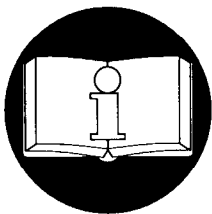


PARTS AND INSTALLATION MANUAL
for
RIGID MOUNT PLAIN AND GEARED TROLLEYS
used with
MLK, HLK, PALAIR PLUS and PALAIR CP
AIR CHAIN HOISTS



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 these trolleys for lifting, supporting, or transporting people or lifting or supporting loads over people.

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

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

INSTALLATION

Trolley and Hoist Assembly

1. If trolley is received preassembled, remove nuts (2) and washers (3) from suspension shafts (19) on plain side plate (1) side.
2. Pull plain side plate assembly from suspension shafts (19).
3. Loosen setscrews (20) in suspension bracket (22) and remove suspension bracket from suspension shafts.
4. Install suspension bracket on hoist.

For **ML250K, ML250KS, ML250KR, ML500K and ML500KS** hoists align holes in hoist and suspension bracket (22) and drive pins (40) into position until pins extend equal amounts on each side.

For **ML500KR, ML1000K and ML1000KS** hoists align holes in hoist and suspension bracket (22) and drive pins (40) into position until pins extend equal amounts on each side. Apply a small amount of Loctite® 242 to capscrew threads and install capscrews (42) through suspension bracket into hoist. Torque to 17 to 19 lb ft (23 to 26 Nm).

For **Palair Plus, 3CP1500, 3CP3000 and 6CP3000** hoists align holes in hoist and suspension bracket (22) and install capscrews (51), washers (53) and nuts (52). Torque **Palair Plus** nuts to 29 lb ft (39 Nm), torque **3CP1500** nuts to 58 lb ft (78 Nm), torque **3CP3000** and **6CP3000** nuts to 159 lb ft (215 Nm).

For **HL1000K, HL1500K, HL2000K and HL3000K** hoists apply a small amount of Loctite® 242 to threads on capscrews (42) and (44). Loosely install anchor bracket (43) to suspension bracket (22) with capscrews (44). Install suspension and anchor bracket assembly to hoist with capscrews (42) and (44).

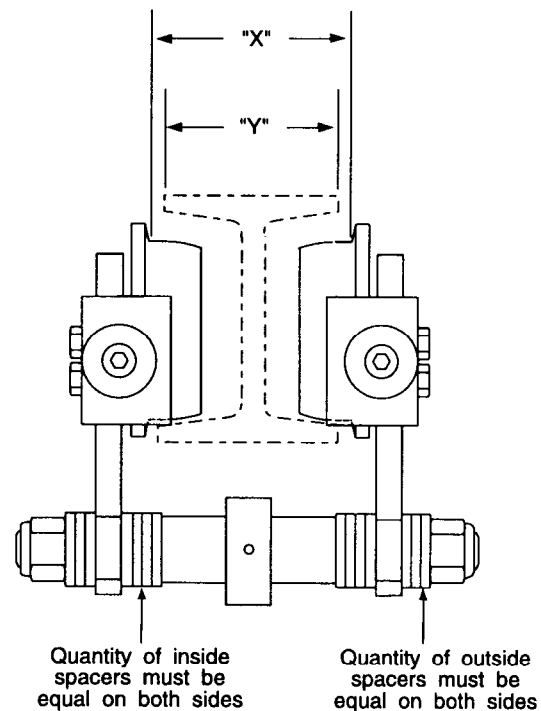
Torque capscrews (44) to 75 to 125 lb ft (100 to 170 Nm) and capscrews (42) to 150 to 170 lb ft (200 to 230 Nm).

For **HL4500K and HL6000K** hoists align holes in hoist and suspension bracket (22) and install pins (45). Install a washer (46) at each end of the pins (45) and secure with pins (47).

