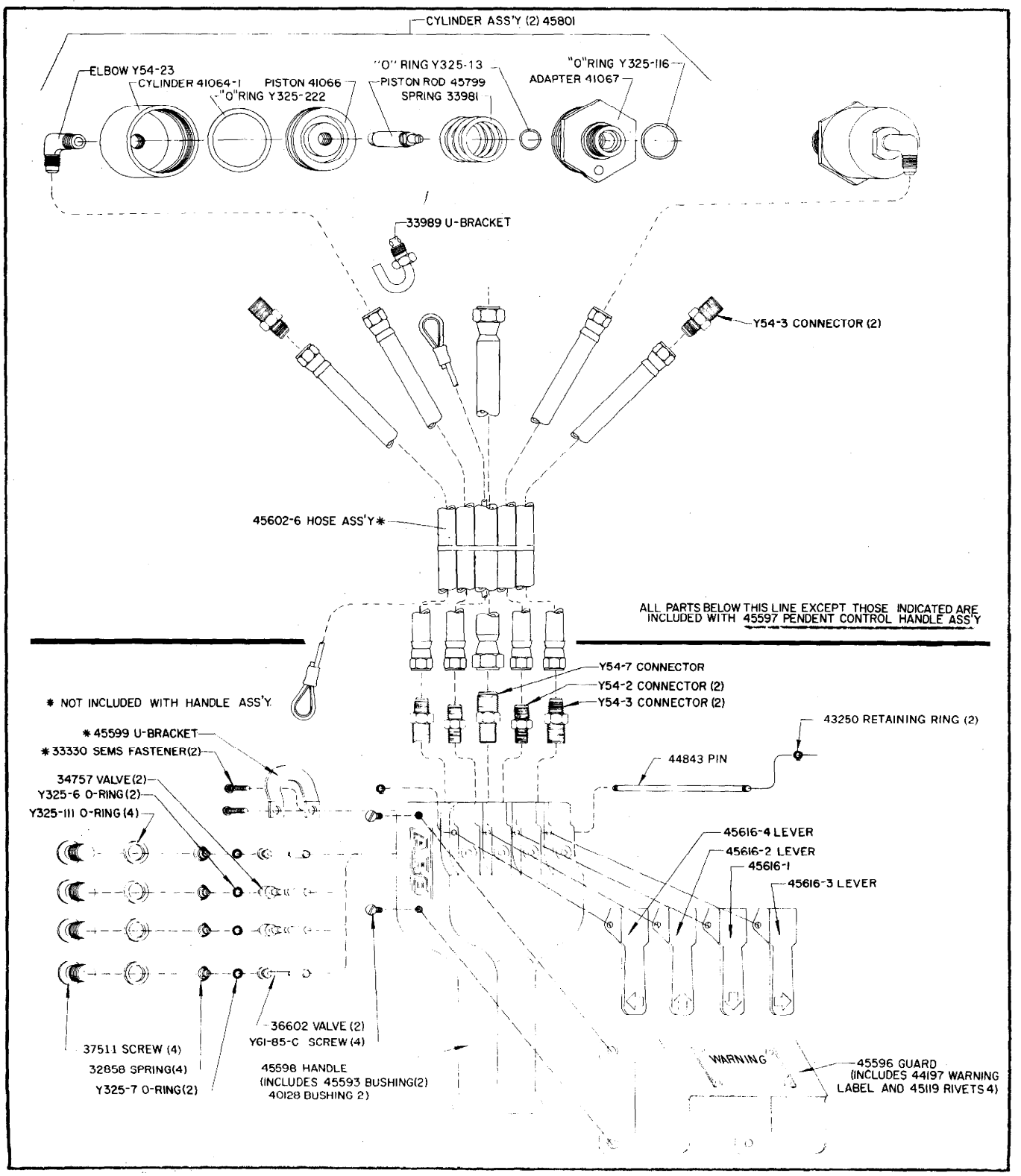
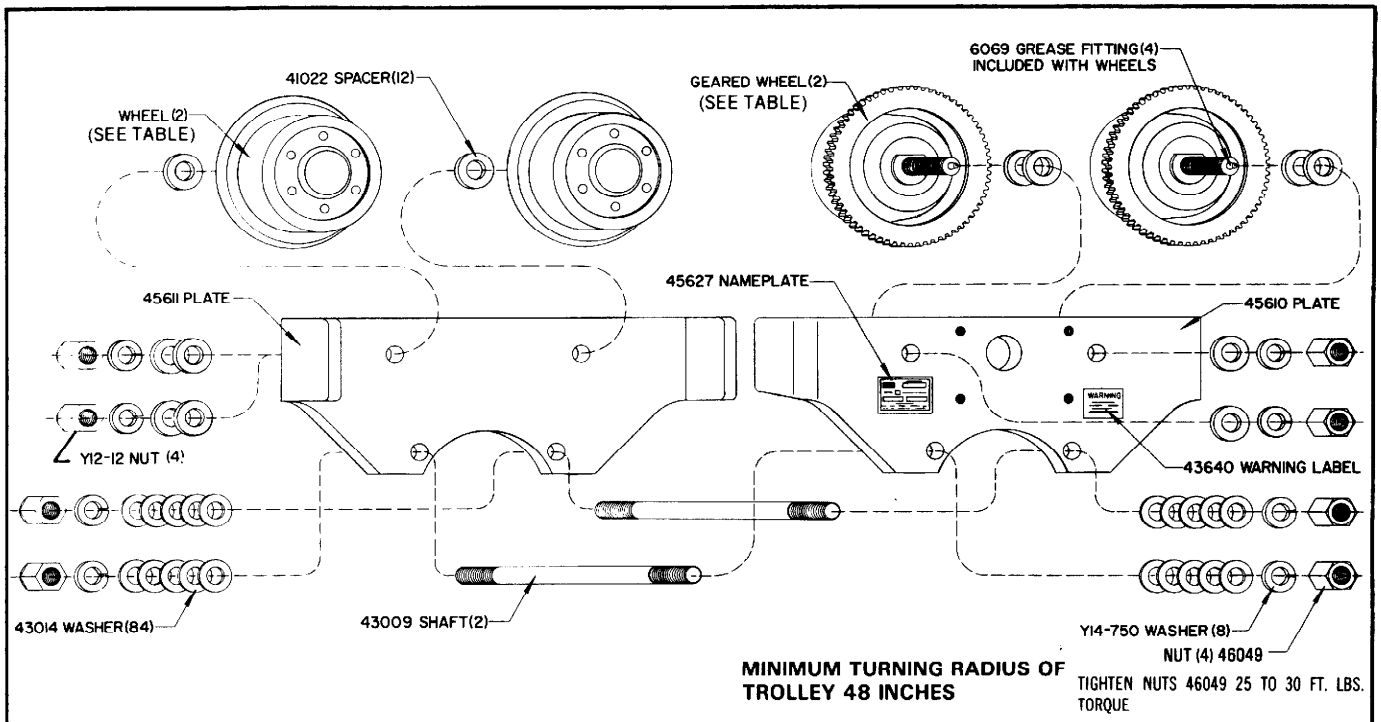


FIGURE 12

POWER TROLLEY SECTION

SIDE PLATES AND WHEELS



INCLUDED W/KIT NO.	GEARED WHEEL	WHEEL (NOT GEARED)	TYPE BEAM	BEAM SIZE (MIN.)	BEAM FLANGE WIDTH MIN.	MAX.
7797-1	45622	45623	I-BEAM	6"	3-1/4"	5-1/2"
7797-FT-1	45735	45738	H-BEAM	6"	3-1/4"	5-1/2"

FIGURE 13

45625 WHEELS AND SIDE PLATE ASSEMBLY. INCLUDES SIDE PLATE 45611, WHEEL (2) 45623, SPACER (6) 41022, WASHER (2) Y14-750 AND NUT (2) Y12-12.

45626 GEARED WHEELS AND SIDE PLATE ASSEMBLY. INCLUDES SIDE PLATE 45610, WHEEL (2) 45622, SPACER (6) 41022, WASHER (2) Y14-750, NUT (2) Y12-12, NAMEPLATE 45627 AND WARNING LABEL 43640.

45736 WHEELS AND SIDE PLATE ASSEMBLY (FLAT TREAD WHEELS).INCLUDES SIDE PLATE 45611, WHEEL (2) 45738, SPACER (6) 41022, WASHER (2) Y14-750, AND NUT (2) Y12-12.

45737 GEARED WHEELS AND SIDE PLATE ASSEMBLY (FLAT TREAD WHEELS). INCLUDES SIDE PLATE 45610, WHEEL 45735, SPACER (6) 41022, WASHER (2) Y14-750, NUT (2) Y12-12, NAMEPLATE 45627 AND WARNING LABEL 43640.

HEAD SECTION

DISASSEMBLY

a. Remove Head from Housing as outlined on page 8.
b. Remove Lock Screw (34024), Gear (34030) and Shaft (34025).
c. Remove Pendent Cylinder Assemblies (45801).
d. Valves (33703) and (46079) with "O" Rings (Y330-12) and Valve Body (37704) may now be removed from either end of Head Housing.
e. Swivel Assembly may be disassembled while mounted to Head or removed from Head. To disassemble, remove Retaining Ring (Y145-28) pull off Swivel (46839) exposing "O" Rings (Y325-115) and Swivel Body (33314).
f. To remove Oilite Casting (33190), remove oil Screw (30747) and Washer (31389) on side of Head. Insert screwdriver into opening and remove Oilite Casting.
g. Muffler Fillers (34028) and Screen (33672) are exposed after removal of Head from Housing and may be removed.
h. To remove Regulator Valve (41595), remove Set Screws (41598) and pull Valves from housing.

