

## IMPORTANT INFORMATION:

- A copy of our “Safe Operating Practices” Manuals are always available free of charge either by downloading it from our Technical Publications website @ [www.airwinch.com](http://www.airwinch.com) or by contacting the Factory at (800) 866-5457 for North America and (206) 624-0466 for International. The Safe Operating Practices manual must be read prior to anyone operating a **Ingersoll-Rand** winch or hoist. The manual form numbers are as follows:

“Safe Operating Practices Non-Man Rider™ Winches” Manual, Form No. MHD56250

“Safe Operating Practices for Man Rider™ Winches” Manual, Form No. MHD56251

“Safe Operating Practices for Pneumatic, Hydraulic and Electric Hoists” Manual, Form No. MHD56295

- Available winch options may require additional supplements to the basic winch manual.
- For Man Rider™ winches ensure a copy of the Man Rider™ supplement is made available to the operator prior to winch operation.

### Winch Man Rider™ Supplements:

Model:	Publication No.
FA2, FA2.5, FH2, FH2.5	MHD56046
FA5	MHD56042 and MHD56220
FA10	MHD56252
FA2.5A	MHD56236
FA2B and HU40A	MHD56207
FH10MR	MHD56212
Fulcrum Electric	MHD56277
LS500HLP/ LS1000HLP	SAM0004

Model:	Publication No.
LS500RLP	SAM0011
LS1000RLP	SAM0012
LS150RLP	SAM0082
LS150RLP/500/ 1000	SAM0115
LS150RLP and LS150PLP-PH	SAM0120
LS500RLP-E	SAM0122
LS150RLP- DP5M-F	SAM0184
LS150HLP	SAM0222

- We strongly recommend that ALL maintenance on **Ingersoll-Rand** equipment be carried out by personnel certified by **Ingersoll-Rand**, or by **Ingersoll-Rand** Authorized Service Centers.
- Contact the Factory if in doubt about installation, operation, inspection and maintenance instructions.
- Use only Genuine **Ingersoll-Rand** parts when maintaining or repairing a winch, hoist or any component of a winch or hoist.
- ANSI / ASME recommends that a winch or hoist (or any components of a winch or hoist) that has been repaired be tested prior to being placed into service:
  - \* **Winches** - ANSI / ASME B30.7 (BASE MOUNTED DRUM HOISTS) Refer to section 7.2.2 - Testing.
  - \* **Hoists** - ANSI / ASME B30.16 (OVERHEAD HOISTS - UNDERHUNG) Refer to section 16.2.2 - Testing.

# **force** <sup>TM</sup> **AIR WINCHES**

## **MODEL FA5 MAN RIDER<sup>TM</sup> WINCH SUPPLEMENT\***

\* This supplement should be used in conjunction with the Model FA5 Winch Parts, Operation and Maintenance Manual Form MHD56037.

These instructions apply only to winches designed by Ingersoll-Rand that are identified for personnel lifting by a permanent nameplate attached to the winch at the factory.



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

Always operate, inspect and maintain this winch in accordance with American Society of Mechanical Engineers Safety Code (ASME B30.7) and any other applicable safety codes and regulations.

**Ingersoll-Rand** offers, in its winch product line, a limited number of models referred to as *Man Rider* which are designed and manufactured to standards and specifications based on the recommendations of various regulatory bodies for the purpose of lifting people.

*Man Rider* winches are type-approved and/or certified to meet the requirements of the Offshore Oil Industry by one or more of the following regulatory bodies:

**American Bureau of Shipping (ABS), Lloyd's Register of Shipping (LRS) or Det Norske Veritas (DNV)** to comply with the UK Health and Safety Executive (HSE), UK Department of Energy (DEn), the Norwegian Maritime Directorate (NMD) or the Norwegian Petroleum Directorate (NPD).

In furnishing customers *Man Rider* winches, **Ingersoll-Rand** does not warrant the suitability of these winches for any particular use. It is the owner's and user's responsibility to determine the suitability of a *Man Rider* winch for a particular application. Further, it is the owner's and user's responsibility to check and satisfy all local, state, federal and country requirements pertaining to the lifting and lowering of persons.

