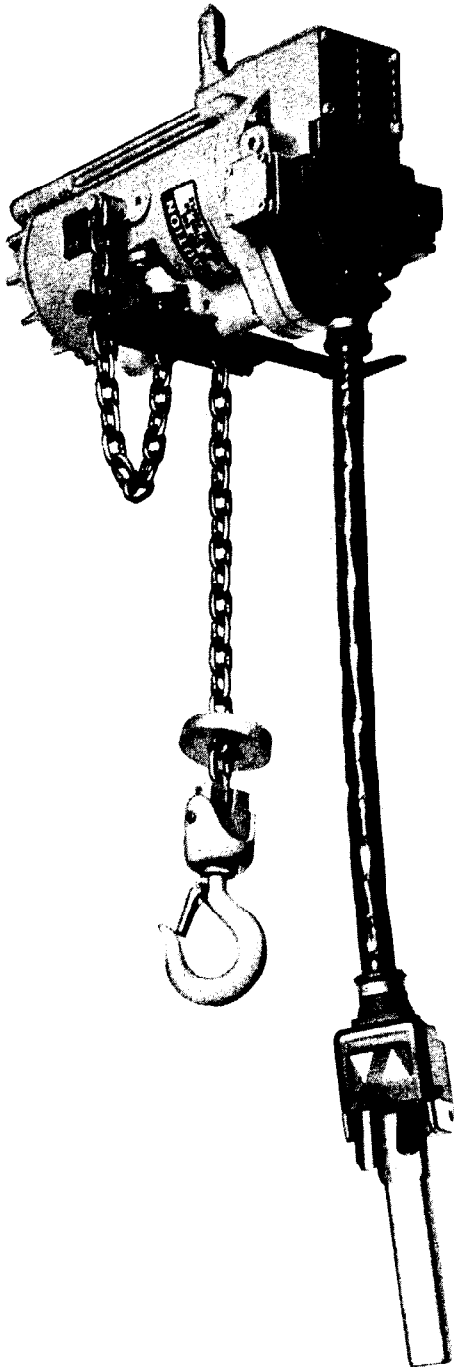


# OPERATOR AND MAINTENANCE MANUAL



**MODEL ML25K**  
**1/4 - Ton Air Chain Hoist**

**MODEL ML50K**  
**1/2 - Ton Air Chain Hoist**

**MODEL ML100K**  
**1 - Ton Air Chain Hoist**

**WARNING**  
**DO NOT USE THIS HOIST FOR**  
**LIFTING OR LOWERING PEOPLE.**

**ALWAYS OPERATE, INSPECT AND MAINTAIN**  
**THIS HOIST IN ACCORDANCE WITH AMERICAN**  
**NATIONAL STANDARDS INSTITUTE SAFETY**  
**STANDARDS B30.16.**

**READ ALL THE ENCLOSED INSTRUCTIONS BEFORE**  
**INSTALLING, OPERATING OR REPAIRING THIS**  
**HOIST.**

Refer All Communications to the Nearest  
Ingersoll-Rand Office or Distributor.

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Printed in U.S.A.

**INGERSOLL-RAND®**  
**AIR HOISTS**



## HOW TO ORDER REPAIR PARTS FOR YOUR HOIST

Your Hoist is designed and constructed to give you long, trouble-free service. In time it may become necessary to order and install new parts to replace those that have been subjected to wear. For prompt service and genuine Ingersoll-Rand parts, place orders with your nearest Ingersoll-Rand Distributor. The use of other than genuine Ingersoll-Rand replacement parts may result in decreased Hoist performance, and may, at the Company's option, invalidate all warranties.

When ordering parts, give your Distributor the following data:

1. Complete model number of the Hoist as it appears on the nameplate.
2. Complete part number, part description and quantity needed as shown on the pages of this manual.

If it becomes necessary to return the complete Hoist or certain parts to the factory, contact the Distributor from whom you purchased the Hoist, or the nearest Ingersoll-Rand Distributor in your locality.

## INSTALLING THE HOIST

Make certain your Hoist is properly installed. A little extra time and effort in so doing can contribute a lot toward preventing accidents and helping you get the best service possible.

Always make certain the supporting member from which the Hoist is suspended is strong enough to support the weight of the Hoist plus the weight of a maximum rated load plus a generous factor of at least 500% of the combined weights.

When installing a Fabric Chain Container on an MLK Hoist refer to the illustration on Page 30. **Note:** Make certain to adjust the balance chain so that the Container does not contact the load chain.

If the Hoist is suspended by a Top Hook, the supporting member should rest completely within the saddle of the Hook and be centered directly above the hook shank. Do not use a supporting member that cants the Hoist to one side or the other.

For installing a Trolley on a beam measure the beam flange and temporarily install the Trolley on the Hoist to determine the exact distribution and arrangement of the spacers. The distance between the wheel flanges should be  $\frac{3}{16}$ " to  $\frac{1}{4}$ " (4.76 to 6.35 mm) greater than the width of the beam flange. The number of spacers between the Trolley side plate and the mounting lug on the Hoist must be the same in all four locations in order to keep the Hoist centered under the I-beam. The remaining spacers must be equally distributed on the outside of the side plate.

When installing the Hoist and Trolley on the beam, make certain the side plates are parallel and vertical. After installation, operate the Trolley over the entire length of the beam with a capacity load suspended a few inches off the floor.

## LUBRICATION SPECIFICATION

Whenever a Series MLK Hoist is disassembled for overhaul or replacement of parts, lubricate as follows:

1. Coat all motor parts with a light film of Ingersoll-Rand Pneu-Lube® Medium Oil No. 50 or a good quality SAE 20 or 20W motor oil before assembling.
2. Apply a coating of Ingersoll-Rand No. 11 Grease to the Planet Gear Bearings (83) and the Brake Driver Bearing (87) before assembly.
3. Lubricate **each link** of the load chain weekly using a good quality SAE 50 to 90W EP oil. Lubricate the chain more frequently depending on the severity of service.

## OPERATION

Always use an air line filter and lubricator with an MLK Hoist. The diameter of the air passage must be at least 1/2" (13 mm). We recommend using No. NFLRU-8 Filter-Lubricator-Regulator installed as close to the inlet of the Hoist as practical.

If quick disconnect fittings are used at the inlet of the Hoist, they must have at least a 3/8" (9.5 mm) air passage. Use of smaller fittings will reduce performance.

## OPERATING PRACTICES

The two most important aspects of Hoist operation are: (1) Allow only qualified people to operate a Hoist, and (2) Subject each Hoist to a regular inspection and maintenance procedure.

A qualified operator must be physically competent. He must have no health condition which might affect his ability to react, and he must have good hearing, vision and depth perception. The qualified Hoist operator must be carefully instructed in his duties and must understand the operation of the Hoist, including a study of the manufacturer's literature. He must thoroughly understand proper methods of hitching loads. He should have a good attitude regarding safety and should refuse to operate under unsafe conditions.

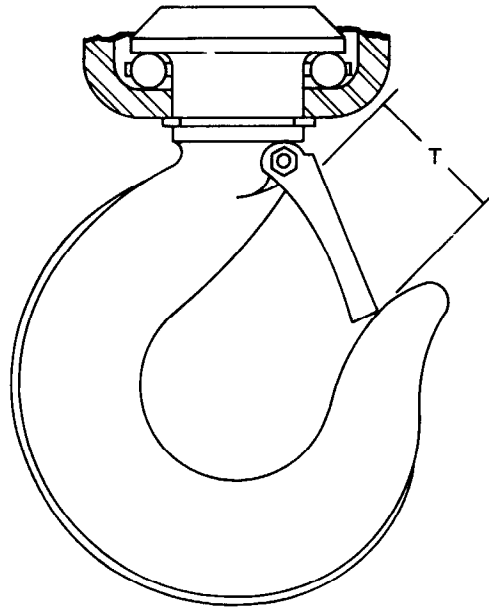
Proper use of a Hoist begins before a load is lifted. Make certain to:

- a. Check to see that the Hoist is directly over the load. Do not lift the load at an angle.
- b. Check to see that the Hoist is securely connected to the overhead crane, monorail, trolley or supporting member.
- c. Check to see that the load is securely inserted in the hook.

Regular inspection procedures should be set up, rigidly adhered to and recorded by or under the direction of a qualified person. On Hoists in continuous service, inspection should be made at the beginning of each shift. The items to be checked include, but are not limited to:

- a. Lubrication according to the instructions above.
- b. **Brakes:** Lift a capacity or near capacity load a few inches off the floor and check ability of braking system to stop and hold the load and without excessive drift.
- c. **Chain and Hooks:** Visually inspect the load chain for cleanliness and lubrication as well as wear or other damage. **Note:** Excessive wear may not be apparent upon casual observation. The only positive check is to gauge it according to manufacturer's instructions. Refer to **CHAIN REPLACEMENT** on page 7. Never operate a Hoist with dry, dirty, worn, damaged or kinked chain.

Hooks should be checked for wear, increase in throat opening, and bending. (**Note:** Increased throat opening or a bent hook indicates overloading or abuse). Replace hooks having a 15% increase in throat opening or 10% bend. If the hook latch snaps past the tip of the hook, the hook is sprung and must be replaced. Check hook support bearings for lubrication or damage. See that they swivel easily and smoothly.



(Dwg. TPD450)

Hoist Size	"T" Throat Opening			
	New Hook		Discard Hook	
	in	mm	in	mm
For ML25K and ML50K.....	1-1/16	27.0	1-7/32	31.0
For ML100K .....	1-1/4	31.8	1-7/16	36.5

Observe the action of Chain feeding through the Hoist. Do not operate a Hoist unless the Chain feeds through the Hoist and Hook Block smoothly and without audible clicking or other evidence of binding or malfunctioning.

- d. **Controls:** See that the controls function properly and return to neutral when released. Check the functioning of up and down stops by running the empty hook slowly to both extremes of travel. If the hook does not stop in its normal position, do not operate the Hoist until the cause of the trouble is located and corrected.
- e. **General:** Check to see that suspension fastenings are secure, unworn and undamaged. On trolley-mounted Hoists, check that trolley wheels track the rail properly and that wheels and rail are not excessively worn. Be alert for unusual visual or audible signs which could indicate a defect. Do not operate the Hoist until the defect has been determined and corrected.

Periodically, depending upon severity of service, the following items should also be inspected. These are in addition to those previously listed.

- a. Check all load-supporting members, including Chain, Pocket Wheel and Chain Guides, for excessive wear or damage.
- b. Inspect top and bottom hooks with a magnetic particle or other suitable crack detector.
- c. Hook retaining nuts or collars along with their locking members and support bearings should be inspected. Proper inspection will require disassembly.
- d. Check and clean the brake parts each time the Hoist is disassembled. Replace the brake disc if the thickness is less than .090 in (2.286 mm).
- e. At least once yearly disassemble the Hoist and check for worn gearing, bearings and shafts. The parts should be cleaned, lubricated and reassembled. Replace worn parts.
- f. Check all Trolleys for smoothness of operation and for wear on supporting members.
- g. Check for excessive wear in the fabric in a Fabric Chain Container, and check for loose mounting bolts and nuts on Fabric and Metal Chain Containers.

