

YALE

FC-441

MIDGET KING

ELECTRIC HOIST

LINK AND ROLLER CHAIN
PUSH BUTTON AND CORD CONTROL

INSTRUCTION AND PARTS MANUAL

*THE PURPOSE OF THIS MANUAL IS TO HELP
YOU OBTAIN MAXIMUM SERVICE FROM
YALE HIGH QUALITY PRODUCTS*

IMPORTANT

SEE THAT THIS MANUAL
IS GIVEN TO PERSON
WHO WILL INSTALL
AND MAINTAIN
THIS EQUIPMENT

YALE HOISTING EQUIPMENT DIVISION
FORREST CITY, ARKANSAS 72335

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INSTALLATION AND OPERATION PUSH BUTTON TYPE UNITS

Before attempting to operate the hoist be sure the current supply corresponds to the name-plate rating.

On polyphase A. C. hoists, it is impossible to predetermine the direction of the hook travel before the unit is connected to the power lines. To insure correct operation of the safety limit stops it is very important to be sure that the hook travel is in the hoisting direction when the "up" button is pressed. If this is not so, interchange two of the line wires for three phase and two of the line wires of any one phase for two phase operation. If the hoist is operated with the wrong power line connections, the safety limit stops will be ineffective and serious damage may result. If the hoist does not operate in the proper direction, follow the instructions above. Do not attempt to rewire the push button.

With each unit, there is supplied a one pint can of Yale

gear oil. Before putting the hoist in operation add this lubricant to the gears through the filler plug in the gear case cover. Fill to the level of this plug.

After the proper line connections have been made, to operate the hoist, press the button marked "up" and the hook will travel in that direction. To lower the hook press the button marked "down" and the hook will travel in that direction.

The hoist is equipped with upper and lower safety limit stops operating on the controller shaft. These safety limit stops prevent the over-travel of the hook by returning the controller to the neutral position and applying the motor brake at the limit of the hook travel in either the hoisting or lowering direction. In the event of over-travel of the hook, the motor is automatically and momentarily reversed.

INSTALLATION AND OPERATION CORD CONTROLLED UNITS

Before attempting to operate the hoist be sure the current supply corresponds to the name-plate rating.

On polyphase A. C. hoists, it is impossible to predetermine the direction of the hook travel before the unit is connected to the power lines. To insure correct operation of the safety limit stops, it is very important to be sure that the hook travel is in the hoisting di-

rection when the "up" rope is pulled. If this is not so, interchange two of the line wires for three phase and two of the line wires of any one phase for two phase operation. If the hoist is operated with the wrong power line connections, the safety limit stops will be ineffective and serious damage may result.

With each unit, there is supplied a one pint can of Yale

gear oil. Before putting the hoist in operation, add this lubricant to the gears through the filler plug in the gear case cover. Fill to the level of this plug.

After the proper line connections have been made and the oil has been added, to operate the hoist, pull on the side of the control handle marked "up" and the hook will travel in that direction. To lower the hook pull on the side of the control

marked "down" and the hook will travel in that direction.

The hoist is equipped with upper and lower safety limit stops operating on the controller shaft. These safety limit stops prevent the over travel of the load hook by returning the controller to the neutral position and applying the motor brake at the limit of hook travel in either the hoisting or lowering direction. In the event of over-travel, the motor is automatically and momentarily reversed.

PERIODIC INSPECTION AND MAINTENANCE

LUBRICATION

GEARING

The gearing is lubricated by a continuous oil bath. For normal operating temperatures (above 20 degrees F and below 120 degrees F) use Yale gear oil number 0106091-00 (one pint) or

Esso Lube HDX50 formula 2115.

For temperatures above or below the normal operating temperatures consult the nearest lubrication engineer for the correct oil.

BEARINGS

All bearings used in the gear case are double shielded and are lubricated by the oil bath. All other bearings are double

sealed and lubricated for life. NOISY OR WORN OUT BEARINGS SHOULD BE REPLACED.

LOAD CHAIN

The load chain should be kept coated with a light oil to prevent rust and excessive wear. For proper lubrication, the chain should be removed from the unit and placed in an oil filled container to insure an

oil film is left between the bearing points of the links.

A very little lubricant will greatly increase the life of the chain, so the chain should not be allowed to run dry.

MOTOR BRAKE SHOE CAM

Apply a light grease to the contact points of the cam and adjusting screws.

CLUTCH MECHANISM (PUSH BUTTON UNITS ONLY)

The clutch mechanism should be lubricated with a light grease.

PREVENTIVE MAINTENANCE SCHEDULE

The preventive maintenance schedule is largely confined to a visual inspection of the unit. The periods between inspections will vary due to the wide range of duty cycles and

operating conditions encountered with this type of equipment. The following inspection periods are based on an operation of about forty hours per week under normal conditions.

DAILYLOAD CHAIN

Inspect the load chain for dirt and foreign matter. Slack the chain and observe the bearing surface between links. Inspect the dead end link assembly for signs of excessive wear or stretching.

Clean the chain in solvent and lubricate by placing the chain in an oil filled container. Replace any chain that is nicked, gouged, twisted or excessively worn. Be sure the chain links lie correctly in the load sheave.

HOOKS AND SUSPENSION ADAPTERS

Inspect all hooks for signs of cracking or opening.
LOWER HOOK MUST SWIVEL FREELY.

Be sure all suspension pins and nuts are tight.

MOTOR BRAKE SHOES

Check for excessive or uneven wear of the shoes. If one or both of the shoes are worn down

to the rivets, both shoes should be replaced.

MONTHLY**WIRING AND TERMINALS**

See that all connections are tight.

Terminals are to be securely crimped to wires and the insulation sound.

Bent terminals can usually be straightened to provide a tight fit.

Replace terminals or wire if

necessary.

Check the ground connections to see that wire cores from the push button cable and the power cord are secure.

Tighten the grounding screw and replace the lockwasher if it is missing.

SUSPENSION FRAME AND COVERS

Inspect the gear case, motor, and suspension frame to see that they are securely fastened and that no screws or lockwashers are missing. Tighten all screws and replace all missing or damaged hardware. Inspect all load bearing parts for cracks, par-

ticularly if the hoist has been dropped or bumped against a wall, I-Beam or other solid obstruction. A crack in these parts indicates mistreatment or severe overloading. Replace all damaged parts.

SEMI-ANNUALLY (DISCONNECT THE POWER CORD)**LOAD BRAKE DISCS**

Normally these do not have to be checked. A good indication of worn load brake discs is when a light load is placed on the hook and the motor brake is held open, the load descends rapidly. However, if duty cycles are severe, the load brake should be checked more often. Follow in-

structions for removal of gear case and load brake. Measure each brake disc. When new each disc measures 1/8" thick. If either one or both discs are worn 3/64" or more, then the ratchet and disc assembly should be replaced.

REVERSING DRUM SWITCH

Check contacts for worn tips, tips not making good contact,

and springs for undue distortion or breaks.

CHAIN GUIDES

Inspect the chain guides for wear or burring where the chain

enters the hoist. If worn, replace the guide.

**METHOD FOR DETERMINING REPLACEMENT OF
ROLLER TYPE LOAD CHAIN**

(1) Carefully inspect the chain for the following conditions:

- (a) Exceptionally loose joints.
- (b) Exceptionally tight or stiff joints.
- (c) Worn or broken rollers.
- (d) Bent, cracked or deformed side plates.
- (e) Kinks or twists over entire length of chain.
- (f) Extreme corrosion or rusting.

If visual inspection reveals any one of the above conditions, the chain should be replaced.

(2) If visual inspection reveals no defects:

- (a) Lay used chain on a flat

surface and measure with a vernier caliper over eight (8) rolls while the chain is pulled taut. The measurement should be taken in that portion of the chain which has most passed over the load sprocket.

- (b) Repeat step (a) above to measure a new chain of the "same make" as the used chain.

(c) Subtract the new chain measurement from the used chain and divide the result by seven (7). This is the elongation per pitch which is probably a combination of wear and stretch.

- (d) If the elongation per pitch is .004 to .005 inches or more it is recommended that the chain be replaced.

METHOD FOR DETERMINING REPLACEMENT OF

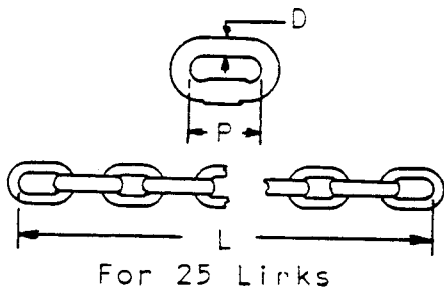
LINK TYPE LOAD CHAIN

The load chain should be lubricated with oil. Lubrication greatly increases the life of chain and reduces to a minimum the wear on the load sheave pockets. The load sheave pockets should be greased occasionally.

Periodical inspection and measurement of load chain, see figure 1, will indicate when replacement is necessary. Measure any 25 links as shown and if the chain is worn 1% longer than shown in the chart, the chain should be replaced.

Worn chain or worn load sheave pockets usually can be detected by the noise of the chain links sliding into the load sheave pockets.

When replacing a worn-out load sheave, test the load chain for worn links by running it over a new sheave or check the chain with the dimensions shown in figure 1. Worn chain should not be used with a new load sheave since this condition will soon wear out the new load sheave.



DIMENSION IN INCHES	
D	9/32
P	.792
L	20.340 ± .031

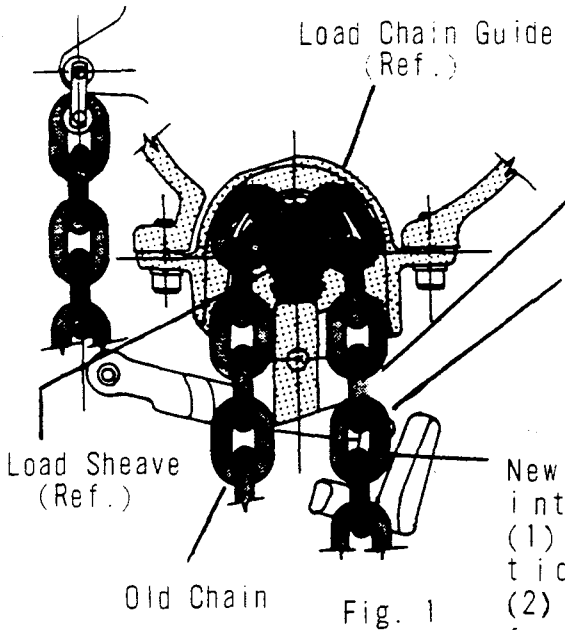
FIGURE 1

INSTRUCTIONS FOR INSTALLATION OF LINK TYPE CHAIN

With a pair of heavy alloy bolt cutters cut a vertical *link somewhere between bottom block and hoist.

With a grinder, grind thru case of chain and then with a hacksaw cut out a section of one of the horizontal *links (as shown in figure 2).

Slip first link of new chain thru cut out link making sure that (1) first link of new chain is a vertical *link and (2) weld on chain is facing outward from sheave.



- * Vertical Link - First Link of Chain to Sheave Pocket.
- * Horizontal Link - Second Link Laying in the Sheave Pocket.

Horizontal Cut Out Link

1st Link New Chain Must be in this position when entering sheave. Must have weld facing out.



(Fig. 2)

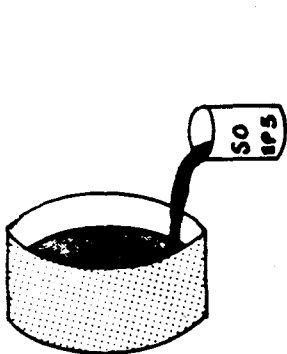
New Chain must be fed into Sheave with:
 (1) First Link in vertical position.
 (2) Weld facing outward from sheave.

Part No. 0625631-00 for 250 to 1000 lb. cap.

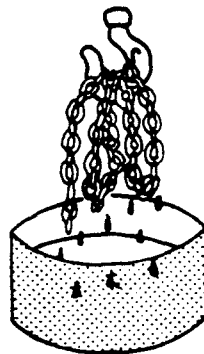
Part No. 0625632-00 for 2000 & 4000 lb. cap.

Before using Hoist with new chain installed check chain for twisting. If chain is twisted it was installed wrong.

LUBRICATION OF LINK CHAIN
 (Use Esso Pen-O-Led EP5 or Equivalent)

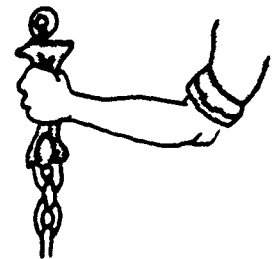


1. Place load chain in container. Then pour lubricating oil, completely covering chain.



2. Remove chain from container allowing excess oil to drain back into container.

3. Apply lubricated chain to sheave in hoist.



4. After chain is fastened to hoist, wipe off surface of chain with rag. This will make the outer surface of the chain clean and allow lubrication between link where lubrication is necessary.

TROUBLE SHOOTING GUIDE

(1) HOOK DOES NOT RESPOND TO PUSH BUTTON OR PULL ON CONTROL CORD

POSSIBLE CAUSE	REMEDY
Power failure in supply lines.	Check switches, circuit breakers and connections in the supply lines.
Wrong voltage or frequency.	Be sure all electrical characteristics are as listed on the hoist nameplate.
Loose or broken connections in the hoist or push button.	Disconnect the hoist from the power source. Remove the control cover and the push button cover. Check all connections and continuity of each wire.
Burned out solenoid (Push button units only.)	Check the coil for open or short circuit by isolating it and checking for continuity with an ohm meter or with the coil in series with a light or bell.
Drum switch contacts failing to make contact.	Disconnect the hoist from the power source. Check all contacts on the drum switch for burnt or bent tips.

(2) HOOK LOWERS BUT WILL NOT RAISE

POSSIBLE CAUSE	REMEDY
Excessive load.	Reduce loading to the capacity limit as indicated on the hoist nameplate.
Hoisting circuit open.	Check for loose connections.
Broken wire in push button (Push button units only.)	Check the continuity of each wire. If there is an internal break, replace the push button cord.
Motor centrifugal switch not operating. (Single phase only.)	Check connections to the switch and examine the centrifugal mechanism for loose or damaged parts. Replace parts as required.

(3) HOOK RAISES BUT WILL NOT LOWER

POSSIBLE CAUSE

REMEDY

Lower Circuit Open

Check for loose connections.

Broken Wire in Push Button (push button units only).

Check the continuity of each wire. If there is an internal break, replace the push button cord.

(4) HOOK DOES NOT STOP PROMPTLY

POSSIBLE CAUSE

REMEDY

Excessive load.

Reduce loading to the capacity limit of the hoist as indicated on the nameplate.

Load brake loose.

Reposition the stopwasher as shown in figure 2 page 11.

Brake discs worn or glazed.

Replace discs.

Ratchet pawl not releasing.

Check for tight fit of the pawl on the stud or the retainer stuck in the pawl. Replace pawl.

Motor brake slipping.

Replace brake shoes. Adjust the brake per paragraph in the disassembly instruction.

(5) MOTOR OVERHEATS

POSSIBLE CAUSE

REMEDY

Defective centrifugal switch.

Replace.

Defective centrifugal mechanism.

Replace motor assembly.

Defective capacitor.

Replace..

Rotor dragging in stator.

Tighten motor bolts and check for foreign matter between rotor stator.

Motor brake too tight.

Adjust the brake per paragraph in the disassembly procedures.

Low voltage.

Check voltage at power source.

RECOMMENDED SEQUENCE OF DISASSEMBLY

Before doing any maintenance work on the hoist read the following instructions thoroughly.

TO COMPLETELY DISASSEMBLE THE HOIST-----follow the disassembly procedures in the order they are listed.

TO DISASSEMBLE ANY ONE SPECIFIC PART OF THE HOIST (SUCH AS MOTOR LOAD BRAKE, ETC.)-----follow the instructions for that specific section.

PRELIMINARY DISASSEMBLY PROCEDURES

(1) Disassemble the end of the chain from where it dead ends to the gear case by removing the spring clip.

(2) Run the hoist in the down direction until the chain is completely off the load sheave.

(3) For convenience, remove the control ropes on cord controlled units.

CAUTION: BEFORE CONTINUING FURTHER WITH THE DISASSEMBLY, CUT OFF ALL POWER TO THE HOIST BY DISCONNECTING THE FEED LINE.

(4) The hoist should now be removed, if possible, from the working area and placed on a maintenance bench for further disassembly.

NOTE: NEVER DISASSEMBLE THE HOIST IN DIRTY SURROUNDINGS, NOR ALLOW DIRT, GRIT OR ANY OTHER FOREIGN MATERIAL TO GET ON THE WORKING PARTS OF THE HOIST OR INTO THE WORKING AREAS OF THESE PARTS.

(5) Drain the oil from the hoist by removing the drain plug from the gear case cover.

(6) Place the hoist on its side on a work bench or upside down in a vise. The vise may be tightened on the upper hook or swivel lug.

(7) Remove the drum switch cover on cord controlled units and the solenoid cover on push button units.

(8) Remove the hoist nameplate and the brake inspection cover.

(9) Disconnect and tag the motor leads and power cord at the drum switch. Loosen the motor lead wire clamp. On push button models remove the leads from the drum switch to the transformer (if necessary) and disconnect and tag all push button wires at the solenoids and transformer.

NOTE: TAGGING THE LEADS AND THEIR POINTS OF CONNECTION AS THEY ARE REMOVED WILL INSURE PROPER RECONNECTION AT THE TIME OF REASSEMBLY.

(10) Remove the push button pendant by loosening the locknut and unscrewing the strain reliever from the gear case cover.

TO REMOVE GEARING

(1) Remove the screws securing the gear case cover to the gear case.

NOTE: USE CAUTION WHEN REMOVING THE GEAR CASE COVER TO AVOID DAMAGE TO THE INTERMEDIATE PINION BEARING.

(2) Remove the gasket and clean the mating surfaces of the gear case and cover.

(3) Remove the outer intermediate pinion bearing.

(4) Remove the load sheave nut and slow speed gear.

(5) Remove the snap ring, washer, pawl, pawl spring retainer, and pawl return spring.

(6) Remove the intermediate pinion shaft and load brake assembly.

