OPERATION AND MAINTENANCE MANUAL
for
1/2 to 20 TON TROLLEY MODELS

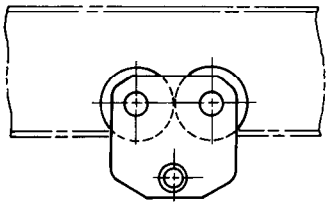
PLAIN TROLLEYS

UTP005	**UTP020**	**UTP050**
1/2 TON	2 TON	5 TON
UTP010	**UTP020**	**UTP100**
1 TON	2 TON	10 TON

GEARED TROLLEYS

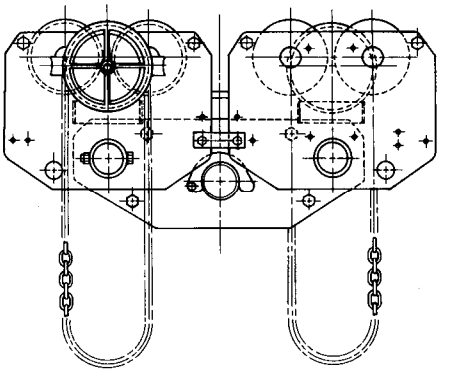
UTG010	**UTG030**	**UTG100**
1 TON	3 TON	10 TON
UTG020	**UTG50**	**UTG150**
2 TON	5 TON	15 TON
UTG200		
20 TON		

Including UTP and UTG S•COR•E (Spark and Corrosion Resistant) Features



(Dwg. MHTPA0036)

1/2 to 5 ton, Plain



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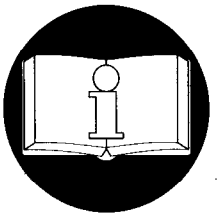
15 and 20 ton, Geared

Tons in this manual are metric tons (2,200 lbs.)



READ THIS MANUAL BEFORE USING THESE PRODUCTS. This manual contains important safety, installation, operation and maintenance information. Make this manual available to all persons responsible for the operation, installation and maintenance of these products.

⚠WARNING

Do not use this trolley for lifting, supporting, or transporting people or lifting or supporting loads over people.

Always operate, inspect and maintain this trolley in accordance with any federal, state or local regulations and any other applicable safety codes.

Refer all communications to the nearest Ingersoll-Rand Material Handling Products Office or Distributor.

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INGERSOLL-RAND®
MATERIAL HANDLING

SAFETY INFORMATION

This manual provides important information for all personnel involved with the safe installation, operation and proper maintenance of this product. Even if you feel you are familiar with this or similar equipment, you must read and understand this manual before operating the product.

Danger, Warning, Caution and Notice

Throughout this manual there are steps and procedures which, if not followed, may result in a hazard. The following signal words are used to identify the level of potential hazard.

⚠ DANGER Danger is used to indicate the presence of a hazard which ***will*** cause ***severe*** personal injury, death, or substantial property damage if the warning is ignored.

⚠ WARNING Warning is used to indicate the presence of a hazard which ***can*** cause ***severe*** personal injury, death, or substantial property damage if the warning is ignored.

⚠ CAUTION Caution is used to indicate the presence of a hazard which ***will*** or ***can*** cause ***minor*** personal injury or property damage if the warning is ignored.

NOTICE Notice is used to notify people of installation, operation, or maintenance information which is important but not hazard-related.

Safety Summary

⚠ WARNING

• Do not use this trolley or attached equipment for lifting, supporting, or transporting people or lifting or supporting loads over people.

• The supporting structures and load-attaching devices used in conjunction with this trolley must provide an adequate safety factor to handle the rated load, plus the weight of the trolley and attached equipment. This is the customer's responsibility. If in doubt, consult a qualified structural engineer.

The National Safety Council, Accident Prevention Manual for Industrial Operations, Eighth Edition and other recognized safety sources make a common point: Employees who work near cranes or assist in hooking on or arranging a load should be instructed to keep out from under the load. From a safety standpoint, one factor is paramount: conduct all lifting or pulling operations in such a manner that if there were an equipment failure, no personnel would be injured. This means keep out from under a raised load and keep out of the line of force of any load.

To our interpretation, INGERSOLL-RAND Material Handling trolleys are manufactured in accordance with the latest ASME standards.

However, contrary to common belief, the Occupational Safety and Health Act of 1970, as we understand it, generally places the burden of compliance with the user, not the manufacturer. Many OSHA requirements are not concerned or connected with the manufactured product but are, rather, connected with the final installation: "It is the owner's responsibility and user's responsibility to determine the suitability of a product for any particular use. Check all applicable industry, trade association, federal, state and local regulations. Read all operating instructions and warnings before operation".

Rigging: It is the responsibility of the operator to exercise caution, use common sense and be familiar with proper rigging techniques. See ANSI/ASME B30.9 for rigging information, American National Standards Institute, 1430 Broadway, New York, NY 10018.

NOTICE

• Using other than genuine INGERSOLL-RAND Material Handling parts will result in the void of warranty.

SAFE OPERATING INSTRUCTIONS

The following warnings and operating instructions have been adapted in part from American National (Safety) Standard ASME B30.16 (Overhead Hoists) and are intended to avoid unsafe operating practices which might lead to personal injury or property damage.

INGERSOLL-RAND recognizes that most companies who use hoists and trolleys have a safety program in force at their facility. In the event that some conflict exists between a rule set forth in this publication and a similar rule already set by an individual company, the more stringent of the two should take precedence.

Safe Operating Instructions are provided to make an operator aware of dangerous practices to avoid and are not necessarily limited to the following list. Refer to specific sections in the manual for additional safety information.

If this trolley is used in conjunction with a hoist, also refer to the hoist manual for additional precautions and instructions.

1. Only allow qualified people (trained in safety and operation) to operate the trolley.
2. Only operate a trolley if you are physically fit to do so.
3. When a "DO NOT OPERATE" sign is placed on the trolley controls, do not operate the trolley until the sign has been removed by designated personnel.
4. Before each shift, the operator should inspect the trolley for wear or damage.
5. Never use a trolley that inspection indicates is defective.
6. Periodically, inspect the trolley thoroughly and replace worn or damaged parts.
7. Lubricate the trolley regularly.
8. Never splice a hand chain by inserting a bolt between links.
9. Only lift loads less than or equal to the rated capacity of the hoist.
10. Only attach a hoist having a rated capacity equal to or less than the capacity of the trolley.
11. When using two hoists to suspend one load, select two trolleys each having a rated capacity equal to or more than the load. This provides adequate safety in the event of a sudden load shift or failure of one trolley.
12. Never place your hand inside the throat area of a hook.
13. Never use the hand chain to support a load.
14. Only operate a trolley when the load is centered under the trolley. Do not "side pull" or "yard."
15. Pay attention to the load at all times when operating the trolley.
16. Make sure all people are clear of the load path. Do not lift a load over people.
17. Never use the trolley for lifting or lowering people, and never allow anyone to stand on a suspended load.
18. Do not swing a suspended load.
19. Never suspend a load for an extended period of time.
20. Never leave a suspended load unattended.
21. Never weld or cut a load suspended by the trolley.
22. Never use the trolley hand chain as a welding electrode.
23. Do not operate the trolley hand chain if excessive noise, jamming, overloading, or binding occurs.
24. Always rig the load properly and carefully.
25. Remove all loads before performing any maintenance.
26. Avoid collision or bumping of trolley.
27. After use, properly secure trolley and all loads.

SPECIFICATIONS

Trolley Model No.		Capacity (metric tons)	Min. curve radius	Std. flange adjustment	Hand chain drop nominal	Net wt.
Plain	Geared		ins.	ins.	ft.	lbs
UTP005A	---	1/2	32	3-5	18	13
UTP010A	UTG010-18A	1	40	3-5	18	24/31
UTP020A	UTG020-18A	2	48	4-6	18	40/48
UTP030A	UTG030-18A	3	59	4-6	18	57/66
UTP050A	UTG050-18A	5	79	5-7	18	97/110
UTP100A*	UTG100-18A*	10	118	6-7-1/2	18	239/263
---	UTG150-18A*	15	**	6-7-1/2	18	600
---	UTG200-18A*	20	**	6-7-1/2	18	600

** Not recommended for curved beams.

* These trolleys are for manually operated hoists only.

Model Code Explanation

Example: UTG150 - 18A

Series UT

Trolley Type
- P = Plain
- **G** = Geared

Capacity
- 005 = 1/2 metric ton
- 010 = 1 metric ton
- 020 = 2 metric ton
- 030 = 3 metric ton
- 050 = 5 metric ton
- 100 = 10 metric ton
- **150** = 15 metric ton
- 200 = 20 metric ton

Hand Chain Drop
- **18** = 18 ft. (6 m)
- XX = Specify Length

Flange Width
- **A** = Refer to Specification chart above for Std. flange adjustment (width)
- B = 2 in. over standard flange width
- C = 4 in. over standard flange width
- D = 6 in. over standard flange width

⚠WARNING

• Before installing, read "SAFETY INFORMATION."