## OPERATING INSTRUCTIONS

1. Read the manufacturer's operating instructions before operating the Hoist.
2. Never lift a load greater than the rated capacity of the Hoist.
3. Never use the load chain as a sling.
4. Never operate the Hoist with twisted, kinked or damaged chain.
5. Be certain the load is properly seated in the saddle of the hook. Faulty loading leads to spreading of the hook.
6. Do not use load chains as a ground for welding. Do not attach a welding electrode to a Hoist or sling chain.
7. Do not use the up and down stops as means of stopping a Hoist—these are emergency devices only. Keep hands and clothing free from the throttle lever.
8. Do not leave a load suspended for any extended period.
9. Always stand clear of the load.
10. Never use the Hoist for lifting or lowering people, and never stand on a suspended load.
11. Never carry loads over people.
12. Before each shift, check the Hoist for wear or damage. Check brakes, limit stops, etc.
13. Periodically inspect the Hoist thoroughly and replace worn or damaged parts.
14. Follow the lubrication instructions.
15. Do not attempt to repair load chain or hooks. Replace them when they become worn or damaged.
16. Never operate a Hoist when the load chain is not centered under the hook. Do not "side pull" or "yard".
17. Always rig the Hoist properly and carefully.
18. Ease the slack out of the load chain when starting a lift. Do not jerk the Hoist.
19. Keep the load chain clean and well lubricated. Do not drag the load chain or hook on the floor.
20. Be certain there are no objects in the way of a load or hook when moving the Hoist.
21. Be certain the air supply is shut off before performing maintenance work on the Hoist.
22. Avoid swinging the load when moving the Hoist.
23. Keep the load block overhead when not in use.
24. Properly secure an outdoor Hoist before leaving it unattended.
25. Do not allow unqualified personnel to operate a Hoist.
26. Avoid collision or bumping of Hoists. Do not swing a suspended load.
27. Do not operate a Hoist if you are not physically fit to do so.
28. Do not do anything that you feel may be unsafe.
29. Pay attention to the load at all times when operating a Hoist.
30. Never splice a hoist chain by inserting a bolt between links or by any other means.
31. Do not force a chain or hook into place by hammering, and never insert the point of the hook into a chain link.
32. Do not allow the chain to be exposed to extremely cold weather. Do not apply sudden loads to a cold chain.

## CHAIN LUBRICATION

The load chain and chain attachment pins must be kept clean and lubricated at all times. Unlubricated Chain will wear out in a very few capacity lifts. Failure to maintain clean lubricated Chain will void the Manufacturer's Warranty and cause chain wear which will make operation of the Hoist hazardous. Use an open chain lubricant or any good EP gear oil. Several excellent types of open chain lubricants are available and can be purchased in convenient aerosol cans.

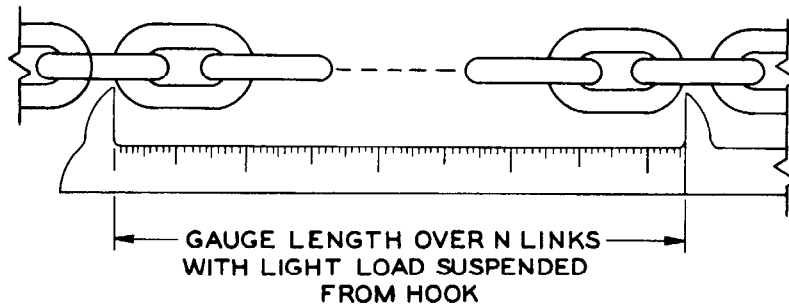
## CHAIN REPLACEMENT

Excessive Chain wear cannot be detected by casual observation. The Chain is case hardened to a depth of .010" to .012", and once this case is worn through, wear will progress rapidly and the strength of the Chain will be considerably reduced. Further, the Chain will no longer fit the Chain Wheel properly, greatly increasing the chance of malfunction and Chain breakage.

Periodically, as experience dictates, examine the Chain for wear. Be certain to inspect that portion of the Chain which regularly passes over the Chain Wheel, since this is the portion that suffers the greatest wear. Check the individual links for striation—that is, minute parallel lines indicating excessive stress or wear.

Suspend a light load (50 to 100 pounds) from the Hoist and measure the Chain over the outside of the specified number of links.

The Chain must be measured over its entire working length—that is, over that portion of Chain which continuously passes over the Chain Wheel. When any number of links in the working length reaches or exceeds the discard length, replace the entire Chain. **Always use a genuine Ingersoll-Rand replacement Chain. Never use any other Chain.**



(Dwg. TPD635-1)

DIMENSIONS OF LINK - INCHES				N NUMBER OF LINKS	DISCARD LENGTH OVER N LINKS, INCHES
NOMINAL WIRE DIAMETER	PITCH	INSIDE WIDTH	OUTSIDE WIDTH		
1/4	.767	.298	.823	7	5.89

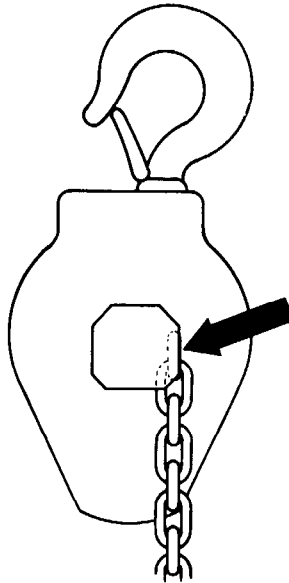
One Chain Wheel will outlast several Chains if the Chain is replaced as recommended, whereas the use of a worn Chain will cause the Chain Wheel to wear rapidly.

If the Chain is visibly damaged, examine the Chain Wheel and Chain Guard. Install a new Chain Wheel if the old one is visibly worn; install a new Guard if the old one is broken or distorted.

## CHAIN REPLACEMENT (Continued)

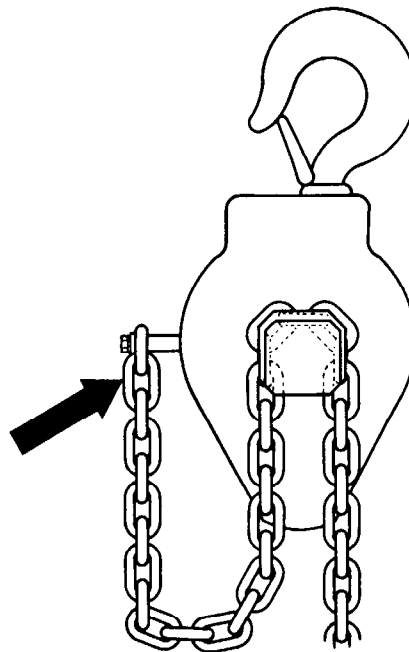
### For Single Line Hoists, Method 1

1. Remove the Brake Spring and Piston Housing, Brake Discs and Brake Plates to expose the Brake Driver.
2. Engage the first link of chain in a pocket of the pocket wheel **FLAT SIDE DOWN**. The weld on the second link must face away from the pocket wheel.



(Dwg. TPD571)

3. Rotate the Brake Driver by hand to thread the chain through the Hoist.
4. Keep the chain straight and do not twist it. Attach the free end of the chain using the chain anchor bolt, washers and spacer. Clean the brake parts and inspect them for excessive wear before assembling.



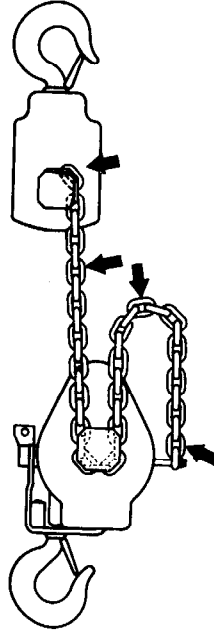
(Dwg. TPD572)



## For Double Line Hoists, Method 1

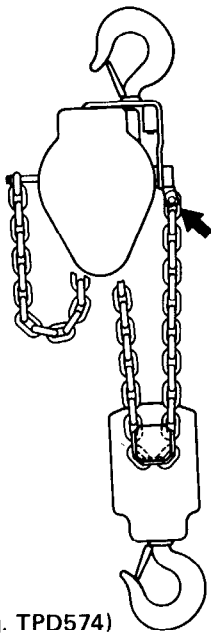
**WARNING: THE REPLACEMENT CHAIN FOR A SERIES MLK DOUBLE LINE HOIST MUST HAVE AN EVEN NUMBER OF LINKS.**

1. Install the load chain through the Hoist pocket wheel as in Step 1 of the instructions for single line Hoist and attach the end of the chain to the Hoist using the anchor bolt and fasteners. Keep the chain straight.
2. Make certain the load chain is straight and feed the end through the bottom hook wheel with the first link ON EDGE.



(Dwg. TPD573)

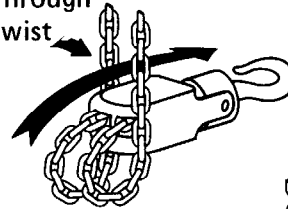
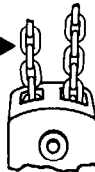
3. Keep the chain straight and attach the free end to the chain anchor bracket.



(Dwg. TPD574)

**WARNING:**  
Make Certain That The Bottom Hook  
Block Has Not Been Flipped Through  
The Chain With A Resultant Twist

Appearance Of  
Chain That Has  
Not Been Twisted

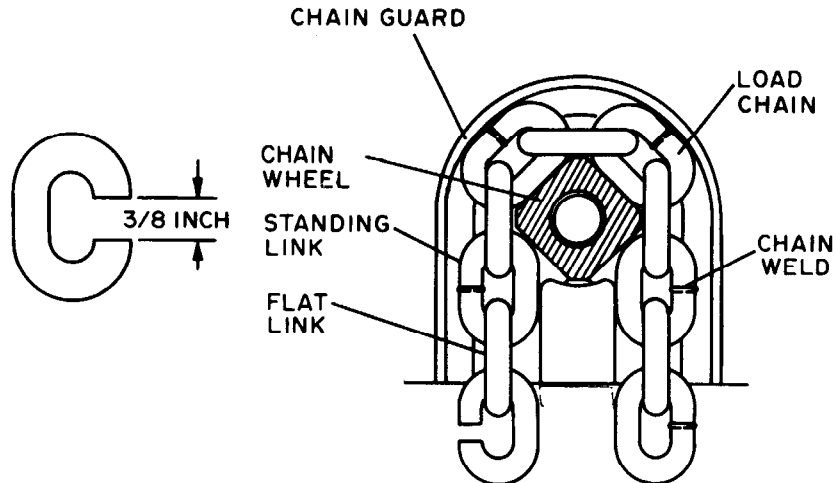


Appearance Of  
Chain That Has  
Been Twisted

(Dwg. TPD575)

## Method 2

1. On ML25K and ML50K single line Hoists, disconnect the load end of the Chain from the hook block. On ML100K double line Hoists, disconnect the load end of the Chain from the chain yoke and withdraw it from the hook sheave block. Do not remove the Chain from the Hoist.
2. Using an abrasive wheel, cut a section from the last standing link as shown in the following illustration. **Caution:** Do not distort the link in any manner. It must be able to pass over the Pocket Wheel without binding.



