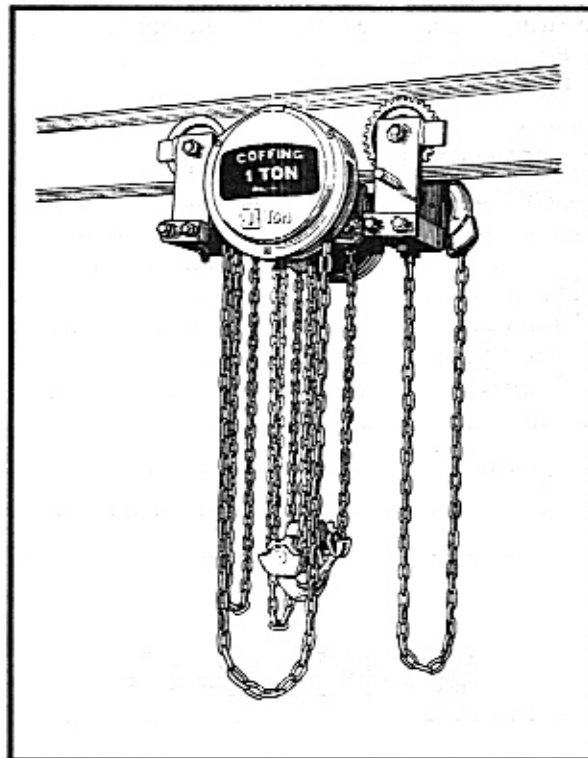


# COFFING®

## OPERATING & MAINTENANCE INSTRUCTIONS

## LOW HEADROOM HAND CHAIN HOISTS

WITH ILLUSTRATED PARTS LIST  
PUBLICATION PART NO. YLH-680



YLH SERIES

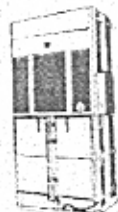
### IMPORTANT – CAUTION

This manual contains important information for the correct installation, operation and maintenance of the equipment described herein. All persons involved in such installation, operation and maintenance should be thoroughly familiar with the contents. To safeguard against the possibility of personal injury or property damage, follow the recommendations and instructions of this manual and keep it for further reference.

### WARNING

The equipment shown in this manual is intended for industrial use only and should not be used to lift, support, or otherwise transport people.

**BEATON**



OVERHEAD EQUIPMENT  
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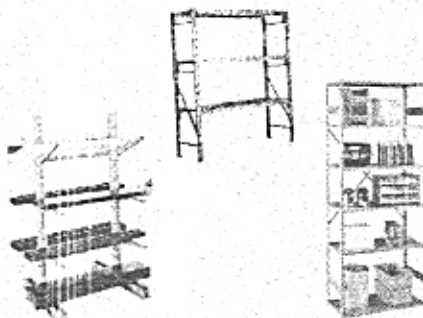
BRIDGE CRANES

WRAPPERS

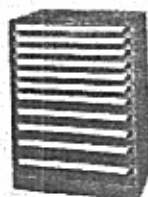
AIR CURTAINS  
 BALERS/COMPACTORS  
 BELOW HOOK  
 BENCHES/CARTS/TOOLS  
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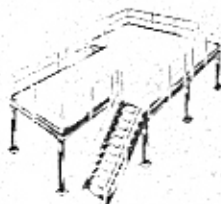
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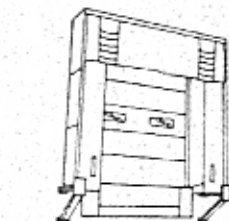
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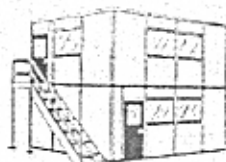
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## WARRANTY

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 Duff-Norton Authorized Warranty Repair Station. If inspection reveals that the problem is caused by defective workmanship or material, repairs will be made without charge and the hoist will be returned, transportation prepaid.

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, modifi-

cations or alterations made by persons other than factory or Duff-Norton Authorized Warranty Repair Station 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 Duff-Norton 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, DUFF-NORTON MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

## SECTION I. GENERAL INFORMATION

### 1-1. Repair Parts Ordering Information

This instruction and parts manual is provided as a convenience to assist you in ordering repair parts for your YLH Series Hoist. To ensure prompt service, place all parts orders with your local distributor.

Give all information listed below in items a, b and c. This will enable your distributor to fill your order promptly.

- a. Give complete data from hoist nameplate.

- b. Give part numbers, description and quantity required.
- c. Give the correct shipping destination.

If it becomes necessary to return the complete hoist or certain parts to the factory, a letter requesting such a return is necessary. This letter should contain an explanation for requesting the return. A return authorization will be issued giving you clearance for returning the hoist or parts to the factory. Should you need additional help in ordering, contact your local Coffing distributor.

## SECTION II. INSTALLATION

### 2-1. Installation Instructions

For installation on I-beam other than the size preset at the factory follow the instructions listed below.

Measure the I-beam flange width and temporarily install the trolley sideplates on the hoist before installation to determine the exact distribution of washers.

The distance between track wheel flanges should be  $\frac{3}{16}$  inch greater than the beam flange width for straight runway beams, and  $\frac{3}{16}$  to  $\frac{1}{4}$  inch in a runway system that includes sharp curves. The number of adjusting plates between the

sideplates and the suspension yoke should be the same or differ only by one (1) adjusting plate, in order to keep the hoist centered under the I-beam. The distribution of adjusting plates outside the trolley sideplates is unimportant except that the total number used be sufficient to keep the nuts engaged.

After the hoist and trolley are installed on the I-beam, check for proper fit, then operate the trolley over the entire length of the beam with a capacity load to be sure that adjustment and operation is satisfactory.

## SECTION III. PREVENTIVE MAINTENANCE

The following inspection periods are based on average duty with a single shift of 40 hours per week under normal environmental conditions. If the hoist is used in heavier applications or in adverse environmental conditions, it should be inspected more frequently.

### 3-1. Daily Inspection

Inspect the following items before using the hoist.

1. **Brake Mechanism:** Check for slipping brake.
2. **Load Chain:** Check for worn, broken or cracked links. Check for grit, dirt or other foreign matter which may be carried into the hoist mechanism. Check chain for proper lubrication.
3. **Hooks:** Check for cracks or deformations. The bottom hook must swivel freely.

**Note:** Bent or twisted hooks indicate overloading or abuse of the unit. Other load-bearing components of the hoist should be inspected for damage.

#### CAUTION

DO NOT OPERATE THE HOIST IF IT IS FUNCTIONING IMPROPERLY OR IF DAMAGE IS NOTED.

### 3-2. Annual Inspection

Inspect the following items at least once every year or more according to paragraph above.

1. **Load Chain and Sheaves:** Check for excessive wear of chain, load sheaves, bottom block sheaves and chain stretch. See table on page 7.
2. **Hooks:** Magnetic particle or other suitable crack detecting inspection should be performed at least once a year. Replace hook if throat opening is 15% in excess of normal throat opening or  $10^\circ$  twist from normal plane of hook. The bottom hook must swivel freely. See table on page 4.
3. **Hardware:** Check hook retaining nut, collars or pins for wear. Check for loose bolts, nuts or rivets. Check for missing or damaged hook latch.
4. **Braking Mechanism:** Check for worn, glazed or oil contaminated friction discs, worn pawls or ratchet. Corroded, stretched or broken pawl springs.
5. **Load Bearing Parts:** Check for worn, cracked or distorted parts such as hook blocks, suspension bolts, shafts and bearings.



6. **Supporting Structure and Trolley:** If used, should be inspected for continued ability to support the imposed loads.

**Note:** Inspection Record — The last page of this manual is an inspection record log to be filled out and signed by the person making the annual inspection.

### 3-3. Inspection and Care of Hoist

1. If the load chain is worn and requires replacing, also examine the load sheave and load chain guide and stripper. If these parts are worn, they should be replaced to avoid damaging the new load chain. The new load chain should be installed with weld on vertical link as shown on page 7, Fig. 3-3. The load chain guide should fit so there is approximately  $\frac{1}{8}$ " clearance between the load chain guide side and the outside diameter of the load sheave.
2. Turn the handwheel to check the backlash and wear on the load brake parts. Normally, the handwheel should have a back movement equivalent to 1 or  $1\frac{1}{2}$  pockets. If this backlash is equivalent to 2 or more pockets on the handwheel, some of the synchromatic load brake parts

are worn. Inspect the brake disc, oilite disc and spring washer for possible replacement.

3. Check operation ring pawl and note that it engages ratchet disc properly.
4. When the hoist is disassembled for repairs, note the position of all parts to assure proper reassembling.
5. The YLH Series Hoists are designed with the safety of the operating personnel first in mind. Your own safety and that of your fellow workers will be assured when overhead materials handling equipment is used as recommended by the manufacturer. Disregarding such recommendations endangers life and property. You are referred to the Safe Hoisting Practices listed on page 2. Read this information carefully for your protection and protection of the equipment.

### 3-4. Function Testing

After repair of hoist, test with a light load for proper function. Load test unit with 125% of the rated capacity by lifting and lowering through a short distance.

### 3-5. Lubrication

LUBRICANT	LUBRICATION POINT	LUBRICATION INSTRUCTIONS
Houghton Sta-Put #580 Gulf Crown Grease #2 Humble Multi-Purpose Grease Shell Alvania #2 Shell Retinex A	Load sheave pockets. Thread in friction plate. Bore and teeth in ratchet disc. Fingers on ring pawl. Ring pawl studs. All gears and pinions. Idler sheave bearings.	Apply a light coat of grease at reassembly and as needed.
Humble Pen-O-Led EP5 Houghton Sta-Put #415 Top-Sall Lubricant Gulf Multi-Purpose Gear Lube 140	Chain	Run entire chain into a can or pan of oil. Allow chain to soak. Remove from oil and allow oil to drip. Wipe excess oil from chain.

**Note:** Load Sheave, driving pinion and intermediate gear and pinion bearing are lubricated for life and sealed. These bearings should not require any maintenance attention. Idler sheave bearings will require periodic inspection and lubrication based upon frequency of use. All gears are packed with a permanent grease. Load chain should be kept lubricated for satisfactory service.