TO DISASSEMBLE THE LOAD BRAKE

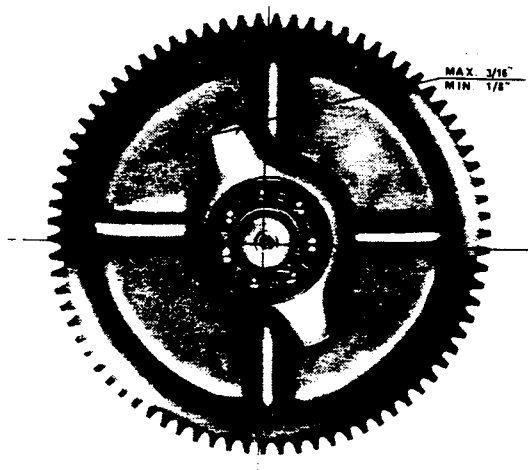


FIGURE 2

(1) If the load brake fails to hold it may be an indication that the brake discs are worn and need to be replaced.

(2) Remove the snap ring and ball bearing and pull the stop washer off.

(3) Unscrew the high speed gear from the brake disc hub. This will release the ratchet and disc assembly.

(4) The ratchet and discs must be purchased as an assembly and cannot be supplied separately.

TO REMOVE LOAD SHEAVE AND CHAIN GUIDE

(1) Follow steps 1 through 10 of the preliminary disassembly procedures and also the steps as outlined under "To Remove Gearing."

(2) Remove the limit paddle assembly, control connecting link, and controller lever.

(3) Remove the cotter pin stripper pin and stripper.

(4) Remove snap ring and load sheave assembly. The outer bearing may remain in the frame.

(5) Remove the chain guide by removing the two allen head screws and lockwashers.

TO REMOVE DRUM SWITCH

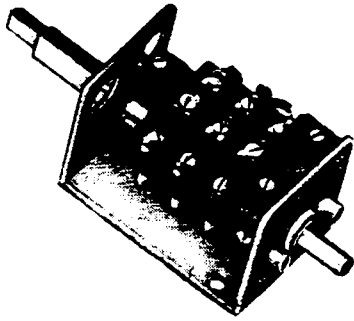


FIGURE 3

(1) On cord controlled units remove the drum switch by removing the four screws securing the switch to the gear case cover.

(2) On push button units remove the clips from the control chain sprocket. (NOTE: The clip must be discarded and replaced by a new one at reassembly). Remove the screw and lockwasher securing the clutch assembly to the drum switch and slide the clutch assembly off the shaft.

(3) On push button units remove the four screws securing the drum switch and by holding the solenoid plungers in the extreme upper position, slip the control chain off the shaft and remove the drum switch.

TO REMOVE CONTROL SOLENOIDS AND TRANSFORMER

(PUSH BUTTON UNITS ONLY)

(1) Remove the locknuts and screws securing the solenoids to the bracket.

(2) Remove the cotter pin, spacers and solenoid pin from where the control chain connects to the solenoid.

(3) Remove the three screws securing the solenoid bracket to the gear case cover.

NOTE: LOCKTITE IS APPLIED TO THESE THREE SCREWS AT THE FACTORY. IT MAY BE NECESSARY, BEFORE ATTEMPTING TO REMOVE THEM, TO APPLY HEAT WITH A TORCH TO BREAK SEAL. AT REASSEMBLY IT IS NECESSARY TO REAPPLY LOCKTITE.

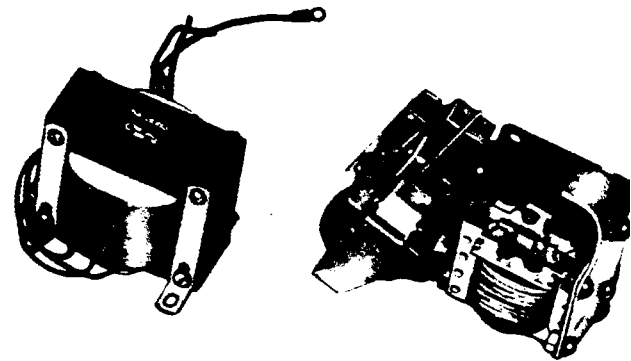


FIGURE 4

(4) Remove the transformer by removing the four screws securing it to the gear case cover.

NOTE: AT REASSEMBLY APPLY PERMATEX TO THE TOP TWO SCREWS TO PREVENT OIL LEAKS.

TO REMOVE THE MOTOR

(1) Follow steps 1 through 9 of the preliminary disassembly instructions.

(2) Remove the four thru-bolts from the motor and pull off the stator.

CAUTION: CARE SHOULD BE EXERCISED WHEN REMOVING THE MOTOR STATOR TO AVOID BENDING THE ROTOR OR DAMAGING THE STATOR WINDING.

(3) Open the brake shoes and pull out the rotor.

TO REMOVE THE MOTOR BRAKE

(1) Follow steps 1 through 6 of the preliminary disassembly procedures.

(2) If the motor has been removed, then remove the hex nut and lockwasher from one end of the double end stud and pull it out of the gear case. Then slide the brake shoes off the brake studs and remove them from the

hoist.

(3) If the motor has not been removed, then remove the hex nut and lockwasher from one end of the double end stud and remove the stud from the gear case.

(4) Slide the brake shoes off the drum and brake studs and remove the shoes from the hoist.

TO ADJUST THE MOTOR BRAKE

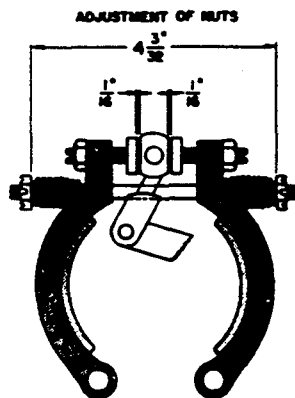


FIGURE 5

(1) If the bottom hook does not come to a quick stop when the

motor is de-energized the brake should be adjusted.

(2) Remove the top screw and loosen the bottom screw of the hoist name plate and the brake inspection cover.

(3) Adjust the gap between the adjusting screw and the cam to 1/16 inch.

(4) If greater braking is desired, tighten the spring tension but make sure that the spring does not bottom when the brake is fully released.

TO REMOVE THE UPPER HOOK

- (1) Drive out the driv-lok pin washer.
from the hook collar.
- (2) Remove the collar and thrust
- (3) Refer to page 38 for more information.

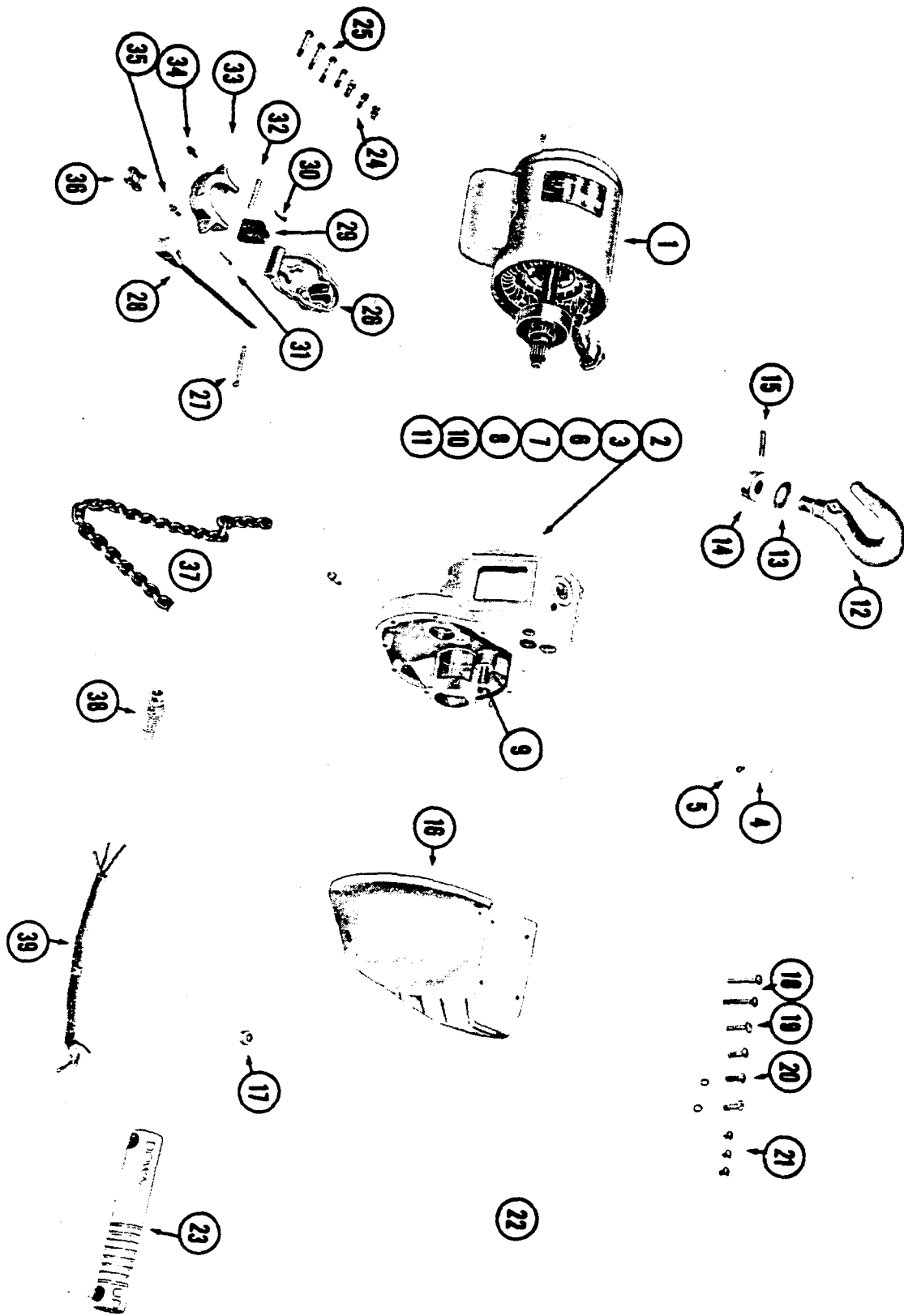
SEQUENCE OF REASSEMBLY

Reverse the instructions listed or damaged parts.
for reassembly replacing all worn

YALE

HOIST FRAME PARTS

CORD CONTROLLED - LINK CHAIN TYPE



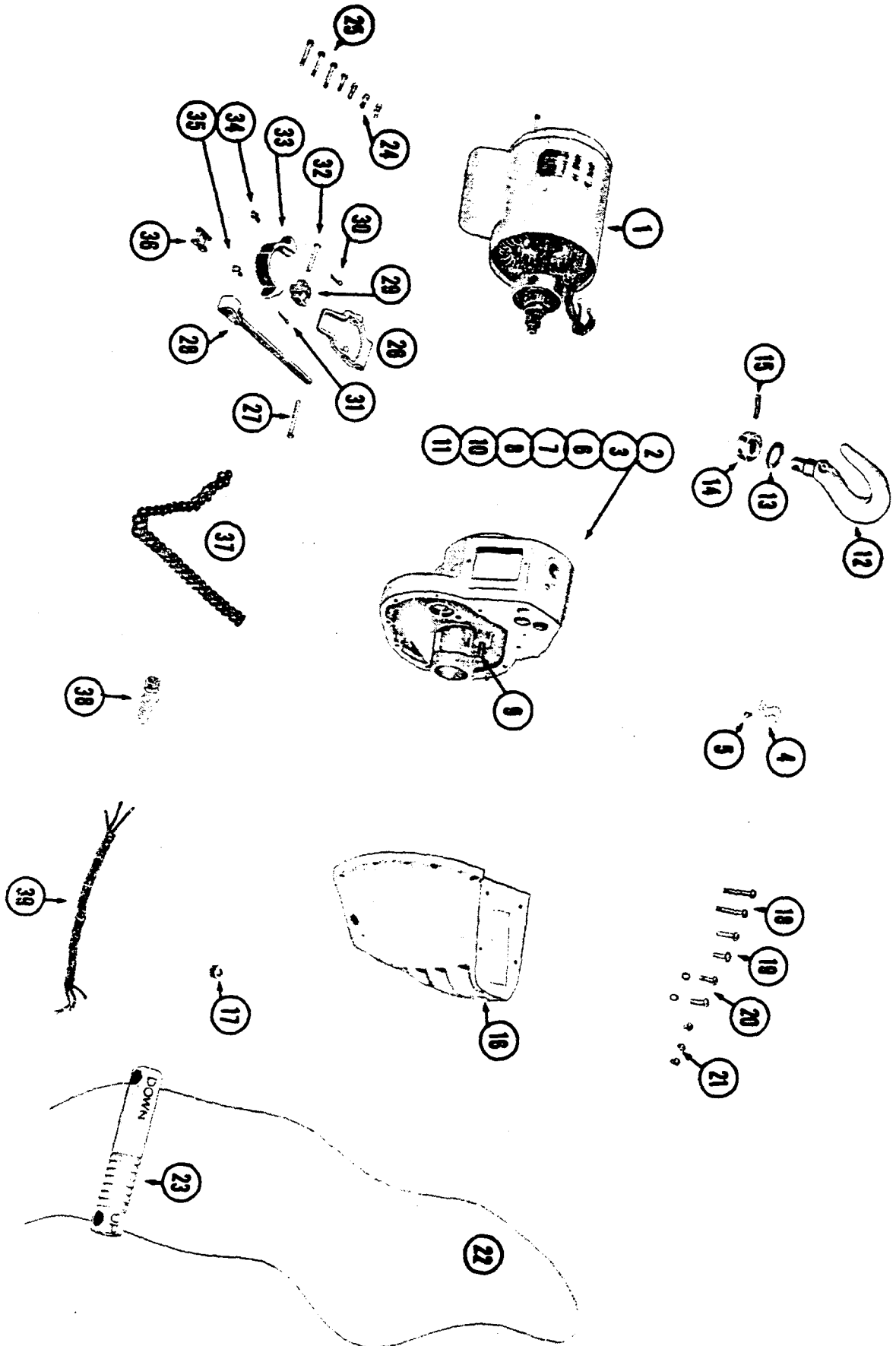
**HOIST FRAME PARTS
CORD CONTROLLED - LINK CHAIN TYPE**

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	See Motor Page	Hoist Motor.....	1
2	6414480-00	Gear Case Assembly For..... 1/4 And 1/2 Ton Units Only (Includes Items 3 Thru 15)	1
	6409800-00	Gear Case Assembly For..... 1 And 2 Ton Units Only (Includes Items 3 Thru 11)	1
3	*6400657-00	Gear Case (1/4 And 1/2 Ton Only)...	1
	*6400227-00	Gear Case (1 And 2 Ton Only).....	1
4	0103784-00	Conduit Clamp.....	1
5	0109463-00	Round Head Screw.....	1
6	0550311-00	Inner Paddle Stud (Not Shown).....	1
7	0106601-00	Hex Nut (Not Shown).....	1
8	0110026-00	Snap Ring (Not Shown).....	1
9	6404561-00	Brake And Pawl Stud.....	1
10	0110076-00	Brake Stud (Not Shown).....	1
11	0656193-00	Lockwasher (Not Shown).....	1
12	0544164-00	Top Hook (1/4 And 1/2 Ton).....	1
	0544159-00	Top Hook (1 Ton Only).....	1
13	0524153-00	Oilite Washer (1/4 And 1/2 Ton)...	1
	0544158-00	Oilite Washer (1 Ton Only).....	1
14	0544163-00	Hook Collar (1/4 And 1/2 Ton).....	1
	0544162-00	Hook Collar (1 Ton Only).....	1
15	0544160-00	Driv-Lok Pin (1/4 And 1/2 Ton).....	1
	0544161-00	Driv-Lok Pin (1 Ton Only).....	1
16	0595184-00	Gear Case Cover (1/4 Ton).....	1
	0595185-00	Gear Case Cover (1/2 Ton).....	1
	6431140-00	Gear Case Cover (1 Ton).....	1
	6431150-00	Gear Case Cover (2 Ton).....	1
17	0230825-00	Pipe Plug.....	1
18	0147462-00	Round Head Screw.....	2
19	0109453-00	Round Head Screw.....	1
20	6400419-00	Round Head Sems Screw.....	2
21	0109486-00	Round Head Screw.....	3
22	0113551-00	Control Rope.....	1
23	0113554-00	Control Handle.....	1
24	0109453-00	Round Head Screw.....	4
25	0638973-00	Round Head Screw.....	3
26	6426320-00	Limit Paddle Assembly.....	1
27	0106945-00	Control Connecting Pin.....	1
28	0118425-00	Control Lever Assembly.....	1
29	6410473-00	Stripper.....	1
30	0102806-00	Cotter Pin.....	1
31	0102782-00	Cotter Pin.....	1
32	0106946-00	Stripper Pin.....	1
33	6402943-00	Load Chain Guide.....	1
34	0147462-00	Allen Head Screw.....	2
35	0114113-00	Lockwasher.....	2
36	0118590-00	Coupler Link (Slack Chain End)....	1
37	**6412208-00	Load Chain (11 Ft.).....	1
	**6412218-00	Load Chain (22 Ft.).....	1
38	0103717-00	Strain Reliever.....	1
39	0628173-00	Power Cord.....	1

* These items cannot be purchased separately. They must be purchased as an assembly under the part number listed as Item 2.

