Form P5829
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OPERATOR AND MAINTENANCE MANUAL

for

MULTI-VANE ® HOISTS

STANDARD MODELS MR5, ML5, MR10, ML10, MR20 AND ML20

SPARK RESISTANT MODEL MR10SR

FAST DESCENT MODELS ML10F AND ML20F

FOR TOP PERFORMANCE AND MAXIMUM DURABILITY OF PARTS, OPERATE THESE HOISTS AT 90 psig (6.2 bar 620 kPa) WITH 1/2" (13 mm) MINIMUM AIR SUPPLY HOSE.

WARNING

DO NOT USE THESE HOISTS FOR LIFTING OR LOWERING PEOPLE.

ALWAYS OPERATE, INSPECT AND MAINTAIN THESE HOISTS IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE SAFETY STANDARD B30.16.

ALWAYS DISCONNECT THE HOIST FROM THE AIR SUPPY BEFORE DOING ANY MAINTENANCE OR INSTALLATION OF ACCESSORIES ON THESE HOISTS.

READ ALL THE ENCLOSED INSTRUCTIONS BEFORE INSTALLING, OPERATING OR REPAIRING THESE HOISTS.

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

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.

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, preferably 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.

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:

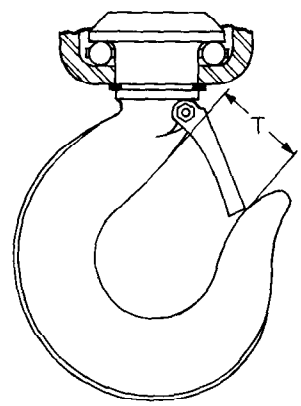
a. Lubrication according to manufacturer's instruction.

b. **Brakes**: Visually check for proper adjustment. 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. Wear should not exceed that which increases length by 3%. 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. Check hook support bearings for lubrication or damage. See that they swivel easily and smoothly.

Hoist Size	"T" Throat Opening	
	New Hook	Discard Hook
ML5, MR5	1-1/16	1-7/32
ML10, MR10, MR10SR	1-1/16	1-7/32
ML10F	1-1/16	1-7/32
ML20, MR20	1-1/4	1-7/16
ML20F	1-1/4	1-7/16



(Dwg. TPD429)

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 empy 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, Chain 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 the brake lining for excessive wear or other deficiencies. The brake drum must be smooth, and the brake cam and arm must not show excessive wear. If necessary, readjust the gap to 1/32" (0.8 mm).
e. The Hoist should be disassembled and checked for worn gearing, bearings, and shafts. Parts should be cleaned, lubricated and reassembled with worn parts replaced.
f. Check all Trolleys for smoothness of operation and wear on supporting members.

OPERATING INSTRUCTIONS

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

HOIST LUBRICATION

Unless an air line lubricator is used, after each 20 hours of operation, or as experience indicates, remove the Oil Chamber Plug (17) located in the upper, right-hand side of the Valve Chest (12) and fill the oil chamber with Ingersoll-Rand Pneu-Lube® Medium Oil No. 50 or a good SAE 20 or 20W motor oil.

Monthly, inject approximately 6 cc of Ingersoll-Rand Light Grease No. 28 or a good quality No. 2 cup grease into the Angle Grease Fitting (2). Use No. P25-228 Grease Gun. **Caution**: Do not inject an excessive amount of grease into the Grease Fitting as this can force grease into the brake drum chamber.

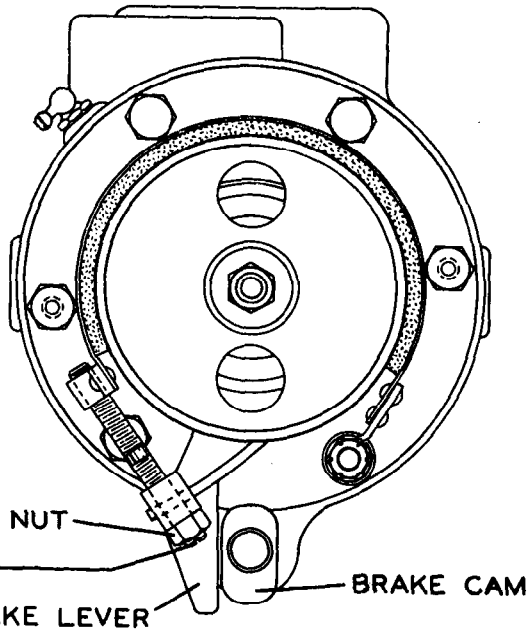
If the motor is disassembled, work a small amount of Ingersoll-Rand Light Grease No. 28 into both End Plate Bearings (52 and 59).

AIR STRAINER

Periodically, as experience indicates, remove the Air Strainer Screen (29) and clean it in kerosene or other solvent.

BRAKE OPERATION AND ADJUSTMENT

The brake on these Hoists is a self-energizing band brake with a bonded friction lining. It is mechanically released by rotation of the Throttle Control Shaft (46) which is actuated by the Throttle Chains (106). The Brake is spring applied when the Throttle Chains are released and the Throttle Control Shaft automatically returns to the neutral position. Should an air line failure occur when raising or lowering a load, apply the brake immediately by simply releasing the Throttle Chain Handles (109) or Throttle Chain Bar (110).



(Dwg. TPC144-1)

On Hoists equipped with a Pendent Throttle, the brake is automatically applied in the event of air line failure.

For proper operation of the Hoist, it is necessary that the brake be inspected periodically or immediately upon indication of the inability of of the brake to stop and hold quickly and positively. Before inspecting or adjusting the brake, shut off the air supply and be certain there is no load on the hook. Remove the brake cover. Make sure the lining and drum are free from oil or grease, that the lining is not worn excessively or the drum is scored or otherwise damaged. In order for the brake to develop full torque, there must be a gap between the brake cam and brake lever.

If the gap is 1/64" (0.4 mm) or less, loosen the Adjusting Screw Jam Nut and rotate the Brake Adjusting Screw until there is 1/32" (0.8 mm) clearance between the faces on the Brake Lever and Brake Cam. Tighten the Jam Nut to lock the Screw in the selected position.

The Brake Band must be replaced when the lining is worn to a thickness of 1/16" (1.6 mm).

CHAIN CARE

Keep the Chain well lubricated as instructed in the section, **CHAIN LUBRICATION.** Never operate a Hoist when the Chain does not flow freely and smoothly into and out of the Pocket Wheel, or when it makes noises indicative of binding or other malfunctions. Under certain circumstances, particularly when worn or gummy, slack Chain can become tangled and jammed, causing the chain to break. Chain can also fail to feed properly with an undersize or improperly mounted Chain Bucket.

Periodically (at the beginning of each shift for Hoists in continuous high-duty cycle service), the Chain should be examined for cleanliness, lubrication, wear or other damage, and proper and smooth feeding through the Hoist. If the Hoist is deficient in any of these respects, it must not be operated until the deficiency is corrected.

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 Manufacturer's Warranty and cause chain wear which will make operation of the Hoist hazardous. Where the Hoist is being used in clean areas, an open chain lubricant

or any good EP gear oil may be used. Several types of open chain lubricants, which are also excellent, are available and can be purchased in convenient aerosol cans. In areas where airborne grit and grime are present, a dry lubricant should be used since grit trapped in the chain lubricant also causes rapid chain wear. These lubricants contain graphite or molydisulfide in a volatile carrier.

The top and bottom hooks are supported by thrust bearings. These bearings must be packed with grease at regular intervals. Failure to maintain lubrication will lead to bearing failure. Continued operation with ruined bearings can result in failure of the suspension and the dropping of a load.

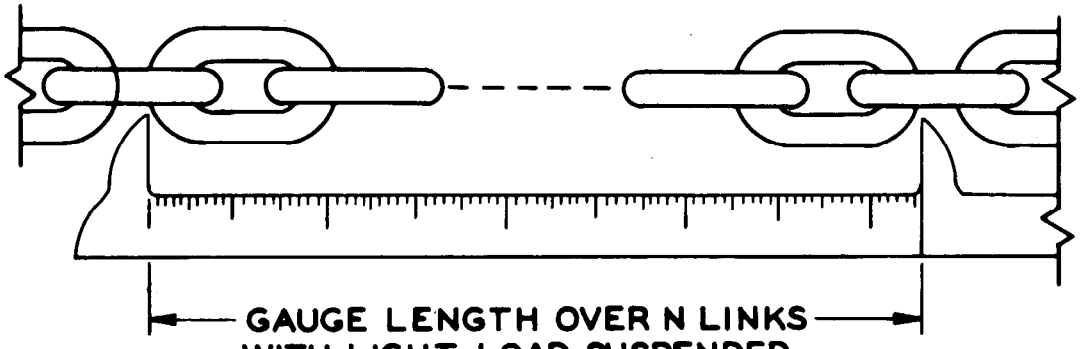
CHAIN REPLACEMENT

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.

Checking Link Chain: 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.

Checking Roller Chain: Place the section of Chain subjected to the greatest wear on a flat surface and stretch it taut. Measure the center to center distance between the end rivets in a 20 link span. If the Chain is worn to the extent that this dimension has reached 12-11/16" (322.3 mm), install a new Chain.

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.

When replacing a Chain, always examine the Chain Wheel and Chain Guard (10). Install a new Chain Wheel if the old one is visibly worn; install a new Guard if the old one is broken or distorted.

ASSEMBLY INSTRUCTIONS

Install the Motor Retaining Washer (60) in the Housing (1) convex side first, so that the outer rim of the Washer will contact the Front End Plate (58) when the motor is installed.

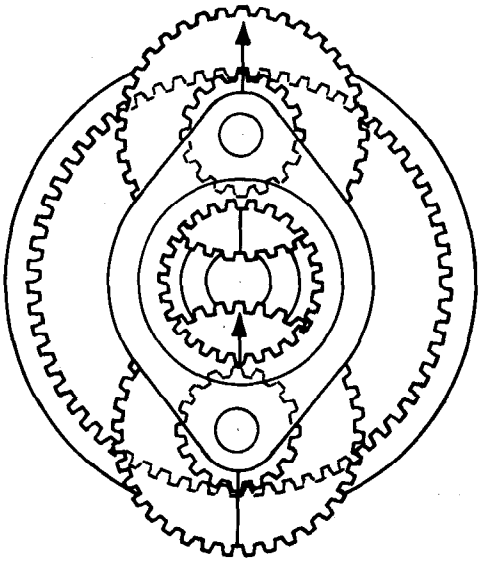
Chain Wheel Washers (64 and 66) must be installed large face first on the Chain Wheel (62), so that the small face will contact the inner ring of the Chain Wheel Bearing (63 or 65) when the bearing is pressed onto the chain wheel hub.

The gearing can be withdrawn from one end of the Hoist and serviced without disturbing the motor at the opposite end. Likewise, the motor can be withdrawn for repair or replacement of parts without disturbing the gearing. **Caution**: If the motor is to be withdrawn from the Housing, the Motor Shaft Nut (72) must be removed first, as the Motor Shaft (50) remains with the motor assembly.

PLANET GEAR TIMING

It is very important that the Planet Gears (68) be timed when the Gear Frame Assembly is inserted into the Ring Gear (74).

Stand the Ring Gear upright on its small hub. Hold the Gear Frame Assembly and rotate the Planet Gears (68) until the arrows and lines scribed on their faces are aligned as indicated in the following illustration.



(Dwg. TPD35-1)

While maintaining this alignment, insert the Gear Frame Assembly into the Ring Gear. Make sure the Ring Gear Gasket (76) is properly positioned on the face of the Housing (1) and insert the assembled unit into the Housing, meshing the teeth on the Motor Shaft (50) with the teeth on the Planet Gears. Secure the Ring Gear in the Housing with the Ring Gear Screws (78) and Ring Gear Studs (77). Before any further assembly, manually rotate the Motor Shaft several revolutions to be certain that the gears have been properly timed. The Shaft should rotate freely with no apparent binding.

NEW STYLE TROLLEY BRACKETS

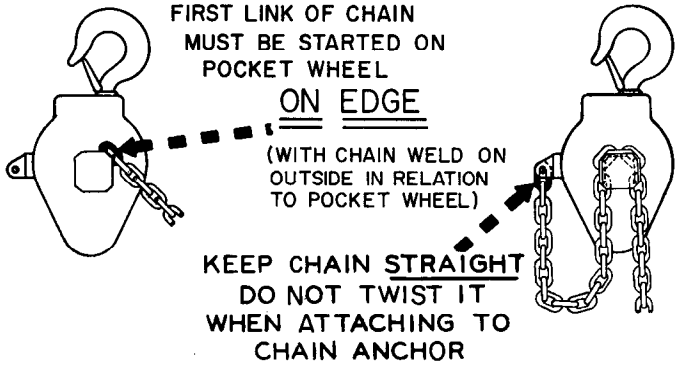
Effective in early 1975, the Trolley Brackets (200) for all MR and ML Hoists were redesigned to incorporate an integral lug or rail sweep on each end of the Bracket. The new Trolley Brackets are **not** interchangeable with the plain, flat Trolley Brackets originally used on MR5, ML5, MR10 and ML10 Hoists. If you are replacing one of the plain, flat Brackets on one of these Hoists, you must order a complete new Trolley Assembly.

