

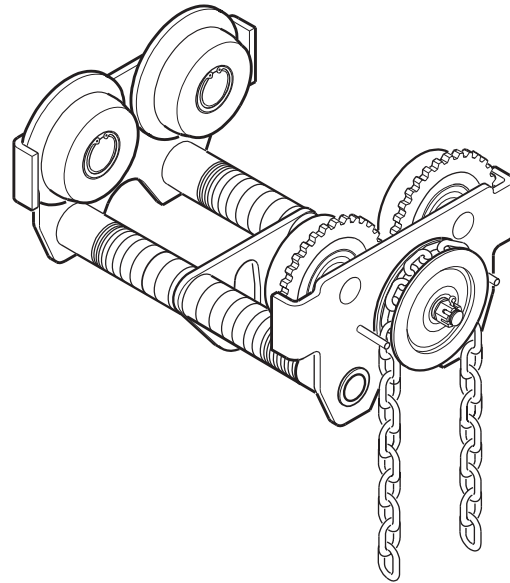
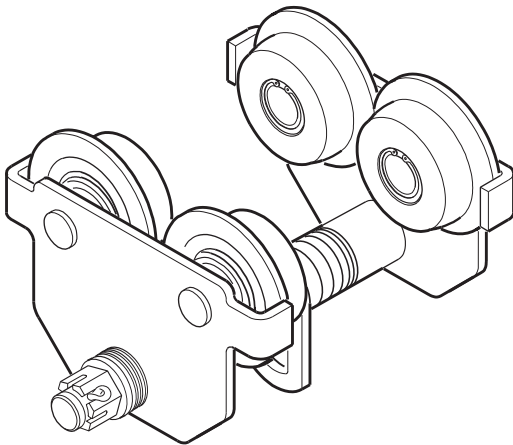
PARTS, OPERATION AND MAINTENANCE MANUAL for 1/4 TO 20 TON* TROLLEY MODELS

PLAIN TROLLEYS

SP005 1/4 - 1/2 ton	SP010 1 ton	SP020 1-1/2 - 2 ton
SP030 2-1/2 - 3 ton	SP050 4 - 5 ton	SP100 6 - 10 ton

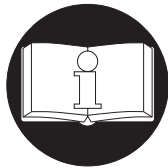
GEARED TROLLEYS

SG010 1 ton	SG020 1-1/2 - 2 ton	SG030 2-1/2 - 3 ton
SG050 4 - 5 ton	SG100 6 - 10 ton	SG200 12 - 20 ton



(Dwg. MHP1591)

*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 American National Standards Institute Safety Code (ASME B30.16) and any other applicable safety codes or regulations.

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

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* 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* 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 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 registered 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 suspended loads 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 intended path of any load.

The Occupational Safety and Health Act of 1970 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, associated with the final installation. It is the owner's and user's responsibility to determine the suitability of a product for any particular use. It is recommended that all applicable industry, trade association, federal, state and local regulations be checked. Read all operating instructions and warnings before operation.

SAFE OPERATING INSTRUCTIONS

The following warnings and operating instructions have been adapted in part from American National (Safety) Standard ASME B30.16 and are intended to avoid unsafe operating practices which might lead to 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 safe operating instructions.

1. Before each shift, the operator should inspect the trolley for wear and damage.
2. Never use a trolley that inspection indicates is damaged.
3. Only attach a hoist having a rated capacity equal to or less than the capacity of the trolley.
4. Only operate a trolley when the load is centered under the trolley. Do not "side pull" or "yard."
5. Make sure all people are clear of the load path. Do not lift a load over people.
6. Avoid collision or bumping of trolley.
7. Ensure stops are installed at both ends of the beam prior to using trolley.

WARNING LABEL

Each trolley is supplied from the factory with the warning label shown. If the label is not attached to your unit, order a new label and install it. Refer to the parts list for the part number. Label may not be shown actual size.

NOTICE

- Trolley warning label is located on side plate.



SPECIFICATIONS

Trolley Model No.		Capacity (metric tons)*	Min. Curve Radius		Beam Flange (Width)		Net Weight SP/SG	
Plain	Geared		in	mm	in	mm	lbs	kg
SP005	---	1/4 - 1/2	36	914	2 - 8	50 - 203	14.3	6.5
SP010	SG010	1	42	1066	2.5 - 8	60 - 203	23/32	10.5/14.5
SP020	SG020	1-1/2 - 2	48	1219	3 - 8	75 - 203	39/47	17.5/21.5
SP030	SG030	2-1/2 - 3			3.5 - 8	90 - 203	60/68	27/31
SP050	SG050	4 - 5	60	1524	4 - 8	100 - 203	93/101	42/46
SP100	SG100	6 - 10	96	2438	6 - 12	150 - 305	157/165	71/75
---	SG200	12 - 20	120	3048			379	172

*1 metric ton = 1000 kg = 2,200 lbs.

INSTALLATION

⚠ WARNING

- Before installing, read “SAFETY INFORMATION.”
- To avoid an unbalanced load which may damage the trolley, the hoist must be centered under the trolley.

NOTICE

- Install manual chain hoists so that the hoist hand chain is on the opposite side of the trolley hand chain.
- Trolley wheels ride on the top of the lower flange of the beam.
- Visually inspect components for distortion, wear and damage during installation. Replace any item indicating damage, distortion and/or excessive wear.

Proper use, inspections and maintenance will increase the life and usefulness of your **Ingersoll-Rand** equipment. During assembly lubricate gears, and shafts with applicable lubricants. Use of Loctite® on capscrew and nut threaded areas will help prevent corrosion.

1/4 – 3 ton Trolley Installation

Refer to Dwg. MHP1511 on page 10

1. Measure the beam flange width.
2. Place the hook plate (15) in the middle of hanger shaft (13).
3. Add spacers (6, 7, 9, and 10) equally to both sides of hook plate. When side plates (4) are on hanger shaft the total distance between the trolley wheels (2 and 3) should be 1/8 – 1/4 in (3 – 6 mm) larger than the beam flange width. Refer to Dwg. MHP1589 on page 4.

Use the following instructions for mounting trolley to beam.