REASSEMBLY

a. Assemble Screen (33672) and Fillers (34028) to Head. Assuming other hoist components are assembled to Housing, assemble Head to Housing with Gasket (41623). Secure with Washers (Y14-10) and Screws (Y154-54).
b. Assemble "O" Rings (Y325-17), (Y325-115) and Screen (46072) to Swivel Body and assemble to Head. Assemble Swivel to Swivel Body and secure with Retaining Ring (Y145-28). Assemble Screen (31648) and Adapter (46211) to Swivel.
c. Assemble Oilite Casting (33190), Screw (30747) with Washer (31389) and Regulator Valves (41595) with "O" Rings (Y325-11) to Head.

NOTE: Assemble Valves to Head with slot in Valve positioned to accept Set Screw, Secure Valves with Set Screws (41598). After complete assembly of hoist, loosen Set Screw and adjust valve for desired rate of lift and descent. See pages 4 and 5.

d. With Gear (34022) and Control Rod assembled to housing, assemble valve parts as shown in figure 8, page 8.

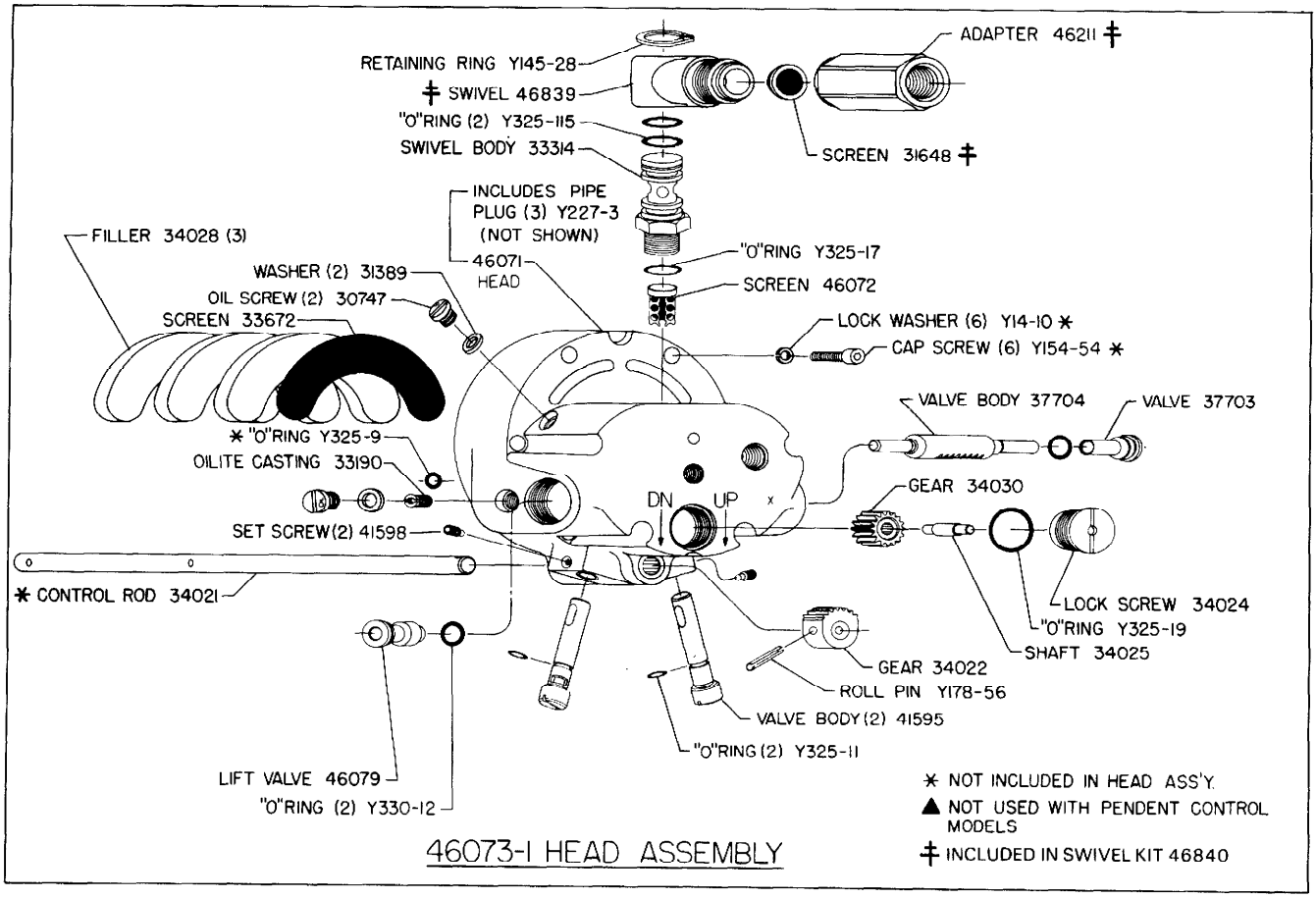


FIGURE 14

DISASSEMBLY

a. Remove housing cap, brake spring, brake wheel and components as outlined on page 8.
b. Remove screws (Y194-44), nuts (33368), washers (Y1-516) and bolts (33369), releasing support ring and gear assemblies.
c. Bearing (36546) and grease seal (37706) should be removed only for replacement.

REASSEMBLY

NOTE: Lubricate gears and bearings liberally with grease (33153) when assembling.

a. Assemble grease seal (37706) and bearing (36546) to end plate, if removed.
b. Assemble wear plates (45909), gear assemblies and bushings to end plate and secure with support ring, screws (Y19-44), bolts (33369), washers (Y1-516) and nuts (33368).
c. Assemble end plate to housing and secure with washers (30997) and screws (Y99-41).
d. Assemble brake wheel (33376) to splined end of motor spindle and secure with washer (Y117-616) and nut (Y12-106).
e. Assemble steel balls (Y16-10) and screw (37701) into bracket. Position brake shoes (33387 or 33387-1) over brake wheel and assemble brake spring (33281) over shoes, using brake spring spreader (33541).
f. Assemble housing cap over brake and secure with screws (Y19-113-C). See "Brake Adjustment", page 7.