### 3-6. Normal and Maximum Hook Openings

Capacity in Tons	YLH SERIES Bottom Hook	
	Normal	Maximum
$\frac{1}{2}$	$1\frac{1}{32}$	$1\frac{9}{32}$
1	$1\frac{5}{32}$	$1\frac{27}{64}$
$1\frac{1}{2}$	$1\frac{5}{16}$	$1\frac{37}{64}$
2	$1\frac{11}{32}$	$1\frac{39}{64}$
3	$1\frac{11}{32}$	$1\frac{39}{64}$
4	$1\frac{17}{32}$	$1\frac{13}{16}$
5	$1\frac{31}{32}$	$2\frac{11}{32}$
6	$1\frac{31}{32}$	$2\frac{11}{32}$
8	$2\frac{13}{32}$	$2\frac{7}{8}$
10	$2\frac{23}{32}$	$3\frac{13}{64}$
12	$2\frac{23}{32}$	$3\frac{13}{64}$

OPENING WITH SAFETY LATCH



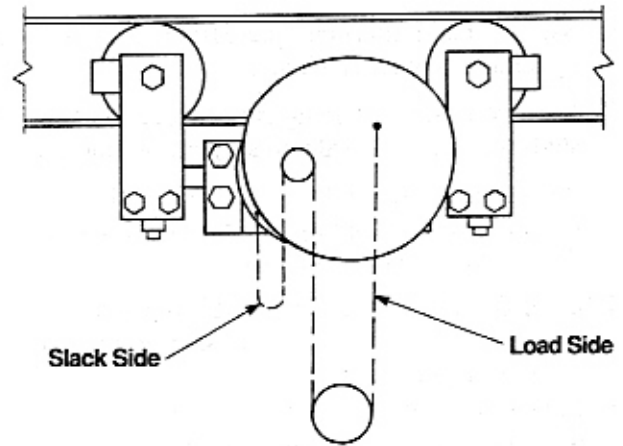
INSTALLATION OF HOOKS

THOROUGHLY TIGHTEN NUT ON SHANK. INSERT ROLL PIN THRU NUT TO SECURE HOOK.

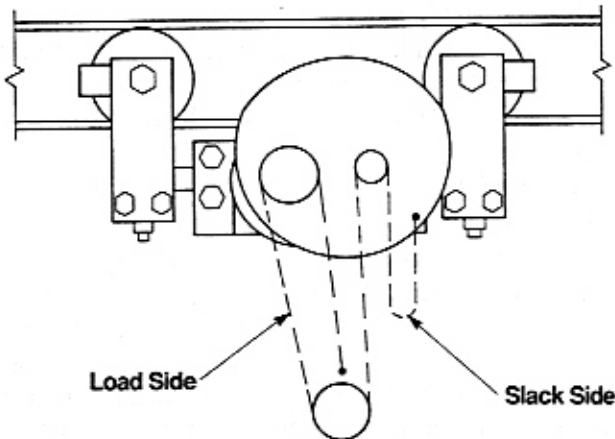
### 3-7. Chain Reeving

**Looking at Handwheel Side of Hoist** — When the hoist is disassembled for repairs, note the position of all parts to assure proper reassembling. When repairs are made, hoist should be tested with loads of full capacity before placing hoist in service.

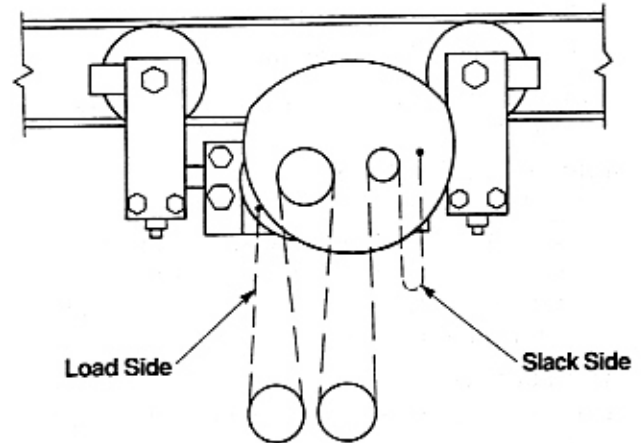
**Note:** When replacing chain for any reason, chain must be reeved as shown for each capacity as illustrated.



1/2 THROUGH 6 TON



8 TON



10 & 12 TON

## SECTION IV. DISASSEMBLY & REASSEMBLY

### 4-1. General Disassembly Procedures

- It is suggested the following items be removed before any maintenance is performed:
- Handwheel cover and hand chain;
- Gear cover and counterweight;
- Load chain.
- Remove three (3) self-tapping screws to disassemble handwheel cover and hand chain.
- Remove three (3) self-tapping screws from gear cover.
- Remove two (2) capscrews and lockwashers from counterweight.
- The following disassembly procedure applies to both strands of load chain. Refer above for illustrations of the various methods of chain reeving which is based on the capacity of the hoist.
- Lower bottom block assembly to floor level or to a position where it is fully supported to prevent damage when assembly is disengaged.
- Remove cotter key and flatwasher from chain end of pin on "no load" end of chain and free chain link.
- Remove the key and chain anchor pin from the suspension frame. The chain link on the "load" end will now fall free.
- Turn the handwheel in the "down" direction to clear hoist of load chain.
- To remove hoist and trolley assembly from beam, loosen trolley double end studs to allow the track wheels to clear the beam flanges. Be sure unit is sufficiently supported to prevent damage and falling. If it is necessary, the hoist can be taken down without removing the trolleys in the following manner: Remove cotter key, nut, king pin and thrust washer from suspension frame.
- Roll trolleys out from under suspension yokes.
- Lower hoist to floor.

### 4-2. To Disassemble Load Brake

- Remove cotter key from end of driving pinion.
- Remove pinion nut and check washer.
- Back handwheel off hoist by turning counter clockwise.
- The spring washer, oilite interlock disc, ratchet disc and brake lining disc can be lifted straight off.

- e. Back off the friction brake plate from the driving pinion by turning counter clockwise.
- f. Remove tru-arc retaining rings, three (3) from pawl studs which are riveted into suspension frame adapter.
- g. Remove ring pawl and cushion springs, three (3). Note the smallest end of spring coil must be faced up against the ring pawl when assembled.

#### 4-3. To Disassemble Suspension Frame

- a. Remove four (4) nuts and lockwashers from tie bolts and suspension yokes together.
- b. Remove tie bolts and suspension yokes.
- c. Pry extension shaft off both load sheaves.

#### 4-4. To Disassemble Gears and Idler Sheaves

##### All Capacities:

- a. Remove three (3) screws from suspension frame adapter.
- b. Pry adapter off of suspension frame.

**Note:** Exercise extreme caution to avoid damaging rabbet on the aluminum adapter.

##### 4 through 12 Ton Units:

- c. Pry intermediate gear and pinion out of suspension frame. When the hoist is disassembled to this point, remove the cotter pin from the gear case end of the idler sheave shaft. The shaft, idler sheave and bearing can be removed for inspection.

##### All Capacities:

- d. Remove retaining ring from the end of the load sheave.
- e. Pry load gear off of load sheave.
- f. Remove driving pinion and pinion bearing from suspension frame.

#### 4-5. To Disassemble Stripper, Load Sheave and Chain Guide

Procedure applies to either or both sides of frame.

- a. Remove cap screw holding stripper in frame.
- b. Grasp stripper on each side and slide out of channel.
- c. Drive roll pin out of load sheave shaft.

- d. Remove retaining ring holding outside load sheave bearing in suspension frame.
- e. Drive out load sheave from inside of frame. The outside load sheave bearing will come out with the load sheave.
- f. Remove two (2) cap screws holding load chain guide in frame.
- g. Drive inside load sheave bearing back into frame.
- h. Load chain guide can now be removed from the hoist frame.
- i. Remove the inside load sheave bearing.

#### 4-6. To Disassemble Bottom Blocks

##### 1/2 through 3 Ton Units:

- a. Remove two (2) nuts, lockwashers and bolts from bottom guard and guide. Idler sheave and guard and guide can be removed from the crosshead.

##### 4 through 8 Ton Units:

- a. Remove two (2) nuts, lockwashers and bolts holding the bottom blocks to the crosshead.
- b. Remove four (4) nuts and bolts which hold block halves together.
- c. Separate block halves to remove idler sheave.

##### 10 and 12 Ton Units:

- a. Remove four (4) locknuts and bolts holding guard and guide to crosshead. Idler sheaves, bearings and pins will come out as an assembly with the guard and guide.
- b. To replace any of the idler sheaves, remove the cotter pins and slide sheave pins out of sheave and guard and guide. Idler sheaves and bearings can now be lifted out and inspected.

#### 4-7. To Disassemble Bottom Hooks

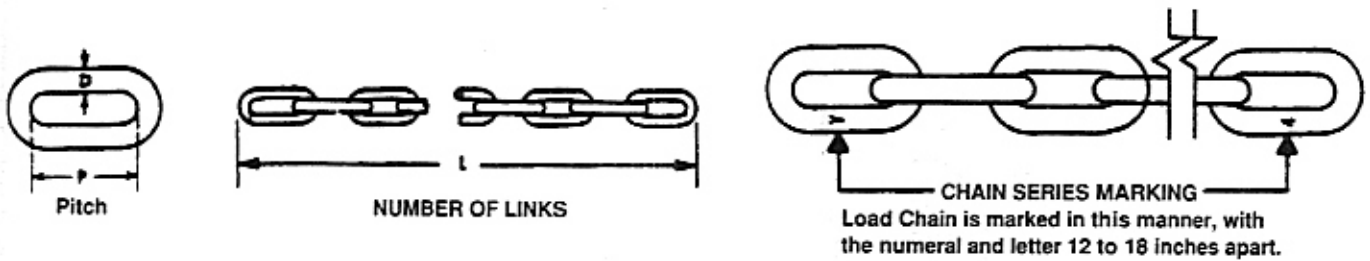
##### All Capacities:

- a. To remove hook, remove roll pin and back nut off shank. See instructions on page 4 for proper procedure when replacing hooks.

#### 4-8. Reassembly

To reassemble hoist after repair is completed, reverse the disassembly instructions.

**New Load Chain Will Measure These Dimensions:**

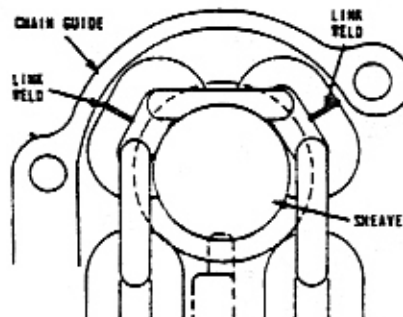


**Y3, Y4 AND Y5 LOAD CHAIN (Link)**

Part Number	Chain Series	D Diameter	P Pitch	L Gauge Length Nominal	L Gauge Length Maximum	L Number of Links in Gauge
6427004-02 6427004-20*	Y4	1/4	.75	14.79	15.00	19
33650 6427004-27*	Y3	3/8	1.13	22.13	22.46	19

\*Zinc Plated

**Chain Attachment**



**WELD ON STANDING LINK MUST FACE AWAY FROM SHEAVE**

**FIGURE 3-3**

**SECTION V. EXPLODED ILLUSTRATIONS AND PARTS LIST**

**5-1. Recommended Spare Parts for 1 Year**

Quantity per Hoist	Description	Part Number
1	Brake Disc	6484551-00
1	Oilite Disc	0154042-00
1	Ring Pawl	0156405-00
3	Ring Pawl Spring	0159622-00
1	Spring Washer	0159671-00



