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ARO

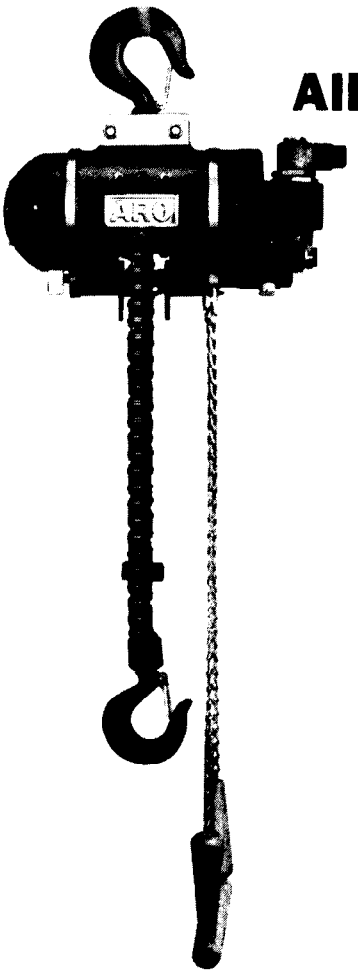
OPERATORS MANUAL

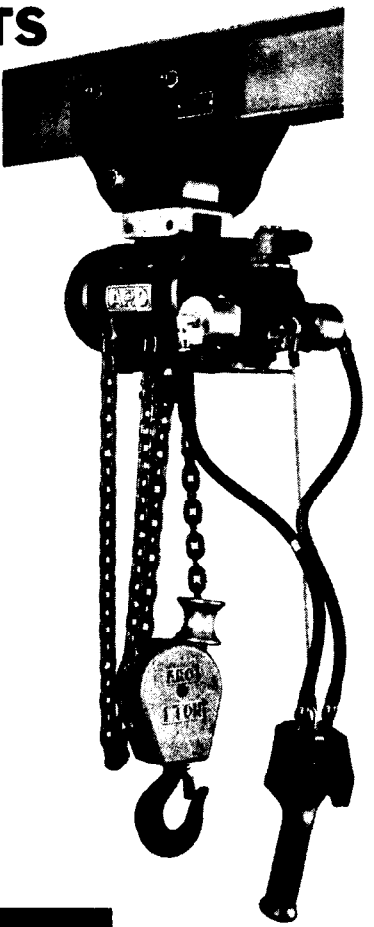
PARTS LIST AND SERVICE INSTRUCTIONS

FOR

"D" MODEL

AIR-POWERED CHAIN HOISTS





LINK & ROLLER CHAIN MODELS

1/4, 1/2 & 1 Ton Capacities

READ CAREFULLY BEFORE OPERATING HOIST

HOIST EQUIPMENT DESCRIBED HEREIN IS NOT FOR HUMAN TRANSPORTATION

THE ARO CORPORATION

BRYAN, OHIO 43506

PRINTED IN USA

FORM 4857 REV. 11/78

OPERATORS MANUAL

This Parts List and Instruction Manual is composed of eight sections:

A complete Parts List will be found on the various drawings contained herein.

This manual is provided to serve as an aid in obtaining the maximum service from this hoist.

After carefully reading manual, place in a suitable area where it can be readily referrred to.

MODEL IDENTIFICATION

TYPE OF LOAD CHAIN	TYPE MOUNT	TYPE OF CONTROL	1/4-TON MODEL NO.	1/2-TON MODEL NO.	APPROX. WEIGHT (LBS.)	1-TON MODEL NO.	APPROX. WEIGHT (LBS.)
ROLLER	HOOK	PULL CHAIN	7719-D	7700-D	37	7725-D	49
ROLLER	TROLLEY	PULL CHAIN	7719-DT	7700-DT	37	7725-DT	49
ROLLER	HOOK	PENDENT	7720-D	7708-D	42	7732-D	54
ROLLER	TROLLEY	PENDENT	7720-DT	7708-DT	42	7732-DT	54
LINK	HOOK	PULL CHAIN	7717-D	7750-D	37	7775-D	49
LINK	TROLLEY	PULL CHAIN	7717-DT	7750-DT	37	7775-DT	49
LINK	HOOK	PENDENT	7718-D	7756-D	42	7776-D	54
LINK	TROLLEY	PENDENT	7718-DT	7756-DT	42	7776-DT	54
EXTRA-FAST DESCENT HOISTS							
ROLLER	HOOK	PULL CHAIN	–	7706-D	37	7730-D	49
ROLLER	TROLLEY	PULL CHAIN	–	7706-DT	37	7730-DT	49
ROLLER	HOOK	PENDENT	–	7710-D	42	7734-D	54
ROLLER	TROLLEY	PENDENT	–	7710-DT	42	7734-DT	54
LINK	HOOK	PULL CHAIN	–	7754-D	37	7777-D	49
LINK	TROLLEY	PULL CHAIN	–	7754-DT	37	7777-DT	49
LINK	HOOK	PENDENT	–	7758-D	42	7778-D	54
LINK	TROLLEY	PENDENT	–	7758-DT	42	7778-DT	54

FOR SPARK-RESISTANT MODELS; SEE SPARK-RESISTANT HOIST SECTION PAGE, 23.

GENERAL DESCRIPTION

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 a better understanding of proper and safe use of hoists; the publication "Overhead Hoists", ANSI B30.16 1973, can be purchased from the American Standards Institute, Inc., 1430 Broadway, N.Y., N.Y. 10018.

Your ARO Hoist is a precision unit. Its design and construction offers dependable, efficient operation with minimum maintenance.

ARO Chain Hoists are available in three (3) capacity sizes – 1/4, 1/2 and 1-Ton. Each capacity size is available with either a link or roller type load chain, pull chain or pendent type throttle control, and hook or trolley suspension mounting.

Extra-fast descent models are available in the 1/2 and 1-Ton capacities only.

Models with spark-resistant load chain and hooks are also available, see pages 19-A, 20-A, 23 and 24.

NOTE: SPARK-RESISTANT MODELS have CAPACITY RATINGS of 500, 1,200 and 1,500 LBS.

The basic difference in hoist models are in the type of control, type of suspension and type of load chain. Differences in capacities are in the gear reduction ratios used and in the reeving of the load chain. The 1/4 Ton models have a 10:1 gear ratio and the 1/2 and 1-Ton models have a 20:1 gear ratio. On the 1/4 and 1/2 Ton capacity models the load chain is single reeved; on the 1-Ton capacity models the load chain is double reeved through a lower block assembly.

All models have a rotary vane-type air motor, mechanical brake with bonded lining, bearings on all rotating or oscillating parts, a built-in oil reservoir, external adjustment valves for regulating rate of lift or descent (with the exception of spark-resistant models; see SPARK-RESISTANT HOIST SECTION), adjustable chain stop on 1/4 and 1/2 Ton models, safety stop on sheave block of 1-Ton models, 1/2" female N.P.T.F. air inlet with 180°, Swivel. Pull chain controls are 5' long. Pendent controls have 6' lengths of hose with a nylon-sheathed steel strain cable. Standard models have a lift of 10 feet. Trolley mounted hoists are furnished with trolley adapter only, trolley must be ordered separately.

AIR AND LUBE REQUIREMENTS

AIR PRESSURE of 90 p.s.i.g. (6 bar, g) 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 tool. The capacity of the individual Filter-Regulator-Lubricator is adequate to provide clean (40 micron) oiled and regulated air for the tool. The Filter-Regulator-Lubricator must be installed on the stationary air line, in that order, with the Lubricator nearest to the tool. NEVER mount the unit on the detachable flexible hose to the tool.

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 6) 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 LEVEL of the built-in reservoir in the Head should be checked after each 40 hours of operation. Fill reservoirs full with spindle oil (39844).

APPLY GREASE (33153) thru grease fitting in housing a minimum of every 160 hours of operation, to provide lubrication for gearing.

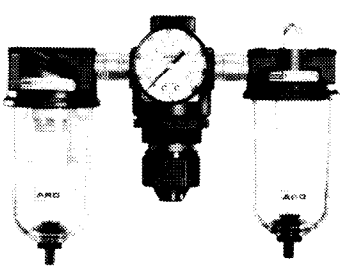
APPLY GREASE (33153) thru grease fittings of trolley wheels, on trolley suspended models, periodically to insure proper lubricaion.

LOWER BLOCK ASS'Y. (EARLY MODELS) should be lubricated through grease fitting approximately every 80 hours of operation to provide lubrication for Sprocket or Pocketwheel.

LOWER BLOCK ASS'Y. (LATE MODELS) should be lubricated at any time the lower block is disassembled either for inspection or for maintenance or for chain replacement. See pages 19-A and 20-A for lubrication instructions.

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

RECOMMENDED LUBRICANTS: Spindle Oil 39843, 1 qt. (.9 liter) container or 39844, 1 gal, (3.8 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.



MODEL 128241-300
FILTER-REGULATOR-GAUGE-LUBRICATOR.

INSTALLATION AND OPERATION

INSTALLATION

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

HOOK SUSPENDED MODELS – select an overhead support capable of safely supporting combined weight of hoist and its capacity load. Hang hoist being certain the upper hook is firmly seated in center of hook saddle and that the safety latch is properly closed. The use of a secondary safety cable is recommended – see page 28.

TROLLEY SUSPENDED MODELS – the trolley side plates must be spaced so the trolley wheels will properly engage I-beam on which trolley will be operated. Adjustment for various I-bearm sizes is accomplished by arrangement of Spacer Washers on Shaft which connects the trolley side plates. Hoist can be suspended from Trolley by using Trolley Adapter (34386-1 for 1/4 and 1/2 ton models or 34386 for 1-ton models,page 26, 27) or by attaching upper hook directly to shaft, figure 1. Use of the Trolley Adapter is recommended. The distance between the outside edges of the trolley wheels should be 1/2" greater than the width of the beam flange. The number of spacers used to space side plates out should be the same on each side of shaft or trolley adapter and the remaining spacers must be equally distributed on the shaft outside the side plates, at each side, figure 1.

When installing Trolley on I-beam be certain side plates are vertical. After installation of Trolley and Hoist on I-beam, operate the Trolley over the entire length of beam with a capacity load suspended a few inches off the floor to make certain of proper installation and operation. Insure I-beam will safely support combined weight of hoist, trolley and capacity load. Minimum turning radius of trolley is – 1/4 and 1/2 ton models, 24 inches; 1-ton models, 30 inches.

Connect hoist to nearest air source using a minimum 1/2" I.D. air hose assembly. If hoist is trolley mounted sufficent air hose must be provided to reach from air source to farthest point of trolley travel. Aro Model 7703 Air Hose Trolley Assemblies are recommended to keep air hose elevated and in line with the hoist, figure 3.

Hoist shall be installed only in locations that will permit the operator to stand free of the load at all times.

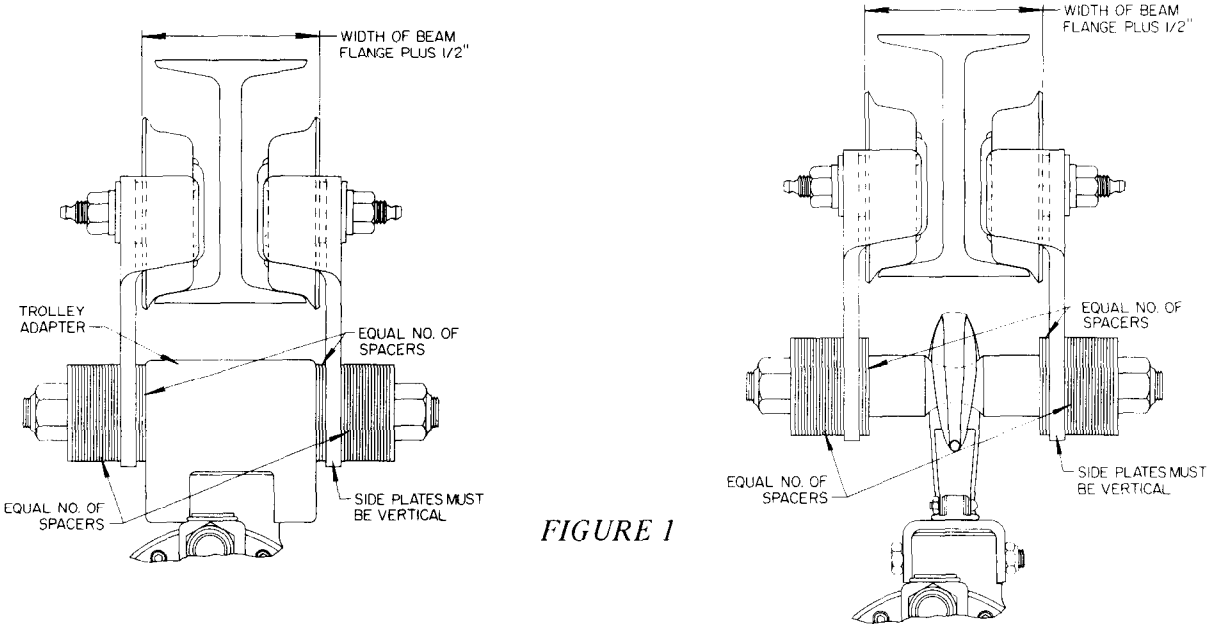


FIGURE 1

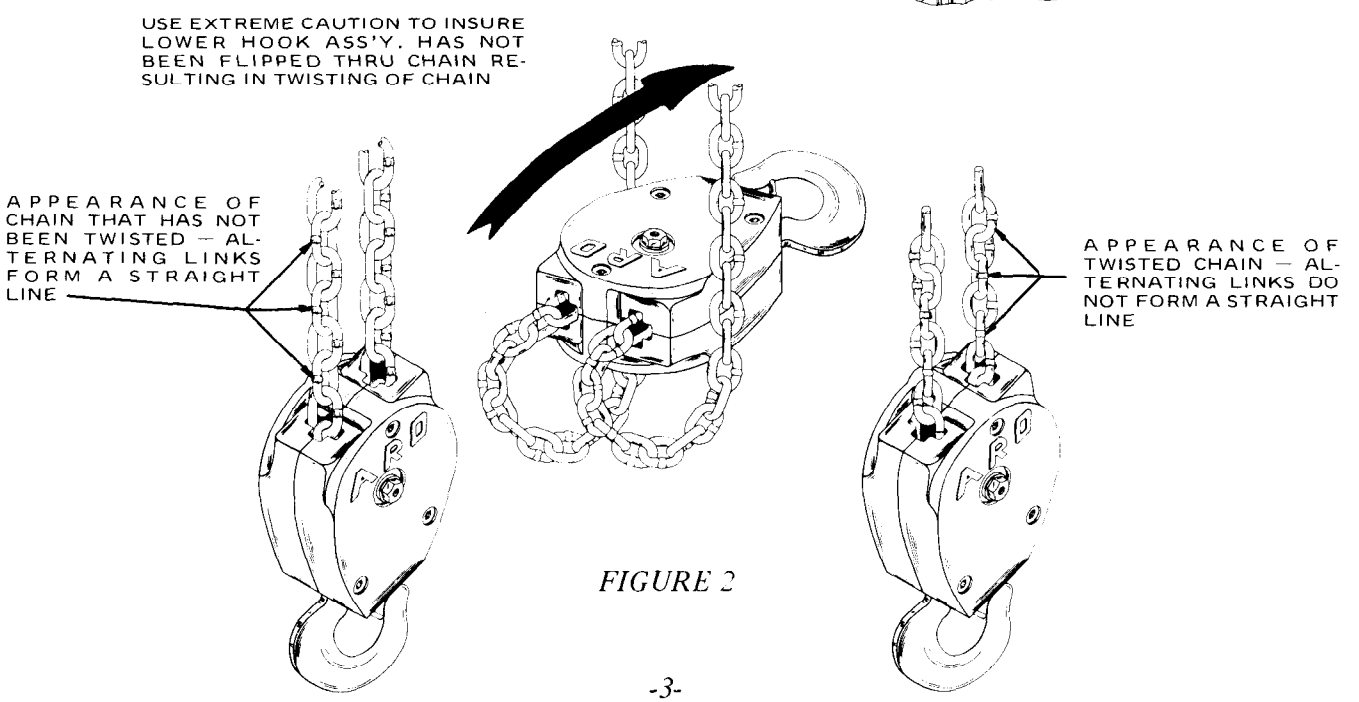


FIGURE 2

OPERATE HOIST CAUTIOUSLY to become familiar with the performance of the hoist. Hoist shall be operated from a position that will not be hazardous to the operator should he lose his grip or footing while operating hoist.

To operate hoist. Pull (or depress) controls slowly. Abrupt operation, resulting from "jerking" of controls, should always be avoided.

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.

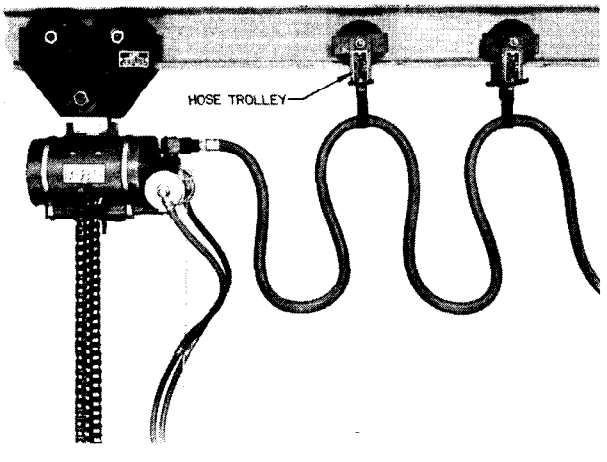
Before lifting a load be certain that safety latch on load hook is properly closed. On 1-Ton Link Chain Models; to avoid jamming of chain in lower block; allow only sufficient slack in chain to permit attaching hook to load.

INSURE LOAD CHAIN IS HANGING PROPERLY and is free of twists, loops or kinks.

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 rate of lift or descent of any Aro Chain Hoist can be governed manually by the operator. Both the pull chain and pendent controls provide unlimited variation between full speed and the slowest "INCHING" movement. This is accomplished by movement of pull chain handles or pendent control levers. Pulling down on pull chain control as far as possible or by depressing pendent control 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.



Air Hose Supported by Hose Trolleys
FIGURE 3

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.

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.

CAUTION: DO NOT OPERATE HOIST WITHOUT CHAIN STOP ATTACHED PROPERLY TO HOIST LOAD CHAIN. DO NOT USE CHAIN STOP AS A LIMIT Δ SWITCH (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.

The maximum lift rate of a hoist is constant, provided that air pressure and load are also constant. The maximum descent rate of hoist, with the exception of spark-resistant models (see spark-resistant hoist section), can be varied within fixed limits by means of regulating valves located on the underside of the Head Housing.
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.

