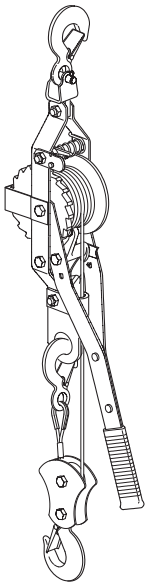
PARTS, OPERATION AND MAINTENANCE MANUAL
for
RATCHET PULLER MODELS

P6H (Wire Rope)
1000 lb (450 kg) Single Line

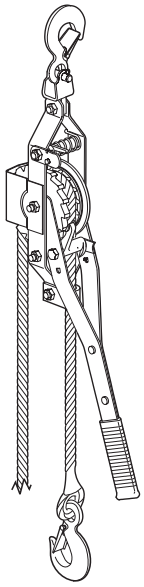
P15H (Wire Rope)
1000 lb (450 kg) Single Line

P15D3H (Wire Rope)
1000 lb (450 kg) Single Line
2000 lb (900 kg) Double Line

PR (Synthetic Rope)
1100 lb (500 kg) Single Line



(Dwg. MHP1894)



(Dwg. MHP1901)

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 puller for lifting, supporting, or transporting people or lifting or supporting loads over people.

Always operate, inspect and maintain this puller in accordance with ASME B30.21 and any other applicable safety codes and regulations.

Form MHD56010
Edition 13
July 1999
71018600

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 should read 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 hoist for lifting, supporting, or transporting people or lifting or supporting loads over people.
• Pullers are designed to provide a 4 to 1 safety factor and are factory tested to 125% of the rated load. The supporting structures and load-attaching devices used in conjunction with these pullers must provide adequate support to handle all puller operations plus the weight of puller and attached equipment. This is the customer's responsibility. If in doubt, consult a registered structural engineer.

Ingersoll-Rand Material Handling pullers are manufactured in accordance with the latest ASME B30.21 standards.

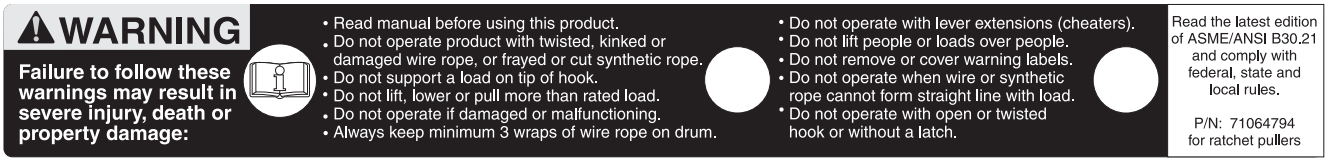
The National Safety Council, Accident Prevention Manual for Industrial Operations, Eighth Edition and other recognized safety sources make a common point: Employees who work near cranes or assist in hooking on or arranging a load should be instructed to keep out from under the load. From a safety standpoint, one factor is paramount: conduct all pulling or lifting 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.

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, connected 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.

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

WARNING LABEL

Each puller is supplied from the factory with the warning label shown. If the label is not attached to your puller, order a new label and install it. Refer to the parts list for the part number. Read and obey all warnings and other safety information attached to this puller. Warning label may not be shown actual size. The warning label must be clearly visible on the puller handle at all times.



SAFE OPERATING INSTRUCTIONS

The following warnings and operating instructions have been adapted in part from American National Standard ASME B30.21 and are intended to avoid unsafe operating practices which might lead to injury or property damage.