NOTICE

• 15 and 20 ton trolleys come assembled. Two ten-ton trolleys are connected together to create a UTG150 or UTG200. Nameplates on the units are in reference to that combination and the rated capacity only applies to the unit as a whole.
• The following procedures are for installing UTP and UTG trolleys with a manual chain hoist. To connect other types of hoists, see the appropriate Operation and Maintenance manual for additional instructions.
• Orientation of the hoist with respect to the trolley: on geared trolleys up to 10 tons, install the manual chain hoist so that the hoist hand chain is on the opposite side of the trolley as the trolley hand chain.
• Trolley wheels ride on the top of the lower flange of the beam.

Installing Over the Open End of the Beam for 1/2 to 20 ton Trolleys

Preadjust trolley width for the beam flange measurement per the Adjusting Spacer Table. Remove the rail stop and slide the trolley onto the end of the beam. If this procedure cannot be used, due to insufficient space or fixed limit stops, the trolley must be installed from underneath the beam using the applicable procedure for your trolley size which follow.

Installing a 1/2 to 5 ton Trolley from Underneath the Beam

(See Parts Dwg. MHTPC0007 for 1/2 to 5 ton Trolleys and Assembly Dwg. MHTPB0018)

⚠WARNING

• Depending on the size you select, the trolley alone may weigh more than 700 lbs (318 kg). If parts of the trolley or hoist are dropped, they can injure personnel or damage property. Adequately support the hoist and trolley when lifting them into place on the beam.

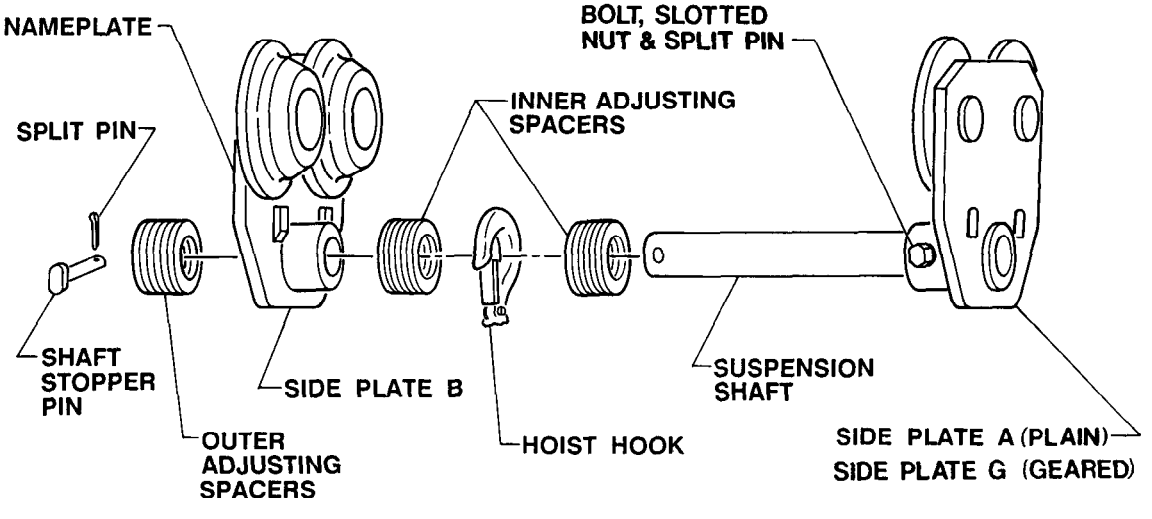
1. Remove bolt (16), shaft stopper pin (18), and spacers (12) from the suspension shaft (17).
2. Insert suspension shaft (17) into side plate A (2) on plain trolley, or side plate G (23) on geared trolley. Align holes in suspension shaft (17) and side plate (2) for plain trolley or (23) on geared trolley. Secure with bolt (16), slotted nut (14) and split pin (13).

NOTICE

• Do not reuse a bent split pin. Replace with a new split pin.

⚠CAUTION

• To avoid an unbalanced load which may damage the trolley, the hoist must be centered under the trolley by the spacers.



(Dwg. MHTPB0018)

3. Slide enough spacers (12) on the suspension shaft (17) to fill the space between the side plates with the hook or suspender installed. Center the hoist under the trolley with, as near as possible, equal amounts of spacers on each side of the hook. For standard length suspension shafts, see the table below.

Number of Adjusting Spacers (27)
(1/2 to 5 ton Plain and Geared Trolley)
(Standard Length Suspension Shaft)

Cap. (ton)	Beam Width (in.)	2.31	2.50 ● 2.63	2.88 ● 2.94	3.25	3.56	3.88	3.94
	(mm)	58	64 ● 66	73 ● 74	82	90 ● 91	98	100
1/2 - 1	Inner	1 + 2	2 + 3	4 + 4	5 + 5	6 + 7	7 + 8	8 + 8
	Outer	21	19	16	14	11	9	8
2 - 3	Inner							1+2
	Outer							15
5	Inner							
	Outer							

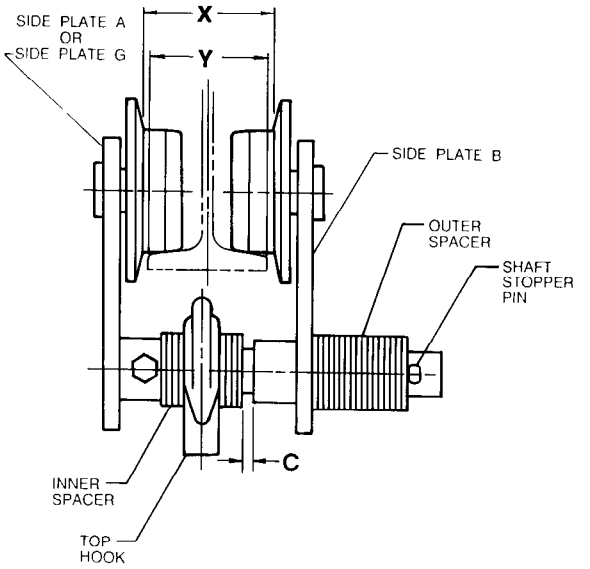
Cap. (ton)	Beam Width (in.)	4.19	4.31	4.44	4.69 ● 4.75	4.94	5.19	5.31 ● 5.38
	(mm)	106	110	113	119 ● 120	125	131	135 ● 137
1/2 - 1	Inner	9 + 9	9+10	10+10	11+11	12+12		
	Outer	6	5	4	2	0		
2 - 3	Inner	2 + 2	3 + 3	3 + 3	4 + 5	5 + 5	6 + 6	7 + 7
	Outer	14	12	12	9	8	6	4
5	Inner					1 + 2	2 + 3	3 + 3
	Outer					15	13	12

Cap. (ton)	Beam Width (in.)	5.50	5.63	5.88 ● 5.94	6.13	6.31	6.69	6.88
	(mm)	140	143	149 ● 150	155	160	170	175
1/2 - 1	Inner							
	Outer							
2 - 3	Inner	7 + 8	8 + 8	9 + 9				
	Outer	3	2	0				
5	Inner	4 + 4	4 + 5	5 + 6	6 + 7	7 + 7	8 + 9	9 + 9
	Outer	10	9	7	5	4	1	0

For the number of spacers on Inner side: numbers on the left show the number on side plate A or G and numbers on the right show the number on side plate B.

Example: 1 + 2
Number on side plate A or G ___ ___ Number on side plate B

4. Check that "C" dimension is 9/32 to 1/2 in. (7 to 13 mm). Adjust "C" dimension by changing the number of spacers on side plate B (10) side of hook (see Dwg. MHTPA0012). A minimum of one inner spacer is required on each side of the hook.