WARNING: Maximum lowering speed with rated capacity load is very high. Adjust with care.

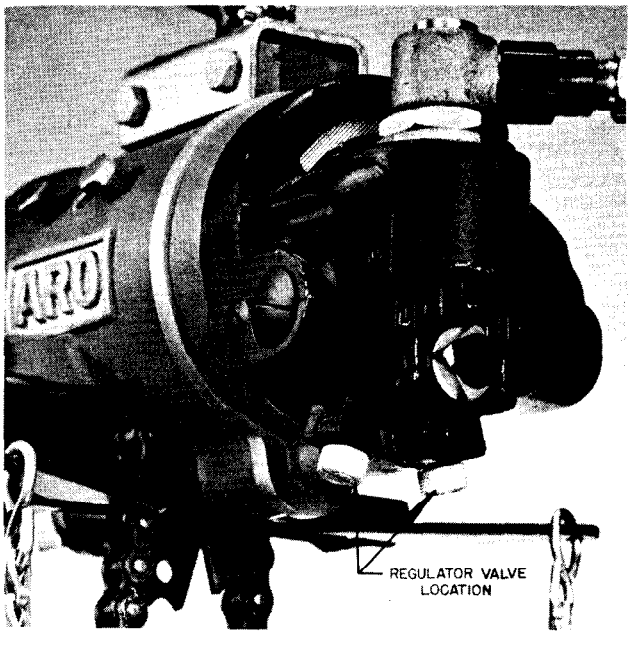


FIGURE 4

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.

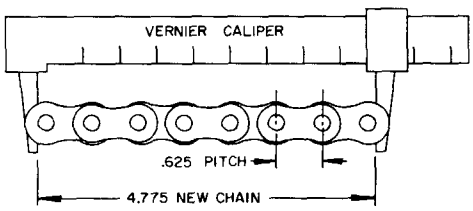
The following points and areas are recommended for inspection:

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 occurance 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.

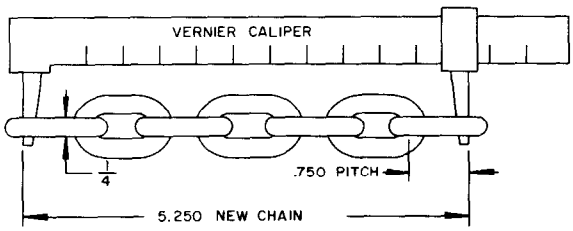
NOTE: New chain should never be used on a worn pocketwheel, replace chain and pocketwheel as a pair.



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.



IF VISUAL CHECK REVEALS NO DEFECTS, PROCEED AS FOLLOWS:

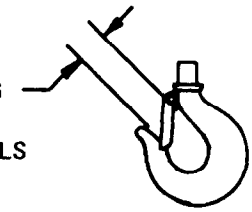
LAY USED CHAIN ON FLAT SURFACE AND MEASURE BETWEEN SEVEN (7) LINKS AS SHOWN. MEASUREMENT SHOULD BE TAKEN ON PORTION OF CHAIN WHICH HAS MOST PASSED OVER THE POCKET WHEEL.

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

FIGURE 5

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.



BRAKE

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

Δ NOTE: When replacement of brake shoes is indicated, they must be replaced as a pair.

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.

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.

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. Check blade springs.
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.

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 replacement 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 Roll Pin (Y178-91) and Clevis (34987). 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 Brakcet (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 lug on housing 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.

INSTALLATION

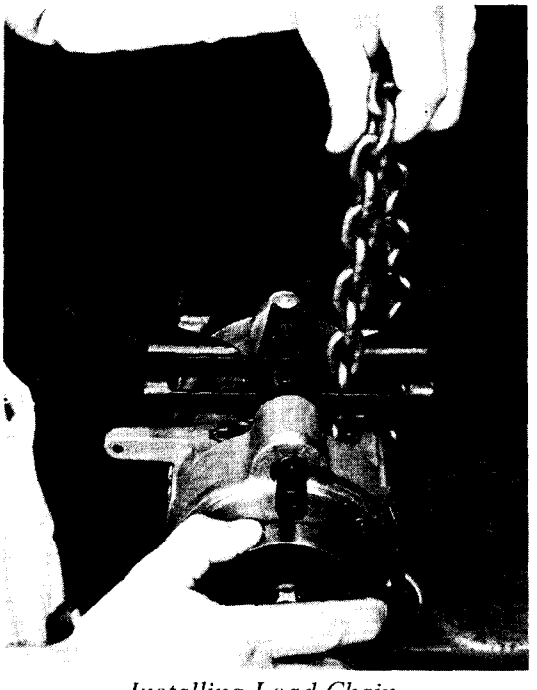
LINK CHAIN MODELS – position hoist in a vise or other suitable holding device (figure 6) and remove Housing Cap, Brake Spring and Brake Shoes. Turn Brake Wheel by hand to rotate Pocketwheel while carefully feeding chain thru Chain Guide and around Pocketwheel. Pull sufficient chain thru housing to allow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

TO ASSEMBLE CHAIN TO LOWER BLOCK ON 1-TON MODELS, SEE PAGES 19 and 20.



Installing Load Chain

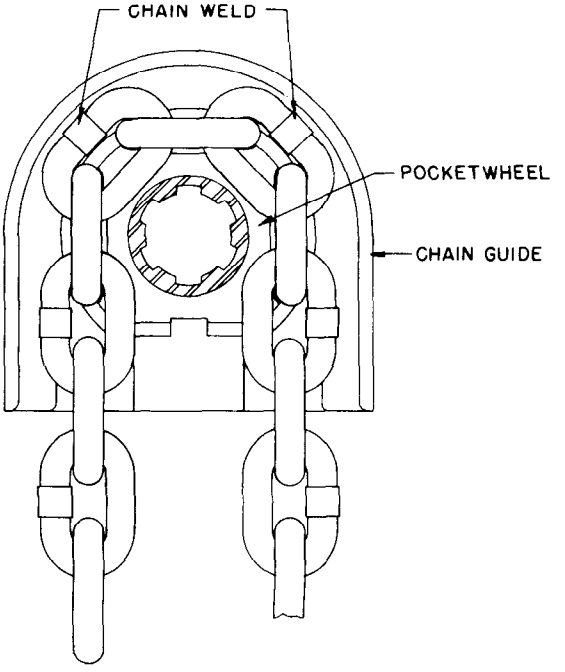


FIGURE 6

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. On pull chain models remove pull chains from control arm.
d. If chain basket is being used, remove from hoist.
e. Drain oil from reservoir in Head.
f. Upper Hook Assembly may be removed from Housing by removing Nuts (Y109-624) and Bolts (41599).
g. Place hoist upside-down in vise and clamp on upper hook 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 6.

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 7). 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 (Y19-112) and Housing Cap Assembly.
b. Slide Brake Spring (33281) part way off Brake Shoes (33387) 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 End Plate Assembly with gearing attached.

MOTOR SECTION

a. After removal of Head Assembly, Housing Cap, Nut (Y12-106) and Washer (Y117-616); Motor Assembly may be removed from Housing.

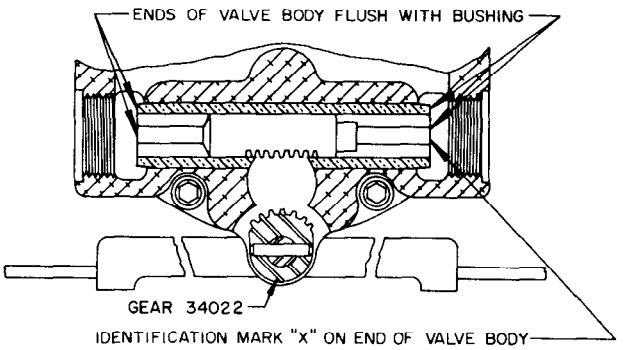
HOUSING SECTION

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.

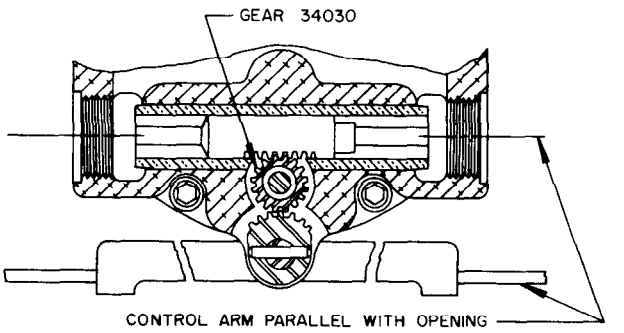
"TIMING OF HEAD"

STEP 1



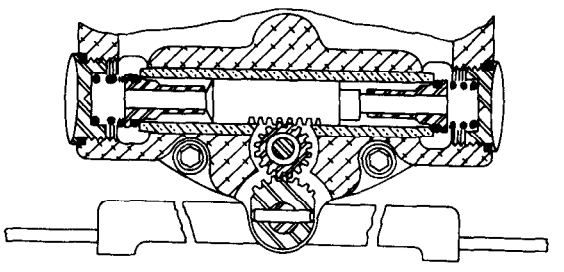
POSITION HOIST SO YOU ARE FACING END WITH AIR INLET.
WITH VALVE PARTS AND GEAR 34030 REMOVED, PLACE VALVE BODY IN VALVE OPENING. INSERT FINGER IN EACH END OF VALVE OPENING AND ALIGN ENDS OF VALVE BODY WITH ENDS OF BUSHING.
NOTE: VALVE BODY MUST BE INSTALLED WITH IDENTIFICATION MARK AS SHOWN.

