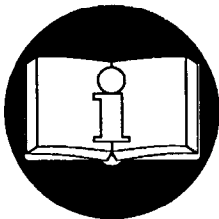


OPERATION AND MAINTENANCE MANUAL for SIX TON CHAIN DRIVEN TROLLEYS

TC6B-K430 Standard; Taper Tread Wheels; 3.33" to 7.25" Wide I-beams
TC6B-K430T Standard; Flat Tread Wheels; 3.25" to 7.25" Wide Flat-beams
TC6B-K1430 Spark Resistant; Taper Tread Wheels; 3.33" to 7.25" Wide I-beams
TC6B-K1430T Spark Resistant; Flat Tread Wheels; 3.25" to 7.25" Wide Flat-beams



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 (ANSI B30.11 and B30.16) and any other applicable safety codes and regulations. Refer all communications to the nearest Ingersoll-Rand Material Handling Office or Distributor.

Form MHD56036
Edition 2
June 1992
71061907

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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.

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.

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.

INSTALLATION

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

Chain Driven Trolleys are furnished with either taper tread wheels or flat tread wheels. Taper tread wheels are used on tapered beams such as I-beams while flat tread wheels are used on flat beams such as monorails and wide flange beams.

Always make certain the beam on which the Trolley is mounted is strong enough to support the combined weight of Trolley and Hoist, plus the weight of a maximum rated load of the Hoist, plus a factor of at least 500% of the combined weights. These Chain Driven Trolleys are to operate with a maximum load of six metric tons.

The Side Plates (19 or 20) must be spaced so that the wheel flanges extend beyond the width of the beam flange. The wheel flanges must be 1/8 to 3/16 inches (3.2 to 4.7 mm) wider than the beam flange for straight beams

and 3/16 to 1/4 inches (4.7 to 6.3 mm) wider for curved beams. The load must be under the center line of the Trolley and the center line of the supporting beam. To make certain that this condition exists, an equal number of Trolley Mounting Spacers (36) must be located between the Trolley Side Plate and the mounting lug on the Hoist in all four locations. If necessary, to obtain proper adjustment, the number of Spacers on one Side Plate may differ in quantity from the other Side Plate by a quantity of only one. However, the quantity of Spacers used on any one Side Plate must be identical. The remaining Spacers must be equally distributed on the outside of the Side Plates.

▲ WARNING

• **At least one Mounting Spacer must be used between the head of each Trolley Mounting Bolt (34) and the Side Plate, and between each Mounting Bolt Nut (35) and the Side Plate. Failure to do this could cause the Hoist to fall when used improperly. After the Trolley is properly spaced and mounted, tighten the mounting Bolt Nuts (51) to 250 ft lbs (339 N. m) of torque.**

LUBRICATION

Lubricants

Oil: Ingersoll-Rand No. 50 Oil or a good quality SAE 20 or 20W nondetergent motor oil. A good quality SAE 10 or 10W nondetergent motor oil may be used when temperatures remain below 50 Fahrenheit (10 Celsius).

Grease: Ingersoll-Rand No. 68 Grease or a good quality No. 2 multi-purpose grease.

Grease: Ingersoll-Rand No. 70 Grease or a good quality No. 2 extreme pressure multi-purpose grease.

Time Interval	Lubricant	Component	Procedure
Each 200 hours	Ingersoll-Rand No. 68 Grease	Wheel Bearings Chain Wheel Shaft	Inject 30 cc of grease into each Grease Fitting (32).
Each 500 hours or whenever the trolley is dis-assembled	Ingersoll-Rand No. 70 Grease	Gearing and Bearings	Disassemble the Motor and Gear Case as instructed in the disassembly instructions. Wipe the old grease from the gear and then liberally coat all the gears and bearings with grease. Reassemble the Trolley as instructed in the assembly instructions.

DISASSEMBLY INSTRUCTIONS

Disassembly



- **Disconnect the air supply hose to the hoist before performing any maintenance or repairs on the hoist or trolley. Remove the hoist and all loads if the trolley must be disassembled.**

General Instructions

1. Do not disassemble the Hand Chain Trolley any further than necessary to replace a worn or damaged part.
2. Do not remove any part which is a press fit in or on a subassembly unless the removal of that part is necessary for replacement or repairs.
3. Do not disassemble this Trolley unless you have a complete set of new gaskets and seals on hand for replacement.
4. Whenever grasping a part in a vise always use leather-covered or copper-covered vise jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.