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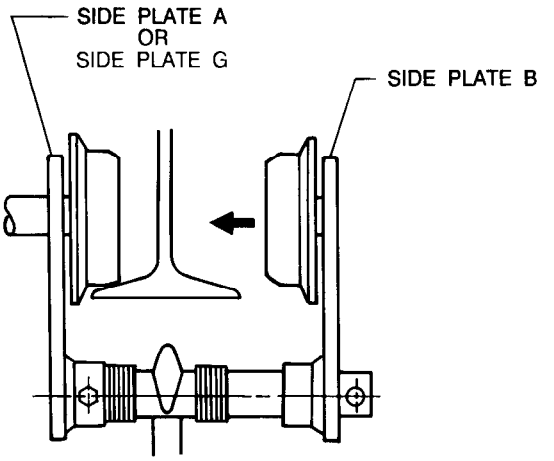


(Dwg. MHTPA0013)

5. Adequately support the hoist and side plate (2 or 23) and raise into place on the beam flange.
6. Slide side plate B (10) over the suspension shaft (17) and push both side plates together. The correct total clearance between the beam and the trolley wheel flanges is 3/32 to 5/32 in. (2 to 4 mm). The difference between X and Y equals the total clearance. (See Dwg. MHTPA0012).
7. Slide all extra spacers (12) over the free end of the suspension shaft (17). Insert shaft stopper pin (18) into the hole in the suspension shaft (17), place flat side of head flush against spacers. Secure by installing split pin (15) and bending ends apart.

The stopper (18) and outside spacers must hold the trolley to the adjustment in step 6. If the side plates can be spread farther apart, install more spacers between side plate B (10) and the shaft stopper pin (18).

8. Prior to using, test the trolley. Check that the trolley side plates are vertical. Raise a load equal to the rated capacity of the hoist a few inches (cms) off the floor and operate the trolley along the entire length of the beam.

Installing a 10 ton Trolley from Underneath the Beam

(See Assembly Drawing MHTPC0008/A for 10 ton Trolleys)

⚠WARNING

• Depending on the size you select, the trolley alone may weigh more than 700 lbs (318 kg). If parts of the trolley or hoist are dropped, they can injure personnel or damage property. Adequately support the hoist and trolley when lifting them into place on the beam.

1. Remove split pin (29), slotted nut (28) and bolt (32) from the suspension shaft (30).
2. Insert suspension shaft (30) into side plate G (17). Align holes in suspension shaft (30) and side plate (17). Secure with bolt (32), slotted nut (28) and split pin (29). Bend ends of split pin (29) apart. Do not reuse a bent split pin. Replace with a new split pin.

⚠ CAUTION

• To avoid an unbalanced load which may damage the trolley, the hoist must be centered under the trolley by the spacers.

3. Slide enough spacers (34) and adjusting spacers (27) on the suspension shaft (30) to fill the space between the side plates with the hook installed. Attach the top hook of the hoist. Center the hoist under the trolley with, as near as possible, equal amounts of spacer on each side of the hook. For standard length suspension shafts, see the table below for the quantity of adjusting spacers (27). Two spacers (34) must be used, one on each side of the hook.

Number of Adjusting Spacers (27)
(10 to 20 ton Plain and Geared Trolley)
(Standard Length Suspension Shaft)

Beam Width	(in.)	5.88	6.13	6.31	6.69	6.88	7.06
	(mm)	150	155	160	170	175	180
Cap. (ton)	Inner	0	2	3	6	8	9
10, 15 & 20	Outer	22	20	19	16	14	13

Beam Width	(in.)	7.31	7.50	7.88	8.25	8.69	
	(mm)	185	190	200	210	220	
Cap. (ton)	Inner	11	13	16	19	22	
10, 15 & 20	Outer	11	9	6	3	0	

4. Adequately support the hoist and side plate G (17) and raise into place on the beam flange.
5. Slide side plate B (25) over the suspension shaft (30) and push both side plates together. The correct total clearance between the beam and the trolley wheel flanges is 3/32 to 5/32 in. (2 to 4 mm). The difference between X and Y equals the total clearance. (See Dwg. MHTPA0012)

⚠WARNING

• To avoid failure of the trolley, do not use the small diameter outer hole on the suspension shaft (30) for adjusting the trolley width. Trolley failure could cause injury or death of personnel and damage to property. Order extended length suspension shafts instead.

6. Slide the extra adjusting spacers (27) over the free end of the suspension shaft (30). Insert shaft stopper pin (33) into the hole in the suspension shaft (30), place flat side of pin head flush against spacers. Secure by installing split pin (31) and bending ends apart.

The shaft stopper pin (33) and outside spacers must hold the trolley to the adjustment in step 5. If the side plates can be spread farther apart, install more spacers between side plate and the shaft stopper pin (33).

7. Prior to using, test the trolley. Check that the trolley side plates are vertical. Raise a load equal to the rated capacity of the hoist a few inches (cms) off the floor and operate the trolley along the entire length of the beam.

Installing a 15 and 20 ton Trolley from Underneath the Beam

(See Assembly Drawing MHTPD0009/A for 15 and 20 ton Trolleys)

⚠WARNING

• Depending on the size you select, the trolley alone may weigh more than 700 lbs (318 kg). If parts of the trolley or hoist are dropped, they can injure personnel or damage property. Adequately support the hoist and trolley when lifting them into place on the beam.

NOTICE

• 15 and 20 ton trolleys come assembled. Two ten-ton trolleys are connected together to create a UTG150 or UTG200. Nameplates on the units are in reference to that combination and the rated capacity only applies to the unit as a whole.

1. Remove split pin (31) and shaft stopper pin (33) from both suspension shafts (30).

2. Remove bolts (35), spring washers (37), nuts (38) and connecting plates (36).
3. Remove both side plates G (17) from suspension shafts (30).
4. Remove suspension plate A and B assembly (46 and 47) as a unit from the suspension shafts (30).
5. Slide enough adjusting spacers (27) on the suspension shaft (30) to fill the space between the suspension plate A and B assembly (46 and 47) and side plates G and B (17 and 25) with the trolley installed. Center the suspension plate A and B assembly (46 and 47) under the trolley with, as near as possible, equal amounts of spacer on each side. See the Adjusting Spacer Table in the section for "Installing a 10 ton Trolley from Underneath the Beam."

If an even number of adjusting spacers (27) are required on each suspension shaft (30), place half on each end. If an odd number is required, split the spacers (27) evenly as possible. For example if 9 spacers (27) are required, place 4 spacers (27) on suspension plate A (46) side and 5 spacers on suspension plate B (47) side.

6. Slide both side plates G (17) over the suspension shafts, but do not press together.
7. Adequately support the trolley and raise into place on the beam flange.
8. Push both side plates together. The correct total clearance between the beam and the trolley wheel flanges is 3/32 to 5/32 in. (2 to 4 mm). The difference between X and Y equals the total clearance. The clearance must be the same on both suspension shafts. (See Dwg. MHTPA0012)

⚠WARNING

• To avoid failure of the trolley, do not use the small diameter outer hole on the suspension shaft (30) for adjusting the trolley width. Trolley failure can cause injury or death of personnel and damage to property. Order extended length suspension shafts instead.

9. Slide extra adjusting spacers (27) over the free end of the suspension shafts (30). The same amount of extra spacers should be on each suspension shaft for the trolley to ride properly. Insert shaft stopper pins (33) into holes in the suspension shafts (30), place flat side of pin heads flush against adjusting spacers (27). Secure by installing split pins (31) and bending ends apart.

The shaft stopper pins (33) and outside adjusting spacers (27) must hold the trolley to the adjustment in step 8. If the side plates can be spread farther apart, install more adjusting spacers (27) between the side plates and the shaft stopper pins (33).

10. Position connecting plates (36) and secure by installing bolts (35), spring washers (37) and nuts (38).
11. Connect the manual chain hoist by hooking over suspension shaft (44). Make sure the hook latch is engaged. If there is not enough room to install the hook around the suspension shaft, remove the suspension shaft (44). See "Attaching a Hoist to a 15 or 20 ton Trolley."
12. Prior to using, test the trolley. Check that the trolley side plates are parallel and vertical. Raise a load equal to the rated capacity of the hoist a few inches (cms) off the floor and operate the trolley along the entire length of the beam.

Attaching a Hoist to a 15 or 20 ton Trolley

(See Assembly Drawing MHTPD0009/A for 15 and 20 ton Trolleys)

1. Unscrew bolt (39) and remove spring washer (40) and retainer plate (41).
2. Gently tap suspension shaft (44) out of one suspension plate (46 or 47) and slide shaft (44) clear of the space between the suspension plates A and B (46 and 47).
3. Insert the hoist top hook between suspension plate A (46) and suspension plate B (47).
4. Gently tap suspension shaft (44) back through the top hook. Make sure the hook latch is properly engaged.
5. Install retainer plate (41) making sure it fits into the groove in the end of suspension shaft (44).
6. Secure the retainer plate (41) by install spring washer (40) and bolt (39).

Hand Chain Adjustment

See "Hand Chain Adjustment or Replacement" in the "MAINTENANCE" section.

Initial Operating Checks

1. After trolley installation, check that the hoist is centered below the trolley. Raise a load equal to the lower of the rated capacities of either the trolley or hoist a few inches off the floor and operate the trolley along the entire length of the beam.