(Dwg. TPD451-2)

3. Connect the new Chain to the old Chain by hooking the end of the new Chain onto the cutaway link. Make certain the welds on the standing links—links perpendicular to the Pocket Wheel—face away from the Pocket Wheel.
4. Carefully energize the Hoist in the raise direction, running off the old Chain and reeving the new Chain over the Pocket Wheel. The first link of new Chain over the Pocket Wheel must be a flat link.
5. After the new Chain is installed, secure the dead end of the Chain to the side of the Hoist. Make certain there is no twist in the dead end of the Chain between the Pocket Wheel and the end link. A twisted Chain can jam as it passes over the Pocket Wheel, possibly resulting in damage to the Hoist or even breaking the Chain and injuring personnel.
6. On single line Hoists, install the Stop Ring on the second link from the load end of the Chain, or so a load does not hit the Chain Container, and then attach the Hook Block Assembly.
7. On double line Hoists, reeve the load end of the new Chain around the Pocket Wheel in the Sheave Block Assembly, making certain the Chain is not twisted between the Hoist and Sheave Block.
8. Keeping the load end of the Chain straight, attach the end link to the Chain Anchor.
9. Lubricate the Chain as instructed in the section **CHAIN LUBRICATION**.
10. Run the hook up and down several times under power with no load to make certain the Chain is running smoothly over the Pocket Wheel. There must be no apparent binding or evidence of malfunctioning.

## DISASSEMBLY

**WARNING: DISCONNECT THE AIR SUPPLY HOSE BEFORE PERFORMING MAINTENANCE ON THIS HOIST.**

**Note:** Refer to the illustrations on the following pages. Disassemble the Hoist only as far as necessary to service the worn or broken component.

1. The Brake Piston (99) located in the Piston Housing (96) may be serviced by removing the Plate Screws (104), Plate (103), Shoulder Bolts (105) and Lock Washers (106).
2. Place the Piston Housing Assembly and Pressure Plate (98) down on a press table. Compress the Springs between the Pressure Plate and the Housing and remove the Piston Nut (102). **WARNING: Release the pressure of the Springs carefully.**
3. Push the Brake Piston (99) from the Housing.  
**Note:** It is necessary to remove the Brake Driver Retainer (67) before the motor components can be removed.
4. Remove the Muffler Cover Screws (33) and the Valve Chest Cover Screws (45).
5. Remove the Valve Chest Screws (19) and remove the Valve Chest (16) from the Housing (1). **Note:** The Throttle Disc Seals (58) and Seal Expanders (59) are free to fall from the Throttle Disc (57) as the Valve Chest is removed.

## ASSEMBLY

Before assembling the Hoist clean and apply a light film of oil or grease where specified, to each part. Apply a thin film of O-ring lubricant to each O-ring before final assembly. Clean and lubricate the load chain each time maintenance is performed in addition to the regular maintenance schedule.

### Assembly of Valve Chest End

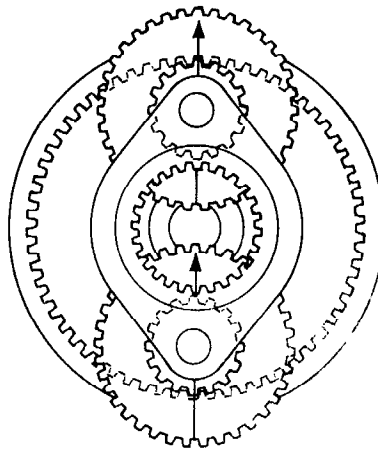
1. Install the Motor Shaft Front Retaining Ring (66) onto the Motor Shaft (64) and slide the Front End Plate Bearing (75), Front End Plate (74), bearing diameter first, and Rotor (70), small diameter first, onto the Shaft.
2. Apply a light film of oil to each Vane (71), slide one Vane into each slot and slide the Cylinder (72) over the Rotor.
3. Slide the Rear End Plate (69) and Rear End Plate Bearing (68) over the short end of the Motor Shaft and apply the Motor Shaft Rear Retaining Ring (65).
4. Align the holes in the Front and Rear End Plates with the dowel hole in the Cylinder and slide a 1/8" diameter rod 12" long through the aligned parts.
5. Place the Motor Retaining Washer (76), dished (concave) side first, over the Front End Plate and engage the dowel hole with the rod.
6. Slide the long hub of the Motor Shaft into the Housing (1), insert the guide rod into the pilot hole in the Housing and seat the motor.
7. Remove the guide rod and replace it with the Cylinder Dowel (73).
8. Apply the Housing Gasket (9) onto the motor end of the Housing and apply the Valve Plate (60) over the Gasket.
9. Apply a heavy film of O-ring lubricant to the Throttle Disc Seals (58) and the Seal Expanders (59). Insert an Expander, small diameter first, followed by a Seal, into each of the two recesses in the Throttle Disc (57).
10. With the valve ports oriented as illustrated on Page 20, slide the Throttle Disc over the hub of the Rear End Plate.
11. With the Throttle Shaft (34) in place in the Housing (1), slide the Limit Gear (36) onto the keyed end of the Shaft and engage the teeth on the Gear with those on the Throttle Disc.
12. For Hoists equipped with Pull Chain Throttle, apply the Throttle Shaft Spring (42) into the Valve Plate before installing the Limit Gear.
13. For Hoists equipped with Pendent Throttle:
  - a. Install one Pendent Piston Seal (22), cupped side trailing, onto the Pendent Piston (21). Push the Piston through the bore of the Valve Chest to the opposite side and install the remaining Seal cupped side outward.
  - b. Apply the Piston Rod Seal (24) to the Piston Rod (23) and slide the Rod into the bore of the Piston so the ends of the Rod protrude equally beyond the Piston.
  - c. Slide a Piston Spring Retainer (27), small diameter trailing, followed by a Spring (26), over the ends of the Rod.
  - d. Align the hole in the Piston with the slot in the back of the Valve Chest.
  - e. Insert the Piston Drive Pin (25) into the Piston through the slot in the Valve Chest. Install the Piston Cylinder Caps (28).

- f. Align the bolt holes in the Valve Chest with those in the Valve Plate (60) and Housing (1) and retain with Valve Chest Screws (19) and Lock Washers (20).
- 14. Insert the Muffler Inserts and Muffler (31) into the recesses in the top of the Valve Chest and retain them with the Muffler Cover (32) and Screws (33).
- 15. For Hoists with Pull Chain Throttle:
  - a. Install a Pipe Plug into each of the three tapped holes in the Valve Chest.
  - b. Apply the Valve Chest Cover Grommet and Valve Chest Cover (44) and retain both with the Valve Chest Cover Screws (45).
- 15. For Hoists equipped with Pendent Control:
  - a. Install an Elbow (221) in each of the tapped holes in the Valve Chest.
  - b. Slide the Pendent Grommet (231), small diameter first, over the Pendent Bundle.
  - c. Install the air supply hose from the Hose Bundle to the top center Elbow, the “up” hose to the left Elbow and the “down” hose to the right Elbow.
  - d. Insert the Stop Sleeve (227) into the recess in the Valve Chest, align the grooves in the Pendent Grommet with the slot in the Valve Chest Cover (44) and retain them using the Cover Screw Washers (46) and Valve Chest Cover Screws (45). **Note:** The Stop Sleeve must be firmly crimped onto the Pendent Bundle cable.
  - e. Clean the Bundle and Grommet to remove all grease and oil.

### Assembly of Chain Wheel, Brake and Gearing

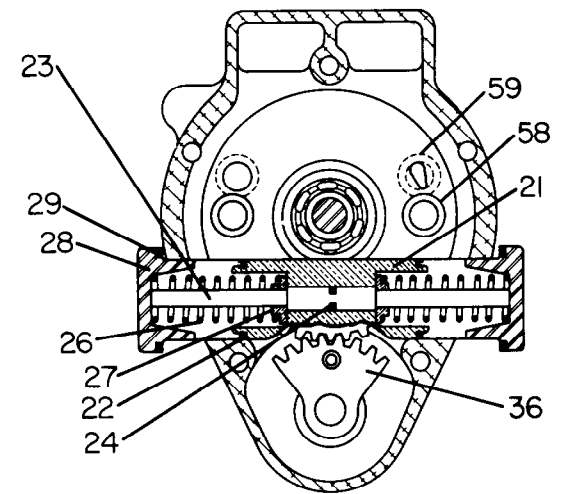
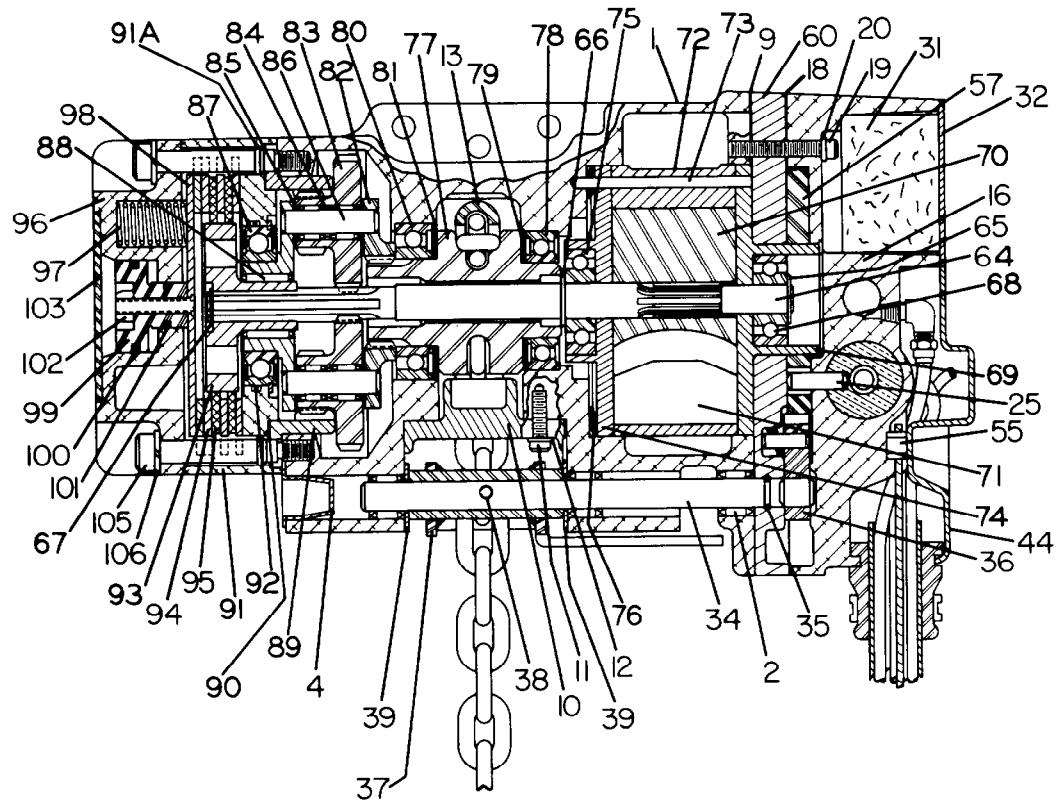
1. Apply the Chain Wheel Plain End Washer (79) onto the plain end of the Chain Wheel (77) and press the Bearing (78) onto the Chain Wheel hub.
2. Similarly install the Splined End Chain Wheel Washer (81) and Bearing (80) on the splined end of the Chain Wheel.
3. Slide the Chain Wheel, plain end first, over the end of the Motor Shaft (64) into the brake end of the Housing (1). Tap the assembly to seat the Plain End Bearing (78).
4. Install two Planet Gear Bearings (84) into each of the Planet Gears (83) using Bearing Inserting Tool No. 45675. **Caution:** Lubricate the Bearings as instructed on Page 4 and press only on the hardened stamped end of the Bearing.
5. Install the Planet Gears using the Planet Gear Shaft (86) and Thrust Washers (85).
6. Insert the Brake Driver Bearing (88) in the smooth bore of the Planet Gear Frame (82). **Caution:** Lubricate the Bearing as instructed on Page 4 and press only on the hardened stamped end.
7. Press the Gear Frame Bearing (87) onto the bearing diameter of the Gear Frame. Lubricate as above.