### **WARNING**

• **Many agencies require on winches additional redundant safety devices that Ingersoll-Rand does not furnish. Additional devices are often required to bring the system up to elevator code standards.**

*Man Rider* winches manufactured by **Ingersoll-Rand** to ABS, LRS and/or DNV requirements are furnished with limitations; approval for use in personnel-lifting applications automatically terminates for any of the following reasons:

1. Winch does not meet other applicable codes or standards.
2. Winch is not part of an approved system.
3. Winch is not properly maintained in an "as new" condition with all parts intact and properly adjusted.
4. Winch is used in applications not approved by codes and regulations, or is used in applications inconsistent with manufacturer's operation and maintenance manual.
5. Changes in any of the standards or regulations after **Ingersoll-Rand's** initial shipment of the product.
6. More than one winch is used to attach to a common load.

### **WARNING**

• **Before using a *Man Rider* winch, be sure to check all regulations: local, state, federal and country, that may apply to the use of a winch or winch system for lifting and lowering people.**

7. The personnel platform shall be designed by a registered engineer competent in this area.

## NOTICE

• **Lifting personnel with this winch is STRICTLY LIMITED to off-shore marine applications specifically approved by maritime regulatory bodies. Suitable use is determined by regulatory bodies, not the manufacturer. DO NOT USE FOR personnel lifting applications not specifically approved by regulatory bodies.**

### Traceability

Load bearing parts are documented to provide traceability. Documentation includes chemical and physical properties of raw material, heat treating, hardening, tensile and charpy tests as required for the part.

Units with M1, M2 or M3 in the model code have traceable load bearing components.

**M1**–Material Traceability certificates according to EN 10204 (Ex DIN 50049) 2.2 on load bearing parts. Conformity documents affirm (by the manufacturer) that parts are in compliance with the requirements of the order based on non-specific inspection and testing (i.e. results are typical material properties for these parts).

**M2**–Material Traceability certificates according to EN 10204 (Ex DIN 50049) 3.1b on load bearing parts. Conformity documents affirm (by a department independent of the manufacturing department) that the actual parts are in compliance with the requirements of the order based on specific inspection and testing (i.e. results are actual material properties for these parts).

**M3**–Material Traceability certificates according to EN 10204 (Ex DIN 50049) 3.1b on load bearing parts. Conformity documents affirm (by a department independent of the manufacturing department) that the actual parts used in the product are in compliance with the order based on specific inspection and testing (i.e. results are actual material properties for these parts in a finished, as delivered condition).

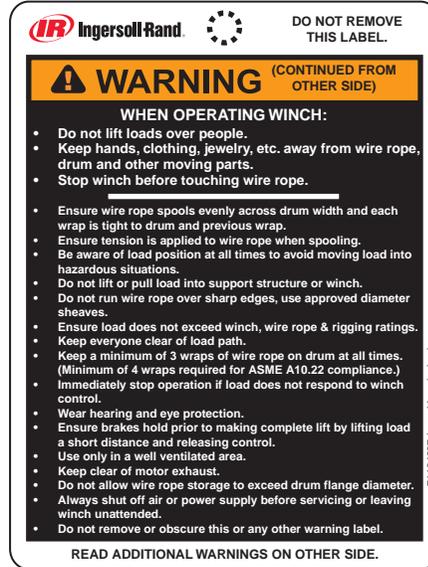
## GUIDELINES

With reference to the ABS, LRS, DNV, HSE, DEn, NMD and NPD, **Ingersoll-Rand** has developed the following requirements for its **Man Rider** winches. It is the responsibility of owners and operators to comply with rules and guidelines required by other local regulatory agencies.