Storing the Hoist

1. Always store the trolley in a no load condition.
2. Wipe off all dirt and water.
3. Oil the wheels and pins.
4. Place in a dry location.
5. Before returning trolley to service follow instructions for Trolleys not in Regular Service in the "INSPECTION" section

OPERATION

The three most important aspects of trolley operation are:

1. Follow all safety instructions when operating trolley.
2. Allow only qualified people to operate a trolley.
3. Subject each trolley to a regular inspection and maintenance procedure.
4. Be aware of the hoist and trolley capacity and weight of load at all times.

Plain Trolley

When the attached hoist is unloaded, move the trolley by pushing on the load chain. When the attached hoist is loaded, push on the load or the hook shank.

⚠WARNING

• Severe injury can be caused by: 1) falling under a moving load, 2) being caught between a moving load and an object, 3) tripping over an unseen object. To avoid injury, push to move the trolley, do not pull. Pushing will allow you to stay out of the path of the load and also look in the direction you are moving.

Geared Trolley (1 to 10 ton)

When facing the trolley hand wheel:

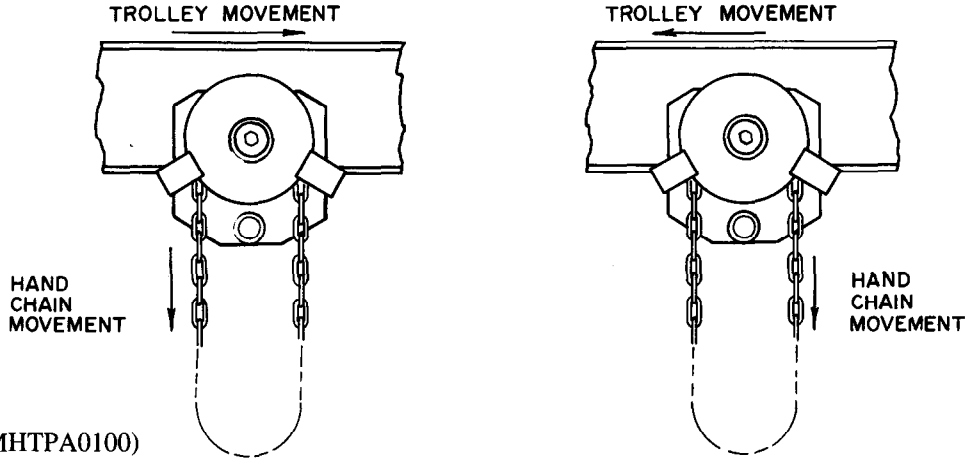
- Pull down on right side of hand chain (Clockwise rotation) to move left.
- Pull down on left side of hand chain (Counterclockwise rotation) to move right.

Geared Trolley (15 and 20 ton)

Use two operators, one for each of the two trolley hand chains. For trolley movement, the direction of rotation of the two hand chains is opposite.

When facing the trolley hand wheel:

- Pull down on right side of hand chain (Clockwise rotation) to move to the operator's left.
- Pull down on left side of hand chain (Counterclockwise rotation) to move to the operator's right.



(Dwg. MHTPA0100)

INSPECTION

There are two types of inspection: the frequent inspection performed by the operator and periodic inspections performed by qualified personnel. Careful inspection on a regular basis will reveal potentially dangerous conditions while still in the early stages, allowing corrective action to be taken before the condition becomes dangerous. Any deficiency revealed through inspection must be reported to an appointed person. A determination must be made as to whether a deficiency constitutes a safety hazard before resuming operation of the trolley or hoist.

Records and Reports

Some form of inspection record should be maintained for each trolley, listing all points requiring periodic inspection. A written report should be made monthly on the condition of the critical parts of each trolley. These reports should be dated, signed by the person who performed the inspection, and kept on file where they are readily available to authorized personnel.

Frequent Inspection

On trolleys in continuous service, frequent inspection should be made at the beginning of each shift. In addition, visual inspections should be conducted during regular service for any damage or evidence of malfunction.

1. OPERATION. Operate the trolley so that it travels a few feet (1 meter). During the few feet (1 meter) of travel, check for visual signs or abnormal noises which could indicate a defect. Check for smooth operation. Do not operate the trolley until all defects have been corrected.

Periodic Inspection

According to ASME B30.16 (Overhead Hoists), frequency of periodic inspection depends on the severity of usage: NORMAL, yearly; HEAVY, semi-annually; SEVERE, quarterly. Disassembly may be required for HEAVY or SEVERE usage. Keep accumulative written records of periodic inspections to provide a basis for continuing evaluation.

Inspect all the items in "Frequent Inspection." Also inspect the following:

1. FASTENERS. Check rivets, split pins, capscrews and nuts. Replace if missing and tighten if loose.
2. ALL COMPONENTS. Inspect for wear, damage, distortion, deformation and cleanliness. If external evidence indicates the need, disassemble. Check gears, shafts, bearings, and chain guides. Replace worn or damaged parts. Clean, lubricate and reassemble.
3. HAND CHAIN WHEEL. Check for damage or excessive wear. Replace if necessary.
4. SUPPORTING STRUCTURE. Check for distortion, wear and continued ability to support load.
5. TROLLEY. Check that the trolley wheels track the beam properly and total clearance between wheels and beam equals, 3/32 to 5/32 in. (2 to 4 mm). Check side plates for spreading due to bending. Repair as necessary.
6. LABELS. Check for presence and legibility. Replace if necessary.

Trolleys Not in Regular Use

A trolley which has been idle for a period of one month or more, but less than six months, shall be given an inspection conforming with the requirements of "Frequent Inspection" before being placed into service.
A trolley which has been idle for a period of over six months shall be given a complete inspection conforming with the requirements of "Periodic Inspection". Standby trolleys shall be inspected at least semi-annually in accordance with the requirements of "Frequent Inspection". If abnormal operating conditions apply trolleys may require a more frequent inspection.

LUBRICATION

Geared Wheels (Geared Trolley Only)

Lubricate exposed trolley drive pinion and wheel teeth. Brush with grease as often as necessary to keep teeth liberally covered. If the grease becomes contaminated with sand, dirt or other abrasive materials, clean off old grease and brush on new. For temperatures -20° to 50° F (-29° to 10° C) use EP 1 grease or equivalent. For temperatures 30° to 120° F (-1° to 49° C) use EP 2 grease or equivalent.

Trolley Wheels and Hand Chain

Trolley wheel bearings cannot be lubricated and must be replaced if worn or damaged. Hand chain, used on geared trolleys, normally requires no lubrication.

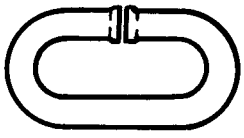
⚠WARNING

• Never perform maintenance on the trolley while it is supporting a load. A falling load can cause injury or death of personnel and damage to property.
• Before starting maintenance, tag controls: DANGER - DO NOT OPERATE - EQUIPMENT BEING REPAIRED.
• Only allow qualified service personnel to perform maintenance.
• After performing maintenance, test trolley to 100% of its rated capacity before returning to service.

Hand Chain Adjustment or Replacement

⚠CAUTION

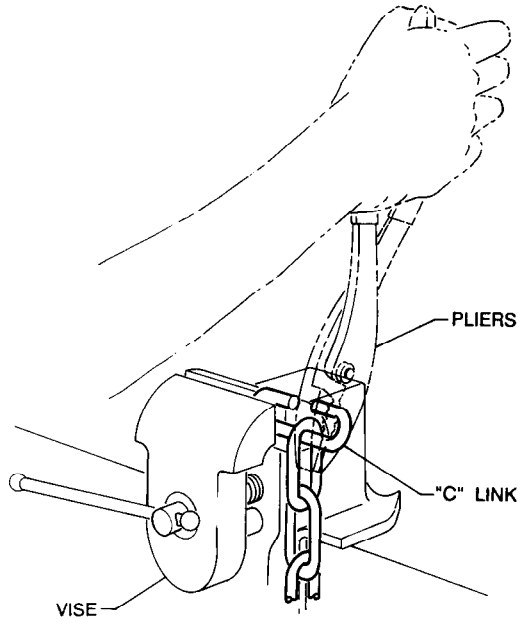
• When cutting the weld side of a hand chain link, do not cut or nick the opposite side. A damaged link must be replaced to prevent premature failure. A falling hand chain can injure personnel.