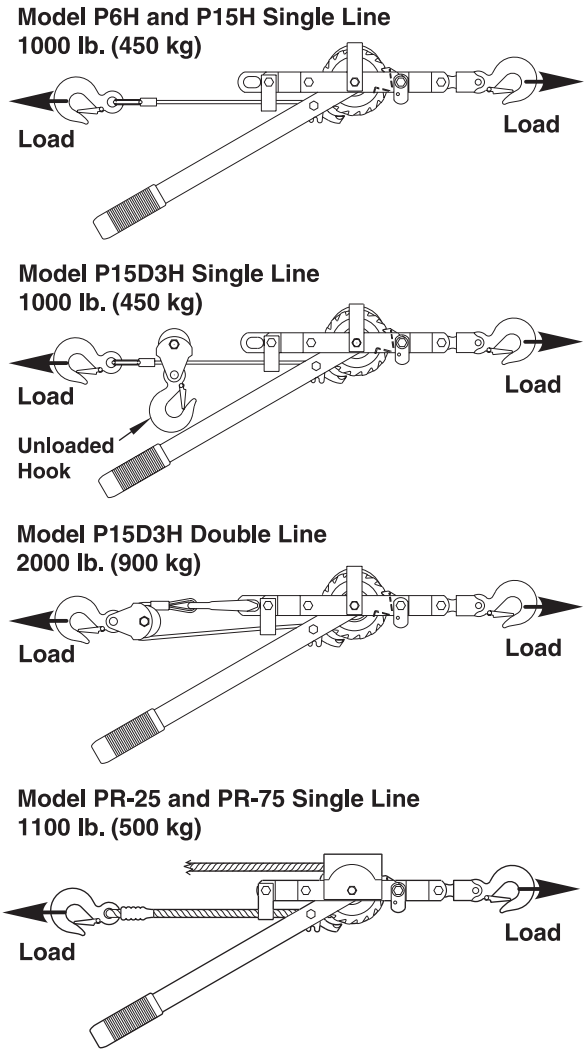
Safe Operating Instructions are provided to make an operator aware of dangerous practices to avoid and are not necessarily limited to the following list. Refer to specific sections in the manual for additional safety information.

1. Only allow personnel trained in safety and operation to operate the puller.
2. Only operate a puller if you are physically fit to do so.
3. When a "**DO NOT OPERATE**" sign is placed on the puller, do not operate the puller until the sign has been removed by designated personnel.
4. Before each use, the operator should inspect the puller for wear or damage.
5. Never use a puller which inspection indicates is worn or damaged.
6. Do not use puller if hook latch has been sprung or broken.
7. Check that hook latches are engaged before using.
8. Never use puller load line as a sling.
9. Only pull or lift loads less than or equal to rated capacity of puller. Refer to capacity labels attached to puller.
10. Position load correctly. Do not place load on hooks except in a straight pulling line. Do not "side pull" or "yard."
11. Never operate a puller with twisted, kinked, or damaged wire rope or a frayed or cut synthetic rope.
12. Do not force a hook into place by hammering.
13. Be certain load is properly seated in saddle of hook and hook latch is engaged.
14. Do not support load on tip of hook.
15. Never run load line over a sharp edge. Use a sheave.
16. When using two pullers on one load, select two pullers both having rated capacities equal to or more than the load. This provides adequate safety in the event of a sudden load shift.
17. Pay attention to load at all times when operating puller.
18. Always ensure that you, and all other people, are clear of the path of the load. Do not lift a load over people.
19. Never use puller for lifting or lowering people, and never allow anyone to stand on a moving or suspended load.
20. Ease slack out of load line and sling when starting a lift or pull. Do not jerk load.
21. Do not swing a suspended load.
22. Do not leave a load suspended when puller is unattended or not in use.
23. Never weld or cut a load suspended by puller.
24. Never use puller wire rope as a welding electrode.
25. Do not operate puller if jamming, overloading or binding occurs.
26. Do not use a cheater bar or extended handle.
27. Always use gloves when handling wire rope.
28. When tensioning heavy loads allow for stretch in synthetic rope.

SPECIFICATIONS

Model No.		Rated Capacity		Pulling Distance		Rope Diameter		Min. Distance Between Hooks		Net Weight	
		lb	kg	feet	metre	inch	mm	inch	mm	lb	kg
P6H	Single Line	1000	450	6	1.8	3/16	5	18	457	8	3.6
P15H				15	4.6						
P15D3H	Double Line	2000	900	7.5	2.3			24	610	10	4.5
PR-25	Single Line Only	1100	500	23	7	5/8	16	27	686	10.8	4.9
PR-75				73	22.3					17.4	7.9

Puller Loading Methods



(Dwg. MHP0420)

WARNING

• Always maintain three or more wraps of wire rope on the drum.
• Do not use a "cheater bar" or extended handle.

Model P15D-3H puller has a capacity of 1,000 lbs (450 kg) when rigged single line. For a capacity of 2,000 lbs (900 kg), attach hook (25) to hook link (11) and attach pulley block assembly (35) to load. Pullers may be supplied with hook link (11) at right angles to frame for packaging purposes only. When a load is applied, hook link (11) will rotate 90 degrees to align hook link (11), hook (25) and load. If hook link (11) rotates less than 90 degrees, slacken capscrew (21) and tap hook link lightly into position. Retighten capscrew (21).