Disassembly of the Gearing

1. If the Chain Bracket Assembly does not require disassembly, unscrew the Bracket Mounting Capscrews (5), and withdraw from the Gear Case (7).
2. Using snap ring pliers, remove Drive Gear Retaining Ring (18) and slide the Drive Gear (16) off the shaft of the Output Gear (13).
3. Unscrew the Gear Case Mounting Screws (8) and remove the Gear Case (7) and Gear Case Cover (11) from the Chain Wheel Side Plate (19). Keep the Gear Case Cover in position against the Gear Case and set the Gear Case on a workbench with the Cover upward.
4. If the Drive Gear Bearing (17) must be replaced, pull or press it from the Side Plate.
5. Separate the Gear Case Cover from the Gear Case and remove the Gear Case Gasket (10).
6. Lift the Output Gear (13) and Output Gear Thrust Washer (15) out of the Gear Case.
7. If the Output Gear Bearing (14) must be replaced, press it from the Gear Case.

Disassembly of the Trolley Wheel

1. Using an impact wrench, loosen and remove the Trolley Wheel Shaft Nut (25). Remove the Shaft Nut Lockwasher (25) and the Wheel Shaft Washer (33) from the Trolley Wheel Shaft (23) and pull the assembled Trolley Wheel (21 or 22) and Shaft out of Side Plate (19 or 20).
2. Slide the Wheel Shaft Spacer (31) off the Wheel Shaft.

3. Remove the four Wheel Capscrews (29) and Wheel Capscrew Nuts (30).
4. Remove the Wheel Bearing Plate (28) and Wheel Bearing Cover (26). Push on the threaded end of Trolley Wheel Shaft to remove it from the Wheel.
5. If the Trolley Wheel Bearing (27) must be replaced, press it from the Trolley Wheel.
6. Repeat this procedure on the remaining Trolley Wheels.

Assembly

General Instructions

1. Always press on the inner ring of a ball-type bearing when installing the bearing on a shaft.
2. Always press on the outer ring of a ball-type bearing when installing the bearing in a bearing recess.
3. Always press on the stamped end of a needle-type bearing when installing the bearing in a bearing recess.
4. Whenever grasping a part in a vise, always use leather-covered or copper-covered vis jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.

Assembly of the Trolley Wheel

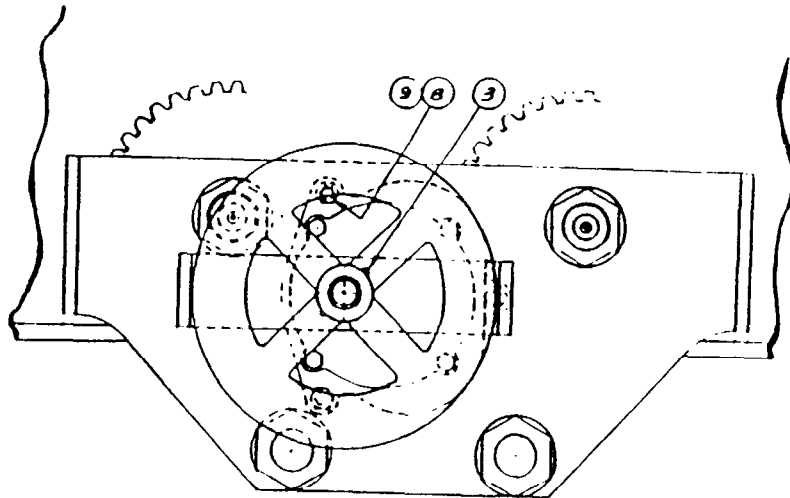
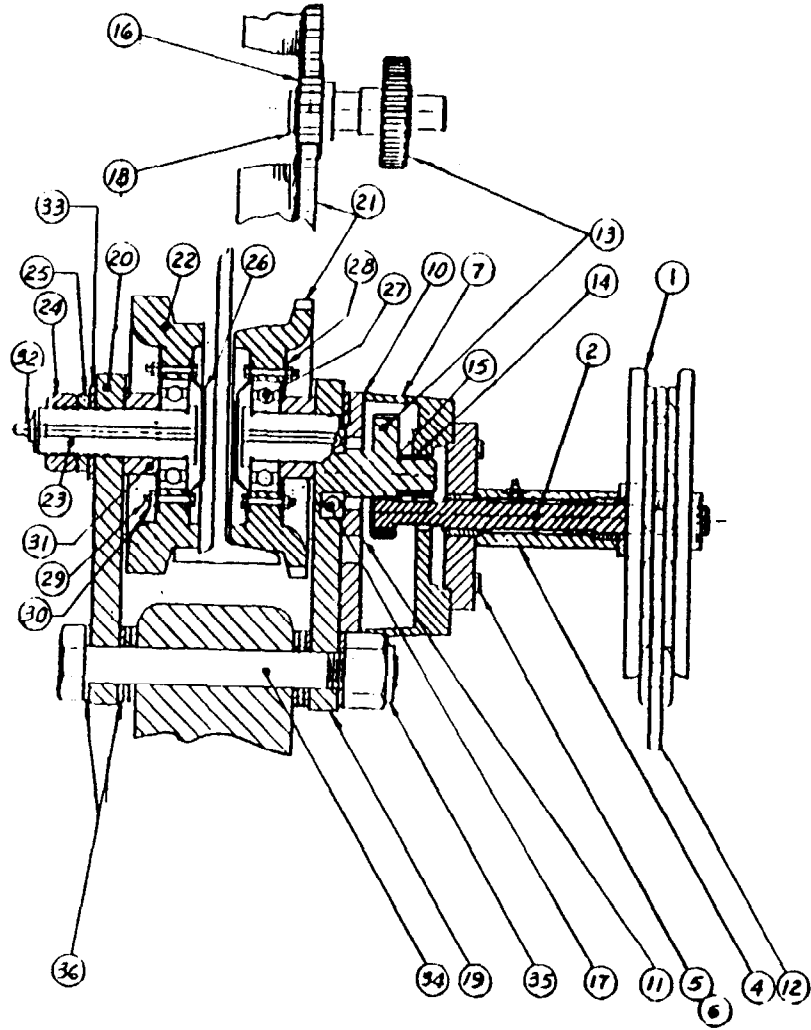
1. The Trolley Wheel Bearing (27) is a slide or light press fit into the Trolley Wheel (21 or 22). Install the Bearing in the Wheel with the shielded side of the Bearing toward the large wheel flange.
2. Insert the Trolley Wheel Shaft (23) into the Wheel Bearing with the threaded end of the Shaft toward the large wheel flange.
3. Install the four Wheel Bearing Plate (29) on the threaded end of the Shaft against the hub of the Wheel.
4. Position the Wheel Bearing Cover (26), concave side first, against the hub on the nonflanged side of the Wheel.
5. Insert the four Wheel Capscrews (29) from the Bearing Cover side of the Wheel, through the Cover, Wheel and Bearing Plate.
6. Install the four Wheel Capscrew Nuts (30) on the Screws and tighten them securely.
7. Install a Wheel Shaft Spacer (31) on the Wheel Shaft and insert the Shaft through the Side Plate. Note: Geared Trolley Wheels (21) must be installed on the Chain Wheel Side Plate (19) while Plain Trolley Wheels (22) must be installed on Plain Side Plates (20). Mount the Geared Wheel on the side of the Motor Side Plate opposite the recess for the Drive Gear Bearing (17).