'C' Link

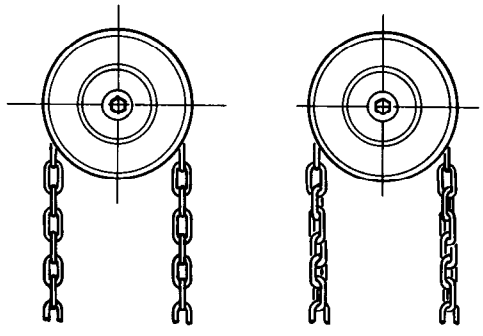
(Dwg. MHTPA0016)

1. To create a "C" link, cut the welded side of the link with a hack saw. Clamp one side of the "C" link in a vise and bend it open by using a pliers to grip the exposed part of the link.
2. If you are replacing the hand chain, disconnect it at the "C" link and carefully remove the hand chain.
3. Cut the length of hand chain required by creating a "C" link . When replacing a hand chain, cut a length 2 times the required hand chain drop plus about 1 foot (30 cm). For adjustments, remove or add a length of chain twice the difference in hand chain height. To prevent the hand chain from twisting, maintain an even number of links, by removing or adding an even number of links.
4. If you are replacing the hand chain, run the new hand chain up through the left hand chain guide, around the hand wheel, making sure the hand chain is seated in the hand wheel pockets, and back down through the right hand chain guide.
5. Connect the hand chain ends with the "C" link(s), making the total number of links even, and bend the "C" link(s) shut.



(Dwg. MHTPA0014)

6. Make sure the hand chain is not twisted. If twisted, untwist or open a "C" link and remove one hand chain link if necessary.



(Dwg. MHTPA0015)

Trolley Wheel Removal and Disassembly

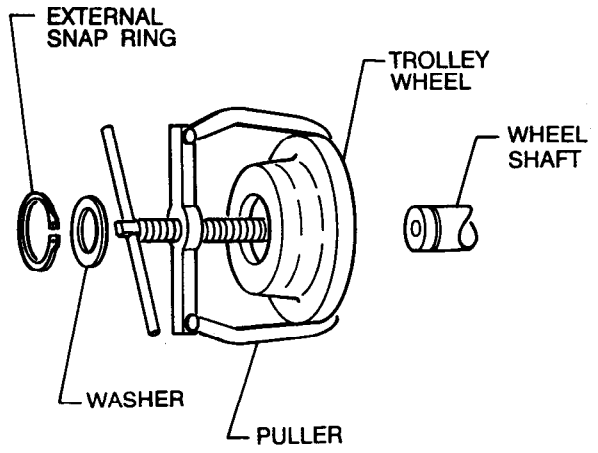
(See Dwg. MHTPA0017)
To replace wheels or wheel bearings, use the following procedure:

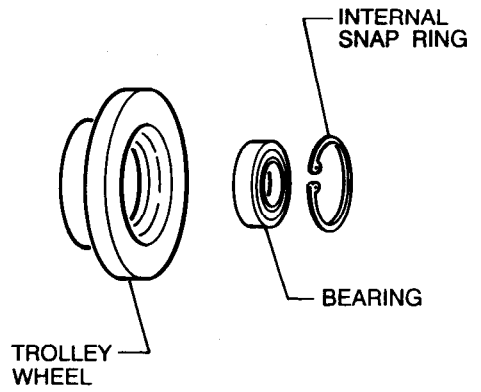
NOTICE

• When removing or installing a snap ring, bend it as little as possible. If the snap ring becomes damaged, replace it.

1. While adequately supporting the hoist and trolley, remove them from the beam.

2. Remove fasteners attaching trolley wheel to wheel shaft:
   a. On 1/2 ton UTP, remove the split pin (5) and unscrew the slotted nut (4). Note how split pin (5) was installed.
   b. On 1 ton and larger trolleys, remove the external snap ring and washer.
3. Slide off the trolley wheel. If necessary, use a gear puller to remove the trolley wheel.
4. Remove the internal snap ring from the back of the trolley wheel.
5. Press or pull the bearing from the back of the trolley wheel.





(Dwg. MHTPA0017)

Trolley Wheel Assembly and Installation

(See Dwg. MHTPA0017)

1. Press the bearing into the back of the wheel. Press on the outer race only.
2. Secure the bearing by installing the internal snap ring.
3. Press the trolley wheel over the wheel shaft by pressing on the inner race of the bearing only.
4. Secure the wheel to the wheel shaft:
   a. On 1/2 ton UTP trolleys, screw on the slotted nut. Align the hole in the wheel shaft with groove in slotted nut (4). Secure by installing split pin (5) and bending ends apart.
   b. On 1 ton and larger trolleys, slide the washer over the wheel shaft and install the external snap ring.
5. See "INSTALLATION" section for installing trolley and hoist.

PARTS ORDERING INFORMATION

The use of replacement parts other than INGERSOLL-RAND Material Handling will invalidate the Company's warranty. For prompt service and genuine INGERSOLL-RAND Material Handling parts, provide your nearest Distributor with the following:

1. Complete trolley model number and serial number as it appears on the nameplate.
2. Part number and part description as shown in this manual.
3. Quantity required.

The model and serial number label is located on the side plate.

NOTICE

• When the life of the trolley has expired, it is recommended that the trolley be disassembled, degreased and parts separated as to materials so that they may be recycled.

For additional information contact:
Ingersoll-Rand Material Handling
2724 Sixth Avenue South
Seattle, Wa,
98124 USA
or
Ingersoll-Rand International Sales
Trafford House, Southmoor Road
Wythenshawe, Manchester
M23 9LN United Kingdom.

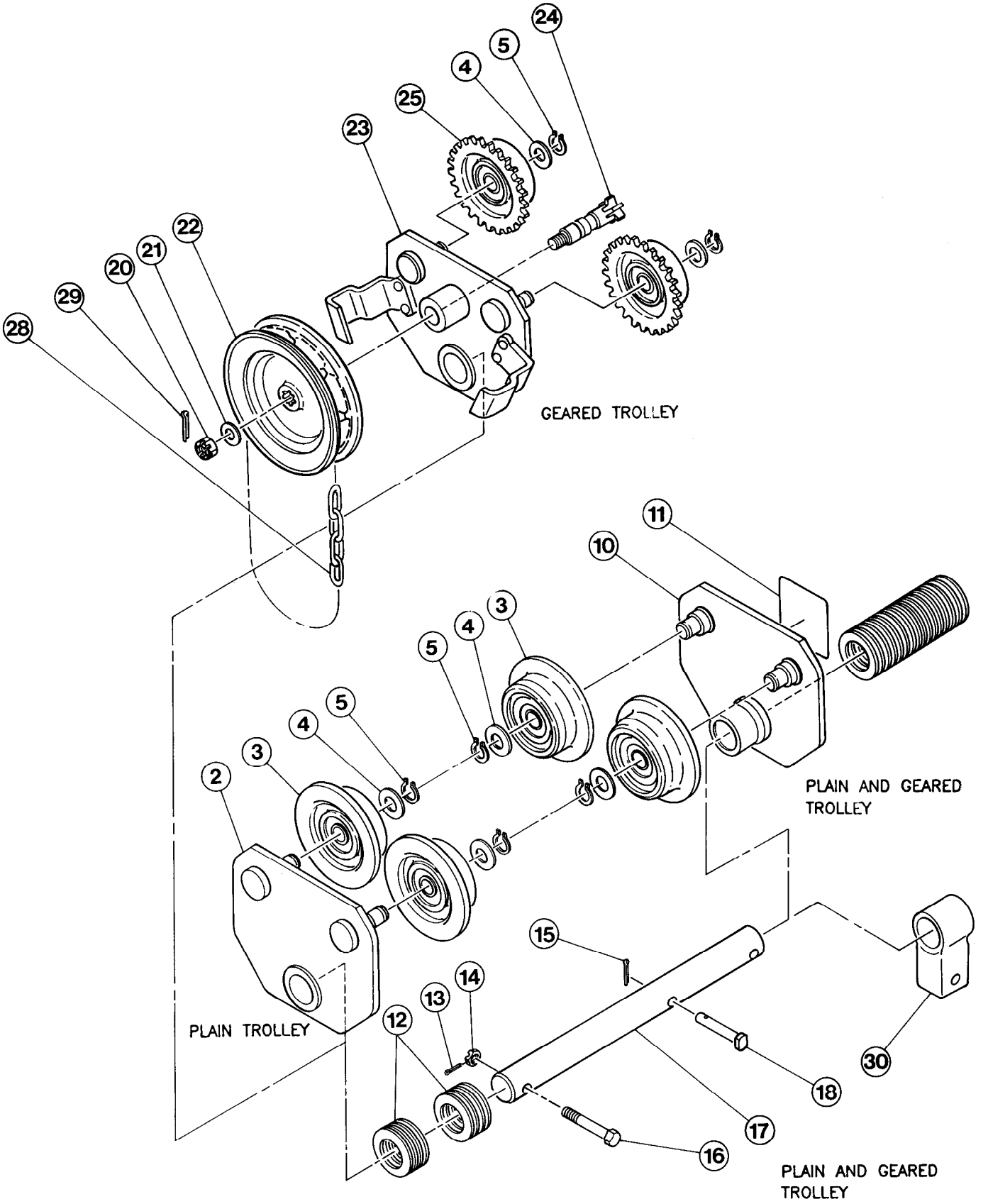
Return Goods Policy

Ingersoll-Rand will not accept any returned goods for warranty or service work unless prior arrangements have been made and written authorization has been provided from the location where the goods were purchased.