5. Install suspension bracket and hoist assembly on suspension shafts.
6. Align setscrews (20) with dimple positions in suspension shafts (19) and tighten setscrews.
7. Install plain side plate assembly on suspension shafts.
8. Install washers (3) and nuts (2) on suspension shafts. Verify washers are positioned to provide correct trolley to beam clearance.
9. On **ML500KR, ML1000K, ML1000KS, HL2000K and HL3000K** hoists attach load chain end to chain anchor with pins (48) and (49). Bend the ends of pin (49) apart to secure.

Trolley To Beam Installation

When installing a trolley on a beam, measure the beam flange and temporarily install the trolley and hoist assembly on the beam to determine the exact distribution and arrangement of the washers (3). The distance between the wheel flanges should be 3/16 to 1/4 in. (5 to 6 mm) greater than the width of the beam flange. As shown in Dwg. MHP0370 the difference between dimensions "X" and "Y" equals the total clearance. The number of washers between the trolley side plate and the shoulder on the suspension shaft (22) must be the same in all four locations in order to keep the hoist centered under the I-beam. The remaining spacers must be equally distributed on the outside of the side plates.



(Dwg. MHP0370)

CAUTION

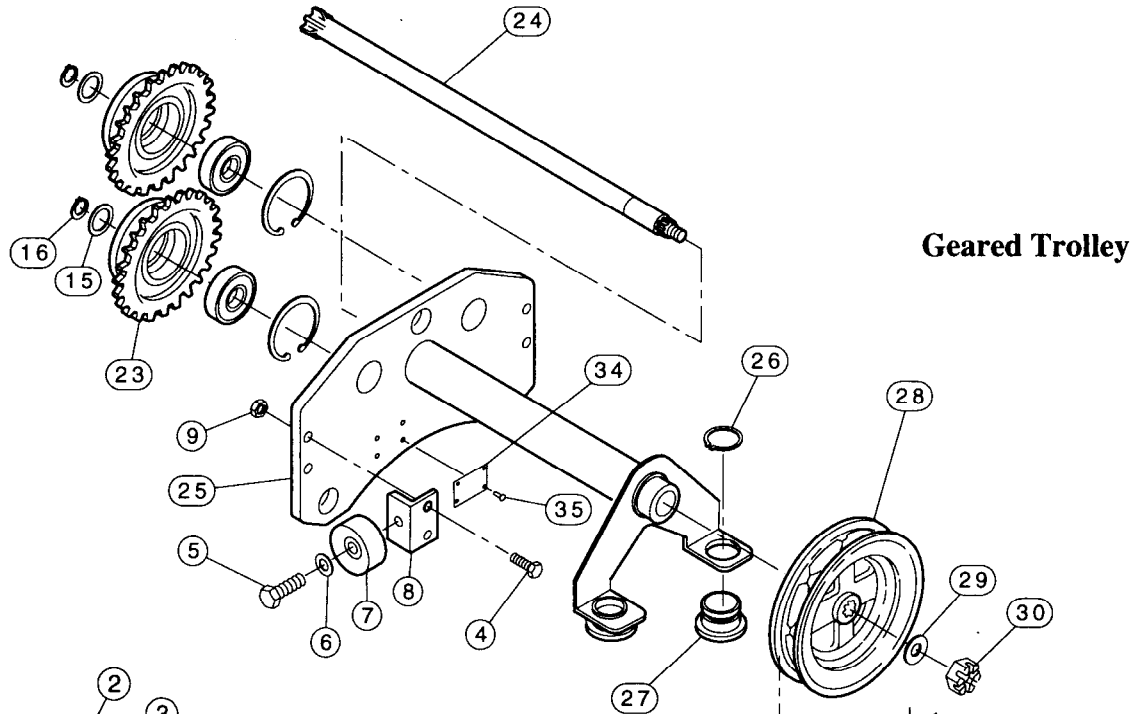
- Ensure position and quantity of washers between each suspension shaft shoulder and side plate is the same in all four locations.

Ensure trolley beam stops are installed prior to operating hoist and trolley.