Installing over Beam

1. Place remaining spacers on support shaft (on the outside of side plates). The last washer **MUST BE** (8).
2. Thread nut(s) (11) onto hanger shaft and loosely tighten.
3. Remove end stop on beam and slide trolley onto beam.
4. Check clearance between beam flange and trolley wheel flanges. Refer to Dwg. MHP1589 on page 4. Ensure side plates are parallel to beam and hook plate is centered under trolley and beam.
5. Tighten nut(s) and secure with cotter pin(s) (12).

Installing under Beam

1. Thread nut(s) (11) halfway onto support shaft. There should be **NO** spacers between nuts and side plates.
2. Spread side plates apart and lift trolley up and over lower beam flange.
3. Hold side plates together with a suitable clamp and remove nuts (11). Add equal spacers to each side of support shaft. The last washer **MUST BE** (8). Install nuts and tighten.
4. Check clearance between beam flange and trolley wheel flanges. Refer to Dwg. MHP1589 on page 4. Ensure side plates are parallel to beam and hook plate is centered under trolley and beam.
5. Tighten nut(s) and secure with cotter pin(s) (12).

4 – 20 Ton Trolley Installation

Refer to Dwg. MHP1512 on page 11 and MHP1513 on page 12.

1. Measure the beam flange width.
2. With hanger shafts (14) installed in side plate (5), place half of spacers (6, 7, 9, 10 and 37) on hanger shaft followed by hook plate (15) and then the other half of the spacers.
3. Place side plate (4) on hanger shaft and push together. Measure the total distance between trolley wheels (2 and 3) and the beam flange. The distance should be 1/8 – 1/4 in (3 – 6 mm) larger than the beam flange.

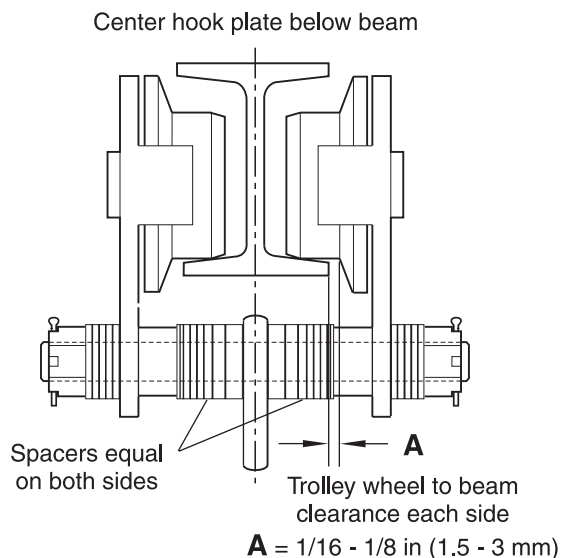
Use the following instructions for mounting trolley to beam.

Installing over Beam

1. Place remaining spacers on support shafts (on the outside of side plates). The last washer **MUST BE** (8).
2. Thread nuts (11) onto hanger shafts and loosely tighten.
3. Remove end stop on beam and slide trolley onto beam.
4. Check clearance between beam flange and trolley wheel flanges. Refer to Dwg. MHP1589 on page 4. Ensure side plates are parallel to beam and hook plate is centered under trolley and beam.
5. Tighten nuts and secure with cotter pins (12).

Installing under beam

1. Thread nuts (11) half way onto support shaft. There should be **NO** spacers between nuts and side plate (5).
2. Spread side plates apart and lift trolley up and over lower beam flange.
3. Hold side plates together with a suitable clamp and remove nuts (11). Add equal spacers to each hanger shaft. The last washer **MUST BE** (8). Install nuts and tighten.
4. Check clearance between beam flange and trolley wheel flanges. Refer to Dwg. MHP1589 on page 4. Ensure side plates are parallel to beam and hook plate is centered under trolley and beam.
5. Tighten nuts and secure with cotter pin (12).



(Dwg. MHP1589)

OPERATION

The **four most important** aspects of trolley operation are:

1. Follow all safety instructions when operating trolley.
2. Allow only trained people to operate a trolley.
3. Subject each trolley to regular inspections and a scheduled maintenance program.
4. Be aware of the hoist and trolley capacity and weight of load at all times. Do not overload.

⚠ 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.**

Initial Operating Checks

1. After trolley installation ensure the side plates are vertical.
2. With hoist installed, verify that hoist is centered below trolley.
3. Raise a load equal to the lower of the rated capacities of either the trolley or hoist 3 to 4 inches (75 to 100 mm) off the floor.
4. Operate the trolley along the entire length of the beam.
5. Inspect trolley performance when raising, moving and lowering test load(s). Trolley must operate smoothly prior to being placed in service for general use.

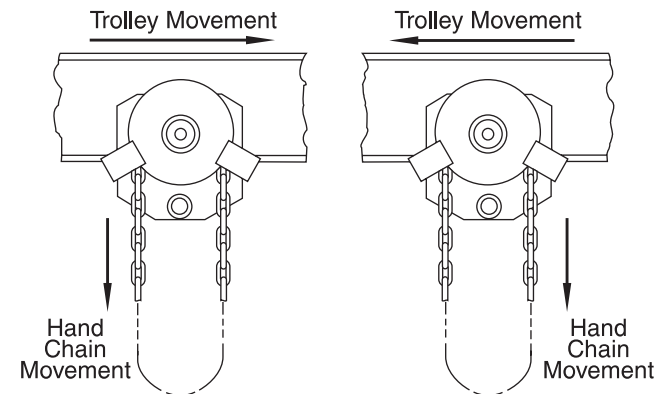
Plain Trolley (1/4 to 10 ton)

1. To move an unloaded hoist/trolley, push on the hoist load chain.
2. To move a loaded hoist/trolley, push on the load or the hoist load hook shank.
3. When operating the trolley keep load as close to the floor as practical.

Geared Trolley (1 to 20 ton)

Refer to Dwg. MHP0100 on page 5

1. When facing the trolley hand wheel:
 - a. Pull down on right side of hand chain (Clockwise rotation) to move left.
 - b. Pull down on left side of hand chain (Counterclockwise rotation) to move right.