8. **Caution:** It is very important that the Planet Gears and Ring Gear (89) be timed when the Gear Frame Assembly is inserted into the Ring Gear. Time the gearing as follows:
  - a. Align the bolt holes in the Ring Gear and Brake Housing (91) and press in the Ring Gear.
  - b. Stand the Ring Gear and Housing upright.
  - c. Align the arrows and scribe lines on the faces of the Planet Gears in a straight line as illustrated below.



(Dwg. TPD35-1)

- d. Maintain this alignment, insert the Gear Frame Assembly into the Ring Gear and simultaneously press the Planet Frame Bearing into the Brake Housing.
  - e. Make certain the Gasket (90) is in place and install the assembled Planet Frame, Ring Gear and Brake Housing over the Motor Shaft and into the Housing. The Motor Shaft must turn freely by hand. The gear train and Chain Wheel must rotate smoothly as the shaft is turned.
9. Install the Brake Driver (93) and Brake Driver Retaining Ring (67).
10. Stack the brake components over the Brake Driver and into the Brake Housing as illustrated on Page 16. Align the notches in the Brake Plates with the bolt holes in the Brake Housing (91) and main Housing (1).
11. Assemble the Brake Spring and Piston Housing Assembly as follows:
    - a. Apply O-ring lubricant to the Large Seal (100) and Small Seal (101) and install them in their respective grooves on the Brake Piston.
    - b. Taking care not to cut the Seals (100 and 101), slide the Piston into the Brake Spring and Piston Housing (96).
    - c. Place the Spring and Piston Housing (96) on a bench, three spring holes facing upward.
    - d. Place a Spring (97) in each of the holes and place the Pressure Plate (98), stud first, over the Springs and into the Brake Piston.
    - e. Hold the Plate and Housing together and flip the Housing over with the threaded stud up.
    - f. Press down on the Brake Spring and Piston Housing to force the threaded stud through the Piston. While maintaining this position, tighten the Piston Nut (102) to 50 to 70 in-lb (5.65 to 7.91 N m) torque. **Note:** Make certain the Piston is fully inserted through the Spring and Piston Housing and that it is in full contact with the Pressure Plate.
    - g. Install the Plate (103) using the Plate Screws (104).
    - h. Align the bolt holes in the Brake Spring Housing with those in the Housing (1) and install the Lock Washers (106) and Shoulder Bolts (105).



END VIEW OF MLK HOIST WITH  
PENDENT THROTTLE

MLK Hoist with Pendent Throttle

(Dwg. TPA715-2)

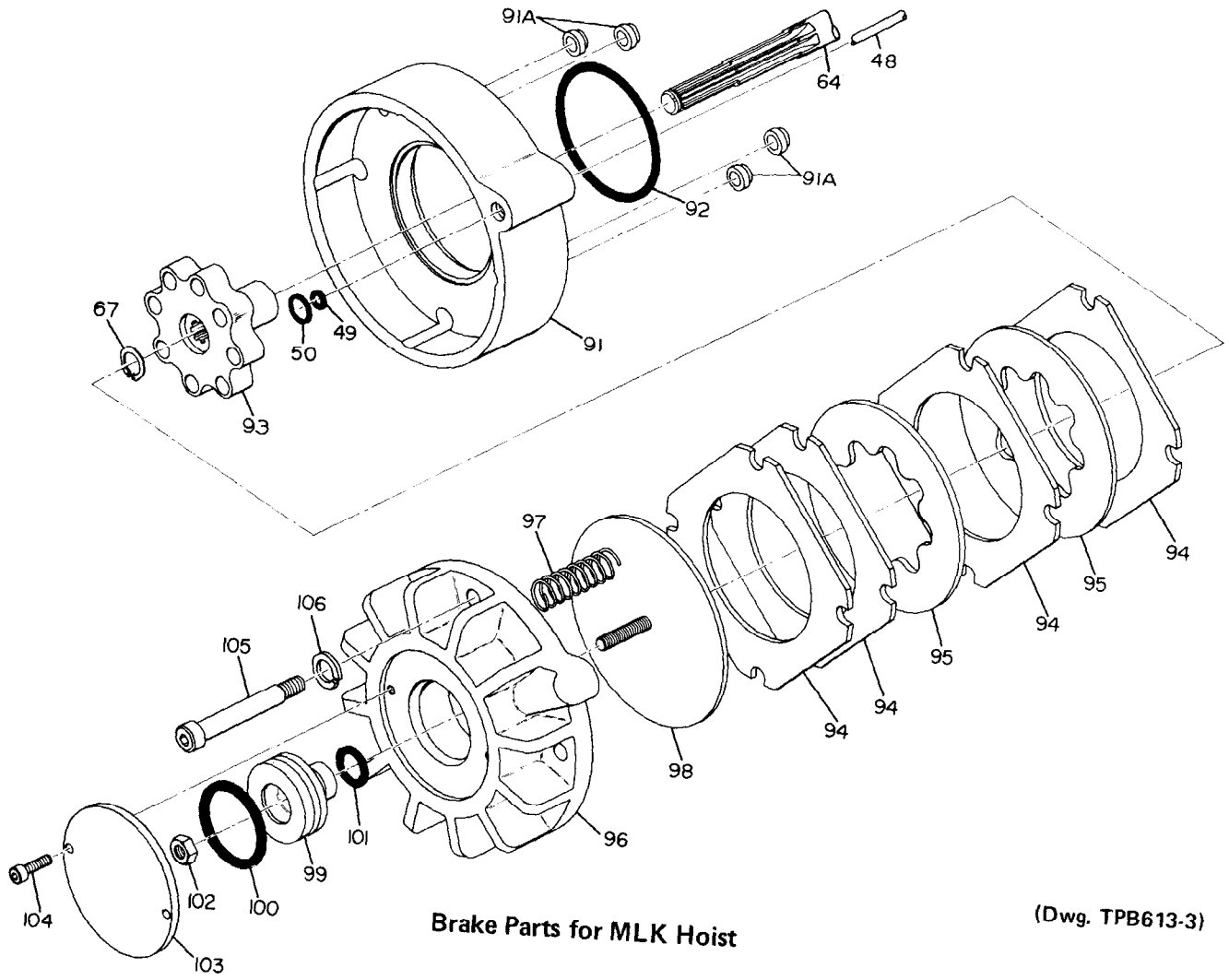
## PART NUMBER FOR ORDERING

## PART NUMBER FOR ORDERING

	Housing Assembly . . . . .	ML50K-A300	31A	Muffler Insert (2) . . . . .	ML50K-675
1	Housing . . . . .	ML50K-300	32	Muffler Cover . . . . .	ML50K-342
● 2	Throttle Shaft Bearing (3) . . . . .	R38M-603	33	Muffler Cover Screw (4) . . . . .	CE110-354
3	Vent Plug . . . . .	P250-546	34	Throttle Shaft . . . . .	ML50K-A255
4	Throttle Shaft Plug . . . . .	ML50K-29	● 35	Throttle Shaft Seal . . . . .	834-159
*	Nameplate . . . . .	MR-301	36	Limit Gear . . . . .	ML50K-251
*	Nameplate Screw (4) . . . . .	R4K-302	37	Throttle Lever . . . . .	ML50K-556
*	Caution Tag . . . . .	TA-147A	38	Throttle Lever Retaining Pin . . . . .	WF171-15
*	Caution Tag Screw (4) . . . . .	9BM-302	39	Throttle Lever Thrust Washer (2) . . . . .	MR-458
● 9	Housing Gasket . . . . .	ML50K-445	*	S-Hook (for Hoists with Pull Chain Throttle (4)) . . . . .	D02-421
10	Chain Guide . . . . .	ML-741C	*	Pull Chain (for Hoists with Pull Chain Throttle) (2) . . . . .	MR10-413-10
11	Chain Guide Screw (4) . . . . .	34U-463	● 42	Throttle Shaft Spring (for Hoists with Pull Chain Throttle) . . . . .	ML50K-412
12	Lock Washer (4) . . . . .	4U-58	*	1/8" Pipe Plug (for Hoists with Pull Chain Throttle) (3) . . . . .	R2-227
13	Chain Guard . . . . .	ML-6A	44	Valve Chest Cover . . . . .	ML50K-241
*	Guard Retaining Screw (2) . . . . .	G57T-634	45	Valve Chest Cover Screw (4) . . . . .	CE110-354
*	Lock Washer (2) . . . . .	L01-67	46	Cover Screw Washer (4) . . . . .	MF-37
16	Valve Chest . . . . .	ML50K-545	*	Valve Chest Cover Grommet (for Hoists with Pull Chain Throttle) . . . . .	ML50K-377
17	Valve Chest Inlet Plug . . . . .	GA57-95	*	Warning Plate . . . . .	CA110-598
● 18	Valve Chest Gasket . . . . .	ML50K-928	*	Warning Plate Fastener (2) . . . . .	CE110-4
19	Valve Chest Screw (5) . . . . .	PR22H-548	55	Stop Sleeve . . . . .	ML50K-520
20	Lock Washer (5) . . . . .	8U-58	57	Throttle Disc . . . . .	ML50K-102
21	Pendent Piston . . . . .	ML50K-A246	● 58	Throttle Disc Seal (4) . . . . .	ML50K-5
● 22	Pendent Piston Seal (2) . . . . .	ML50K-248	● 59	Seal Expander (4) . . . . .	410-283
23	Pendent Piston Rod . . . . .	ML50K-A655	60	Valve Plate . . . . .	ML50K-549
● 24	Piston Rod Seal . . . . .	R0BR1C-283	61	Brake Tube . . . . .	ML50K-401
25	Piston Drive Pin . . . . .	ML50K-256	● 62	Brake Tube Seal (2) . . . . .	ML50K-21
26	Piston Spring (2) . . . . .	ML50K-250	● 63	Brake Tube Housing Seal . . . . .	PS3-67
27	Piston Spring Retainer (2) . . . . .	ML50K-249			
28	Piston Cylinder Cap (2) . . . . .	ML50K-238			
● 29	Cylinder Cap Seal (2) . . . . .	HRA20A-117			
30	Cylinder Cap Screw (8) . . . . .	CE110-354			
31	Muffler . . . . .	ML50K-175			

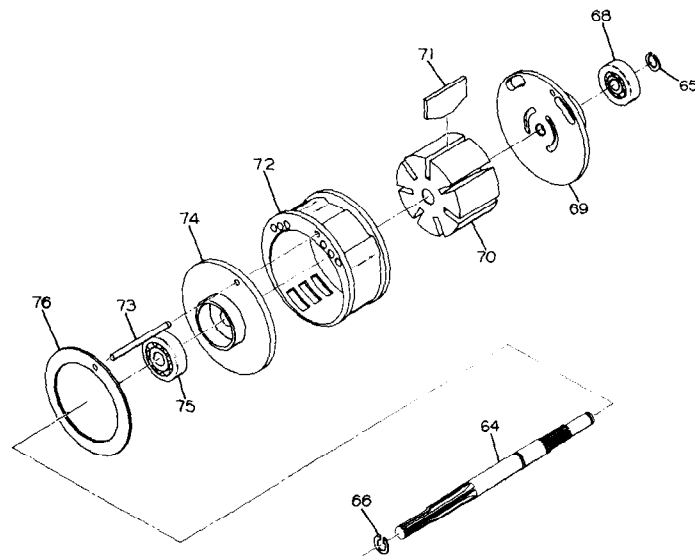
\* Not illustrated.