** For other than standard lengths of load chain, specify Part Number 6409898-00 and the length desired.

YALE
HOIST FRAME PARTS
CORD CONTROLLED - ROLLER CHAIN TYPE



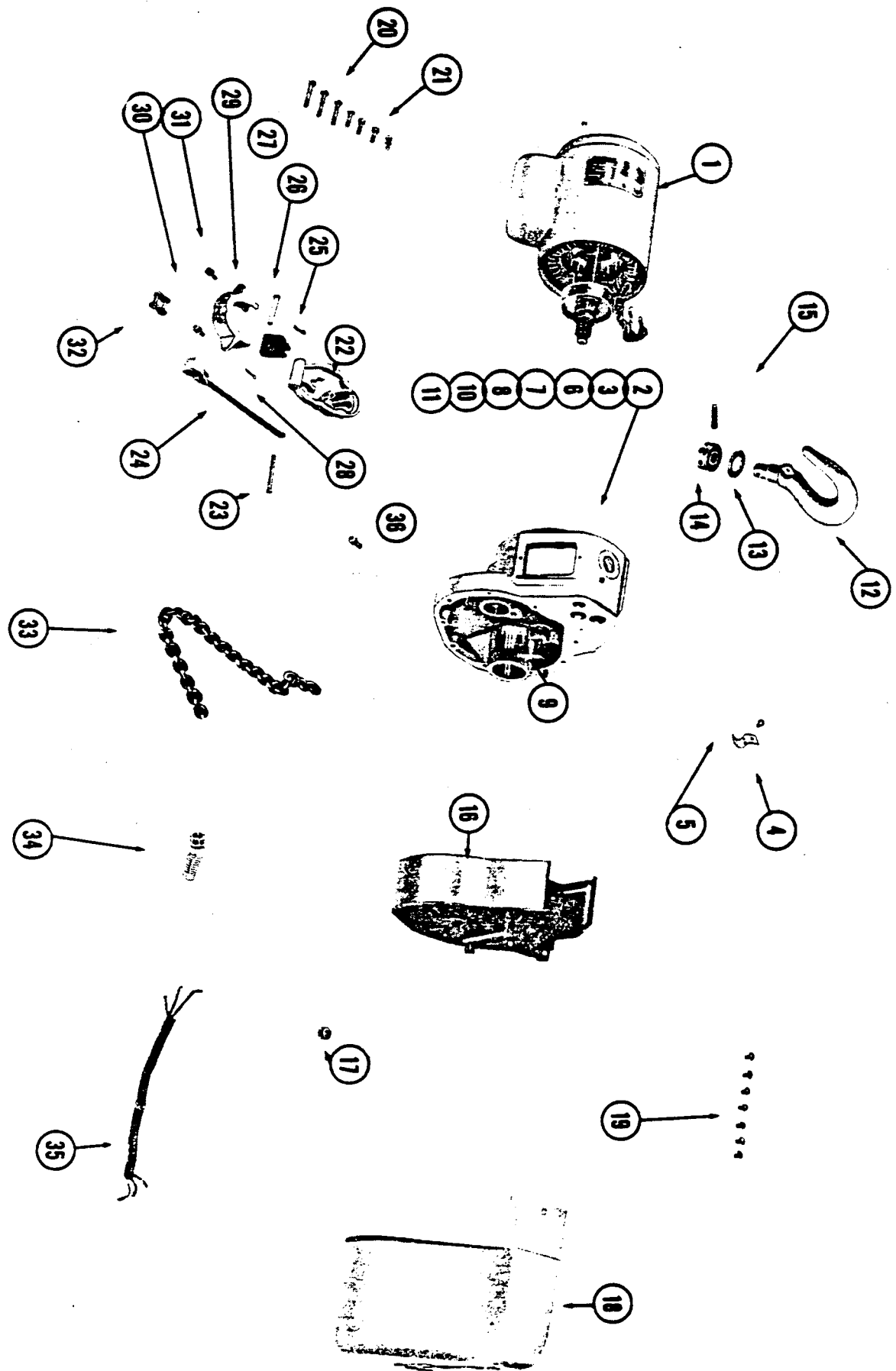
HOIST FRAME PARTS
CORD CONTROLLED - ROLLER CHAIN TYPE

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	See Motor Page	Hoist Motor.....	1
2	6414480-00	Gear Case Assembly For..... 1/4 And 1/2 Ton Units Only (Includes Items 3 Thru 15)	1
	6409800-00	Gear Case Assembly For..... 1 And 2 Ton Units Only (Includes Items 3 Thru 11)	1
3	*6400657-00	Gear Case (1/4 And 1/2 Ton Only)..	1
	*6400227-00	Gear Case (1 And 2 Ton Only).....	1
4	0103784-00	Conduit Clamp.....	1
5	0109463-00	Round Head Screw.....	1
6	0550311-00	Inner Paddle Stud (Not Shown)....	1
7	0106601-00	Hex Nut (Not Shown).....	1
8	0110026-00	Snap Ring (Not Shown).....	1
9	6404561-00	Brake And Pawl Stud.....	1
10	0110076-00	Brake Stud (Not Shown).....	1
11	0656193-00	Lockwasher (Not Shown).....	1
12	0544164-00	Top Hook (1/4 And 1/2 Ton).....	1
	0544159-00	Top Hook (1 Ton Only).....	1
13	0524153-00	Oilite Washer (1/4 And 1/2 Ton)..	1
	0544158-00	Oilite Washer (1 Ton Only).....	1
14	0544163-00	Hook Collar (1/4 And 1/2 Ton)....	1
	0544162-00	Hook Collar (1 Ton Only).....	1
15	0544160-00	Driv-Lok Pin (1/4 And 1/2 Ton)...	1
	0544161-00	Driv-Lok Pin (1 Ton Only).....	1
16	0595184-00	Gear Case Cover (1/4 Ton).....	1
	0595185-00	Gear Case Cover (1/2 Ton).....	1
	6431140-00	Gear Case Cover (1 Ton).....	1
	6431150-00	Gear Case Cover (2 Ton).....	1
17	0230825-00	Pipe Plug.....	1
18	0147462-00	Round Head Screw.....	2
19	0109453-00	Round Head Screw.....	1
20	6400419-00	Round Head Screw.....	2
21	0109486-00	Round Head Screw.....	3
22	0113551-00	Control Rope.....	1
23	0113554-00	Control Handle.....	1
24	0109453-00	Round Head Screw.....	4
25	0638973-00	Round Head Screw.....	3
26	6426310-00	Limit Paddle Assembly.....	1
27	0106945-00	Control Connecting Pin.....	1
28	0118425-00	Control Lever Assembly.....	1
29	6401761-00	Stripper.....	1
30	0102806-00	Cotter Pin.....	1
31	0102782-00	Cotter Pin.....	1
32	0106946-00	Stripper Pin.....	1
33	6402963-00	Load Chain Guide.....	1
34	0147462-00	Allen Head Screw.....	2
35	0114113-00	Lockwasher.....	2
36	0118590-00	Coupler Link (Slack Chain End)...	1
37	**0118582-00	Load Chain (11 Ft.).....	1
	**0641146-00	Load Chain (22 Ft.).....	1
38	0103717-00	Strain Reliever.....	1
39	0628173-00	Power Cord.....	1

* These items cannot be purchased separately. They must be purchased as an assembly under the part number listed as Item 2.

** For other than standard lengths of load chain, specify Part Number 0034267-00 and length desired.

YALE
HOIST FRAME PARTS
PUSH BUTTON - LINK CHAIN TYPE



HOIST FRAME PARTS
PUSH BUTTON - LINK CHAIN TYPE

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	See Motor Page	Motor Assembly.....	1
2	6414480-00	Gear Case Assembly For..... 1/4 And 1/2 Ton Units Only (Includes Items 3 Thru 15)	1
	6409800-00	Gear Case Assembly For..... 1 And 2 Ton Units Only Includes Items (3 Thru 11)	1
3	*6400657-00	Gear Case (1/4 And 1/2 Ton Only).	1
	*6400227-00	Gear Case (1 And 2 Ton Only).....	1
4	0103784-00	Conduit Clamp.....	1
5	0109463-00	Round Head Screw.....	1
6	0550311-00	Inner Paddle Stud (Not Shown)....	1
7	0106601-00	Hex Nut (Not Shown).....	1
8	0110026-00	Snap Ring (Not Shown).....	1
9	6404561-00	Brake and Pawl Stud.....	1
10	0110076-00	Brake Stud (Not Shown).....	1
11	0656193-00	Lockwasher (Not Shown).....	1
12	0544164-00	Top Hook (1/4 And 1/2 Ton).....	1
	0544159-00	Top Hook (1 Ton Only).....	1
13	0524153-00	Oilite Washer (1/4 And 1/2 Ton)..	1
	0544158-00	Oilite Washer (1 Ton Only).....	1
14	0544163-00	Hook Collar (1/4 And 1/2 Ton)....	1
	0544162-00	Hook Collar (1 Ton Only).....	1
15	0544160-00	Driv-Lok Pin (1/4 And 1/2 Ton)....	1
	0544161-00	Driv-Lok Pin (1 Ton Only).....	1
16	6402076-00	Gear Case Cover.....	1
17	0230825-00	Pipe Plug.....	1
18	6431880-00	Solenoid Cover (1/4 Ton).....	1
	6431890-00	Solenoid Cover (1/2 Ton).....	1
	6431900-00	Solenoid Cover (1 Ton).....	1
	6431910-00	Solenoid Cover (2 Ton).....	1
19	6400419-00	Rd. Hd. Screw.....	6
20	0638973-00	Rd. Hd. Screw.....	3
21	0109453-00	Rd. Hd. Screw.....	4
22	6426320-00	Limit Paddle Assembly.....	1
23	0106945-00	Control Connecting Pin.....	1
24	0118425-00	Control Lever Assembly.....	1
25	6410473-00	Stripper.....	1
26	0102806-00	Cotter Pin.....	1
27	0106946-00	Stripper Pin.....	1
28	0102782-00	Cotter Pin.....	1
29	6402943-00	Load Chain Guide.....	1
30	0147462-00	Allen Head Screw.....	2
31	0114113-00	Lockwasher.....	2
32	0118590-00	Coupler Link (Slack Chain End)...	1
33	**6412208-00	Load Chain (11 Ft.).....	1
	**6412218-00	Load Chain (22 Ft.).....	1
34	0103717-00	Strain Reliever.....	1
35	0628173-00	Power Cord.....	1
36	0109488-00	Phillips Head Screw.....	1

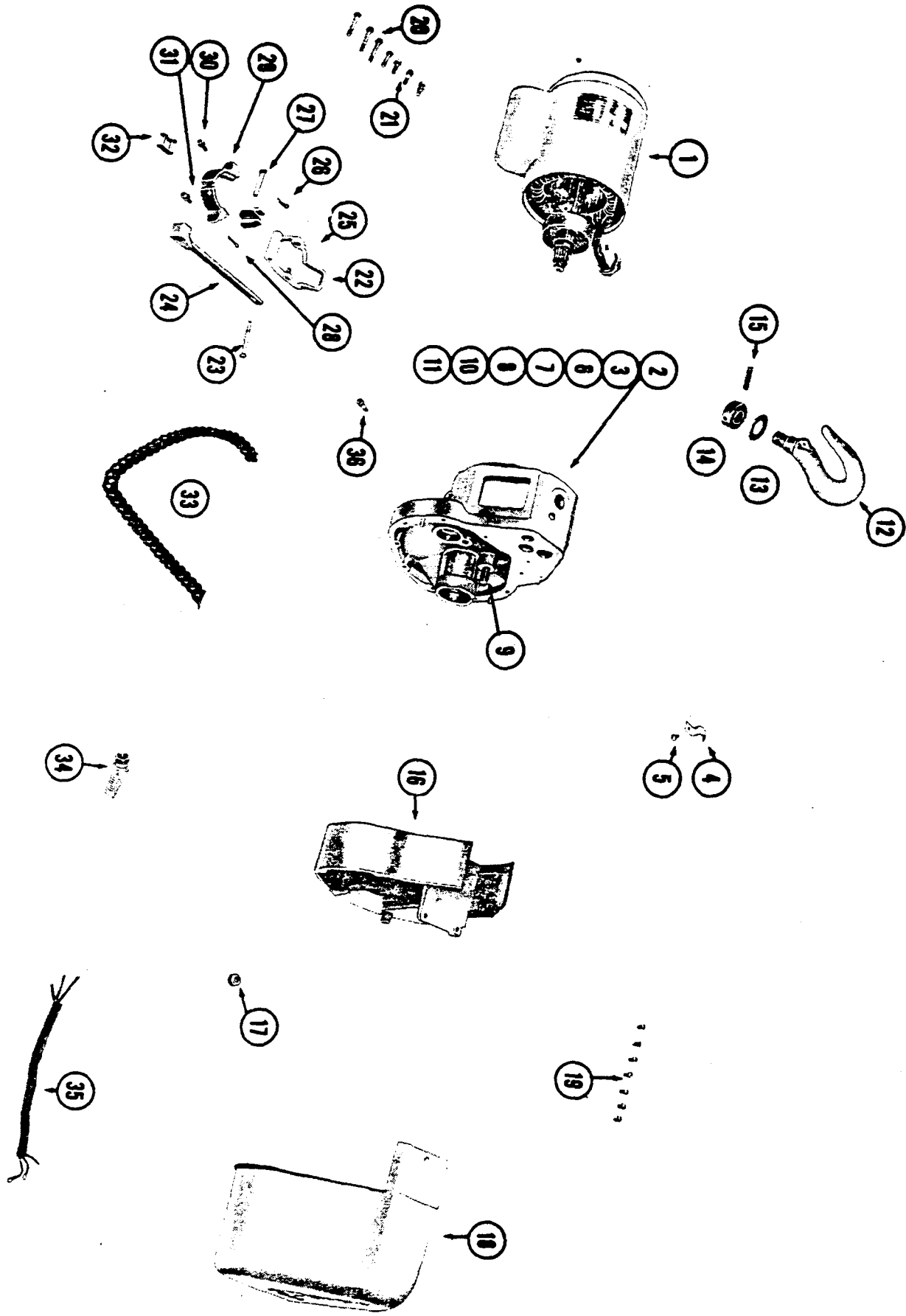
* These items cannot be purchased separately. They must be purchased as an assembly under the part number listed as Item 2.

** For other than standard lengths of load chain, specify Part Number 6409898-00 and length desired.

YALE

HOIST FRAME PARTS

PUSH BUTTON - ROLLER CHAIN TYPE



HOIST FRAME PARTS
 PUSH BUTTON - ROLLER CHAIN TYPE

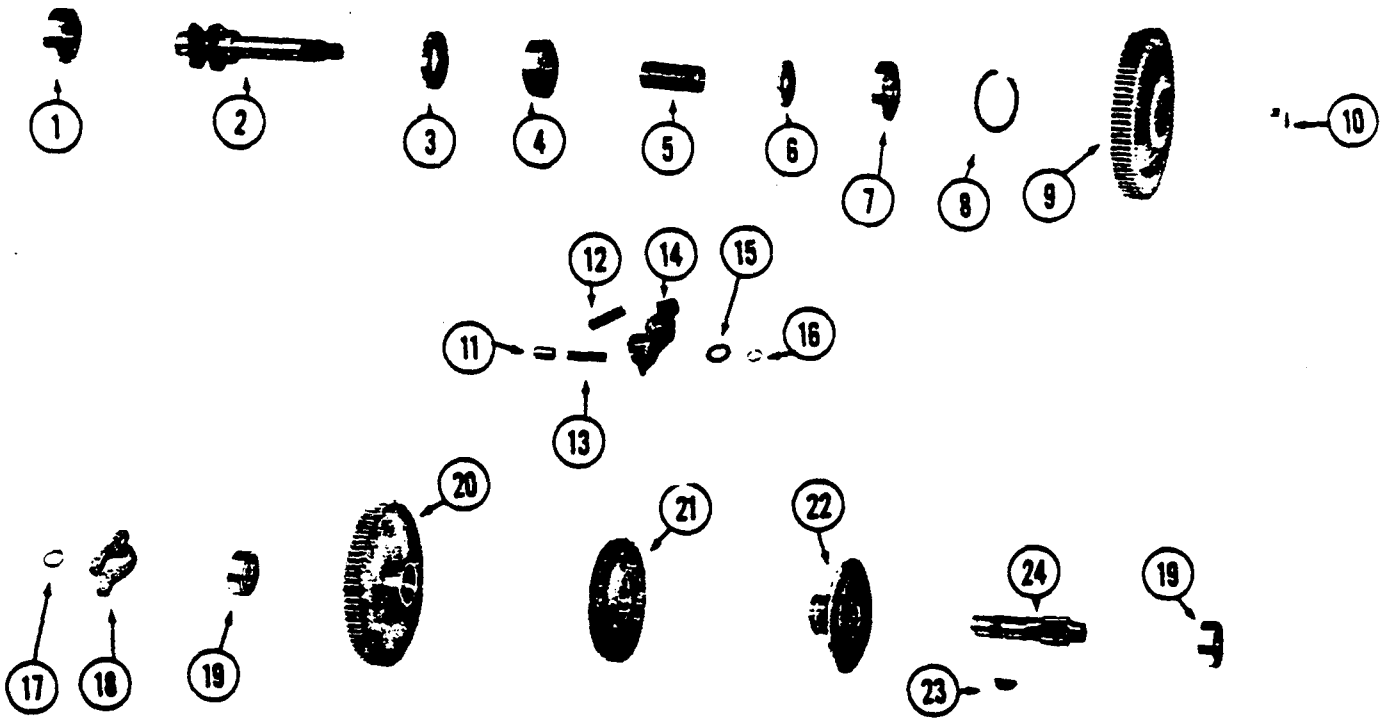
ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	See Motor Page	Motor Assembly.....	1
2	6414480-00	Gear Case Assembly For..... 1/4 And 1/2 Ton Units Only (Includes Items 3 Thru 15)	1
	6409800-00	Gear Case Assembly For..... 1 And 2 Ton Units Only (Includes Items 3 Thru 11)	1
3	*6400657-00	Gear Case (1/4 And 1/2 Ton).....	1
	*6400227-00	Gear Case (1 And 2 Ton).....	1
4	0103784-00	Conduit Clamp.....	1
5	0109463-00	Round Head Screw.....	1
6	0550311-00	Inner Paddle Stud (Not Shown)...	1
7	0106601-00	Hex Nut (Not Shown).....	1
8	0110026-00	Snap Ring (Not Shown).....	1
9	6404561-00	Brake And Pawl Stud.....	1
10	0110076-00	Brake Stud (Not Shown).....	1
11	0656193-00	Lockwasher (Not Shown).....	1
12	0544164-00	Top Hook (1/4 And 1/2 Ton).....	1
	0544159-00	Top Hook (1 Ton Only).....	1
13	0524153-00	Oilite Washer (1/4 And 1/2 Ton)...	1
	0544158-00	Oilite Washer (1 Ton Only).....	1
14	0544163-00	Hook Collar (1/4 And 1/2 Ton)...	1
	0544162-00	Hook Collar (1 Ton Only).....	1
15	0544160-00	Driv - Lok Pin (1/4 And 1/2 Ton)	1
	0544161-00	Driv - Lok Pin (1 Ton Only).....	1
16	6402076-00	Gear Case Cover.....	1
17	0230825-00	Pipe Plug.....	1
18	6431880-00	Solenoid Cover (1/4 Ton).....	1
	6431890-00	Solenoid Cover (1/2 Ton).....	1
	6431900-00	Solenoid Cover (1 Ton).....	1
	6431910-00	Solenoid Cover (2 Ton).....	1
19	6400419-00	Round Head Screw.....	6
20	0638973-00	Round Head Screw.....	3
21	0109453-00	Round Head Screw.....	4
22	6426310-00	Limit Paddle Assembly.....	1
23	0106945-00	Control Connecting Pin.....	1
24	0118425-00	Control Lever Assembly.....	1
25	6401761-00	Stripper.....	1
26	0102806-00	Cotter Pin.....	1
27	0106946-00	Stripper Pin.....	1
28	0102782-00	Cotter Pin.....	1
29	6402963-00	Load Chain Guide.....	1
30	0147462-00	Allen Head Screw.....	2
31	0114113-00	Lockwasher.....	2
32	0118590-00	Coupler Link (Slack Chain End)..	1
33	**0118582-00	Load Chain (11 Ft.).....	1
	**0641146-00	Load Chain (22 Ft.).....	1
34	0103717-00	Strain Reliever.....	1
35	0628173-00	Power Cord.....	1
36	0109488-00	Phillips Head Screw.....	1

* These items cannot be purchased separately. They must be purchased as an assembly under the part number listed as Item 2.