(Dwg. MHP0100)

INSPECTION

There are two types of inspection: the frequent inspection performed by the operator and periodic inspections performed by personnel trained in service and maintenance of this product.

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 quarterly on the condition of the critical parts (e.g. wheels, bearings, gears, side plates and hook plate) 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.

NOTICE

• **During assembly/disassembly visually inspect each component for distortion, wear and damage. Replace items indicating damage, distortion and/or excessive wear. Proper use, inspections and maintenance will increase the life and usefulness of your Ingersoll-Rand equipment.**

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 metre). During the few feet (1 metre) of travel, check for visual signs or abnormal noises which could indicate a problem. Check for smooth operation. Do not operate the trolley until all problems 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 Semiannually	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 retainer rings, cotter pins, capscrews and nuts. Replace if missing or damaged 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 and bearings. 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 clearance between each trolley wheel and the beam equals 1/16 to 1/8 in. (1.5 to 3 mm). Check side plates for spreading due to bending. If side plates are distorted replace complete trolley.
6. **LABELS.** Check for presence and legibility. Replace if necessary.

LUBRICATION

SP and SG trolleys are designed to require minimum lubrication under NORMAL conditions. The following sections specify the lubrication requirements.

Trolley Wheel Shafts

During assembly lubricate trolley wheel shafts and bearings with high quality EP grease.

Hand Chain

Hand chain, used on geared trolleys, normally requires no lubrication.

Pinion Shaft and Geared Trolley Wheels

Lubricate pinion shaft before installing in geared side plate shaft sleeve. Lubricate exposed trolley drive pinion and wheel teeth. Brush with grease as often as necessary to keep teeth liberally coated. 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.

12 – 20 ton Trolleys

Lubricate idle gear (27) with a high quality EP grease.

CAUTION

- **When greasing pinion and geared wheels make sure excess grease is cleaned off trolley wheel riding surface and track of beam. Failure to keep track and wheel contact surfaces clean could affect the safe operation of the trolley.**

TROUBLESHOOTING

During all rigging and transporting situations the single most important point to keep in mind is **SAFETY**. Any uncorrected abnormal condition may result in injury, death or property damage. At the first indication of a change in normal trolley operation conduct the following: (1) **stop** all operations on the

affected trolley, (2) properly **secure** the trolley, and (3) **investigate** to determine the cause of the change in operation. The chart below provides a brief guide to common trolley symptoms, probable causes and remedies.

SYMPTOM	CAUSE	REMEDY
Trolley will not operate.	Trolley is overloaded.	Reduce load to within rated capacity.
	Trolley wheel bearings are damaged.	Replace trolley wheel bearings.*
Trolley will not stop or trolley wheels slip.	Too much oil or grease on track of beam and wheels.	Clean track and trolley wheels.
Hand Chain operation difficult / impossible.	Twisted chain.	Untwist chain.*
	Hand Wheel damaged.	Replace Hand Wheel.*
	Pinion Shaft damaged.	Replace Pinion Shaft.*
	Geared Wheel(s) damaged.	Replace Geared Wheel(s).*

*Procedure provided in "MAINTENANCE" section.

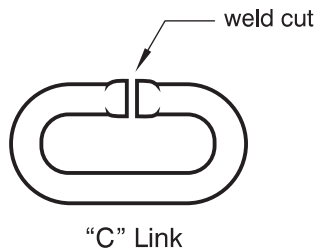
⚠ WARNING

- Never perform maintenance on the trolley while it is supporting a load. A falling load can cause injury or death and damage to property.
- Before starting maintenance, tag trolley:
**DANGER — DO NOT OPERATE —
EQUIPMENT BEING REPAIRED.**
- Only allow trained service personnel to perform maintenance.
- After performing maintenance, test trolley to 150% of its rated capacity (or to that amount required by the applicable regulations) 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 cause injury.

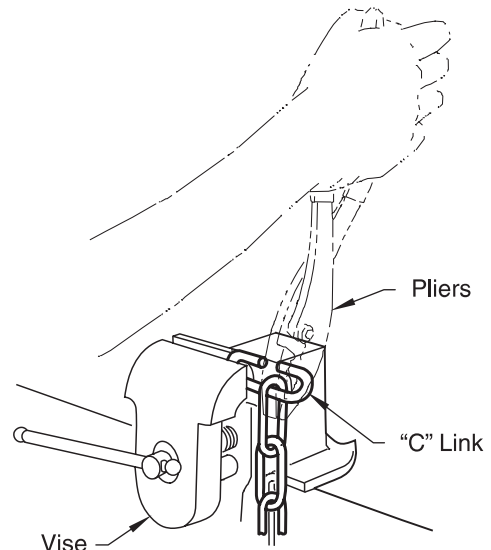


(Dwg. MHP0016)

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 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 a length of chain that is twice the required hand chain drop plus 1 foot (30 cm.).
4. Run the new 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. Add or remove a length of chain that is twice the desired amount of chain adjustment.

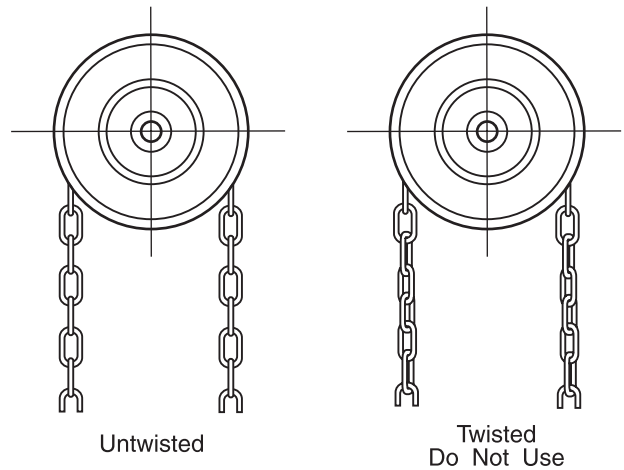
NOTICE

- To prevent the hand chain from twisting maintain an even number of links. Refer to Dwg. MHP0015 on page 7



(Dwg. MHP0014)

6. Connect the hand chain ends with the “C” link(s), make the total number of links even, and bend the “C” link(s) shut.
7. Make sure the hand chain is not twisted. To untwist, open a “C” link and remove one hand chain link.