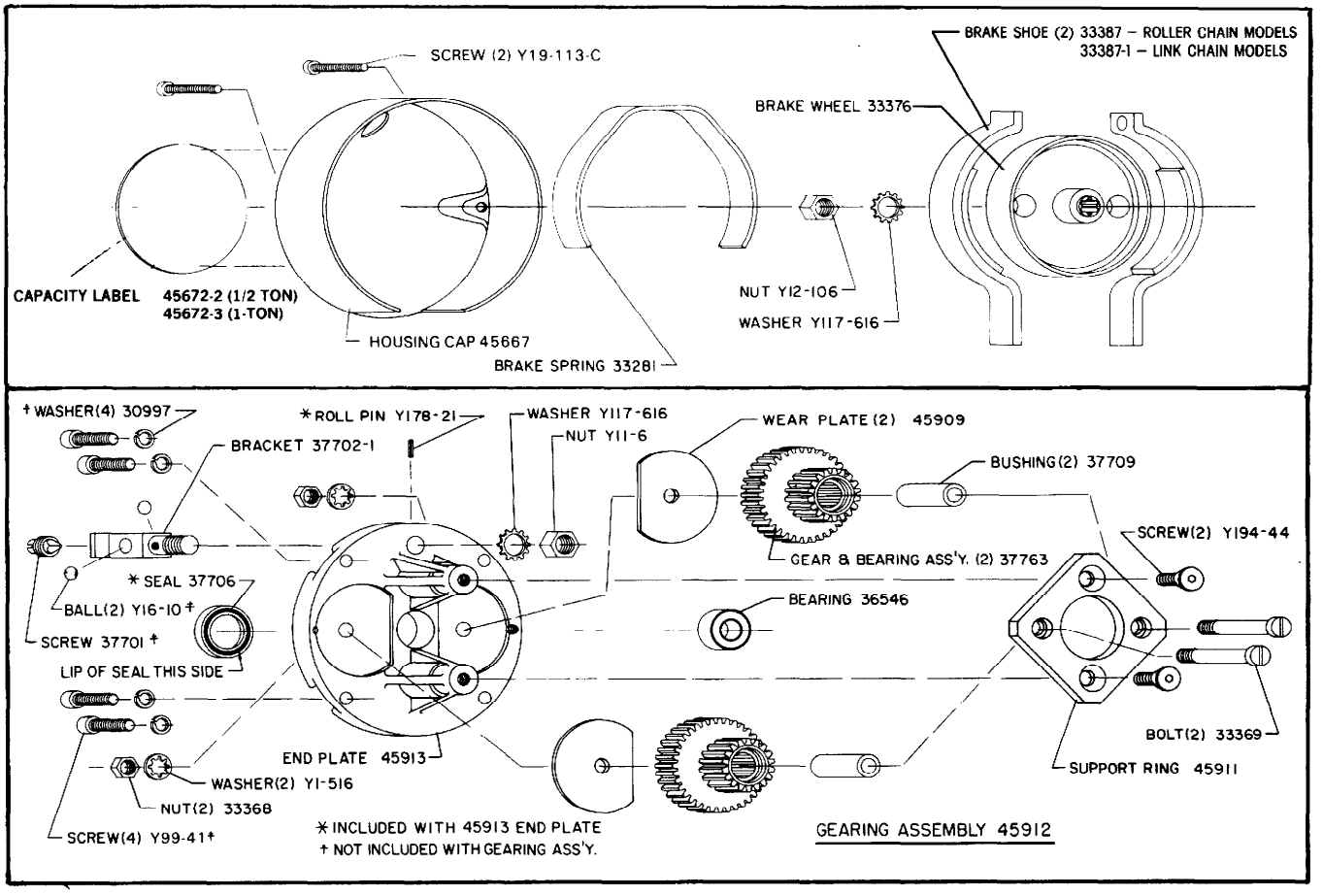


FIGURE 15

MOTOR SECTION

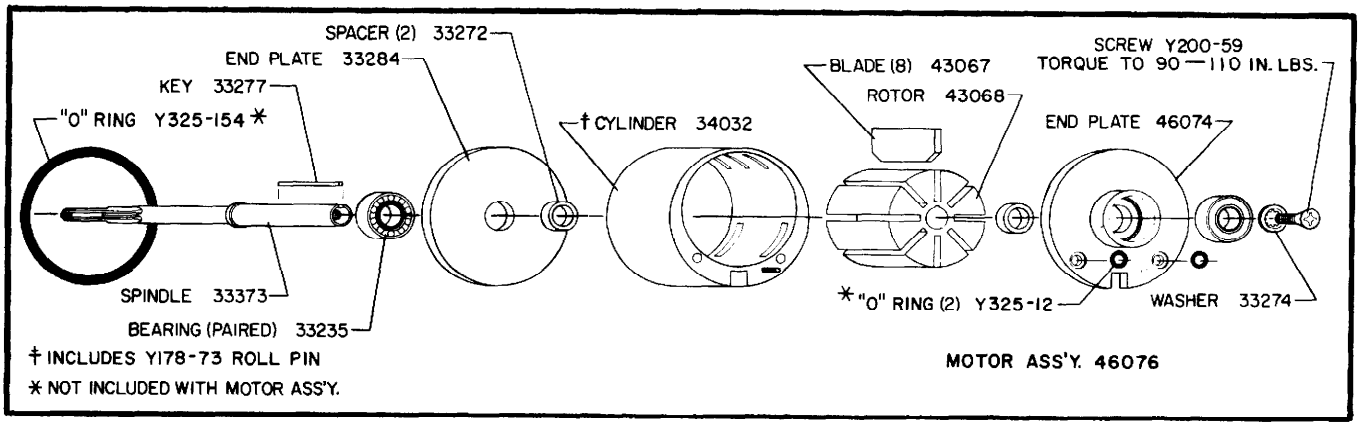


FIGURE 16

DISASSEMBLY

a. Remove motor from housing as outlined on page 8.
b. Remove Screw (Y200-59) and Washer (33274). Motor will now come apart.

REASSEMBLY

a. Assemble Bearings (33235) and Spacers (33272) into End Plates. NOTE: Bearings (33235) are paired flush face bearings shielded on one side. The open or unshielded side must be installed facing the End Plate. Lubricate bearings with 33153 grease when assembling.
b. Assemble End Plate (33284) together with Bearing and Spacer on large end of Spindle Shaft (33373) and slide up to boss on shaft.
c. Assemble Key (33277) into groove in Spindle and assemble Rotor with groove aligned with Key on Spindle.
d. Assemble Cylinder over Rotor to End Plate and assemble Blades (43067) to Rotor.
e. Assemble End Plate (46074) together with Spacer and Bearing. Secure with Washer (33274) and Screw (Y200-59). Hold Spindle in a suitable holding device, being careful not to damage splines or threads on end of Spindle.
f. Assemble "O" Rings (Y325-12) into End Plate.
g. Assemble Motor with "O" Ring (Y325-154) into Housing.

HOUSING SECTION

DISASSEMBLY

a. Remove Plate (33318) on link chain models; remove Chain Stripper (33319) on roller chain models.
b. Place a brass or wood block in sprocket cavity to prevent turning of sprocket shaft and remove Nut (33280), Washer (Y1-966) and Gear.
c. Remove Retaining Ring (Y147-18) from "motor end" of Housing.
d. Sprocket Shaft and Bearing (33236) may now be removed thru "motor end" of Housing.
e. Remove Chain Guide (35861) and Pocketwheel (37571) on link chain models. On roller chain models to remove Chain Guide (34991), remove Cap Screws (Y154-54) and Washers (Y14-10) from Housing.
f. Remove Retaining Ring (Y147-18) and Bearing (33236) from "brake end" of Housing.

REASSEMBLY

LINK CHAIN MODELS —

a. Insert Pocketwheel (37571) into Chain Guide (35861) and place in Housing. NOTE: Pocketwheel must be installed with counterbore facing towards "motor end" of Housing. Secure Plate (33318) to Housing with Sems Fasteners (33330).
b. Assemble Bearing (33236) and Retaining Ring (Y147-18) into "brake end" of Housing.
c. Assemble Retaining Ring (Y145-28) into groove in Shaft (34985) and assemble Bearing (33236) on end of Shaft with Retaining Ring.
d. Assemble Shaft, with Bearing and Retaining Ring thru opening at "motor end" of Housing. Insert Shaft thru Pocketwheel and thru Bearing in "brake end" of Housing. Assemble Retaining Ring (Y147-18) into Housing.
e. Assemble Gear (33374) to Shaft and secure with Washer (Y1-966) and Nut (33280).
f. Assemble Brake Block (34029) to Control Rod (34021) and secure with Roll Pin (Y178-60).
g. Assemble Hangers (37585) and Control Arm (37719) to Housing (NOTE: assemble Control Arm in Housing with arms for mounting control chains pointing towards air inlet) and insert Control Rod thru Housing, hangers and Control Arm. Secure Control Rod and Arm with Roll Pin (Y178-55).
h. On 1-Ton models, assemble Anchor Bracket (41624) to Hangers (37585) and secure with Washers (37587) and Anchor Bolts (37586).
i. For installation of load chain see page 7.

ROLLER CHAIN MODELS —

a. Insert Chain Guide (34991) into Housing and secure with Washers (Y14-10) and Cap Screws (Y154-54).
b. Assemble Bearings (33236) and Retaining Ring (Y147-18) into "brake end" of Housing.
c. Assemble Bearing (33236) on Sprocket (33375) and assemble into Housing thru "motor end" with threaded end of Sprocket thru Bearing in "brake end" of Housing.
d. Assemble Gear (33374) to Shaft and secure with Washer (Y1-966) and Nut (33280).
e. Secure Chain Stripper (33319) to housing with Sems Fasteners (33330).
f. Assemble Brake Block (34029) to Control Rod (34021) and secure with Roll Pin (Y178-60).
g. Assemble Hangers (37585) and Control Arm (37719) to Housing (NOTE: assemble Control Arm in Housing with arms for mounting control chains pointing towards air inlet) and insert Control Rod thru Housing, Hangers and Control Arm. Secure Control Rod and Arm with Roll Pin (Y178-55).
h. On 1-Ton models, assemble Anchor Bracket (37579) to Hangers (37585) and secure with Washers (37587) and Anchor Bolts (37586).
i. For installation of load chain, see page 7.