INSTALLATION OF LINK CHAIN IN ML HOISTS
FOR ML5, ML10, AND ML10F

INSTALLATION OF LINK CHAIN IN SERIES ML HOISTS

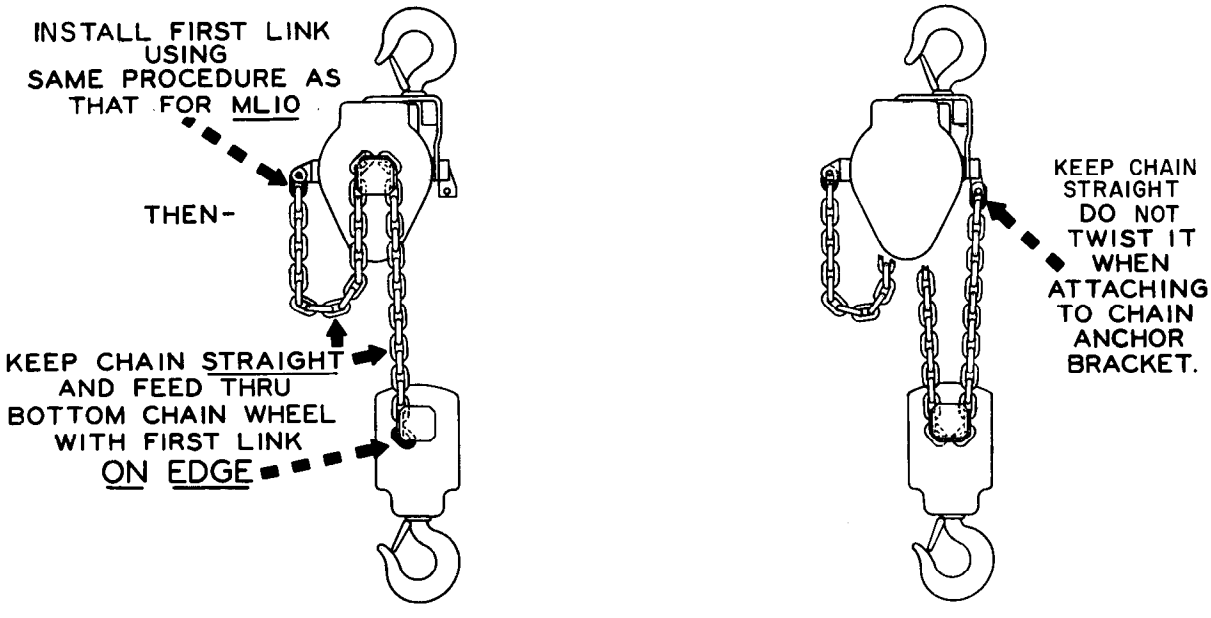
SIZES ML5, ML 10, AND ML 10F

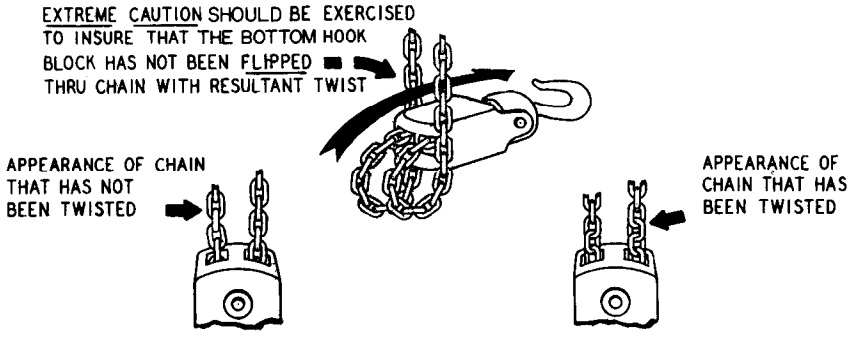
IMPROPER INSTALLATION OF THE CHAIN CAN RESULT IN CHAIN BREAKAGE WITH POSSIBLE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT



SIZES ML20 AND ML 20F

CHAIN MUST CONSIST OF ODD NUMBER OF LINKS





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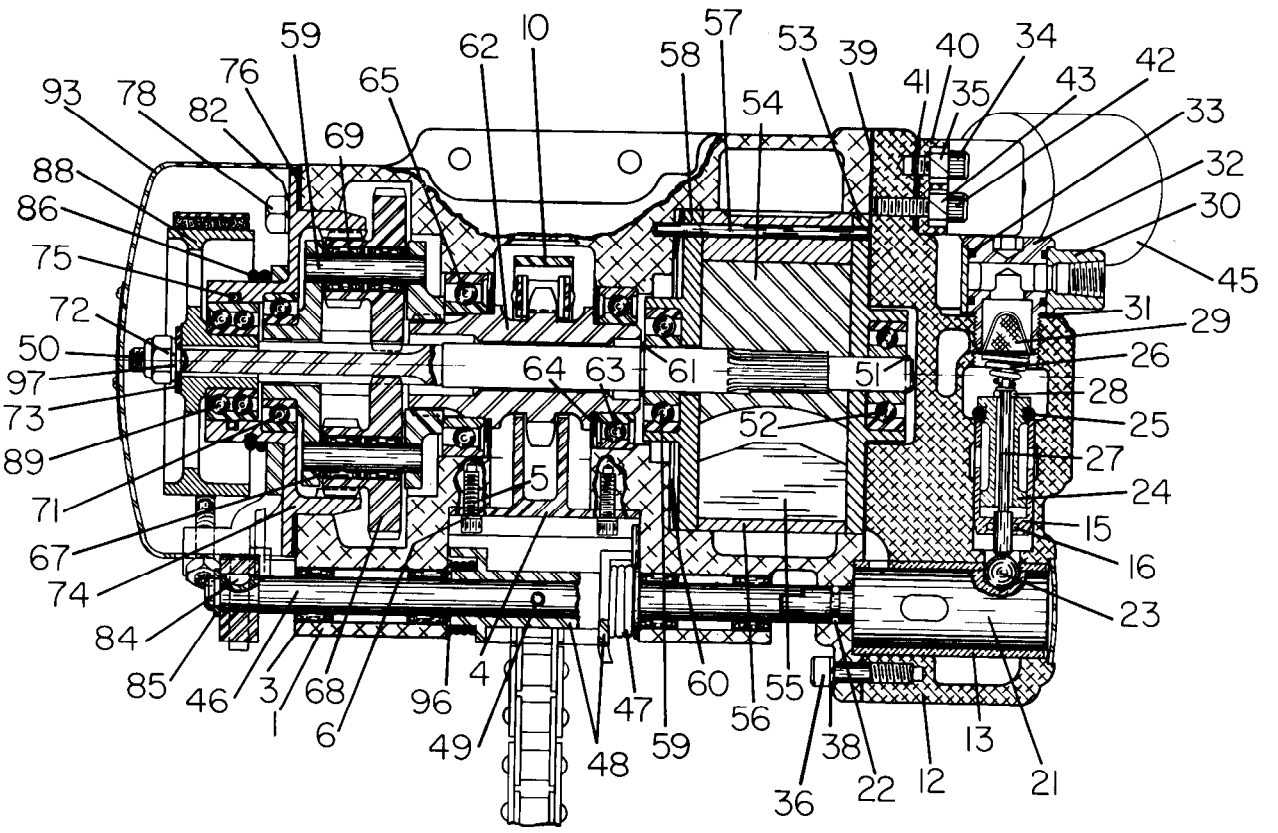
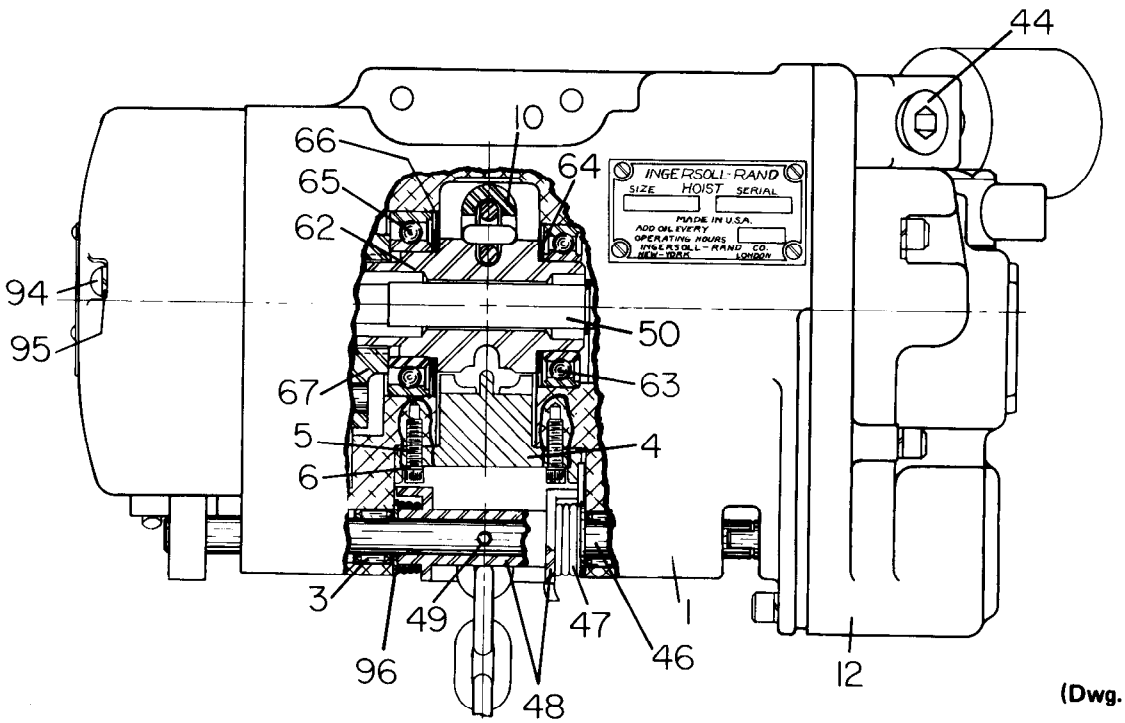


Model MR5 or MR10 Hoist
Motor and Gearing Typical of all MR and ML Hoists



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Model ML5, ML10 or ML10F Hoist

MAIN HOIST PARTS

			PART NUMBER FOR ORDERING
	1	Housing	MR-300B
	2	Angle Grease Fitting	MR-189
	3	Control Shaft (4) (Torrington No. B88 or its equivalent)	R38M-603
	4	Chain Guide	
		for MR	MR-741A
		for ML	ML-741C
	5	Chain Guide Screw (4)	
		for MR	AL-638
		for ML	34U-463
	6	Chain Guide Screw Lock Washer (4)	4U-58
	10	Chain Guard	
		for MR	MR-6
		for ML	ML-6A
	*	Guard Retaining Screw (2)	G57T-634
	*	Guard Retaining Screw Lock Washer (2)	L01-67
▲		Valve Chest Assembly	
		for MR5, ML5, MR10, ML10, MR10SR, MR20 or ML20	MR-A445
		for ML10F or ML20F	MRF-A445
	12	Valve Chest	MR-445
★	13	Reverse Valve Bushing	MR-945
	*	Reverse Valve Cap	MR-299
★	15	Throttle Valve Bushing	MR-615A
	16	Throttle Valve Bushing Seal	R0BR1C-283
	17	Oil Chamber Plug (2)	R2-227
	18	Oiler Adjusting Screw	JA4-71
	19	Oiler Felt (2)	JA4-75
	21	Reverse Valve	
		for MR5, ML5, MR10, ML10, MR10SR, MR20 or ML20	MR-944
		for ML10F or ML20F	MRF-944
	22	Reverse Valve Seal Ring	R000BR-210
	23	Throttle Valve Ball (7/16" dia. steel ball)	WF171-28
	24	Poppet Throttle Valve	MR-940A
	25	Throttle Valve Face	FEA100-5
	26	Throttle Valve Spring	MR-942A
	27	Throttle Valve Stem	MR-161
	28	Throttle Valve Stem Seal	MR-167
○		Swivel Connection Assembly	MR-A581A
	29	Air Strainer Screen	402-61
	30	Inlet Swivel Sleeve	HRA20A-166
	31	Swivel Gasket	D01-946
	32	Swivel Nipple	MR-4A
	33	Swivel Seal (2)	MT4-210
	34	Valve Chest Medium Cap Screw	20BM-744
	35	Valve Chest Cap Screw Lock Washer	8U-58
	36	Valve Chest Short Cap Screw	5080-638
	37	Valve Chest Long Cap Screw (4)	PR22H-548
	38	Valve Chest Cap Screw Lock Washer (5)	L01-67
	39	Valve Chest Gasket	MR-934
	40	Exhaust Adapter	MR-342
	41	Adapter Gasket	MR-343
	42	Exhaust Adapter Screw	34U-667A
	43	Adapter Screw Lock Washer	8U-58
	44	1/2" Pipe Plug	D02-351
	45	Exhaust Muffler	MR-674
††	46	Throttle Control Shaft	MR-655A