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 7

TYPICAL CROSS-SECTION OF 1/4-TON HOIST

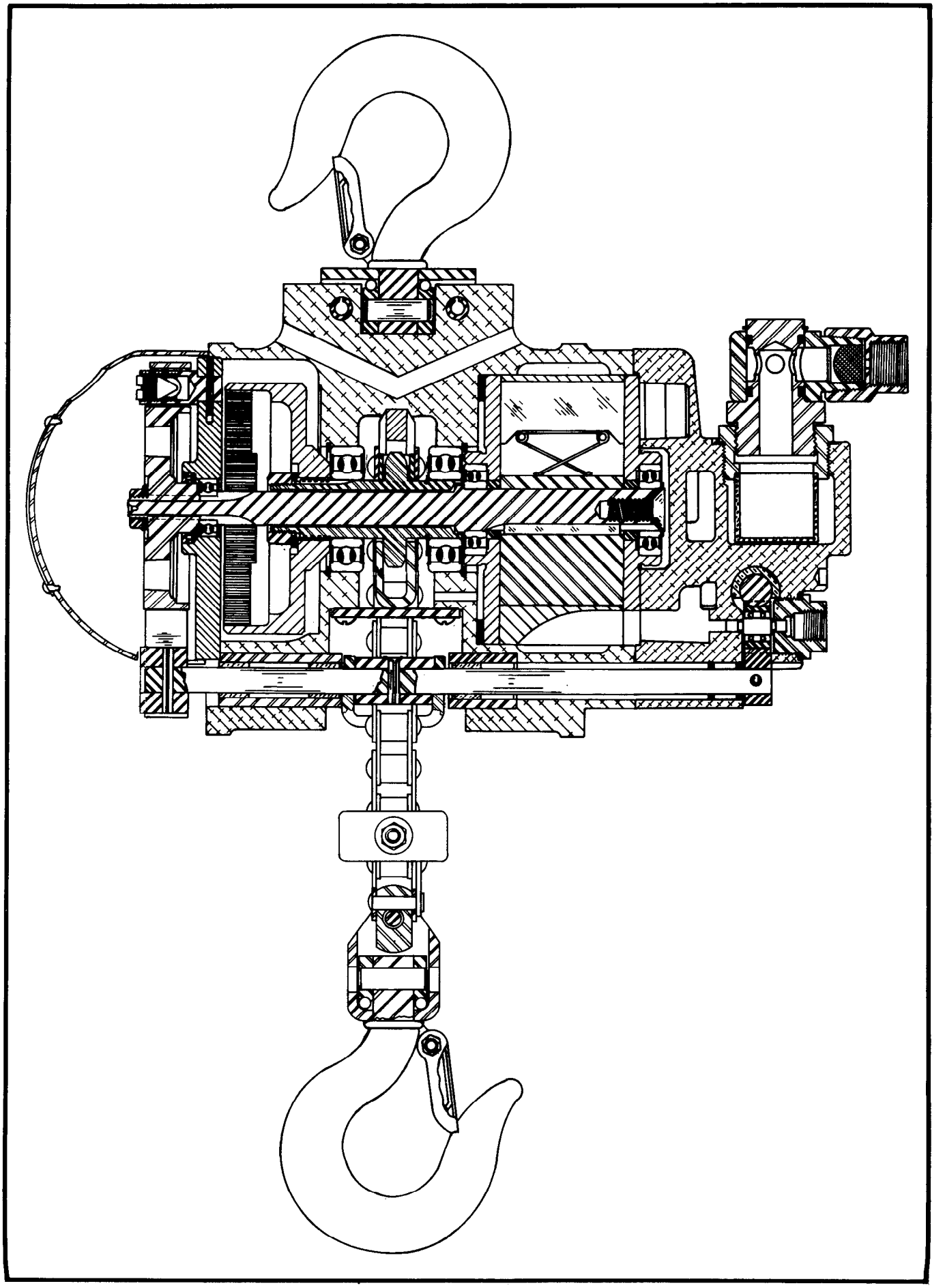


FIGURE 8

TYPICAL CROSS-SECTION OF 1/2 & 1-TON HOIST

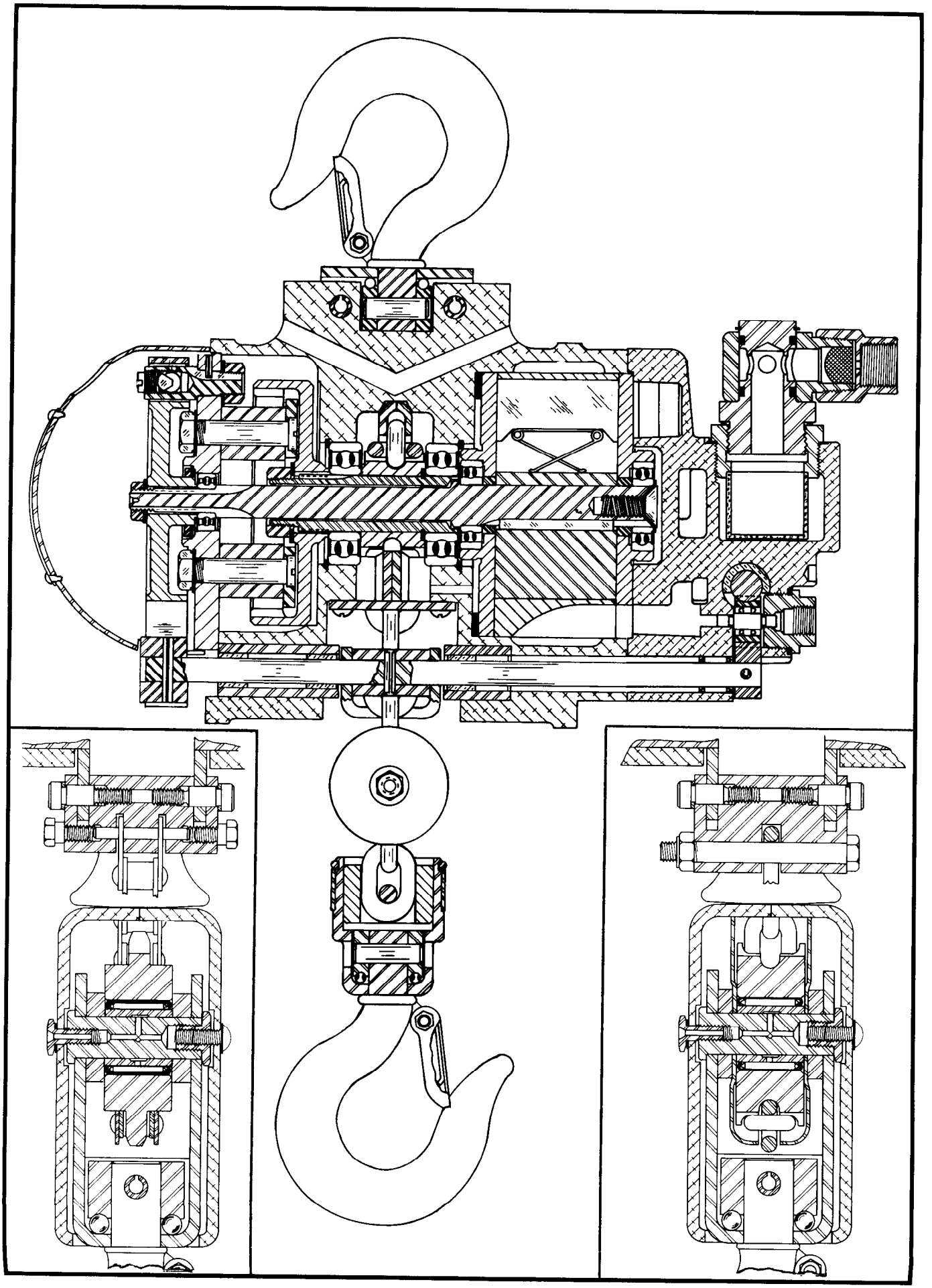


FIGURE 9

DISASSEMBLY

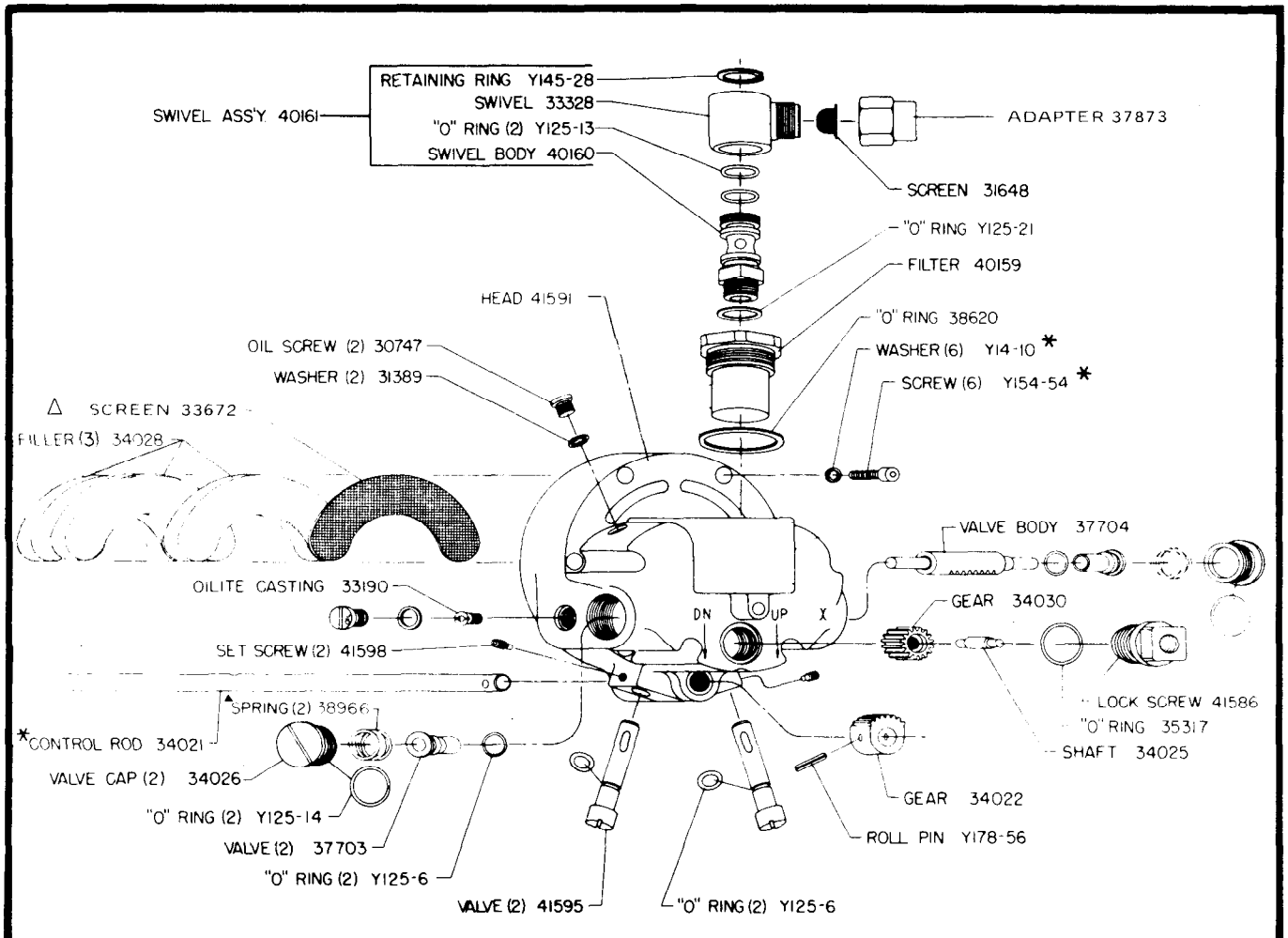
a. Remove Head from Housing as outlined on page 7.
b. Remove Lock Screw (41586), Gear (34030) and Shaft (34025).
c. Remove Valve Caps (34026), "O" Rings (Y125-14), and Springs (38966).
d. Valves (37703) with "O" Rings (Y125-6) and Valve Body (37704) may now be removed from either end of Head Housing.
e. Swivel Assembly may be disassembled while mounted to Head or removed from Head. To disassemble, remove Retaining Ring (Y145-28) pull off Swivel (33328) exposing "O" Rings (Y125-13) and Swivel Body (40160).
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" Ring (38620), Filter (40159), "O" Ring (Y125-21), Swivel Assembly (40161), Oilite Casting (33190), Screw (30747) with Washer (31389) and Regulator Valves (41595) with "O" Rings (Y125-6) 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 valves for desired rates of lift and descent. See page 4.

c. With Gear (34022) and Control Rod assembled to housing, assemble valve parts as shown in Figure 7, page 7.



*NOT INCLUDED IN HEAD ASS'Y.
▲NOT USED WITH PENDENT CONTROL MODELS

41593-1 HEAD ASSEMBLY

DISASSEMBLY

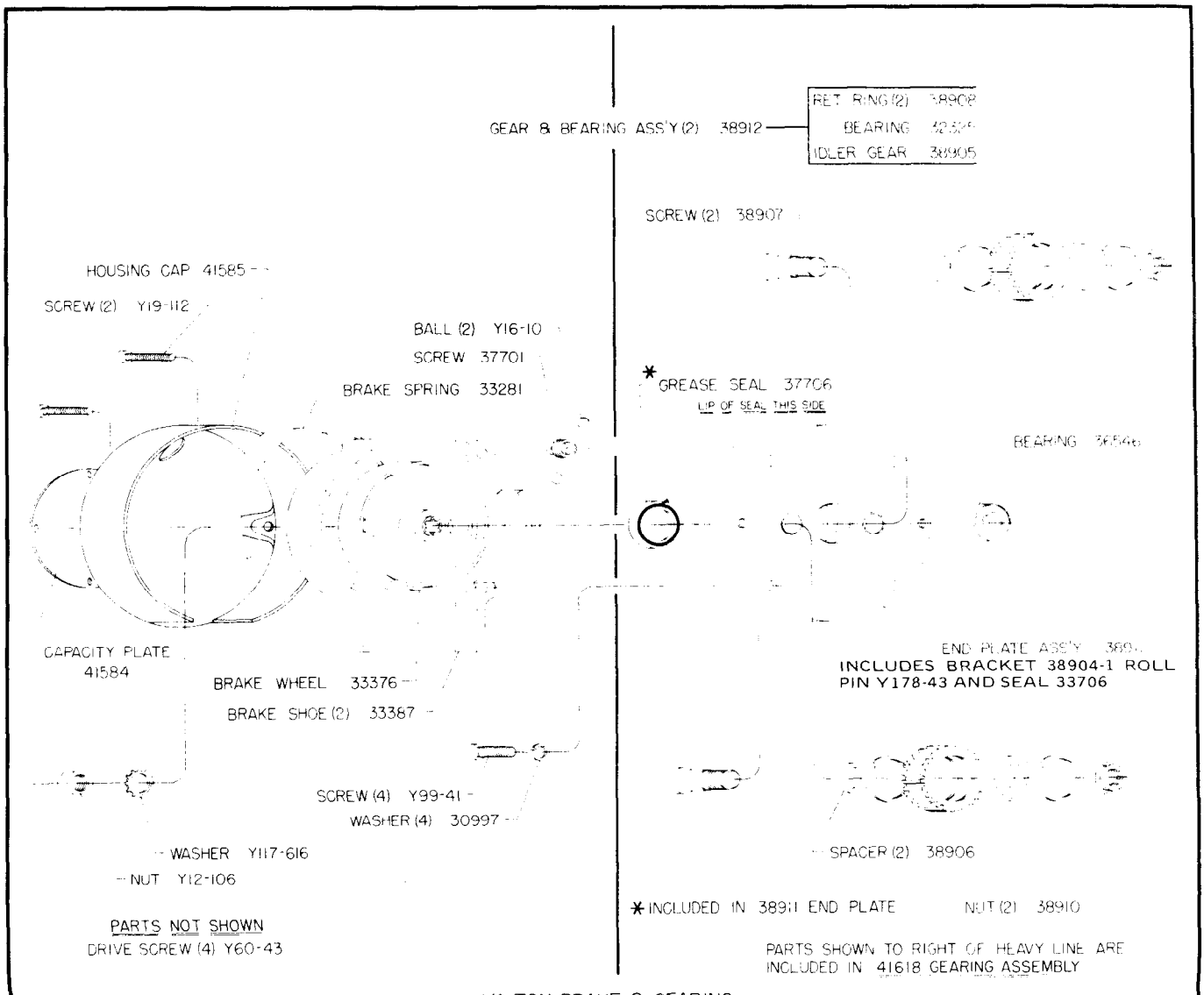
a. Remove parts from Housing Section as outlined on page 7.
b. On 1/4 Ton models; remove Nuts (38910), releasing Gear and Bearing Assemblies.
c. On 1/2 and 1 Ton models; remove Nuts (Y11-106) and Nuts (33368), releasing Bolts, Support Ring, Gear Assemblies, Spacers and Bushings.
d. Bearing (36546) and Grease Seal (37706) should be removed only for replacement.

REASSEMBLY

a. Assemble Grease Seal (37706) and Bearing (36546) to End Plate.

NOTE: Lubricate Bearings and Gears liberally with 33153 grease when assembling.

b. On 1/4 Ton models; assemble Bearings (32325) and Retaining Rings (38908) to Idler Gears (38905).
c. On 1/2 and 1 Ton models; assemble Gear Assemblies (37763), Bushings (37709), Spacers (33264), Support Ring (33367), Bolts (33369 and 33271), Washers (Y1-516 and Y117-616) and Nuts (33368 and Y11-106) to End Plate (37715).
d. Assemble End Plate to Housing and secure with Washers (30997) and Screws (Y99-41).
e. Assemble Brake Wheel (33376) to splined end of Motor Spindle and secure with Washer (Y117-616) and Nut (Y12-106).
f. Assemble Steel Balls (Y16-10) and Screw (37701) into Bracket. Position Brake Shoes (33387) over Brake Wheel and assemble Brake Spring (33281) over Shoes using Brake Spring Spreader (33541).
g. Assemble Housing Cap over Brake and secure with Screws (Y19-112).



1/4 TON BRAKE & GEARING

FIGURE 11

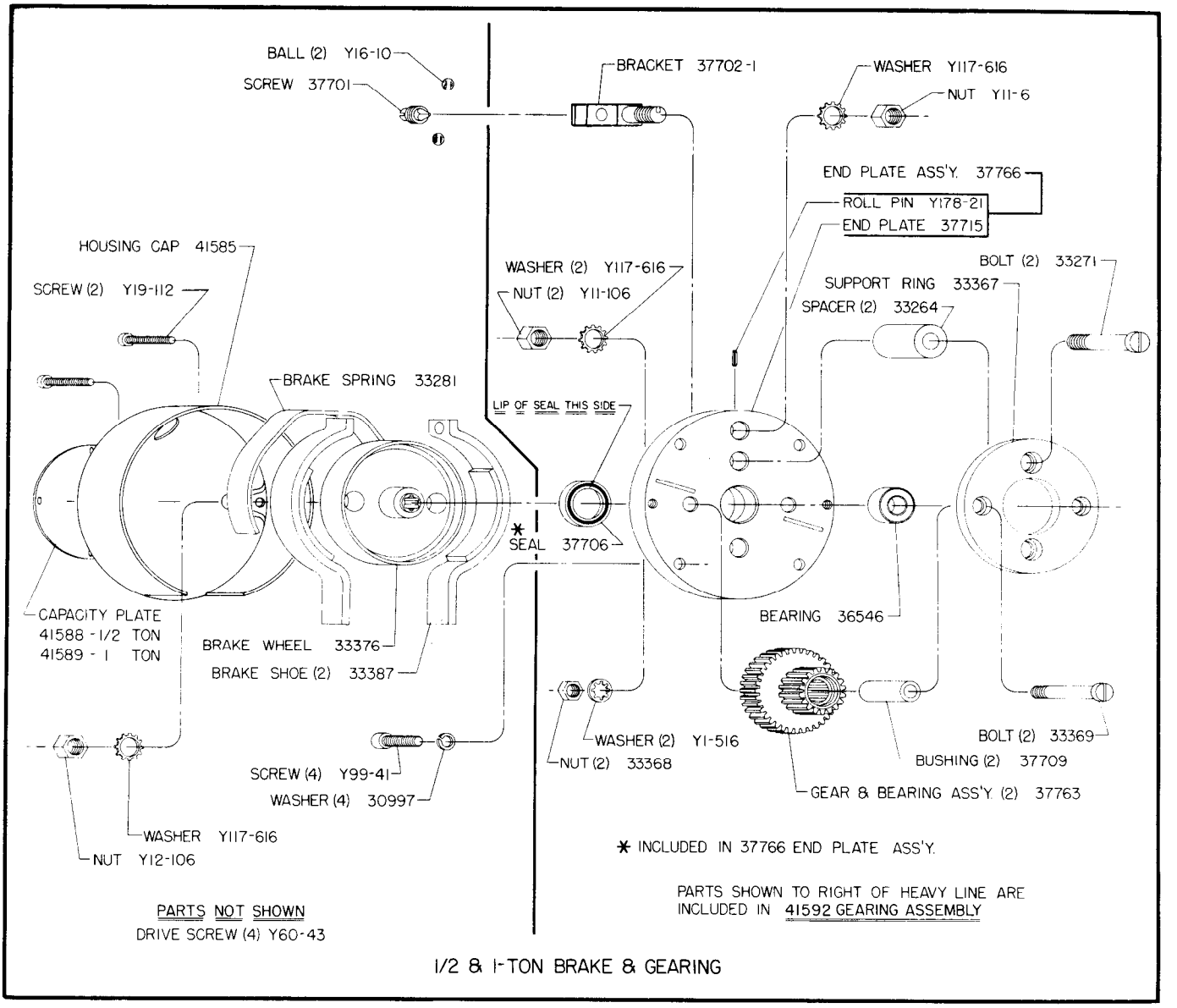


FIGURE 12

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 pull chain handle or 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.

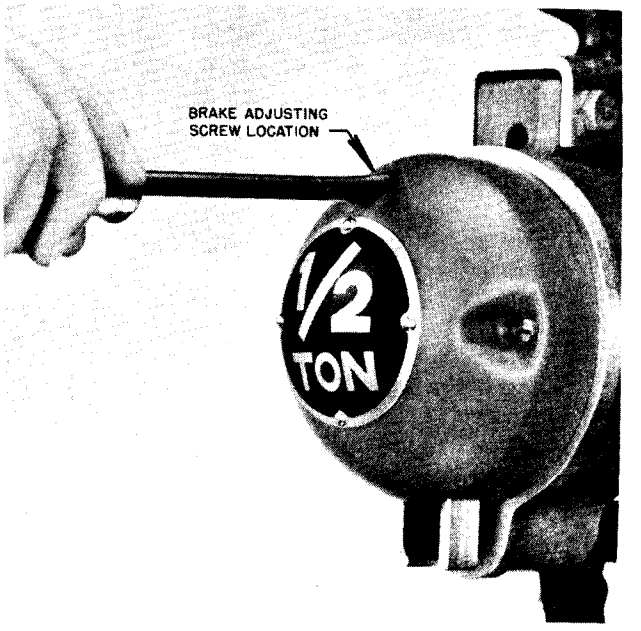


FIGURE 13

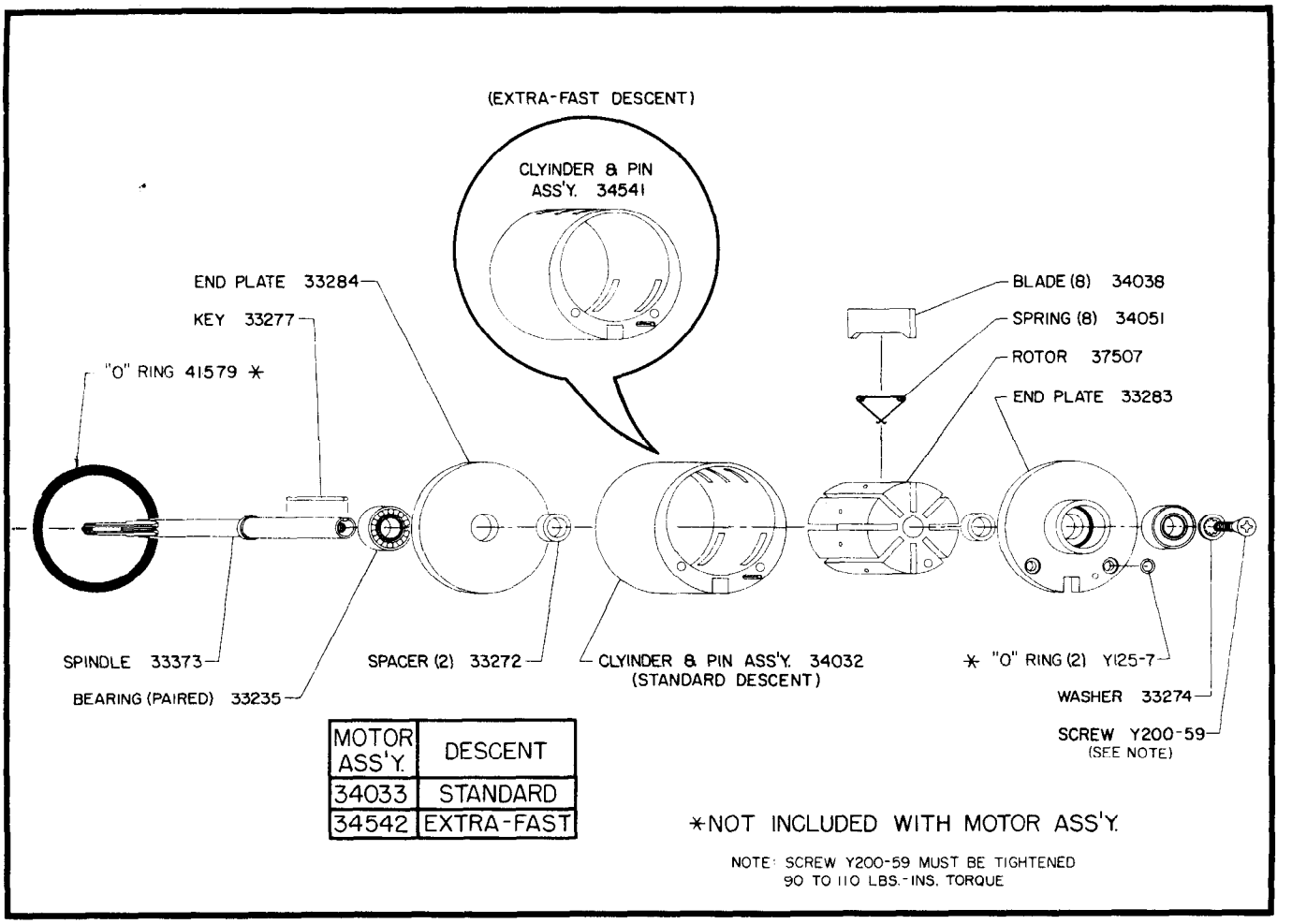


FIGURE 14

DISASSEMBLY

a. Remove motor from housing as outlined on page 7.

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 (37507) with groove aligned with Key on Spindle. NOTE: one end of Rotor is marked with a 1/4 inch drill point. The Rotor must be assembled with the drill point mark pointing away from splined end of Spindle (See fig. 15).

d. Assemble Cylinder and Pin Ass'y. over Rotor with Pin facing away from End Plate (33284) already assembled on Spindle and with groove in Cylinder at bottom.