DESCRIPTION	GUIDELINE
Wire rope to drum ratio	18:1
Wire rope design factor at <b>Man Rider</b> rating	Minimum of 8:1
Winch design factor at <b>Man Rider</b> rating	Minimum of 8:1
Throttle control	Spring return to neutral
Brakes (two)	One automatic brake required
	One manual or second automatic brake also required
Special <b>Man Rider</b> label	Required
Wire rope fleet angle	Not to exceed 1-1/2° (1-1/2 degrees)
Disengaging clutch	Not Allowed
Drum guard	Required
Overload protection	Optional, required to meet CE (Community Europe) directives
Travel limit switch	Optional (owner's responsibility)
Emergency lowering	Not required (Refer to "EMERGENCY LOWERING" section)
Design approval by regulatory or certifying authority	Required
Witness tests at time of manufacture	Required for some applications
Minimum clear drum flange	2.5 times wire rope diameter
Emergency stop device	Optional, required to meet CE (Community Europe) directives
Wire rope winding device	Owner's responsibility
Data book	Provided on request

# WARNING TAG AND LABEL

Each winch is shipped from the factory with the labels shown. If the labels are not attached to your winch, order new labels and install. Refer to the parts list for the part numbers. Labels are shown smaller than actual size.



## SAFE OPERATING INSTRUCTIONS

### Man Rider Operating Instructions



• **Failure to follow these instructions may result in termination of all applicable warranties. Ingersoll-Rand assumes no liability for any loss or damage resulting from operation of Man Rider winches if these operating instructions are not followed.**

1. Winch operator must maintain visual or signalman with personnel being lifted or lowered at all times.
2. Personnel operating the winch or being transferred are to have sufficient instruction/training concerning that operation before any movement takes place.
3. The winch installation must be arranged to conform to the statutory regulations covering personnel handling.
4. Prior to any personnel movement, the winch shall be inspected to ensure safe operation.
5. The lifting apparatus (basket, etc.) shall be inspected and certified for personnel-lifting prior to use.
6. The winch shall not be overloaded.
7. Do not operate without testing. Refer to "INSPECTION AND TESTING" procedures.
8. Do not operate winch in a damaged condition.
9. Do not operate a winch that has not been properly maintained or equipped.
10. Do not attach winch to an unsafe foundation. Refer to "INSTALLATION" section in Model FA5 Winch Operation and Maintenance Manual Form MHD56037.
11. Do not operate winch with any personnel near the line of force or where they are likely to come into contact with moving parts.
12. All signs and warning notices must be posted permanently on the winch.
13. Always maintain three or more wraps of wire rope on the drum.
14. Never leave a suspended load unattended.
15. Wire rope must be spooled off drum from the top, away from the operator.

### General Operating Instructions

The following warnings and operating instructions have been adapted in part from American Society of Mechanical Engineers (Safety) Standard ASME B30.7 and are intended to avoid unsafe operating practices which might lead to injury or property damage.

**Ingersoll-Rand** recognizes that most companies who use winches have a safety program in force at their facilities. 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.

1. Only allow people trained in safety and operation of this product to operate and maintain this winch.
2. Only operate a winch if you are physically fit to do so.
3. When a "DO NOT OPERATE" sign is placed on the winch, or controls, do not operate the winch until the sign has been removed by designated personnel.
4. Before each shift, the operator should inspect the winch for wear and damage. Never use a winch that inspection indicates is worn or damaged.
5. Never lift a load greater than the rated capacity of the winch. See nameplate attached to winch or refer to "SPECIFICATIONS" section.
6. Keep hands, clothing, etc. clear of moving parts.
7. Never place your hand in the throat area of a hook or near wire rope spooling onto or off the winch drum.
8. Always rig loads properly and carefully.
9. Be certain the load is properly seated in the saddle of the hook. Do not support the load on the tip of the hook.
10. Do not "side pull" or "yard".
11. Always ensure that you, and all other people, are clear of the path of the load. Do not lift a load over people.
12. Ease the slack out of the wire rope when starting to lift or pull. Do not jerk the load.
13. Do not swing a suspended load.
14. Do not leave a suspended load unattended.
15. Never operate a winch with twisted, kinked or damaged wire rope.
16. Pay attention to the load at all times when operating the winch.
17. Never use the wire rope as a sling.
18. After use, or when in a non-operational mode, the winch should be secured against unauthorized and unwarranted use.