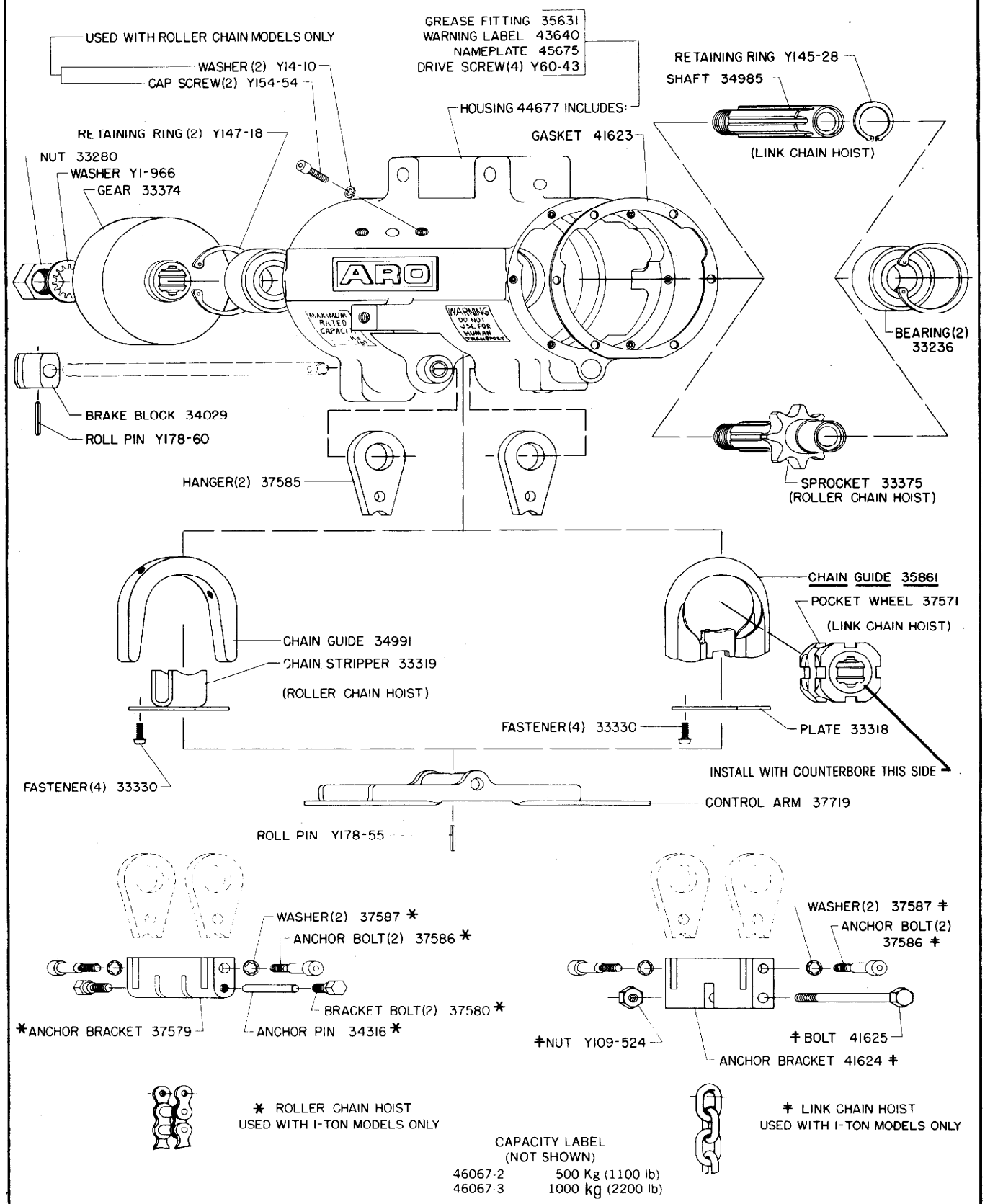
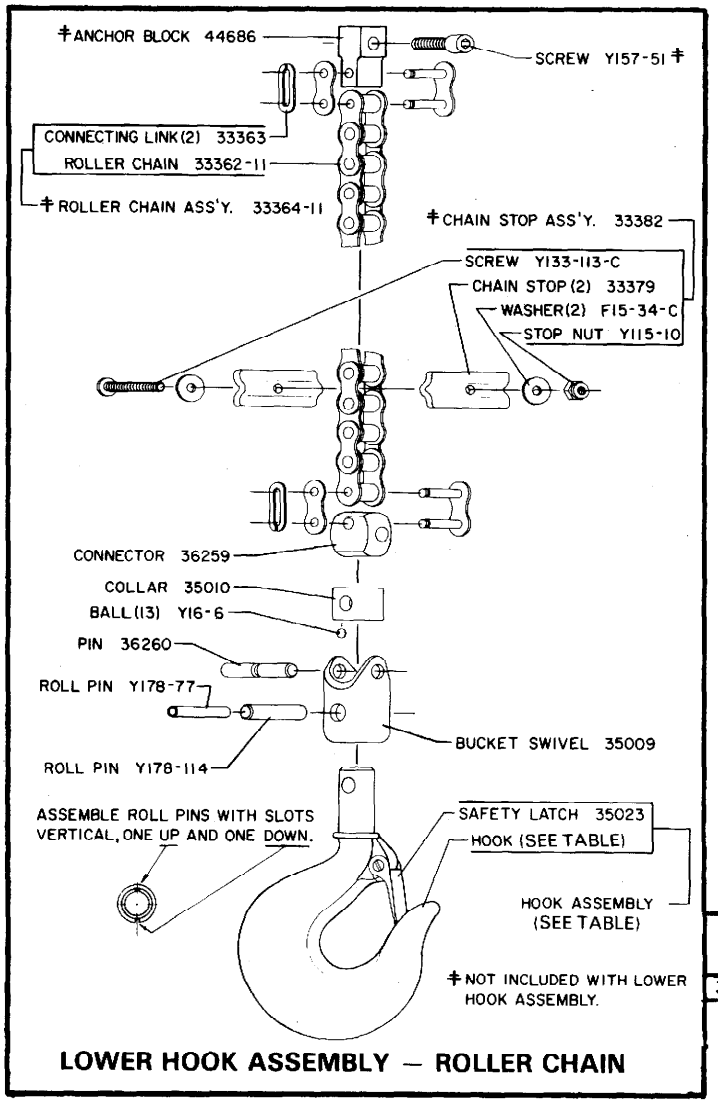

USED WITH ROLLER CHAIN MODELS ONLY
WASHER (2) Y14-10
CAP SCREW(2) Y154-54
GREASE FITTING 35631
WARNING LABEL 43640
NAMEPLATE 45675
DRIVE SCREW(4) Y60-43
HOUSING 44677 INCLUDES:
RETAINING RING Y145-28
SHAFT 34985
(LINK CHAIN HOIST)
RETAINING RING (2) Y147-18
NUT 33280
WASHER Y1-966
GEAR 33374
GASKET 41623
ARO
BEARING(2) 33236
BRAKE BLOCK 34029
ROLL PIN Y178-60
HANGER(2) 37585
SPROCKET 33375
(ROLLER CHAIN HOIST)
CHAIN GUIDE 35861
POCKET WHEEL 37571
(LINK CHAIN HOIST)
CHAIN GUIDE 34991
CHAIN STRIPPER 33319
(ROLLER CHAIN HOIST)
FASTENER(4) 33330
PLATE 33318
INSTALL WITH COUNTERBORE THIS SIDE
FASTENER(4) 33330
CONTROL ARM 37719
ROLL PIN Y178-55
WASHER(2) 37587 *
ANCHOR BOLT(2) 37586 *
BRACKET BOLT(2) 37580 *
*ANCHOR BRACKET 37579
ANCHOR PIN 34316 *
WASHER(2) 37587 ǂ
ANCHOR BOLT(2) 37586 ǂ
ǂNUT Y109-524
ǂ BOLT 41625
ANCHOR BRACKET 41624 ǂ
* ROLLER CHAIN HOIST
USED WITH 1-TON MODELS ONLY
ǂ LINK CHAIN HOIST
USED WITH 1-TON MODELS ONLY
CAPACITY LABEL
(NOT SHOWN)
46067-2 500 Kg (1100 lb)
46067-3 1000 kg (2200 lb)

FIGURE 17

LOWER HOOK SECTION

1/2 TON ROLLER CHAIN MODELS



LOWER HOOK ASSEMBLY — ROLLER CHAIN

FIGURE 18

DISASSEMBLY

a. Remove Connecting Link (33363). Remove Pin (36260), releasing Connector (36259).

b. To disconnect Hook from Bucket Swivel (35009), drive out Roll Pins (Y178-114 and Y178-77), releasing Collar (35010) and Steel Balls (Y16-6).

REASSEMBLY

a. Assemble Steel Balls (Y16-6) to Collar (35010), applying a liberal amount of grease in groove of Collar to hold Steel Balls in place and also for lubrication.

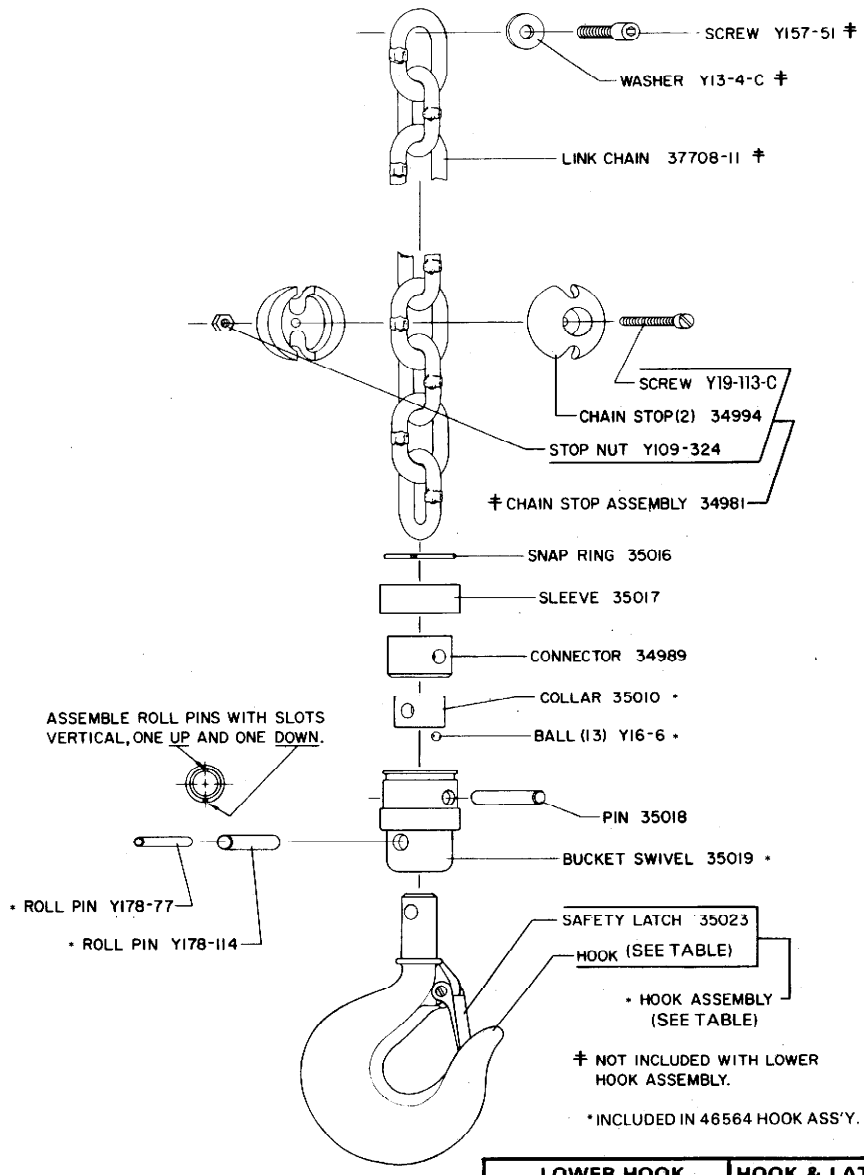
b. Place Bucket Swivel (35009) in holding device with opening for Collar pointing down. Place Hook and Latch Assembly thru Swivel and slip Collar with Steel Balls over end of hook and secure with Roll Pins (Y178-114 and Y178-77).

c. Assemble Connector (36259) to Bucket Swivel (35009) and secure with Pin (36260). Assemble Chain to Connector and secure with Connecting Link.