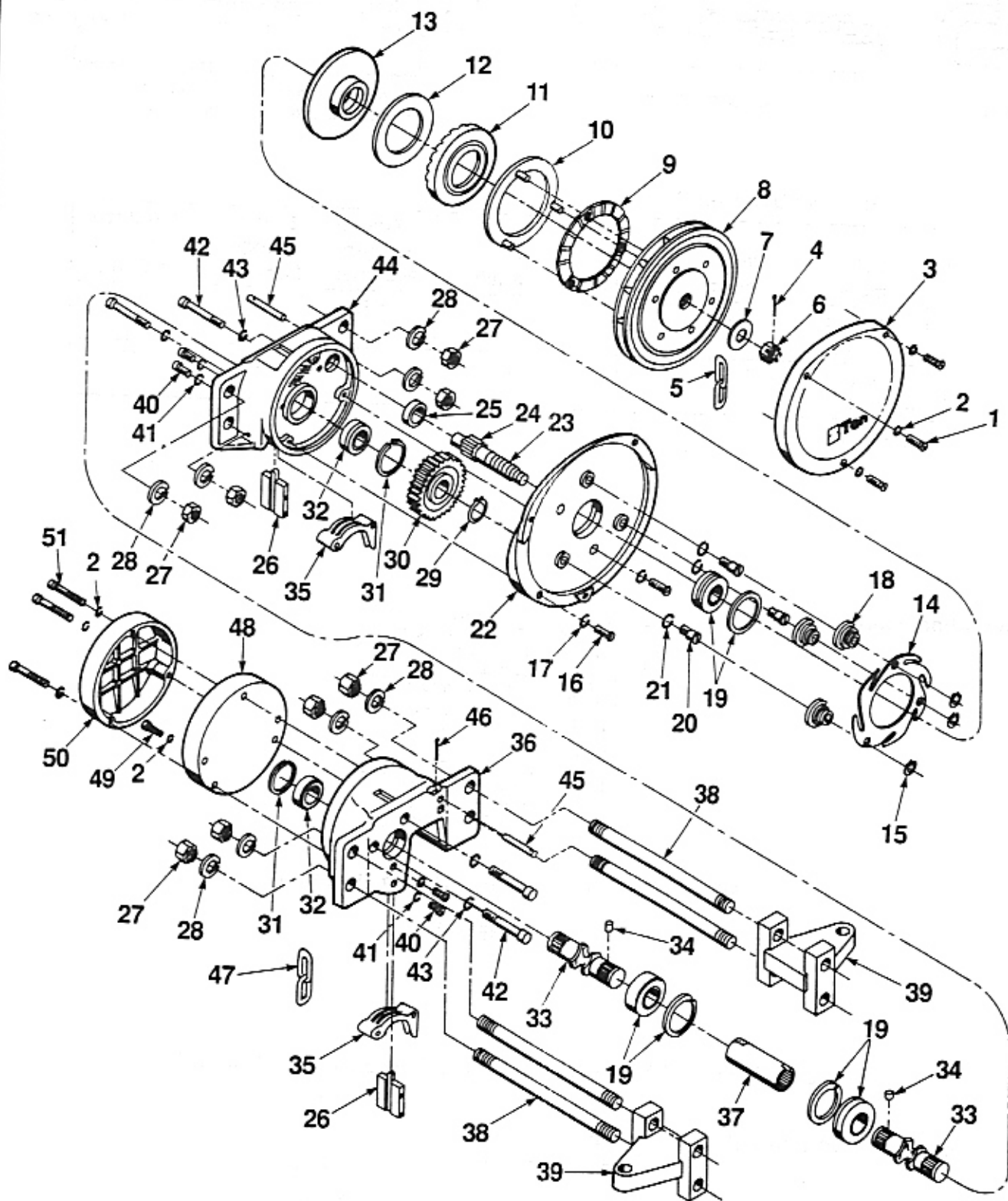


FIGURE 5-2. 1/2-3 TON

## Capacity 1/2-3 Ton

Item	Part Number	Description	Qty.
1	0655765-00	Socket Head Screw	3
2	0150321-00	Lockwasher	8
3	0595052-00	Handchain Guide & Cover	1
4	0154200-00	Cotter Pin	1
*5	0033730-00	Hand Chain	*
6	0149779-00	Castellated Nut	1
7	0161405-00	Check Washer	1
8	0165100-00	Handwheel	1
9	0159671-00	Spring Washer	1
10	0154042-00	Oilite Disc	1
11	0158079-00	Ratchet Disc	1
12	6484551-00	Brake Disc (Non-Asbestos)	1
13	0127232-00	Friction Plate	1
14	0156405-00	Ring Pawl	1
15	0159148-00	Retaining Ring	3
16	0655732-00	Fillister Head Screw	3
17	0150260-00	Lockwasher	3
18	0159622-00	Ring Pawl Spring	3
19	0151277-00	Ball Bearing 620522 w/Retainer	3
20	0159799-00	Ring Pawl Stud	3
21	0150322-00	Pawl Stud Lockwasher	3
22	5014816-00	Suspension Frame Adapter	1
23	See Table 8, Pg. 25	Driving Pinion	1
24	0159131-00	Retaining Ring (Not Shown)	1
25	0100836-00	Bearing 62022R5	1
26	6471283-00	Stripper	2
27	0149375-00	Tie Bolt Nut	8
28	0150270-00	Lockwasher (Tie Bolt)	8
29	5024339-04	Retaining Ring	1
30	See Table 9, Pg. 25	Load Gear	1
31	5024339-04	Retaining Ring	2
32	0151283-00	Ball Bearing 620522	2
33	5017183-00	Load Sheave	2
34	5004099-01	Roll Pin	2
35	0164954-00	Load Chain Guide	2
36	5000477-00	Suspension Frame (Handwheel Side)	1
37A	6403983-00	Load Sheave Extension Shaft (1/2 Ton)	1
B	6404003-00	Load Sheave Ext. Shaft (1 & 1 1/2 Ton)	1
C	5017193-00	Load Sheave Ext. Shaft (2 & 3 Ton)	1
38	See Table 10, Pg. 25	Tie Bolt	4
39	See Table 2, Pg. 23	Suspension Yoke	2
40	0621437-00	Fillister Head Screw	4
41	0325860-00	Lockwasher	4
42	0655801-00	Fillister Head Screw	4
43	0656194-00	Lockwasher	4
44	5000487-00	Suspension Frame (Gear Cover Side)	1
45	5022541-00	Chain Anchor Pin (Load End)	2
46	0154167-00	Cotter Pin	2
*47	6427004-02	1/4 Alloy Chain	*
48	6404604-00	Counterweight	1
49	0109227-00	Fillister Head Screw	2
50	0155189-00	Gear Cover	1
51	0655767-00	Socket Head Screw	3
52	0621285-00	Slack End Screw (Not Shown)	2
53	0150260-00	Slack End Washer (Not Shown)	2
54	0379012-00	Slack End Nut (Not Shown)	2
55	See Table 13, Pg. 24	Nameplate (Not Shown)	1
56	See Table 4, Pg. 24	Capacity Plate (Not Shown)	1
57	0149878-00	Rivet (Not Shown)	2
	6410411-00	Connect Link (Hand Chain) Not Shown	1