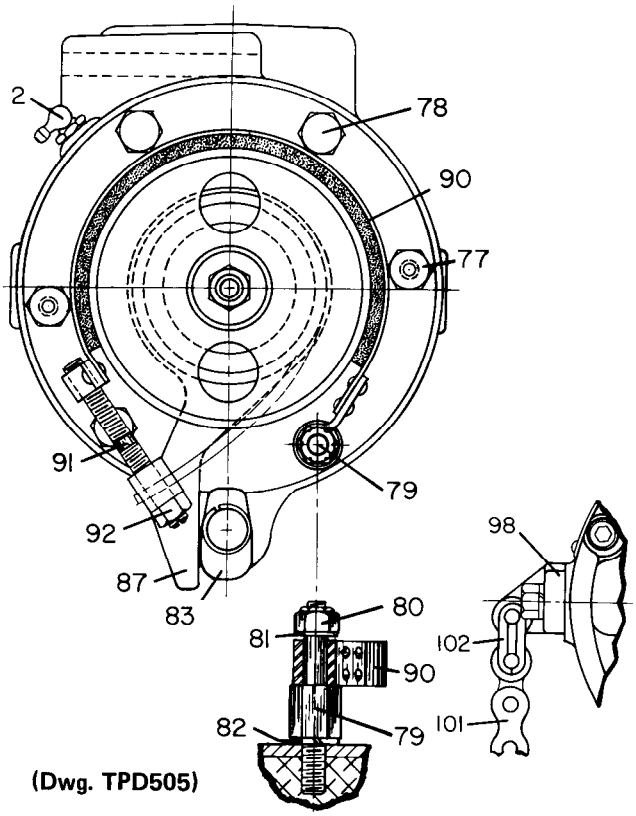
* Not illustrated.

▲ Before ordering this part refer to Muffled or Piped-Away Exhaust Equipment on page 31.

★ The Reverse Valve Bushing (13) and Throttle Valve Bushing (15) are not available as repair items. If either of these Bushings requires replacement, the Valve Chest Assembly must be returned to the factory or repair depot.

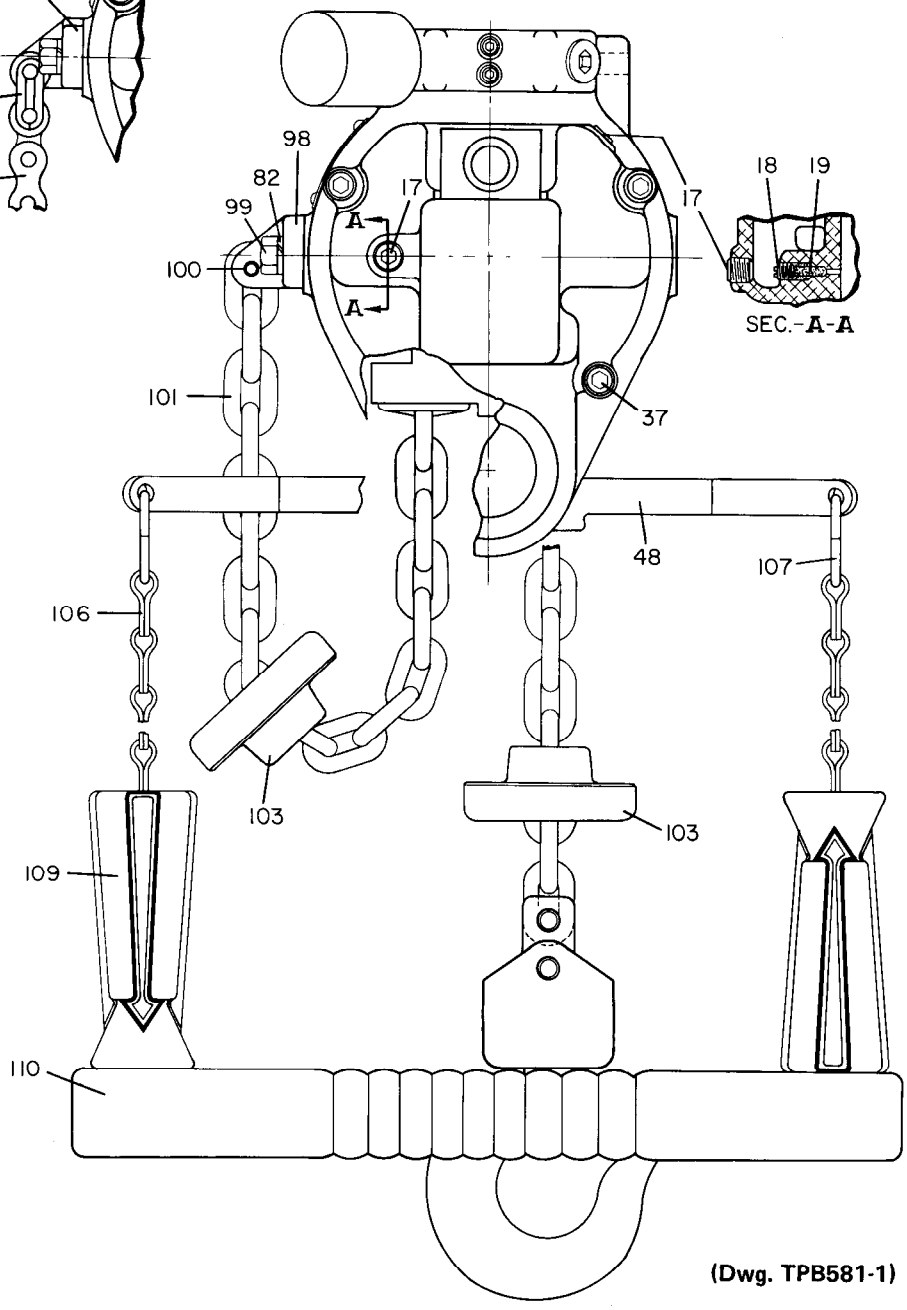
†† Before ordering this part refer to Improved Brake Cam and Control Shaft on page 21.

○ Before ordering this part refer to Old Style Valve Chest on page 27.



(Dwg. TPD505)

Brake End View of Hoist



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Valve Chest End View of Model MR5, ML10 or ML10F Hoist

MAIN HOIST PARTS (Continued)

		PART NUMBER FOR ORDERING
• 47	Throttle Lever Spring (2)	MR-412
48	Throttle Lever	MLK-556
49	Throttle Lever Retaining Pin	WF171-15
50	Motor Shaft	MR-316
51	Motor Shaft Rear Retaining Ring	N44-6
• 52	Rear End Plate Beaaring	R2-24
53	Rear End Plate	MR-12
54	Rotor	MR-53
• 55	Vane Packet (set of 7 Vanes)	MR-42-7
56	Cylinder	MR-3A
57	Cylinder Dowel	R3H-434
58	Front End Plate	MR-11
• 59	Front End Plate Bearing	RB-394
60	Motor Retaining Washer	MR-207
61	Motor Shaft Front Retaining Ring	R4800-119
62	Chain Wheel	
	for MR	MR-640
	for ML	ML-740B
63	Chain Wheel Plain End Bearing	GA1S-593
64	Chain Wheel Plain End Washer	MR-974
65	Chain Wheel Splined End Bearing	MR-988
66	Chain Wheel Splined End Washer	MR-975
	Gear Frame Assembly	
	for MR10, ML10, MR20 or ML20	MR-A8
	for MR5 or ML5	MR5-A8
67	Planet Gear Frame	
	for MR10, ML10, MR20 or ML20	MR-8
	for MR5 or ML5	MR5-8
68	Planet Gear Assembly (2)	
	for MR10, ML10, MR20 or ML20	MR-A10
	for MR5 or ML5	MR5-A10
69	Planet Gear Bearing (4)	ML50K-654
70	Planet Gear Shaft (2)	MR-191
71	Gear Frame Bearing	R38P-97
72	Motor Shaft Nut	503-639
73	Motor Shaft Nut Washer	B12-265
74	Ring Gear	MR-406
75	Brake Drum Bearing Seal	MR-614
76	Ring Gear Gasket	MR-31
77	Ring Gear Stud (2)	MR-69
78	Ring Gear Screw (3)	R3-7A
79	Brake Band Anchor	MR-206
80	Brake Band Anchor Nut	501-639
81	Brake Band Anchor Washer	R3-94
82	5/16" Lock Washer (8)	T11-58
83	Brake Release Cam	MR-29A
84	Brake Cam Key	MR-18
85	Brake Cam Retainer	12E-6
86	Brake Lever Spring	MR-393
87	Brake Lever	MR-151
88	Brake Drum	MR-803A
• 89	Brake Drum Bearing	MR-110
• 90	Brake Band Assembly	MR-152
91	Brake Adjusting Screw	MR-158
92	Adjusting Screw Jam Nut	MR-5
93	Brake Cover	
	for MR5 or ML5	MR5-981
	for MR10, ML10 or MR10SR	MR10-981
	for ML10F	MR10F-981
	for MR20 or ML20	MR20-981
	for ML20F	MR20F-981

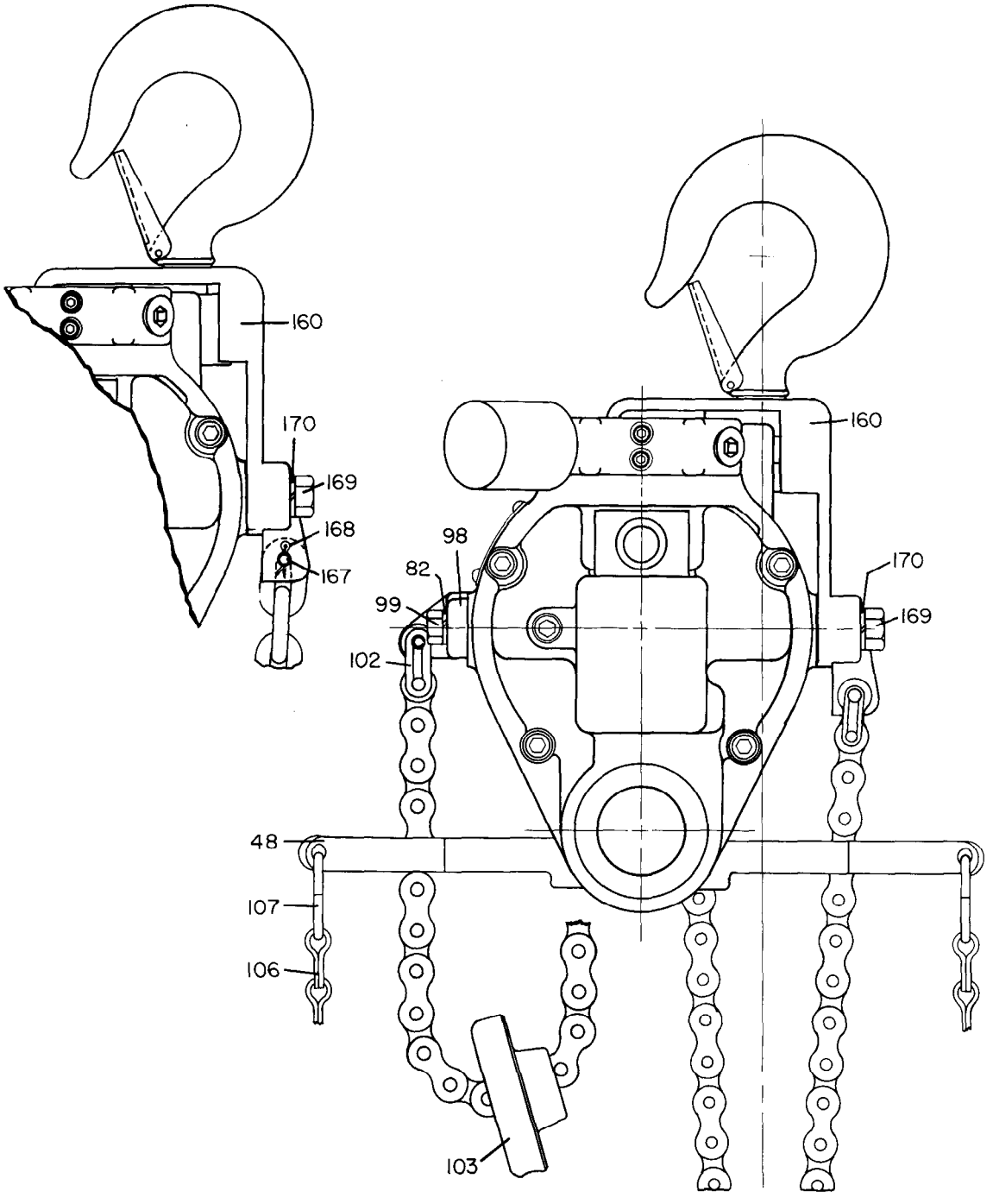
• To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