NOTICE

• If your trolley has special finish requirements for painted parts, please specify when ordering replacement parts.
• Continuing improvement and advancement of design may cause changes to this trolley which are not included in this manual. Manuals are periodically revised to incorporate changes. Always check the manual edition number on the front cover for the latest issue.

1/2 TO 5 METRIC TON PLAIN AND GEARED TROLLEY ASSEMBLY



(Dwg. MHTPC0007/A)

1/2 TO 5 METRIC TON PLAIN AND GEARED TROLLEY PARTS LIST

ITEM NO.	DESCRIPTION OF PART	QTY TOTAL	PART NO.				
			1/2 ton	1 ton	2 ton	3 ton	5 ton
2	Side Plate A	1	Not sold separately				
3	Trolley Wheel P (Includes items 3A & 3B)	4	70817	70818	70819	70820	70821
*	Trolley Wheel P, Copper Plated		70817-CP	70818-CP	70819-CP	70820-CP	70821-CP
*	Trolley Wheel P, Solid Bronze		71003958	71003966	71003974	71003982	71003990
3A	Wheel Bearing (For Trolley Wheel P)	2	71887	71888	71889	71890	71891
3B	Retaining Ring (For Trolley Wheel P)	2	71892	71893	71894	71895	71896
4	Washer	4	---	70822	70823	70824	70825
	Slotted Nut		70826	---			
5	Snap Ring	4	---	70827	70828	70829	70830
	Split Pin	4	70831	---			
10	Side Plate B	1	Not sold separately				
11	Nameplate B, Plain	1	71004063	71004071	71004089	71004097	71004105
	Nameplate B, Geared		---	71004121	71004139	71004147	71004154
12	Spacer	24	70842	70843	---		
	Spacer	18	---		70844	70845	70846
13	Split Pin	1	70847		70848		70849
14	Slotted Nut	1	73316	70850	70851		70852
15	Split Pin	1	70853		70841		70854
16	Bolt	1	70855	70856	70857	70858	70859
17	Suspension Shaft (Standard Length)	1	70860 (3 to 5 in.)	70861 (3 to 5 in.)	70862 (4 to 6 in.)	70863 (4 to 6 in.)	70864 (5 to 7 in.)
**	Suspension Shaft (Standard Length) Zinc Plated		70860-ZP (3 to 5 in.)	70861-ZP (3 to 5 in.)	70862-ZP (4 to 6 in.)	70863-ZP (4 to 6 in.)	70864-ZP (5 to 7 in.)
***	Extended Suspension Shaft Kit (5 - 7 in.)		7943-005KB	7943-010KB	---	---	---
***	Extended Suspension Shaft Kit (7 - 9 in.)		7943-005KC	7943-010KC	---	---	7943-050KB
***	Extended Suspension Shaft Kit (9 - 11 in.)		7943-005KD	7943-010KD	---	---	7943-050KC
***	Extended Suspension Shaft Kit (6 - 8 in.)		---	---	7943-020KB	7943-030KB	---
***	Extended Suspension Shaft Kit (8 - 10 in.)		---	---	7943-020KC	7943-030KC	---
***	Extended Suspension Shaft Kit (10 - 12 in.)		---	---	7943-020KD	7943-030KD	---
***	Extended Suspension Shaft Kit (11 - 13 in.)		---	---	---	---	7943-050KD

* S·COR·E (Spark and Corrosion Resistant) feature.
** Optional S·COR·E (Spark and Corrosion Resistant) feature.
*** Option. Does not come as standard with unit. Must be ordered separately.

1/2 TO 5 METRIC TON PLAIN AND GEARED TROLLEY PARTS LIST (continued)

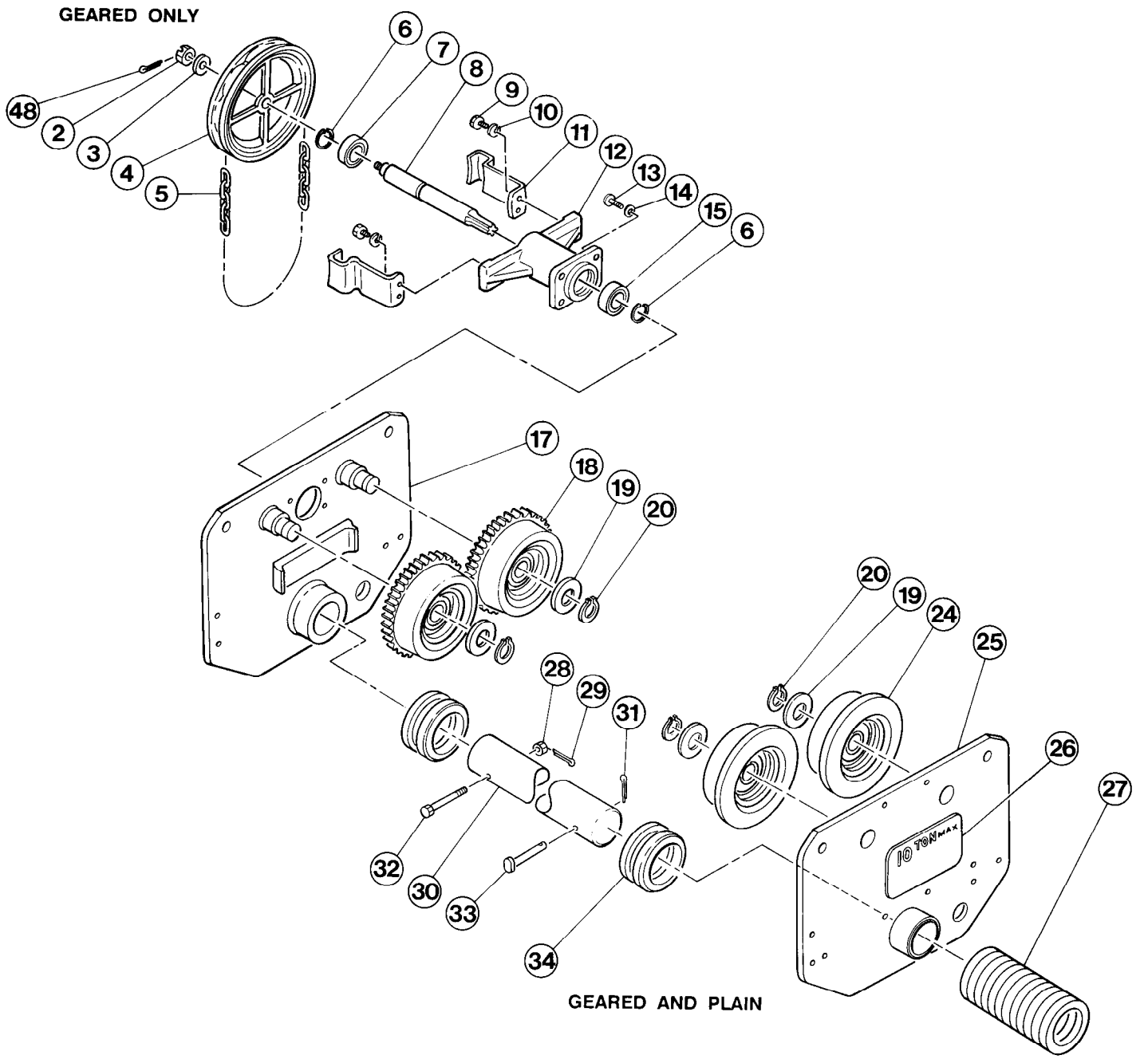
ITEM NO.	DESCRIPTION OF PART	QTY TOTAL	PART NO.				
			1/2 ton	1 ton	2 ton	3 ton	5 ton
*** 17	Extended Suspension Shaft Kit, Zinc Plated 5 - 7 in.	1	7943-005KBZP	7943-010KBZP	---	---	---
***	Extended Suspension Shaft Kit, Zinc Plated 7 - 9 in.		7943-005KCZP	7943-010KCZP	---	---	7943-050KBZP
***	Extended Suspension Shaft Kit, Zinc Plated 9 - 11 in.		7943-005KDZP	7943-010KDZP	---	---	7943-050KCZP
***	Extended Suspension Shaft Kit, Zinc Plated 6 - 8 in.		---	---	7943-020KBZP	7943-030KBZP	---
***	Extended Suspension Shaft Kit, Zinc Plated 5 - 7 in.		---	---	7943-020KCZP	7943-030KCZP	---
***	Extended Suspension Shaft Kit, Zinc Plated 5 - 7 in.		---	---	7943-020KDZP	7943-030KDZP	---
***	Extended Suspension Shaft Kit, Zinc Plated 5 - 7 in.		---	---	---	---	7943-050KDZP
18	Shaft Stopper Pin	1	70865	70866	70867	70868	70869
20	Nut	1	---	70875			
21	Washer	1	---	70876			
22	Hand Wheel, Impact Resistant Nylon	1	---	70877			
***	Hand Wheel, Cast Iron		---	70763			
*	Hand Wheel, Cast Iron, Copper Plated		---	70763-CP			
23	Side Plate G	1	Not sold separately				
*	Side Plate G, Copper Plated (Copper plated chain guide)						
24	Pinion	1	---	70883	70884		
25	Trolley Wheel G (Includes items 3A and 3B)	2	---	70885	70886	70887	70888
*	Trolley Wheel G, Copper Plated		---	70885-CP	70886-CP	70887-CP	70888-CP
*	Trolley Wheel G, Solid Bronze		---	71004014	71004022	71004030	71004048
25A	Wheel Bearing (For Trolley Wheel G)	2	---	71888	71889	71890	71891
25B	Retaining Ring (For trolley Wheel G)	2	---	71893	71894	71895	71896
28	Hand Chain	1	---	HCCF005			
*	Hand Chain, Zinc Plated		---	HCCF005ZP			
29	Split Pin	1	---	70890			
30	Lug (Option for use with SE Model Electric Chain Hoists only)	1	A17707	A17708	A17709	A17710	A17711
+ 31	Operation and Maintenance Manual	1	Form No. MHD56003				