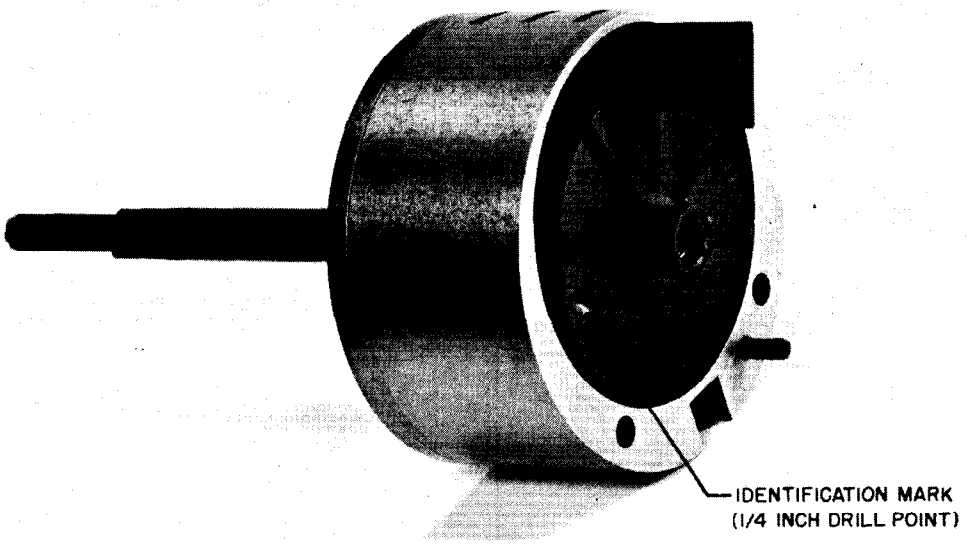
e. Place parts thus far assembled on a flat surface as shown in figure 15.

f. Insert Springs (34051) and Blades (34038) into grooves as shown in figure 15. Rotate grooves of Rotor, as Springs and Blades are installed, towards top making their installation easier.

g. Assemble End Plate (33283) 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.

h. Assemble "O" Rings (Y125-7) into End Plate.

i. Assemble Motor with "O" Ring (41579) into Housing.



Installation of Blades in Rotor *FIGURE 15*

HOUSING SECTION

DISASSEMBLY

a. Remove Plate (33118) 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 (Y1-963) 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 part number stamped on side of wheel facing towards "brake 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 (34895) 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, 1/2 and 1 Ton models -38903 1/4 Ton models) to Shaft and secure with washer (Y1-963) 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 6.

HOUSING SECTION

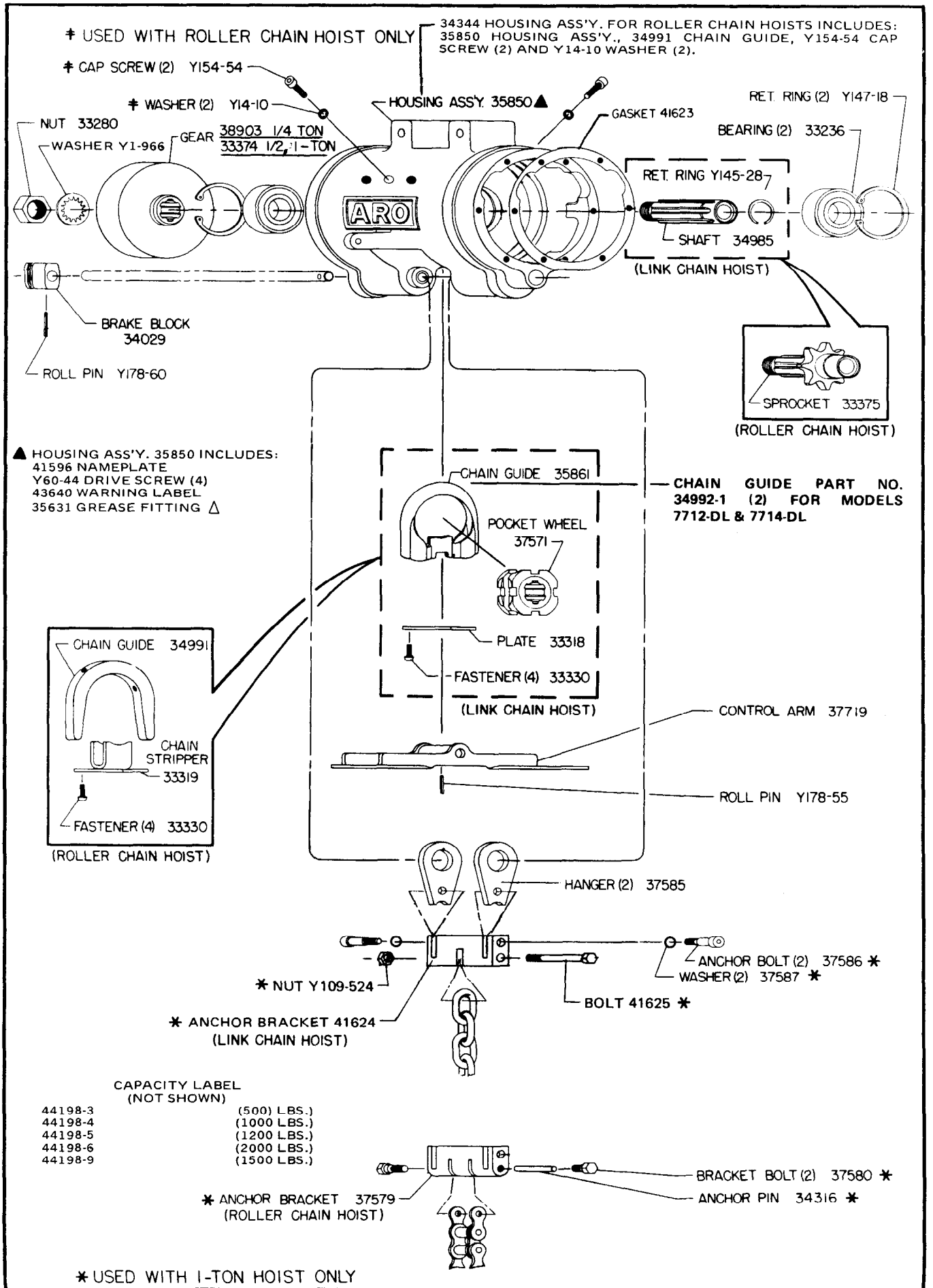


FIGURE 16

REASSEMBLY

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 Bearing into Housing thru "motor end" with threaded end of Sprocket thru Bearing in "brake end" of Housing.
d. Assemble Gear (33374, 1/2 & 1 Ton models- 38903, 1/4 Ton models) to Sprocket Shaft and secure with washer (Y1-963) and Nut (33280).
e. Secure Chain Stripper (33319) to housing with Sems Fastener (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.

UPPER HOOK SECTION

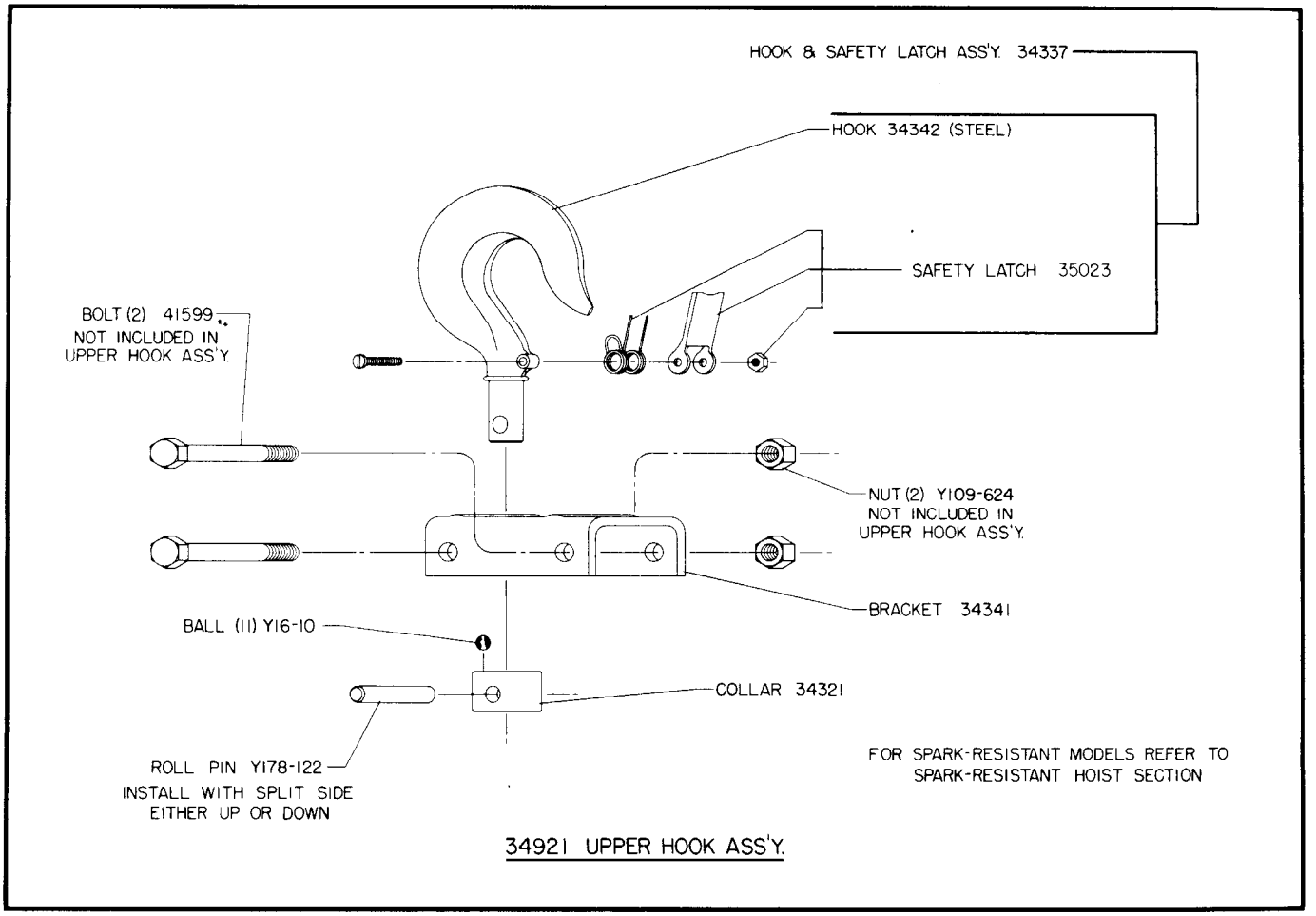


FIGURE 17

DISASSEMBLY

a. To remove Upper Hook Assembly from Housing, remove Nuts (Y109-264) and Bolts (41599).
b. To disassemble Hook Assembly; drive out Roll Pin (Y178-122) from Collar (34321).
c. Removing Collar will release Steel Balls and Bracket from Hook and Latch Assembly.

REASSEMBLY

a. To assemble Steel Balls to Collar, apply a liberal amount of grease in groove of Collar and place Steel Balls into groove.
b. Place Bracket in a holding device with flanges down. Insert Hook thru Bracket and slip Collar with Steel Balls over end of hook. Secure with Roll Pin.
c. Assemble Latch and Spring to hook and secure with Bolt and Nut.
d. Assemble to Housing and secure with Bols and Nuts.

NOTE: Roll Pin securing Collar to Hook must be installed with SPLIT SIDE pointing either directly UP or DOWN.

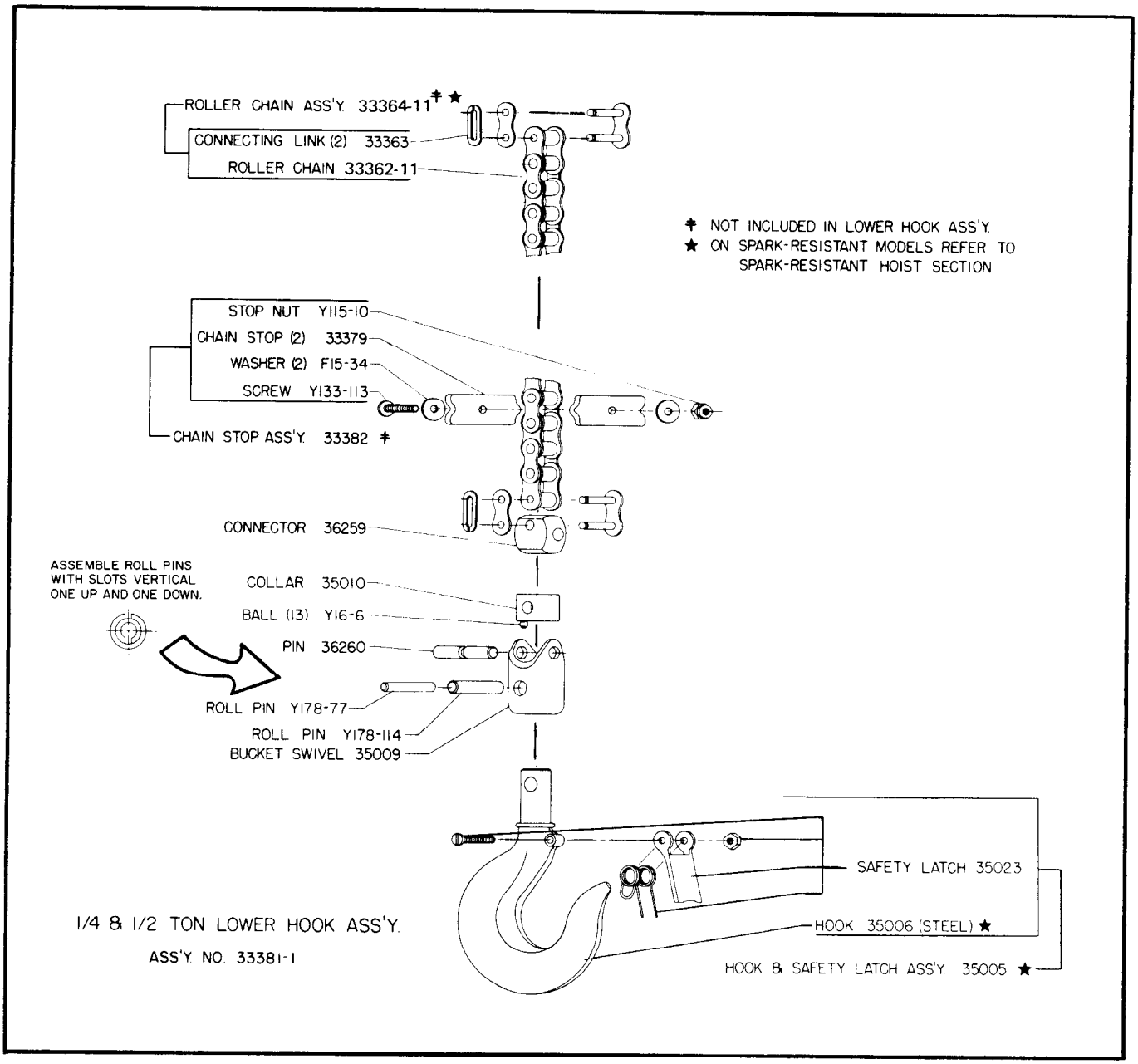


FIGURE 18

ROLLER CHAIN MODELS (1/4 AND 1/2 TON)

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 chain and secure with Connecting Link (33363). Assemble Connector to Bucket and secure with Pin (36260).

NOTE: Install Roll Pins with slots vertical, one up and one down, figure 18.

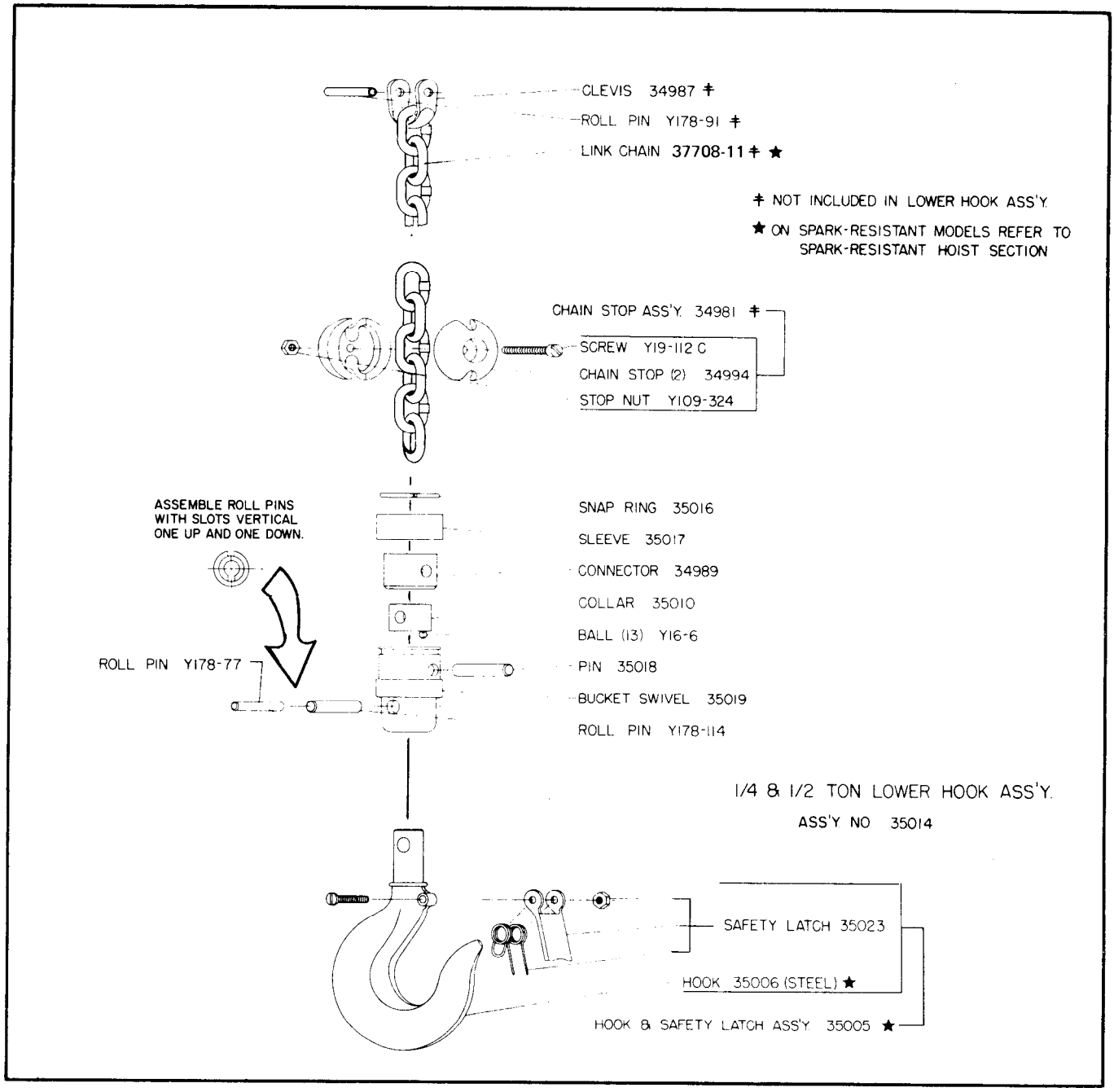


FIGURE 19

LINK CHAIN MODELS (1/4 AND 1/2 TON)