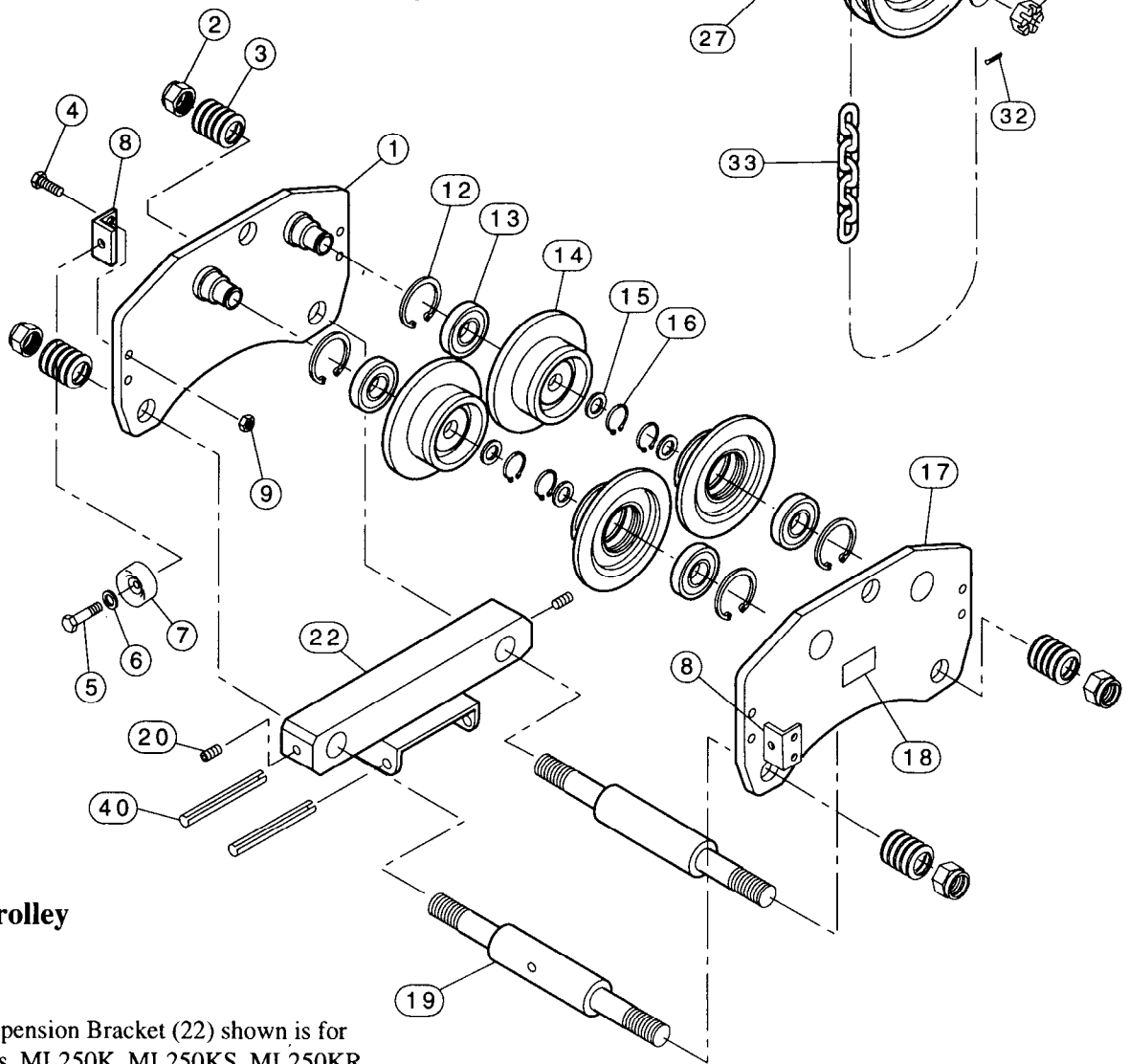
When installing the hoist and trolley on the beam, make certain the side plates are parallel and vertical. After installation, operate the trolley over the entire length of the beam with a capacity load suspended 4 to 6 inches (100 to 150 mm) off the floor.