** For other than standard lengths of load chain, specify Part Number 0034267-00 and length desired.

YALE

GEARING AND LOAD SHEAVE PUSH BUTTON AND CORD CONTROLLED - LINK CHAIN TYPE

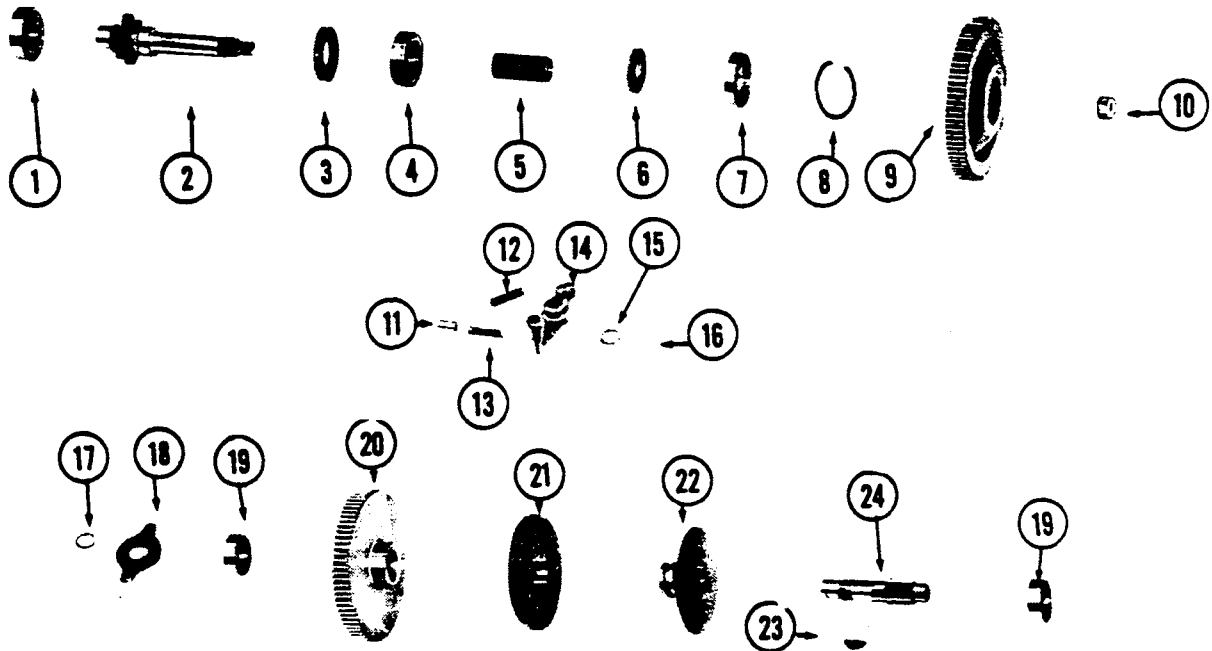


ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	0151201-00	Ball Bearing.....	1
2	6403013-00	Load Sheave.....	1
3	5001459-04	Garlock Seal.....	1
4	5005059-01	Ball Bearing.....	1
5	6401911-00	Spacer.....	1
6	6403201-00	Thrust Washer.....	1
7	5005059-02	Ball Bearing.....	1
8	6400469-01	Snap Ring.....	1
9	See Gear Table	Slow Speed Gear.....	1
10	0106652-00	Stover Locknut.....	1
11	0107999-00	Pawl Spring Retainer.....	1
12	0110592-00	Pawl Return Spring.....	1
13	0110591-00	Pawl Spring.....	1
14	6401771-00	Ratchet Pawl.....	1
15	0114230-00	Washer.....	1
16	0110026-00	Snap Ring.....	1
17	0110030-00	Snap Ring.....	1
18	0114268-00	Stop Washer.....	1
19	0100835-00	Ball Bearing.....	2
20	See Gear Table	High Speed Gear.....	1
21	0107856-00	Ratchet And Disc Assembly.....	1
22	0107925-00	Brake Disc Hub.....	1
23	0116474-00	Woodruff Key.....	1
24	See Gear Table	Intermediate Pinion.....	1

GEAR TABLE						
ITEM NBR	SPEED IN FEET PER MINUTE					
	6	13	17	18	30	32
9	6402973-00	6402973-00	6402973-00	6402973-00	6402983-00	6402983-00
20	0104391-00	0104391-00	0104390-00	0104390-00	0104391-00	0104391-00
24	6402993-00	6402993-00	6402993-00	6402993-00	0104637-00	0104637-00

GEARING AND LOAD SPROCKET

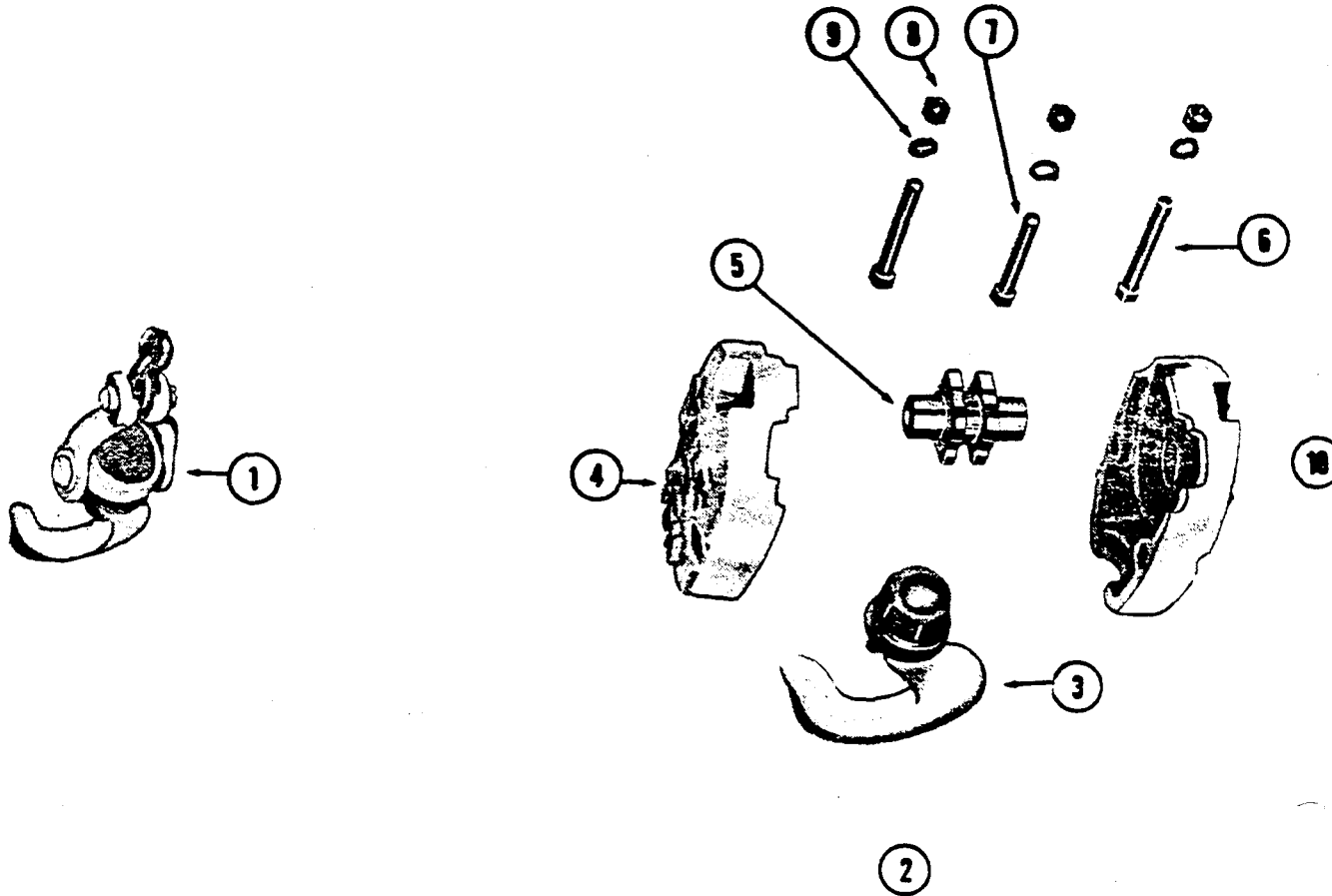
PUSH BUTTON AND CORD CONTROL - ROLLER CHAIN TYPE



ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	5005059-01	Ball Bearing.....	1
2	6403003-00	Load Sprocket.....	1
3	5001459-04	Garlock Seal.....	1
4	0151201-00	Ball Bearing.....	1
5	6401911-00	Spacer.....	1
6	6403201-00	Thrust Washer.....	1
7	5005059-02	Ball Bearing.....	1
8	6400469-01	Snap Ring.....	1
9	See Gear Table	Slow Speed Gear.....	1
10	0106652-00	Stover Lock Nut.....	1
11	0107999-00	Pawl Spring Retainer.....	1
12	0110592-00	Pawl Return Spring.....	1
13	0110591-00	Pawl Spring.....	1
14	6401771-00	Ratchet Pawl.....	1
15	0114230-00	Washer.....	1
16	0110026-00	Snap Ring.....	1
17	0110030-00	Snap Ring.....	1
18	0114268-00	Stop Washer.....	1
19	0100835-00	Ball Bearing.....	2
20	See Gear Table	High Speed Gear.....	1
21	0107856-00	Ratchet.....	1
22	0107925-00	Brake Disc Hub.....	1
23	0116474-00	Woodruff Key.....	1
24	See Gear Table	Intermediate Pinion.....	1

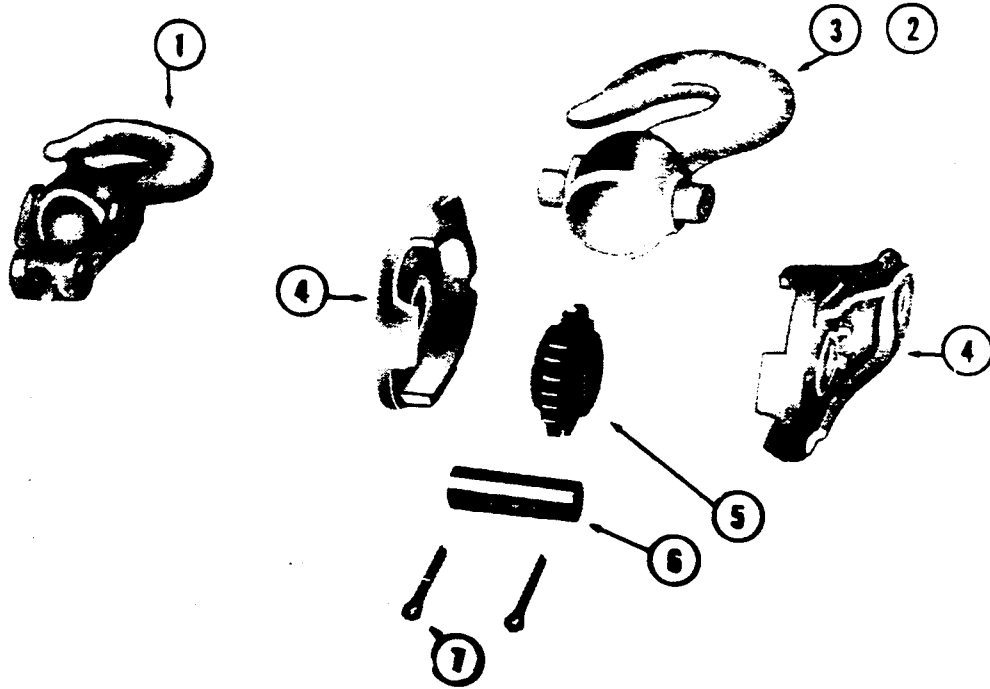
GEAR TABLE					
ITEM	SPEED IN FEET PER MINUTE				
	6	13	17	18	30
9	6402993-00	6402993-00	6402993-00	6402993-00	6402993-00
20	0104391-00	0104391-00	0104391-00	0104391-00	0104391-00
24	6402993-00	6402993-00	6402993-00	6402993-00	0104637-00

BOTTOM HOOK AND BLOCK ASSEMBLIES
LINK TYPE CHAIN HOISTS ONLY



ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	0104990-00	Bottom Hook Assembly For 1/4 & 1/2 Ton.....	1
	0564718-00	Bottom Hook Assembly With Safety Latch.....	1
		For 1/4 & 1/2 Ton (Not Shown)	
	0104985-00	Bottom Hook Assembly For 1 Ton Only.....	1
	0564719-00	Bottom Hook Assembly With Safety Latch.....	1
		(Not Shown) For 1 Ton Only	
2	6414700-00	Complete Bottom Block Assembly For 2 Ton... 1	
		Units Only (Includes Items 3 Thru 9)	
	6437160-00	Complete Bottom Block Assembly With Safety. 1	
		Latch For 2 Ton Units (Not Shown) (Includes	
		Items 3A,4,5,6,7,8 & 9)	
3	0545345-00	Bottom Hook Sub Assembly.....	1
3A	0559964-00	Bottom Hook Sub Assembly With Safety Latch. 1	
		(Not Shown)	
4	0566099-00	Bottom Block Half.....	2
5	6404853-00	Bottom Sheave.....	1
6	0146397-00	3/8 - 16 x 3" Hex Bolt.....	2
7	0109287-00	3/8 - 16 x 2-1/2" Hex Bolt.....	1
8	0106663-00	3/8 " Hex Nut.....	3
9	0150264-00	3/8" Lockwasher.....	3
10	0572813-00	Roller Bearing.....	2

**BOTTOM HOOK AND BLOCK ASSEMBLY
ROLLER CHAIN TYPE ONLY**

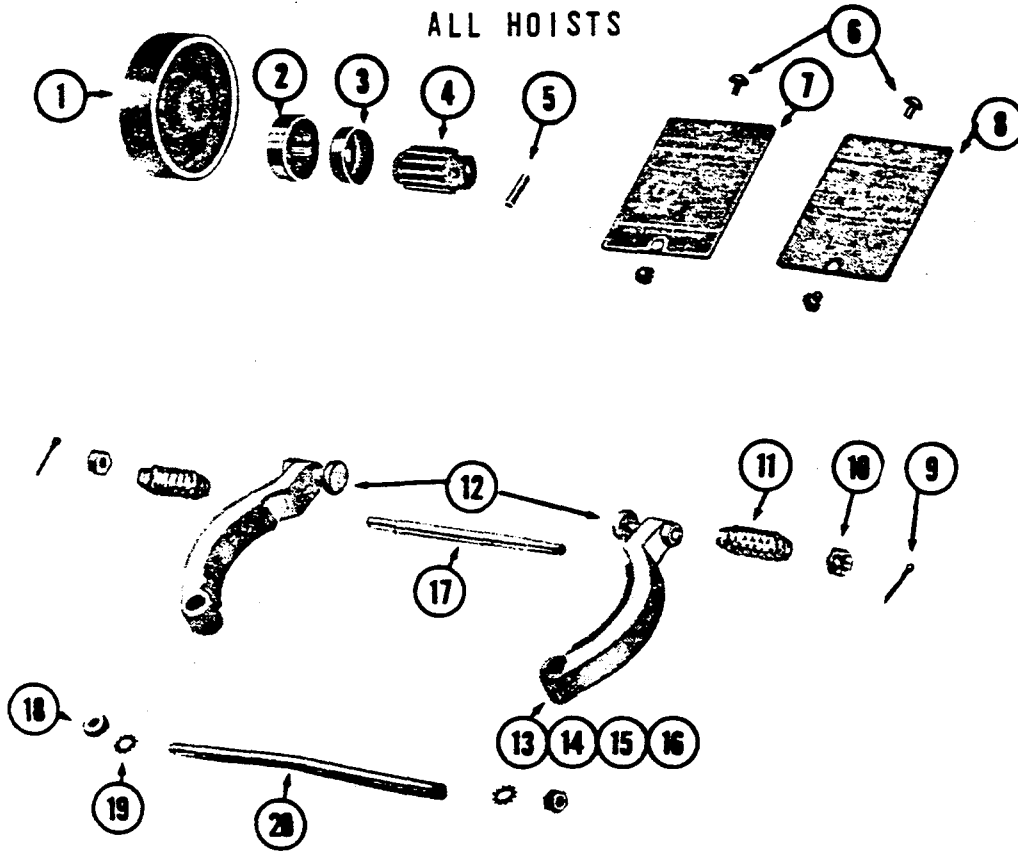


ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	6437130-00	Bottom Hook Assembly 1/4 & 1/2 Ton.....	1
		(Includes (1) 6404863-00 Hook Assembly & (1) 0118623-00 Connecting Link)	
	6437140-00	Bottom Hook Assembly With Safety Latch... (Not Shown) 1/4 & 1/2 Ton (Includes (1) 6404863-00 Hook Assembly, (1) 0118623-00 Connecting Link, (1) 0521639-00 Latch, (1) 0519458-00 Spring & (1) 0516332-00 Rivet)	1
	0104758-00	Bottom Hook Assembly (1 Ton).....	1
	0563766-00	Bottom Hook Assembly With Safety Latch (Not Shown) (Includes (1) 0331033-00 Hook Assembly, (1) 0331033-00 Spring, (1) 0515080-00 Rivet & (1) 0521640-00 Latch)	
2	0101392-00	Complete Bottom Block Assembly For 2 Ton. Units Only (Includes Items 3 Thru 7)	1
	0583909-00	Complete Bottom Block Assembly With Safety Latch (Not Shown) For 2 Ton Units Only (Includes Items 3A,4,5,6 & 7)	1
3	0104687-00	Hook & Crosshead Assembly.....	1
3A	0583910-00	Hook & Crosshead Assembly With Safety Latch	1
4	0101396-00	Bottom Block Half.....	2
5	0117846-00	Sprocket With Bushing.....	1
6	0106993-00	Pin.....	1
7	0102831-00	Cotter Pin.....	2