* S·COR·E (Spark and Corrosion Resistant) feature.

*** Option. Does not come as standard with unit. Must be ordered separately.

\+ Not Illustrated.

10 METRIC TON PLAIN AND GEARED TROLLEY ASSEMBLY



(Dwg. MHTPC0008/A)

10 METRIC TON PLAIN AND GEARED TROLLEY PARTS LIST

ITEM NO.	DESCRIPTION OF PART	QTY TOTAL	PART NO.	
			PLAIN	GEARED
2	Nut	1	---	71701
3	Washer	1	---	70876
4	Hand Wheel, Cast Iron	1	---	71608
*	Hand Wheel, Copper Plated		---	71608-CP
5	Hand Chain	1	---	HCCB015
*	Hand Chain, Zinc Plated		---	HCCB015ZP
6	Snap Ring	2	---	71684
7	Ball Bearing	1	---	71622
8	Pinion	1	---	71614
9	Socket Bolt	2	---	71702
10	Lock Washer	2	---	71703
11	Hand Chain Guide	2	---	71621
*	Hand Chain Guide, Copper Plated		---	71621-CP
12	Socket Bolt	4	---	71704
13	Lock Washer	4	---	71705
14	Pinion Holder	1	---	71683
15	Ball bearing	1	---	71622
16	Snap Ring	1	---	71684
17	Side Plate G Assembly	1	Not sold separately	
18	Trolley Wheel G (Includes items 18A and 18B)	2	---	71606
*	Trolley Wheel G, Copper Plated		---	71606-CP
*	Trolley Wheel G, Solid Bronze		---	71004055
18A	Wheel Bearing (For Trolley Wheel G)	2	71600	
18B	Retaining Ring (For Trolley Wheel G)	2	71601	
19	Washer	4	71699	
20	Snap Ring	4	71700	
24	Trolley Wheel P (Includes items 24A and 24B)	2	71607	---
*	Trolley Wheel P, Copper Plated		71607-CP	---
*	Trolley Wheel P, Solid Bronze		71004006	---

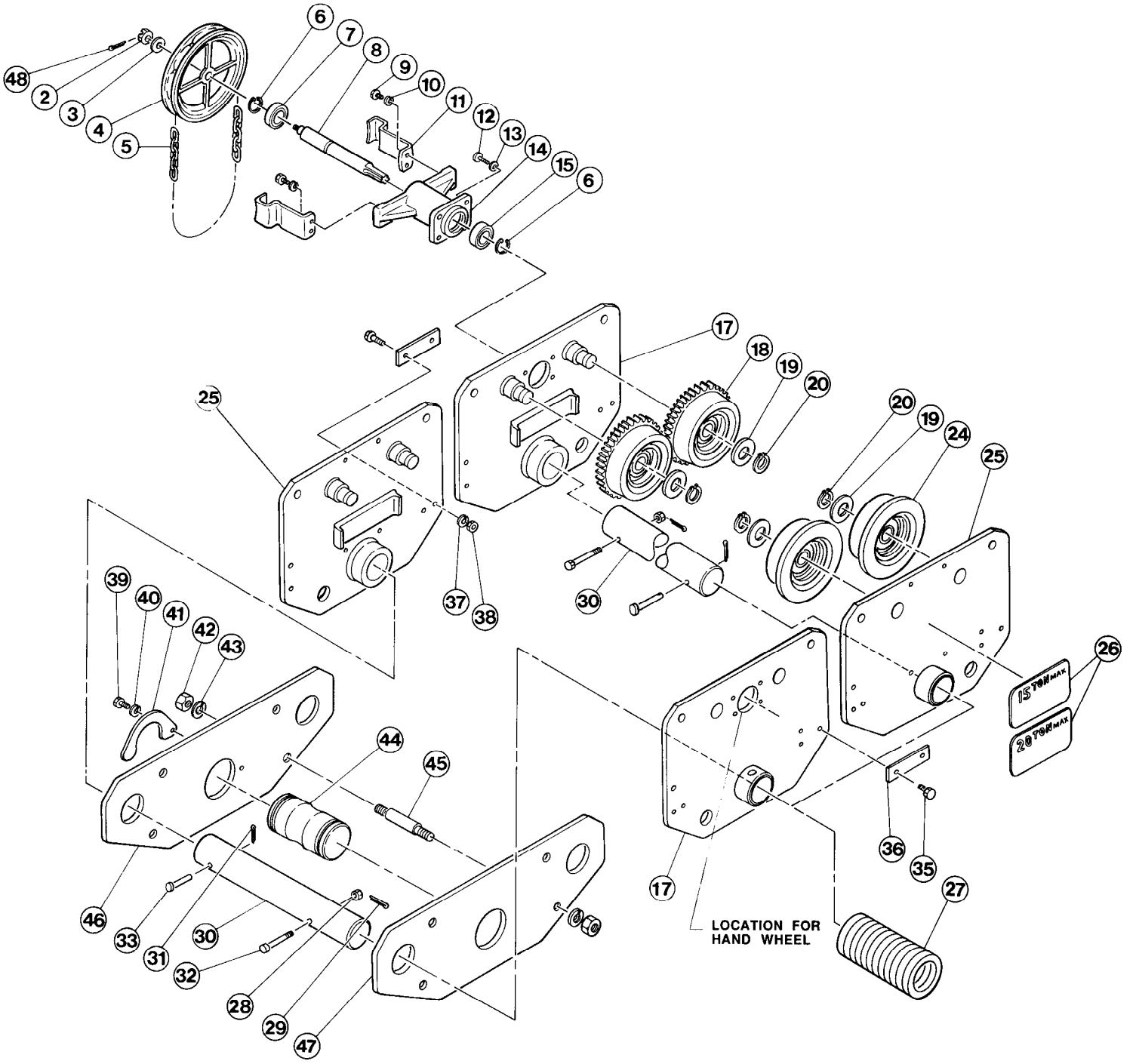
* S·COR·E (Spark and Corrosion Resistant) feature.