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

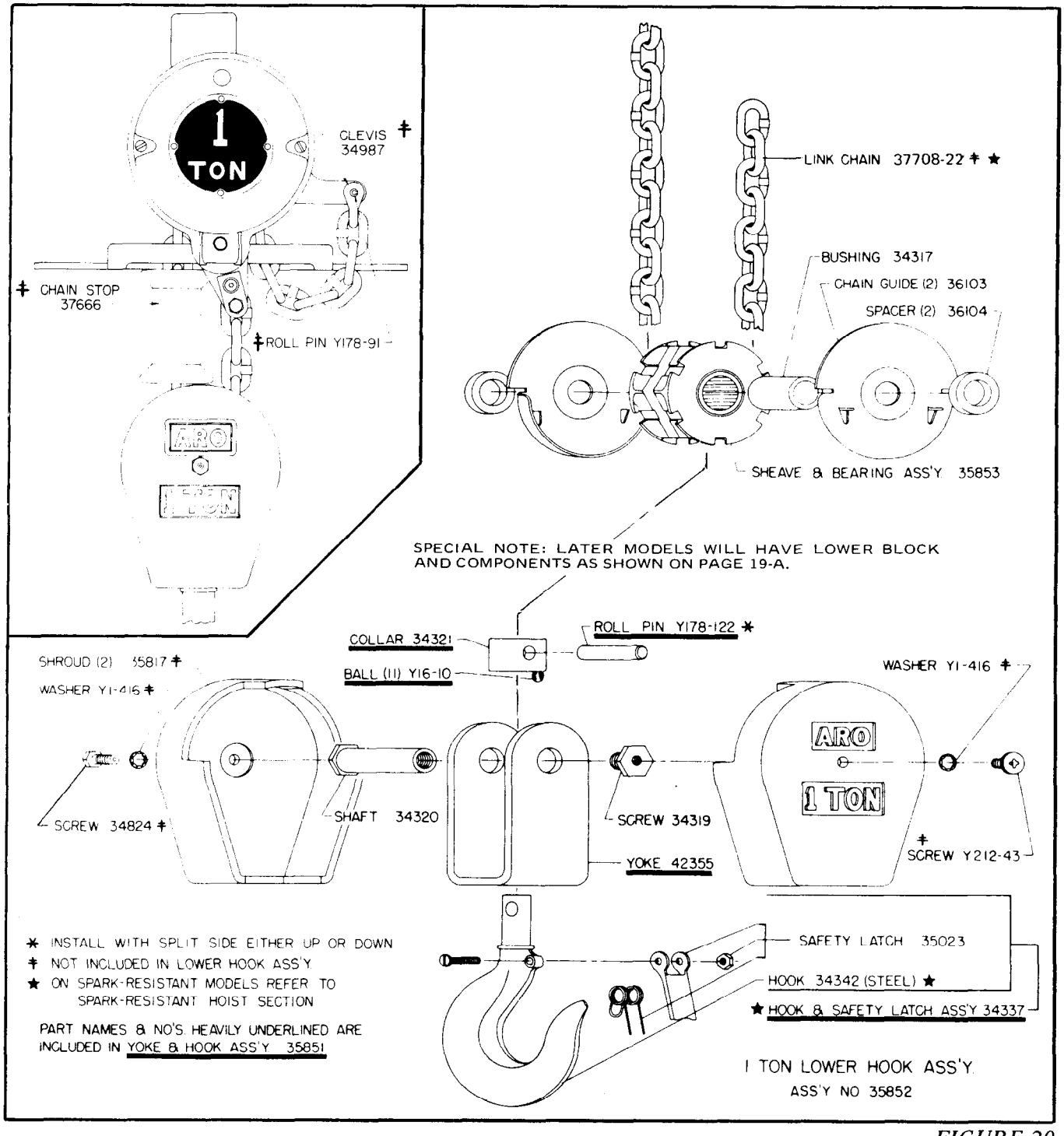
a. Assemble Steel Balls (Y16-6) to Collar (35010), applying a liberal amount of grease in groove of Collar to hold Steel Balls in place and also to lubricate Balls.

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).

LOWER HOOK SECTION



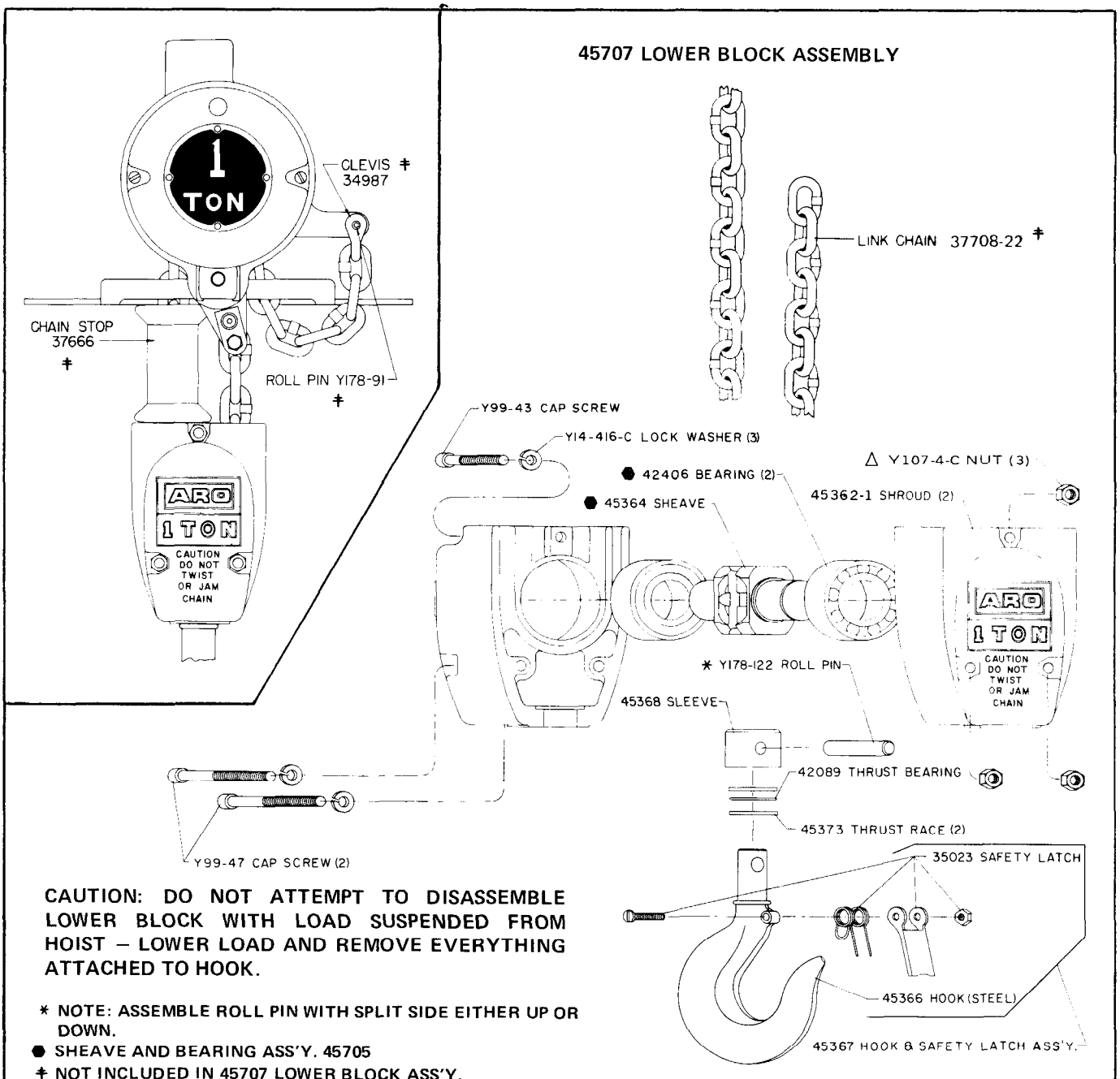
LINK CHAIN MODELS (1-TON) *FIGURE 20*

DISASSEMBLY

a. Remove Screws (34824) and (Y212-43) with Washers and remove Shroud.
b. Remove Screw (34319) and Shaft (34320), releasing Sheave and components.
c. To remove Hook from Yoke, remove Roll Pin (Y178-122).

REASSEMBLY

a. Lubricate groove in Collar (34321) liberally with 33153 grease and assemble Steel Balls (11) to Collar.
b. Insert Hook Assembly thru Yoke, slip Collar with balls over end of hook and secure with Roll Pin (Y178-122).
NOTE: Assemble Roll Pin to Hook with split side vertical with hook (either up or down).
c. Lubricate Sheave bearing liberally with 33153 grease and assemble with Bushing, Guides (2) and Spacers (2) to Yoke, securing with Shaft (34320) and Screw (34319).
d. Assemble Chain Stop to chain and assemble chain thru lower Hook Assembly. CAUTION: when feeding chain around Sheave (35853) insure chain is not twisted and that welded side of links face away from Sheave – see figure 6 and inset of figure 20.
e. Secure end of chain to Anchor Bracket (41624) being certain chain is not twisted and that chain is properly seated in pockets of Sheave. Assemble Shrouds to hook assembly and secure with Screws (34824) and (Y212-43) and Washers (Y1-416).



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

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

● SHEAVE AND BEARING ASS'Y. 45705

‡ NOT INCLUDED IN 45707 LOWER BLOCK ASS'Y.

NOTE: FOR 1500 LB. SPARK-RESISTANT MODELS THE FOLLOWING PART NO'S. WILL DIFFER FROM THOSE SHOWN: SHROUD (2) 45362-2, CAPACITY LABEL (ON SHROUD) 45280, SHROUD ASS'Y. 45378 (INCLUDES SHROUD 45362-2 AND CAP. LABEL 45280), HOOK (BRONZE) 45371, HOOK ASS'Y. 45372 (INCLUDES HOOK 45371 AND SAFETY LATCH 35023), LINK CHAIN 39489-22 (STAINLESS STEEL CHAIN 22 FT. LONG).

DISASSEMBLY

a. Remove Screw (Y99-43) and two (2) Screws (Y99-47), Lock Washers (Y14-416-C) and Nuts (Y107-4-C).

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

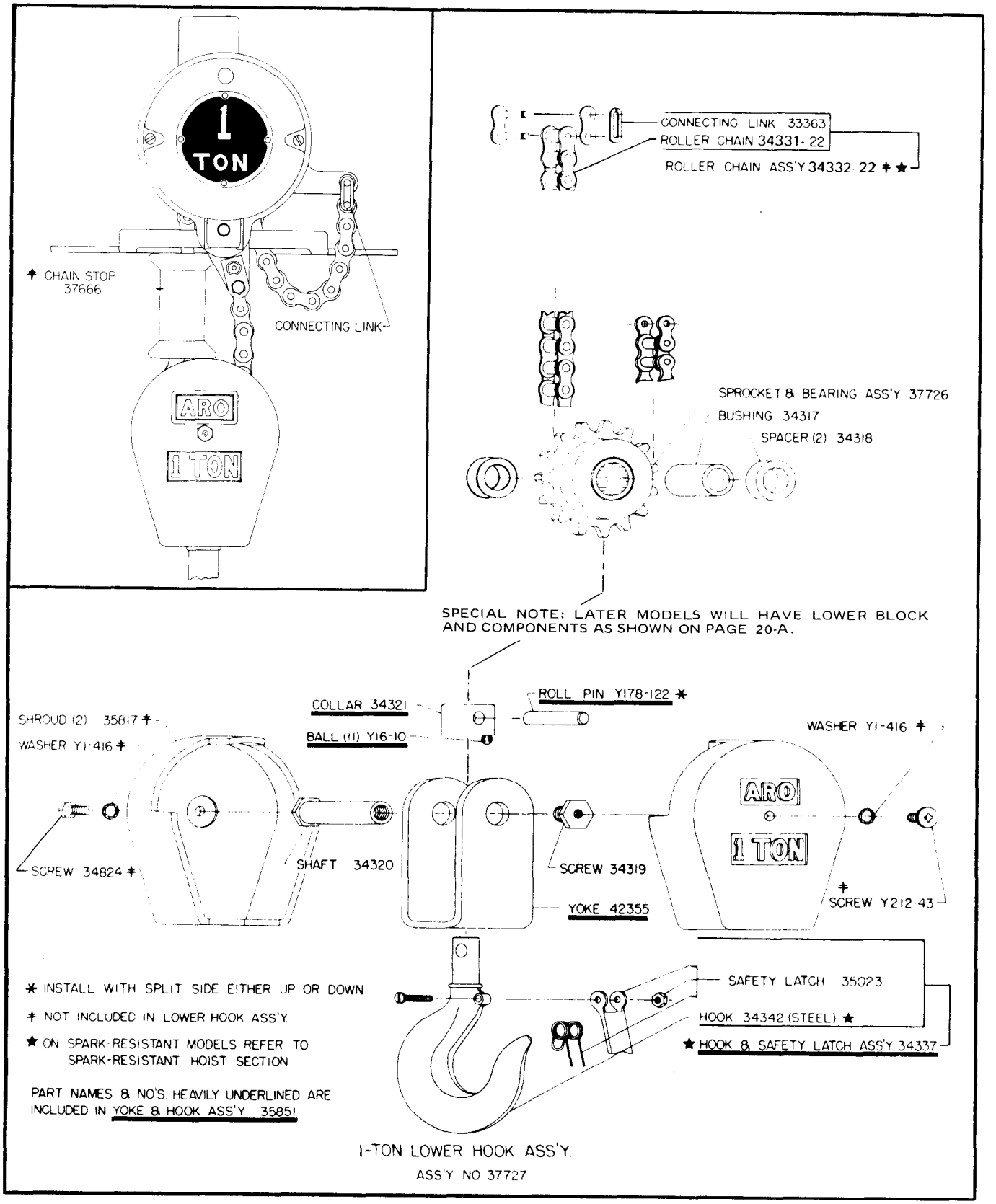
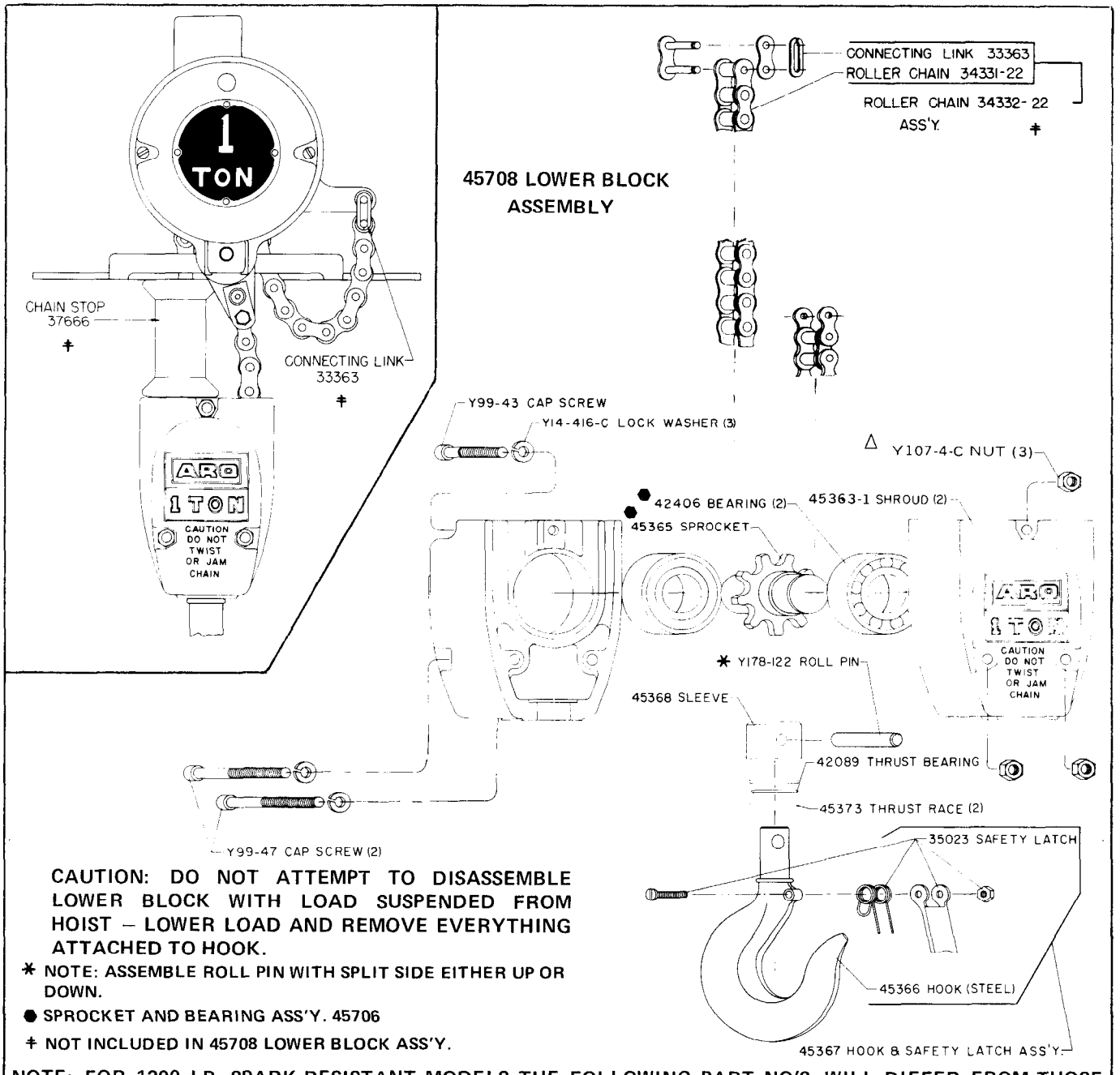


FIGURE 21

ROLLER CHAIN MODELS (1-TON)

NOTE: Disassembly and Reassembly of the Lower Hook Assembly for Roller Chain models is very similar to that for Link Chain models – see page 19.



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

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

● SPROCKET AND BEARING ASS'Y. 45706

‡ NOT INCLUDED IN 45708 LOWER BLOCK ASS'Y.