YALE

BRAKE SHOES AND ASSOCIATED PARTS

ALL HOISTS

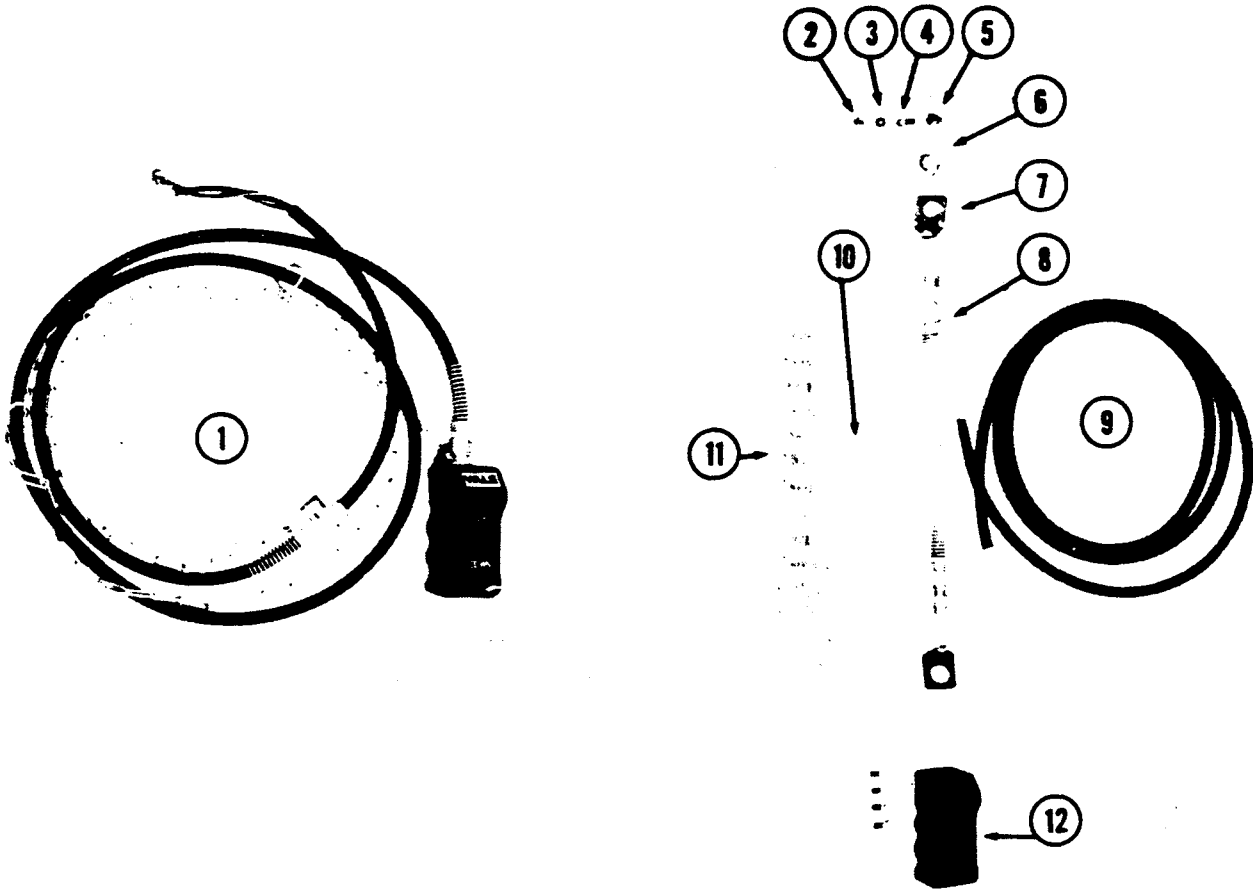


ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	0102446-00	Brake Drum.....	1
2	0100836-00	Ball Bearing.....	1
3	0573887-00	Oil Slinger.....	1
4	See Table	Motor Pinion.....	1
5	See Table	Motor Pinion Pin.....	1
6	0109453-00	Round Head Screw.....	4
7	0559762-00	Brake Inspection Cover.....	1
8	0102928-00	Hoist Name Plate.....	1
9	0102775-00	Cotter Pin.....	2
10	0106612-00	Slotted Hex Nut.....	2
11	0110596-00	Brake Spring.....	2
12	0109541-00	Brake Adjusting Screw.....	2
13	0102564-00	Brake Shoe And Lining Assembly. (Includes Items 14,15,And 16)..	2
14	0108042-00	Brass Rivet.....	6
15	0102523-00	Brake Lining.....	2
16	0102563-00	Brake Shoe.....	2
17	0100956-00	Brake Spring Stud.....	1
18	0106608-00	Hex Nut.....	2
19	0114113-00	Lockwasher.....	2
20	0100954-00	Double End Stud.....	1

MOTOR PINION AND PIN TABLE						
ITEM NBR.	SPEED IN FEET PER MINUTE					
	6	13	17	18	30	32
4	0104607-00	0104607-00	0104602-00	0104602-00	0104607-00	0104607-00
5	0106959-00	0106959-00	0106953-00	0106953-00	0106959-00	0106959-00

YALE
PUSH BUTTON ASSEMBLY

REPAIR PARTS

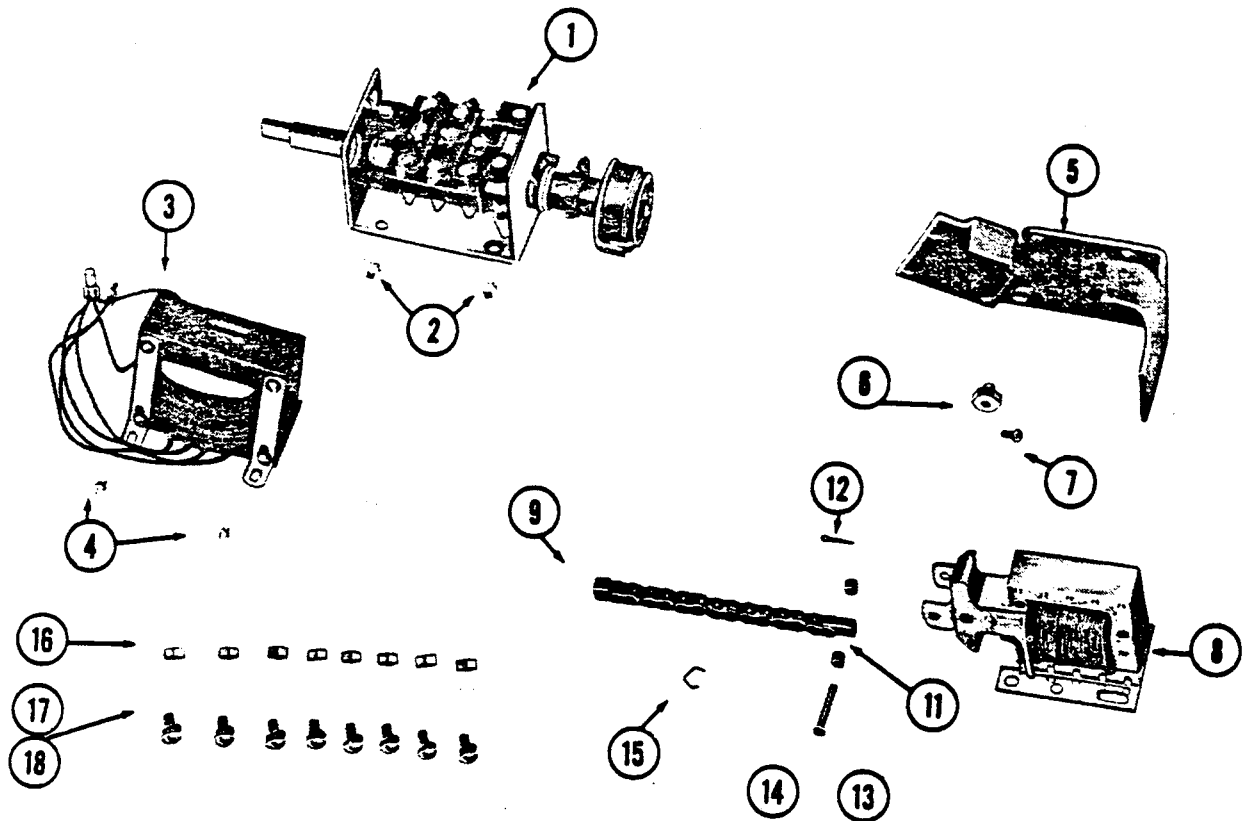


ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	6418350-00	Push Button Assembly - 10' Lift.....	1
*2	0109536-00	Screw.....	2
*3	0656193-00	Washer.....	2
4	0653541-00	Hy-Lug.....	5
5	0109539-00	Screw.....	1
6	0103739-00	Locknut.....	2
7	0103933-00	Hanger Bracket.....	2
8	0242931-00	Strain Reliever.....	2
9	0628174-00	Push Button Cord.....	1
10	0107225-00	Chain Hooks.....	2
11	0107222-00	Anchor Chain.....	7ft.
12	5030768-00	Push Button Station.....	1

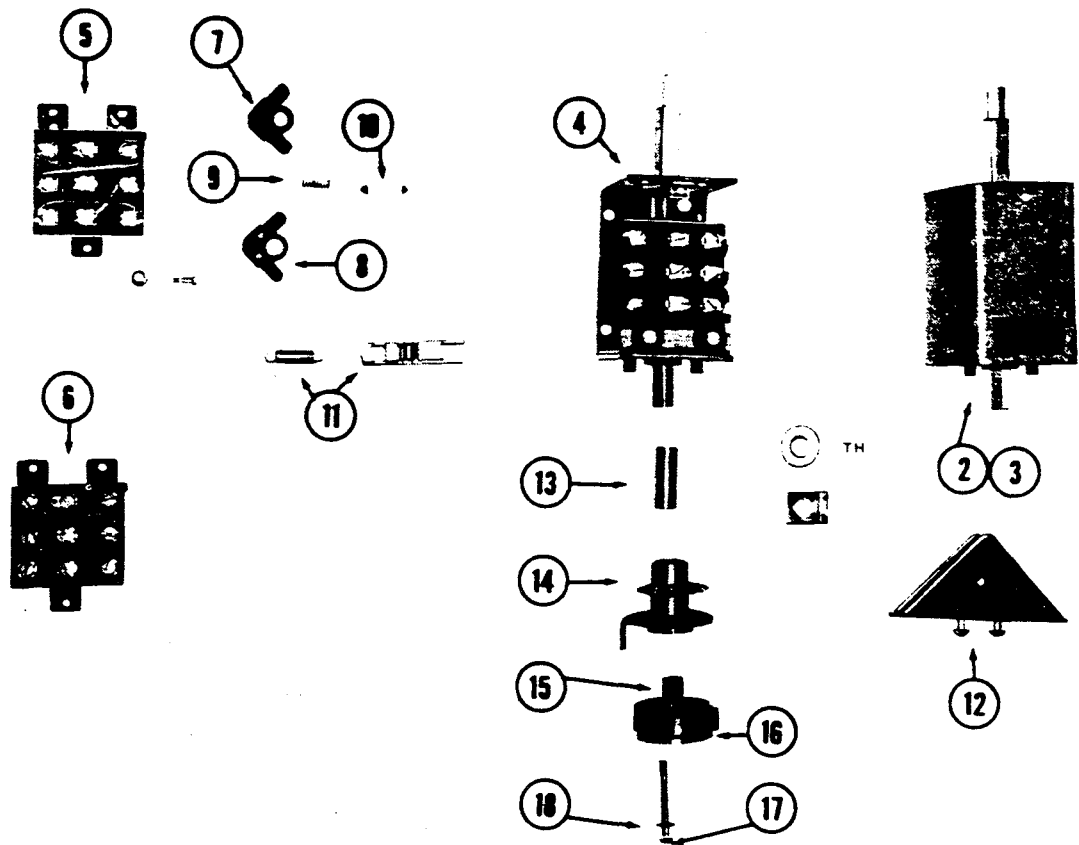
*One each of items 2 & 3 are used in push button station on ground connection.

YALE

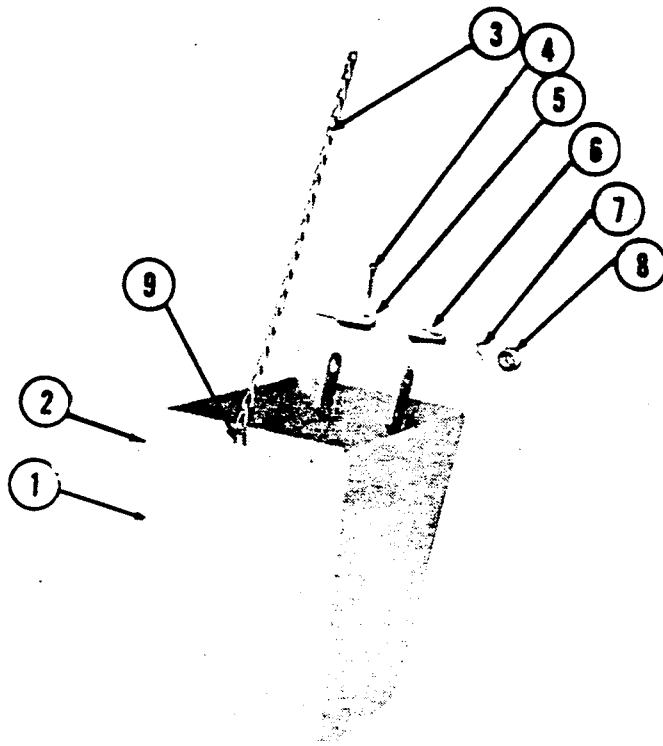
CONTROL COMPONENTS PUSH BUTTON TYPE HOISTS



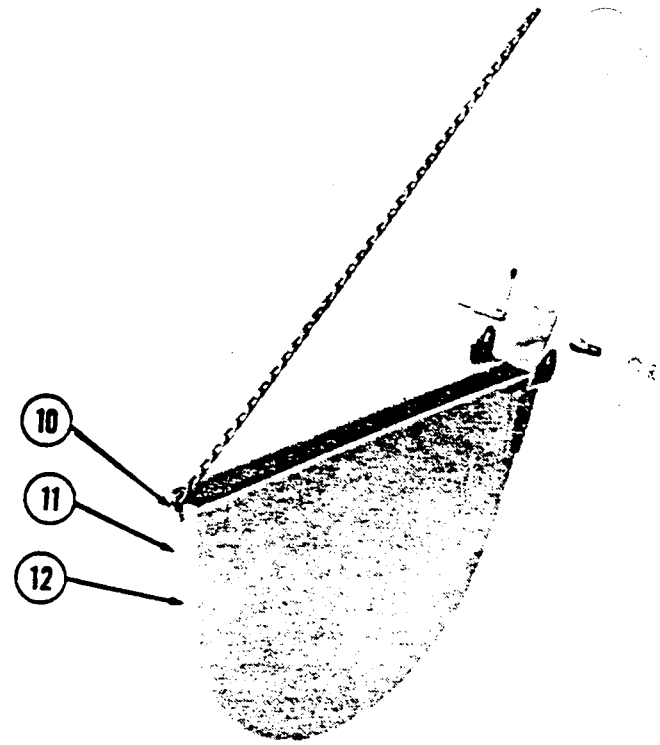
ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1		Reversing Drum Switch..... (See Reversing Switch Page)	1
2	6400429-00	Round Head Screw.....	4
3	6403053-00	Transformer 230/460 Volt Pri.....	1
	6406693-00	Transformer 575 Volt Pri.....	1
4	6400449-00	Round Head Screw.....	4
5	6403073-00	Solenoid Support.....	1
6	0109536-00	Special Ground Lug.....	1
7	0109539-00	Special Ground Screw.....	1
8	6403063-00	Solenoid.....	2
9	6423980-00	Control Chain Assembly..... (Includes (1) 6401831-00 Control Chain And (2) 6401841-00 Coupler Links)	1
10	6401851-00	Chain Support.....	1
11	6401891-00	Chain Anchor.....	1
12	0381435-00	Cotter Pin.....	2
13	6401901-00	Spacer.....	4
14	6404541-00	Solenoid Pin.....	2
15	6401821-00	Clip.....	1
16	0106610-00	1/4" Hex Nut.....	8
17	6400439-00	Round Head Screw.....	8
18	0114107-00	Lockwasher.....	8



ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	0635671-00	Wire Terminal (Not Shown).....	7
2	0113467-00	Reversing Switch with lever for D.C. or Poly Phase motors. (Cord type control).....	1
3	0504696-00	Reversing Switch with lever - For single Phase A. C. motors. (Cord type control).....	1
4	6403943-00	Reversing Switch for Push Button type Hoist.....	1
5	0504697-00	Stationary Contact Assembly complete with screws and springs for single phase A.C. Cord Control and Push Button types.).....	1
6	0103493-00	Stationary Contact Assembly complete with shoes and springs for D.C. and Poly Phase motors (Cord Control and push button types).....	1
7	0113512-00	Contacteur Arm L.H.....	4
8	0113513-00	Contacteur Arm R.H.....	3
9	0113491-00	Contact Spring.....	6
10	0113489-00	Movable Contact Finger.....	6
11	0113487-00	Star Wheel Roller and Lever with spring.....	1
12	0113483-00	Rope Lever.....	1
13	6403221-00	Clutch Bushing.....	1
14	6405193-00	Outer Clutch Ass'y.....	1
15	6405333-00	Inner Clutch Ass'y.....	1
16	6404783-00	Clutch Spring.....	1
17	0148768-00	#10-32 x 2" Rd. Hd. Screw.....	1
18	0114106-00	#10-Shake Proof Lockwasher.....	1



LINK TYPE



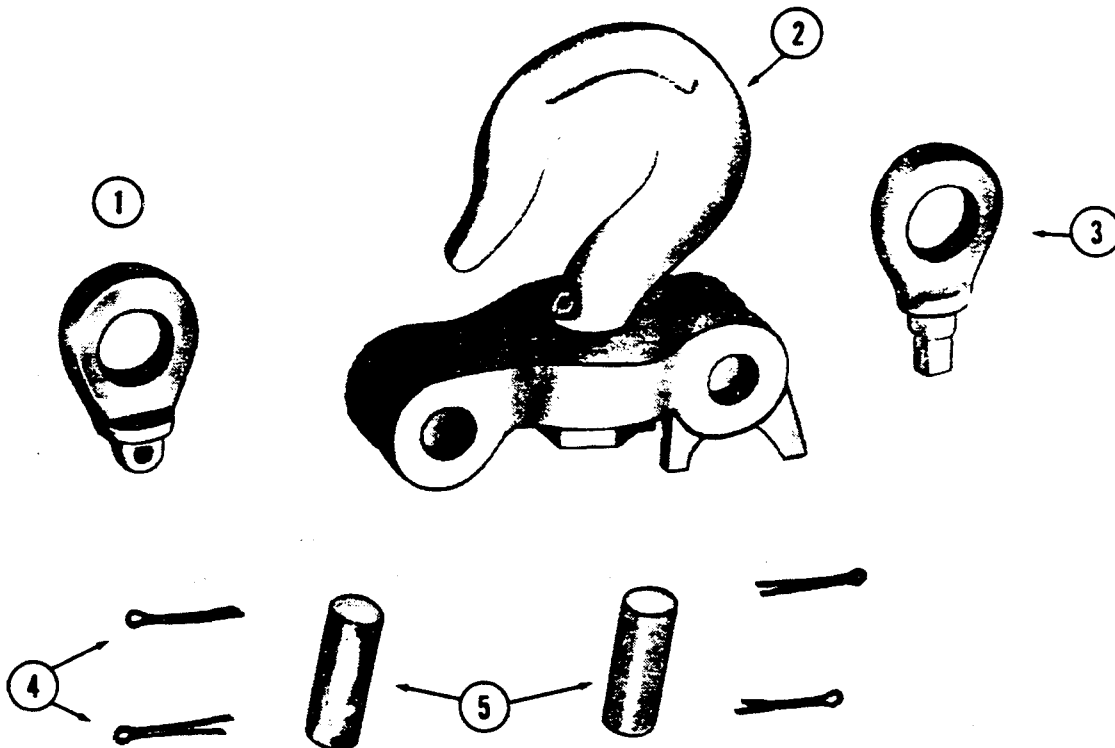
ROLLER TYPE



ANTI-ROTATING CLAMP. CAN BE RE-POSITIONED LEFT OR RIGHT 90° FROM POSITION AS SHOWN.

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	0583904-00	Link Type Chain Container Assembly, including special screws and sash chain (capacity 15 foot lift).....	1
2	0583905-00	Link Type Chain Container Assembly including special screws and sash chain (capacity 12-½' foot lift).....	1
3	0032587-00	Chain for Chain Container (11-½' x 9-½' long).....	1
4	0102806-00	Cotter Pin.....	1
5	0109573-00	Special Screw - long (for Chain Container).....	1
6	0109572-00	Special Screw - short (for Chain Container).....	1
7	0114128-00	Lockwasher 3/8".....	1
8	0106634-00	Hex Nut 3/8" - 16".....	1
9	0109453-00	Round Head Screw #10 - 24 x 5/16".....	1
10	0109454-00	Round Head Screw #10 - 24 x ½".....	1
11	0118522-00	Roller Type Chain Container Assembly including special screws and sash chain (capacity 15 foot lift).....	1
12	0118531-00	Roller Type Chain Container Assembly including special screws and sash chain (capacity 10 foot lift).....	1
13	0104843-00	Anti Rotating Clamp Assembly (can be re-positioned 90°) Two Clamps, Bolt and Nut.....	1

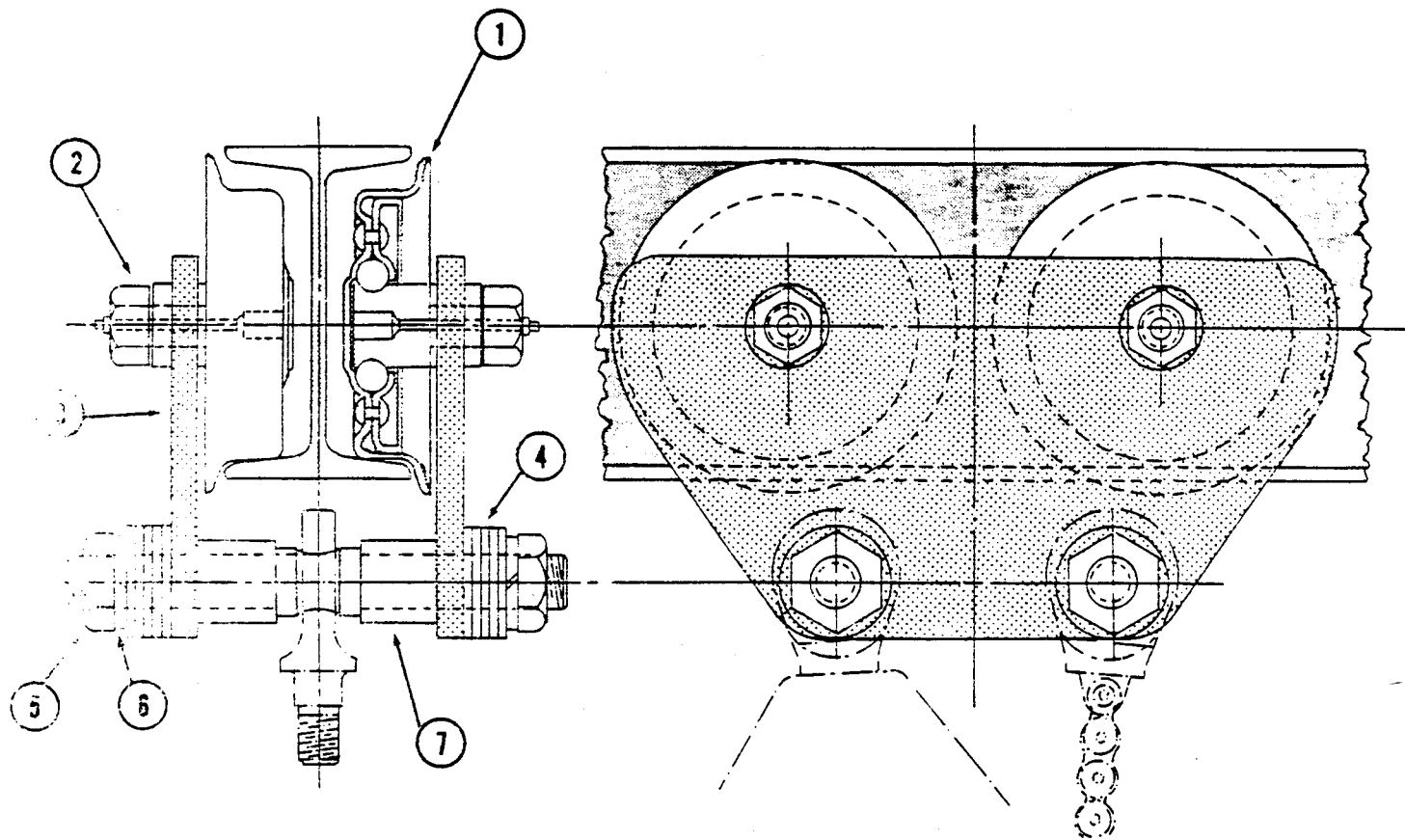
**TOP HOOK ADAPTER
2 TON UNITS ONLY**



ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	*0564764-00	Top Clevis.....	1
2	0616640-00	Top Hook.....	1
3	0539985-00	Chain Clevis.....	1
4	0102812-00	Cotter Pin.....	4
5	0106994-00	Pin.....	2

* 0544162-00 Hook Collar and 0544161-00, Driv-Lok Pin must be replaced with 0564764-00 Top Clevis (Not Serviced Separately).

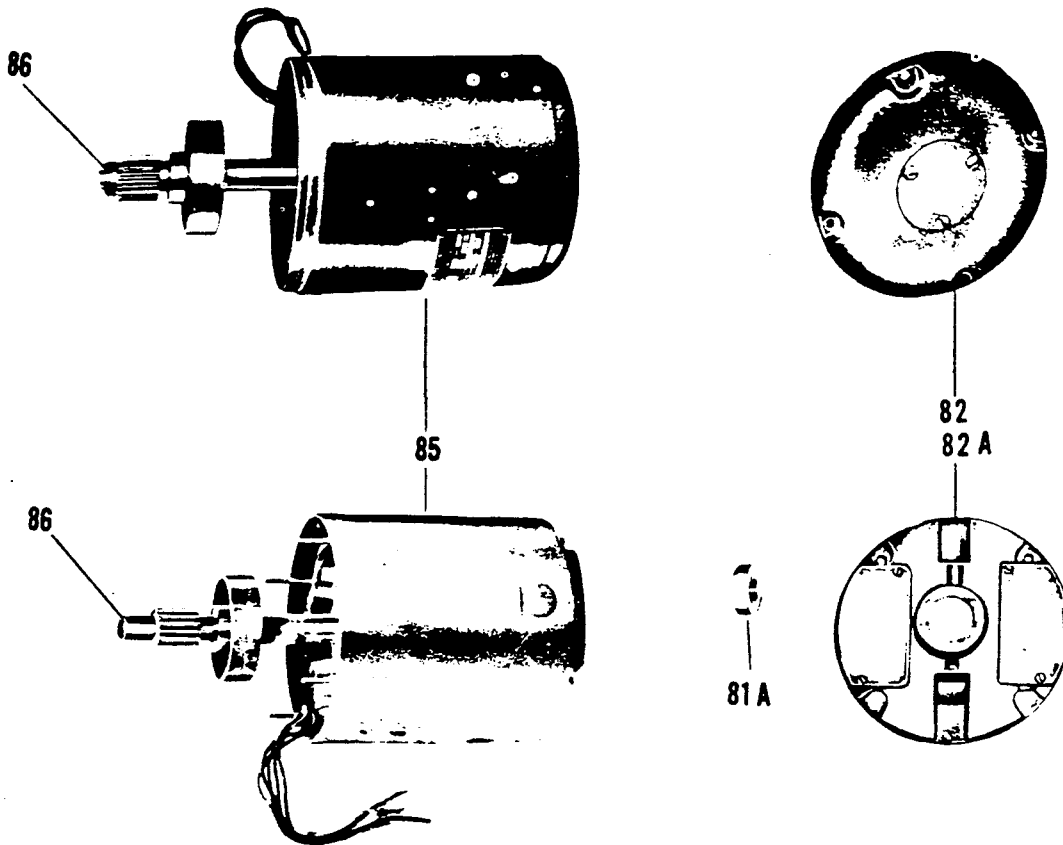
0548202-00 TROLLEY ASSEMBLY
FOR 2 TON TROLLEY TYPE HOIST
LINK OR ROLLER CHAIN



ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	0501071-00	Trackwheel.....	4
2	0150157-00	Locknut.....	4
3	0548185-00	Side Plate.....	2
4	0114197-00	Spacer Washer.....	20
5	0149716-00	Jam Nut.....	4
6	0150297-00	Lockwasher.....	4
7	0101060-00	Double End Stud (3.33" to 5" Flg) Std.....	2
	0101061-00	Double End Stud (5" to 6.5" Flg) Spec.....	2

YALE POLYPHASE MOTORS

REPAIR PARTS



IMPORTANT: If motor repair parts are required give all information listed on hoist and motor name plates.

Part Name	Fig. No.
Complete Motor with Brake Drum, Ball Bearings and Pinion	85
End Bell—with Bearing	82
End Bell	82A
Ball Bearing	81A

Motor frame with wound primary and rotor with shaft cannot be supplied separately as spare parts.

TO DISASSEMBLE

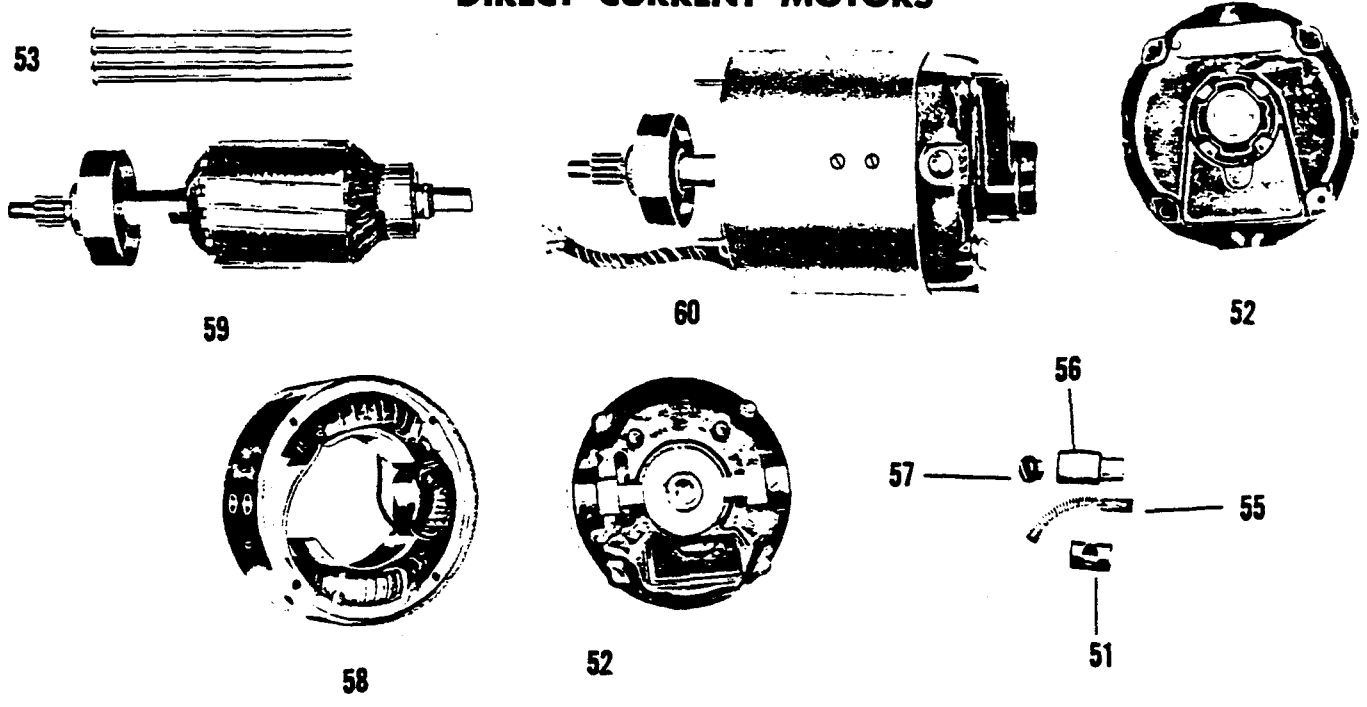
Remove hoist name plate cover and disconnect wires at Reversing Switch. Remove four long screws and pull off Stator. Rotor remains in hoist. Caution should be exercised when removing Stator to avoid bending Rotor Shaft or damaging windings. Spread open brake shoes and pull out Rotor.

The Brake Drum, Ball Bearing and Pinion can be removed by taking out Pin from the Pinion. To remove Bearing use a bearing puller.

TO ASSEMBLE

Reverse Disassembling Instructions.
Make sure that Pinion Pin is riveted over on both sides of Pinion.
Follow wiring diagram when re-wiring.

YALE DIRECT CURRENT MOTORS



Part Name	Fig. No.	Quan.
Bearing—Plain Bushing	51	1
End Bell—with Bearing	52	1
Long Screw	53	4
Brush with Brush Spring	55	2
Brush Holder	56	2
Brush Holder Cap	57	2
Field Coils (complete set) without Pole Pieces	58	1
Complete Motor with Brake Drum, Ball Bearing and Pinion.....	60	1

Armature and shaft (59) cannot be supplied as spare parts.

IMPORTANT: If motor repair parts are required give all information listed on hoist and motor name plates.