(Dwg. MHP0015)

Disassembly

The following instructions provide the necessary information to disassemble, inspect, repair and assemble the trolley. Parts drawings are provided in the “Parts” Section.

- In the process of disassembling the trolley, observe the following:
1. Never disassemble the trolley any further than necessary to accomplish the needed repair. A good part can be damaged during the course of disassembly.
 2. Never use excessive force when removing parts. Tapping gently around the perimeter of a cover or housing with a soft hammer, for example, is sufficient to break the seal.
 3. Do not heat a part with a flame to free it for removal, unless the part being heated is already worn or damaged beyond repair and no additional damage will occur to other parts.

In general the trolley is designed to permit easy disassembly and assembly. The use of heat or excessive force should not be necessary.

4. When removing bearings from shafts, it is best to use a bearing puller. When removing bearings from housings, drive out the bearing with a sleeve slightly smaller than the outside diameter of the bearing. The end of the sleeve must be square. Protect the bearings from dirt by keeping them wrapped in a clean cloth.

NOTICE

- Prior to disassembly, record the number of spacers between side plates, hook plate, and nuts.
- During maintenance assembly/disassembly visually inspect components for distortion, wear and damage. Replace any item indicating damage, distortion and/or excessive wear.

CAUTION

- Observe proper safety precautions when conducting maintenance on or around trolleys. It is recommended that trolley be removed from beam and moved to a clean work area.
- Depending on the model of the trolley (refer to 'Specification' section) the weight of the trolley could require additional support. Adequately support the hoist and trolley when lifting or removing them from the beam.

1/4 – 3 ton Trolley

1. Remove trolley from beam and take to a clean dust free work area.
2. Remove cotter pin (12), nut(s) (11), and washer (8).
3. Remove spacers on the out side of side plates.
4. Slide side plates off of support shaft.
5. Remove retainer rings (33 and 34), cover (35), and pull trolley wheels (2 and 3) off axles.
6. Pull bearings (1) out of trolley wheels.

4 – 20 ton Trolley

1. Remove trolley from beam and take to a clean dust free work area.
2. Remove cotter pins (12), nuts (11), washer (8) and spacers.
3. Slide side plate off of support shafts and remove remaining spacers and hook plate (15).
4. Remove cotter pin (22) and pin (21).
5. Remove retainer rings (33 and 34), cover (35), and trolley wheels (2 and 3).
6. Pull bearings (1) from trolley wheels.

1 – 10 ton Geared Trolley Hand Wheel Disassembly

1. Remove cotter pin (36).

NOTICE

- Discard cotter pin. During assembly use a new cotter pin.

2. Secure hand wheel (17) and remove nut (18) and washer (19).
3. Press pinion shaft (16) out of hand wheel and side plate. Catch key (41) and washer (20) as they become free.
4. Press out bushing (23).

12 – 20 ton Geared Trolley Hand Wheel Disassembly

1. Remove cotter pin (36), nut (18), washer (19) and washer (20). Pull hand wheel (17) off hand wheel pinion shaft (16).

NOTICE

- Discard cotter pin. During assembly use a new cotter pin.

2. Remove capscrews (25) and lockwashers (26). Remove cover (24).
3. Pull hand wheel pinion from cover. Remove bushings (23) from cover.
4. Pull idle gear (27) from gear shaft (29). Key (30) might come free, catch and remove.
5. Remove retainer ring (32) and pinion gear (28), catch key (31).
6. Push gear shaft out through outside of side plate.

Cleaning, Inspection and Repair

Cleaning

Clean all trolley components in solvent. The use of a stiff bristle brush will facilitate the removal of dirt and old lubricants.

Dry each part with low pressure, filtered compressed air.

Inspection

All disassembled parts should be inspected to determine their fitness for continued use. Pay particular attention to the following:

1. GEARS. Check gears for worn, cracked, or broken teeth.
2. BUSHINGS. Check all bushings for wear, scoring, or galling.
3. SHAFTS. Check all shafts for ridges or grooves caused by wear. If ridges or grooves are apparent on shaft, replace shaft.
4. THREADED Items. Inspect all threaded items and replace any with damaged threads.
5. WHEELS. Inspect wheels, if any flat spots or out-of-round is visible replace wheels.
6. SIDE PLATES. Inspect side plates for cracks or signs of distortion. Complete trolley will need to be replaced if side plates are worn or damaged.
7. HOOK PLATE. Inspect for signs of wear or distortion. Replace if signs are evident.

Repair

Actual repairs are limited to removal of small burrs and other minor imperfections from gears and shafts. Use a fine stone or emery cloth for this work.

1. Worn or damaged parts must be replaced. Refer to the applicable parts listing for specific replacement parts information.
2. Inspect ALL parts for evidence of damage. Repair or replace any part that is in question. The cost of the part is often minor in comparison with the cost of redoing the job.

Assembly

NOTICE

• **Proper use, inspections and maintenance will increase the life and usefulness of your Ingersoll-Rand equipment. During assembly lubricate gears, shafts and bearings with applicable lubricants. Use of Loctite® on capscrew and nut threaded areas will help prevent corrosion.**

1/4 – 3 ton Trolley

1. Press bearings (1) into trolley wheels.
2. Lubricate side plate axles and slide on trolley wheels. Secure with retainer rings (33). Place covers (35) over bearings and secure with retainer rings (34).
3. Place side plates onto support shaft with spacers, washer and nut.
4. Place trolley back onto beam. Refer to “INSTALLATION” section.

4 – 20 ton Trolley

1. Press bearings (1) into trolley wheels.
2. Lubricate side plate axles and slide on trolley wheels. Secure with retainer rings (33). Place covers (35) over bearings and secure with retainer rings (34).
3. Insert hanger shafts (14) into side plate (5) and secure with pin (21) and cotter pin (22).
4. Place half the spacers, hook plate and the other half of the spacers on the support shaft.
5. Slide second side plate onto support shafts with the rest of the spacers, washer and nut.
6. Place trolley back onto beam. Refer to “INSTALLATION” section.