NOTE: FOR 1200 LB. SPARK-RESISTANT MODELS THE FOLLOWING PART NO'S. WILL DIFFER FROM THOSE SHOWN: SHROUD (2) 45363-2, CAPACITY LABEL (ON SHROUD) 39592, SHROUD ASS'Y. 45379 (INCLUDES 45363-2 AND CAP. LABEL 39592), HOOK (BRONZE) 45371, HOOK ASS'Y. 45372 (INCLUDES HOOK 45371 AND SAFETY LATCH 35023), ROLLER CHAIN 35109-22 (STAINLESS STEEL ROLLER CHAIN 22 FT. LONG – INCLUDES 34042 CONNECTING LINK), CONNECTING LINK 34042).

DISASSSEMBLY

a. Remove Screw (Y99-43) and two (2) Screws (Y99-47), Lock Washers (Y14-416) and Nuts (Y107-4-C) .

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.

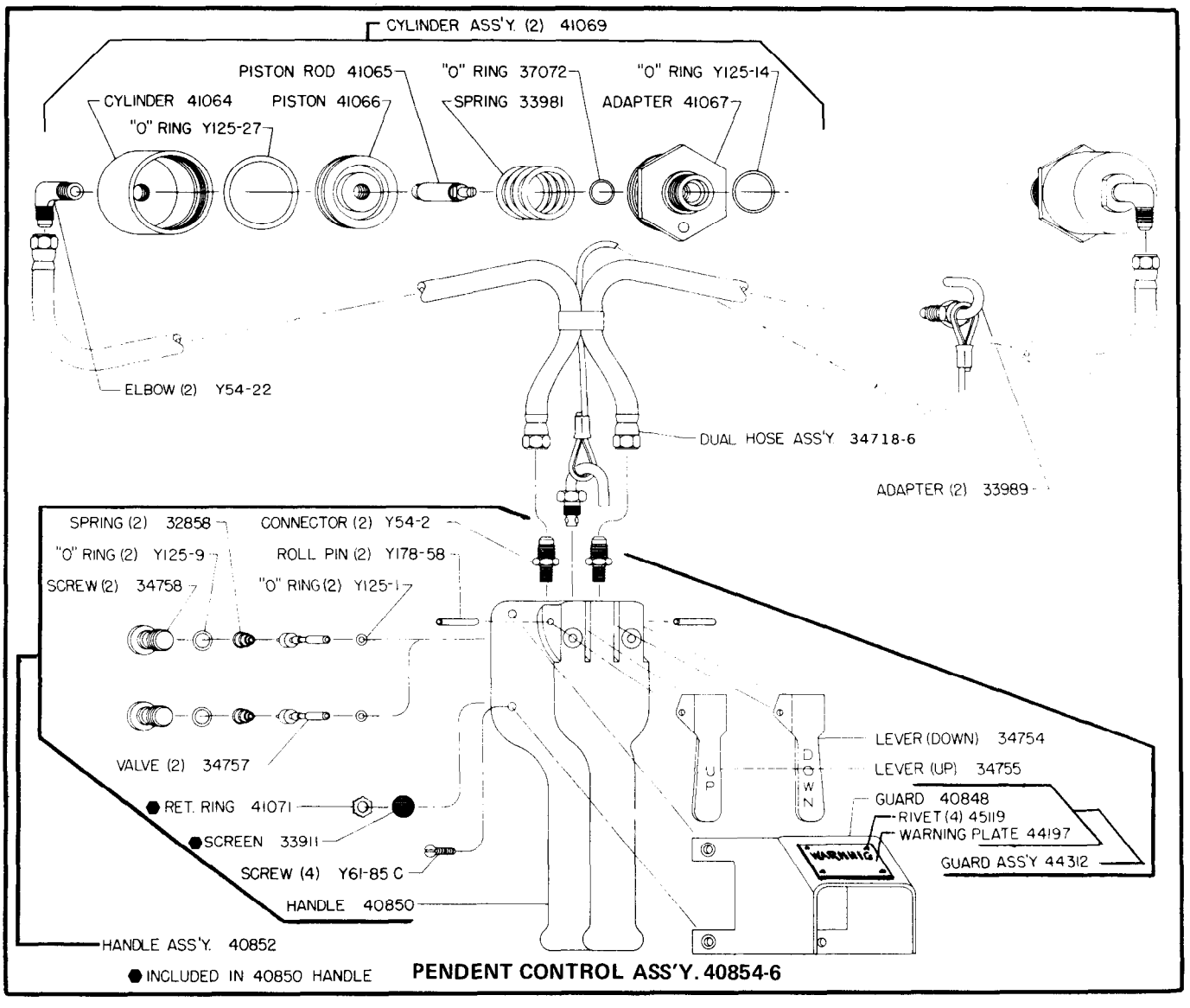


FIGURE 22

PENDENT CONTROL

DISASSEMBLY

a. To remove from hoist, shut off air and disconnect hoses from cylinder assemblies.
b. Remove Adapter (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 (34758) with "O" Rings (Y125-9), releasing Spring (32858), Valves (34757) with "O" Rings (Y125-1).

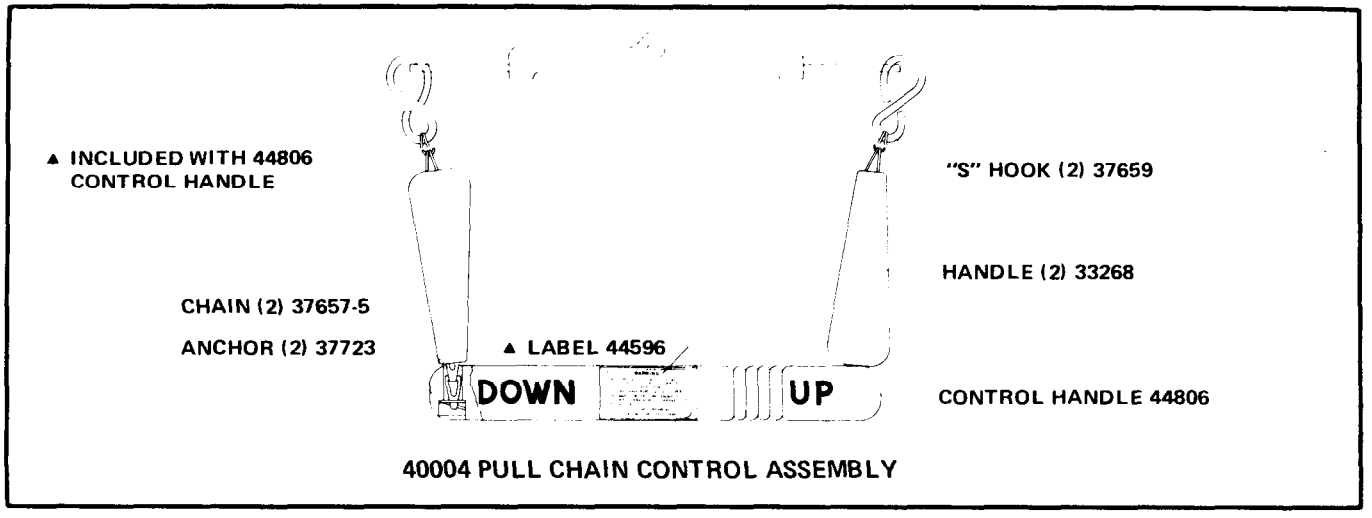
REASSEMBLY

a. Assemble "O" Ring (37072) into Adapter (41067).
b. Assemble Piston Rod (41065) and "O" Ring (Y125-27) to Piston (41066) and assemble with Spring (33981) into Cylinder (41064). Secure with Adapter (41067).
c. Assemble with "O" Ring (Y125-14) to head.
d. To reassemble control handle, reverse disassembly procedure.

ASSEMBLY OF CONTROLS TO HOIST

a. On pull chain control models, control chains must be installed as follows: Facing air inlet end of hoist (with hoist in upright position), chain attached to "UP" end of control handle must be attached to right end of control arm. Chain attached to "DOWN" end of control handle must be attached to left end of control arm.

b. On pendent control models, control hoses must be attached to cylinder on head as follows: Facing air inlet of hoist, the hose to "DOWN" lever of control must be connected to cylinder on right hand side of head. Hose to "UP" side of control must be connected to left hand side of the head.



40004 PULL CHAIN CONTROL ASSEMBLY

FIGURE 23

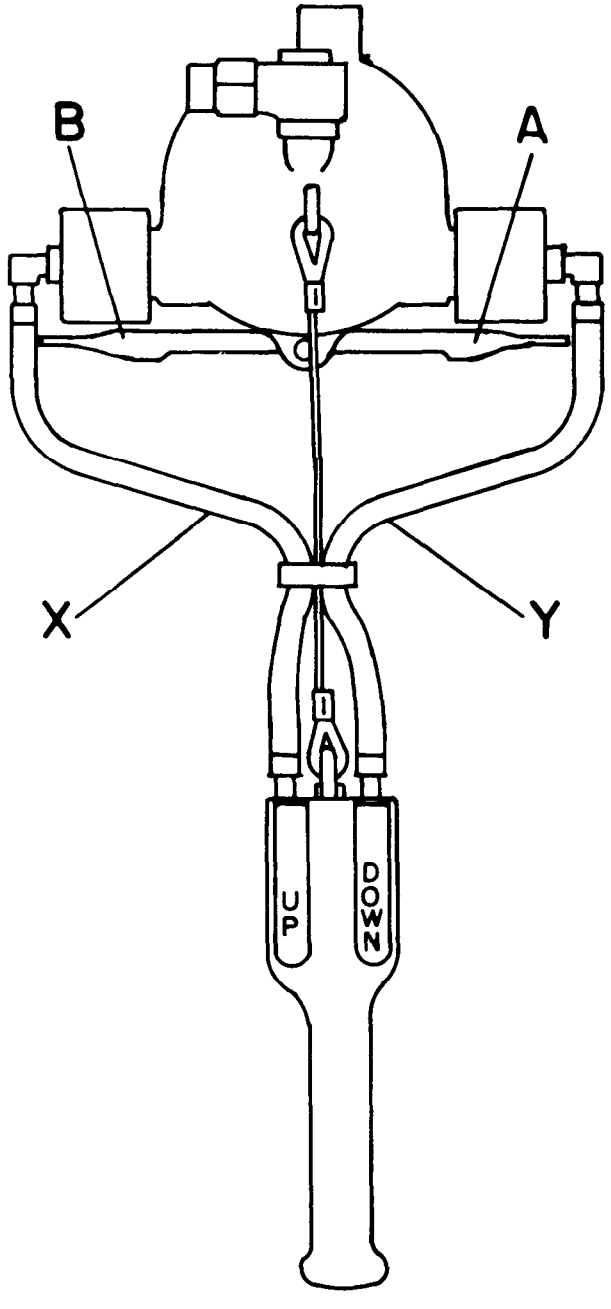


FIGURE 24

PENDENT CONTROL SYSTEM

THE HOIST WILL ALWAYS CEASE OPERATION WHEN OPERATOR RELEASES THE PENDENT CONTROL. This is true even when a Pendent Control hose or inlet hose might rupture; regardless of direction of operation (raising or lowering) or if the hoist is at rest.

If any hose (either air inlet or pendent control hoses) should become cut or ruptured –

1. Release Pendent Control.
2. Shut off air supply to hoist and replace ruptured hose.
3. To operate hoist if hose should rupture, be guided by the following:

IF HOSE "X" IS CUT OR RUPTURED;

To lower load – hoist may be lowered by manually operating control arm. Pull down on control arm at "B". See CAUTION note below.

To raise load – with air on, hoist may be raised by depressing "UP" lever.

IF HOSE "Y" IS CUT OR RUPTURED;

To lower load – with air on, hoist may be lowered by depressing "DOWN" lever.

To raise load – hoist may be raised by manually operating control arm. Pull down on control arm at control arm at "A".

AIR INLET HOSE CUT OR RUPTURED;

To lower load – hoist may be lowered by manually operating control arm. Pull down on control arm at "B". See CAUTION note below.

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

SPARK-RESISTANT HOIST SECTION

500 POUNDS CAPACITY				1,200 AND 1500 POUNDS CAPACITY			
MODEL	CHAIN	HOOKS	CONTROL	MODEL	CHAIN	HOOKS	CONTROL
7712-D	STAINLESS, ROLLER	BRONZE	PULL-CHAIN	7714-D 1200-LB.	STAINLESS, ROLLER	BRONZE	PULL-CHAIN
7712-DL	STAINLESS, LINK	BRONZE	PULL-CHAIN	7714-DL . 1500 LB.	STAINLESS, LINK	BRONZE	PULL-CHAIN

The Hoist Models listed in chart above are furnished with load chain made of stainless steel. The top and bottom hooks of these hoists are bronze, with safety snaps (see opposite page).

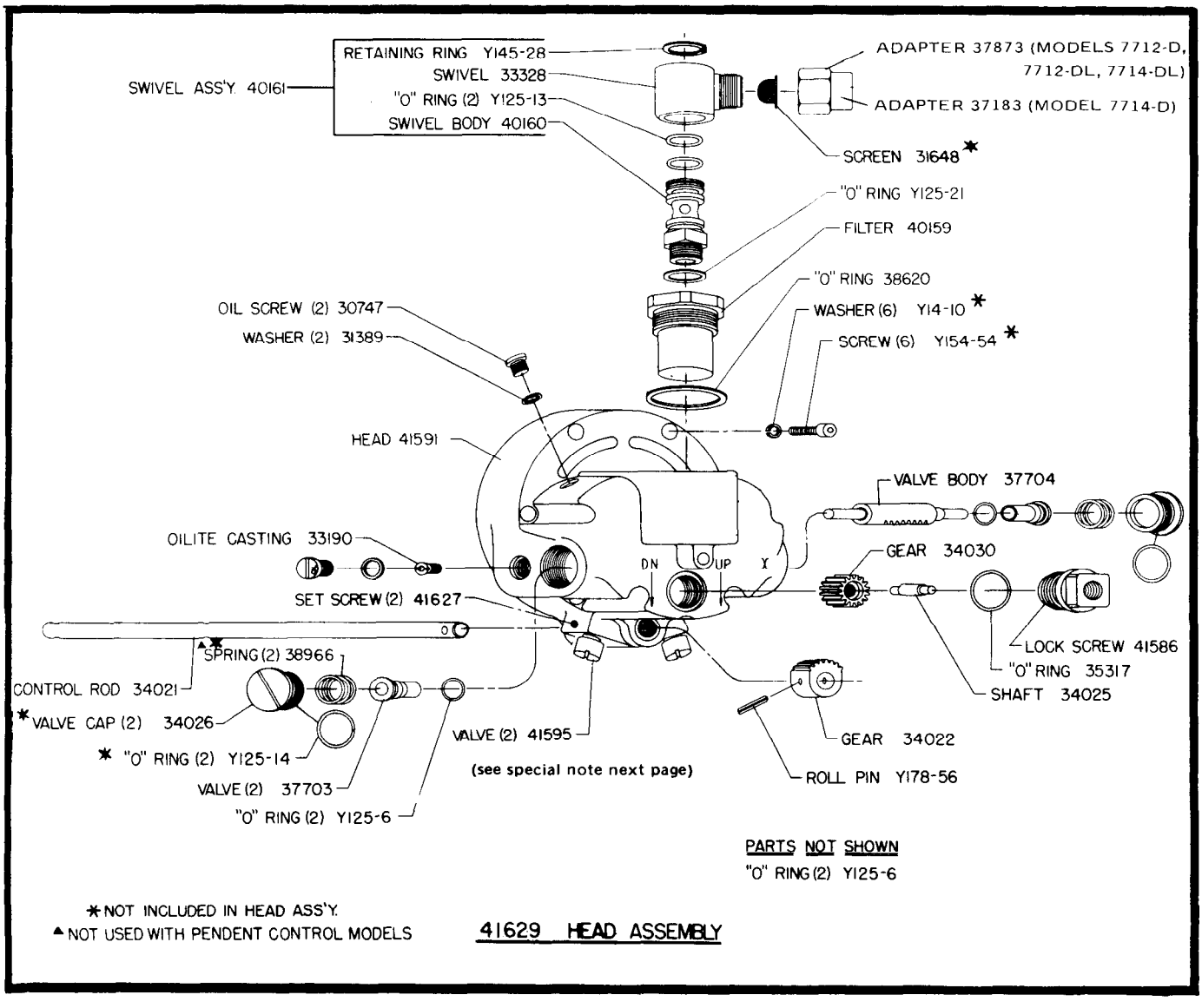
Other components of the 500 lb. capacity spark-resistant hoists are comparable to the standard 1/2 ton models, and the 1200 lb. and 1500 lb. capacity spark-resistant hoist components are comparable to the standard 1 ton models (with the exceptions of parts shown in chart below); but the rates of lift and descent are modified. The 500 lb. capacity hoists have a rate of lift and descent of approximately 20' per minute, maximum at 90 p.s.i. and the 1200 lb. and 1500 lb. capacity hoists have a maximum rate of lift and descent of approximately 10' per minute at 90 p.s.i.

PART NAME	STANDARD 1/2 TON	STANDARD 1 TON	500 LB. CAPACITY	1200 LB. CAPACITY	1500 LB. CAPACITY
CAPACITY PLATE	41588	41589	41584	41628	45278
SHROUD (2)	——	35817	——	□ 39593	35817-1 (SHROUD) 45280 (CAP. LABEL, 2)

SPECIAL NOTE: LATER MODELS WILL HAVE SHROUDS LISTED ON PAGES 19-A AND 20-A.