NOTE: Install Roll Pins with slots vertical, one UP and one DOWN. Insure safety latch is properly assembled to hook.

LOWER HOOK ASSEMBLY	HOOK & LATCH ASS'Y.	HOOK ONLY
33381-1 (STANDARD)	35005	35006 (STEEL)

1/2-TON LINK CHAIN MODELS



LOWER HOOK ASSEMBLY — LINK CHAIN

LOWER HOOK ASSEMBLY	HOOK & LATCH ASS'Y.	HOOK ONLY
35014 (STANDARD)	35005	35006 (STEEL)

FIGURE 19

DISASSEMBLY

a. Remove Snap Ring (35016) and Sleeve (35017). Drive out Pin (35018), releasing chain and connector (34989).

b. To disconnect Hook from Bucket Swivel (35019), drive out Roll Pins (Y178-114 and Y178-77), releasing collar (35010) and Steel Balls (Y16-6).

REASSEMBLY

a. Assemble steel Balls (Y16-6) to Collar (35010), applying a liberal amount of grease in groove of Collar to hold Steel Balls in place and also to lubricate Balls.

b. Place Bucket Swivel (35019) in a suitable holding device with opening for Collar pointing down. Place Hook and Latch Assembly thru Bucket Swivel and slip Collar with Steel Balls over end of hook and secure with Roll Pins (Y178-114 and Y178-77).

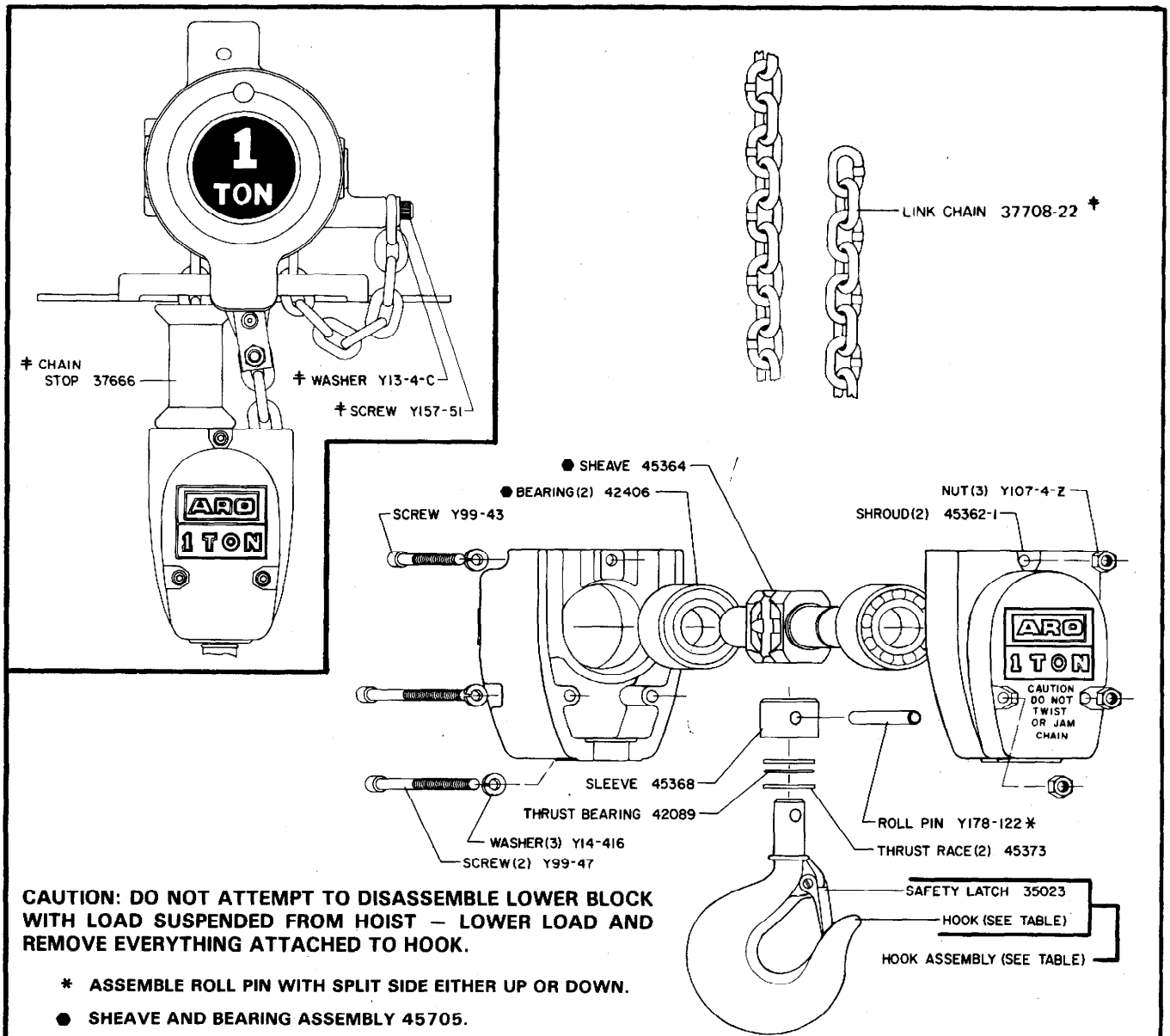
c. Place Bucket Swivel in holding device with hook down. Insert Connector (34989) in proper position in swivel, place Snap Ring (35016) and Sleeve (35017) over end of chain. Place Chain in connector and secure chain and Connector to Swivel with Pin (35018).

d. Slip Sleeve (35017) over end of swivel and secure with Snap Ring (35016).

NOTE: Install Roll Pins with slots vertical — one UP and one DOWN. Insure safety latch is properly assembled to hook.

LOWER HOOK SECTION

1-TON LINK CHAIN MODELS



CAUTION: DO NOT ATTEMPT TO DISASSEMBLE LOWER BLOCK WITH LOAD SUSPENDED FROM HOIST — LOWER LOAD AND REMOVE EVERYTHING ATTACHED TO HOOK.

* ASSEMBLE ROLL PIN WITH SPLIT SIDE EITHER UP OR DOWN.

● SHEAVE AND BEARING ASSEMBLY 45705.

† NOT INCLUDED IN LOWER BLOCK ASSEMBLY.

LOWER BLOCK ASSEMBLY	HOOK ASS'Y.	SHROUD	CAPACITY LABEL	HOOK
45707 (STANDARD)	45367	45362-1 (2)	———	45366 (STEEL)