PLAIN AND GEARED TROLLEY ASSEMBLY DRAWINGS

(Dwg. MHP0295)



Geared Trolley



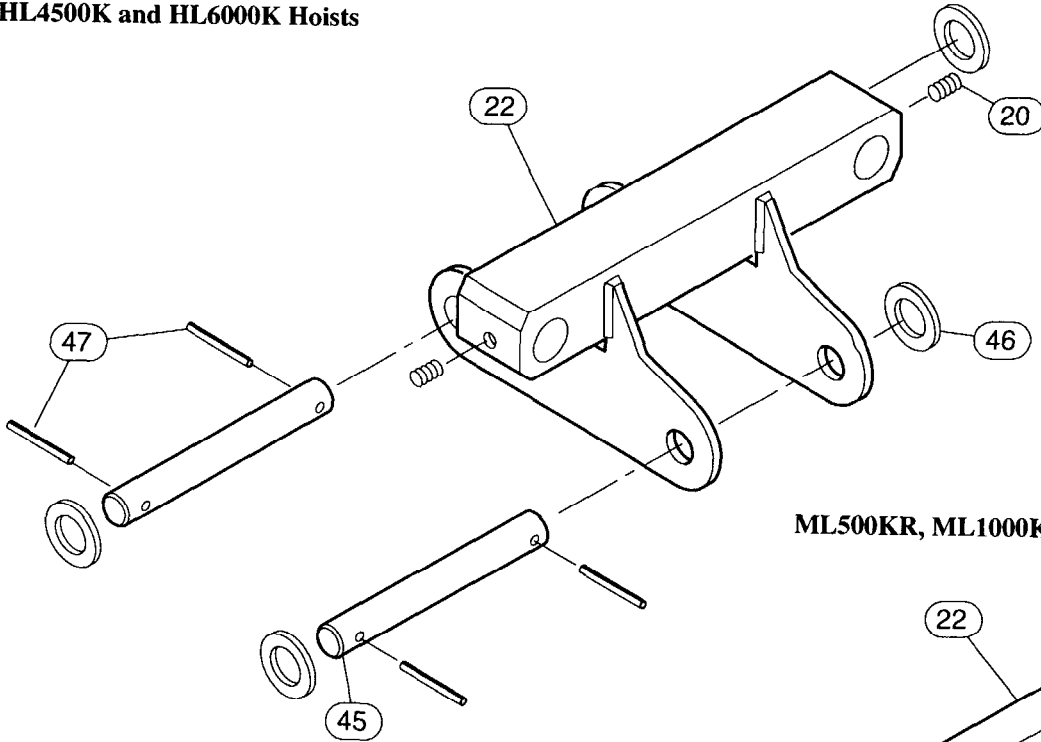
Plain Trolley

Note: Suspension Bracket (22) shown is for Palair Plus, ML250K, ML250KS, ML250KR, ML500K and ML500KS Hoists.

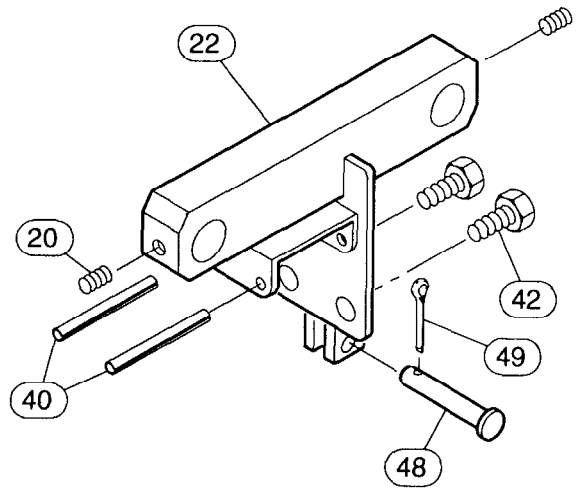
(Dwg. MHP0573)