● To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (●) for every four tools in service.



**Brake Parts for MLK Hoist**

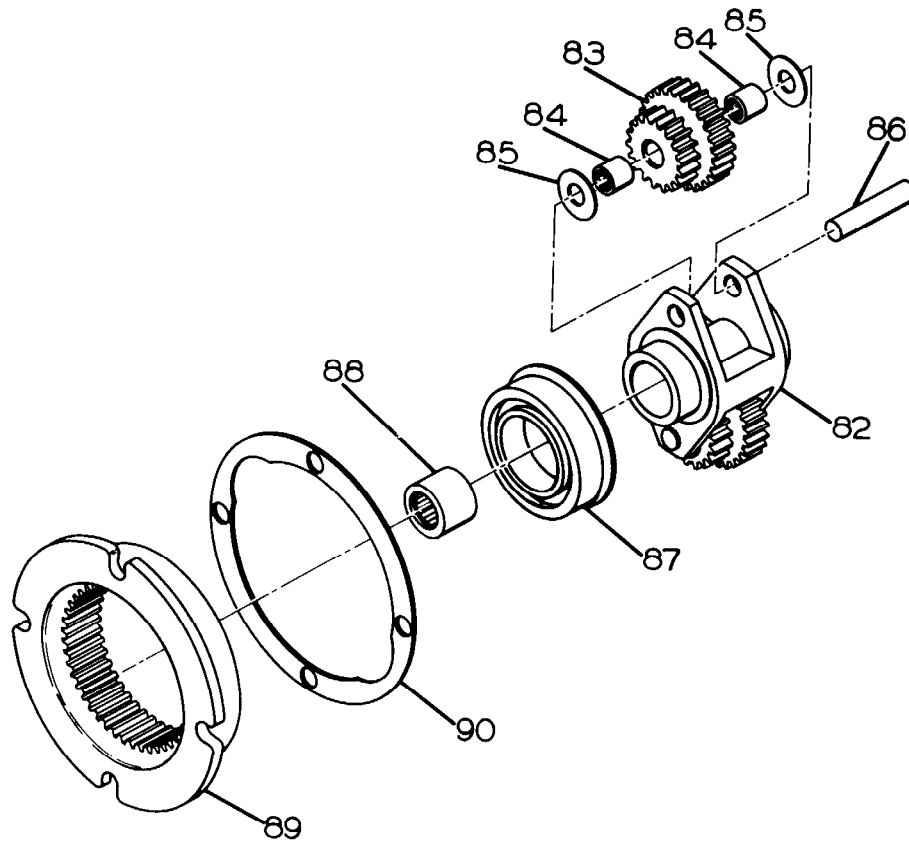
(Dwg. TPB613-3)



**Motor Parts for MLK Hoist**

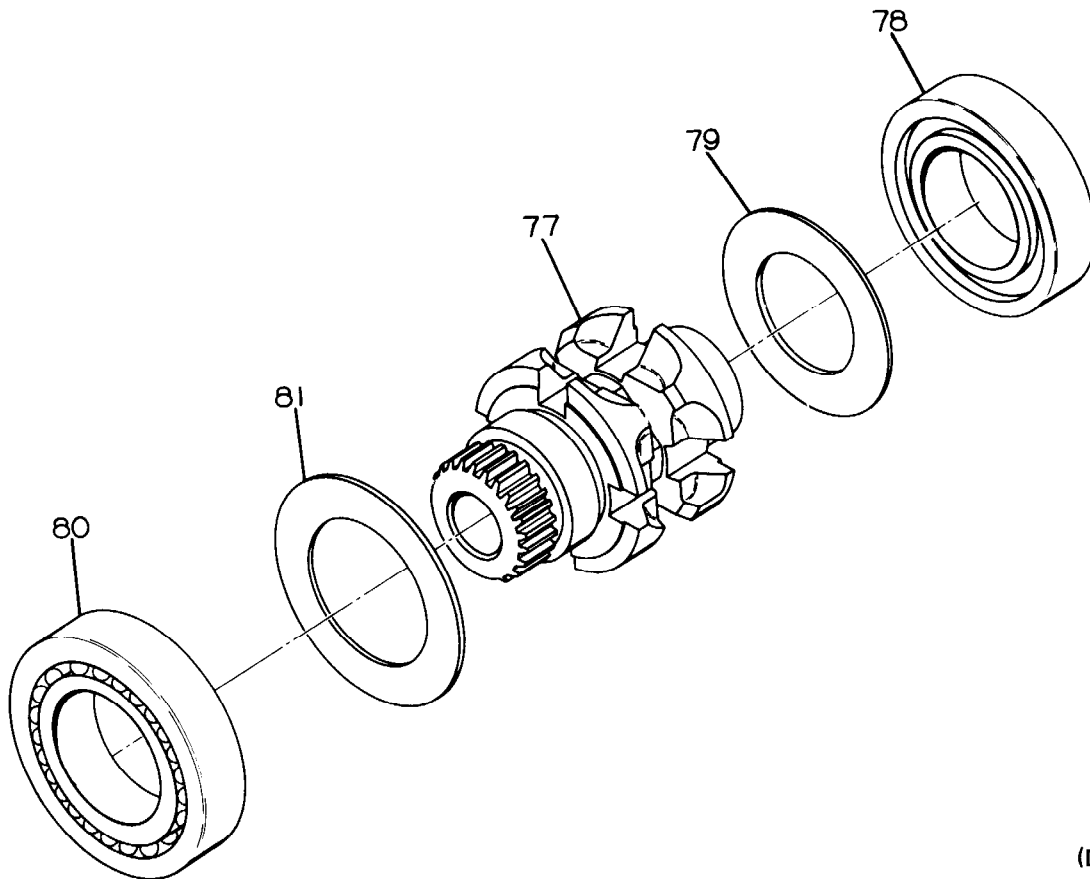
(Dwg. TPB702)





(Dwg. TPC396-1)

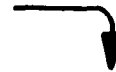
**Gearing for MLK Hoist**



(Dwg. TPC397-1)

**Sprocket Assembly for MLK Hoist**

PART NUMBER FOR ORDERING



64	Motor Shaft . . . . .	ML50K-316
● 65	Motor Shaft Rear Retaining Ring . . . . .	MLK-120
● 66	Motor Shaft Front Retaining Ring . . . . .	MLK-119
67	Brake Driver Retainer . . . . .	ML50K-729
● 68	Rear End Plate Bearing . . . . .	R2-24
69	Rear End Plate . . . . .	ML50K-12
70	Rotor . . . . .	MR-53
● 71	Vane Packet (set of 7 Vanes) . . . . .	MR-42-7
72	Cylinder . . . . .	MR-3
73	Cylinder Dowel . . . . .	R3H-434
74	Front End Plate . . . . .	MR-11
● 75	Front End Plate Bearing . . . . .	TB-394
76	Motor Retaining Washer . . . . .	MR-207
77	Chain Wheel . . . . .	ML-740B
● 78	Chain Wheel Plain End Bearing . . . . .	MR-593
79	Chain Wheel Plain End Washer . . . . .	MR-974
● 80	Chain Wheel Splined End Bearing . . . . .	MR-988
81	Chain Wheel Splined End Washer . . . . .	MR-975
	Gear Frame Assembly	
	for ML25K . . . . .	ML25K-A8
	for ML50K and ML100K . . . . .	ML50K-A8
82	Planet Gear Frame	
	for ML25K . . . . .	ML25K-8
	for ML50K and ML100K . . . . .	ML50K-8
83	Planet Gear Assembly (2)	
	for ML25K . . . . .	MR5-A10
	for ML50K and ML100K . . . . .	MR-A10
84	Planet Gear Bearing (2 for each Gear) . . . . .	ML50K-654
85	Planet Gear Thrust Washer (4) . . . . .	ML50K-361
86	Planet Gear Shaft (2) . . . . .	MR-191
87	Gear Frame Bearing . . . . .	ML50K-97
● 88	Brake Driver Bearing . . . . .	ML50K-318
89	Ring Gear . . . . .	ML50K-406
● 90	Ring Gear Gasket . . . . .	ML50K-31
91	Brake Housing . . . . .	ML50K-346
91A	Brake Housing Bolt Seal (4) . . . . .	ML50K-271
● 92	Brake Housing Bearing Seal . . . . .	HRA20A-990
93	Brake Driver . . . . .	ML50K-842
94	Brake Plate (4) . . . . .	ML50K-834
● 95	Brake Disc (2) . . . . .	ML50K-855
	Brake Spring and Piston Housing Assembly . . . . .	ML50K-A395
96	Spring and Piston Housing . . . . .	ML50K-395
97	Spring (3) . . . . .	ML50K-832
98	Pressure Plate . . . . .	ML50K-A338
99	Piston . . . . .	ML50K-A809
● 100	Piston Large Seal . . . . .	R2C-103
● 101	Piston Small Seal . . . . .	R00BR-210
102	Piston Nut . . . . .	ML50K-394
103	Plate . . . . .	ML50K-981
104	Plate Screw (2) . . . . .	CE110-354
105	Shoulder Bolt (4) . . . . .	ML50K-7
106	Lock Washer (4) . . . . .	D02-321
*	Chain Anchor Bolt . . . . .	20BM-744

\* Not illustrated.

● To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (●) for every four tools in service.