FIGURE 20

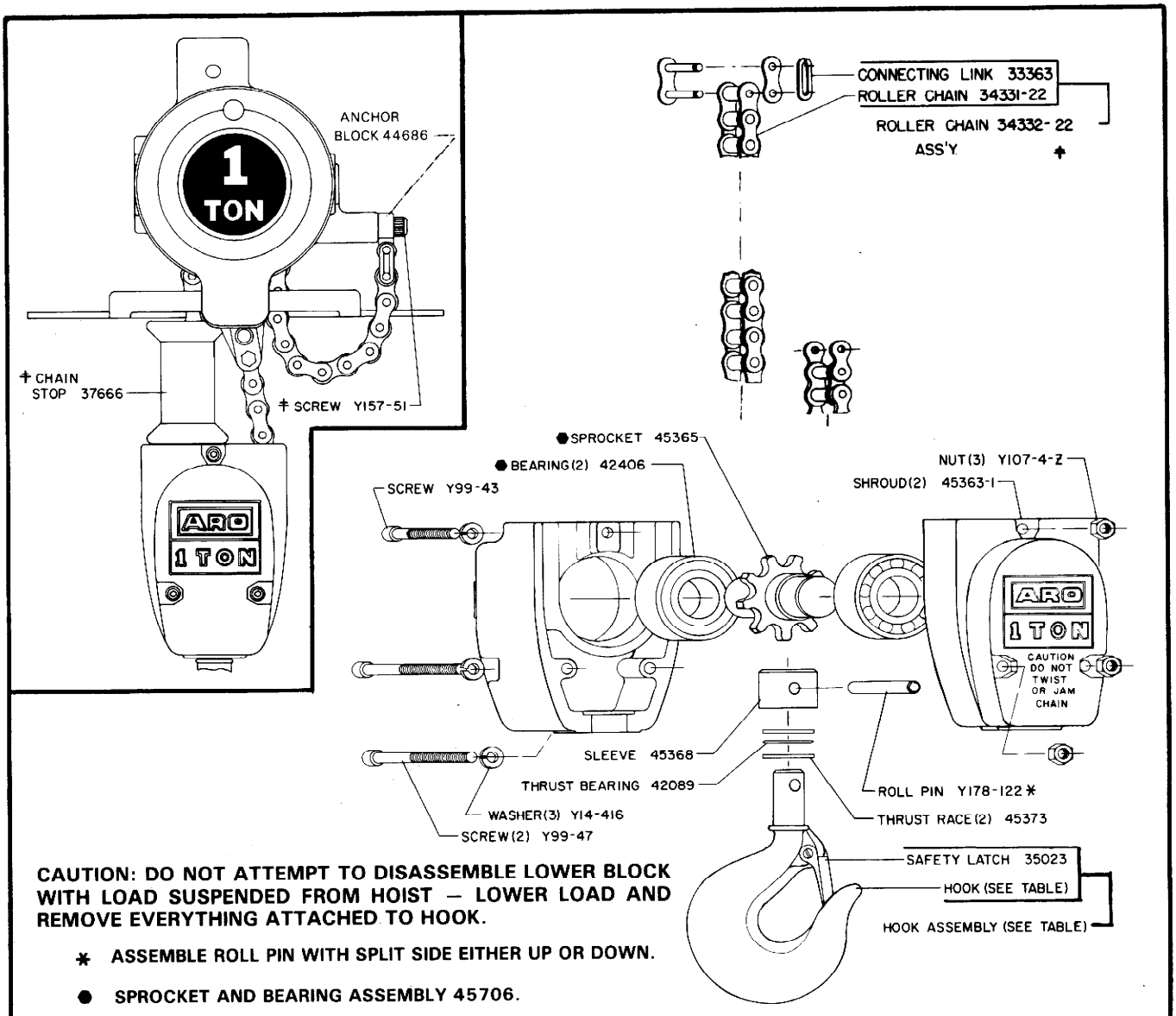
DISASSEMBLY

a. Remove Screw (Y99-43) and two (2) Screws (Y99-47), Lock Washers (Y14-416) and Nuts (Y107-4-Z).
b. Pull Shroud apart releasing Hook and components. Bearings (42406) are pressed on Shaft of Sheave (45364).
c. To remove Thrust Bearing from hook shank, remove Roll Pin (Y178-122) and Sleeve (45368).

REASSEMBLY

a. Lubricate Thrust Bearing liberally with Grease (33153) or equivalent and assemble to shank of Hook. Assemble Sleeve (45368) to hook and secure with Roll Pin (Y178-122) NOTE: Assemble Roll Pin to hook with split side vertical with hook (either up or down).
b. Pack bearings (42406) with Grease (33153) and assemble to Sheave with shielded side going on shaft first (shielded side towards sheave).
c. Assemble Sheave and Hook into one half of Shroud, insuring Thrust Bearing and Race are properly seated in Shroud.
d. Feed load chain around Sheave. CAUTION — insure chain is not twisted and that welded side of links face away from Sheave — see figure 6 and inset above.
e. Assemble other half of Shroud and secure Shroud with Screws, Washers and Nuts as shown — tighten securely.

LOWER HOOK SECTION
1-TON ROLLER CHAIN MODELS



CAUTION: DO NOT ATTEMPT TO DISASSEMBLE LOWER BLOCK WITH LOAD SUSPENDED FROM HOIST — LOWER LOAD AND REMOVE EVERYTHING ATTACHED TO HOOK.

* ASSEMBLE ROLL PIN WITH SPLIT SIDE EITHER UP OR DOWN.

● SPROCKET AND BEARING ASSEMBLY 45706.

† NOT INCLUDED IN LOWER BLOCK ASSEMBLY.

LOWER BLOCK ASSEMBLY	HOOK ASS'Y.	SHROUD	CAPACITY LABEL	HOOK
45708 (STANDARD)	45367	45363-1 (2)	—	45366 (STEEL)

FIGURE 21

DISASSEMBLY

a. Remove Screw (Y99-43) and two (2) Screws (Y99-47), Lock Washer (Y14-416) and Nuts (Y107-4-Z).
b. Pull Shroud apart releasing Hook and components. Bearings (42406) are pressed on shaft of Sprocket (45365).
c. To remove Thrust Bearing from hook shank, remove Roll Pin (Y178-122) and Sleeve (45368).

REASSEMBLY

a. Lubricate Thrust Bearing liberally with Grease (33153) or equivalent and assemble to shank of Hook. Assemble Sleeve (45368) to hook and secure with Roll Pin (Y178-122). NOTE: Assemble Roll Pin to hook with split side vertical with hook (either up or down).
b. Pack Bearings (42406) with Grease (33153) and assemble to Sprocket with shielded side going on shaft first (shielded side towards sprocket).
c. Assemble Sprocket and Hook into one half of Shroud, insuring Thrust Bearing and Race are properly seated in Shroud.
d. Feed load chain around Sprocket. CAUTION — insure chain is not twisted.
e. Assemble other half of Shroud and secure Shroud with Screws, Washers and Nuts as shown — tighten securely.

TROUBLE SHOOTING

HOIST WILL NOT OPERATE — CHECK FOR:
1. Excessive load.
2. Sufficient air pressure.
3. Clogged air intake screen.
4. Clogged valves.
5. Proper brake adjustment.
6. Proper installation of Roll Pin in Control Rod and Gear (34022).

UNABLE TO REGULATE HOIST SPEED BY CONTROLS CHECK FOR:
1. Proper brake adjustment.

HOIST WILL NOT HOLD LOAD IN SUSPENSION — CHECK FOR:
1. Excessive load.
2. Worn or oily brake linings.
3. Proper brake adjustment.
4. Proper timing of gears in head.

HOIST LOSES POWER — CHECK FOR:
1. Sufficient air pressure.
2. Clogged air intake screen.
3. Clogged muffler screen or filler.

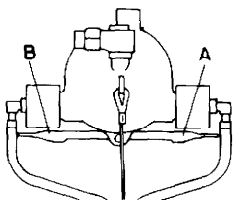
HOIST LIFTING OR LOWERING SPEED DIFFERS FROM RATED SPEED AT FULL LOAD — CHECK FOR:
1. Proper timing of gears in Head.

HOIST CONTROL LEVER WILL NOT RETURN TO HORIZONTAL POSITION — CHECK FOR:
1. Bent control rod.
2. Binding of control rod.
3. Proper brake adjustment.
4. Lack of lubrication in pendent control cylinders.
5. Proper timing of gears in head.

PENDENT CONTROL

THE HOIST WILL ALWAYS CEASE OPERATION WHEN OPERATOR RELEASES THE PENDENT CONTROL. If any hose (air inlet or pendent control hoses) should become cut or ruptured - 1) RELEASE PENDENT CONTROL. 2) SHUT OFF AIR SUPPLY AND REPLACE HOSE.

TO OPERATE HOIST IF HOSE SHOULD RUPTURE, BE GUIDED BY THE FOLLOWING:

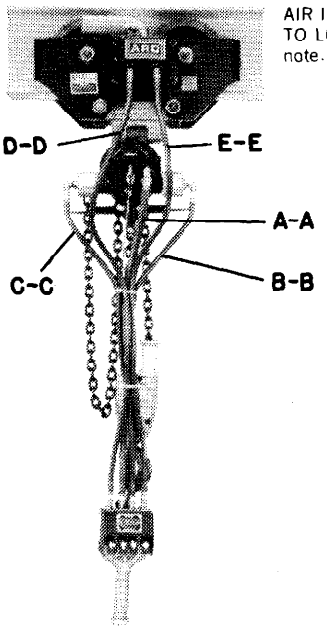


IF HOSE "A-A" IS CUT OR RUPTURED:
TO LOWER LOAD — Load may be lowered by manually operating control arm. Pull down control arm at "B". See WARNING note

IF HOSE "B-B" IS CUT OR RUPTURED:
TO LOWER LOAD — load may be lowered by depressing "DOWN" lever of pendent control.
TO MOVE LOAD — trolley can be operated in either direction.

IF HOSE "C-C" IS CUT OR RUPTURED:
TO LOWER LOAD — load may be lowered by manually operating control arm. Pull down control arm at "B". See WARNING note
TO MOVE LOAD — trolley can be operated in either direction.
TO RAISE LOAD — load may be raised by depressing "UP" lever of pendent control.

IF HOSE "D-D" OR "E-E" IS CUT OR RUPTURED:
Trolley will operate in one direction only (depending on which hose is ruptured). All other hoist functions will operate normally.



AIR INLET HOSE CUT OR RUPTURED:
TO LOWER LOAD — load may be lowered by manually operating control arm. Pull down on control arm at "B". See WARNING note.

WARNING: Exercise extreme care when operating control arm to lower load as load will be lowered at a very fast rate.