# SPECIFICATIONS

## General

To determine your basic winch configuration, refer to the nameplate for model number information.

## Model Code Explanation:

	Example:	FA	5	MR	24	M	K	1	12
<b>Series:</b>									
<b>FA</b> =	<b>Air Powered</b>								
<b>Winch Capacity:</b>									
<b>5</b> =	<b>5 tons (full drum)</b>								
	<b>11,000 lbs. (4,545 kg) utility</b>								
	<b>3,180 lbs. (1,442 kg) personnel</b>								
<b>Man Rider</b>									
<b>MR</b> =	<i>Man Rider</i>								
<b>Drum Length:</b>									
<b>24</b> =	<b>Long, 24 in. (610 mm) standard</b>								
<b>Drum Brake:</b>									
<b>A</b> =	Automatic Drum Brake								
<b>M</b> =	<b>Manual Drum Brake</b>								
<b>Disc Brake:</b>									
<b>K</b> =	<b>Automatic Disc Brake</b>								
<b>Control:</b>									
<b>1</b> =	<b>Winch mounted lever throttle (standard)</b>								
<b>2XX</b> =	Remote full flow lever throttle (XX = Specify hose length (feet). Max 20 ft. (6 metres))								
<b>3XX</b> =	Remote pilot pendant throttle (XX = Specify hose length (feet). Max 50 ft. (15 metres))								
<b>4XX</b> =	Remote pilot lever throttle (XX = Specify hose length (feet). Max 50 ft. (15 metres))								
<b>Options:</b>									
<b>12</b> =	<b>Drum Grooving (number = wire rope size in 16ths, e.g. 18 = 18/16 = 1-1/8")</b>								
<b>G</b> =	Drum Guard (Required)								
<b>L</b> =	Limit Switch								
<b>W</b> =	Witness Test								

### Description of Operation

**FA5MR** winches are air powered, planetary geared units designed for lifting and pulling applications. **FA5MR** winches are supplied with an internal automatic disc brake and a manual or automatic externally mounted drum band brake.

The output from an externally mounted piston air motor is transmitted through a coupling and shaft to the planetary reduction gear assembly.

The output from the planetary reduction gear assembly is connected to the wire rope drum through the output shaft.

**FA5MR** winches are provided with a disc brake assembly consisting of friction plates splined to a hub which in turn is connected to the drive shaft from the air motor. The brake friction plates are clamped to the drum shaft through a spring applied piston. The brake remains applied until winch control valve is operated and winch payout or haul-in occurs. Air is introduced into brake piston chamber which is formed between brake piston and brake housing and causes brake piston to retract, compressing brake springs and releasing friction plates allowing motor shaft to rotate. A power failure or sudden loss of air will immediately cause spring applied brake to engage.

The drum band brake operates by applying a friction force between band brake and winch drum. The manual brake requires an operator to engage and disengage brake using a lever located on top of brake band. The automatic drum band brake operation is similar to disc brake operation; they are both fully disengaged in the haul-in and payout direction.

### Air System

Rated operating pressure is 90 psig (6.3 bar) at 700 scfm (20 cu.m/min).

### Rated Performance

(Based on rated air pressure and volume)

**FA5MR** Winch (18:1 wire rope to drum ratio)

Full drum line pull 6,870 lbs (3,116 kg).

Mid drum line speed 69 fpm (21 m/min).

**Drum Wire Rope Storage Capacity \* ft. (m)**

**FA5MR** Winch with a 15 in. (381 mm) barrel diameter and 27 in (659 mm) diameter drum flange.

\* Based on standards which require the top layer to be 2-1/2 times the wire rope diameter below the drum flange diameter using 3/4 inch (19 mm) diameter EIPS 6 X 19 IWRC wire rope with a maximum breaking strength of 58,800 lbs (26,672 kg). Wire rope construction providing a non-rotating or anti-spin characteristic is recommended. Wire rope storage capacities shown may vary from those published elsewhere.