\*Specify length

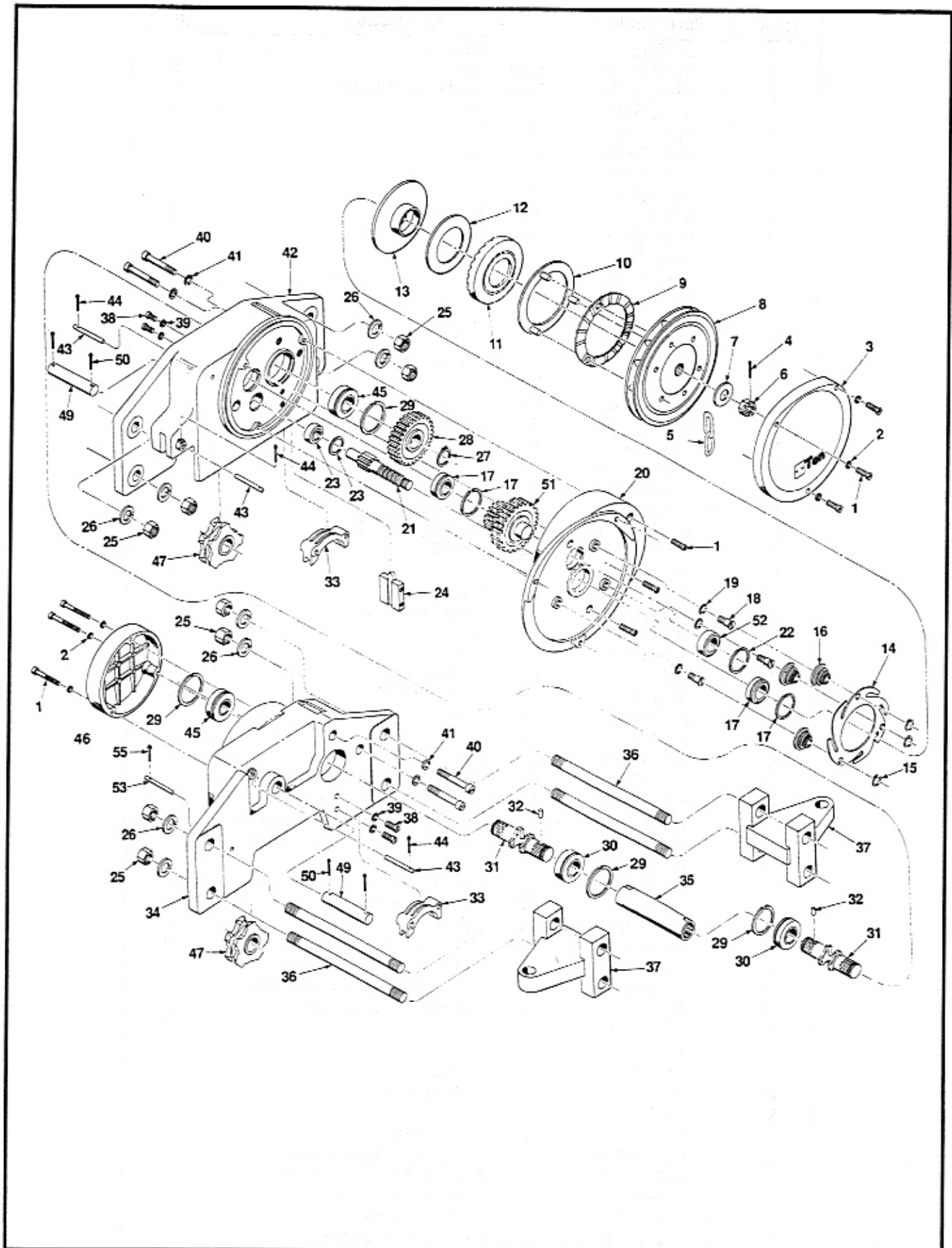


FIGURE 5-3. 4-12 TON

### Capacity 4-12 Ton

Item	Part Number	Description	Qty.
1	0665765-00	Socket Head Screw	9
2	0150321-00	Lockwasher	9
3	0514017-00	Handchain Guide & Cover	1
4	0154200-00	Cotter Pin	3
*5	0033730-00	Hand Chain	*
6	0149779-00	Castellated Nut	1
7	0161405-00	Check Washer	1
8	0165102-00	Handwheel	1
9	0159671-00	Spring Washer	1
10	0154042-00	Oilite Disc	1
11	0158079-00	Ratchet Disc	1
12	6484551-00	Brake Disc	1
13	0127232-00	Friction Plate	1
14	0156405-00	Ring Pawl	1
15	0159148-00	Retaining Ring	3
16	0159622-00	Ring Pawl Spring	3
17	0151277-00	Ball Bearing 620522 w/Retainer	2
18	0159799-00	Ring Pawl Stud	3
19	0150322-00	Pawl Stud Lockwasher	3
20	5000627-00	Suspension Frame Adapter	1
21	5029363-00	Driving Pinion	1
22	6400469-01	Retaining Ring	1
23	5005079-02	Bearing 6202ZZ NR w/Retainer	1
24	6406841-00	Stripper	2
25	0149378-00	Tie Bolt Nut	8
26	0150273-00	Lockwasher	8
27	5024339-03	Retaining Ring	1
28	0155366-00	Load Gear	1
29	6400469-20	Retaining Ring	2
30	5005079-01	Bearing 6207ZZ w/Retainer	2
31	5036444-00	Load Sheave	2
32	0230210-00	Roll Pin	2
33	6423604-00	Load Chain Guide	2
34	5000607-00	Suspension Frame (L.H.)	1
35	5036574-00	Extension Shaft	1
36	5037741-00	Tie Bolt	4
37	See Table 2, Pg. 23	Suspension Yoke	2
38	0603055-00	Fillister Head Screw	4
39	0150365-00	Lockwasher (Stripper)	4
40	6412041-00	Fillister Head Screw	4
41	0150368-00	Lockwasher	4
42	5000617-00	Suspension Frame (R.H.)	1
43	5031331-00	Chain Anchor Pin	2
44	0154167-00	Cotter Pin	2
45	0151281-00	Ball Bearing 6207ZZ	2
46	0155192-00	Gear Cover	1
**47	6405463-00	Idler Sheave	2
**48	6400269-01	Bearing (Idler Sheave)	2
**49	5031271-00	Idler Sheave Shaft	2
**50	0381423-00	Cotter Pin	4
51	6427361-00	Intermediate Gear	1
	6427331-00	Intermediate Pinion	1
52	0100808-00	Bearing 6204ZZ	1
53	0609303-00	Chain Dead End (Not Shown)	2
54	0161040-00	Washer (Not Shown)	2
55	0154167-00	Cotter Pin	2
56	0033650-00	3/8 Alloy Chain (Not Shown)	*
57	0149878-00	Rivet (Not Shown)	2
58	See Table 13, Pg. 24	Name Plate (Not Shown)	1
59	See Table 4, Pg. 24	Capacity Plate (Not Shown)	1
60	0209149-00	Rd. Head Dr. Screw (Not Shown)	2
	6410411-00	Connect Link (Hand Chain) Not Shown	1

\*Specify length

\*\*Used on 8 thru 12 Ton only

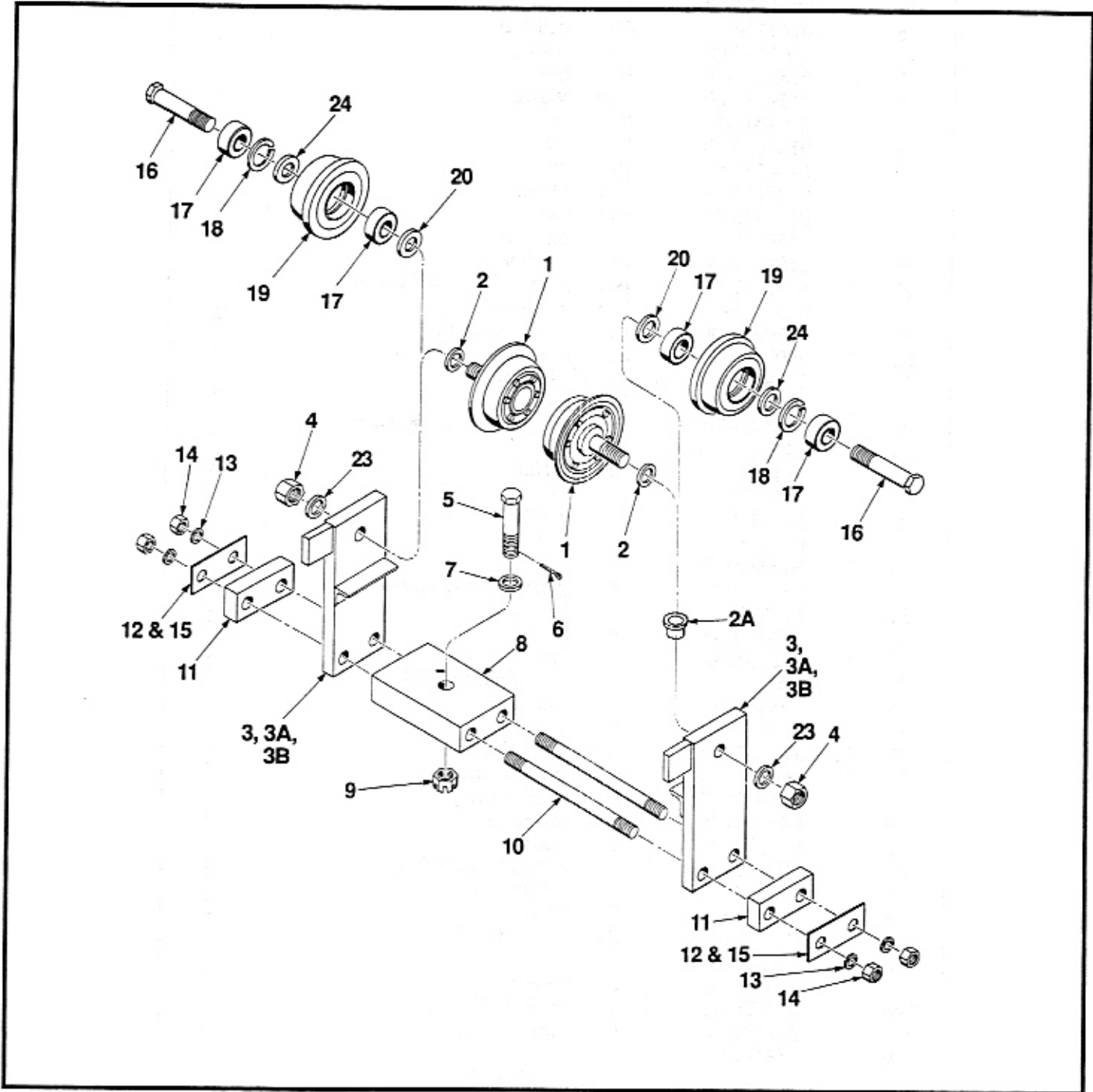


FIGURE 5-4. PLAIN TROLLEY 1/2-3 TON



**Parts List Plain Trolley 1/2-3 Ton**

Item	Description	1/2 Ton	1 & 1/2 Ton	2 Ton	3 Ton	Qty.
**1	Plain Wheel Saginaw	6457083-01	0249628-00	6457073-01	—	4
**2	Plain Washer (Wheel)	0161100-00	5006371-00	0236018-00	—	8
**3	Sideplate Plain L/Hand	6485473-01	6485501-00	6475424-00	—	1
**3A	Sideplate Plain R/Hand	6485473-02	5022184-00	6475424-00	—	1
3B	Sideplate Plain (Geared)	—	—	6404614-00	5022344-00	2
**4	Hex Nut	0149648-00	0149375-00	0149375-00	0213606-00	4
4A	Lock Nut	0371081-00	0150160-00	0150158-00	—	4
5	King Pin	6402511-00	6402511-00	5022511-00	5022511-00	2
6	Cotter Pin	0154185-00	0154185-00	0154185-00	0154185-00	2
7	Thrust Washer	0143734-00	0143734-00	0144735-00	0144735-00	2
8	Separator Block	5017303-00	5017303-00	6412003-00	5019723-00	2
9	Slotted Nut	0149779-00	0149779-00	0149780-00	0149780-00	2
10	Double End Stud	6402551-00	6402551-00	6402641-00	5022571-00	4
11	Adjusting Block	5060721-00	5060721-00	5022581-00	5022581-00	4
12	Adjusting Plate	6402541-00	6402541-00	6402651-00	6402651-00	8
13	Lockwasher	0150268-00	0150268-00	0150270-00	0150270-00	8
14	Hex Nut	0149374-00	0149374-00	0149375-00	0149375-00	8
15	Adjusting Plate	6406631-00	6406631-00	6406641-00	6406641-00	8
16	Axle	0250610-00	0639076-00	0250576-00	0664038-00	4
17	Bearing	6480873-00	5003539-02	5003539-07	0664037-00	8
18	Retaining Ring or Spacer	0645705-00	0645708-00	6400469-04	5024531-00	4
19	Plain Wheel	0250542-00	0249664-00	6412103-00	6412133-00	2
20	Washer, Spacer	0236017-00	5006371-00	0250699-00	6402671-00	8
**21	Lockwasher (Not Shown)	0150292-00	0150270-00	0150296-00	—	4
22	Bearing Shim	6480653-00	6494681-00	0612798-00	6447903-06	4
	Sideplate (Geared) L/Hand	6412804-01	6485501-00	6404614-00	5022344-00	1
	Sideplate (Geared) R/Hand	6412804-02	5022184-00	6404614-00	5022344-00	1

\*\*For units with Saginaw wheels only (1/2-2 Ton)