TO DISASSEMBLE

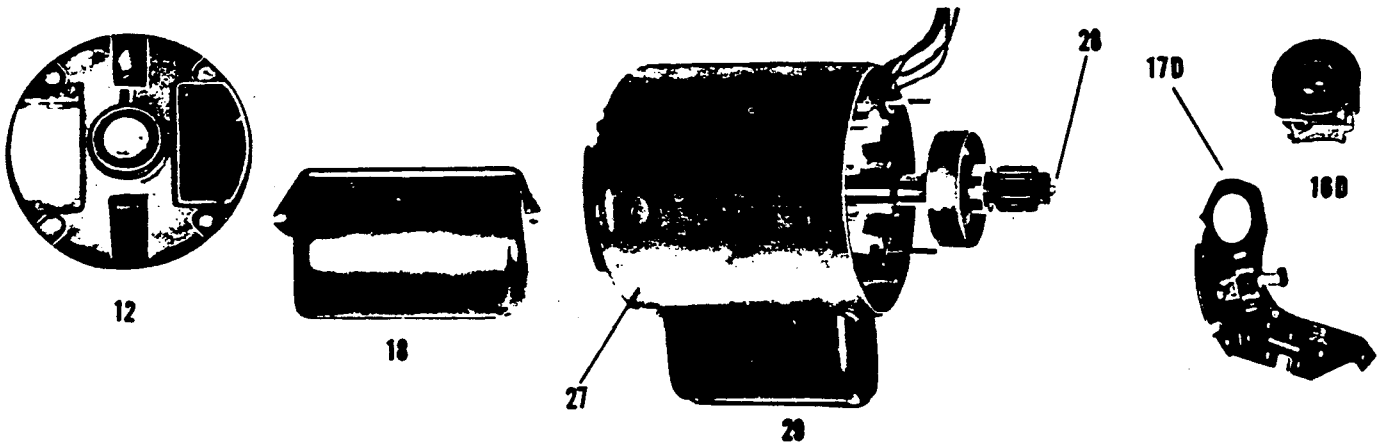
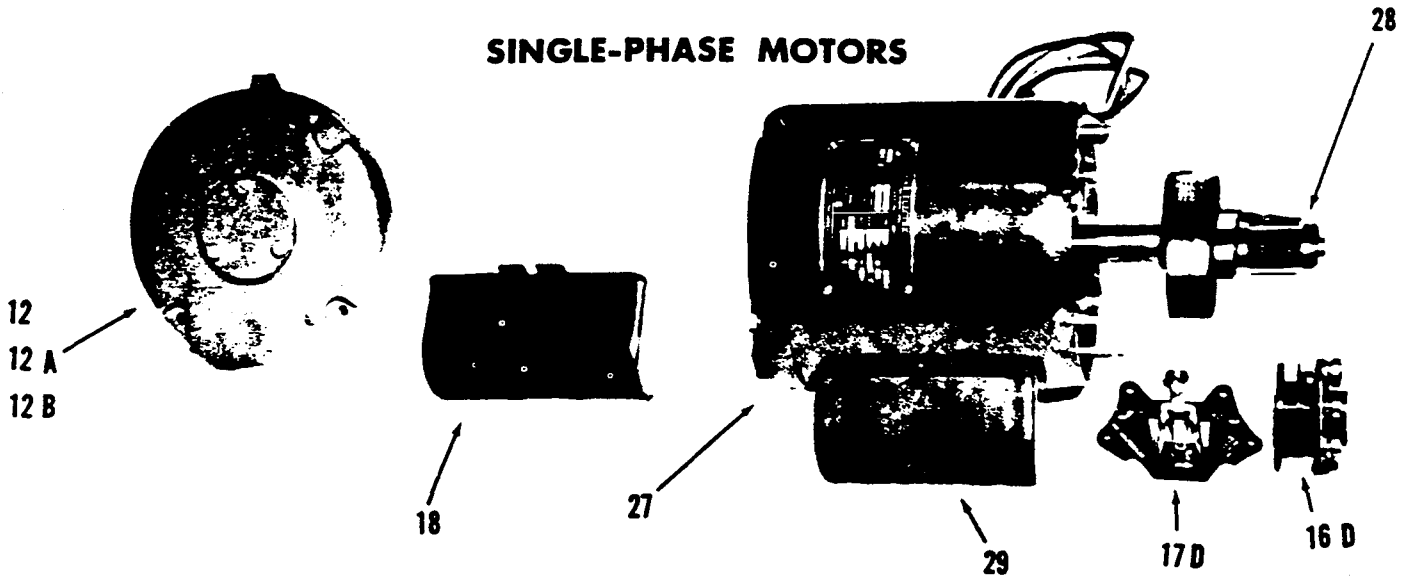
Remove Brush Holder Caps (57) pull out Brushes (55). Remove hoist name plate cover and disconnect wires at Reversing Switch. Remove four long screws (53) and pull off Motor Housing with Field Coils (58). Armature (59) remains in hoist. Caution should be exercised when removing field coils to avoid bending armature shaft or damaging windings. Spread out brake shoes and pull out armature (59).

To remove the Brushes (55) first unscrew the Brush Holder Caps (57) and the Brush and Brush Spring can be pulled out of Motor. Check Commutator for smoothness and cleanliness. Check brushes for smoothness, cleanliness and pressure on commutator. If commutator is rough, clean with sandpaper. (Not emery cloth). If Brushes are worn or spring pressure is light, replace. The Brake Drum, Ball Bearing, and Pinion can be removed by taking out pin from the Pinion. To remove other bearings use a bearing puller.

TO ASSEMBLE

Reverse the disassembling instructions. Make sure that the pinion pin is riveted over on both sides of the pinion. Consult the wiring diagram when re-wiring.

SINGLE-PHASE MOTORS



Above figures numbers refer to Master Spare Parts List which is in dealer's possession.

IMPORTANT: If motor repair parts are required give all information listed on hoist and motor name plates.

Part Name	Fig. No.
Complete Motor with Brake Drum, Ball Bearing and Pinion	29
End Bell—with Bearing	12
End Bell	12A
Ball Bearing	12B
Centrifugal Mechanism	16D
Centrifugal Switch	17D
Capacitor with Mounting	18

Motor frame with wound primary (27) and rotor with shaft (28) cannot be supplied as spare parts.

TO DISASSEMBLE

Remove hoist name plate cover and disconnect wires at Reversing Switch. Remove four long screws and pull off Motor Stator. Rotor (28) remains in hoist. Caution should be exercised when removing Stator to avoid bending or damaging windings. Spread open brake shoes and pull out Rotor (28). The Rotating Switch (16) is on the end of the Rotor Shaft. Test the spring action with fingers. Remove the End Bell (12) from the Motor Frame (27) and examine the switch contacts. The Stationary Switch (17D) is mounted on the inside of the End Bell or end of Motor Frame. It is connected to the Capacitor (18) which is on the Motor Frame (27). Switch contacts should be clean and free from pitting to insure proper contact. Do not disconnect wiring - unless making replacements. The Brake Drum, Ball Bearing, and Pinion can be removed by taking out Pin from the Pinion. To remove Bearing use a Bearing Puller.

TO ASSEMBLE

Reverse Disassembling Instructions. Make sure that Pinion Pin is riveted over on both sides of Pinion. Follow wiring diagram when re-wiring.

PROCEDURE FOR REPLACING TOP HOOK ON MIDGET KING HOIST

¼ TO 1 TON CAPACITY MIDGET KING HOIST

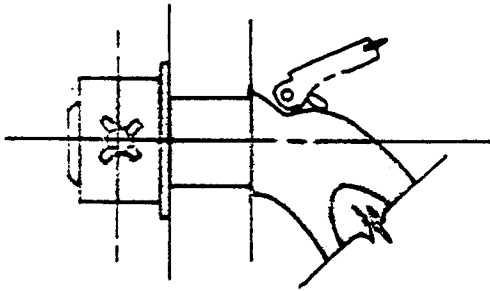
Step 1 - Remove hoist from working area and place on bench.

Step 2 - Remove screws from name plate and instruction plate.

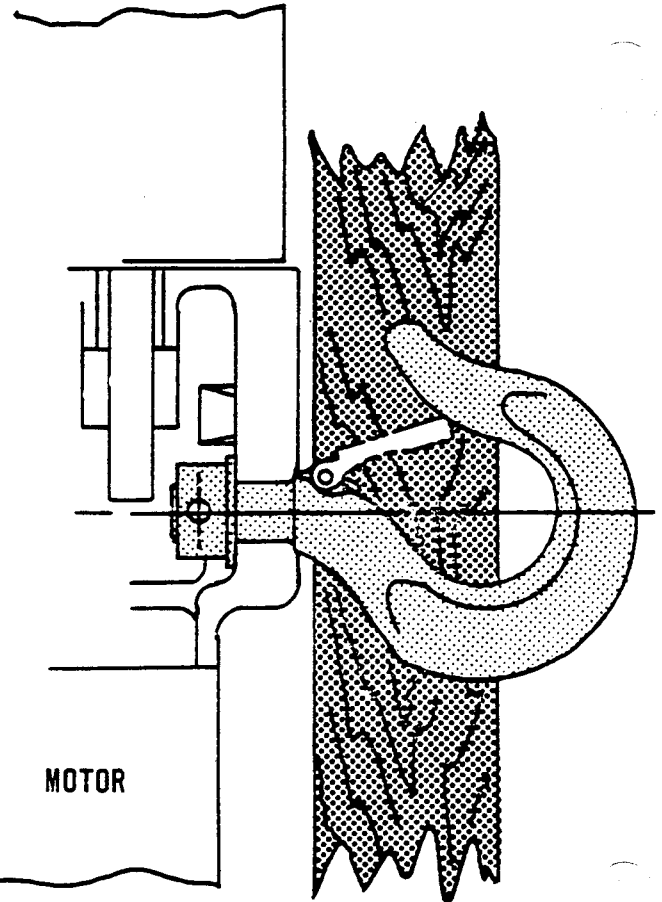
Step 3 - Place hoist on it's side with name plate up and support by placing block of wood under hook in position shown.

Step 4 - Remove pin with drift bar making sure the hook is supported by block. Remove collar washer and hook.

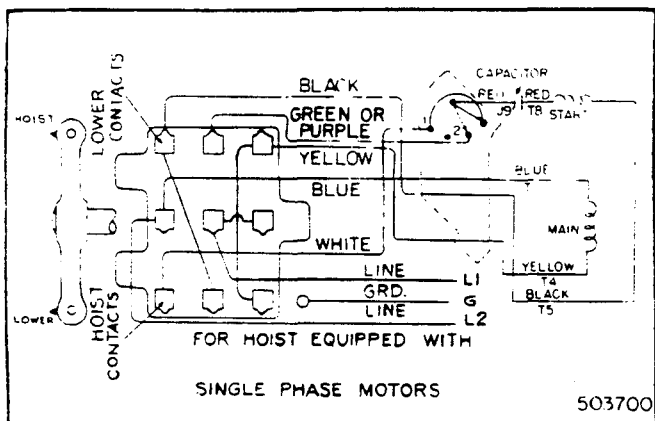
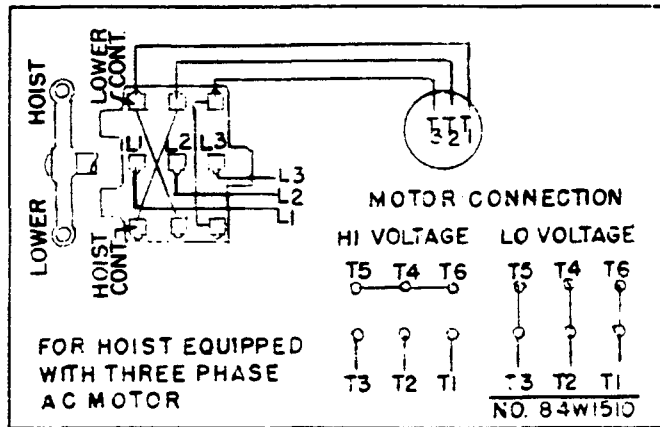
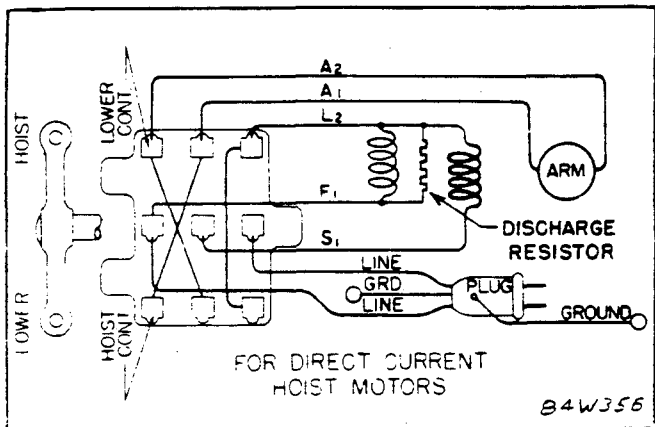
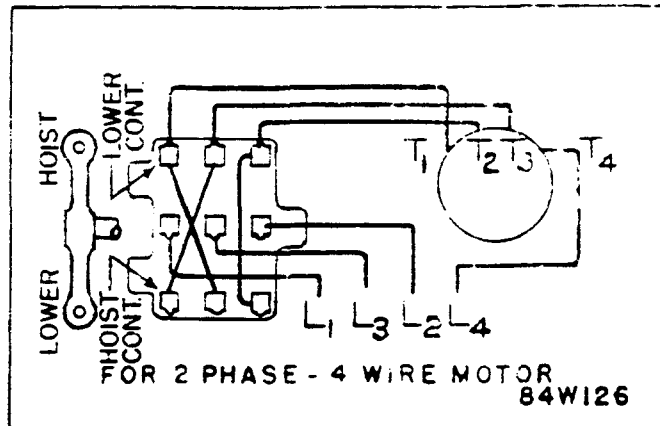
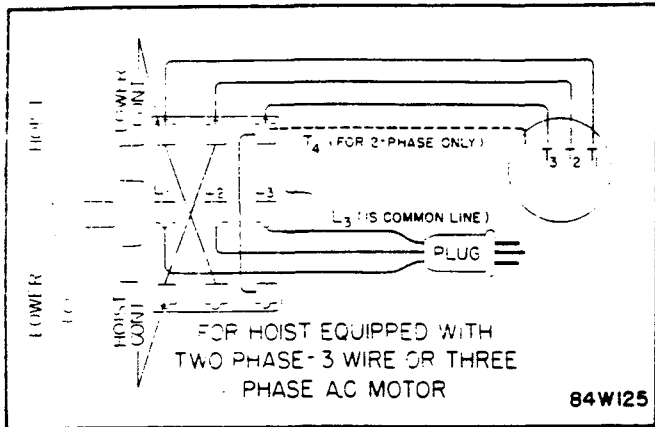
Step 5 - Place new hook in hoist. Slip on washer and collar, then drive in pin making sure pin is centered in collar.



Step 6 - Stake collar on both sides as shown with blunt end chisel. Replace both plates.



WIRING DIAGRAMS CORD CONTROLLED



IMPORTANT

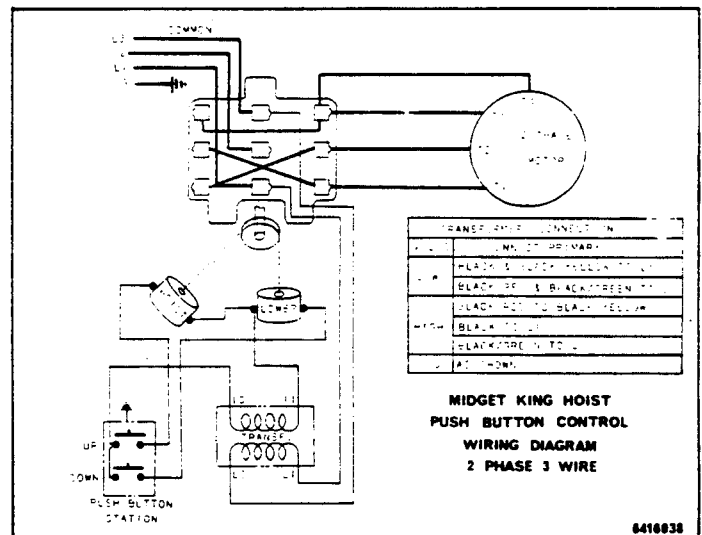
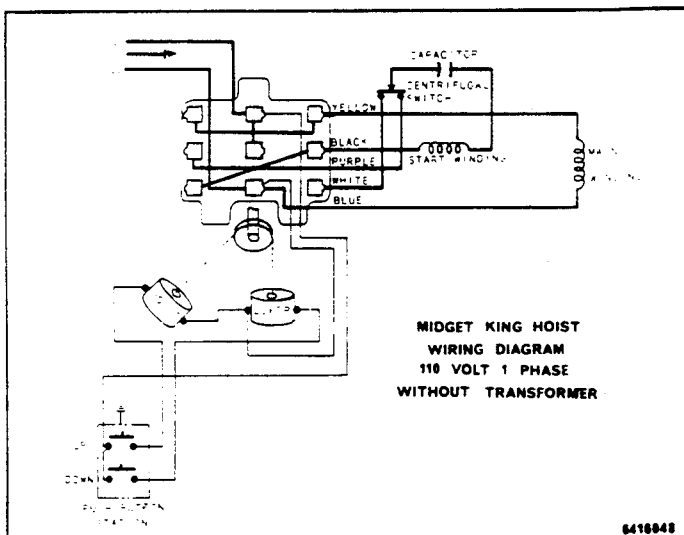
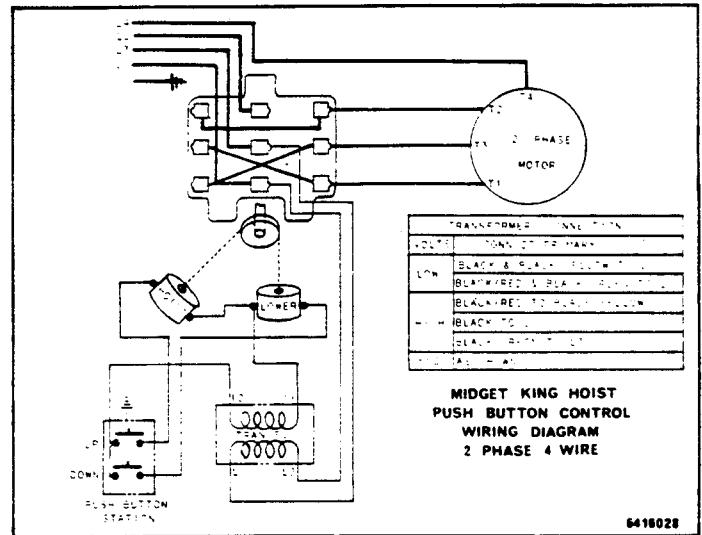
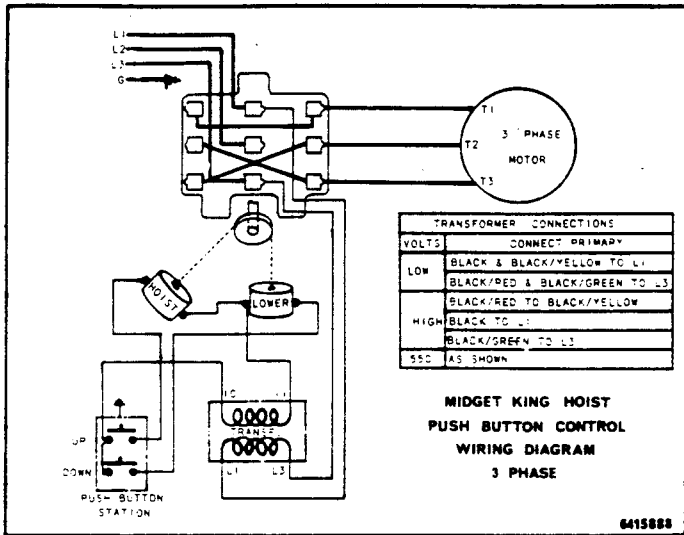
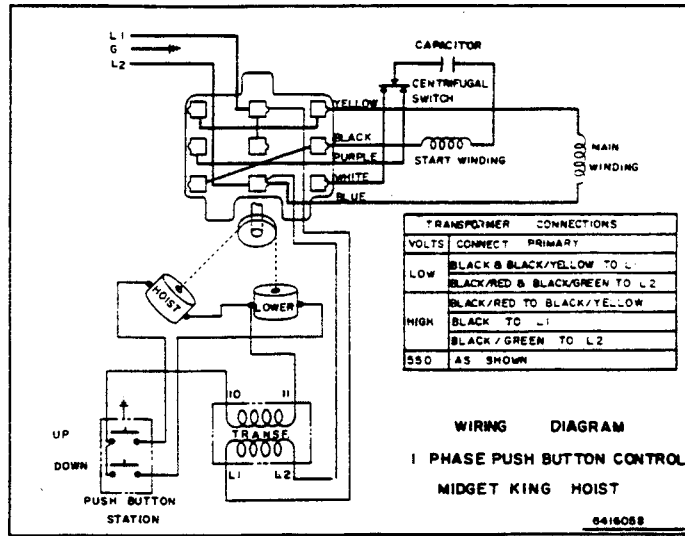
When consulting wiring diagrams, check Motor Name Plate for manufacturer's name, voltage, phase and cycle of Motor.