□ INCLUDES CAP. LABEL 39592

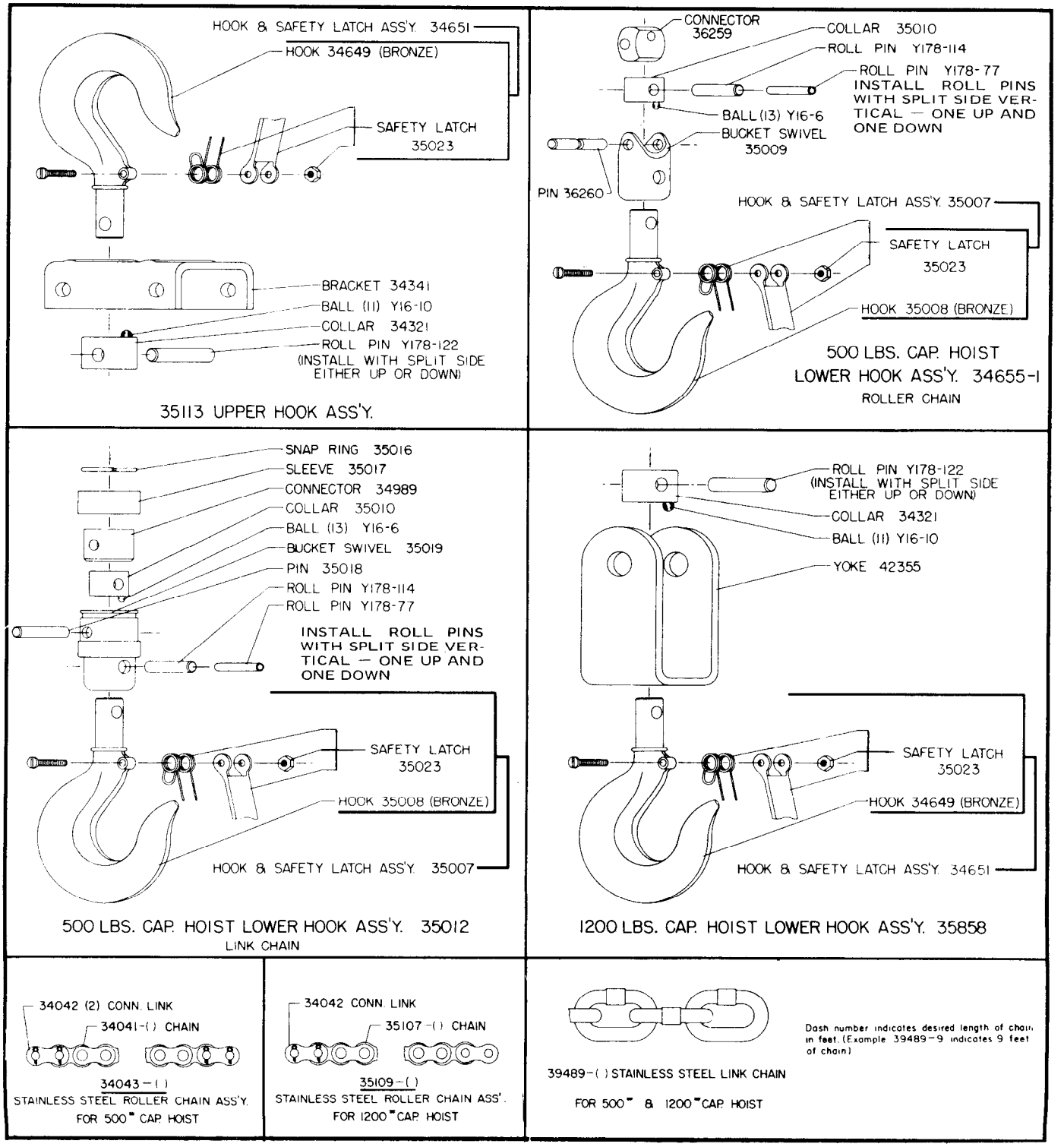
*Air Inlet Adapter 37183 must be used with the 1200 lb. capacity hoists.



SPECIAL NOTE: Spark-Resistant models are shipped from factory with Valves (41595) pre-set for maximum rates of lift and descent and are secured by Set Screws (41627). **DO NOT ADJUST OR REMOVE VALVES 41595 on these models. IF HEAD ASS'Y. IS REPLACED for service – Valves (41595) must be adjusted for the following rates of lift and descent:**

500 lb. Capacity Hoist – Rate of lift with minimum throttle opening for continuous motion and with a 500 lb. load shall be 5 ft./min. maximum. Rate of lift with max. throttle opening with a 500 lb. load shall not exceed 25 ft./min. max. and 17 ft./min. minimum. Rate of descent with max. throttle opening and a 500 lb. load shall not exceed 30 ft./min.

1,200 lb. Capacity Hoist – Rate of lift with minimum throttle opening for continuous motion and with a 1,200 lb. load shall be 2-1/2 ft./min. maximum. Rate of lift with max. throttle opening with a 1,200 lb. load shall not exceed 13 ft./min. max. and 9 ft./min. minimum. Rate of descent with max. throttle opening and a 1,200 lb. load shall not exceed 18 ft./min.



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. Rotor spring failure.
7. Proper installation of roll pin in Control Rod and Gear (34022).

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

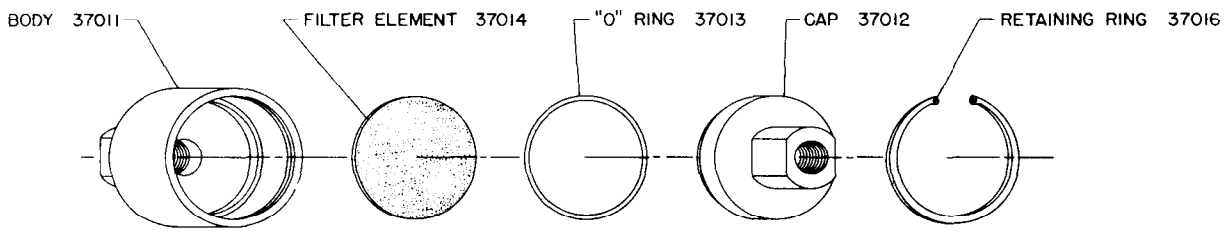
HOIST WILL NOT HOLD LOAD IN SUSPENSION-CHECK FOR:
1. Excessive load.
2. Worn or oily brake linings.
3. Proper brake adjustment.
4. Proper timing of gears in head.

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.

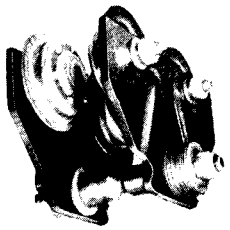
HOIST CONTROL LEVER WILL NOT RETURN TO HORIZONTAL POSITION-CHECK FOR:
1. Bent control rod.
2. Binding of control rod.
3. Proper brake adjustment.
4. Lack of lubrication in pendent control cylinders.
5. Proper timing of gears in head.

ACCESSORIES

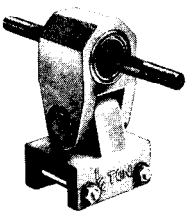


37015 AIR LINE FILTER ASS'Y.

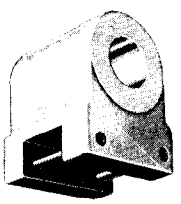
TROLLEYS & ADAPTERS



7702



41938
DUAL SWIVEL
TROLLEY
ADAPTER



34386

Trolley Model No.	Capacity	Dimension Limits, I-Beams Height Min.	Height Max.	Width Min.	Width Max.	Trolley Adapter Required
7702 7702-BC	1/4 & 1/2 Ton	4"	10"	2-21/32"	5-3/32"	34386-1
7727 7727-BC	1-Ton	5"	12"	3"	5-5/8"	34386

SPARK RESISTANT TROLLEYS

Models 7702-BC and 7727-BC are equipped with bronze-beryllium wheels. Their dimensions are identical with those of Models 7702 and 7727.

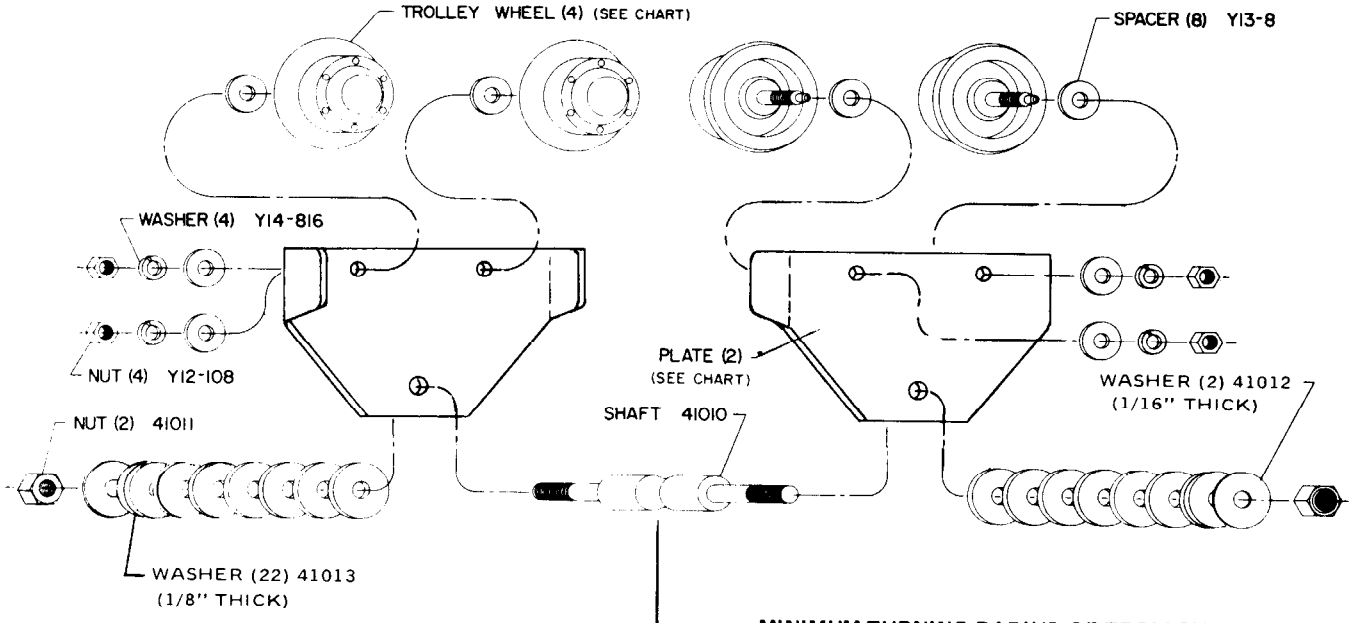
No. 41938 Dual Swivel Trolley Adapter, for 1/4-ton and 1/2-ton hoists, must be used with Trolley No. 7702 or 7702-BC.

NOTE: The recommended minimum turning radiuses for Trolleys are: Models 7702 and 7702-BC 2 feet; Models 7727 and 7727-BC 3 feet.

Δ

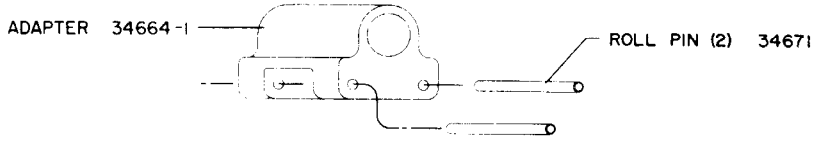
MODEL NO.	CAP. (LBS.)	TROLLEY WHEEL (4)	SIDE PLATE (2)	NAMEPLATE (NOT SHOWN)	TYPE BEAM	BEAM SIZE	FLANGE WIDTH
7702	1,000	41008	41009	44081-1	I-Beam	4" To 10"	2.660" To 4.660"
7702-BC*		41008-1	41009-1***	44081-1	I-Beam	4" To 10"	2.660" To 4.660"
7702-FT**		45375	41009	44081-1	H-Beam	4" To 10"	2.600" To 4.900"

* SPARK-RESISTANT MODEL, EQUIPPED WITH BERYLLIUM COPPER TREAD WHEELS.
** FLAT TREAD WHEEL MODEL FOR USE WITH "H" TYPE BEAMS.
*** SIDE PLATES ON SPARK-RESISTANT MODELS ARE EQUIPPED WITH SKID BRACKETS (44618-2) AND MOUNTED TO PLATES WITH RIVETS (Y193-33), NOT SHOWN.



MINIMUM TURNING RADIUS OF TROLLEY
24 INCHES

1/4 AND 1/2 TON TROLLEY ASS'Y.



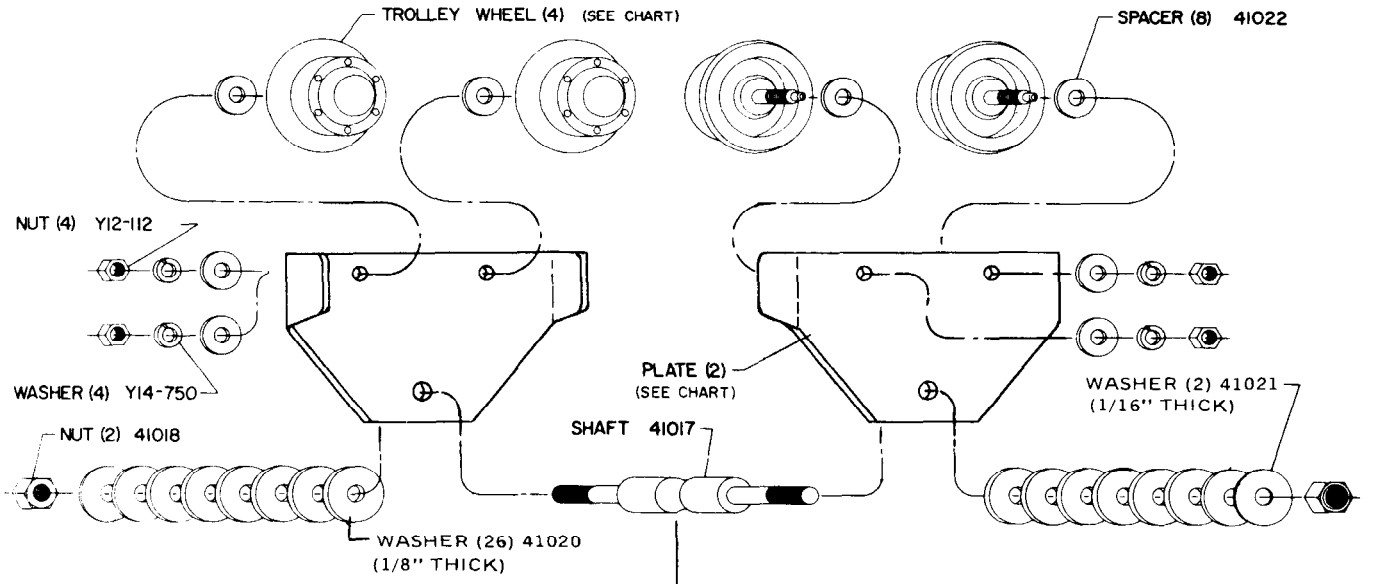
34386-1 1/4 AND 1/2 TON TROLLEY ADAPTER ASS'Y.

ACCESSORIES

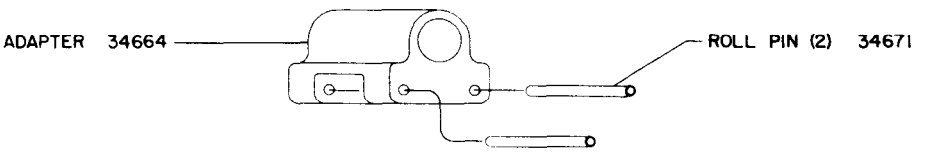
△

MODEL NO.	CAP. (LBS.)	TROLLEY WHEEL (4)	SIDE PLATE (2)	NAMEPLATE (NOT SHOWN)	TYPE BEAM	BEAM SIZE	FLANGE WIDTH
7727	2,000	41015	41016	44081-1	I-Beam	5" To 12"	3.000" To 5.250"
7727-BC*		41015-1	41016-1***	44081-1	I-Beam	5" To 12"	3.000" To 5.250"
7727-FT**		45376	41016	44081-1	H-Beam	5" To 12"	2.600" To 4.900"

* SPARK-RESISTANT MODEL, EQUIPPED WITH BERYLLIUM COPPER TREAD WHEELS.
** FLAT TREAD WHEEL MODEL FOR USE WITH "H" TYPE BEAMS.
*** SIDE PLATES ON SPARK-RESISTANT MODELS ARE EQUIPPED WITH SKID BRACKETS (44618-2) AND MOUNTED TO PLATES WITH RIVETS (Y193-33), NOT SHOWN.



1-TON HOIST TROLLEY ASS'Y.

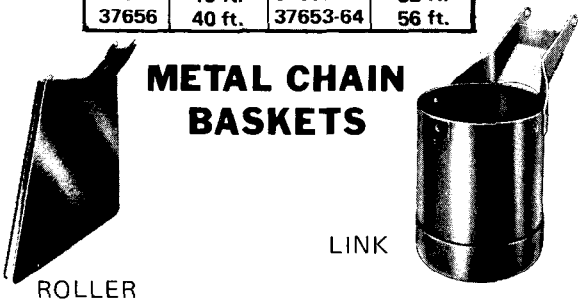


34386 1-TON HOIST TROLLEY ADAPTER ASS'Y.

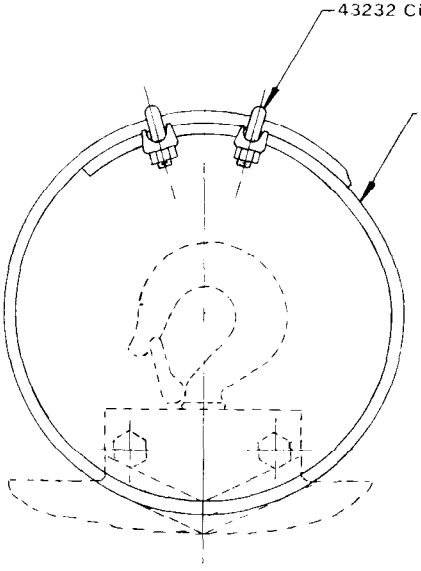
Baskets for Roller Chain and Link Chain

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.



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



43231 RESTRAINING CABLE ASS'Y.

FOR USE AS AN ADDED SAFETY PRECAUTION IN HOIST SUSPENSION.

INSERT CABLE THRU HOLE PROVIDED IN HOUSING AS SHOWN AND AROUND I-BEAM (OR OTHER OVERHEAD SUPPORT CAPABLE OF SAFELY SUPPORTING COMBINED WEIGHT OF HOIST AND ITS CAPACITY LOAD).

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

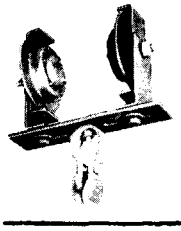
Dash number indicates exact length in feet. Example: 33364-10, the dash 10 indicates 10 feet of chain. When ordering, figure desired lift footage, add one extra foot for assembly, and specify by corresponding dash number. Part No. 33364-( ) includes two (2) Connecting Links No. 33363.

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.

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.

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

Air Hose Assemblies

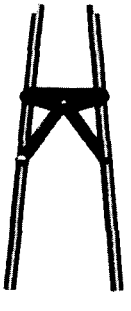
1/2" I.D. high-pressure hose for connecting air supply to Hoist. 3/8" male NPTF fittings on both ends.