1 – 10 ton Geared Trolley Hand Wheel

1. Press in bushing (23) into side plate until flush.
2. Insert pinion shaft (16) into side plate (from trolley wheel side). Align wheel teeth with pinion teeth.
3. Place washer (20) on pinion shaft and insert key (41) into pinion shaft groove.
4. Place hand chain (38) onto hand wheel.
5. Align slot in hand wheel with key and press hand wheel onto drive pinion.
6. Place washer (19) on pinion shaft and secure with nut (18).
7. Tighten nut until pinion shaft has no in and out play and hand wheel rotates easily. Secure with cotter pin (36).

12 – 20 ton Geared Trolley Hand Wheel

1. Lubricate gear shaft (29) and insert into side plate, with collar end of shaft nearest hand wheel.
2. Insert key (31) into slot (on trolley wheel side) in gear shaft (29). Align slot in pinion gear (28) with key and press pinion gear onto shaft (trolley wheels may have to be rotated to allow full seating), secure with retainer ring (32).
3. Insert key (30) into slot (inside side plate). Align idle gear (27) slot with key and seat.
4. Press bushings (23) into both sides of cover (24) until flush.
5. Lubricate hand wheel pinion shaft (16) and slide into cover (24).
6. Lubricate both internal gears with EP Grease.

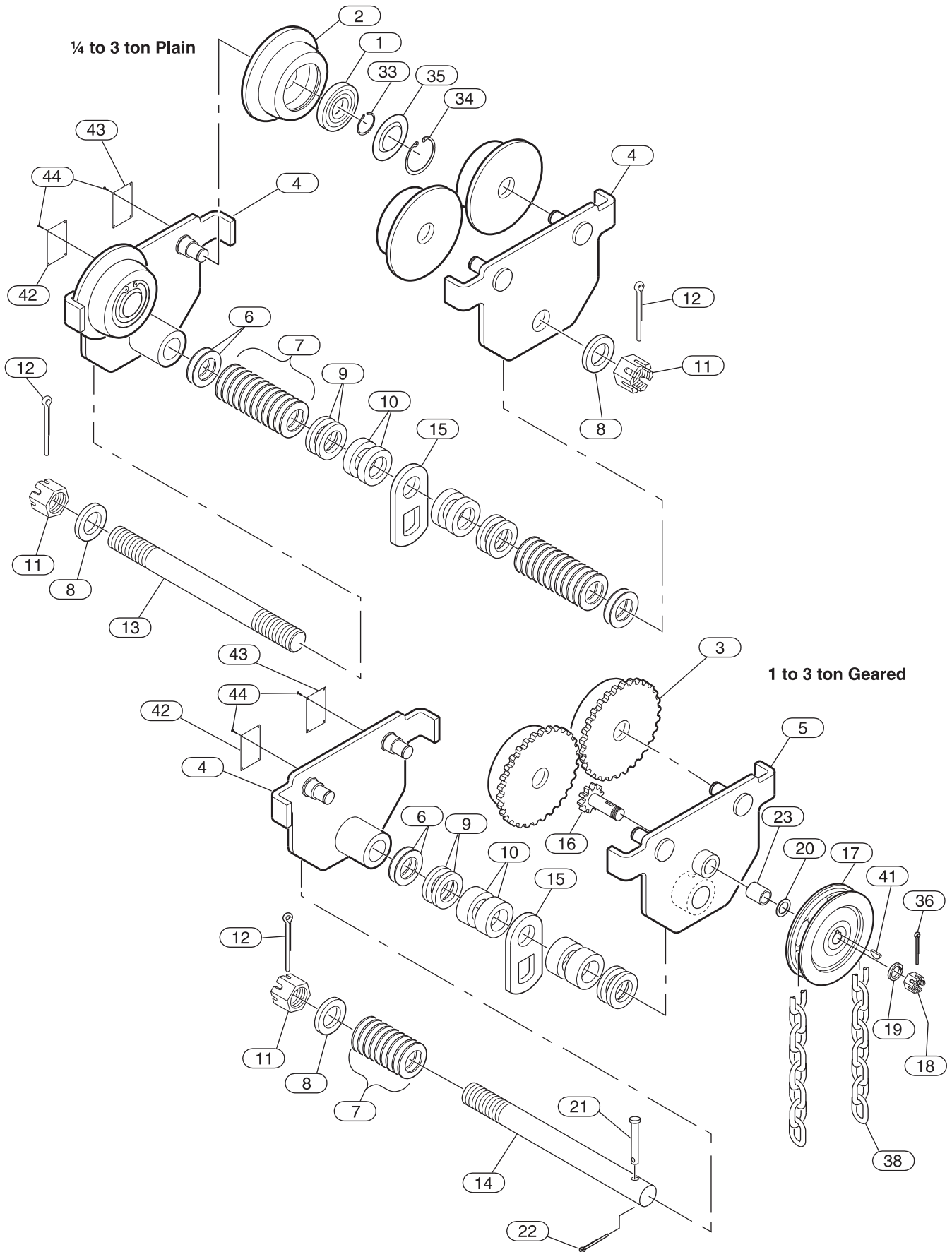
7. Insert pinion shaft (16) through cover. Holding threaded portion of pinion shaft, place cover onto side plate (5). Aligning dowel pin (40) with cover, rotate pinion shaft until gears align. Press cover into position and secure with capscrews (25) and lockwashers (26).
8. Place hand chain (38) onto hand wheel. Thread hand wheel onto pinion shaft until tight.
9. Place flatwasher (20) and lockwasher onto pinion shaft. Thread nut (18) onto shaft until tight and then back off until cotter pin hole is visible. Insert cotter pin (36) through hole and bend ends over nut.