Models PR-25 and PR-75 pullers have a capacity of 1100 lbs. (500 kg). These models are designed for SINGLE line use only.

Positioning Unloaded Hook (Free Spooling)

Refer to Dwg. MHP0458 on page 5.

1. Ensure there is no load on load line.
2. Move selector lever (10) to DN (Down) to disengage driving dog from drum teeth.

NOTICE

• The selector lever (10) is located on the handle near load line drum.

3. Disengage holding dog (5) from drum teeth by pressing holding dog lever, located on frame, towards drum.
4. Pull on load hook (25) or (45) and move to desired location.
5. Release holding dog lever.

Model P6 and P15 Tensioning the Load

1. Switch selector lever (10) to UP to engage driving dog with drum teeth.
2. Ratchet handle back and forth. Ratchet handle towards top hook assembly (36) to move drum.

Model PR Puller Tensioning the Load

Refer to Dwg. MHP1895 on page 4.

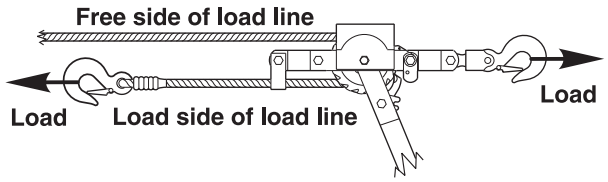
CAUTION

• To ensure proper operation of PR puller use ONLY genuine I-R synthetic rope.

1. Switch selector level (10) to UP to engage driving dog with drum teeth.
2. Attach load hook to load.
3. Using free side of load line, pull all slack out of load line and put some tension on load.
4. Ratchet handle back and forth. Ratchet handle towards top hook assembly (36) to move drum.

CAUTION

• If slack develops in load line while tensioning, remove this slack by pulling free side of load line prior to continued ratcheting.



(Dwg. MHP1895)

Releasing the Load

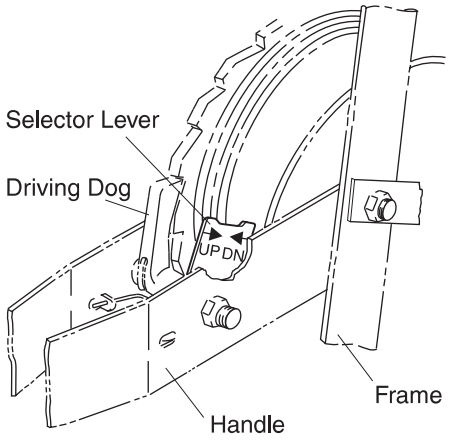
1. Switch selector lever (10) to DN (down) to disengage driving dog from drum teeth.
2. Move handle towards top hook assembly (36) until driving dog (4) disengages the holding dog (5), allowing load to be released one drum tooth at a time. Repeat short ratchet movement until load is in the desired location.

NOTICE

• When rewinding wire rope, apply tension. Eliminating slack helps achieve level and tight spooling and avoids "birdnesting".
• The holding dog is engaged whether lowering or raising the load.

Storing the puller

1. Always store puller in a no load condition.
2. Wipe off all dirt and water.
3. Oil wire rope, hook pins and hook latch pins.
4. Clean synthetic rope.
5. Store in a dry place.



(Dwg. MHP0458)

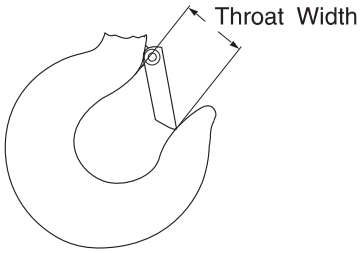
INSPECTION

There are two types of inspection, frequent inspection performed by operator and more thorough periodic inspections performed by personnel trained in operation and repair of this puller. Careful inspection on a regular basis will reveal potentially dangerous conditions while still in the early stages, allowing corrective action to be taken before condition becomes dangerous. Any deficiency revealed through inspection must be corrected before resuming operation of puller. A determination must be made as to whether a deficiency constitutes a safety hazard.