Part No.	Length
31329-10	10'
31329-25	25'
31329-50	50'

Brake Spring Spreader

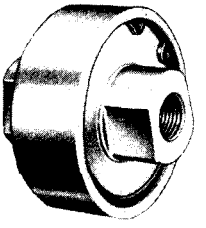
No. 33541

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



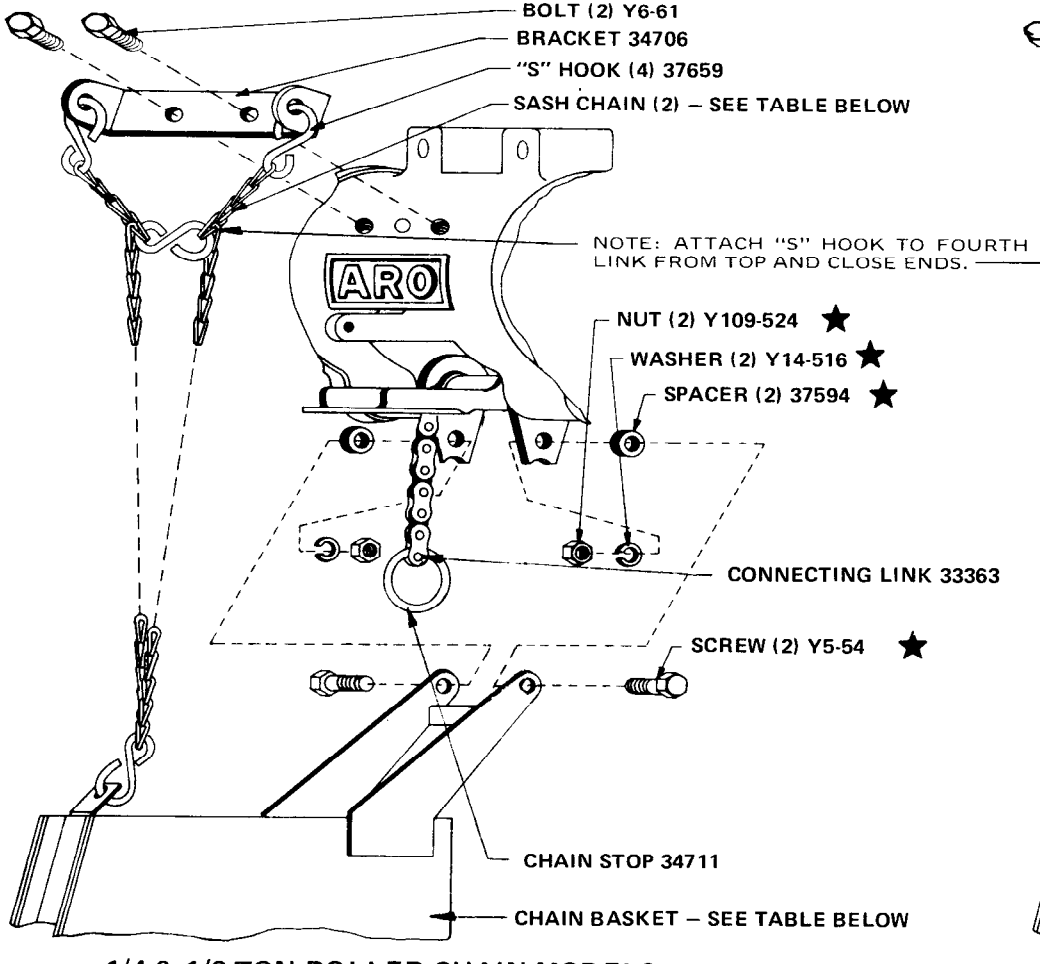
Air Filter (for attachment to Hoist)

No. 37015. Should be used whenever atmospheric dust is excessive. Filters out particles from 12 to 25 microns in size and supplements regular air line filter and oiler. Porous bronze filter element can easily be removed for cleaning. Has 3/8"-18 NPTF inlet, and attaches directly to air inlet of any Aro Hoist (accessible after removal of 31649 Adapter and 31648 Screen). Max. dia. 2 13/16".

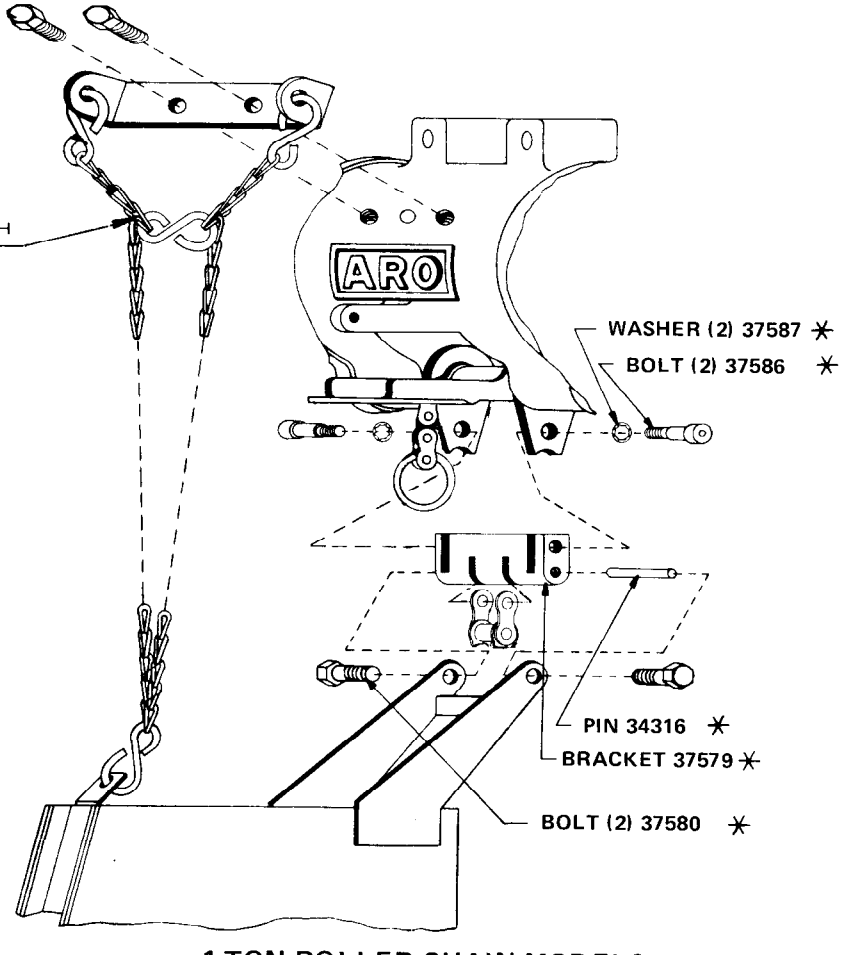


MODEL 37015

CHAIN BASKET INSTALLATION



1/4 & 1/2 TON ROLLER CHAIN MODELS



1-TON ROLLER CHAIN MODELS

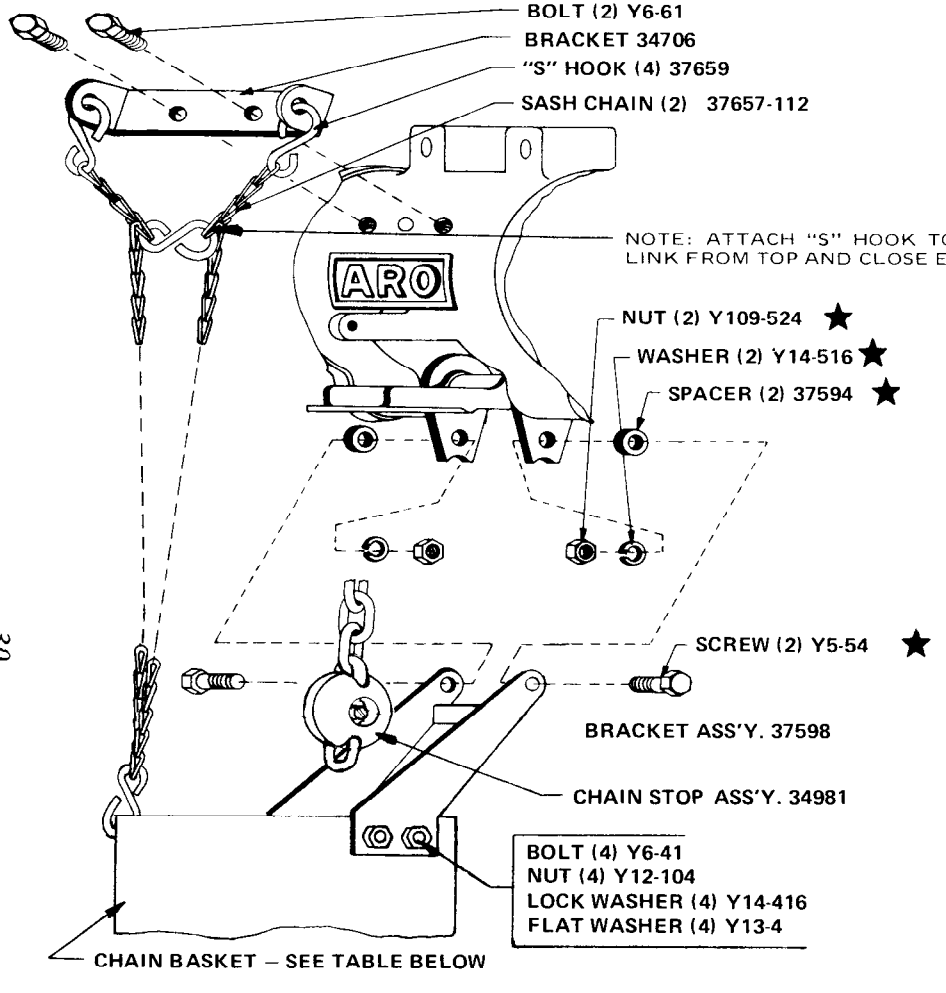
CHAIN BASKET ASSEMBLY NO.	CHAIN CAPACITY	CHAIN BASKET	SASH CHAIN
37654	10′	37660	37657-111
37655	16′	37661	37657-113
37656	40′	37658	37657-116

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

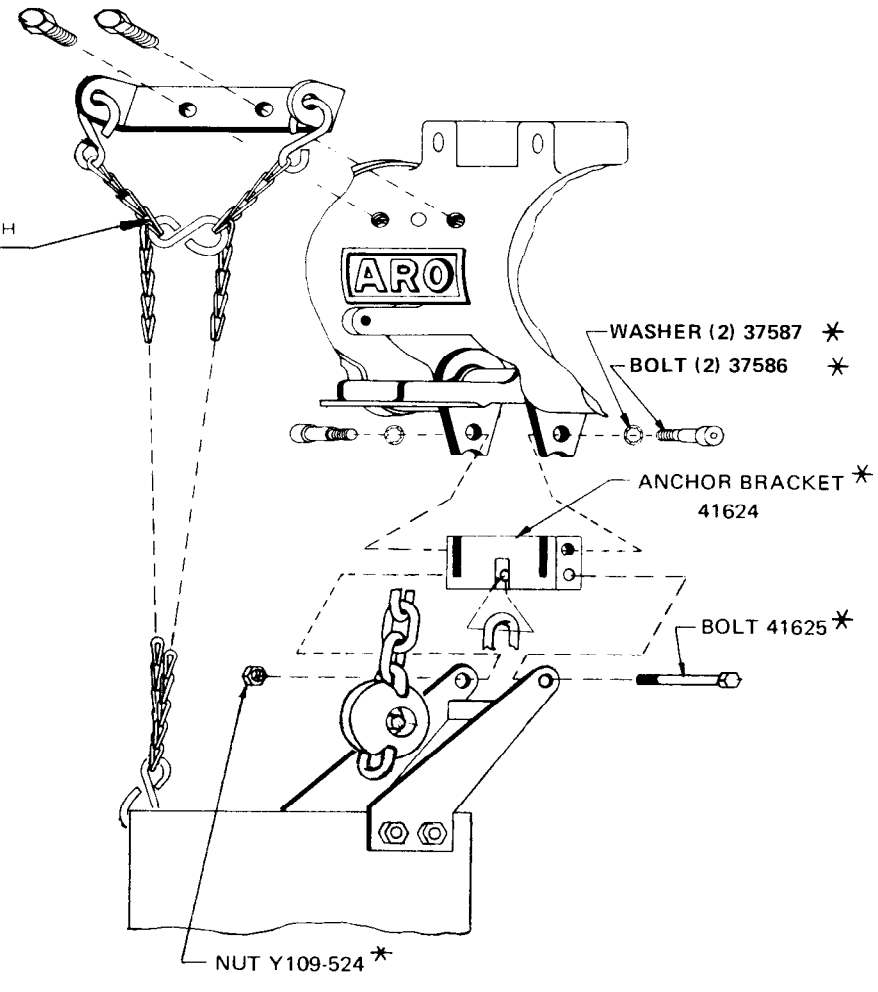
✳ STANDARD 1-TON HOIST PARTS

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.

CHAIN BASKET INSTALLATION



1/4 & 1/2 TON LINK CHAIN MODELS



1-TON LINK CHAIN MODELS

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

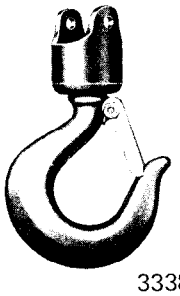
CHAIN BASKET ASSEMBLY NO.	CHAIN CAPACITY	CHAIN BASKET NO.
37653-16	20′	36384-1
37653-32	32′	36384-2
37653-64	56′	36384-3
43554-1	20′	43440-1
43554-2	32′	43440-2
43554-3	64′	43440-3

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

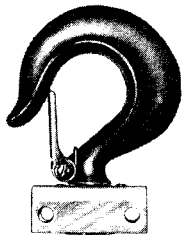
✳ STANDARD 1-TON HOIST PARTS

STEEL SAFETY SNAP HOOKS

1/4-TON, 1/2 TON AND 1 TON CAPACITY



33381



34921

Chain	Hook No.	Position	Throat Opening	Description
Link or Roller	34921	Top	1-1/8"	Upper Hook Assy. for 1/4, 1/2 and 1-ton models
Link	35014	Bottom	1"	Lower Hook Assy. for 1/4 & 1/2-ton models
Roller	33381	Bottom	1"	Lower Hook Assy. for 1/4 & 1/2-ton models

BULLARD SAFETY SNAP HOOKS

35305 Lower Hook Assembly for 1/4 and 1/2 Ton, ROLLER CHAIN only.

35206 Lower Hook Assembly for 1/4 and 1/2 Ton, LINK CHAIN only.

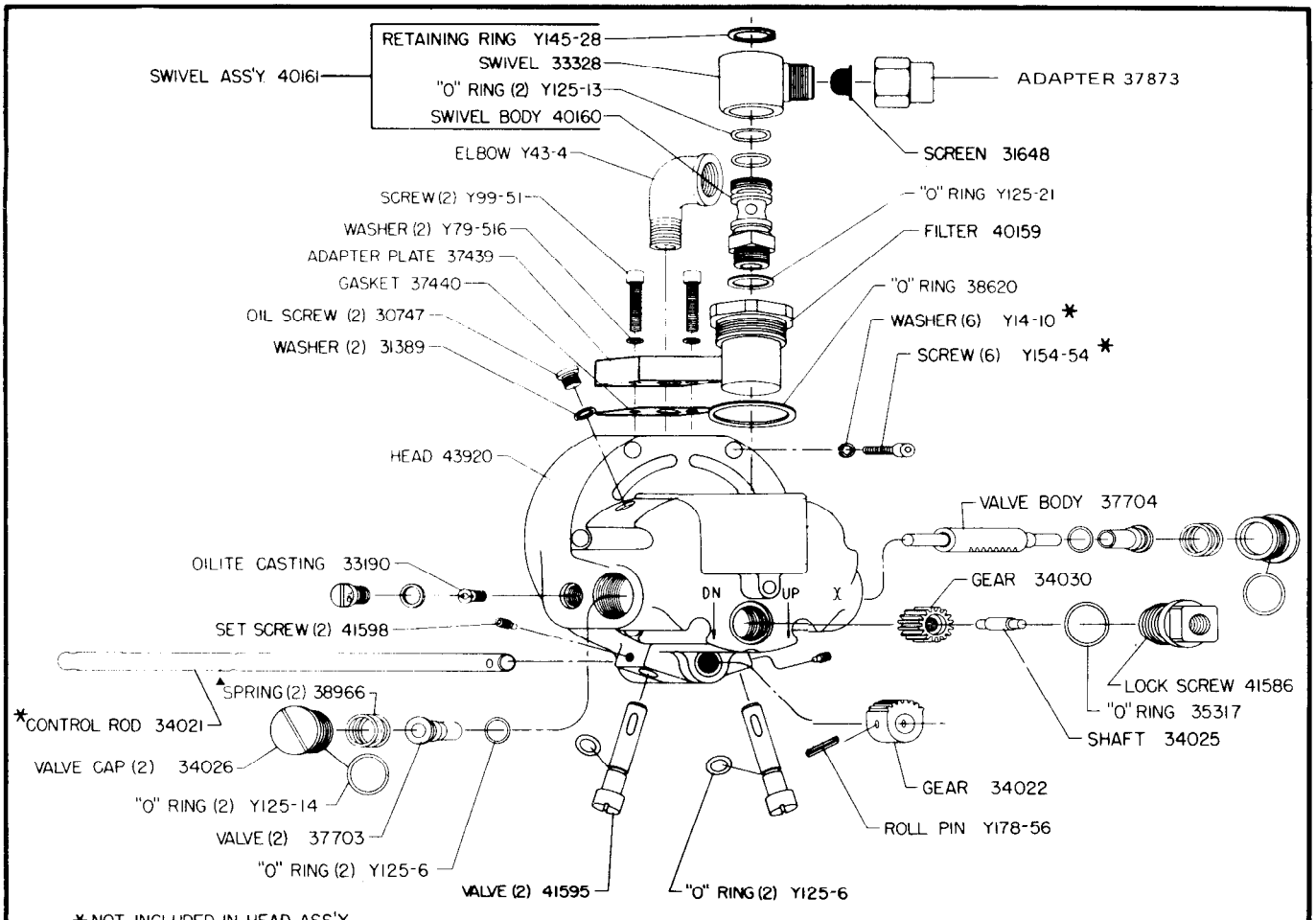
35203 Upper Hook Assembly for 1/4, 1/2 and 1 Ton, all chains.

PIPED EXHAUST

Exhaust from the air motor normally escapes into the room atmosphere, however, exhaust can be piped out of the room.

Any Aro Air Hoist can be furnished, at extra cost, with a modified head for piped exhaust. An exhaust hose (1/2" 12mm. 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."



*NOT INCLUDED IN HEAD ASS'Y.

▲ NOT USED WITH PENDENT CONTROL MODELS

43921-1 HEAD ASSEMBLY FOR PIPED EXHAUST