**NOTE: Geared Trolleys use Forged Wheels**

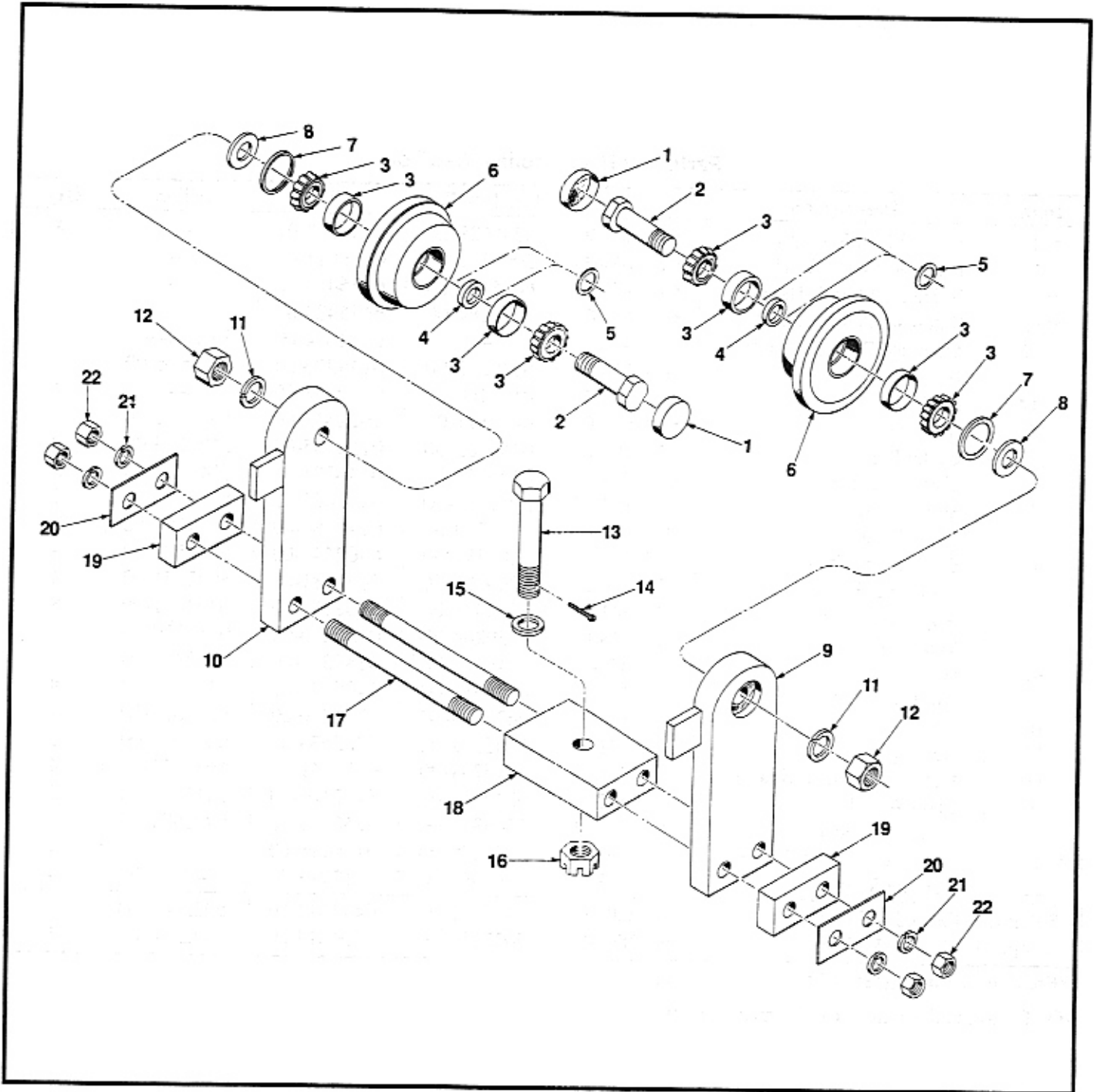


FIGURE 5-5. PLAIN TROLLEY 4-12 TON

**Parts List Plain Trolley 4-12 Ton**

<b>Item</b>	<b>Description</b>	<b>4-6 Ton</b>	<b>8-12 Ton</b>	<b>Qty.</b>
*1	Dust Cover (Outer)	—	0646667-00	2
2	Axle	0579173-00	0664012-00	2
3	Bearing Assembly	0578982-00	0646669-00	4
4	Bearing Spacer	0601083-00	0646668-00	2
5	Bearing Shim	0111950-00	0111948-00	4
6	Plain Wheel	6403844-00	0646672-00	2
*7	Dust Cover (Inner)	—	0646666-00	2
8	Wheel Spacer	0579174-00	0236024-00	2
9	Sideplate (R.H.)	5040004-00	5036474-00	1
10	Sideplate (L.H.)	5036704-00	5036484-00	1
11	Lockwasher	0401010-00	0150300-00	2
12	Jam Nut	0379032-00	0149719-00	2
13	King Pin	6402751-00	5060881-00	1
14	Cotter Pin	0154239-00	0154239-00	1
15	Thrust Washer	0250670-00	0250670-00	1
16	Slotted Nut	0149784-00	0149784-00	1
17	Double End Stud	5037781-00	5031311-00	2
18	Separator Block	5029443-00	5036514-00	1
19	Adjusting Block	5029453-00	5029373-00	2
20	Adjusting Plate	6402741-00	5022461-00	10
21	Lockwasher	0150272-00	0150273-00	4
22	Hex Nut	X379004-00	0149378-00	4
23	Adjusting Plate (Not Shown)	6406811-00	6407351-00	4

\*Used on 8-12 Ton only

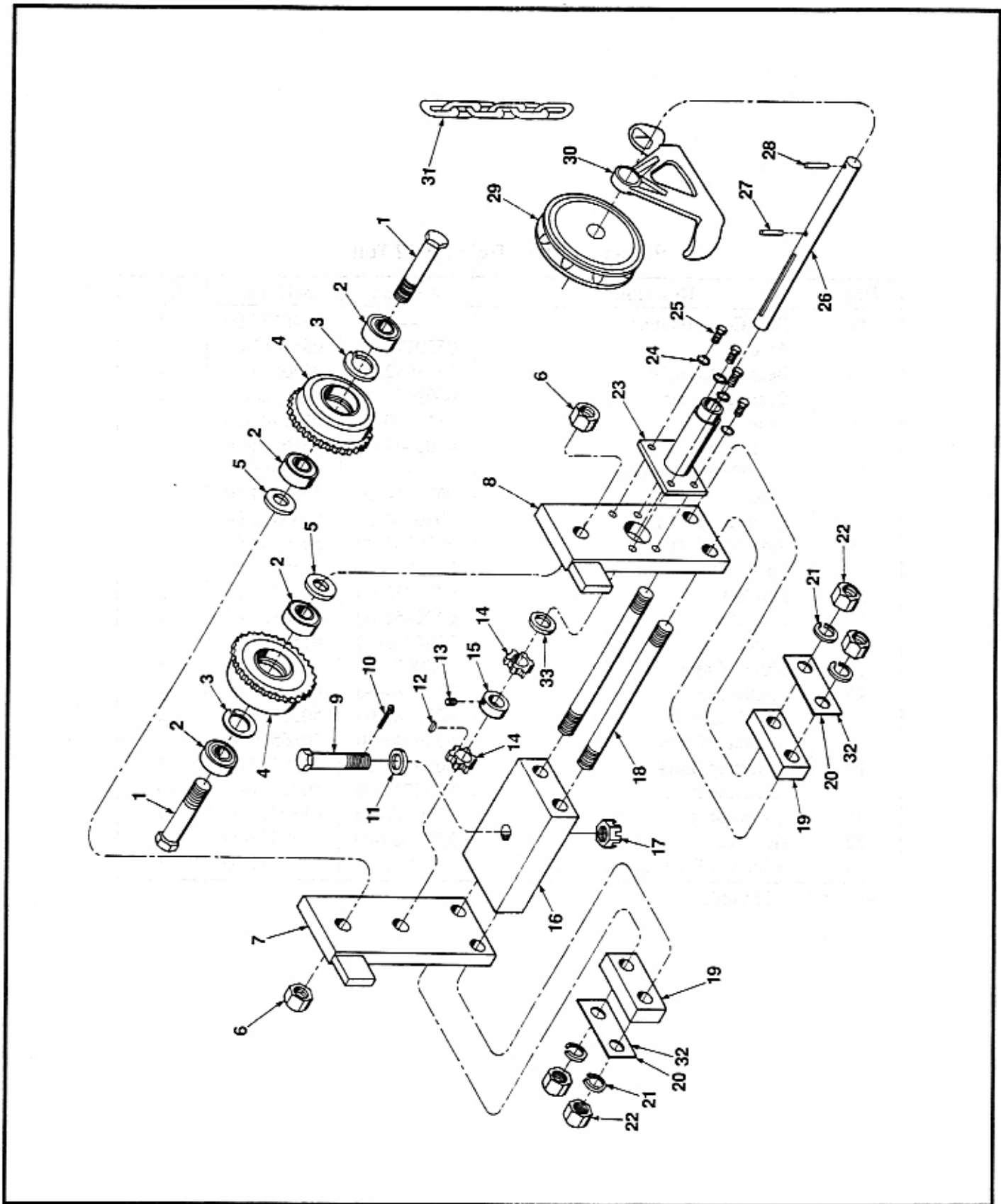


FIGURE 5-6. GEARED TROLLEY 1/2-3 TON

**Parts List Geared Trolley 1/2-3 Ton**

Item	Part Number	Description	Qty.
1	See Table 3	Axle	2
+2	See Table 3	Bearing	4
3	See Table 3	Snap Ring or Spacer	2
4	See Table 3	Geared Wheel	2
5	See Table 3	Washer	4
6	See Table 3	Lock Nut	2
7	See Table 3	Sideplate (R.H.) Geared	1
8	See Table 3	Sideplate (L.H.) Geared	1
9	See Table 3	King Pin	1
10	0154185-00	Cotter Pin	1
11	See Table 3	Thrust Washer	1
12	6402571-00	Pinion Key	1
13	6430098-00	Set Screw	1
14	5022501-00	Wheel Pinion	2
15	6402561-00	Collar	1
16	See Table 3	Separator Block	1
17	See Table 3	Hex Nut	1
18	See Table 3	Double End Stud	2
19	See Table 3	Adjusting Block	2
20	See Table 3	Adjusting Plate	10
21	0150268-00	Lockwasher (1/2-1 1/2 Ton)	4
21A	0150270-00	Lockwasher (2-3 Ton)	4
22	See Table 3	Hex Nut	4
23	5017283-00	Extension Bracket	1
24	0150322-00	Lockwasher	4
25	0597115-00	Extension Bracket Screw	4
26	See Table 3	Pinion Shaft	1
27	5004099-02	Roll Pin	1
28	0230207-00	3/16 x 1 1/4 Roll Pin	1
29	6401803-00	Handwheel	1
30	0610949-00	Hand Chain Guide	1
*31	0033730-00	Hand Chain	*
32	See Table 3	Adjusting Plate (Not Shown)	4
**33	See Table 3	Spacer	1
34	See Table 3	Bearing Shim	8