Frequent Inspection

The ratchet puller should be inspected prior to each use. Visual observations should be conducted during regular operation for any damage or evidence of malfunction.

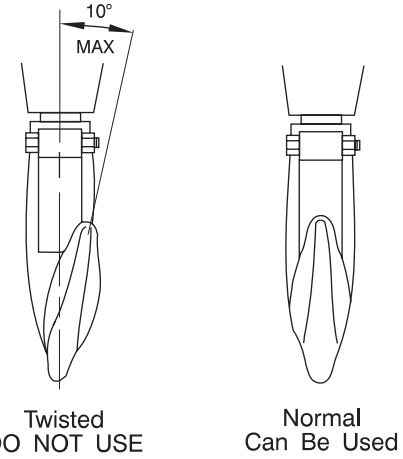
1. OPERATION. Ensure handle mechanism, driving dog and holding dog function properly. Repair or replace if damaged.
2. HOOKS. Check for wear or damage, increased throat width, bent shank or bending of hook. Replace hooks which exceed the discard width specified in Table 2 (refer to Dwg. MHP0040 on page 5) or exceed a 10° twist (refer to Dwg. MHP0111 on page 5). If hook latch snaps past tip of hook, hook is sprung and must be replaced.



(Dwg. MHP0040)

Table 2

Hook Model Identification	Throat Width		Discard Width	
	inches	mm	inches	mm
'D' on side	1.09	27.8	1.26	32
No marking	0.95	24.1	1.09	27.7



(Dwg. MHP0111)

3. HOOK LATCHES. Check operation of hook latch. Replace if broken or missing.
4. WIRE ROPE. Lubricate if necessary. Replace wire rope if damaged or excessively worn. Consult wire rope manufacturer's inspection information or a recognized safety source, such as the latest edition of National Safety Council, Accident Prevention Manual for Industrial Operations or ASME B30.21. The following list is a users guide to accepted standards by which wire rope must be judged and is not presented as a substitute for an experienced inspector.
   a. Damage, such as bird cages, kinking, core protrusion, crushing, heat damage, and main strand displacement.
   b. Corrosion and nicking.
   c. Wear of crown wires. Replace at 1/3 wear of the original diameter of any crown wire.
   d. Broken wires or strands. Replacement is necessary if any broken wires are found.
5. SYNTHETIC ROPE. Check synthetic rope for cleanliness. Remove any lubricants or dirt from rope. Inspect rope for abrasions, cuts or fraying, replace if any of these conditions are found.
6. WIRE ROPE REEVING. Check reeving and ensure wire rope is properly secured to the drum. Refer to "Installing a New Wire Rope" in "MAINTENANCE" section.
7. HANDLE. Check for cracks, bending and other damage. Replace if necessary.

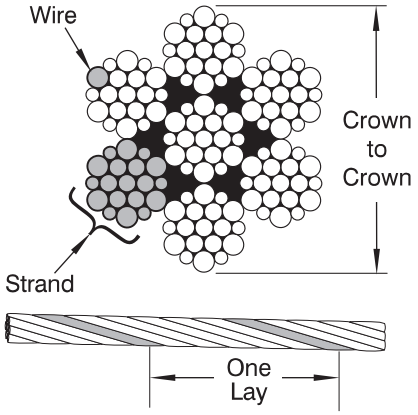
Periodic Inspection

According to ASME B30.21, frequency of periodic inspection depends on the severity of usage:

NORMAL	HEAVY	SEVERE
yearly	semiannually	quarterly

Disassembly may be required for HEAVY or SEVERE usage. Keep accumulative records of periodic inspections to provide a basis for continuing evaluation. Inspect all items in "Frequent Inspection". Also inspect the following:

1. FASTENERS. Check rivets, capscrews, nuts, pins and other fasteners on hooks and puller frame. Replace if missing and tighten or secure if loose.
2. ALL COMPONENTS. Inspect for wear, damage, distortion and cleanliness. If external evidence indicates the need, disassemble. Check frames, shafts, drum, sheaves, guides, springs and covers. Replace worn or damaged parts. Clean, lubricate and reassemble.
3. HOOKS. Inspect hooks for cracks. Use magnetic particle or dye penetrant to check for cracks. Inspect hook retaining parts. Tighten, repair or replace if necessary. Refer to latest edition of ASME B30.10 (Hooks) for additional hook inspection information.
4. DRUM AND SHEAVES. Check for excessive wear or damage. Replace if necessary.
5. HOLDING DOG MECHANISM. Check holding dog engages the drum teeth at all times. Check holding dog and drum teeth for cracks, wear or damage. Check torsion spring and holding dog spring assembly for distortion or damage. Repair or replace as necessary.
6. DRIVING DOG MECHANISM. Check driving dog engages the drum teeth when selector lever is in UP position. Check driving dog and drum teeth for cracks, wear or damage. Check driving dog spring for distortion or damage. Repair or replace as necessary.
7. LABELS. Check for presence and legibility. Replace if necessary.
8. WIRE ROPE. Besides the items in a frequent inspection, inspect for the following:
   a. Build-up of dirt and corrosion. Clean if necessary.
   b. Loose or damaged end connection. Replace if loose or damaged.
   c. Check wire rope is secured to drum.
   d. Changes in the size of the wire rope diameter. Periodically measure diameter of wire rope from crown-to-crown throughout the life of wire rope. The actual diameter should be recorded when wire rope is under equivalent loading and in the same operating section. If actual diameter of wire rope has decreased more than 1/64 in. (0.4 mm) a thorough examination of wire rope should be conducted by an experienced inspector to determine the suitability of the wire rope to remain in service. Refer to Dwg. MHP0056 on page 6.



(Dwg. MHP0056)

9. SYNTHETIC ROPE. Check synthetic rope for cleanliness. Remove any lubricants or dirt from rope. Inspect rope for abrasions, cuts or fraying, replace if any of these conditions are found.

LUBRICATION

Pivot Points and Bearings

As required by severity of usage, lubricate driving and holding dog pivot points, and drum and pulley wheel bearing areas with **Ingersoll-Rand** LUBRI-LINK-GREEN or SAE 30W oil. If puller is disassembled, lubricate pivot points and bearing areas with grease.

Wire Rope

1. Clean with a brush or steam if there is dirt, rock dust or other foreign material on the surface of the wire rope.

⚠ CAUTION

• Do not use an acid-based solvent or other cleaning fluid.

2. Apply **Ingersoll-Rand** LUBRI-LINK-GREEN or SAE 30W oil.
3. Brush, drip or spray lubricant weekly, or more frequently, depending on severity of service.

Synthetic Rope

DO NOT lubricate. Keep synthetic rope clean.

⚠WARNING

• Never perform maintenance on the puller when there is a load on the load line.
• Before performing maintenance, tag handle:
WARNING - DO NOT OPERATE -
EQUIPMENT BEING REPAIRED.
• Only allow personnel trained in operation and service of this product to perform maintenance.
• Test to 125% of its rated capacity before returning to service.

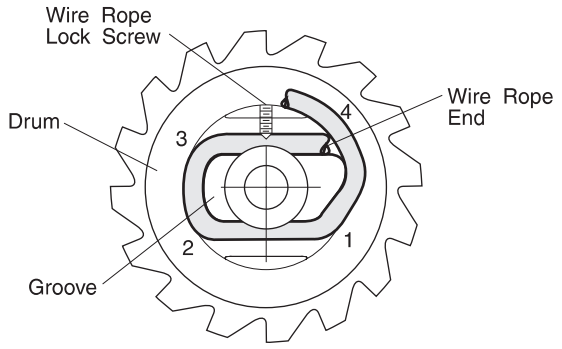
NOTICE

• Use only genuine Ingersoll-Rand Material Handling parts.

Installing a New Wire Rope

Refer to Dwg. MHP0081 on page 7.

1. Cut wire rope to length and fuse end to prevent fraying of strands in accordance with wire rope manufacturer's instructions.
2. On model P15D3H, insert end of wire rope through pulley block assembly (35). Then, on all models, insert wire rope end through rope guide (26).
3. Feed end of wire rope into Hole 1, out Hole 2, along drum recess and back into Hole 3.
4. Position the wire rope end just beneath the surface of the drum near Hole 4. Secure by tightening setscrew (38).



(Dwg. MHP0081)

5. Pull on hook end of wire rope until wire rope is seated in drum recess.
6. While keeping wire rope under tension, rewind wire rope onto drum.