**Drum Wire Rope Storage Capacity\*\***

Drum Length		Wire Rope Capacity	
inches	mm	3/4 inch	19 mm
8	203	235	72
12	305	365	111
16	406	495	151
24	610	55	230

\*\* Wire rope storage capacity based on wire rope top layer located a minimum of 2-1/2 (13 mm) times the wire rope diameter below drum flange and meets ASME B30.7.

## OPERATION

It is recommended that the user and owner check all appropriate and applicable regulations before placing this product into use.

The four most important aspects of winch operation are:

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

### WARNING

• **To avoid damage to the rigging, the structure supporting the rigging and the winch, do not “two-block”\* the end of the wire rope.**

\* “Two-blocking” occurs when the winch wire rope is multi-reeved using two separate sheave blocks which are allowed to come into contact with each other during winch operation. When this occurs extreme forces are exerted on the wire rope and sheave blocks which may result in equipment and/or rigging failure.

Operators must be physically competent. Operators must have no health condition which might affect their ability to act. They must have good hearing, vision and depth perception. The winch operator must be carefully instructed in his duties and must understand the operation of the winch, including a study of the manufacturer’s literature. The operator must thoroughly understand proper methods of hitching loads and must have a good attitude regarding safety. It is the operator’s responsibility to refuse to operate the winch under unsafe conditions.

1. Lifting and lowering speeds shall be operator controlled and as slow as feasible. **Ingersoll-Rand** recommends that they shall not exceed 100 feet (30 m) per minute. Any applicable codes and standards should be followed.
2. Personnel shall keep all parts of the body inside the platform during raising, lowering and positioning.
3. If the personnel platform is not landed on a solid surface, it shall be tied to the structure before personnel get off or on.
4. Tag lines shall be used where practical.
5. The winch operator shall remain at the controls at all times when handling personnel.
6. Handling of personnel shall be discontinued upon indication of any impending danger.

### WARNING

• **Maintain at least 3 wraps of wire rope on the drum at all times.**

7. The platform shall be hoisted approximately one foot (30 cms) and inspected to assure that it is secure and properly balanced before personnel are allowed to occupy the platform. Before elevating or lowering personnel, the following conditions shall exist:
  - a. Wire ropes shall be free of kinks.
  - b. Multiple part lines shall not be twisted around each other.
  - c. The primary point of wire rope attachment shall be centered over the platform so that the platform will not oscillate when lifted.

- d. If there is a slack wire rope condition, the hoisting mechanisms shall be inspected to assure all ropes are properly seated on drums and in sheaves.
8. When personnel are suspended, a signalman must be provided unless voice communication equipment is utilized. Signals must be visible or audible to operator at all times.
9. Personnel occupying the personnel platform shall wear a body belt with lanyard appropriately attached to the load block or to a structural member of the required strength within the platform.
10. Bridles and associated hardware for the personnel platform shall not be used for any other service.
11. Warning or limiting devices shall be installed to prevent “two- blocking,” unless audible communication has been provided and one of the persons being lifted has been specifically assigned the task of warning of the approach of a “two-block” condition.

### Training

#### Program

The employer shall provide and implement a training program for all supervisors and employees engaged in the operation of raising, lowering or suspending personnel platforms from a winch load line so that they are familiar with the requirements of this paragraph and are able to recognize the associated hazards and take appropriate measures.

#### Planning Meeting

A meeting attended by the winch operator, signalman, persons to be lifted and the person in charge of the task to be performed is required to be held to plan and review the procedures to be followed, including procedures for entering and leaving the personnel platform, the points at which employees will enter and leave the platform, signals, and the lift chart information.

### NOTICE

• **This meeting shall be held prior to the beginning of personnel hoisting operations at each new work location and thereafter for any new employees assigned to the operation.**

## EMERGENCY LOWERING

The following information is provided to allow for emergency lowering of the basket if operating power is lost to the winch. These procedures should only be used if no other method of safely lowering personnel is available.

### Winch Brake Configuration

*Man Rider* winches are supplied with a manual or automatic drum brake and a disc brake.

If your winch has a manual drum brake, it can be used to regulate the speed of descent of the basket when one of the options listed below is used.