SERVICE KIT NO. 41329-1
(FOR LINK CHAIN HOISTS)

CONSISTING OF:

QTY	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
1	33274	Lockwasher	1	Y145-28	Retainer Ring
1	33387-2	Brake Shoe Kit	2	Y325-11	"O" Ring
3	34028	Filler	2	Y325-12	"O" Ring
1	35023	Safety Latch	1	Y325-17	"O" Ring
1	41623	Gasket	1	Y325-19	"O" Ring
1	41795	Motor Oil	2	Y325-115	"O" Ring
2	41799	Gear Lube	2	Y325-116	"O" Ring
8	43067	Blade	1	Y325-154	"O" Ring
1	Y1-966	Washer	2	Y330-12	"O" Ring

DOES NOT INCLUDE CHAIN, POCKET WHEEL OR SPROCKET

SERVICE KIT NO. 41329-2
(FOR ROLLER CHAIN HOISTS)

CONSISTING OF:

QTY	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION
1	33274	Lockwasher	1	Y145-28	Retainer Ring
2	33387	Brake Shoe	2	Y325-11	"O" Ring
3	34028	Filler	2	Y325-12	"O" Ring
1	35023	Safety Latch	1	Y325-17	"O" Ring
1	41623	Gasket	1	Y325-19	"O" Ring
1	41795	Motor Oil	2	Y325-115	"O" Ring
2	41799	Gear Lube	2	Y325-116	"O" Ring
8	43067	Blade	1	Y325-154	"O" Ring
1	Y1-966	Washer	2	Y330-12	"O" Ring

DOES NOT INCLUDE CHAIN, POCKET WHEEL OR SPROCKET

SERVICE KIT NO. 41335

CONSISTING OF:

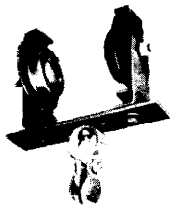
QTY.	PART NO.	DESCRIPTION
1	33375	Sprocket Wheel
1	34991	Chain Guide
4	33330	Fasteners

SERVICE KIT NO. 41336

CONSISTING OF:

QTY.	PART NO.	DESCRIPTION
1	37571	Pocket Wheel
1	35861	Chain Guide
4	33330	Fasteners

Hose-Carrier Trolleys



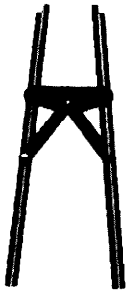
MODEL 7703

Recommended when hoist is trolley-mounted. Adjustable clamp fits hose in sizes up to 1-1/4" O.D. can be mounted on the same beam that carries the hoist trolley. Use on I-beams from 3" to 10" high, having minimum width of 2-3/8" and maximum width of 5-3/32". For best results, use one trolley at each 8' hose interval.

Brake Spring Spreader

No. 33541

Specifically designed for Hoist brake spring. Develops strong leverage for spreading brake band open when removal is required for service or maintenance.



For all hoists equipped with pull-type controls. When ordering, specify desired length, in feet, by dash number. Order two lengths per hoist.

Example: 37657-6, the dash 6 indicates 6 feet of chain.

37657 Sash Chain

BULLARD SNAP HOOKS

35205-1 Lower Hook Assembly for 1/4 and 1/2 Ton ROLLER CHAIN only. Includes Bucket Swivel, Steel Balls, Collar, Roll Pins, Connector and Pin.

35206 Lower Hook Assembly for 1/4 and 1/2 Ton LINK CHAIN only. Includes Bucket Swivel, Steel Balls, Collar, Roll Pins, Connector, Pin, Sleeve and Snap Ring.

35203 Upper Hook Assembly for 1/4, 1/2 and 1-Ton Link and Roller Chain. Includes Mounting Bracket, Bearing, Sleeve and Roll Pin.

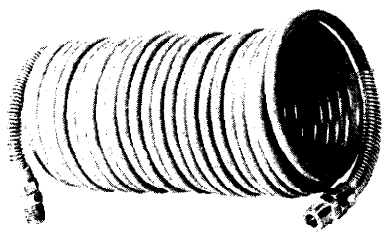
45934 Lower Hook and Block Assembly for 1-Ton LINK CHAIN only. Includes Sheave Assembly, Shroud's and all necessary components for attaching to load chain.

45935 Lower Hook and Block Assembly for 1-Ton ROLLER CHAIN only. Includes Sprocket Assembly, Shroud's and all necessary components for attaching to load chain.

45374 Lower Hook (with latch) Only for 1-Ton LINK and ROLLER CHAIN. (Same hook as furnished with 45934 and 45935 assemblies).

SELF-STORING NYLON AIR HOSE

No.	I.D.	Length	Working Length	Connectors NPT Male Thread
628023-12	1/2"	12'	8-1/2'	1/2"
628023-25	1/2"	25'	19'	1/2"
628023-50	1/2"	50'	38'	1/2"



Self-storing hose is helically coiled for compact storage and opens to approximately 30 times its retracted size. If coil becomes slack through excessive stretching, it can be quickly reversed through its axis and thus retightened. Hose can be used indoors or outdoors. Made of red nylon, with male pipe thread at each end. Connectors are of the reusable type.

MAXIMUM RATED WORKING PRESSURE – 180 PSI
TEMP. RANGE – -20 to 170°F (-29°C TO 77°C)

FLEXIBLE RUBBER AIR HOSE

Flexible air hose for connecting the air supply to an ARO Hoist.

MODEL NO.	DESCRIPTION
41632-10	10' 1/2" I.D. Hose, 1/2" NPTF (M) at each end
41632-25	25' 1/2" I.D. Hose, 1/2" NPTF (M) at each end
41632-50	50' 1/2" I.D. Hose, 1/2" NPTF (M) at each end

MAXIMUM RATED WORKING PRESSURE – 200 PSI

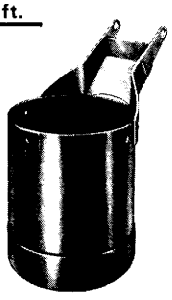
Baskets for Roller Chain and Link Chain

Recommended for all applications where slack chain should be confined.

ROLLER CHAIN BASKET		LINK CHAIN BASKET	
Basket No.	Chain Capacity	Basket No.	Chain Capacity
37654	10 ft.	37653-16	20 ft.
37655	16 ft.	37653-32	32 ft.
37656	40 ft.	37653-64	56 ft.

METAL CHAIN BASKETS

Roller Chain



Link Chain

CANVAS LINK CHAIN BASKET	
Basket No.	Bag Cap. .750 Pitch Chain
43554-1	20 ft.
43554-2	32 ft.
43554-3	64 ft.

Load Chain

STEEL LINK CHAIN
37708-( )

FOR 1/4, 1/2 AND 1-TON HOISTS

Dash number indicates exact length in feet. For 1/4 and 1/2 Ton Hoists, order lift footage, add one extra foot for assembly. For 1-Ton Hoists, order twice the lift footage, add two extra feet for assembly and specify by corresponding dash number. Example: 37708-10, the dash 10 indicates 10 feet of chain.

STEEL ROLLER CHAIN

33364-( )

FOR 1/4 AND 1/2 TON HOIST

Dash number indicates exact length in feet. Example: 33364-10, the dash 10 indicates 10 feet of chain. When ordering, figure desired lift footage, add one extra foot for assembly, and specify by corresponding dash number. Part No. 33364-( ) includes two (2) Connecting Links No. 33363.

34332-( )

FOR 1-TON HOISTS

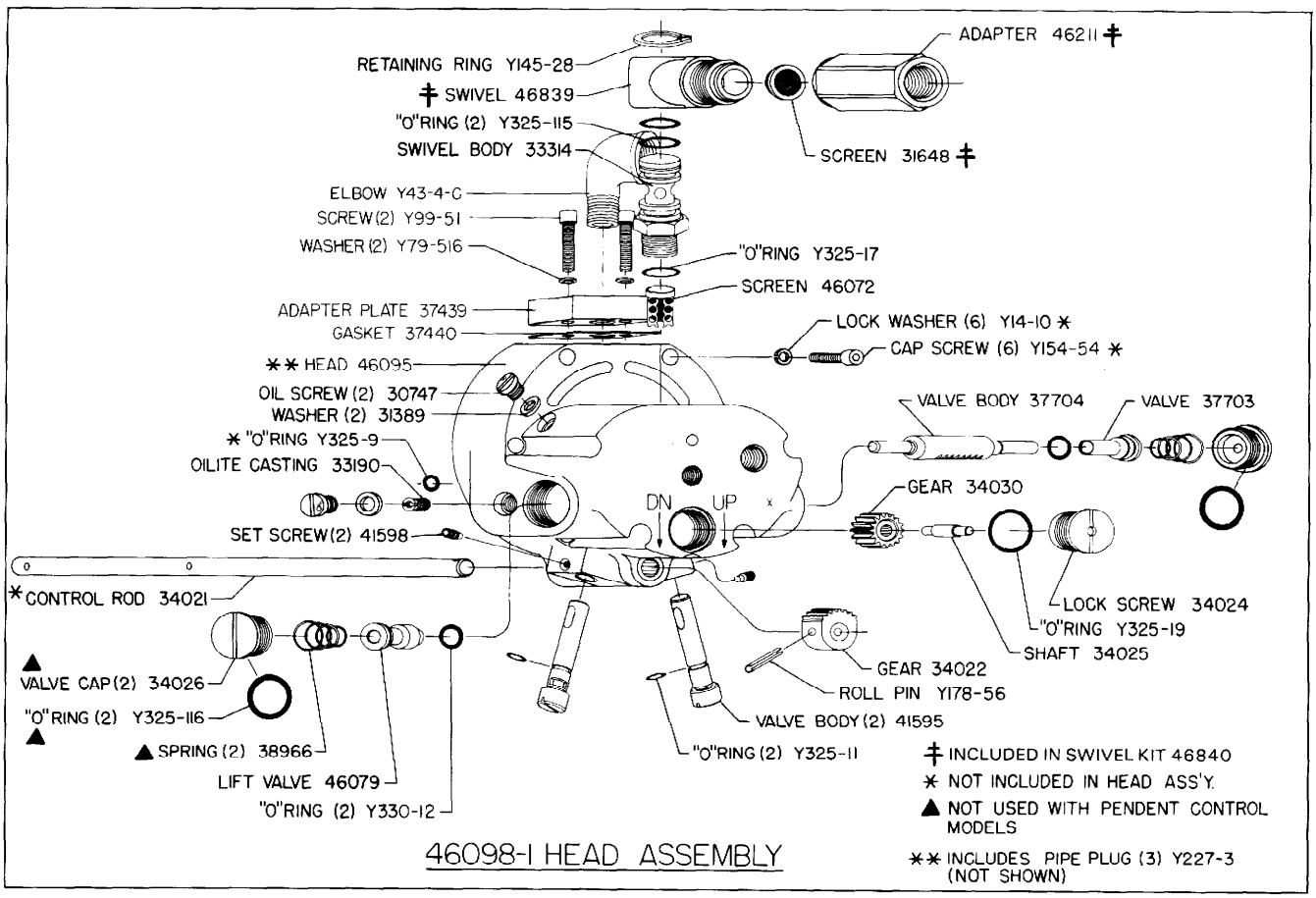
Dash number indicates exact length in feet. Example: 34332-10, the dash 10 indicates 10 feet of chain. When ordering, figure twice the desired lift footage, add two extra feet for assembly, and specify by corresponding dash number. Part No. 34332-( ) includes one (1) Connecting Link 33363.