Replacing Synthetic Rope

1. Feed non-hook end of rope up through rope guide (26) over drum (42) and down between drum guard (15) and drum.

To ensure proper operation of PR puller use ONLY genuine **Ingersoll-Rand** synthetic rope.

Adding a Pulley Block Assembly (Wire Rope Models Only)

To double the capacity (the speed will be halved) of a puller rigged for single line, install a pulley block assembly (35) and rig puller for double line.

To install a pulley block assembly, remove wire rope. Slide pulley block assembly over end of wire rope and reinstall wire rope.

Replacing a Hook Latch

1. Using an air or hand file, remove the head of the hook latch rivet.
2. Drive out hook latch rivet with a punch and remove latch and spring.

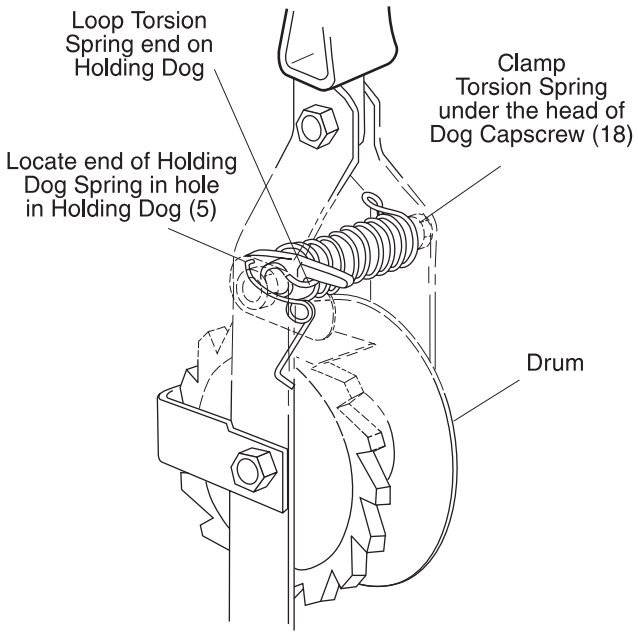
Installing New Hook Latch

1. Position spring in latch so long free ends of spring are under the latch.
2. Hold spring loop compressed and place spring and latch onto the hook.
3. Insert a new rivet and mushroom the head to secure latch.
4. Check latch compresses freely and spring returns when released. Ensure latch end does not go past tip of hook.

Holding Dog Release Spring Replacement

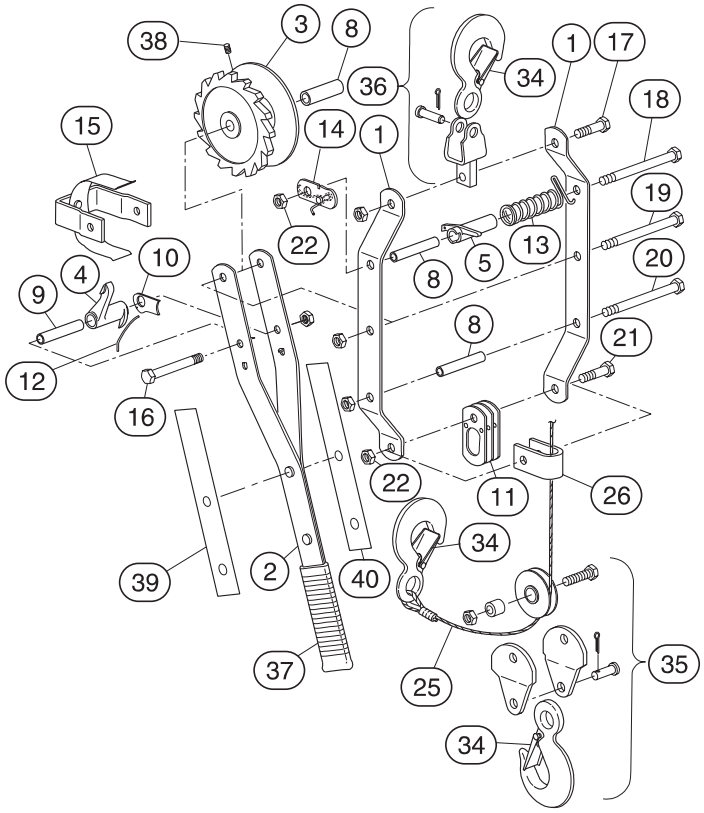
Refer to Dwg. MHP0237 on page 7.