TROLLEY SUSPENSION BRACKET DRAWINGS

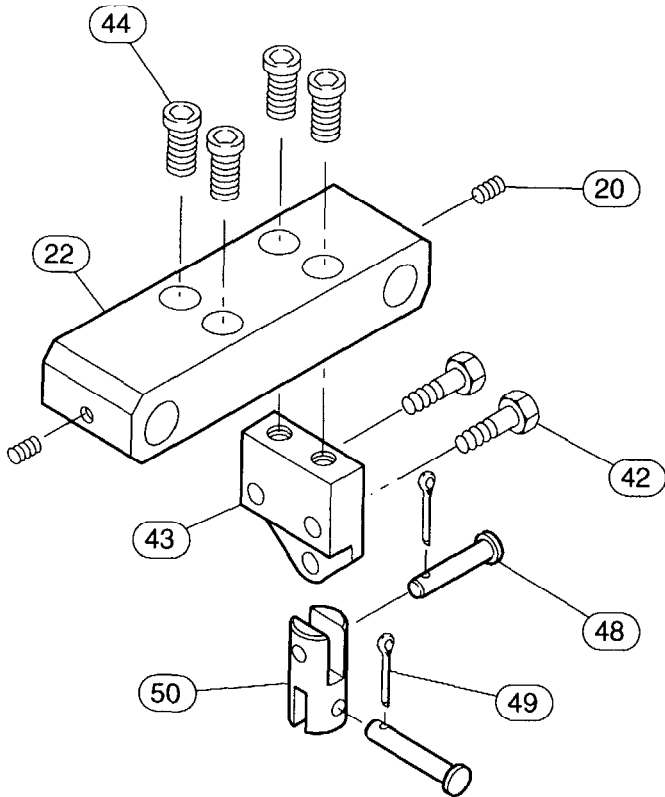
HL4500K and HL6000K Hoists



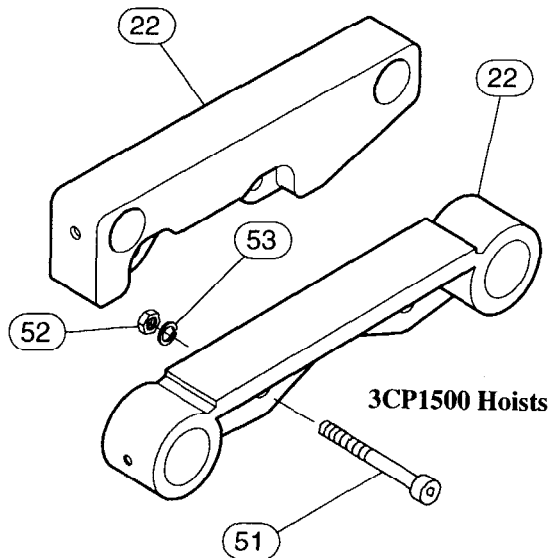
ML500KR, ML1000K and ML1000KS Hoists



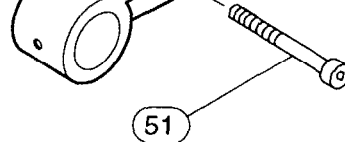
HL1000K, HL1500K, HL2000K and HL3000K Hoists