Note: For Wiring Diagrams for all other series contact factory giving complete name plate data of hoist unit.

YALE

WIRING DIAGRAMS

PUSH BUTTON CONTROLLED



YALE

RECOMMENDED SPARE PARTS FOR ONE YEAR

CORD CONTROLLED UNITS

PART NUMBER	DESCRIPTION	QUANTITY
0102564-00	Brake Shoe & Lining Assembly.....	2
0113489-00	Movable Contact Finger.....	6
0113491-00	Contact Spring.....	6
0107856-00	Ratchet & Disc Assembly.....	1
0118590-00	Dead End Link.....	1
	Stationary Contact Assembly *(Select 1)	
0504697-00	Single Phase.....	*
0103943-00	Polyphase & D.C.....	*
	Load Chain **(Select 1)	
6402208-00	Link Chain 1/4,1/2 & 1 Ton 11Ft. STD...	**
0118528-00	Roller Chain 1/4,1/2 & 1 Ton 11Ft. STD.	**
6402218-00	Link Chain 2 Ton Only 23Ft. STD.....	**
0641146-00	Roller Chain 2 Ton Only 23Ft. STD.....	**

PUSH BUTTON CONTROLLED UNITS

PART NUMBER	DESCRIPTION	QUANTITY
0102564-00	Brake Shoe & Lining Assembly.....	2
0113489-00	Movable Contact Finger.....	6
0113491-00	Contact Spring.....	6
0107856-00	Ratchet & Disc Assembly.....	1
0118590-00	Dead End Link.....	1
6401821-00	Control Chain Retaining Clip.....	1
6403063-00	Solenoid.....	1
	Stationary Contact Assembly *(Select 1)	
0504697-00	Single Phase.....	*
0103943-00	Polyphase & D.C.....	*
	Load Chain **(Select 1)	
6412208-00	Link Chain 1/4,1/2 & 1 Ton 11Ft. STD...	**
0118582-00	Roller Chain 1/4,1/2 & 1 Ton 11Ft. STD.	**
6412218-00	Link Chain 2 Ton Only 23Ft. STD.....	**
0641146-00	Roller Chain 2 Ton Only 23Ft. STD.....	**

Yale

Hoisting Equipment

BOTTOM BLOCK ASSEMBLIES

FOR USE ON SINGLE LINE LINK CHAIN TYPE HOISTS



		COMPLETE BOTTOM BLOCK ASSEMBLIES			
MODEL USED ON		CAPACITY IN TONS	WITH STD. HOOK	WITH BRONZE HOOK	WITH BULLARD HOOK
+	PD, PE	3/4	642537200		
+	LH, LTP, LTG	1/2			
+*	BB	1/4-1/2			
	MEL	1/8-1/4-1/2			
	KEL, KAL	1/2		642541200	642543200
	AL	1/4-1/2			
*	CL, PL	1/4-1/2	642539200		
*	ML	1/8-1/4-1/2			
*	LE	1/4-1/2			
+	PD, PE	1 1/2	642594200		
+*	BB	1			
+	LH, LTP, LTG	1			
+	LH, LTP, LTG	1 1/2			
	KEL, KAL	1		642598200	642600200
*	ML	1	642596200		
*	LE	3/4-1			
	MEL	1	642721200	642722200	642723200
+*	BB	1 1/2	642690200	642691200	642692200
+	LH, LTP, LTG	2			
+*	BB	2	642612200	642614200	642616200

*THESE MODELS ARE NO LONGER IN CURRENT PRODUCTION.

+ALSO ORDER (1) WARNING DECAL #643932301.

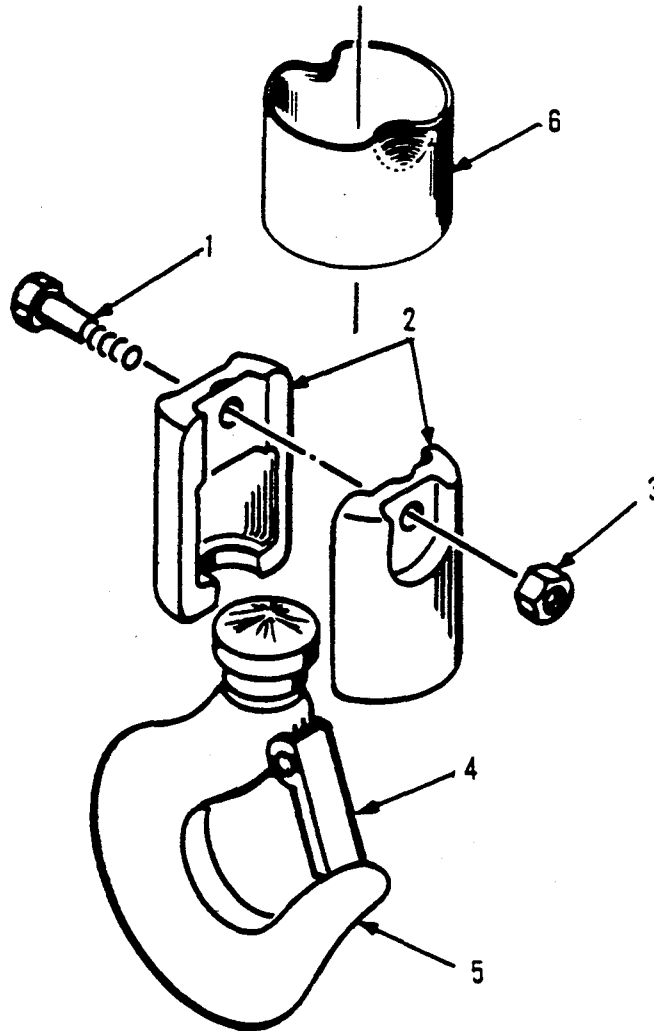
SEE THE FOLLOWING PAGES FOR REPAIR PARTS LISTS.

When Replacement Parts Are Needed, Order Only YALE[®] Factory Engineered Parts

FORM 165-905-107

BOTTOM BLOCK ASSEMBLIES W/STANDARD HOOKS - REPAIR PARTS

642537200 & 642594200



ITEM NBR.	PART NUMBERS COMPLETE BOTTOM BLOCK ASSEMBLIES		DESCRIPTION	QTY.
	642537200	642594200		
1	642895100	642896100	SKT. HD. SCREW	1
2	642017100	642039100	BLOCK HALF	2
3	015015200	015015300	LOCKNUT	1
4	066940000	066940200	LATCH KIT	1
5	642558200	642593200	HOOK ASM. (INCL. 4)	1
6	645670100	645671100	RETAINER BAND	1

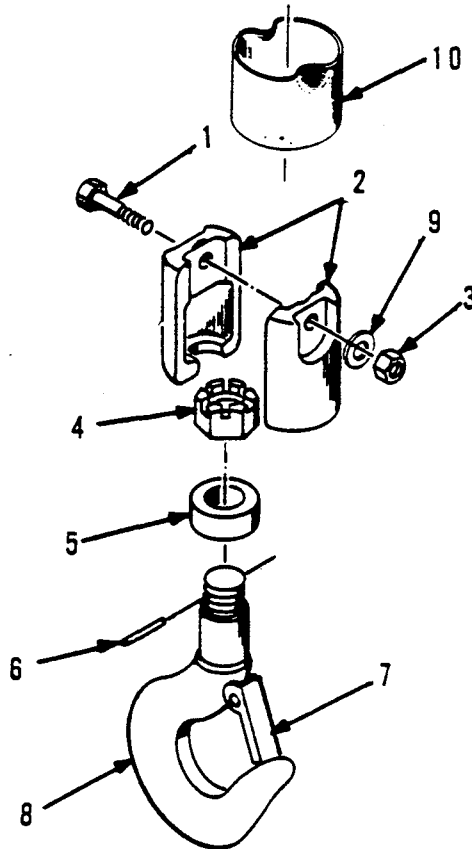
When Replacement Parts Are Needed, Order Only YALE® Factory Engineered Parts

Yale

Hoisting Equipment

BOTTOM BLOCK ASSEMBLIES W/STANDARD HOOKS - REPAIR PARTS

642539200, 642596200, 642721200, 642612200 & 642690200



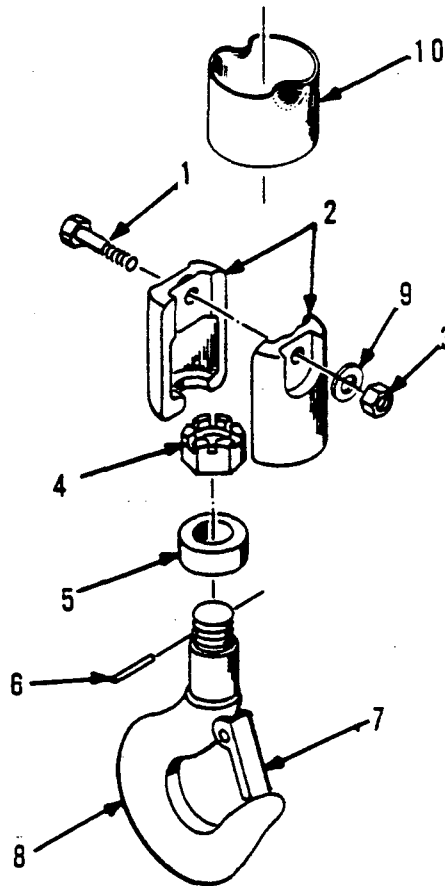
ITEM NBR.	PART NUMBERS FOR THE FOLLOWING COMPLETE BOTTOM BLOCK ASSEMBLIES					DESCRIPTION	QTY.
	642539200	642596200	642721200	642612200	642690200		
1	642895100	642896100	645085100	642897100	642897100	SKT. HD. SCREW	1
2	642017100	642039100	642039100	642045100	644226100	BLOCK HALF	2
3	015015200	015015300	015015200	015015500	015015500	LOCKNUT	1
4	010666300	065267300	065267300	640137901	640137901	SLOTTED NUT	1
5	015122100	015122200	015122200	050193100	050193100	THRUST BEARING	1
6	059989100	500409902	500409902	051191400	051191400	ROLL PIN	1
-	066940000	066940200	066940200	066940400	066940400	LATCH KIT	1
8	642540200	642595200	642595200	643625200	643625200	HOOK ASM.*	1
9	-	-	016103700	-	-	WASHER	1
10	645670100	645671100	645671100	645672100	645672100	RETAINER BAND	1

* Includes Item 4, 6 & 7

When Replacement Parts Are Needed, Order Only YALE® Factory Engineered Parts

BOTTOM BLOCK ASSEMBLIES W/BRONZE HOOKS - REPAIR PARTS

642541200, 642598200, 642722200, 642614200 & 642691200



ITEM NBR.	PART NUMBERS FOR THE FOLLOWING COMPLETE BOTTOM BLOCK ASSEMBLIES					DESCRIPTION	QTY.
	642541200	642598200	642722200	642614200	642691200		
1	642395100	642896100	645085100	642897100	642897100	SKT.HD.SCREW	1
2	642017100	642039100	642039100	642045100	644226100	BLK. HALF	2
3	015015200	015015300	015015200	015015500	015015500	LOCKNUT	1
4	010666300	065267300	065267300	640137901	640137901	SLOTTED NUT	1
5	015122100	015122200	015122200	050193100	050193100	THRUST BRG.	1
6	059989100	500409902	500409902	051191400	051191400	ROLL PIN	1
7	646255800	646254800	646254800	500690800	500690800	LATCH KIT	1
8	642542200	642597200	642597200	642613200	642613200	HOOK ASM. (INCL.4,6&7)	1
9	-	-	016103700	-	-	WASHER	1
10	645670100	645671100	645671100	645672100	645672100	RETAINER BAND	1

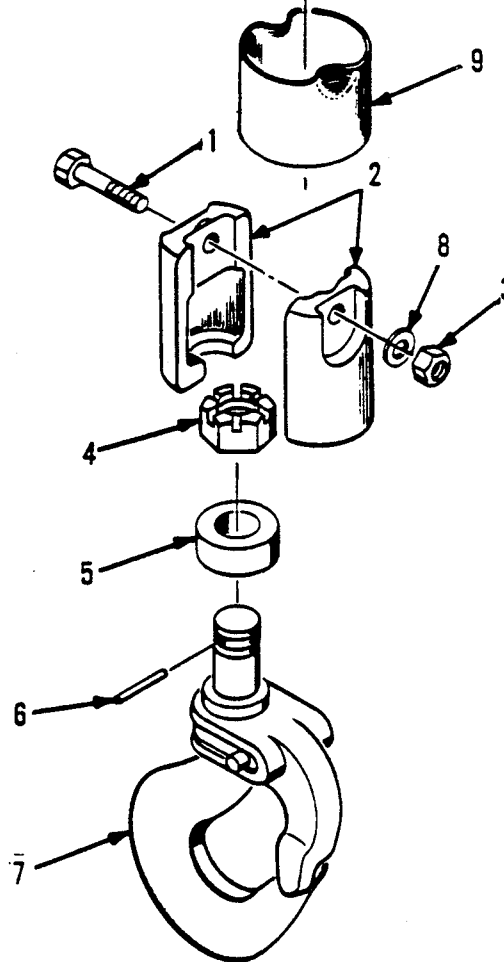
When Replacement Parts Are Needed, Order Only YALE® Factory Engineered Parts

Yale

Hoisting Equipment

BOTTOM BLOCK ASSEMBLIES W/BULLARD HOOKS - REPAIR PARTS

642543200, 642600200, 642723200, 642616200, & 642692200



ITEM NBR.	PART NUMBERS FOR THE FOLLOWING COMPLETE BOTTOM BLOCK ASSEMBLIES					DESCRIPTION	QT
	642543200	642600200	642723200	642616200	642692200		
1	642895100	642896100	645085100	642897100	642897100	SKT. HD. SCREW	1
2	642017100	642039100	642039100	642045100	644226100	BLK. HALF	2
3	015015200	015015300	015015200	015015500	015015500	LOCKNUT	1
4	010666300	065267300	065267300	640137901	640137901	SLOTTED NUT	1
5	015122100	015122200	015122200	050193100	050193100	THRUST BRG.	1
6	501982901	500409902	500409902	051191400	051191400	ROLL PIN	1
7	642544200	642599200	642599200	642615200	642615200	HOOK ASM. (INCL. 4 & 6)	1
8	-	-	016103700	-	-	WASHER	1
9	645670100	645671100	645671100	645672100	645672100	RETAINER BAND	1

When Replacement Parts Are Needed, Order Only YALE® Factory Engineered Parts

Yale®

HOISTS

WARRANTY

Every hoist is thoroughly inspected and tested prior to shipment from the factory. Should any problems develop, return the complete hoist prepaid to your nearest Yale Hoists Authorized Warranty Repair Station.

This warranty does not apply where: (1) deterioration is caused by normal wear, abuse, improper or inadequate power supply, eccentric or side loading, overloading, chemical or abrasive actions, improper maintenance or excessive heat; (2) problems resulted from repairs, modifications or

alterations made by persons other than factory or Yale Hoists personnel; (3) the hoist has been abused or damaged as a result of an accident; (4) repair parts or accessories other than those supplied by Yale Hoists are used on the hoist. Equipment and accessories not of the seller's manufacture are warranted only to the extent that they are warranted by the manufacturer. EXCEPT AS STATED HEREIN, YALE HOISTS MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Improvements:

Yale Hoists is constantly striving to improve its product. Changes in design and improvements will be made whenever manufacturer believes the efficiency of the product will be improved without incurring any obligation to incorporate such improvements in any products which have been shipped or are in service.

Important Notice:

Use of chain, wire rope or replacement parts other than as supplied as original equipment on Yale hoists may lead to dangerous operation. Accordingly, Yale Hoists cannot be responsible in such cases and our warranty will be voided.

For more information, write Yale Hoists, Forrest City, Arkansas 72335.

Yale® HOISTS
3105 N. Washington
P. O. Box 1000
Forrest City, Arkansas 72335
Customer Service (800) 999-6318
FAX (800) 766-0223