When system operating air pressure is lost, air winch disc brakes and automatic drum brakes are engaged.

### Emergency Lowering Precautions

#### CAUTION

• The winch should be isolated from the supply air system during emergency lowering operations.

1. Emergency lowering operations must be performed by a minimum of two personnel trained in the operation of the winch.
2. Communication must be established between personnel in the basket and winch operator. Operator should be able to visually monitor the basket through its full range of travel.

### Emergency Lowering Procedure

The following options can be used for lowering the *Man Rider* basket in an emergency.

1. Have one operator stationed at the manual drum brake (if equipped) to slowly release the brake and regulate basket lowering speed when the disc brake is released.
2. Release the automatic disc and automatic band brake (if equipped). This can be accomplished by attaching an air supply of 40-50 psig (2.8-3.4 bar) and energizing the brake(s). Remove the dump valve from automatic brake and attach the air supply directly to the brake release port on the

brake housing and/or air cylinder. Apply air pressure until brake(s) is released.

3. If basket fails to lower, refer to 'Alternative Measures'.

### Alternative Measures

If the air brake release methods listed above do not allow the basket to lower, there may not be enough weight in the basket to overcome the natural mechanical resistance of the winch gearbox and motor.

1. If the motor will not backdrive, attach a line from another winch to the basket support and pull down the *Man Rider* basket.

#### CAUTION

• The line used to pull down the basket should be attached in such a manner as to NOT damage or deform the basket or cause basket to tip.

2. Alternatively, send additional weight to personnel in the basket using another line. This weight must be carefully and evenly distributed in the *Man Rider* basket. Ensure that this extra weight does NOT exceed the capacity of the basket or cause the basket to tilt.

#### CAUTION

• This weight should be sent in small, easily handled bundles and only enough to cause basket to lower. When lowering basket in this manner the brake(s) can be used to control lowering by releasing air pressure or applying the band brake.

### Lowering – Air Winch with Two Automatic Brakes

In one of the air supply lines, install a valve capable of releasing the energizing air pressure. This will allow the operator to release air pressure, causing the brake to actuate. In this manner the operator can slow or stop the lowering of the *Man Rider* basket at any time during this emergency procedure.

**Ingersoll-Rand** has available kits for emergency lowering. Contact technical sales for further information.

## INSPECTION AND TESTING

### Records and Reports

An approved test and inspection record should be maintained for each winch, listing all points requiring test and inspection. These reports should be dated, signed by the person who performed the test or inspection, and kept on file where they are readily available to authorized personnel.

1. Winches which are used to raise, lower or suspend personnel platforms shall be inspected by the qualified person at the beginning of each shift and prior to hoisting employees on the personnel platform after the winch has been used for any material handling operation.

2. A test lift shall be made for each work location and at the beginning of each shift to insure that all systems and controls are functioning properly.
3. The winch shall not be used for hoisting personnel if the test results in instability or causes permanent deformation of any component.
4. A visual inspection of the winch, personnel platform and rigging shall be conducted immediately after the test lift.

## CERTIFIED UNITS

For cold weather certified units adding a "CH" or "CHA" to the part number of the following parts will ensure certification is retained. Refer to appropriate parts section in the Model FA5 Winch Operation and Maintenance Manual Form MHD56037.

ITEM NO.	DESCRIPTION OF PART	ITEM NO.	DESCRIPTION OF PART
19	Splined Hub	84	Outboard Upright
35	Input Shaft	101	Pin
41	Drum Shaft	103	Link Stud
42	Upright, Inboard (motor end)	104	Brake Lever (manual)
47	Gear Carrier	121	Pin
64	Disc Brake Assembly	122	Pivot Bracket
80	Drum	124	Arm
82	Side Rail (front RH)	125	Connecting Link
83	Side Rail (back LH)	128	Brake Band Assembly (automatic and manual)

## WINCH PARTS

Refer to appropriate parts section in the **Model FA5** Winch Operation and Maintenance Manual Form MHD56037.