Testing

Operational Checks

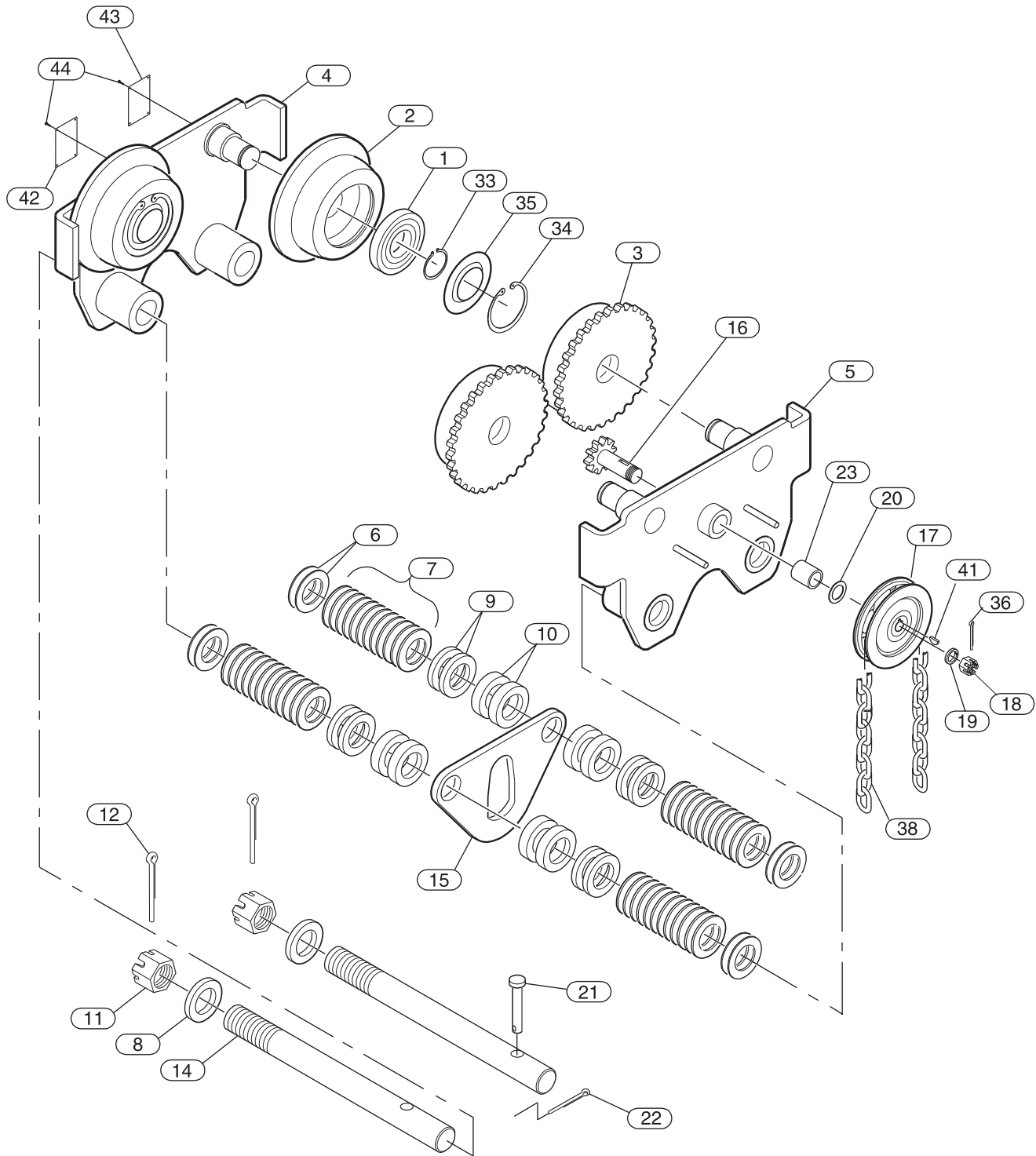
1. After trolley installation ensure the side plates are vertical and parallel to the support beam.
2. With hoist installed, verify that hoist is centered below trolley.
3. Raise a load equal to the lower of the rated capacities of either trolley or hoist 3 to 4 inches (75 to 100 mm) off the floor.
4. Operate the trolley along the entire length of the beam.
5. Inspect trolley performance when moving test load. Trolley must operate smoothly prior to being placed into service for general use.