3CP3000 and 6CP3000 Hoists



3CP1500 Hoists



PLAIN AND GEARED TROLLEY PARTS LIST

Item No.	Description of Part	Qty Total	Part No. for Hoist Models				
			ML250K, ML250KS, ML250KR, ML500K and ML500KS	Palair Plus, ML500KR, ML1000K and ML1000KS	3CP1500, HL1000K and HL1500K	3CP3000, 6CP3000, HL2000K and HL3000K	HL4500K and HL6000K
1	Side Plate (Plain)	1	9741-010-OH		9741-020-OH	9741-030-OH	9741-050-OH
2	Nut	4	51011			53366	52286
3	Washer	See ()	52018 (36)			53076 (32)	54087 (32)
4	Capscrew	8	52906		71084081		71097869
5	Capscrew*	4	71098446				52905
6	Washer*	4	54785				51833
7	Bumper*	4	52973				51722
8	Bracket*	4	21575				21576-1
9	Nut*	8	54668		71020887		71020895
12	Retainer Ring	4	71893		71894	71895	71896
* 13	Bearing	4	71888		71889	71890	71891
14	Wheel (Plain)	4	70818		70819	70820	70821
	Wheel (Copper Plated)**		70818-CP		70819-CP	70820-CP	70821-CP
	Wheel (Solid Bronze)**		71003966		71003974	71003982	71003990
15	Washer	4	70822		70823	70824	70825
16	Retainer Ring	4	70827		70828	70829	70830
17	Side Plate (Plain)	1	9741-010		9741-020	9741-030	9741-050
18	Warning Label	1	71107130				
19	Suspension Shaft (3-5 in.)	2	9614-020-A			9614-030-A	9614-050-A
	Suspension Shaft (5-7 in.)		9614-020-B			9614-030-B	9614-050-B
	Suspension Shaft (7-9 in.)		9614-020-C			9614-030-C	9614-050-C
	Suspension Shaft (9-11 in.)		9614-020-D			9614-030-D	9614-050-D
20	Setscrew	2	50975				50855
22	Suspension Bracket	1	See Suspension Bracket Chart				
23	Wheel (Geared)	2	70885		70886	70887	70888
	Wheel (Copper Plated)**		70885-CP		70886-CP	70887-CP	70888-CP
	Wheel (Solid Bronze)**		71004014		71004022	71004030	71004048
24	Pinion	1	9966				
25	Side Plate (Geared)	1	9939-010		9939-020	9939-030	9939-050
26	Retainer Ring	2	51398				
* 27	Bushing	2	2982-1				
28	Handwheel (Nylon)	1	70877				
	Handwheel (Cast Iron)*		70763				
	Handwheel (Cast Iron Copper Plated)**		70763-CP				

* Recommended Spare

* Optional. Does not come standard with trolley. Parts must be ordered separately.

** Optional. Corrosion Resistant Feature.

PLAIN AND GEARED TROLLEY PARTS LIST (cont'd)

Item No.	Description of Part	Qty Total	Part No. for Hoist Models				
			ML250K, ML250KS, ML250KR, ML500K and ML500KS	Palair Plus, ML500KR, ML1000K and ML1000KS	3CP1500, HL1000K and HL1500K	3CP3000, 6CP3000, HL2000K and HL3000K	HL4500K and HL6000K
29	Washer	1	70876				
30	Nut	1	71701				
32	Pin	1	51996				
33	Chain	1	HCCF005				
	Chain (Zinc Plated)**		HCCF005ZP				
34	Nameplate	1	71106991-R				
35	Rivet	4	50915				
40	Pin	2	50958		---		
42*	Capscrew	2	---	53420	51023		---
43	Anchor Bracket	1	---		HLK-425		---
44	Capscrew	4	---		71084412		---
45	Pin	2	---				21447
46	Washer	4	---				54087
47	Pin	4	---				50823
48	Pin***	See ()	---	ML20-962A (1)	---	HLK-962 (2)	---
49	Pin, Cotter***	See ()	---	53456 (1)	---	D02-330 (2)	---
50	Chain Anchor***	1	---			HLK-373	---
51	Capscrew (see note)	2	---	4131-9606	4130-8406	4130-8606	---
52	Nut (see note)	2	---	4370-2311	4300-0211	4300-0911	---
53	Lockwasher (see note)	2	---	---	4520-0010	4520-0014	---

** Optional. Corrosion Resistant Feature.

*** Included as part of hoist assembly.

Notes: Items 51, 52 and 53 are used in place of item 40 on Palair Plus, 3CP1500, 3CP3000 and 6CP3000 hoists only.