### ! WARNING

- **The user and owner are cautioned to be sure to check all appropriate and applicable regulations regarding the lifting or handling of people with this winch before putting it into use.**

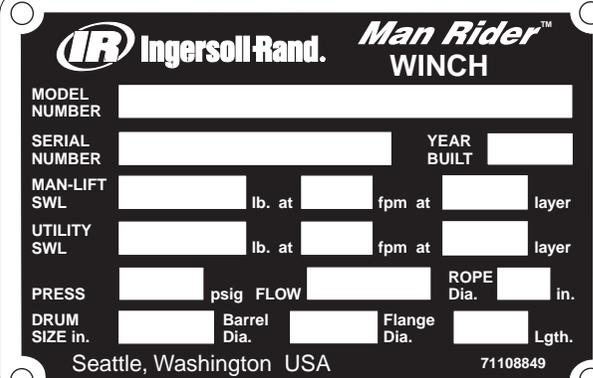
Refer all communications to the nearest **Ingersoll-Rand** Office or Distributor.

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

**Winch Model Number** \_\_\_\_\_

**Winch Serial Number** \_\_\_\_\_

**Date Purchased** \_\_\_\_\_



**IR Ingersoll-Rand. Man Rider™ WINCH**

MODEL NUMBER \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_ YEAR BUILT \_\_\_\_\_

MAN-LIFT SWL \_\_\_\_\_ lb. at \_\_\_\_\_ fpm at \_\_\_\_\_ layer

UTILITY SWL \_\_\_\_\_ lb. at \_\_\_\_\_ fpm at \_\_\_\_\_ layer

PRESS \_\_\_\_\_ psig FLOW \_\_\_\_\_ ROPE Dia. \_\_\_\_\_ in.

DRUM SIZE in. \_\_\_\_\_ Barrel Dia. \_\_\_\_\_ Flange Dia. \_\_\_\_\_ Lgth. \_\_\_\_\_

Seattle, Washington USA 71108849

The nameplate is located on the winch outboard upright. Nameplate may be shown smaller than actual size.

For **Man Rider** winches, item number (88) nameplate part number will be replaced with a different nameplate. To order a new nameplate a serial number must be provided.

## SERVICE NOTES

## United States Office Locations

### For Order Entry and Order Status

**Ingersoll-Rand  
Global Logistics**  
P.O. Box 618  
510 Hester Drive  
White House, TN 37188  
Phone: (615) 474-8665  
Fax: (615) 672-0854

### For Technical Support

**Ingersoll-Rand**  
P.O. Box 24046  
2724 Sixth Avenue South  
Seattle, WA 98124-0046  
Phone: (206) 624-0466 or  
(866) 273-FAST (3278)  
Fax: (206) 624-6265

### Web Site:

[www.airwinch.com](http://www.airwinch.com)

### Regional Sales Offices

**Annandale, NJ**  
P.O. Box 970  
1467 Route 31 South  
Annandale, NJ 08801  
Phone: (908) 238-7000  
Fax: (908) 238-7048

**Detroit, MI**  
1872 Enterprise Drive  
Rochester, MI 48309  
Phone: (248) 293-5700  
Fax: (248) 293-5800

## 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) 213-4506

### Latin America Operations Ingersoll-Rand

730 N.W. 107 Avenue  
Suite 300, Miami, FL, USA  
33172-3107  
Phone: (305) 559-0500  
Fax: (305) 222-0864

### Europe, Middle East and Africa

**Ingersoll-Rand  
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 Ltd.**  
42 Benoi Road  
Jurong, Singapore 629903  
Phone: 65-861-1555  
Fax: 65-861-0317

### Russia

**Ingersoll-Rand Co.**  
Presnensky Val, 19  
Moscow 123557 Russia  
Phone: 7-095-933-03-24  
Fax: 7-095-737-01-48

### Australia

**Ingersoll-Rand Ltd.**  
Landmark Corporate Centre  
Level 2 454-472 Nepean Hwy.  
Frankston, Vic 3199  
Australia  
Phone: 61 3 8781 1600  
Fax: 61 3 8781 1611