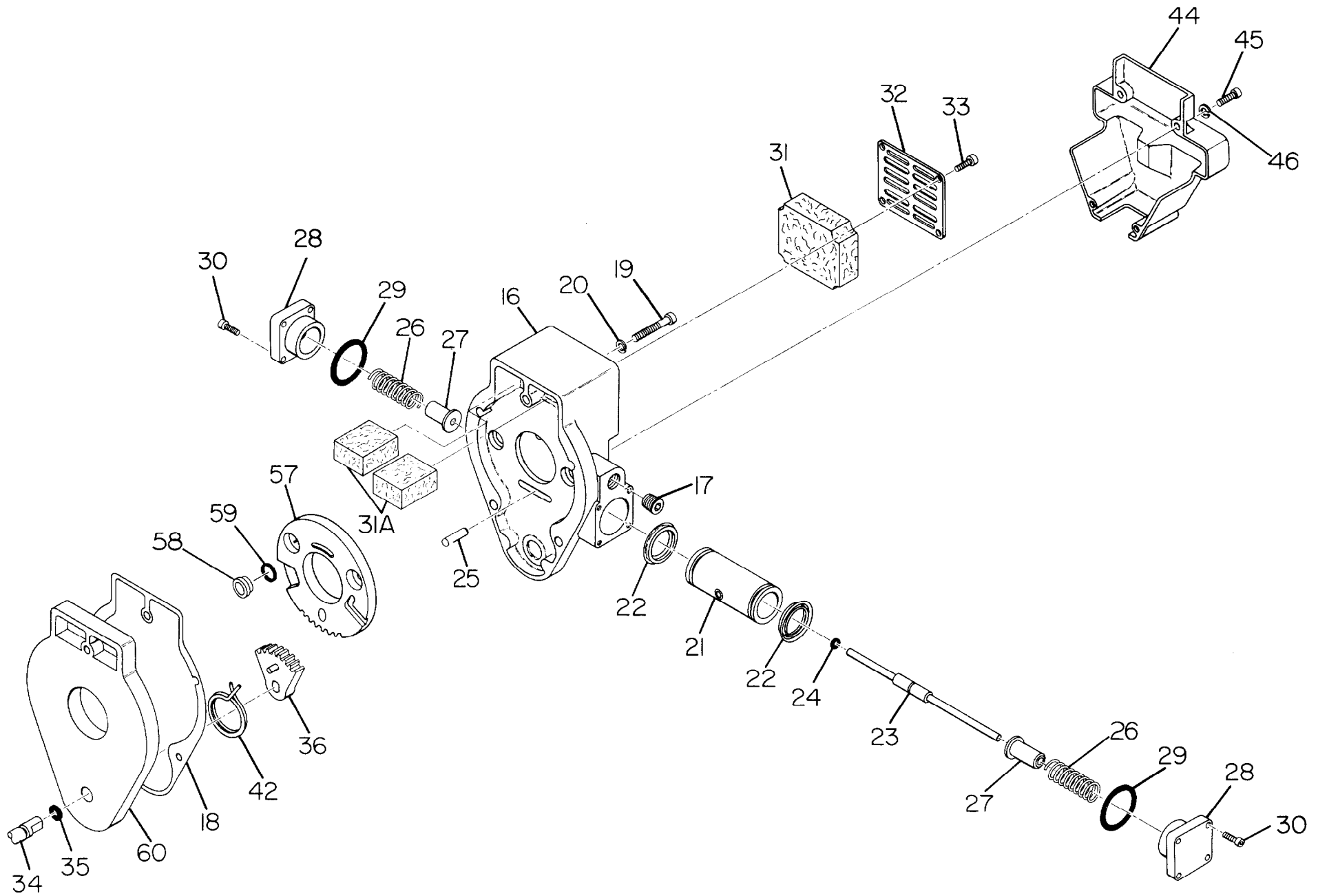


*	Lock Washer . . . . .	L01-67
*	Washer . . . . .	B12-265
*	Chain Anchor Bolt Spacer . . . . .	ML50K-145
111	Chain	
	for ML25K and ML50K with 10' (3.05 m) maximum lift . . . . .	CE110-745
	for ML100K with 10' (3.05 m) maximum lift . . . . .	CE120-745
▲	lift as specified . . . . .	ML-745
112	Stop Ring Assembly (for ML25K and ML50K). . . . .	MR-A259
113	Stop Ring Pin . . . . .	34U-215A
114	Stop Ring Plug . . . . .	502-95
	New Style Bottom Hook Assembly (for ML25K and ML50K). . . . .	MLK-A463
116	Hook Block (2). . . . .	MLK-463
117	Hook . . . . .	CE110-KS304
● 118	Hook Latch Kit. . . . .	CE110-S123
● 119	Hook Bearing . . . . .	R4810-105
● 120	Thrust Race (2). . . . .	CE110-596
121	Hook Block Bolt (2) . . . . .	MLK-461
	Bottom Hook and Block Assembly (for ML100K) . . . . .	ML100K-A378
126	Sheave Block Assembly (includes bearing) (2). . . . .	CE120-B378
127	Sheave Block Screw (3) . . . . .	CE120-312
128	Sheave Block Insert (3). . . . .	CE120-38
129	Pocket Wheel . . . . .	CE120-380
130	Thrust Spacer (2) . . . . .	CE120-80
131	Bottom Hook . . . . .	HRA20A-S377
● 132	Hook Latch Kit. . . . .	D01-S123
● 133	Hook Bearing . . . . .	CE110-295
● 134	Thrust Race (2). . . . .	CE120-596
	Top Hook and Yoke Assembly	
	for ML25K and ML50K . . . . .	MR10-AS590A
	for ML100K. . . . .	ML100K-A590
135	Top Hook Yoke	
	for ML25K and ML50K . . . . .	MR10-590A
	for ML100K. . . . .	ML20-590A
136	Top Hook	
	for ML25K and ML50K . . . . .	CE110-KS304
	for ML100K. . . . .	HRA20A-S377
● 137	Hook Latch Kit	
	for ML25K and ML50K . . . . .	CE110-S123
	for ML100K. . . . .	D01-S123
● 138	Hook Retaining Ring	
	for ML25K and ML50K . . . . .	MR10-375
	for ML100K. . . . .	HRA20A-375
● 139	Hook Bearing	
	for ML25K and ML50K . . . . .	R4810-105
	for ML100K. . . . .	CE110-295
● 140	Thrust Race (2)	
	for ML25K and ML50K . . . . .	CE110-596
	for ML100K. . . . .	CE120-596
141	Top Hook Yoke Pin (2). . . . .	MR-964

\* Not illustrated.

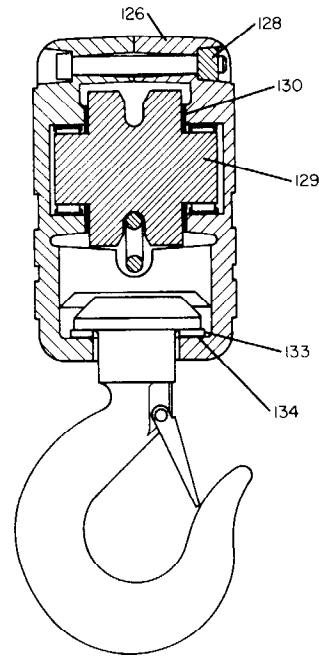
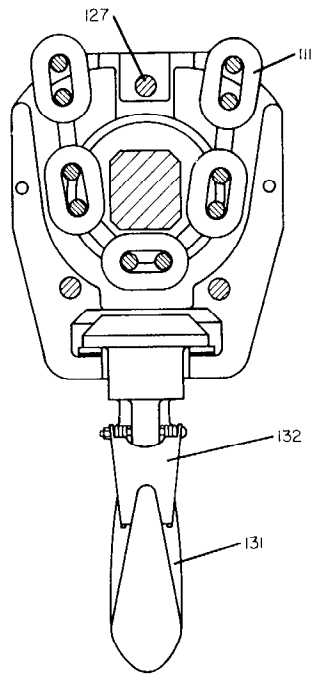
▲ When ordering Chain specify both the model number of the Hoist and the desired maximum lift.

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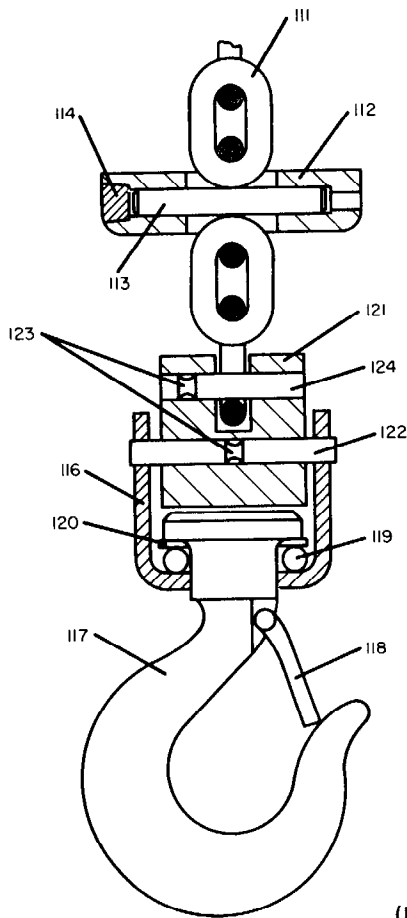
Valve Chest for MLK Hoist

(Dwg. TPA712-2)



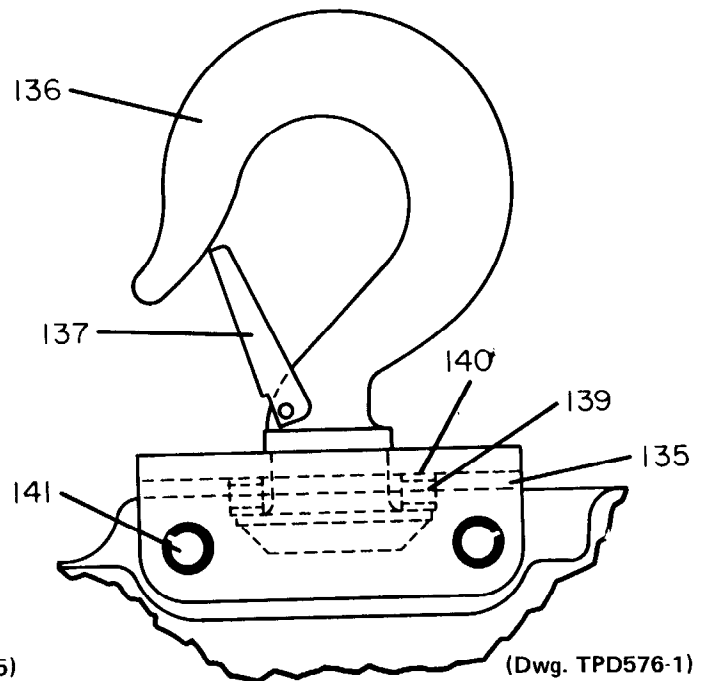
(Dwg. TPC401)

**Bottom Hook and Block Assembly for ML100K Hoist**



(Dwg. TPD785)

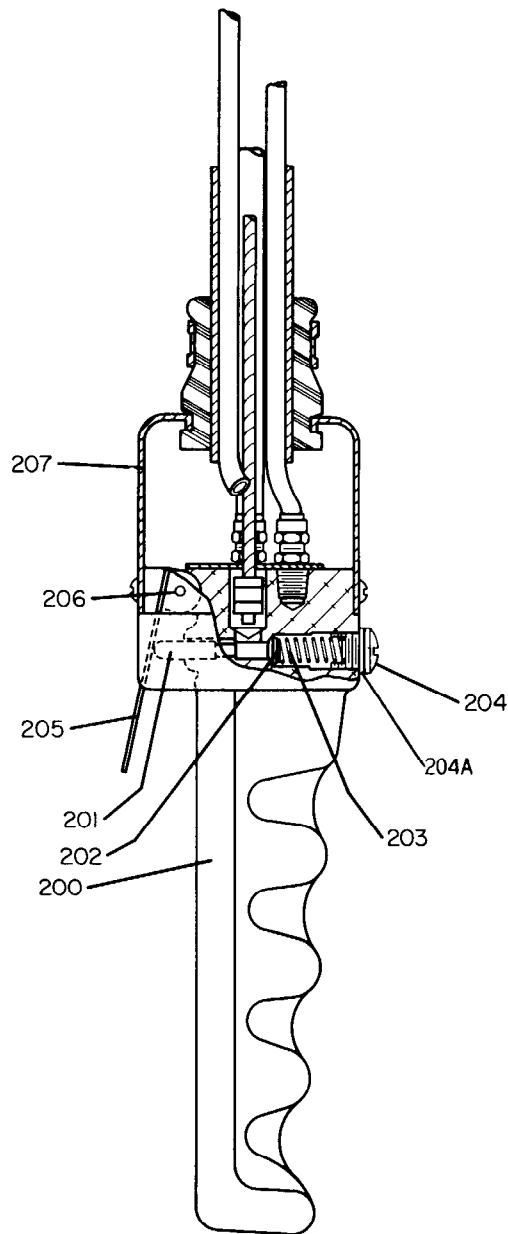
**New Style Bottom Hook for ML25K and ML50K Hoists  
(Refer to page 30 for Old Style Bottom Hook)**



(Dwg. TPD576-1)

**Top Hook and Yoke for MLK Hoists**

# OLD STYLE PENDENT HANDLE ASSEMBLY



(Dwg. TPC394-1)

