

INSTRUCTION SHEET

INSTALLATION OF VALVE BUSHING

Form MHD56126

This sheet provides the information needed to properly install a replacement valve bushing in the control valve housing. This sheet should be used in conjunction with Parts, Operation and Maintenance, Manual form number MHD56040, FA2 and FA2.5 winch.

INSTALLATION INSTRUCTIONS

Removing Old Bushing

1. Remove capscrews (444), lockwashers (443) and exhaust cover (442).
2. Remove pin (428), push out pin (429), and remove control handle assembly and spring (427).
3. Remove pipe plug (434), spring (422), poppet valve (436), and ball (421).
4. Remove valve (441).
5. Remove grease fitting (439).
6. Support the housing (438) around the edge so bushing (440) can be pressed out.
7. Press valve bushing (440) out of housing, it will be destroyed while being removed. Use care to ensure the inner surface of the housing bore is **NOT** scratched or gouged in the process.

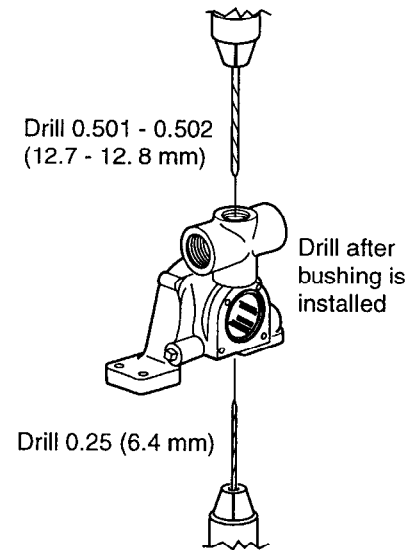
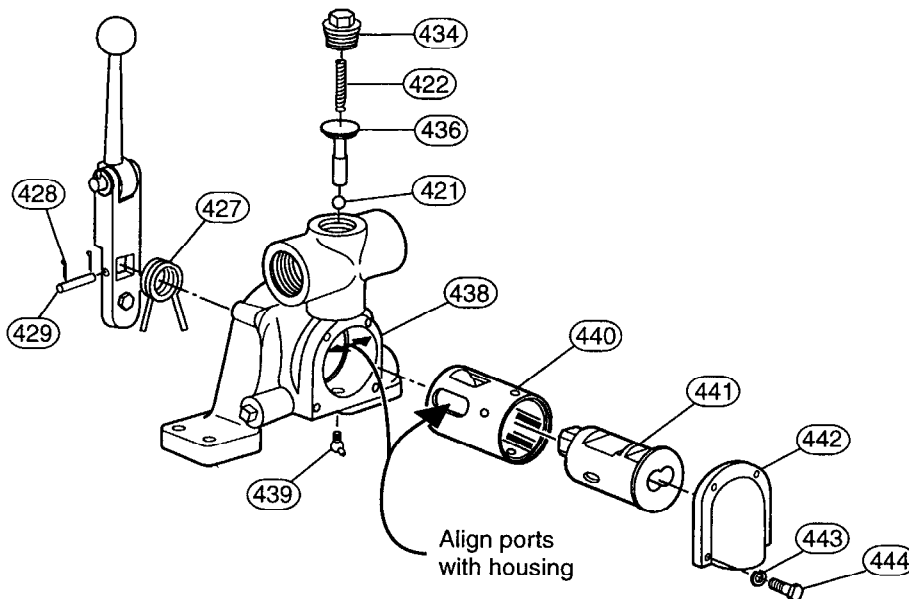
Installing New Bushing

1. Clean bore of housing (438) with Loctite cleaner. Ensure housing bore and side ports are free of old Loctite. Dry housing using low pressure, filtered compressed air.
2. Apply a thin coating of Loctite® 609 to the housing bore and external surface of the new bushing (440). Align ports in valve bushing with those in the housing and press valve bushing (440) into housing until flush with housing face.

NOTICE

- Ensure ports on valve bushing align with ports in housing.

3. Drill a 0.501 - 0.502 in. (12.7 - 12.8 mm) diameter hole through the valve bushing, centered in the port.
4. Drill a 0.25 in. (6.4 mm) hole through the grease fitting hole in the bottom of the housing. Ensure drill bit is centered in hole to avoid damaging the threads.
5. Carefully deburr the drilled holes in the valve bushing so as to **NOT** increase the bore diameter.
6. Check the inside diameter of the bushing bore. Diameter should be 1.875 - 1.876 in. (47.625 - 47.65 mm). If bore is not within tolerance hone to specifications or replace.
7. Install grease fitting (439) into housing (438).
8. Clean valve bushing bore and insert valve (441). Ensure flat portion is facing up.
9. Place ball (421) into top port of housing, followed by, poppet valve (436), spring (422), and pipe plug (434).
10. Place capscrews (444) and lockwashers (443) through exhaust cover (442) into housing and tighten.
11. Replace spring (427) and control handle assembly.
12. Fasten valve assembly to winch and connect air lines.



(Dwg. MHP1124)

Form MHD56126
Edition 2
January 1998
71315121

© 1998 Ingersoll-Rand Company

INGERSOLL-RAND
MATERIAL HANDLING

United States Office Locations

For Order Entry, Order Status and 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
Web Site at:
www.ingersoll-rand.com

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

Regional Sales Offices

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

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

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

Los Angeles, CA
11909 E. Telegraph Road
Santa Fe Springs, CA 90670
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
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) 213-4500
Fax: (416) 213-4510
Order Desk
Fax: (416) 213-4605

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

British Columbia
201-6351 Westminster Hwy
Richmond, B. C.
V7C 5C7
Phone: (604) 278-0459
Fax: (604) 278-1254

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

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

**Asia Pacific Operations
Ingersoll-Rand (Japan) Ltd.**
Shin-Yokohama Square Bldg.
(5TH Floor)
2-3-12 Shin-Yokohama,
Kouhoku-Ku, Yokohama-shi,
Kanagawa Pref. 222 Japan
Phone: 81-45-476-7800
Fax: 81-45-476-7806

**Russia
Ingersoll-Rand Company**
Kuznetsky Most 21/5
Moscow 103895 Russia
Phone: 7-501-921-53-21
7-501-923-91-34
Fax: 7-501-924-46-25