MAIN HOIST PARTS (Continued)

		PART NUMBER FOR ORDERING
94	Brake Cover Retaining Screw (2)	MR-985
95	Cover Screw Lock Washer (2)	510-67
96	Throttle Lever Thrust Washer (2)	MR-458
97	Motor Shaft Nut Lock Washer	T11-58
98	Chain Bracket	
	for MR	MR-746
	for ML	ML-746
99	Chain Bracket Screw (2)	FM-554
100	Link Chain Bracket Pin (for ML Hoists)	WF171-15
• 101	Chain	
	for MR5 or MR10	
	10 ft. maximum lift (standard)	MR10-645-10
	15 ft. maximum lift	MR10-645-15
	20 ft. maximum lift	MR20-645-10
	lift as specified	MR-645
	for MR20	
	10 ft. maximum lift (standard)	MR20-645-10
	15 ft. maximum lift	MR20-645-15
	20 ft. maximum lift	MR20-645-20
	lift as specified	MR-645
	for ML5, ML10 or ML10F	
	10 ft. maximum lift (standard)	CE110-745
	15 ft. maximum lift	CE110-745-15
	20 ft. maximum lift	CE120-745
	lift as specified	ML-745
	for ML20 or ML20F	
	10 ft. maximum lift (standard)	CE120-745
	15 ft. maximum lift	CE120-745-15
	20 ft. maximum lift	CE120-745-20
	lift as specified	ML-745
	for MR10SR	
	10 ft. maximum lift (standard)	MR10-R645-10
	lift as specified	MR-R645
	for ML10 and ML20 (stainless steel chain) (length as specified)	ML-R745
102	Roller Chain Connecting Link (2) (see inset on page 10.)	
	for Standard MR Hoists	DRC-646
	for Spark-Resistant Hoists	MR-R646
103	Stop Ring (1 for MR20 or ML20 Hoists; 2 for others)	
•	Standard	MR-A259
	Spark-Resistant	MR-AR259
104	Stop Ring Pin (1 for each Stop Ring)	34U-215A
105	Stop Ring Plug (1 for each Stop Ring)	502-95
106	Throttle Lever Chain (2) (for all Models except Spark-Resistant)	
	for Hoist with 10 ft. lift	MR10-413-10
	for Hoist with 15 ft. lift	MR10-413-15
	for Hoist with 20 ft. lift	MR10-413-20
	length as specified	CA110-B240
107	S-Hook (2 for each Chain)	D02-421
*	Throttle Lever Rope (2) (for MR10SR)	
	5 ft. long	HRA20A-414
	length as specified	HRA20A-L41
109	Throttle Handle (2)	MR-415
110	Throttle Chain Bar	MR-409
*	Caution Tag	TA-147A
*	Caution Tag Screw (4)	9BM-302
*	Nameplate	MR-301
*	Nameplate Screw (4)	R4K-302
*	Hoist Instruction Tag	CA110-598
*	Instruction Tag Tie (2)	CE110-4

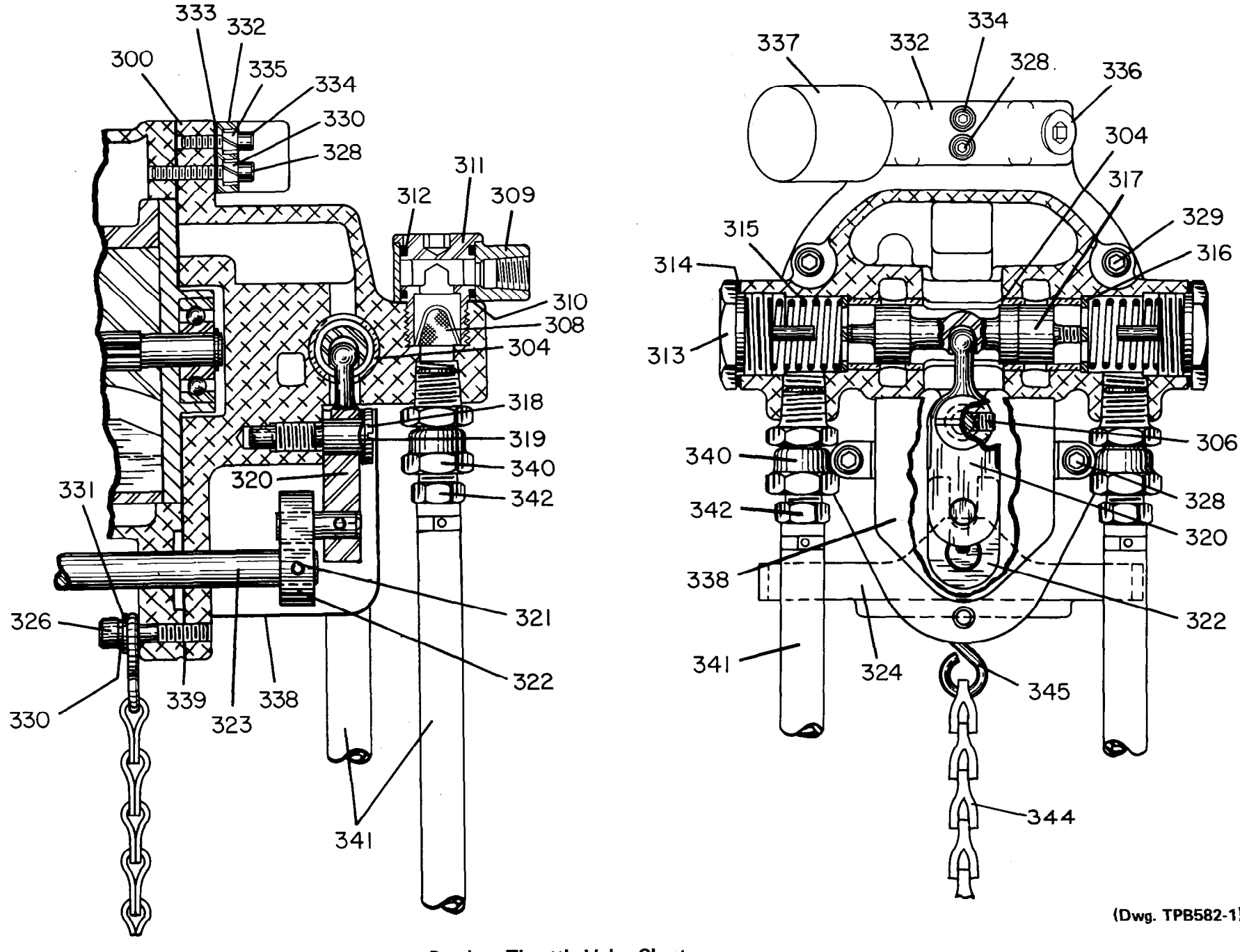
* Not illustrated.

• 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.



(Dwg. TPB580)

End View of Model ML20 or MR20 Hoist



(Dwg. TPB582-1)

Pendent Throttle Valve Chest

PENDENT THROTTLE VALVE CHEST PARTS

		PART NUMBER FOR ORDERING
▲	Shuttle Valve Chest Assembly	
	for MR5, ML5, MR10, ML10, MR10SR, MR20 or ML20	MR-A345
	for ML10F or ML20F	MRF-A345
▲ 300	Shuttle Valve Chest	MR-345
304	Shuttle Valve Bushing	MR-347
306	Shuttle Valve Finger Pivot Setscrew	R2J-561
○	Swivel Connection Assembly	MR-A581A
308	Air Strainer Screen	402-61
309	Inlet Swivel Sleeve	HRA20A-166
310	Swivel Gasket	D01-946
311	Swivel Nipple	MR-4A
312	Swivel Seal (2)	MT4-210
313	Shuttle Valve Cap (2)	MR-238
314	Shuttle Valve Cap Gasket (2)	MR-239
315	Shuttle Valve Spring (2)	MR-250
316	Shuttle Valve Washer (2)	MR-248
▲ 317	Shuttle Valve	
	for MR5, ML5, MR10, ML10, MR10SR, MR20 or ML20	MR-346
	for ML10F or ML20F	MRF-346
318	Shuttle Valve Finger Pivot	MR-252
319	Shuttle Valve Finger Pivot Spring Washer	MR-30
320	Shuttle Valve Finger	MR-251A
321	Stop Arm Retaining Pin	5BM-278
322	Stop Arm	MR-254
323	Stop Lever Shaft	MR-255A
324	Stop Lever	MR-222
*	Stop Lever Retaining Pin	WF171-15

		PART NUMBER FOR ORDERING
326	Shuttle Valve Chest Medium Cap Screw	R3F-7
327	Medium Cap Screw Lock Washer	8U-58
328	Shuttle Valve Chest Short Cap Screw (3)	5080-638
329	Shuttle Valve Chest Long Cap Screw (2)	518-104
330	Cap Screw Lock Washer (6)	L01-67
331	S-Hook Washer	R3-94
332	Exhaust Adapter	MR-342
333	Adapter Gasket	MR-343
334	Exhaust Adapter Screw	34U-667A
335	Adapter Screw Lock Washer	8U-58
336	1/2" Pipe Plug	D02-351
337	Exhaust Muffler	MR-674
338	Shuttle Valve Chest Cover	MR-241
339	Shuttle Valve Chest Gasket	MR-984
340	Control Hose Union (3)	MR-129
★ 341	Control Hose (3)	
	5 ft. long (standard)	MR-930
	length as specified	MR-L930
342	Hose Nipple (2 for each Hose)	RV1-46
343	Hose Binder (3)	CE110-4
† 344	Pendent Throttle Chain	
	Standard (for Hoist with 10 ft. lift)	MR10-240-10
	Standard (for Hoist with 15 ft. lift)	MR10-240-15
	Standard (for Hoist with 20 ft. lift)	MR10-240-20
	Standard (length as specified)	CA110-B240
	Spark-Resistant (for Hoist with 10 ft. lift)	D02-1413
	Spark-Resistant (length as specified)	D02-L1413
345	S-Hook (2)	D02-421

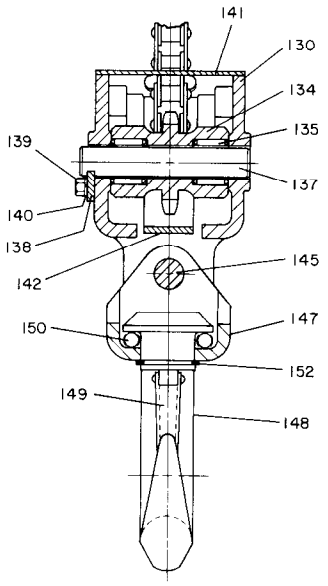
* Not illustrated.

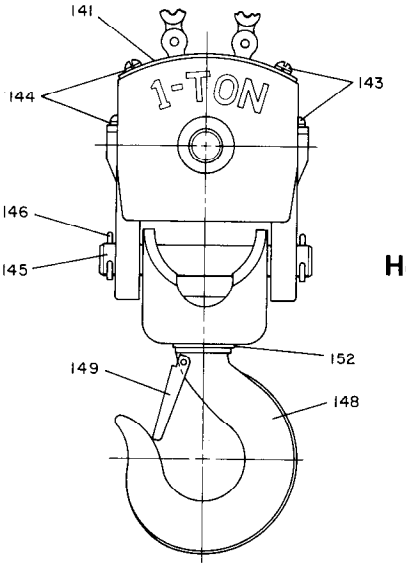
★ Refer to **EXTRA LONG CONTROL HOSES AND CONTROL HOSE EXHAUST VALVES** on Page 28 if control length exceeds 15 ft.

▲ Before ordering this part refer to Muffled or Piped-Away Exhaust Equipment on Page 31.

† Order Pendent Throttle Chain (344) 3" shorter than Control Hoses.

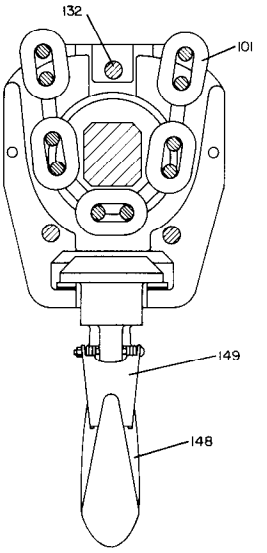
○ Before ordering this part refer to Old Style Valve Chest on Page 27.