+3 Ton units use a cup and cone bearing assembly #0664037-00

\*Specify length

\*\*Used on 2 & 3 Ton only

**NOTE: Table 3, Page 24**



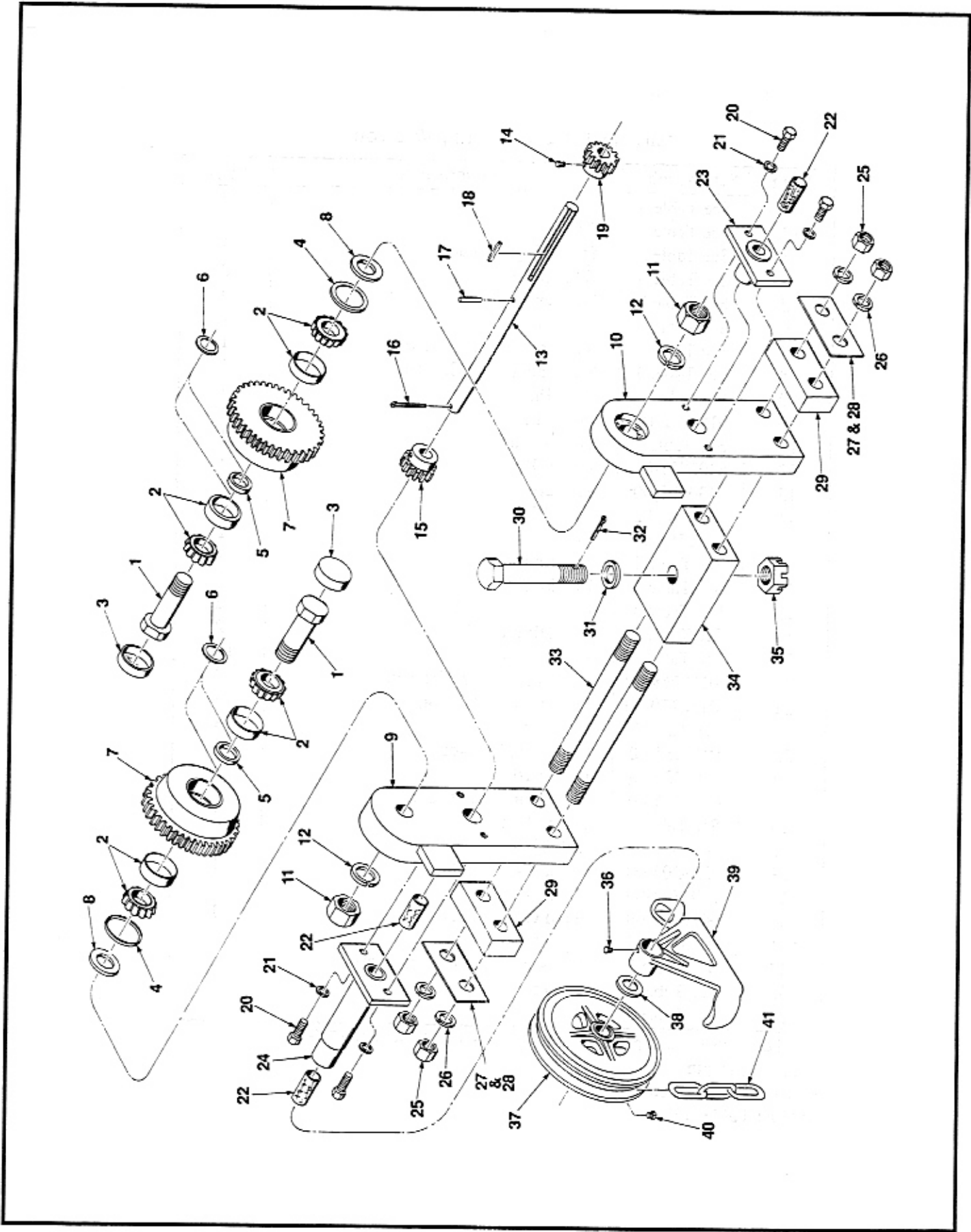


FIGURE 5-7. GEARED TROLLEY 4-12 TON

### Parts List Geared Trolley 4-12 Ton

Item	Part Number	Description	Qty.
1	See Table 1	Axle	2
2	See Table 1	Bearing	4
**3	0646667-00	Dust Cover (Outer)	2
**4	0646666-00	Dust Cover (Inner)	2
5	See Table 1	Spacer, Bearing	2
6	See Table 1	Shim, Bearing	4
7	See Table 1	Wheel	2
8	See Table 1	Wheel Spacer	2
9	See Table 1	Sideplate Geared (L.H.)	1
10	See Table 1	Sideplate Geared (R.H.)	1
11	See Table 1	Nut, Axle	2
12	See Table 1	Lockwasher, Axle	2
13	See Table 1	Pinion Shaft	1
14	0333847-00	Screw, Pinion	1
15	See Table 1	Pinion (For Roll Pin)	1
16	See Table 1	Cotter Pin	1
17	See Table 1	Roll Pin	1
18	0162410-00	Key	1
19	See Table 1	Pinion (For Set Screw)	1
20	0554850-00	Screw (For Extension Bracket)	4
21	0150266-00	Washer (For Extension Bracket)	4
22	See Table 1	Bushing (Bronze)	3
23	See Table 1	Support Plate	1
24	See Table 1	Extension Bracket	1
25	See Table 1	Hex Nut	4
26	See Table 1	Lockwasher	4
27	See Table 1	Adjusting Plate	16
28	See Table 1	Adjusting Plate	4
29	See Table 1	Adjusting Block	2
30	See Table 1	King Pin	1
31	0250670-00	Thrust Washer	1
32	0154239-00	1/4 x 2 1/2 C. Pin	1
33	See Table 1	Double End Studs	2
34	See Table 1	Separator Block	1
35	0149784-00	1 1/4 - 7 Hex Nut	1
36	0182552-00	Ball Valve Oil Cover	1
37	See Table 1	Handwheel	1
38	See Table 1	Flat Washer	1
39	See Table 1	Handchain Guide	1
40	See Table 1	Square Head Screw	1
*41	See Table 1	Hand Chain	4
42	0209149-00	Rd. Head Drive Screw (Not Shown)	2

\*Specify length

\*\*Used on 8-12 Ton only

**NOTE: Table 1, Page 23**

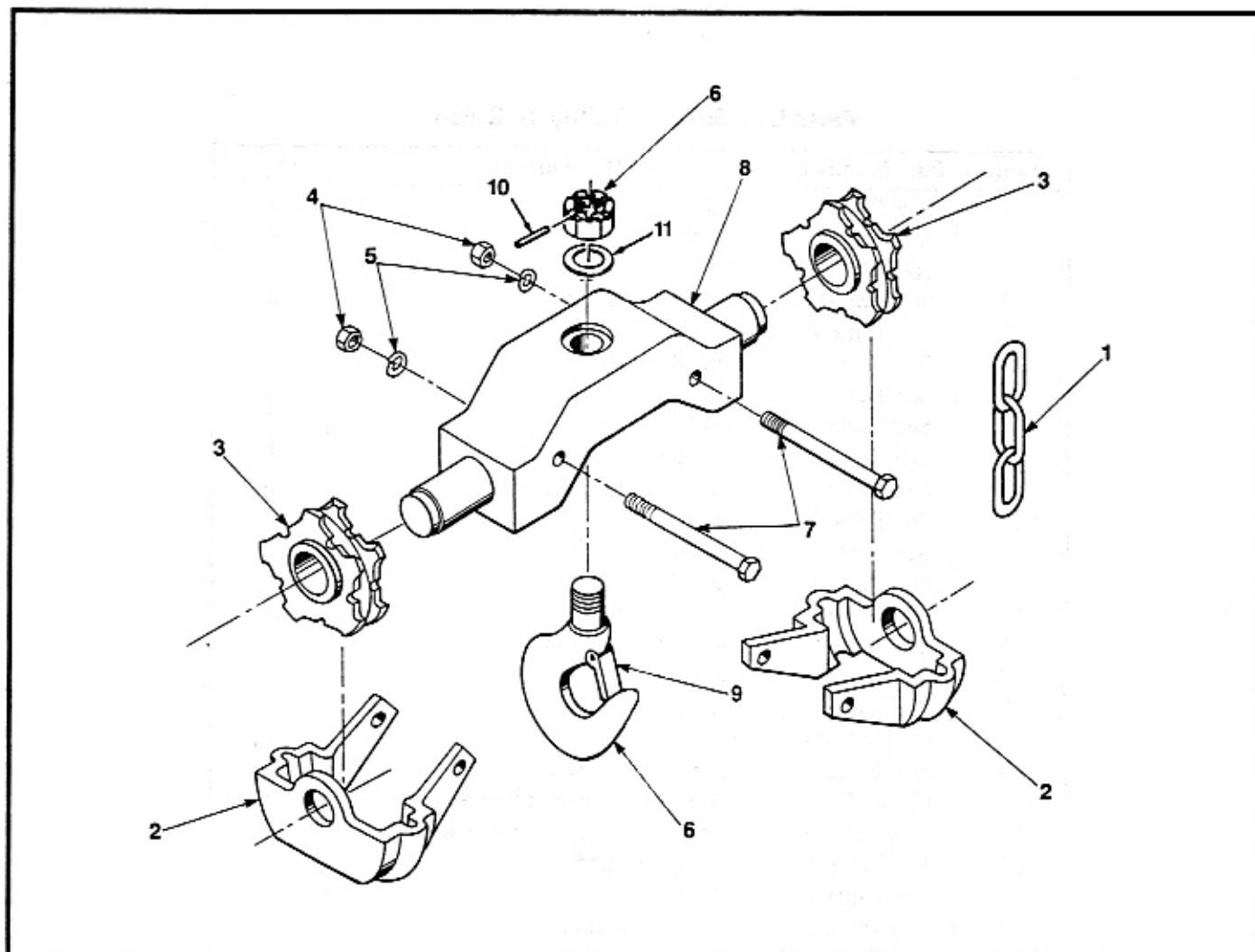


FIGURE 5-8. BOTTOM BLOCK 1/2-3 TON

Item	Part Number	Description	Qty.
*1	6427004-02	Load Chain	*
2	5022114-00	Guard & Guide	2
3	5017173-00	Sheave	2
4	0379017-00	Nut	2
5	0150321-00	Lockwasher	2
6	See Table 7	Hook & Nut w/Safety Latch	1
7	0576996-00	Bolt	2
8	See Table 5	Bottom Crosshead	1
9	See Table 6	Latch Kit	1
10	See Table 11	Roll Pin	1
11	See Table 12	Oilite Washer	1