10 METRIC TON PLAIN AND GARED TROLLEY PARTS LIST (Continued)

ITEM NO.	DESCRIPTION OF PART	QTY TOTAL	PART NO.	
			PLAIN	GEARED
24A	Wheel Bearing (For Trolley Wheel P)	2	71600	
24B	Retainer Ring (For Trolley Wheel P)	2	71601	
25	Side Plate B Assembly	1	Not sold separately	
26	Nameplate B	1	71004113	70626
27	Adjusting Spacer	24	71619	
28	Slotted Nut	1	71863	
29	Split Pin	1	71864	
30	Suspension Shaft (Standard Length, 6 to 7.5 in.)	1	71623	
**	Suspension Shaft (Standard Length 6 to 7.5 in.), Zinc Plated		71025332	
***	Extended Suspension Shaft Kit (7.5 to 9.5 in.)		7943-100KB	
***	Extended Suspension Shaft Kit (7.5 to 9.5 in.)		7943-100KC	
***	Extended Suspension Shaft Kit (9.5 to 11.5 in.)		7943-100KD	
***	Extended Suspension Shaft Kit (7.5 to 9.5 in.), Zinc Plated		7943-100KBZP	
***	Extended Suspension Shaft Kit (9.5 to 11.5 in.), Zinc Plated		7943-100KCZP	
***	Extended Suspension Shaft Kit (11.5 to 13.5 in.), Zinc Plated		7943-100KDZP	
31	Split Pin	1	71865	
32	Bolt	1	71866	
33	Shaft Stopper Pin	1	71867	
34	Spacer	4	71868	
+ 35	Operation and Maintenance Manual	1	Form No. MHD56003	

** Optional S·COR·E (Spark and Corrosion Resistant) feature.
*** Option. Does not come as standard with unit. Must be ordered separately.
+ Not Illustrated

15 AND 20 METRIC TON PLAIN AND GEARED TROLLEY ASSEMBLY



(Dwg. MHTPD0009/A)

15 AND 20 METRIC TON PLAIN AND GEARED TROLLEY PARTS LIST

ITEM NO.	DESCRIPTION OF PART	QTY TOTAL	PART NO.
2	Nut	2	71701
3	Washer	2	70876
4	Hand Wheel, Cast Iron	2	71608
*	Hand Wheel, Copper Plated		71608-CP
5	Hand Chain	2	HCCB015
*	Hand Chain, Zinc Plated		HCCB015ZP
6	Snap Ring	4	71684
7	Ball Bearing	2	71622
8	Pinion	2	71614
9	Socket Bolt	8	71702
10	Lock Washer	8	71703
11	Hand Chain Guide	4	71621
*	Hand Chain Guide, Copper Plated		71621-CP
12	Socket Bolt	8	71704
13	Lock Washer	8	71705
14	Pinion Holder	2	71683
15	Ball Bearing	2	71622
17	Side Plate G Assembly	2	Not sold separately
18	Trolley Wheel G Assembly (Includes items 18A and 18B)	4	71606
*	Trolley Wheel G Assembly, Copper Plated		71606-CP
*	Trolley Wheel G Assembly, Solid Bronze		71004055
18A	Wheel Bearing (For Trolley Wheel G)	4	71600
18B	Retaining Ring (For Trolley Wheel G)	4	71601
22	Snap Ring	8	71700
23	Washer	8	71699
24	Trolley Wheel P (Includes items 24A and 24B)	4	71607
*	Trolley Wheel P, Copper Plated		71607-CP
*	Trolley Wheel P Assembly, Solid Bronze		71004006
24A	Wheel Bearing (For Trolley Wheel P)	4	71600
24B	Retaining Ring (For Trolley Wheel P)	4	71601
25	Side Plate B Assembly	2	Not sold separately
26	Nameplate B, 15 Ton	1	70627
	Nameplate B, 20 Ton		70628

* S-COR-E (Spark and Corrosion Resistant) feature.

15 AND 20 METRIC TON PLAIN AND GEARED TROLLEY PARTS LIST (Continued)

ITEM NO.	DESCRIPTION OF PART	QTY TOTAL	PART NO.
27	Adjusting Spacer	48	71619
28	Slotted Nut	2	71863
29	Split Pin	2	71864
30	Suspension Shaft (Standard Length, 6 to 7.5 in.)	2	71623
**	Suspension Shaft (Standard Length 6 to 7.5 in.), Zinc Plated		71025332
***	Extended Suspension Shaft Kit (7.5 to 9.5 in.)		7943-200KB
***	Extended Suspension Shaft Kit (9.5 to 11.5 in.)		7943-200KC
***	Extended Suspension Shaft Kit (11.5 to 13.5 in.)		7943-200KD
***	Extended Suspension Shaft Kit (7.5 to 9.5 in.), Zinc Plated		7943-200KBZP
***	Extended Suspension Shaft Kit (9.5 to 11.5 in.), Zinc Plated		7943-200KCZP
***	Extended Suspension Shaft Kit (11.5 to 13.5 in.), Zinc Plated		7943-200KDZP
31	Split Pin	2	71865
32	Bolt	2	71866
33	Shaft Stopper Pin	2	71867
35	Bolt	4	71869-B
36	Connecting Plate	2	71871
37	Spring Washer	4	71872
38	Nut	4	71874
39	Bolt	1	71875
40	Spring Washer	1	71703
41	Retainer Plate	1	71876
42	Nut	8	71877
43	Spring Washer	8	71878
44	Suspension Shaft	1	71682
**	Suspension Shaft, Zinc Plated		71025340
45	Spacer Stud	4	71879
46	Suspension Plate A	1	71617
47	Suspension Plate B	1	71618
+ 48	Operation and Maintenance Manual	1	Form No. MHD56003

** Optional S·COR·E (Spark and Corrosion Resistant) feature.
*** Option. Does not come as standard with unit. Must be ordered separately.
+ Not Illustrated.

HOIST AND WINCH LIMITED WARRANTY

Ingersoll-Rand Company (I-R) warrants to the original user its Hoists and Winches (Products) to be free of defects in material and workmanship for a period of one year from the date of purchase. I-R will repair, without cost, any Product found to be defective, including parts and labor charges, or at its option, will replace such Products or refund the purchase price less a reasonable allowance for depreciation, in exchange for the Product. Repairs or replacements are warranted for the remainder of the original warranty period.

If any Product proves defective within its original one year warranty period, it should be returned to any Authorized Hoist and Winch Service Distributor, transportation prepaid with proof of purchase or warranty card.

This warranty does not apply to Products which I-R has determined to have been misused or abused, improperly maintained by the user, or where the malfunction or defect can be attributed to the use of non-genuine I-R parts.

I-R makes no other warranty, and all implied warranties including any warranty of merchantability or fitness for a particular purpose are limited to the duration of the expressed warranty period as set forth above. I-R's maximum liability is limited to the purchase price of the Product and in no event shall I-R be liable for any consequential, indirect, incidental, or special damages of any nature rising from the sale or use of the Product, whether based on contract, tort, or otherwise.

Note: Some states do not allow limitations on incidental or consequential damages or how long an implied warranty lasts so that the above limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

IMPORTANT NOTICE

It is our policy to promote safe delivery of all orders.

This shipment has been thoroughly checked, packed and inspected before leaving our plant and receipt for it in good condition has been received from the carrier. Any loss or damage which occurs to this shipment while enroute is not due to any action or conduct of the manufacturer.

VISIBLE LOSS OR DAMAGE

If any of the goods called for on the bill of lading or express receipt are damaged or the quantity is short, do not accept them until the freight or express agent makes an appropriate notation on your freight bill or express receipt.

CONCEALED LOSS OR DAMAGE

When a shipment has been delivered to you in apparent good condition, but upon opening the crate or container, loss or damage has taken place while in transit, notify the carrier's agent immediately.

DAMAGE CLAIMS

You must file claims for damage with the carrier. It is the transportation company's responsibility to reimburse you for repair or replacement of goods damaged in shipment. Claims for loss or damage in shipment must not be deducted from the Ingersoll-Rand invoice, nor should payment of Ingersoll-Rand invoice be withheld awaiting adjustment of such claims as the carrier guarantees safe delivery.

You may return products damaged in shipment to us for repair, which services will be for your account and form your basis for claim against the carrier.

United States Office Locations

For Order Entry and Order Status:

INGERSOLL-RAND
Distribution Center
510 Hester Drive
P.O. Box 618
White House, TN 37188
Phone (615) 672-0321
Telex: 786573
Fax: (615) 672-0801

For Technical Support:

INGERSOLL-RAND
Material Handling
2724 Sixth Avenue South
P.O. Box 24046
Seattle, WA 98124-0046
Phone (206) 624-0466
Telex: 328795
Fax: (206) 624-6265

Atlanta, GA
111 Ingersoll-Rand Drive
Chamblee, GA 30341
(404) 936-6230

Detroit, MI
23192 Commerce Drive
Farmington Hills, MI 48335
Phone (313) 476-6677
Fax: (313) 476-6670

Houston, TX
2500 East T.C. Jester
Suite 150
Houston, TX 77008
(713) 864-3700

Los Angeles, CA
5533 East Olympic Blvd.
Los Angeles, CA 90022
(213) 725-2826

Milwaukee, WI
12311 W. Silver Spring Dr.
Milwaukee, WI 53225
(414) 461-0973

Philadelphia, PA
900 E. 8th Ave., Suite 103
King of Prussia, PA 19406
(215) 337-5930

International

Office and distributors in principal cities throughout the world. Contact the nearest Ingersoll-Rand office for the name and address or the distributor in your country or write to:
Ingersoll-Rand
Material Handling
P.O. Box 24046 Seattle,
WA 98124-0046 USA

Canada
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