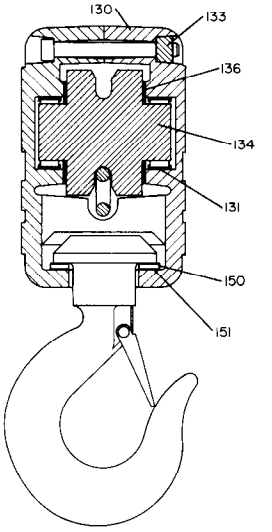




Bottom Hook and Block Assembly for Model MR20 Hoist (Construction is typical of old style Hook and Block Assembly for Model ML20)

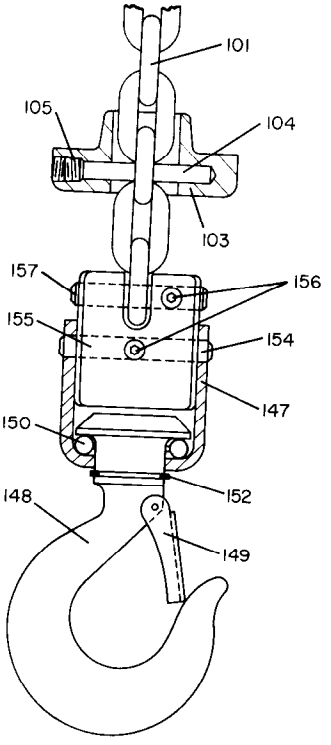
(Dwg. TPC376)





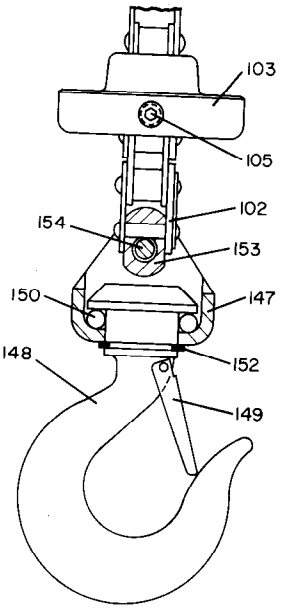
New Style Bottom Hook and Block Assembly for Model ML20 Hoist

(Dwg. TPC374)

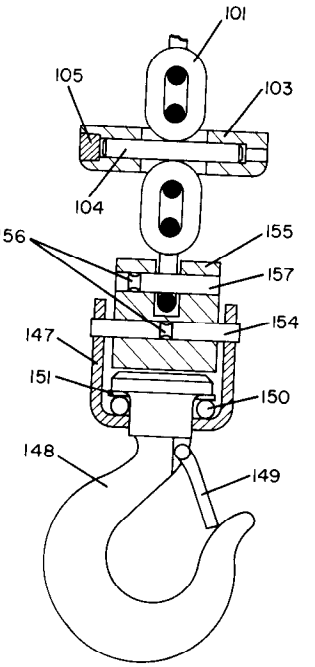


Old Style Bottom Hook and Block Assembly for Model ML5 or ML10 Hoist

(Dwg. TPC373)



Old Style Bottom Hook and Block Assembly for Model MR5 or MR10 Hoist



New Style Bottom Hook and Block Assembly for Model ML5 or ML10 Hoist

BOTTOM HOOK AND BLOCK PARTS

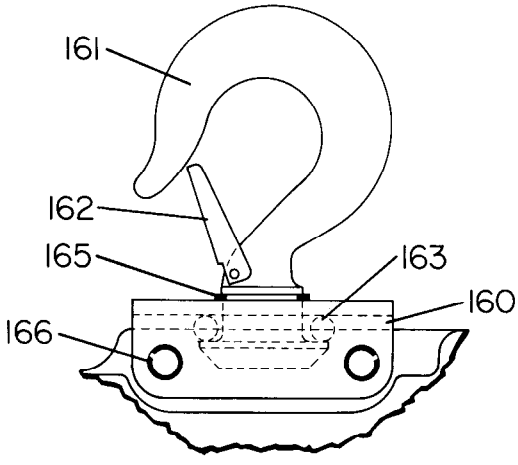
		PART NUMBER FOR ORDERING
	Bottom Hook and Block Assembly	
	for ML20F or ML20F	CE120-A378
	for MR20	MR20-AS378
130	Wheel Block	
	for old style ML20, ML20F or MR20	MR20-378
	for new style ML20 or ML20F (2)	CE120-B378
131	Needle Bearing (1 for each new style Wheel Block)	0C9-593
132	Wheel Block Screw (3) (for new style Block Assembly)	CE120-312
133	Thread Insert (3) (for new style Block Assembly)	CE120-38
134	Bottom Chain Wheel	
	for old style ML20	ML20-380
	for new style ML20	CE120-380
	for MR20	MR20-380
135	Chain Wheel Bearing (2) (for old style ML20 or MR20)	MR20-384
136	Chain Wheel Thrust Spacer (2) (for new style ML20)	CE120-80
137	Bottom Chain Wheel Shaft (for old style ML20, ML20F or MR20)	MR20-382
138	Wheel Shaft Lock (for old style ML20, ML20F or MR20)	MR20-383
139	Shaft Lock Screw (2) (for old style ML20, ML20F or MR20)	JC3350-103
140	Lock Screw Lock Washer (2) (for MR20 or old style ML20)	L01-67
141	Wheel Block Cover (for old style ML20, ML20F or MR20)	MR20-441
142	Wheel Block Guard (for MR20 or old style ML20 or ML20F)	ML20-445
143	Wheel Block Cover Screw (6) (for old style ML20, ML20F or MR20)	4E-376A
144	Cover Screw Lock Washer (6) (for MR20 or old style ML20)	T05-58
145	Wheel Block Pin (for old style ML20, ML20F or MR20)	MR20-464
146	Wheel Block Pin Cotter (2) (for MR20 or old style ML20)	D02-330
	Hook Block Assembly	
	for ML5, ML10 or ML10F	CE110-A463
	for MR5 or MR10	MR10-AS463A
	for MR10SR	MR10-AR463A
	for MR20 or old style ML20 or ML20F	HRA20A-AS463
147	Hook Block	
	for ML5, MR5, ML10, ML10F or MR10:	
	Old Style	MR10-463A
	New Style	CE110-463
	for MR10SR	
	Old Style	MR10-R463
	New Style	MR10-R463A
	for old style ML20, ML20F or MR20	HRA20A-463
148	Bottom Hook	
	for ML5, MR5, ML10, ML10F or MR10:	
	Old Style	MR10-377A
	New Style	CE110-S304
	for MR10SR	MR10-R377
	for new style ML20 or ML20F	CE120-S304
	for old style ML20, ML20F or MR20	HRA20A-377
	for ML5, MR5, ML10, ML10F, MR10, ML20, ML20F or MR20 (Bullard-Burnham Hook)	CE120-BB377X
*	Hook Nut	
	for ML5, MR5, ML10, ML10F or MR10 with Bullard-Burnham Hook	CE110-BB377Y
	for ML20, ML20F or MR20 with Bullard-Burnham Hook	CE120-BB377Y
149	Hook Latch Kit	
	for ML5, MR5, ML10, ML10F or MR10:	
	Old Style	MR10-S123
	New Style	CE110-S123
	for MR10SR	MR10-SR123
	for new style ML20 or ML20F	CE120-S123
	for old style ML20, ML20F or MR20	
	with Williams-Vulcan Hook	D01-S123
	with Crosby-Laughlin Hook	D01-S4055
150	Hook Bearing	
	for ML5, MR5, ML10 or MR10	MR10-379
	for new style ML20	CE110-295
	for old style ML20 or MR20	HRA20A-379

* Not illustrated.

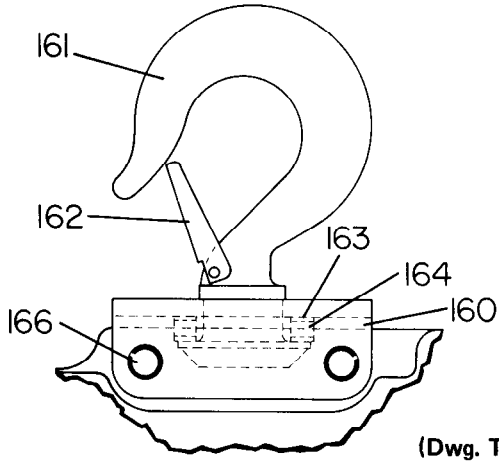
BOTTOM HOOK AND BLOCK PARTS (Continued)

		PART NUMBER FOR ORDERING
151	Thrust Race	
	for ML5, MR5, ML10 or MR10	CE110-596
	for new style ML20	CE120-596
152	Hook Retaining Ring	
	for old style ML5, MR5, ML10 or MR10	MR10-375
	for old style ML20 or MR20	HRA20A-375
153	Hook Block Swivel (for MR5 or MR10)	MR10-461
154	Hook Block Swivel Pin	
	Standard	MR10-462A
	Spark-Resistant	MR10-R462
155	Link Chain Connector (for ML5, ML10 or ML10F)	ML10-461
156	Chain Connector Setscrew (2) (for ML5, ML10 or ML10F)	R2J-561
157	Link Chain Pin (for ML5, ML10 or ML10F)	ML10-603

TOP HOOK AND YOKE PARTS



Old Style Top Hook and Yoke for Model ML5, MR5, ML10 or MR10



(Dwg. TPC375)

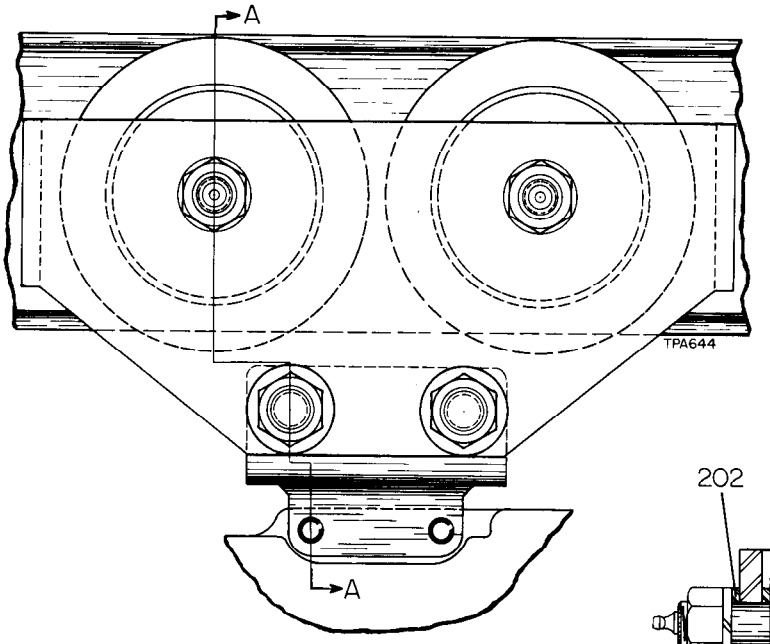
New Style Top Hook and Yoke for Model ML10 or MR10