\*Specify length

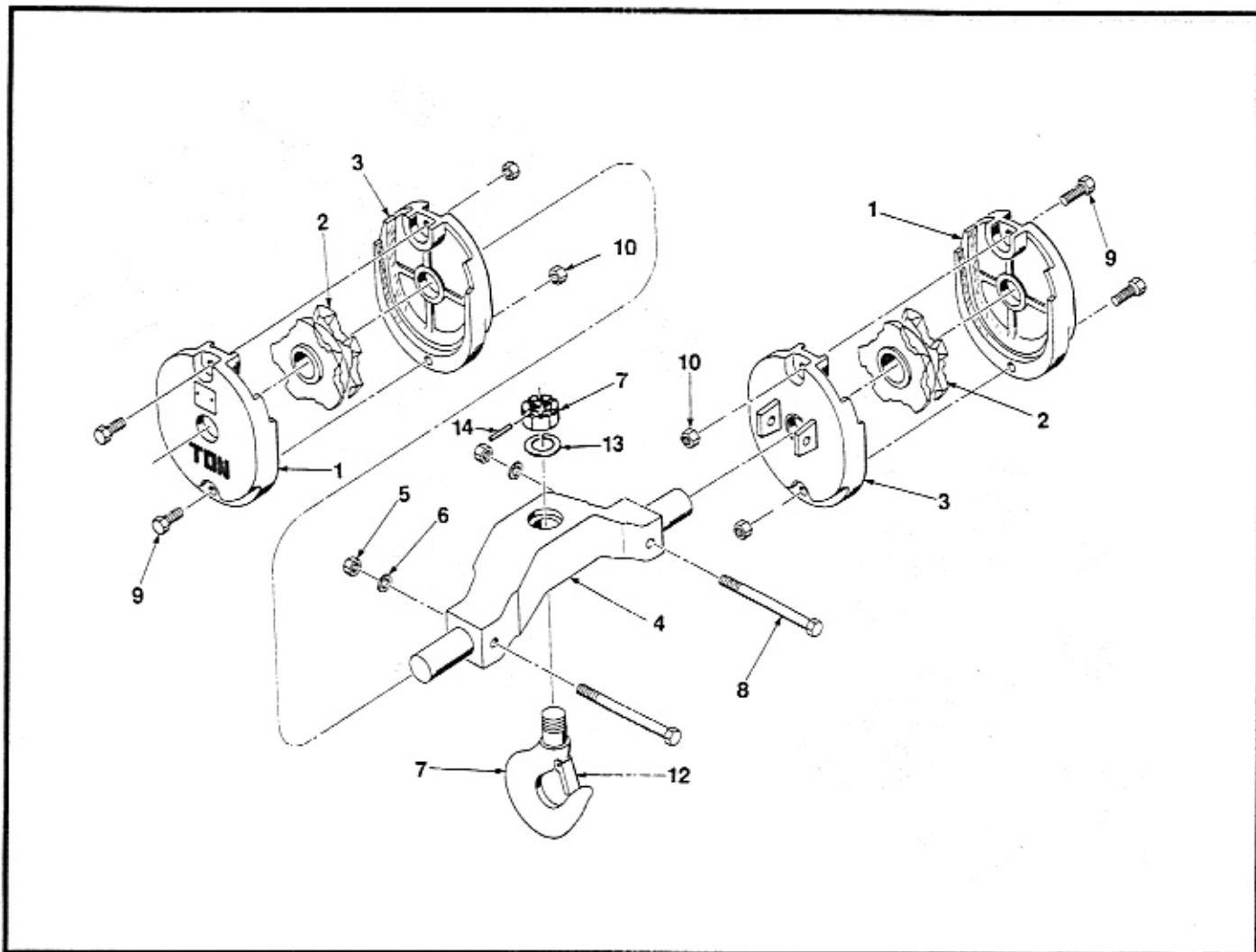


FIGURE 5-8. BOTTOM BLOCK 4-8 TON

Item	Part Number	Description	Qty.
1	5036384-00	Bottom Block Half	2
2	6409703-00	Sheave	2
3	5036374-00	Bottom Block Half	2
4	See Table 5	Bottom Crosshead	1
5	0149709-00	Nut	2
6	0150264-00	Lockwasher	2
7	See Table 7	Hook & Nut w/Safety Latch	1
8	0609303-00	Bolt	2
9	0504959-00	Bolt	4
10	0588346-00	Lock Nut	4
*11	0033650-00	Load Chain (Not Shown)	*
12	See Table 6	Safety Latch Kit	1
13	See Table 12	Oilite Washer	1
14	See Table 11	Roll Pin	1

\*Specify length

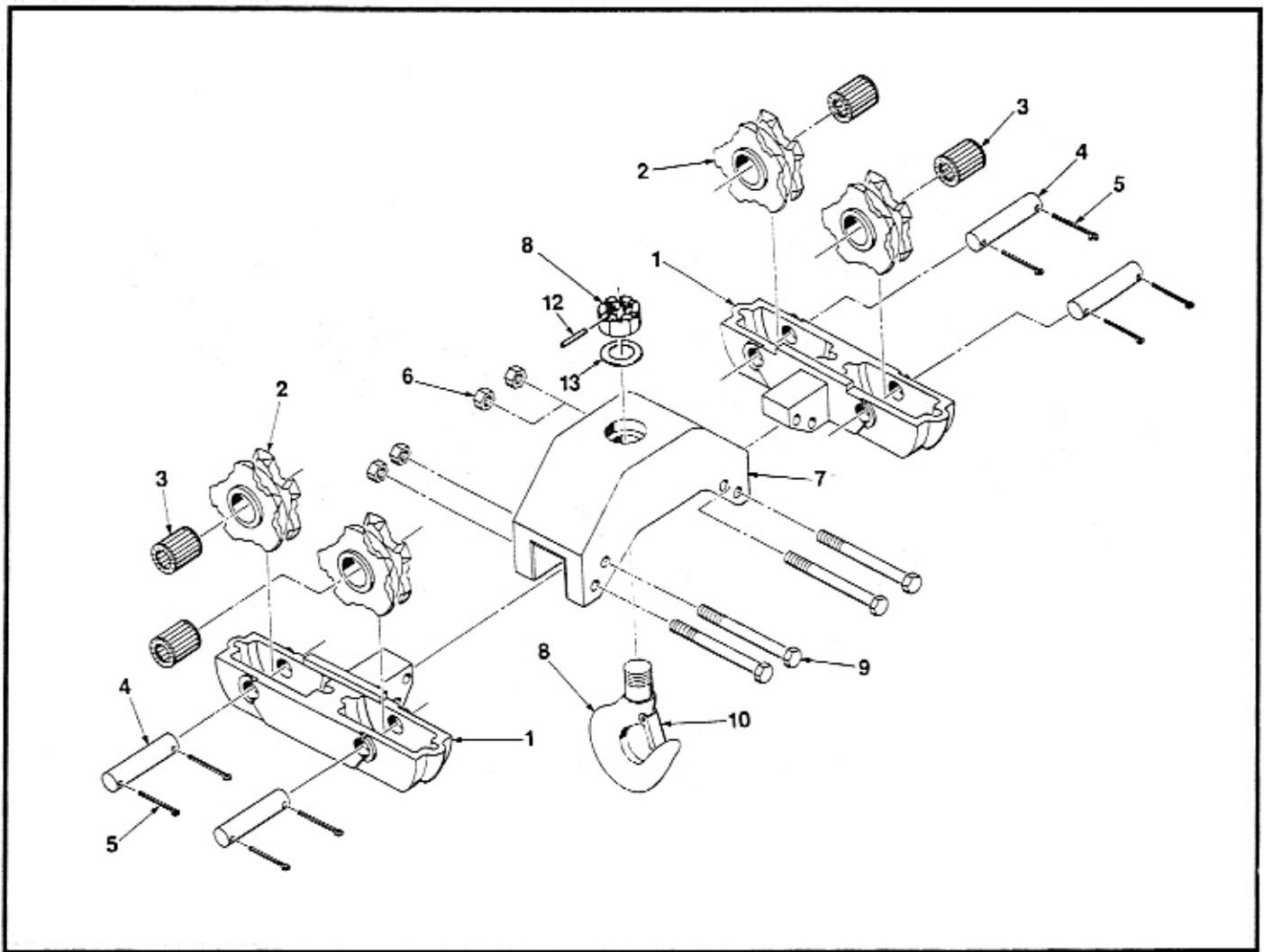


FIGURE 5-9. BOTTOM BLOCK 10-12 TON

Item	Part Number	Description	Qty.
1	5022126-00	Bottom Guard & Guide	2
2	6405463-00	Idler Sheave	4
3	6400269-01	Bearings	4
4	5037731-00	Sheave Pins	4
5	0154219-00	Cotter Pins	8
6	0149374-00	Lock Nut	4
6A	0150294-00	Lockwasher (Not Shown)	4
7	5022176-00	Bottom Crosshead	1
8	See Table 7	Hook & Nut with Safety Latch	1
9	2031571-00	Hex Head Bolt	4
10	0669407-00	Latch Kit	1
*11	0033650-00	Load Chain (Not Shown)	*
12	See Table 11	Roll Pin	1
13	See Table 12	Oilite Washer	1

\*Specify length



**TABLE 1 — GEARED TROLLEY 4-12 TON**

Item	Part Number		Description
	4-6 Ton	8-12 Ton	
1	0579173-00	0664012-00	Axle
2	0578982-00	0646669-00	Bearing
5	0601083-00	0646668-00	Spacer, Bearing
6	0111950-00	0111948-00	Shim, Bearing
7	6403854-00	0646673-00	Wheel
8	0579174-00	0236024-00	Spacer, Wheel
9	5040014-00	5036494-00	Sideplate, Geared (L.H.)
10	5040024-00	5036504-00	Sideplate, Geared (R.H.)
11	0379032-00	0149719-00	Nut, Axle
12	0401010-00	0150300-00	Lockwasher (Axle)
13	5040044-00	5036554-00	Pinion Shaft
15	0588168-00	5060951-00	Pinion (For Roll Pin)
16	0381400-00	0154214-00	Cotter Pin
17	0559292-00	0230236-00	Roll Pin
19	5029463-00	5024013-00	Pinion (For Set Screw)
22	0508441-00	0508443-00	Bushing (Bronze)
23	6412923-00	6412833-00	Support Plate
24	6414924-00	6414634-00	Extension Bracket
25	X379004-00	0149378-00	Hex Nut
26	0150272-00	0150273-00	Lockwasher
27	6402741-00	5022461-00	Adjusting Plate
28	6406811-00	6407351-00	Adjusting Plate
29	5029453-00	5029373-00	Adjusting Block
30	6402751-00	5060881-00	King Pin
33	5037781-00	5031311-00	Double End Studs
34	5029443-00	5036514-00	Separator Block
37	0111132-00	6405624-00	Hand Wheel
38	0250668-00	0250664-00	Flat Washer
39	6405514-00	6405524-00	Handchain Guide
40	0388054-00	0388014-00	Square Head Screw
*41	0033730-00	0033730-00	Hand Chain 1/4" Unplated

\*Specify length

**TABLE 2 — SUSPENSION YOKES 1/2-12 TON**

Item Number	Capacity	Part Number
39	1/2 Ton	6404594-00
	1-1 1/2 Ton	5022354-00
	2-3 Ton	5022124-00
37	4-6 Ton	6403166-00
	8-12 Ton	5022166-00

**TABLE 3 — GEARED TROLLEY 1/2-3 TON**

Item	Part Number				Description
	1/2 Ton	1 & 1/2 Ton	2 Ton	3 Ton	
1	0250610-00	0639076-00	0250576-00	0664038-00	Axle
2	6480873-00	5003539-02	5003539-07	0664037-00	Bearing
3	0645705-00	0645708-00	6400469-04	6447913-06	Snap Ring or Spacer
4	0250545-00	0249666-00	6412113-00	6412143-00	Geared Wheel
5	0236017-00	5006371-00	0250699-00	6402671-00	Washer
6	0317081-00	0150160-00	0150158-00	0231606-00	Lock Nut
7	6404584-00	5022204-00	6404634-00	5024724-00	Sideplate Geared (R.H.)
8	6404574-00	5022194-00	6404624-00	5024714-00	Sideplate Geared (L.H.)
9	6402511-00	6402511-00	5022511-00	5022511-00	King Pin
11	0143734-00	0143734-00	0144735-00	0144735-00	Thrust Washer
16	5017303-00	5017303-00	6412003-00	5019723-00	Separator Block
17	0149779-00	0149779-00	0149780-00	0149780-00	Hex Nut
18	6402551-00	6402551-00	6402641-00	5022571-00	Double End Stud
19	5060721-00	5060721-00	5022581-00	5022581-00	Adjusting Block
20	6402541-00	6402541-00	6402651-00	6402651-00	Adjusting Plate
22	0149374-00	0149374-00	0149375-00	0149375-00	Hex Nut
26	5017293-00	6407603-00	6404353-00	5019713-00	Pinion Shaft
32	6406631-00	6406631-00	6406641-00	6406641-00	Adjusting Plate
**33	—	—	0272326-00	6407391-00	Spacer
36	6480653-00	6494681-00	0612798-00	5024531-00	Bearing Shim

\*\*Used on 2 & 3 Ton only

**TABLE 4 — CAPACITY PLATES 1/2-12 TON**

Item Number	Capacity	Part Number
56	1/2 Ton	0595021-00
	1 Ton	0595028-00
	1 1/2 Ton	0595053-00
	2 Ton	0595029-00
	3 Ton	0595054-00
59	4 Ton	0595055-00
	5 Ton	0595056-00
	6 Ton	0595057-00
	8 Ton	0595058-00
	10 Ton	0595059-00
	12 Ton	0595060-00