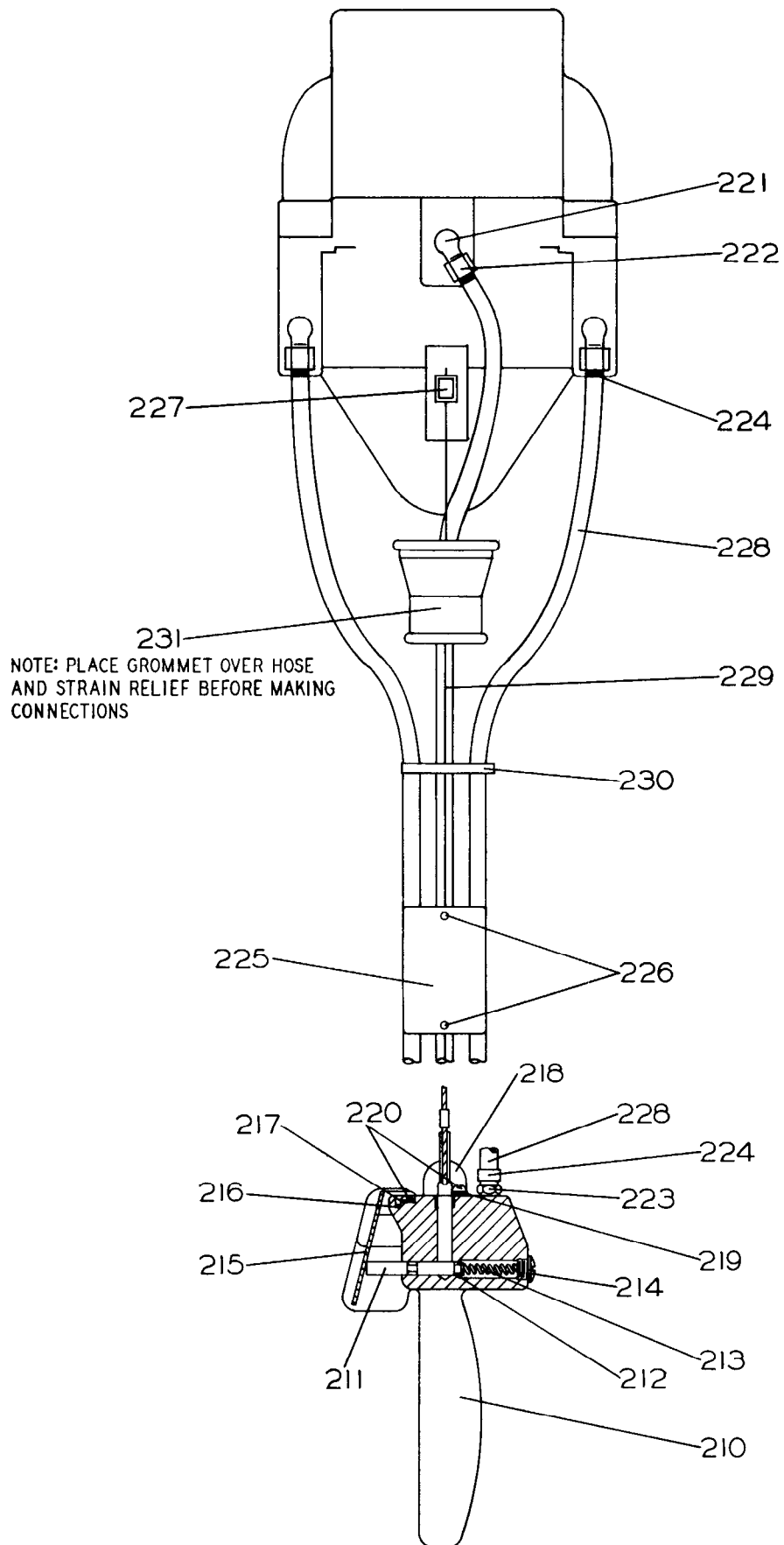
PART NUMBER FOR ORDERING

	Pendent Handle Assembly	} No longer available	
200	Pendent Handle		
201	Pendent Throttle Valve (2)		ML50K-A264
● 202	Throttle Valve Face		R000BR1C-283
● 203	Pendent Throttle Spring (2)		R0H-51
204	Pendent Throttle Valve Cap (2)		R000A2-266
204A	Valve Cap Gasket (2)		AB025-239
205	Pendent Throttle Lever (2)		HRA20A-273
206	Throttle Lever Pin		508-98
207	Handle Cover		ML50K-270
*	Handle Cover Screw (4)		R2FA-662

\* Not illustrated.

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# NEW STYLE PENDENT HANDLE ASSEMBLY



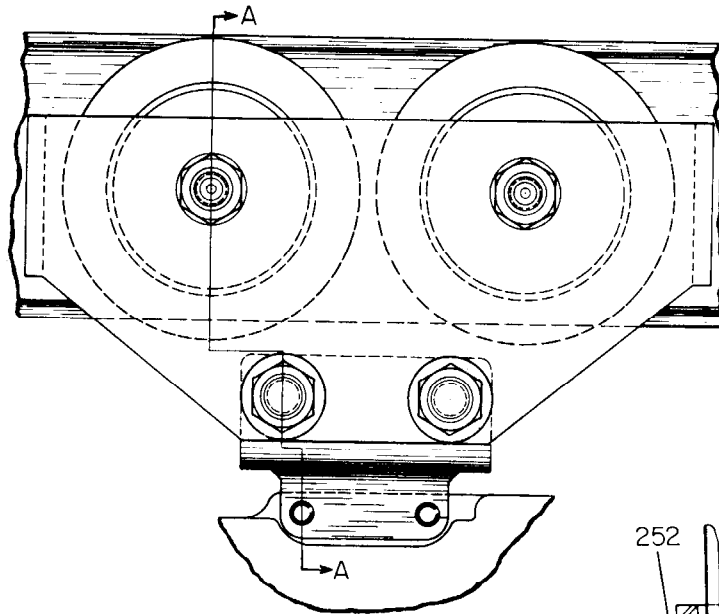
(Dwg. TPB701-1)



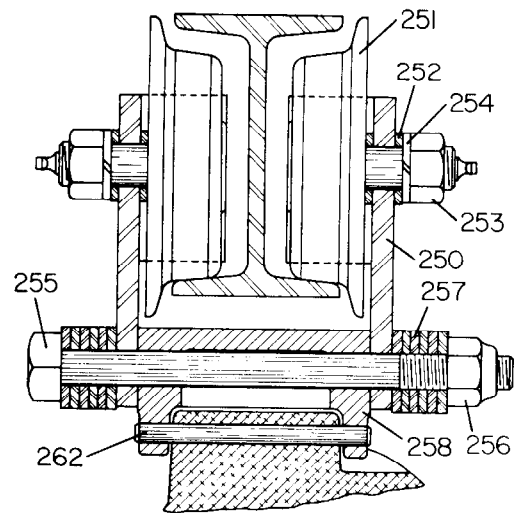
	Pendent and Hose Bundle	
	for 5 ft length. . . . .	MLK-A169-10
	for length as specified. . . . .	MLK-AL169
	Pendent Handle Assembly. . . . .	MLK-A269
210	Pendent Handle. . . . .	MLK-269
● 211	Pendent Throttle Valve (2) . . . . .	MLK-K264
● 212	Throttle Valve Face . . . . .	R000BR1C-283
213	Pendent Throttle Spring (2). . . . .	MLK-51
214	Pendent Throttle Valve Cap (2) . . . . .	R000A2-266
215	Pendent Throttle Lever (2) . . . . .	MLK-273
216	Throttle Lever Pin . . . . .	DLC-120
217	Pin Lock Washer (2). . . . .	D02-138
218	Strain Relief Support . . . . .	MLK-450
219	Relief Support Lock Washer (2). . . . .	H54U-352
220	Handle Screw (4). . . . .	MF-31
221	1/8-27 NPT to 7/16-20 Tube Male Brass Elbow (3) . . . . .	MLK-161
	Hose and Strain Relief Bundle Assembly	
	for 5 ft Pendent . . . . .	ML50K-AH3A-5
	for length as specified. . . . .	ML50K-AL3A
222	Hose Assembly (3)	
	for 5 ft Pendent . . . . .	MLK-H3A-5
	for length as specified. . . . .	MLK-LH3A
223	Hose Clamp (6). . . . .	CA110-476A
224	7/16 x 3/16 Barbed Female Swivel Fitting (3). . . . .	MLK-162
225	1/8 NPT x 3/16 Barbed Straight Fitting (3) . . . . .	MLK-170
226	Strain Relief Assembly	
	for 5 ft pendent . . . . .	ML50K-WR3A-5
	for length as specified. . . . .	ML50K-LWR3A
227	Clamping Sleeve . . . . .	MLK-521
228	Cable Thimble . . . . .	MLK-602
229	Stop Sleeve . . . . .	ML50K-520
230	Warning Plate . . . . .	CA110-598
231	Warning Plate Fastener (2) . . . . .	CE110-4
232	Hose Tie (3 for 5 ft Pendent; 2 additional for each additional 5 ft of Pendent) . . . . .	HRE20A-283
233	Grommet. . . . .	ML50K-236
234	Bushing . . . . .	HRA20A-82

- To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (●) for every four tools in service.

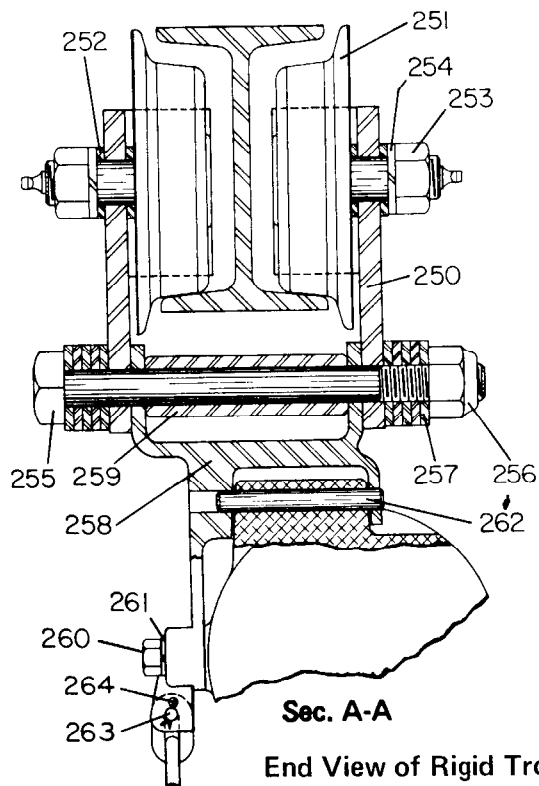




Side View of Rigid Trolley



Sec. A-A  
End View of Rigid Trolley  
for ML25K and ML50K



Sec. A-A  
End View of Rigid Trolley  
for ML100K

(Dwg. TPA825-1)