1. Remove holding dog capscrew (18) and nut (22).
2. Remove holding dog spring assembly (14).
3. Install new holding dog spring assembly (14) in frame (1). Check end of holding dog spring (14) locates in the hole provided in holding dog (5).
4. Install holding dog capscrew (18) through holding dog spring assembly (14) with nut (22) and torque to 10-14 ft lbs (13-19 Nm).
5. Loop torsion spring (13) end onto holding dog (5).



(Dwg. MHP0237)

P-SERIES PULLER ASSEMBLY PARTS DRAWING



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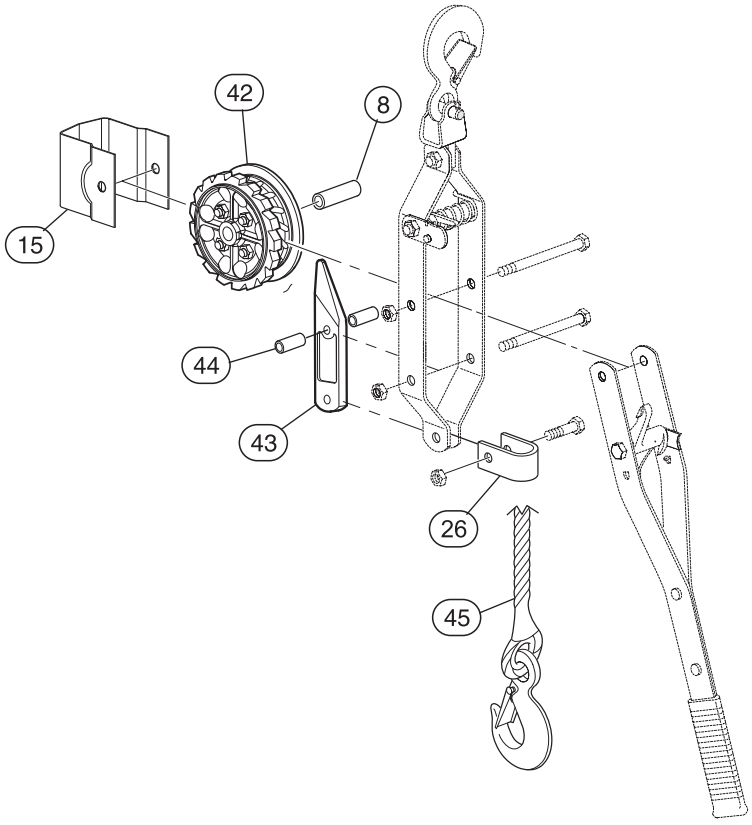


(Dwg. MHP1878)

P-SERIES PULLER ASSEMBLY PARTS LIST

ITEM NO.	DESCRIPTION OF PART	QTY. TOTAL		PART NUMBER	
		PR	P6 and P15	PR	P6 and P15
1	Frame	2		not sold separately	
2	Handle Assembly (Incl's item 37)	1		968-A	
3	Drum (Incl's item 38)	1		1988	
4	Driving Dog	1		962	
5	Holding Dog	1		961	
8	Frame Spacer Sleeve	2	3	972	
9	Handle Spacer Sleeve	1		973	
10	Selector Lever	1		1354	
11	Hook Link	3		4870	
• 12	Driving Dog Spring	1		975	
• 13	Torsion Spring	1		3735	
• 14	Holding Dog Spring Assembly	1		3931	
15	Drum Guard	1		71487193	20298
16	Driving Dog Shaft Capscrew	1		71063895	
17	Clevis Capscrew	1		53969	
18	Holding Dog Shaft Capscrew	1		53970	
19	Drum Shaft Capscrew	1		53968	
20	Frame Shaft Capscrew	1		71063903	
21	Rope Guide Capscrew	1		53972	
22	Self-Locking Jam Nut	6		53973	
• 25	Wire Rope Assembly with Hook and Hook Latch:				
	Model P6H	1		6459-D1	
	Model P15H and P15D-3H			6459-D3	
26	Rope Guide	1		71487235	970
• 34	Hook Latch (Incl's spring and rivet)	3		7328-A	
35	Pulley Block Assembly (Incl's item 34)	1		6444-D1-SLH	
36	Hook and Clevis Assembly (Incl's item 34)	1		6443	
37	Grip	1		P2G	
38	Setscrew	1		53271	
39	Warning Label	1		71064794	
40	Capacity Label	1		71487284	71107064
* 41	Lubricant (optional)			LUBRI-LINK-GREEN	
42	Drum	1	---	71487177	---
43	Drum Stripper	1	---	71487185	---
44	Spacer	2	---	71487201	---
45	Synthetic Rope Assembly with Hook and Hook Latch, 25 ft.	1	---	R-25	---
	Synthetic Rope Assembly with Hook and Hook Latch, 75 ft.		---	R-75	---