**TABLE 5 — BOTTOM CROSSHEAD 1/2-8 TON**

Item Number	Capacity	Part Number
8	1/2 Ton	6403993-00
	1 Ton	5017213-00
	1 1/2 Ton	6404033-00
	2 Ton	6404654-00
	3 Ton	5022234-00
4	4 Ton	5039066-00
	5-6 Ton	5022096-00
	8 Ton	5039316-00
7	10 & 12 Ton	5022176-00

**TABLE 6 — LATCH KIT 1/2-8 TON**

Item Number	Capacity	Part Number
9	1/2 Ton	0669400-00
	1 Ton	0669402-00
	1 1/2-3 Ton	0669403-00
12	4 Ton	0669404-00
	5 & 6 Ton	0669405-00
	8 Ton	0669406-00
10	10 & 12 ton	0669407-00

**TABLE 7 — HOOK & NUT WITH SAFETY LATCH 1/2-8 TON**

Item Number	Capacity	Part Number
6	1/2 Ton	6411262-00
	1 Ton	6411272-00
	1 1/2 Ton	6411292-00
	2 & 3 Ton	6411292-00
7	4 Ton	6411302-00
	5 & 6 Ton	6411312-00
	8 Ton	6411322-00
8	10 & 12 Ton	6411332-00

**TABLE 8 — DRIVING PINION 1/2-3 TON**

Item Number	Capacity	Part Number
23	1/2-1 1/2 Ton	5017163-00
	2-3 Ton	5017333-00

**TABLE 9 — LOAD GEARS 1/2-3 TON**

Item Number	Capacity	Part Number
30	1/2-1 1/2 Ton	0155355-00
	2-3 Ton	0155356-00

**TABLE 10 — TIE BOLT 1/2-3 TON**

Item Number	Capacity	Part Number
38	1/2 Ton	6403973-00
	1-1 1/2 Ton	6404013-00
	2-3 Ton	5017203-00

**TABLE 11 — BOTTOM HOOK ROLL PIN**

Item Number	Capacity	Part Number
10	1/2 Ton	0308442-00
	1-1 1/2, 2 & 3 Ton	0230207-00
14	4, 6 & 8 Ton	0592974-00
12	10 & 12	0594798-00

**TABLE 12 — BOTTOM HOOK (Oilite Washer)**

Item Number	Capacity	Part Number
11	1/2 Ton	0319115-00
	1-1 1/2, 2 & 3 Ton	0544158-00
13	4, 6 & 8 Ton	6400839-06
	10 & 12	5005809-01

**TABLE 13 — NAME PLATES**

Item Number	Capacity	Part Number
55	1/2 Ton	6478764-01
	1 Ton	6478764-02
	1 1/2 Ton	6478764-03
	2 Ton	6478764-04
	3 Ton	6478764-05
58	4 Ton	6478764-06
	5 Ton	6478764-07
	6 Ton	6478764-08
	8 Ton	6478764-09
	10 Ton	6478764-10
	12 Ton	6478764-11

**INSPECTION & MAINTENANCE CHECK LIST  
HAND OPERATED OVERHEAD CHAIN HOIST**

TYPE OF HOIST \_\_\_\_\_ CAPACITY (TONS) \_\_\_\_\_  
 LOCATION \_\_\_\_\_ ORIGINAL INSTALLATION DATE \_\_\_\_\_  
 MANUFACTURER \_\_\_\_\_ MANUFACTURER'S SERIAL NUMBER \_\_\_\_\_

ITEM	FREQUENCY OF INSPECTION			POSSIBLE DEFICIENCIES	OK	ACTION REQUIRED
	FREQUENT		PERIODIC 1-12 MO.			
	DAILY	MONTHLY				
Load Chain	*	*	*	Inadequate lubrication, excessive wear or stretch, cracked, damaged or twisted links, corrosion or foreign substance		
Brake Mechanism	*	*	*	Slippage or excessive drift		
Hooks	*	*	*	Excessive throat opening, bent or twisted more than 10 degrees, damaged hook latch, wear, chemical damage, worn hook bearing, Cracks (use dye penetrant, magnetic particle or other suitable detection method)		
Hook Retainers			*	Worn or damaged nuts, collars, pins welds or riveting used to secure hook in load block or housing		
Brake Parts: Friction Discs  Pawl, Ratchet Pawl Springs Brake Hub Pawl Stud			*	Excessive wear, glazing, oil contamination Wear, binding, worn bushing Breaks, corrosion or stretch Wear or damaged threads Excessive wear, pawl retention		
Sheaves Hand Chain Wheel, Chain Attachments			*	Distortion, cracks, excessive wear		
Gearing			*	Inadequate lubrication, cracks, distortion, worn or broken teeth		
Bearings, Shafts			*	Inadequate lubrication, distortion, cracks, excessive wear		
Housing, Load Block			*	Cracks, distortion, loose bolts or nuts		
Nuts, Bolts, Rivets			*	Looseness, stripped or damaged threads		
Trolleys and Supporting Structure			*	Damage or wear which restricts ability to support imposed loads		
Capacity Plates Warning Labels			*	Missing, damaged or illegible		

NOTE: Refer to Maintenance and Inspection Sections of the Hoist Maintenance Manual for further details.

**PERIOD OF INSPECTION**

Frequent — Indicates items requiring inspection daily to monthly. Daily inspections may be performed by the operator if properly designated.

Periodic — Indicates items requiring inspection monthly to yearly. Inspections to be performed by or under the direction of a properly designated person. The exact period of inspection will depend on frequency and type of usage. Determination of this period will be based on the user's experience. It is recommended that the user begin with a monthly inspection and extend the periods to quarterly, semi-annually or annually based on his monthly experience.

**NOTE: This inspection and maintenance check list is in accordance with our interpretation of the requirements of the Safety Standard for Overhead Hoists ANSI B30.16—1973. It is, however, the ultimate responsibility of the employer/user to interpret and adhere to the applicable requirements of this safety standard.**

**INSPECTION AND MAINTENANCE CHECK LIST**

# DO'S AND DO NOT'S

## Hand Chain Manually Operated Chain Hoists

The following warnings and operating practices have been taken from American National (Safety) Standard ANSI B30.16 and are intended to avoid unsafe hoisting practices which might lead to personal injury or property damage.

These recommendations apply to all hand chain manually operated chain hoists for vertical lifting service involving material handling of freely suspended unguided loads.

### WARNING: TO AVOID INJURY

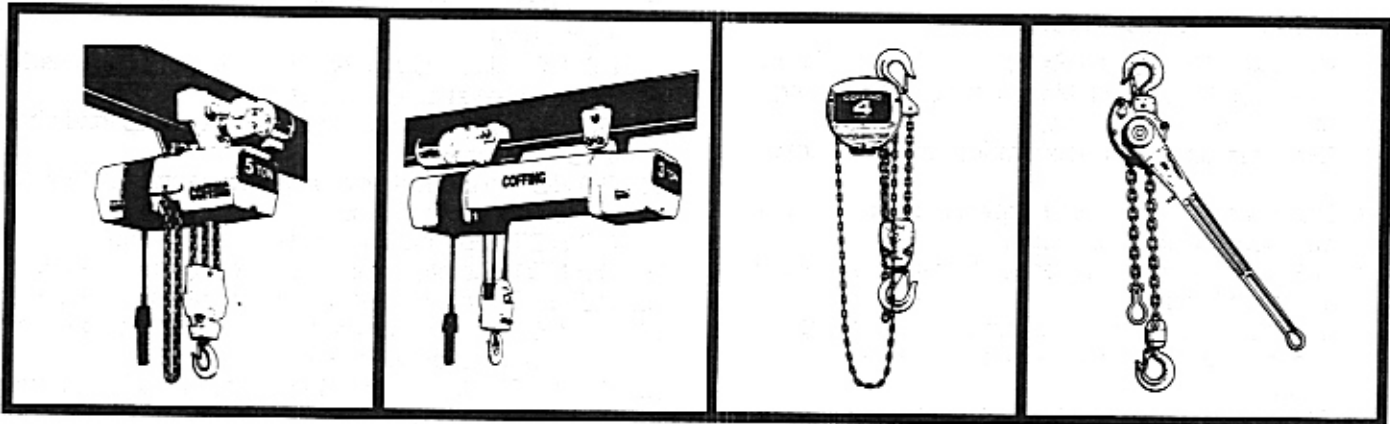
1. DO read ANSI B30.16 Safety Standard for Overhead Hoists and the Hoist Manufacturer's Operating and Maintenance Instructions.
2. DO be familiar with hoist operating controls, procedures and warnings.
3. DO make sure the hoist suspension hook is securely attached to a suitable support.
4. DO maintain firm footing or be otherwise secured when operating hoist.
5. DO make sure that load slings or other approved attachments are properly sized and seated in the hook saddle.
6. DO make sure the hook latch, if used, is closed and not supporting any part of the load.
7. DO make sure that load is free to move and will clear all obstructions.
8. DO take up slack carefully, check load balance, lift a few inches, and check load holding action before continuing.
9. DO make sure all persons stay clear of the suspended load.
10. DO avoid swinging of load or load hook.
11. DO protect load chain from weld spatter or other damaging contaminants.
12. DO promptly report any malfunction, unusual performance, or damage of the hoist.
13. DO inspect hoist regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
14. DO use the hoist manufacturer's recommended parts when repairing a hoist.
15. DO use hook latches wherever possible.
16. DO apply lubricant to load chain as recommended by the hoist manufacturer.
17. DO NOT lift more than rated load.
18. DO NOT use the hoist load limiting device to measure the load.
19. DO NOT use damaged hoist or hoist that is not working correctly.
20. DO NOT use hoist with twisted, kinked, damaged, or worn chain.
21. DO NOT lift a load unless chain is properly seated in chain wheel(s) or sprocket(s).
22. DO NOT use load chain as a sling or wrap load chain around the load.
23. DO NOT lift a load if any binding prevents equal loading on all supporting chains.
24. DO NOT apply the load to the tip of the hook.
25. DO NOT operate unless load is centered under hoist.
26. DO NOT operate hoist with other than manual power.
27. DO NOT permit more than one operator to pull on a single hand chain at one time.
28. DO NOT allow your attention to be diverted from operating the hoist.
29. DO NOT operate hoist beyond limits of load chain travel.
30. DO NOT use hoist to lift, support, or transport people.
31. DO NOT lift loads over people.
32. DO NOT leave a suspended load unattended unless specific precautions have been taken.
33. DO NOT allow sharp contact between two hoists or between hoist and obstructions.
34. DO NOT allow the chain or hook to be used as a ground for welding.
35. DO NOT allow the chain or hook to be touched by a live welding electrode.
36. DO NOT remove or obscure the warnings on the hoist.
37. DO NOT adjust or repair a hoist unless qualified to perform hoist maintenance.
38. DO NOT attempt to lengthen the load chain or repair damaged load chain.

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**WARNING:** The equipment shown in this manual is intended for industrial use only and should not be used to lift, support, or otherwise transport people, or to suspend unattended loads over people.

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