Items 48, 49 and 50 are not used on Palair Plus, 3CP3000 and 6CP3000 hoists.

Suspension Bracket Chart

Hoist Model Number	Part Number of Suspension Bracket item (22)
ML250K, ML250KS, ML250KR, ML500K and ML500KS	21186
Palair Plus	21125
ML500KR, ML1000K and ML1000KS	21185
3CP1500	21284
HL1000K and HL1500K	21184
3CP3000 and 6CP3000	22192
HL2000K and HL3000K	21183
HL4500K and HL6000K	21443

PARTS ORDERING INFORMATION

Ingersoll-Rand trolleys and hoists are designed and constructed to provide long, trouble-free service. In time it may become necessary to order and install new parts to replace those that have been subjected to wear.

The use of other than **Ingersoll-Rand** Material Handling replacement parts may result in decreased trolley or hoist performance, and may, at the company's option invalidate the warranty. For prompt service and genuine **Ingersoll-Rand** Material Handling parts, provide your nearest distributor with the following:

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

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

Trolley/Hoist Model Number _____

Trolley/Hoist Serial Number _____

Date Purchased _____

Return Goods Policy

If it becomes necessary to return the complete trolley and/or hoist or certain parts to the factory, contact the distributor from whom you purchased the unit(s), or the nearest **Ingersoll-Rand** distributor in your area.

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

• **Continuing improvement and advancement of design may cause changes to this trolley and hoist 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 and hoist has expired, it is recommended that the trolley and hoist 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
Phone: (206) 624-0466
Fax: (206) 624-6265

or

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

For additional information on MLK, HLK, Palair Plus and Palair CP hoists consult the following manuals:
MLK Hoist Parts, Operation and Maintenance Manual Form Number P6554.
HLK Hoist Parts, Operation and Maintenance Manual Form Number P6587.
Palair Plus Hoist Parts, Operation and Maintenance Manual Form Number MHD56043.
Palair CP Hoist Parts, Operation and Maintenance Manual Form Number MHD56039.

United States Office Locations

For Order Entry and Order Status

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

For Technical Support

**Ingersoll-Rand
Material Handling**
P.O. Box 24046
2724 Sixth Avenue South
Seattle, WA 98124-0046
Phone: (206) 624-0466
Fax: (206) 624-6265

Regional Sales Offices

Chicago, IL
888 Industrial Drive
Elmhurst, IL 60126
Phone: (708) 530-3800
Fax: (708) 530-3891

Detroit, MI
23192 Commerce Drive
Farmington Hills, MI 48335
Phone: (810) 476-6677
Fax: (810) 476-6670

Houston, TX
Suite 150
2500 East T.C. Jester
Houston, TX 77008
Phone: (713) 864-3700
Fax: (713) 864-2244

Los Angeles, CA
11909 E. Telegraph Road
P.O. Box 2525
Santa Fe Springs, CA 90670
Phone: (310) 948-4189
Fax: (310) 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
Material Handling**
P.O. Box 24046
2724 Sixth Avenue South
Seattle, WA 98124-0046
USA
Phone: (206) 624-0466
Fax: (206) 624-6265

**Canada
National Sales Office
Regional Warehouse
Toronto, Ontario**
51 Worcester Road
Rexdale, Ontario
M9W 4K2
Phone: (416) 675-5611
Fax: (416) 213-4510
Order Desk
Fax: (416) 213-4506

Regional Sales Offices

Calgary, Alberta
44 Harley Road S.E.
Calgary, Alberta
T2V 3K3
Phone: (403) 252-4180
Fax: (403) 252-4462

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

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201-6351 Westminster Hwy
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730 N.W. 107 Avenue
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Kouhoku-Ku Yokohama-Shi,
Kanagawa Pref. 222, Japan
Phone: 81-45-476-7800
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World Trade Center
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Krasnopresnenskaya Nab. 12
Moscow, Russia 123610