TOP HOOK AND YOKE PARTS

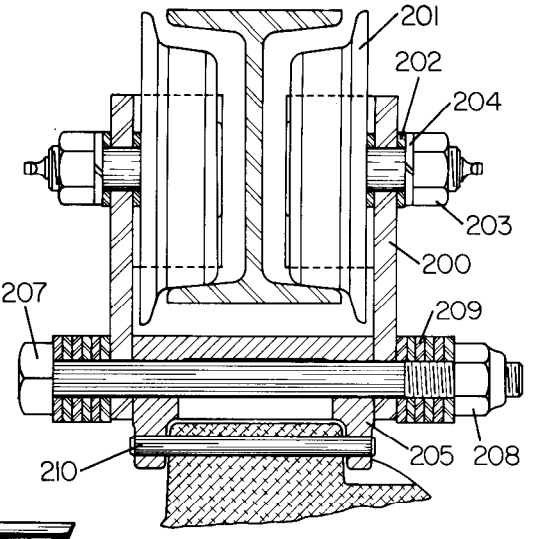
PART NUMBER FOR ORDERING

	Top Hook and Yoke Assembly	
	for ML5, MR5, ML10 or MR10	MR10-AS590A
	for ML20	ML20-AS590A
	for MR20	MR20-AS590B
	for MR10SR	MR10SR-AS590
	for ML5, MR5, ML10 or MR10 with Bullard-Burnham Hook	MR10-ABB590A
	for ML20 with Bullard-Burnham Hook	ML20-ABB590A
	for MR20 with Bullard-Burnham Hook	MR20-ABB590B
160	Top Hook Yoke	
	for ML5, MR5, ML10 or MR10	MR10-590A
	for ML20	ML20-590A
	for MR20	MR20-590B
	for ML20 with Bullard-Burnham Hook	ML20-BB590A
	for MR20 with Bullard-Burnham Hook	MR20-BB590B
161	Top Hook	
	for ML5, MR5, ML10 or MR10	
	New Style	CE110-S304
	Old Style	MR10-377A
	for ML20 or MR20	
	New Style	CE120-S304
	Old Style	HRA20A-377
	for MR10SR	MR10-R377
	for ML5, MR5, ML10 or MR10 (Bullard-Burnham Hook)	CE120-BB377X
	for ML20 or MR20 (Bullard-Burnham Hook)	MR20-BB377X
162	Hook Latch Kit	
	for ML5, MR5, ML10 or MR10	
	New Style	CE110-S123
	Old Style	MR10-S123
	for new style ML20 or MR20	CE120-S123
	for old style ML20 or MR20 with Williams-Vulcan Hook	D01-S123
	for old style ML20 or MR20 with Crosby-Laughlin Hook	D01-S4055
	for MR10SR	MR10-SR123
163	Hook Bearing	
	for ML5, MR5, ML10, MR10 or MR10SR	R4810-105
	for ML20 or MR20 with Bullard-Burnham Hook	D01-379A
	for ML20 or MR20	CE110-295
164	Thrust Race (2)	
	for ML5, MR5, ML10, MR10 or MR10SR	CE110-596
	for ML20 or MR20 with Bullard-Burnham Hook	SMC-273
	for ML20 or MR20	CE120-596
165	Hook Retaining Ring	
	for old style ML5, MR5, ML10, MR10 or MR10SR	MR10-375
	for old style ML20 or MR20	HRA20A-375
*	Hook Nut	
	for ML5, MR5, ML10 or MR10 with Bullard-Burnham Hook	CE110-BB377Y
	for ML20 or MR20 with Bullard-Burnham Hook	C620C40-305
*	Hook Nut Retaining Pin	
	for ML5, MR5, ML10 or MR10	CE110-376
	for ML20 or MR20 with Bullard-Burnham Hook	MR-100
166	Top Hook Yoke Pin (2)	MR-964
167	Link Chain Anchor Pin (for ML20)	ML20-962A
168	Link Chain Anchor Pin Cotter (2) (for ML20)	D02-524
169	Top Hook Yoke Screw (2) (for ML20 or MR20)	D10-312A
170	Yoke Screw Lock Washer (2) (for ML20 or MR20)	D02-321

* Not illustrated.

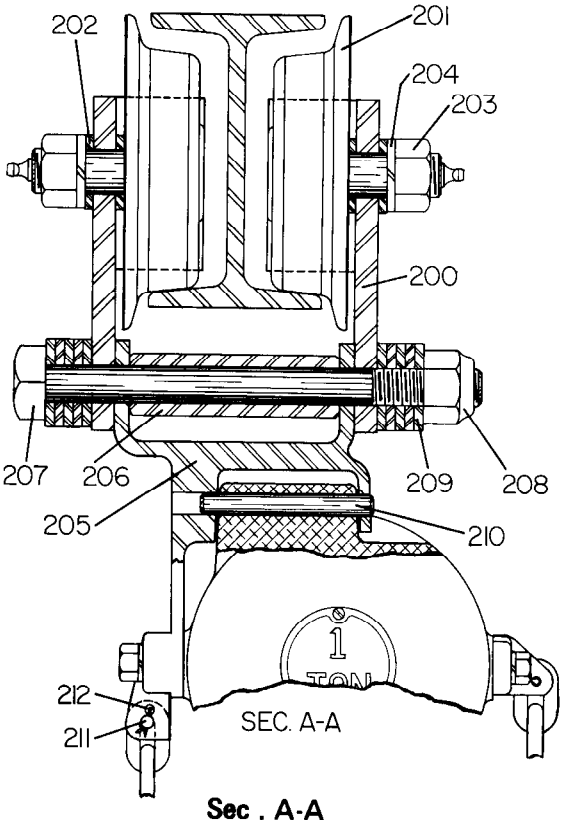


Side View of Rigid Trolley for MR and ML Hoists



Sec. AA

End View of Rigid Trolley for Model MR5, ML5, MR10 or ML10 Hoist



Sec . A-A

End View of Rigid Trolley for Model MR20 or ML20 Hoist

(Dwg. TPA644)

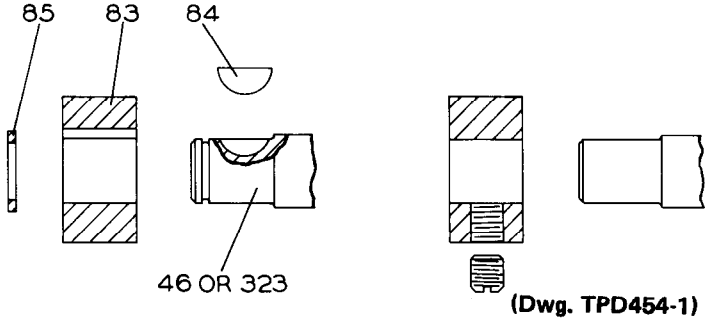
RIGID TROLLEY PARTS

		PART NUMBER FOR ORDERING
	Rigid Trolley Assembly	
	for operation on I-beam having flanges 2.66" (68 mm) to 5.00" (127 mm) wide (3-1/8" dia. wheels):	
	for MR5, ML5, MR10, ML10 or ML10F	MLK-A430
	for MR10SR	MLK-AR430
	for operation on I-Beam having flanges 3.00" (76 mm) to 5.00" (127 mm) wide (4" dia. wheels):	
	for MR5, ML5, MR10, ML10 or ML10F	MR10-A430
	for MR10SR	MR10-AR430
	for MR20	MR20-A430A
	for ML20 or ML20F	ML20-A430
	for operation on Flat-Tread Monorail	
	for MR5, ML5, MR10, ML10 or ML10F	MR10-A430T
	for MR10SR	MR10-AR430T
	for MR20	MR20-A430AT
	for ML20 or ML20F	ML20-A430T
▲ 200	Trolley Bracket (2)	
	for 3-1/8" dia. wheels	ML50K-430
	for 4" dia. wheels	CE120-430
201	Trolley Wheel (4)	
	for operation on I-Beam	
	for MR5, ML5, MR10, ML10 or ML10F (3-1/8" dia.)	MR10-691
	for MR10SR (3-1/8" dia.)	MR10-1691
	for MR5, ML5, MR10, ML10, ML10F, MR20, ML20 or ML20F (4" dia.)	MR20-691
	for operation on Flat-Tread Monorail	
	for MR5, ML5, MR10, ML10 or ML10F (3-1/8" dia.)	MR10-691T
	for MR10SR (3-1/8" dia.)	MR10-R691T
	for MR5, ML5, MR10, ML10, ML10F, MR20, ML20 or ML20F (4" dia.)	MR20-691T
202	Trolley Wheel Spacer (8)	
	for 3-1/8" dia. Wheels	D10-807
	for 4" dia. Wheels	21-748
203	Trolley Wheel Shaft Nut (4)	
	for 3-1/8" dia. Wheels	215-182
	for 4" dia. Wheels	DU-562
204	Trolley Wheel Shaft Lock Washer (4)	
	for 3-1/8" dia. Wheels	D10-322
	for 4" dia. Wheels	D01-692
205	Rigid Trolley Adapter	
	for MR5, ML5, MR10 or ML10	MR10-425
	for MR20	MR20-425B
	for ML20	ML20-425A
206	Trolley Adapter Spacer (2) (for MR20 or ML20) (used with old style Adapter)	MR20-446
207	Trolley Bracket Bolt (2)	D01-694-8
208	Trolley Bolt Nut (2)	D01-341A
209	Trolley Bracket Spacer (28) (as required)	D01-442-1/6
210	Trolley Adapter Pin (2)	MR-964
211	Link Chain Anchor Pin (for ML20 or ML20F)	ML20-962A
212	Link Chain Anchor Pin Cotter (2) (for ML20 or ML20F)	D02-524

▲ Refer to **NEW STYLE TROLLEY BRACKETS** on page 6.

IMPROVED BRAKE CAM AND CONTROL SHAFT

The shape of the Brake Release Cam (83) has been slightly changed to improve the action, and the method of attaching it to the Control Shaft (46 or 323) is changed to provide more definite and positive location. The New Style parts can be used **as a unit** to replace the Old Style parts; therefore the Old Style parts are discontinued. If it becomes necessary to replace either the discontinued Cam or Shaft, the four New Style Parts must be installed.



(Dwg. TPD454-1)

HOOK-ON TROLLEY PARTS

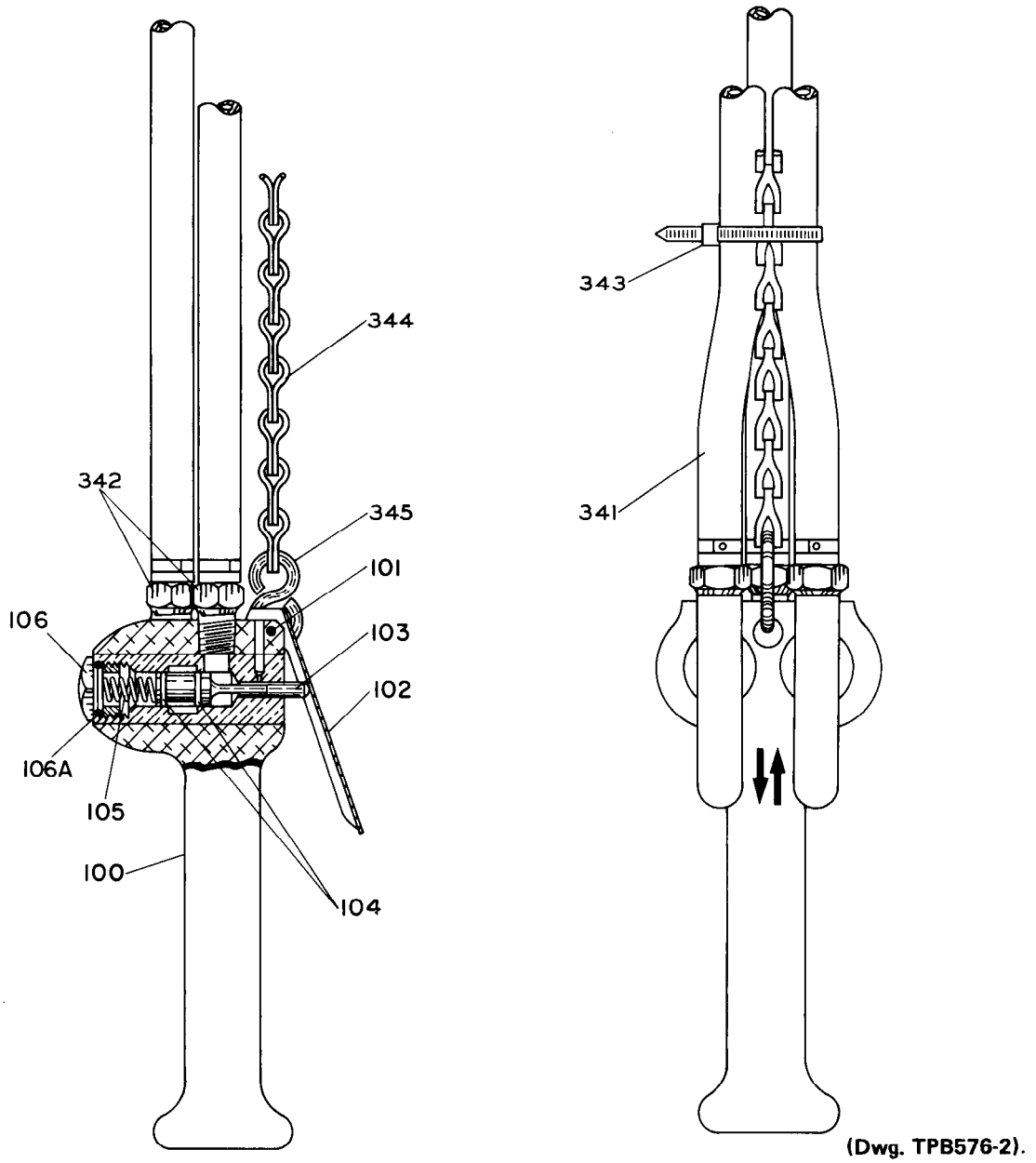
	PART NUMBER FOR ORDERING
Trolley Assembly	
for operation on 4" to 12" I-Beam having flanges 2.66" (68 mm) to 5.00" (127 mm) wide	
for MR5, ML5, MR10 or ML10F	MR10-7927
for MR10SR	MR10-B7927
for operation on 5" to 12" I-Beam having flanges 3.00" (76 mm) to 5.00" (127 mm) wide	
for MR20, ML20 or ML20F	MR20-7928
for operation on Flat Tread Monorail	
for MR5, ML5, MR10, ML10 or ML10F	MR10-7927T
for MR10SR	MR10-B7927T
for MR20, ML20 or ML20F	MR20-7928T
Trolley Wheel (4)	
for Hook-On Trolley No. MR10-7927	MR10-691
for Hook-On Trolley No. MR10-B7927	MR10-1691
for Hook-On Trolley No. MR20-7928	MR20-691
for Hook-On Trolley No. MR10-7927T	MR10-691T
for Hook-On Trolley No. MR10-B7927T	MR10-R691T
for Hook-On Trolley No. MR20-7928T	MR20-691T
Semi-Rigid Trolley Adapter	
for MR5, ML5, MR10, ML10 or ML10F	MR10-852
for MR20	MR20-852
for ML20 or ML20F	ML20-852

PARTS USED FOR LUG MOUNTING

(Parts illustrated on page 20.)