* Not shown on drawing

• Recommended spare.

TROUBLESHOOTING

This section provides basic troubleshooting information. Specific causes to problems are best identified by thorough inspections performed by personnel trained in safety, operation and maintenance of this equipment. The chart below provides a brief guide to common puller symptoms, probable causes and remedies.

P and PR Series

SYMPTOM	CAUSE	REMEDY
Puller does not ratchet.	Broken ratchet tooth.	Replace drum.
	Broken spring.	Replace spring.
	Distorted dog.	Replace dog.
	Bent frame.	Replace frame.
Puller will not unload.	Driving dog not in correct position.	Move selector lever to down or unload position.
	Driving dog spring damaged.	Replace spring.
	Holding dog spring damaged.	
	Wire rope is poorly spooled.	Remove wire rope and rewind onto drum under tension.
Puller will not pull.	Driving dog not in correct position.	Move selector lever to up or pull position.
	Driving dog spring damaged.	Replace spring.
	Holding dog spring damaged.	

PR Series

Drum rotates but load is not pulled.	Synthetic rope worn.	Replace synthetic rope.
	Puller overloaded.	Reduce load or use larger capacity puller.
	Incorrect replacement rope.	Replace with genuine I-R synthetic rope.

PARTS ORDERING INFORMATION

The use of replacement parts other than **Ingersoll-Rand** Material Handling may invalidate the Company's warranty.

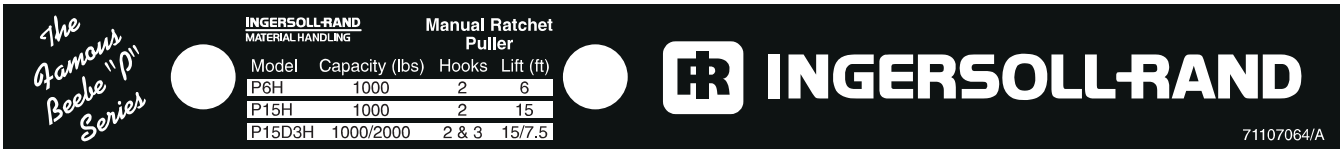
For prompt service and genuine **Ingersoll-Rand** Material Handling parts, provide your nearest Distributor with the following:

1. Complete model number as it appears on the capacity label (sample shown below): P6H, P15H, P15D3H or PR.
2. Part number and part description as shown in manual.
3. Quantity required.

For your convenience and future reference it is recommended that the following information be recorded.

Puller Model Number_____

Date Purchased _____



Capacity label is shown smaller than actual size.

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.

Pullers returned with opened, bent or twisted hooks, or without wire rope and hooks, will not be repaired or replaced under warranty.

NOTICE

• Continuing improvement and advancement of design may cause changes to this puller 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 puller has expired, it is recommended that the puller be disassembled, degreased and parts separated as to materials so that they may be recycled.

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 en route 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:
www.ingersoll-rand.com

Regional Sales Offices

Chicago, IL
888 Industrial Drive
Elmhurst, IL 60126
Phone: (630) 530-3873
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:

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

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) 213-4506

Regional Sales Offices

Edmonton, Alberta
1430 Weber Center
5555 Calgary Trail N.W.
Edmonton, Alberta
T6H 5P9
Phone: (780) 438-5039
Fax: (780) 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
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Fax: (604) 523-0801

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Ingersoll-Rand
Production Equipment Group
730 N.W. 107 Avenue, Suite 300
Miami, FL 33172-3107 USA
Phone: (305) 559-0500
Fax: (305) 559-7505

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Ingersoll-Rand
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59450 Sin Le Noble, France
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Fax: (33) 3-27-93-08-00

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