8. Install a Wheel Shaft Washer (33), Shaft Nut Lockwasher (25) and Trolley Wheel Shaft Nut (24) on the threaded end of the Shaft. Tighten the Nut to 250 ft-lb (339 N m) Torque. An impact wrench may be used to begin tightening the Nut.
9. If the Grease Fitting (32) was removed from the Wheel Shaft, install it in the end of the Shaft and inject 30 cc of Ingersoll-Rand No. 68 Grease into the Wheel Bearing.
10. Repeat this procedure for the remaining Trolley Wheels.

Assembly of the Gearing

1. With the hand chain end of the Gear Case (7) resting on the table of an arbor press, press a new Output Gear Bearing (14) into the Gear Case if the old Bearing was removed.
2. Pack all bearings with Ingersoll-Rand No. 70 Grease.
3. Install the Output Gear Thrust Washer (15) on the short shaft of the Output Gear (13) and insert the shaft with the Washer into the Output Gear Bearing in the Gear Case. Make certain the Output Gear meshes with the small gear of the Intermediate Gear Assembly.
4. Pack the Gear Case with Ingersoll-Rand No. 70 Grease.
5. Place the Gear Case Gasket (10) against the Gear Case and position the Gear Case Cover against the Gasket and Gear Case. Make certain the Gear Case Alignment Pins enter the holes in the Cover and the bolt holes are aligned.
6. Install the Drive Gear Bearing (17) in the Chain Wheel Side Plate (14). The Bearing may be a light press or slide fit into the recess.
7. Position the Gear Case and Cover against the Side Plate making certain the Drive Gear Bearing enters the recess in the Gear Case Cover and the bolt holes are aligned.
8. Install the three Gear Case Mounting Screws (7) and Mounting Screw Lockwashers (8). Tighten the Screws to 20 ft-lb (27 N m) torque.
9. Slide the Drive Gear (16) onto the Shaft of the Output Gear and install the Drive Gear Retaining Ring (18). Coat the Drive Gear with Ingersoll-Rand No. 70 Grease.
10. If the Chain Wheel Bracket was not disassembled, liberally coat the Gear end of the Chain Wheel Shaft (2) with Ingersoll-Rand No. 70 Grease.
11. Mount the assembled Chain Wheel Bracket on the Gear Case so that the Shaft meshes with the Output Gear (13).
12. Install the Bracket Mounting Capscrews (5) and Lockwashers (6). Tighten the Bracket Mounting Capscrews to 11 ft-lb (15 N m) of torque.