1/4 TO 3 METRIC TON PLAIN AND GEARED TROLLEY ASSEMBLY DRAWING



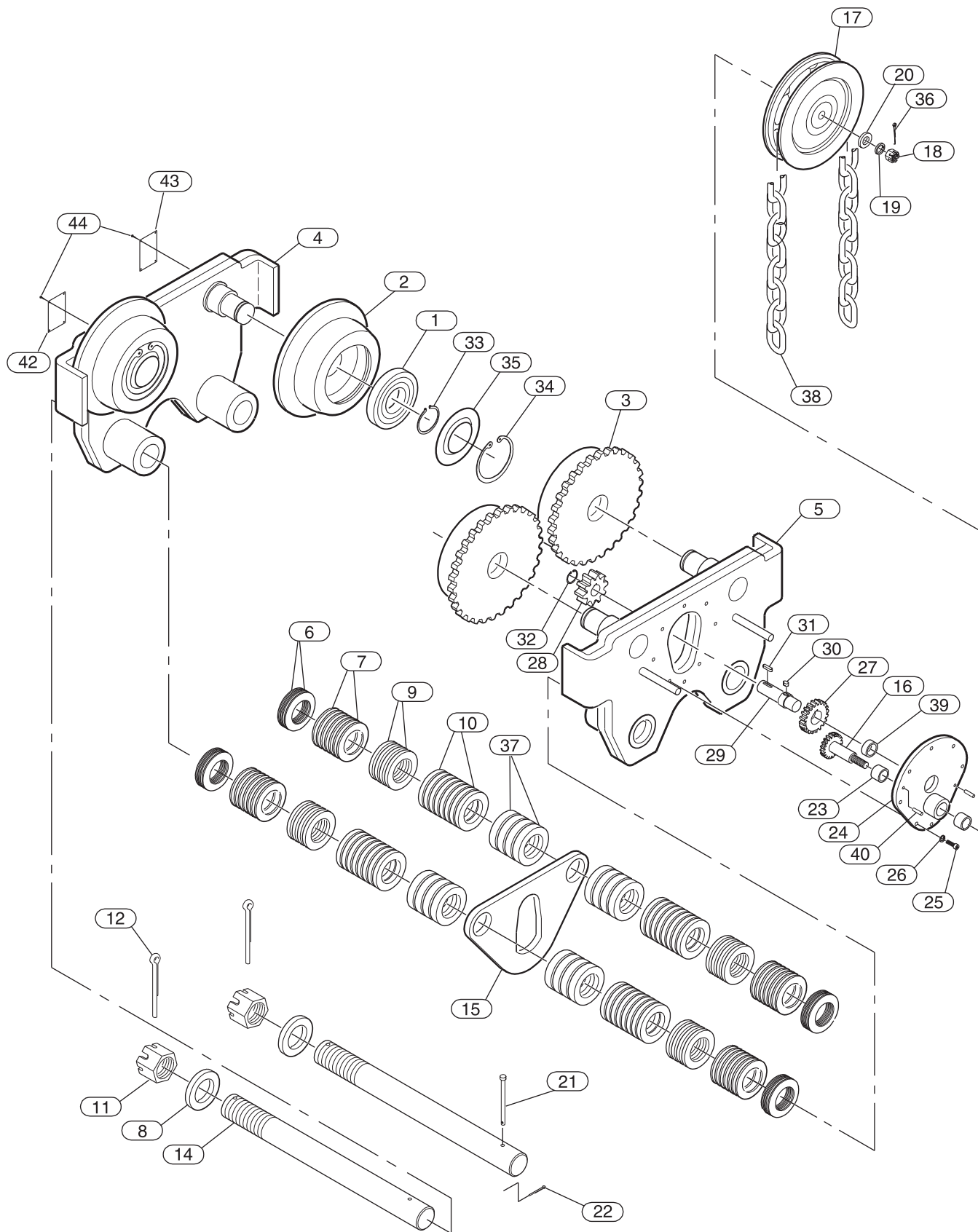
(Dwg. MHP1511)

4 TO 10 METRIC TON PLAIN AND GEARED TROLLEY ASSEMBLY DRAWING



(Dwg. MHP1512)

12 TO 20 METRIC TON GEARED TROLLEY DRAWING



(Dwg. MHP1513)

PLAIN TROLLEY PARTS LIST

ITEM NO.	DESCRIPTION OF PART	QTY PER UNIT	PART NUMBER					
			1/4 - 1/2 ton	1 ton	1-1/2 - 2 ton	2-1/2 - 3 ton	4 - 5 ton	6 - 10 ton
1	Bearing, Wheel	4	71482533	71482541	71482558	71482566		71482574
2	Wheel, Plain	4	71482590	71482608	71482616	71482624	71482632	71482640
4	Side Plate, Plain	2	Side plates not sold separately. Order new trolley.					
6	Washer, Adjusting, Narrow	see ()	71482855 (4)	71482871 (4)	71482897 (4)	71482913 (4)	71482939 (8)	
7	Washer, Adjusting, Wide	see ()	71482863 (12)	71482889 (16)	71482905 (14)	71482921 (12)	71482947 (14)	71482947 (28)
8	Washer, Nut	2	71482970	71483002	71483036	71483069	71483093	
9	Spacer, Adjusting, Narrow	see ()	71482988 (4)	71483010 (4)	71483044 (4)	71483077 (4)	71483101 (16)	
10	Spacer, Adjusting, Wide	see ()	71482996 (4)	71483028 (4)	71483051 (4)	71483085 (4)	71483119 (4)	71483127 (8)
11	Nut, Shaft	see ()	71483168 (2)	71483176 (2)	71483184 (2)	71483192 (2)	71483192 (4)	
12	Pin, Cotter	see ()	71483218 (2)	71483226 (2)	71483234 (2)	71483242 (2)	71483242 (4)	
13	Shaft, Hanger	1	71483267	71483275	71483283	71483291	---	
14	Shaft	2	---				71483309	71483317
15	Plate, Hook	1	71483382	71483390	71483408	71483416	71483424	71483432
21	Pin	2	---				71483622	71483630
22	Pin, Cotter	2	---				71483697	71483705
33	Retainer Ring	4	71483812	71483820	71483838	71483846		71483853
34	Retainer Ring	4	71483879	71483887	71483895	71483903		71483911
35	Cover	4	71483937	71483945	71483952	71483960		71483978
42	Capacity Plate	1	71484091	71484109	71484117	71484125	71484133	71484141
43	Warning Plate	1	71485932					
44	Drive Screw	8	71485924					

WIDE BEAM EXTENSION KITS (SP/SG SERIES TROLLEY ONLY)

Capacity	Part No. for SP Trolley	Part No. for SG Trolley	Additional Weight		Beam Width	
			lbs.	kg	in	mm
1	SP010-K12	SG010-K12	7.3	3.3	2.52 - 12.00	64 - 305
3	SP030-K12	SG030-K12	15.9	7.2	3.94 - 12.00	100 - 305
5	SP050-K12	SG050-K12	20.1	9.1	4.49 - 12.00	114 - 305

Note: Extension kits must be ordered separately. Only kits listed are available.