		PART NUMBER FOR ORDERING
205	Rigid Trolley Adapter	
	for MR5, ML5, MR10 or ML10	MR10-425
	for MR20	MR20-425A
	for ML20	ML20-425
206	Trolley Adapter Spacer (2) (for MR20 or ML20)	MR20-446
210	Trolley Adapter Pin (2)	MR-964
211	Link Chain Anchor Pin (for ML20 or ML20F)	ML20-962A
212	Link Chain Pin Cotter (2) (for ML20 or ML20F)	D02-524

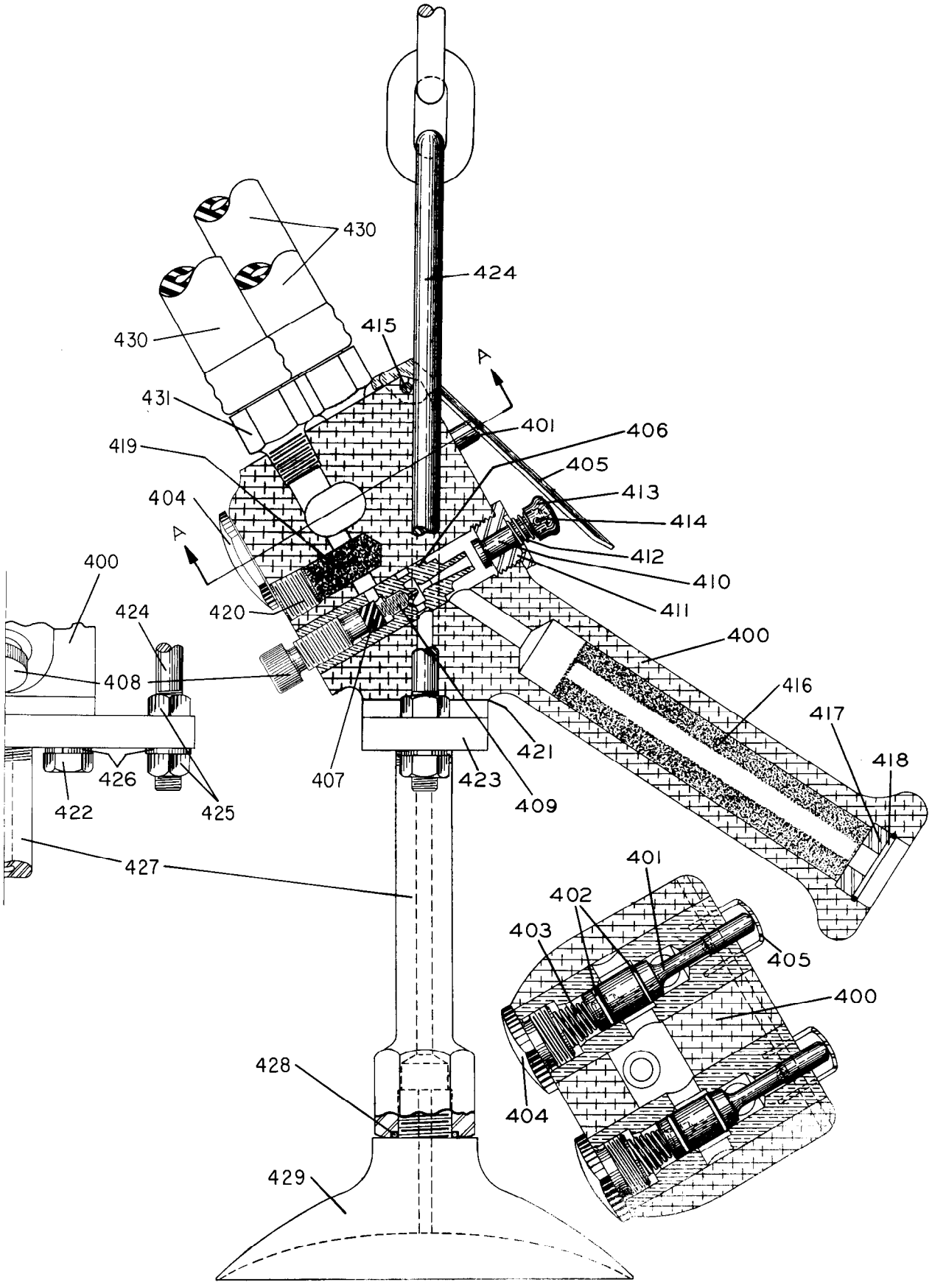
PENDENT THROTTLE HANDLE PARTS



(Dwg. TPB576-2).

PART NUMBER FOR ORDERING

100	Pendent Throttle Handle Assembly	
	Standard	MR-269
	Spark-Resistant	MR-AR269
101	Throttle Lever Pin	DLC-120
102	Pendent Throttle Lever (2)	
	Standard	R00H-273A
	Spark-Resistant	MLK-R273
103	Pendent Throttle Valve (2)	MR-264
104	Pendent Throttle Valve Seal Ring (2 for each Valve)	AF120-289
105	Pendent Throttle Valve Spring (2)	D01-51
106	Pendent Throttle Valve Cap (2)	
	Standard	D02-180
	Spark-Resistant	D02-1180
106A	Throttle Valve Cap Seal (2)	AF120-289



(Dwg. TPA455)

Vac-Lift Handle

VAC-LIFT™ HANDLE PARTS

For ML5 or ML10 Hoist

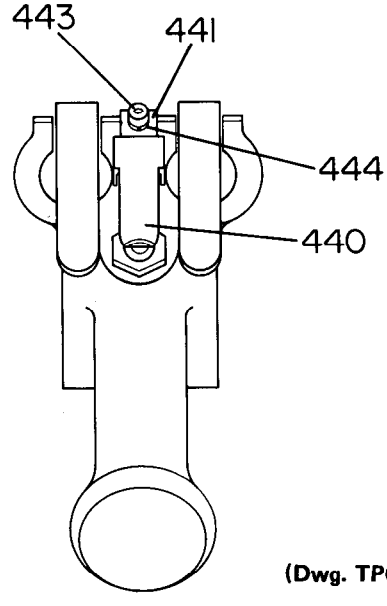
		PART NUMBER FOR ORDERING
	Vac-Lift Handle Assembly	ML10-A869
400	Vac-Lift Handle	ML10-B869
401	Pendent Throttle Valve (2)	MR-264
402	Pendent Throttle Valve Seal Ring (2 for each Valve)	R0AR-210
403	Pendent Throttle Valve Spring (2)	D01-51
404	Pendent Throttle Valve Cap (2)	D02-180
405	Pendent Throttle Lever (2)	R00H-273A
406	Aspirator	DLC-1272
407	Aspirator Valve Disc	DLC-1273
408	Aspirator Valve Stem	DLC-1274
409	Aspirator Valve Spring	DLC-1275
410	Release Valve	DLC-1276
411	Release Valve Guide	DLC-1277
412	Release Valve Spring	508-515
413	Release Valve Button	DLC-1279
414	Release Valve Pin	5UT-762
415	Vac-Lift Throttle Lever Pin	DLC-1281
416	Muffler Felt (3)	DLC-1282
417	Muffler Washer	DLC-1283
418	Muffler Retainer	JC55-506
419	Aspirator Filter	DLC-1285
420	Aspirator Filter Plug	R0H-377
421	Load Flange Gasket	DLC-1287
422	Load Flange Screw (2)	SP9-11B
423	Load Flange	DLC-1270
424	Load Bail	DLC-1271
425	5/16" Hexagon Nut (4)	G7-139
426	5/16" Lock Washer (4)	T11-58
427	Vacuum Cup Connector	DLC-1290
428	Vacuum Cup Seal	R0BR-210
429	Vacuum Cup	DLC-1291
★ 430	Vac-Lift Control Hose (3) (length as specified)	MR-L930
431	Hose Nipple (2 for each Hose)	MR-14

★ The length of Control Hoses must be the same as the height of lift plus two feet.

RELEASE BUTTON GUARD KIT FOR USE ON VAC-LIFT HANDLE

		PART NUMBER FOR ORDERING
	Release Button Guard Kit	ML10-K873
440	Release Button Guard	ML10-873
441	Button Guard Bracket	ML10-875
*	Button Guard Pin	R1AF-524
443	Bracket Screw (2)	804-634
444	Bracket Screw Lock Washer (2)	H54U-352

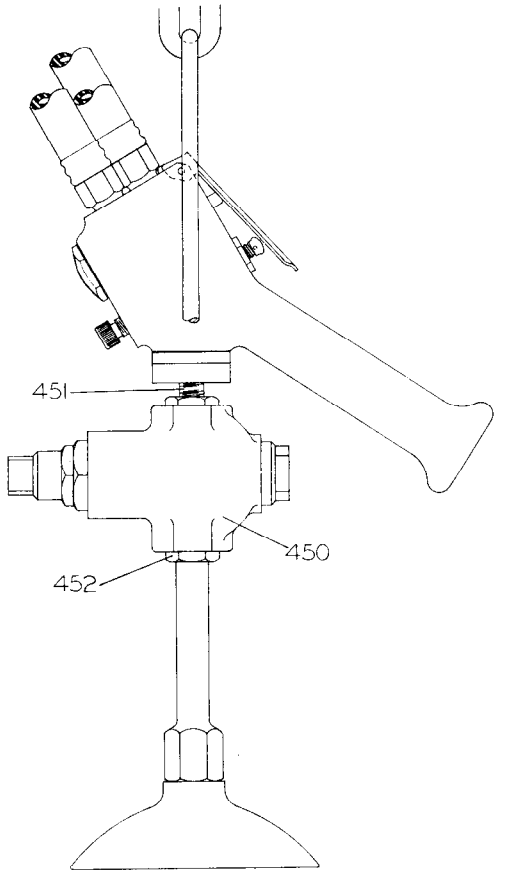
* Not illustrated.



(Dwg. TPC269)

EMERGENCY HOLD VALVE KIT FOR USE ON VAC-LIFT HANDLE

In event of an air line failure, the Emergency Hold Valve will keep the load suspended for a minimum of two minutes, giving the operator sufficient time to take emergency measures.

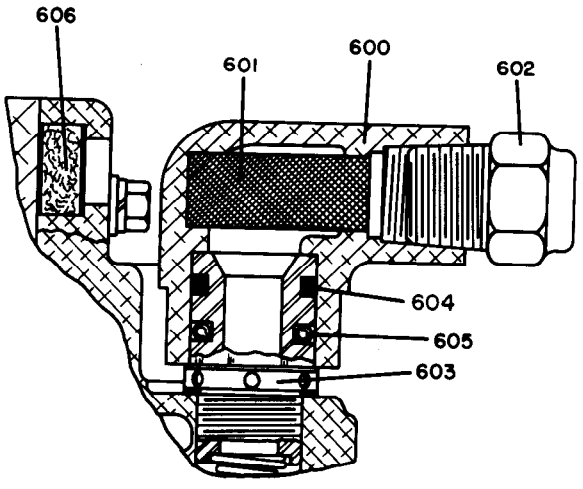


(Dwg. TPB410)

		PART NUMBER FOR ORDERING
	Emergency Hold Valve Kit	ML10-K874
450	Emergency Hold Valve	ML10-874
451	Emergency Hold Valve Nppple	D02-908
452	Emergency Hold Valve Reducing Bushing (2)	13SR-9

PARTS FOR OLD STYLE VALVE CHEST

The design of the Swivel Inlet Assembly has been changed. The new assembly (illustrated on page 8) is interchangeable **only as a unit** with the old style Swivel Inlet. Old style repair parts are listed below.