CHAIN DRIVEN TROLLEY ASSEMBLY DRAWING



CHAIN DRIVEN TROLLEY PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.
1	Hand Chain Wheel	1	D02-470
2	Wheel Shaft	1	TC6B-475
3	Wheel Shaft Pin	1	D02-520
4	Wheel Bracket	1	TC6B-471
5	Bracket Capscrew	4	834-638
6	Lockwasher	4	34U-58
7	Gear Case	1	TC6B-353
8	Gear Case Mounting Screw	3	AHC68-22
9	Lockwasher	3	D02-321
10	Gear Case Gasket	1	TA3-354A
11	Gear Case Cover	1	TA6-502
*	Gear Case Alignment Pin	2	510-669A
12	Hand Chain (Length as Specified) Standard Trolley Spark Resistant Trolley	1	D02-B476 D02-1476A
13	Output Gear	1	TA843
14	Output Gear Bearing	1	20BM-399A
15	Output Gear Thrust Washer	1	CE110-596
16	Drive Gear	1	TA6-028
17	Drive Gear Bearing	1	SS800-22
18	Drive Gear Retaining Ring	1	CE220-631
19	Chain Wheel Side Plate Standard Spark Resistant	1	TA6-430 TA6A-1430
20	Plain Side Plate Standard Spark Resistant	1	TPA6-430 TPA6A-1430
21	Geared Trolley Wheel Standard Taper Tread Standard Flat Tread Spark Resistant Taper Tread Spark Resistant Flat Tread	2	D10-472B D10-T472B D10-1472B D10-T1472B
22	Plain Trolley Wheel Standard Taper Tread Standard Flat Head Spark Resistant Taper Tread Spark Resistant Flat Tread	2	D10-431B D10-T431B D10-1431B D10-T1431B
23	Trolley Wheel Shaft	4	D10-435A
24	Trolley Wheel Shaft Nut	4	D10-305A
25	Shaft Nut Lockwasher	4	Washer Lock 1.50
26	Wheel Bearing Cover	4	D10-954
27	Trolley Wheel Bearing	4	D10-956
28	Wheel Bearing Plate	4	D10-955
29	Wheel Capscrew	16	D10-957A
30	Wheel Capscrew Nut	16	503-639
31	Wheel Shaft Spacer	4	TP6-442A
32	Wheel Shaft Grease Fitting	4	23-189
33	Wheel Shaft Washer	4	Washer 1.50
34	Trolley Mounting Bolt	2	D10-439A-14
35	Mounting Bolt Nut	2	D10-440B
36	Trolley Mounting Spacer	72	D10-442
*	Caution Tag	1	TP200-943
*	Nameplate Drive Screw	4	R4K-302

* Not Illustrated

PARTS ORDERING INFORMATION

How to order repair parts for your chain driven trolley

Your chain Driven Trolley is designed and constructed to give you long, trouble-free service. In time it may become necessary to order and install new parts to replace those that have been subject to wear. For prompt service and genuine Ingersoll-Rand parts, place orders with your nearest Ingersoll-Rand Distributor. The use of other than Ingersoll-Rand replacement parts may result in decreased Trolley performance, and may invalidate all warranties. When ordering parts, give your Distributor the following data:

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

Return Goods Policy

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

NOTICE

• 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.

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.

NOTES

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

Ingersoll-Rand Material Handling Division

123 Bowser Avenue
North Vancouver, British
Columbia V7P 3H1
Phone (604) 985-4470
Fax: (604) 985-0160

Canada

National Sales Office Power Tool Division

Toronto, Ontario
51 Worcester Road
Rexdale, Ontario
M9W 4K2
Phone (416) 675-5611
Fax: (416) 675-6920

Calgary, Alberta

333 11th Avenue S.W.
Calgary, Alberta
T2R 0C7
(403) 261-8652

Montreal, Quebec

3501 St. Charles Blvd.
Kirkland, Quebec
H9H 4S3
(514) 695-9040

British Columbia

201-6351 Westminster Hwy
Richmond, B.C.
V7C 5C7
(604) 278-0459

Latin America Operations Ingersoll-Rand Co.

Power Tool Division

Latin America Operations

730 N.W. 107 Avenue
Suite 300, Miami, FL
33172-3107
Phone (305) 559-0500
Telex: 441617TLS UI
Fax: (305) 559-7505

Europe, Middle East and Africa

Ingersoll-Rand Interna- tional Sales

P.O. Box 23 Southmoor Rd
Wythenshawe
Manchester M23 9LN
United Kingdom
Phone (44) 61-902 9098
Fax: (44) 61-946 6375