GEARED TROLLEY PARTS LIST

ITEM NO.	DESCRIPTION OF PART	QTY PER UNIT	PART NUMBER						
			1 ton	2 ton	3 ton	5 ton	6 - 10 ton	12 - 20 ton	
1	Bearing, Wheel	4	71482541	71482558	71482566		71482574	71482574	
2	Wheel, Plain	2	71482608	71482616	71482624	71482632	71482640	71482657	
3	Wheel, Geared	2	71482665	71482673	71482681	71482699	71482707	71482715	
4	Side Plate, Plain	1	Side plates not sold separately. Order new trolley.						
5	Side Plate, Geared	1							
6	Washer, Adjusting, Narrow	see ()	71482871 (4)	71482897 (4)	71482913 (4)	71482939 (4)	71482939 (8)	71482954 (8)	
7	Washer, Adjusting, Wide	see ()	71482889 (16)	71482905 (14)	71482921 (12)	71482947 (14)	71482947 (28)	71482962 (28)	
8	Washer, Nut	see ()	71483002 (1)	71483036 (1)	71483069 (1)	71483093 (2)	71483093 (2)	71483135 (2)	
9	Spacer, Adjusting, Narrow	see ()	71483010 (2)	71483044 (2)	71483077 (2)	71483101 (2)	71483101 (8)	71483143 (4)	
10	Spacer, Adjusting, Wide	see ()	71483028 (2)	71483051 (2)	71483085 (2)	71483119 (2)	71483127 (4)	---	
	Spacer, Adjusting, Medium	8	---						71483150
11	Nut, Shaft	see ()	71483176 (1)	71483184 (1)	71483192 (1)	71483192 (2)		71483200 (2)	
12	Pin, Cotter	see ()	71483226 (1)	71483234 (1)	71483242 (1)	71483242 (2)		71483259 (2)	
14	Shaft, Hanger	see ()	71483325 (1)	71483333 (1)	71483341 (1)	71483358 (2)	71483366 (2)	71483374 (2)	
15	Plate, Hook	1	71483440	71483457	71483465	71483473	71483481	71483499	
16	Pinion Shaft	1	71483507		71483515		71483523	71483531	
17	Hand Wheel	1	71483549		71483556				
18	Nut, Pinion	1	71483564						
19	Lockwasher	1	71483572						
20	Washer	1	71483580						
21	Pin, Shaft	see ()	71483598 (1)	71483606 (1)	71483614 (1)	71483622 (2)	71483630 (2)	71483648 (2)	
22	Pin, Cotter	see ()	71483655 (1)	71483663 (1)	71483671 (1)	71483689 (2)	71483697 (2)	71483705 (2)	
23	Bushing, Hand Wheel	2	71483713						
24	Cover, Gear	1	----						71483721
25	Capscrew, Gear Cover	8	----						71483739
26	Lockwasher	8	----						71483747
27	Gear, Idle	1	----						71483754
28	Gear, Pinion	1	----						71483762
29	Shaft, Gear	1	----						71483770
30	Key	1	----						71483788
31	Key	1	----						71483796
32	Retainer Ring	1	----						71483804
33	Retainer Ring	4	71483820	71483838	71483846		71483853	71483861	
34	Retainer Ring	4	71483887	71483895	71483903		71483911	71483929	
35	Cover	4	71483945	71483952	71483960		71483978	----	
36	Pin, Cotter	1	71483994						
37	Spacer, Adjusting, Wide	4	----						71484000
38	Hand Wheel Chain (5 x 23.7)	**	HC523ZP						
39	Bushing	1	----						71485890
40	Pin, Dowel	2	----						71485908
41	Key	1	71488712						---
42	Capacity Plate	1	71484158	71484166	71484174	71484182	71484190	71484208	
43	Warning Plate	1	71485932						
44	Drive Screw	8	71485924						

** Order twice the length plus 1 foot of chain drop required (example: HC523ZP - 21, for 10 foot drop)

PARTS ORDERING INFORMATION

The use of other than **Ingersoll-Rand** Material Handling replacement parts may result in decreased trolley performance and may invalidate the 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.

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.**

Disposal

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.

WARRANTY

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, Order Status and Technical Support

**Ingersoll-Rand
Distribution Center**
P.O. Box 618
510 Hester Drive
White House, TN 37188
Phone: (615) 672-0321
Fax: (615) 672-0801

Web Site at:
www.ingersoll-rand.com

Regional Sales Offices

Chicago, IL
888 Industrial Drive
Elmhurst, IL 60126
Phone: (630) 530-3800
Fax: (630) 530-3891

Detroit, MI
23192 Commerce Drive
Farmington Hills, MI 48335
Phone: (248) 476-6677
Fax: (248) 476-6670

Houston, TX
450 Gears Road
Suite 210
Houston, TX 77067-4516
Phone: (281) 872-6800
Fax: (281) 872-6807

Los Angeles, CA
11909 E. Telegraph Road
Santa Fe Springs, CA 90670-0525
Phone: (562) 948-4189
Fax: (562) 948-1828

Philadelphia, PA
P.O. Box 425
900 E. 8th Ave., Suite 103
King of Prussia, PA 19406
Phone: (610) 337-5930
Fax: (610) 337-5912

International Office Locations

Offices and distributors in principal cities throughout the world. Contact the nearest **Ingersoll-Rand** office for the name and address of the distributor in your country or write/fax to:

**Canada
National Sales Office
Regional Warehouse
Toronto, Ontario**
51 Worcester Road
Rexdale, Ontario
M9W 4K2
Phone: (416) 213-4500
Fax: (416) 213-4510
Order Desk
Fax: (416) 213-4605

Regional Sales Offices

Edmonton, Alberta
1430 Weber Center
5555 Calgary Trail N.W.
Edmonton, Alberta
T6H 5G8
Phone: (403) 438-5039
Fax: (403) 437-3145

Montreal, Quebec
3501 St. Charles Blvd.
Kirkland, Quebec
H9H 4S3
Phone: (514) 695-9040
Fax: (514) 695-0963

British Columbia
1200 Cliveden Avenue
Delta, B.C.
V3M 6G4
Phone: (604) 523-0803
Fax: (604) 523-001

**Latin America Operations
Ingersoll-Rand
Production Equipment Group**
730 N.W. 107 Avenue
Suite 300, Miami, FL
33172-3107
Phone: (305) 559-0500
Fax: (305) 222-0864

**Europe, Middle East and Africa
Ingersoll-Rand
Material Handling
Douai Operations**
111, avenue Roger Salengro
59450 Sin Le Noble, France
Phone: (33) 3-27-93-08-08
Fax: (33) 3-27-93-08-00

**Asia Pacific Operations
Ingersoll-Rand**
Suite 1201-3 12/F
Central Plaza
18 Harbour Road
Wanchai, Hong Kong
Phone: (852) 9794 1673
Fax (852) 9794 7895

**Russia
Ingersoll-Rand**
Kuznetsky Most 21/5
Entrance 3
Moscow, Russia 103895
Phone: (7) 501 923 9134
Fax: (7) 501 924 4625