Trolley Parts for MLK Hoists

## RIGID TROLLEY PARTS

PART NUMBER FOR ORDERING



	Rigid Trolley Kit	
	for operation on I-beam having flanges 2.66" (68 mm) to 5.00" (127 mm) wide for ML25K and ML50K (3-1/8" dia. wheels) . . . . .	MLK-K430
	for operation on I-beam having flanges 3.00" (76 mm) to 5.00" (127 mm) wide for all Models (4" dia. wheels) . . . . .	CE120-K430
	for operation on Flat-Tread Monorail for all Models (4" dia. wheels) . . . . .	CE120-K430T
250	Trolley Bracket (2)	
	for MLK-K430 . . . . .	MLK-430
	for CE120-K430 and CE120-K430T . . . . .	CE120-430
251	Trolley Wheel (4)	
	for MLK-K430 . . . . .	MR10-691
	for CE120-K430 . . . . .	MR20-691
	for CE120-K430T . . . . .	MR20-691T
252	Trolley Wheel Spacer (8) . . . . .	21-748
253	Trolley Wheel Shaft Nut (4) . . . . .	DU-562
254	Trolley Wheel Shaft Lock Washer (4) . . . . .	D01-692
255	Trolley Bracket Bolt (2) . . . . .	D01-694-8
256	Trolley Bolt Nut (2) . . . . .	D01-341A
257	Trolley Bracket Spacer (28) (as required) . . . . .	D01-442-1/6
258	Top Lug	
	for ML25K and ML50K . . . . .	MR10-425
	for ML100K . . . . .	ML20-425
259	Top Lug Spacer (for ML100K) (2) . . . . .	MR20-446
260	Top Lug Screw (for ML100K) (2) . . . . .	D10-312A
261	Lock Washer (for ML100K) (2) . . . . .	D02-321
262	Top Lug Pin (2) . . . . .	MR-964
263	Link Chain Anchor Pin (for ML100K) . . . . .	ML20-962A
264	Link Chain Anchor Pin Cotter (2) (for ML100K) . . . . .	D02-524

## HOOK-ON TROLLEY PARTS

PART NUMBER FOR ORDERING

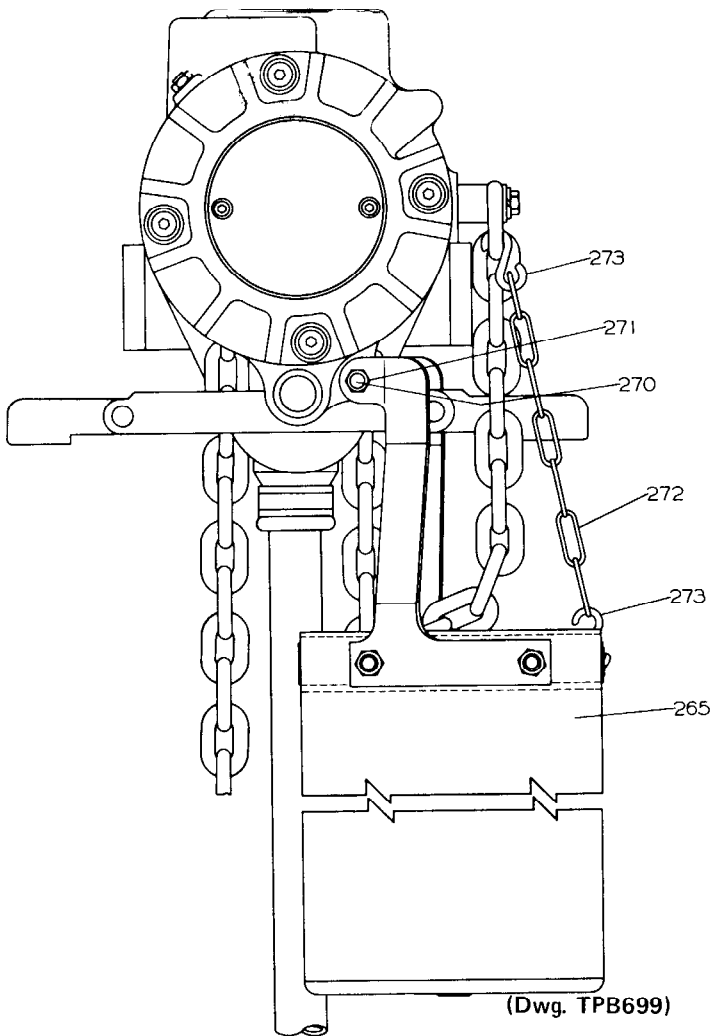
Trolley Assembly	
for operation on 4" to 12" I-Beam having flanges 2.66" (68 mm) to 5.00" (127 mm) wide	
for ML25K and ML50K . . . . .	MR10-7927
for operation on 5" to 12" I-Beam having flanges 3.00" (76 mm) to 5.00" (127 mm) wide	
for ML100K. . . . .	MR20-7928
for operation on Flat Tread Monorail	
for ML25K and ML50K . . . . .	MR10-7927T
for ML100K. . . . .	MR20-7928T
Trolley Wheel (4)	
for Hook-On Trolley No. MR10-7927 . . . . .	MR10-691
for Hook-On Trolley No. MR20-7928 . . . . .	MR20-691
for Hook-On Trolley No. MR10-7927T . . . . .	MR10-691T
for Hook-On Trolley No. MR20-7928T . . . . .	MR20-691T
Semi-Rigid Trolley Adapter	
for ML25K and ML50K . . . . .	MR10-852
for ML100K. . . . .	ML20-852

### INSTALLATION INSTRUCTIONS FOR FABRIC CHAIN CONTAINER KITS ML50K-K479-17 AND ML50K-K749-45

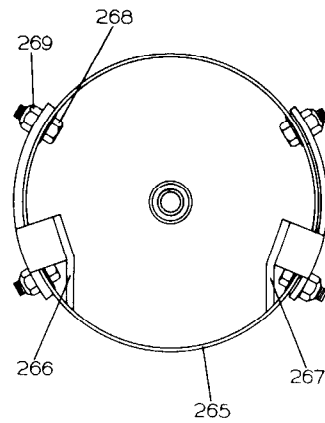
**WARNING: DISCONNECT THE HOIST FROM THE AIR SUPPLY BEFORE INSTALLING A CHAIN CONTAINER KIT.**

Refer to illustrations on Page 28 and install a Fabric Chain Container as follows:

1. Insert a Container Bolt (270) through the boss on the Hoist housing and into the Brackets (266 and 267). Retain the Container with the Container Bolt Nuts (271). **Note:** If the Container is to be allowed to swing outward, tighten the Nuts to within one turn of being fully tight. This will allow the Container to swing away from a load.
2. Apply the Balance Chain (272) to the Container and Hoist using S-Hooks (273). Adjust the length of the Chain to prevent the load chain from rubbing on the Container.

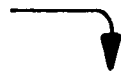


Chain Container for MLK Hoist



Top View of Chain Container for MLK Hoist

PART NUMBER FOR ORDERING



265	Fabric Chain Container for ML50K-K749-17 . . . . . for ML50K-K749-45 . . . . .	ML50K-749-17 ML50K-749-45
266	Left Bracket . . . . .	ML50K-748
267	Right Bracket . . . . .	ML50K-747
268	Bracket Bolt (4) . . . . .	R2N-103
269	Bracket Bolt Nut (4) . . . . .	ML50K-394
270	Chain Container Bolt (2) . . . . .	M0V010AA-634
271	Chain Container Bolt Nut (2) . . . . .	ML50K-394
272	Balance Chain . . . . .	CA110-240-1/2
273	S-Hook . . . . .	D02-421

## KITS AND ACCESSORIES

**Fabric Chain Container:** Includes Chain Container, Brackets and all hardware necessary for installation on a Hoist.

No. ML50K-K749-17 (03551066) for use on an ML25K or ML50K Hoist with up to a 17 ft lift and on an ML100K Hoist with up to a 9 ft lift.

No. ML50K-K749-45 (03551074) for use on an ML25K or ML50K Hoist with up to a 45 ft lift and on an ML100K Hoist with up to a 23 ft lift.

**Link Chain Metal Containers:** One (1) No. FMD2-68 (03109642) Chain Container Bolt and one (1) No. T11-58 (03141538) Lock Washer must be ordered with each Chain Container.

No. ML10-749 (03195336) for use on an ML25K or ML50K Hoist with up to 13 ft lift and on an ML100K Hoist with up to 6-1/2 ft lift.

No. ML20-749A (03195369) for use on an ML25K or ML50K Hoist with up to 26 ft lift and on an ML100K Hoist with up to 13 ft lift.

No. ML20-749-20 (03195385) for use on an ML25K or ML50K Hoist with up to 40 ft lift and on an ML100K Hoist with up to 40 ft lift.

**Conversion Kits:** Include all components necessary to convert a pull chain throttle Hoist to pendent control operation.

No. ML50K-K930-10 (03551140) for use on any MLK Hoist with 10 ft lift (5 ft pendent length).

No. ML50K-K930 (03551207) for use on any MLK Hoist with other than 10 ft lift. Length of pendent must be specified when ordering. Pendent bundle length is normally 5 ft shorter than lift.

### Trolley Kits

No. CE120-K430 (03510435) Plain Trolley Kit - Includes all Trolley parts for suspending a Hoist equipped with lug mounting from an I-beam having 3.00" to 5.00" (76 mm to 127 mm) wide flange 4" (102 mm) diameter wheels.

No. CE120-K430T (03510443) Plain Trolley Kit - Includes all Trolley parts for suspending a Hoist equipped with lug mounting from a flat tread monorail having 2.66" to 5.00" (68 mm to 127 mm) wide flange 4" (102 mm) diameter wheels.

No. MLK-K430 (03611019) Plain Trolley Kit for use with ML25K and ML50K Hoist. Includes all Trolley parts for suspending a Hoist with lug mounting from an I-beam having 2.66" to 5.00" (68 mm to 127 mm) wide flange 3-1/8" (79 mm) diameter wheels.

### Two and Three-Motor Pendants:

No. MLK-AL122 (03622487) - Two-motor pendent and hose assembly (Specify length of hose required).

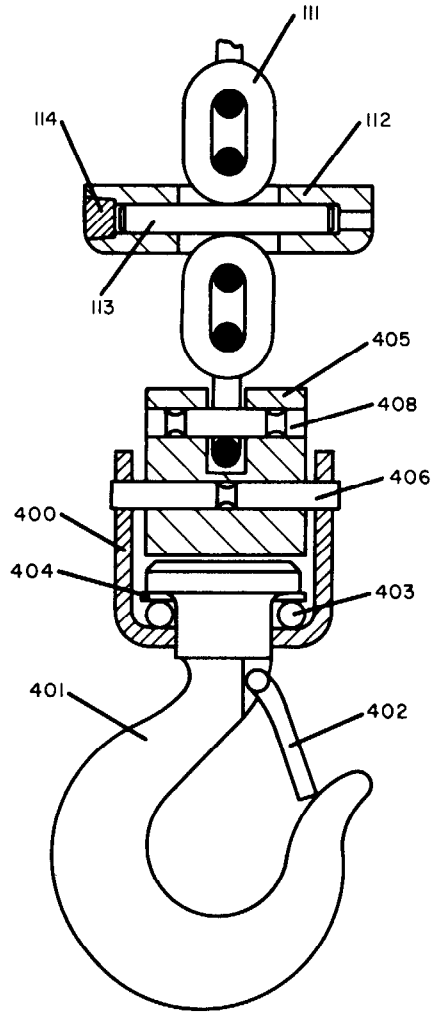
No. MLK-AL132 (03622495) - Three-motor pendent and hose assembly (Specify length of hose required).

### Cross Mount:

No. ML500K-444 (03613023) for use on ML25K or ML50K.

No. ML1000K-444 (03613031) for use on ML100K.

OLD STYLE BOTTOM HOOK FOR ML25K AND ML50K



(Dwg. TPD577-1)

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403	Hook Bearing. . . . .	MR10-379
404	Thrust Race. . . . .	CE120-596
405	Link Chain Connector . . . . .	ML10-461
406	Connector Swivel Pin . . . . .	MR10-462A
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408	Link Chain Pin. . . . .	ML10-603

\* Not illustrated.



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