ACCESSORIES SECTION

PIPED EXHAUST

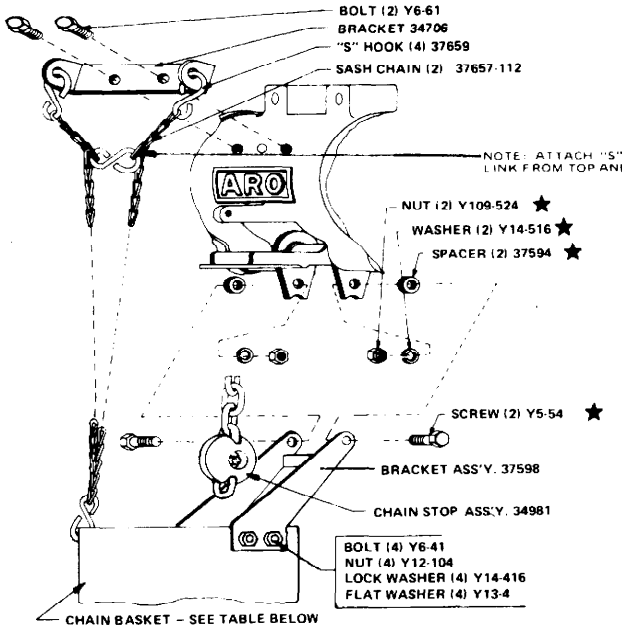
Exhaust from the air motor normally escapes into the room atmosphere, however, exhaust can be piped out of the room.
Hoist can be furnished, at extra cost, with a modified head for piped exhaust. An exhaust hose, 1/2" (12 mm) diameter recommended can then be attached to this outlet and air can be vented at any remote point. Piped exhaust is highly desirable in applications involving food processing, chemicals, or other processes where atmospheric purity must be maintained. It is also preferred for its low-noise-level characteristics.

When ordering. Specify model number and add "with piped exhaust."

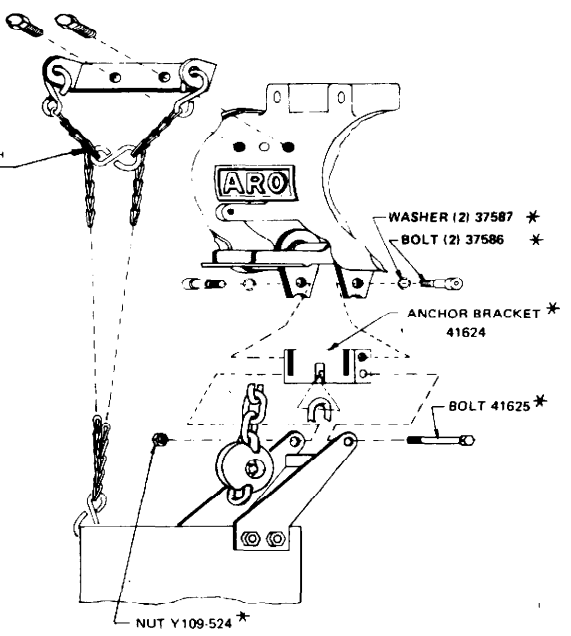


46098-1 HEAD ASSEMBLY

CHAIN BASKET INSTALLATION



1/4 & 1/2 TON LINK CHAIN MODELS



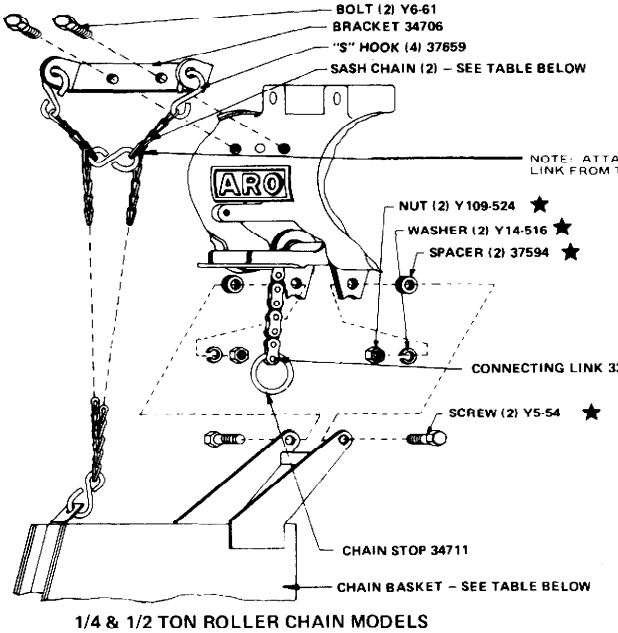
1-TON LINK CHAIN MODELS

NOTE: ON 1-TON MODELS BASKET IS ATTACHED TO ANCHOR BRACKET. PARTS MARKED ★ ARE NOT USED.

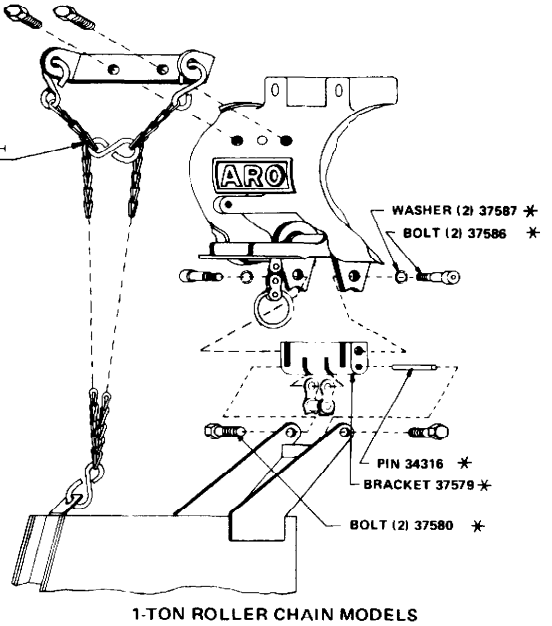
✳ STANDARD 1-TON HOIST PARTS

CHAIN BASKET ASSEMBLY NO.	CHAIN CAPACITY	CHAIN BASKET NO.
37653-16	20'	36384-1
37653-32	32'	36384-2
37653-64	56'	36384-3
43554-1	20'	43440-1
43554-2	32'	43440-2
43554-3	64'	43440-3

NOTE:
43440-( ) BASKET MATERIAL IS CANVAS.
36384-( ) BASKET MATERIAL IS STEEL.



1/4 & 1/2 TON ROLLER CHAIN MODELS



1-TON ROLLER CHAIN MODELS

CHAIN BASKET ASSEMBLY NO.	CHAIN CAPACITY	CHAIN BASKET	SASH CHAIN
37654	10'	37660	37657-F
37655	16'	37661	37657-G
37656	40'	37658	37657-J

NOTE: CHAIN STOP (RING) 34711 IS ASSEMBLED TO END OF LOAD CHAIN AND CHAIN STOP ASSEMBLY 33382 (USED WITH 1/4 AND 1/2 TON MODELS) IS REMOVED. CHAIN STOP 33382 IS TOO WIDE TO FIT CHAIN BASKET.

NOTE: ON 1-TON MODELS BASKET IS ATTACHED TO ANCHOR BRACKET. PARTS MARKED ★ ARE NOT USED.

✳ STANDARD 1-TON HOIST PARTS

ARO

Part of worldwide Ingersoll-Rand

PN 49999-240