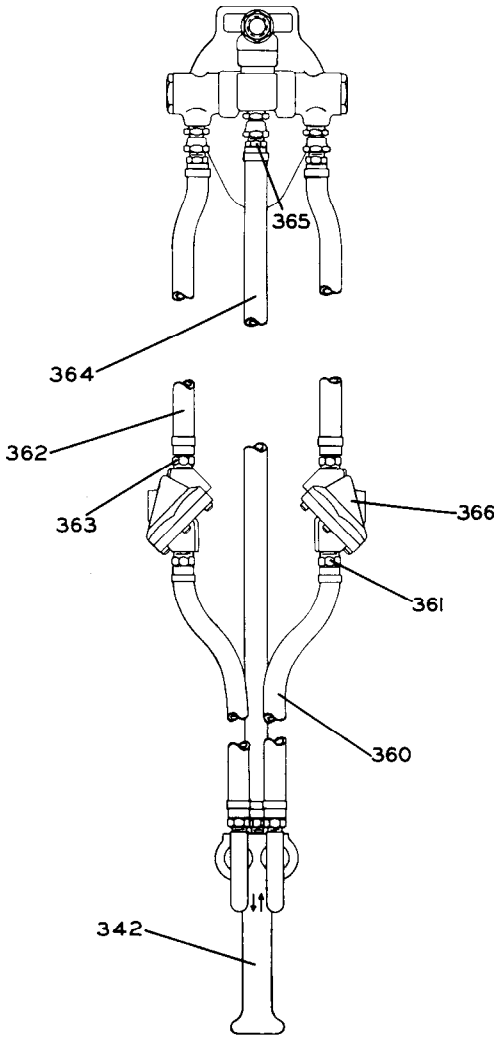


(Dwg. TPD506)

		PART NUMBER FOR ORDERING
600	Swivel Elbow	MR-581
601	Air Strainer Screen	MR-61
602	Air Inlet Bushing (1/2" pipe to 3/8" pipe)	H80-82A
603	Swivel Nppple	MR-4
604	Swivel Seal	JC3350-210
605	Elbow Retaining Pin (2)	MR-100
606	Muffler (2)	MR-175

EXTRA LONG CONTROL HOSES AND CONTROL HOSE EXHAUST VALVES

(Required when control length exceeds 15 feet)



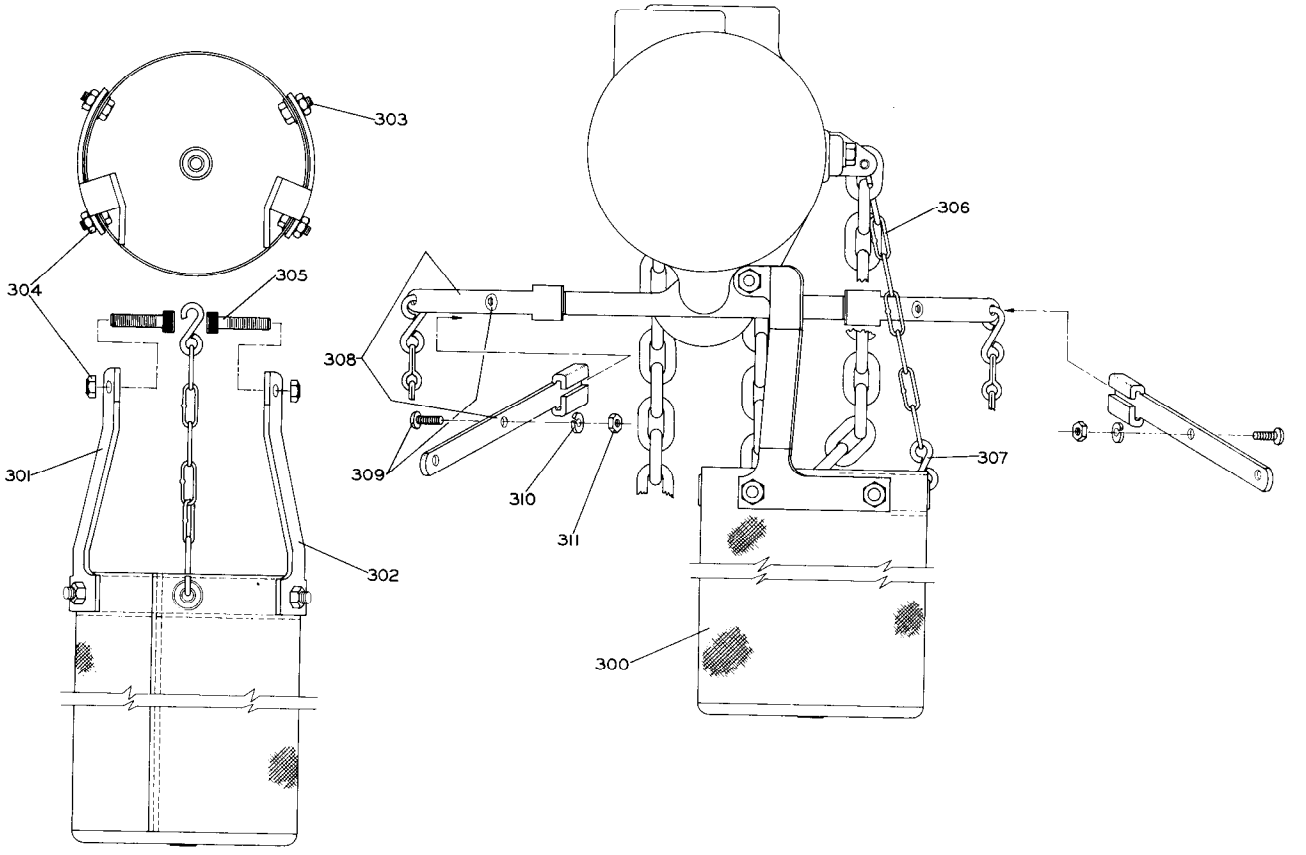
(Dwg. TPB276)

		PART NUMBER FOR ORDERING
360	Lower Control (5 ft. long) (standard) (2)	MR-930
361	Hose Nipple (2 for each Hose)	RV1-46
362	Upper Control Hose (specify length) (2)	MR-L930
363	Hose Nipple (2 for each Hose)	RV1-46
364	Live Air Hose (specify length)	MR-L930
365	Hose Nipple (2 for each Hose)	RV1-46
366	Control Hose Exhaust Valve (2)	MR-939

METAL CHAIN CONTAINERS

	PART NUMBER FOR ORDERING
Roller Chain Bucket (for MR Hoists)	
13 ft. Capacity (holds sufficient roller chain for maximum lift of 13 ft. on MR5 or MR10; 6-1/2 ft. on MR20)	MR10-649
23 ft. Capacity (holds sufficient roller chain for maximum lift of 23 ft. on MR5 or MR10; 11-1/2 ft. on MR20)	MR20-649
36 ft. Capacity (holds sufficient roller chain for maximum lift of 36 ft. on MR5 or MR10; 18 ft. on MR20)	MR20-649-18
Chain Bucket Bolt (2)	M0V010AA-634
Bucket Bolt Nut (2)	MR-37
Chain Bucket Screw Lock Washer	L01-67
Chain Bucket Screw	R1M-56
Chain Bucket Screw Plain Washer	B12-265
Link Chain Bucket (for ML Hoists)	
13 ft. Capacity (holds sufficient link chain for maximum lift of 13 ft. on ML5 or ML10; 6-1/2 ft. on ML20)	ML10-749
26 ft. Capacity (holds sufficient link chain for maximum lift of 26 ft. on ML5 or ML10; 13 ft. on ML20)	ML20-749A
40 ft. Capacity (holds sufficient link chain for maximum lift of 40 ft. on ML5 or ML10; 20 ft. on ML20)	ML20-749-20
Chain Bucket Bolt (2)	M0V010AA-634
Bucket Bolt Nut (2)	MR-37

FABRIC CHAIN CONTAINERS FOR ML HOISTS

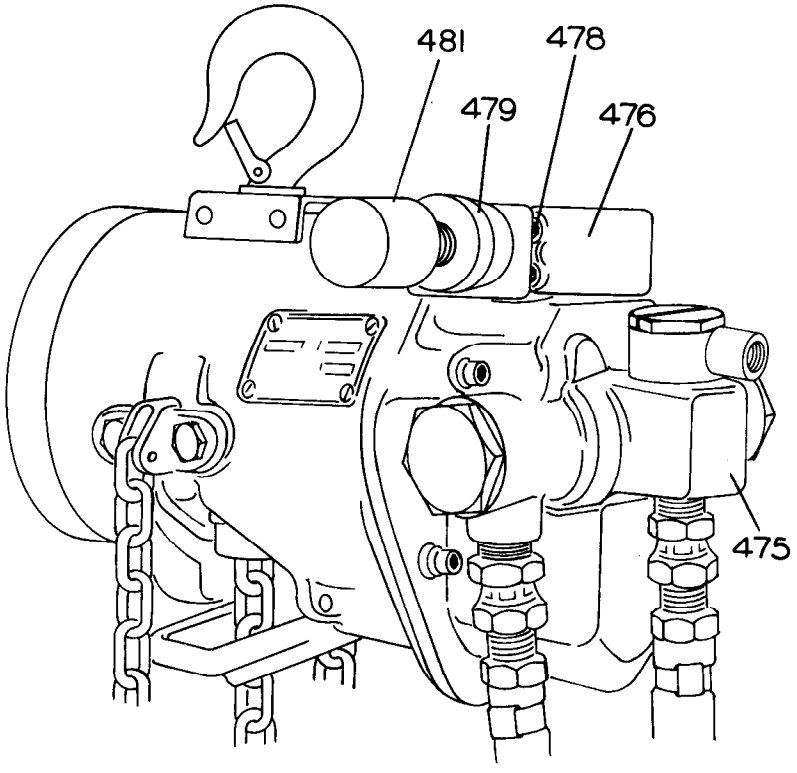


(Dwg. TPA736)

		PART NUMBER FOR ORDERING
300	Fabric Chain Container	
	to accommodate 17 ft. of chain	ML10-K749-17
	to accommodate 45 ft. of chain	ML10-K749-45
301	Left Bracket	ML50K-748
302	Right Bracket	ML50K-747
303	Bracket Bolt (4)	R2N-103
304	Bracket Bolt ESNA Stop Nut (6)	ML50K-394
305	Chain Container Bolt (2)	5080-638
306	Balance Chain	CA110-240-1/2
307	S-hook (2)	D02-421
308	Extension Throttle Lever (2)	ML-557
309	Lever Screw (2)	FEA100-26
310	Lever Lock Washer (2)	R2-320
311	Lever Nut (2)	MF-38

MUFFLED OR PIPED-AWAY EXHAUST PARTS

Significant reduction in exhaust noise can be obtained by the use of muffling equipment now standard on new Hoists, or which can be purchased in Kit form to be installed on any MR or ML Hoist.



(Dwg. TPD433-3)

		PART NUMBER FOR ORDERING ↓ PULL CHAIN THROTTLE	↓ PENDENT THROTTLE
	Quiet Kit		
	for MR5, ML5, MR10, ML10, MR10SR, MR20 or ML20	MR-KM445	MR-KM345
	for ML10F or ML20F	MR-KM445	MRF-KM345
475	Valve Chest	★ MR-445	▲ MR-345
	Shuttle Valve (illustrated part 317 on page 14)		
	for MR5, ML5, MR10, ML10, MR10SR, MR20 or ML20	– – –	MR-346
	for ML10F or ML20F	– – –	MRF-346
476	Exhaust Adapter	MR-342	MR-342
*	Adapter Gasket	MR-343	MR-343
478	Exhaust Adapter Screw (1/4"-20 thd. x 1/2"; socket head)	5080-638	5080-638
*	Lock Washer	8U-58	8U-58
*	Pipe Plug (1/2")	D02-351	D02-351
481	Muffler	MR-674	MR-674

* Not illustrated.

★ Includes illustrated parts 13, 15, 16, 17, 18, 19 and 39 shown on page 8 and listed on page 9.

▲ Includes illustrated parts 304 and 339 shown on page 14 and listed on page 15.

INSTRUCTIONS FOR INSTALLING A QUIET KIT

1. **For Hoist with Pull-Chain Throttle,** remove and discard the Valve Chest (12), Valve Chest Gasket (39) and both Exhaust Mufflers. **For Hoist with Pendent Throttle,** remove and discard the Shuttle Valve Chest (300), Shuttle Valve Chest Gasket (339) and both Exhaust Mufflers.
2. Install the new Valve Chest Gasket and new Valve Chest on the Hoist.
3. Install the new Adapter Gasket and Adapter (476) on the Valve Chest. Use the 1/4"-20 thd. x 1/2" cap screw (furnished with the Kit) in the top hole in the Adapter.
4. Determine which tapped hole in the Adapter is preferable for the exhaust port and plug the opposite hole with the 1/2" Pipe Plug.
5. Thread the Muffler (481) into the Adapter.

MAINTENANCE TOOLS

TOOL NUMBER FOR ORDERING	TOOL NAME FOR ORDERING	OPERATION
P25-228	Grease Gun	Lubrication of gearing.
45582	Shuttle Valve Bushing Reamer	Reaming the Shuttle Valve Bushing (304) after pressing it into the Shuttle Valve Chest (300).
45674	Control Shaft Bearing Inserting Tool	Installing the Control Shaft Bearings (3) in the Housing (1).
45675	Planet Gear Bearing Inserting Tool.	Installing the Planet Gear Bearings (69) in the Planet Gears (68).

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