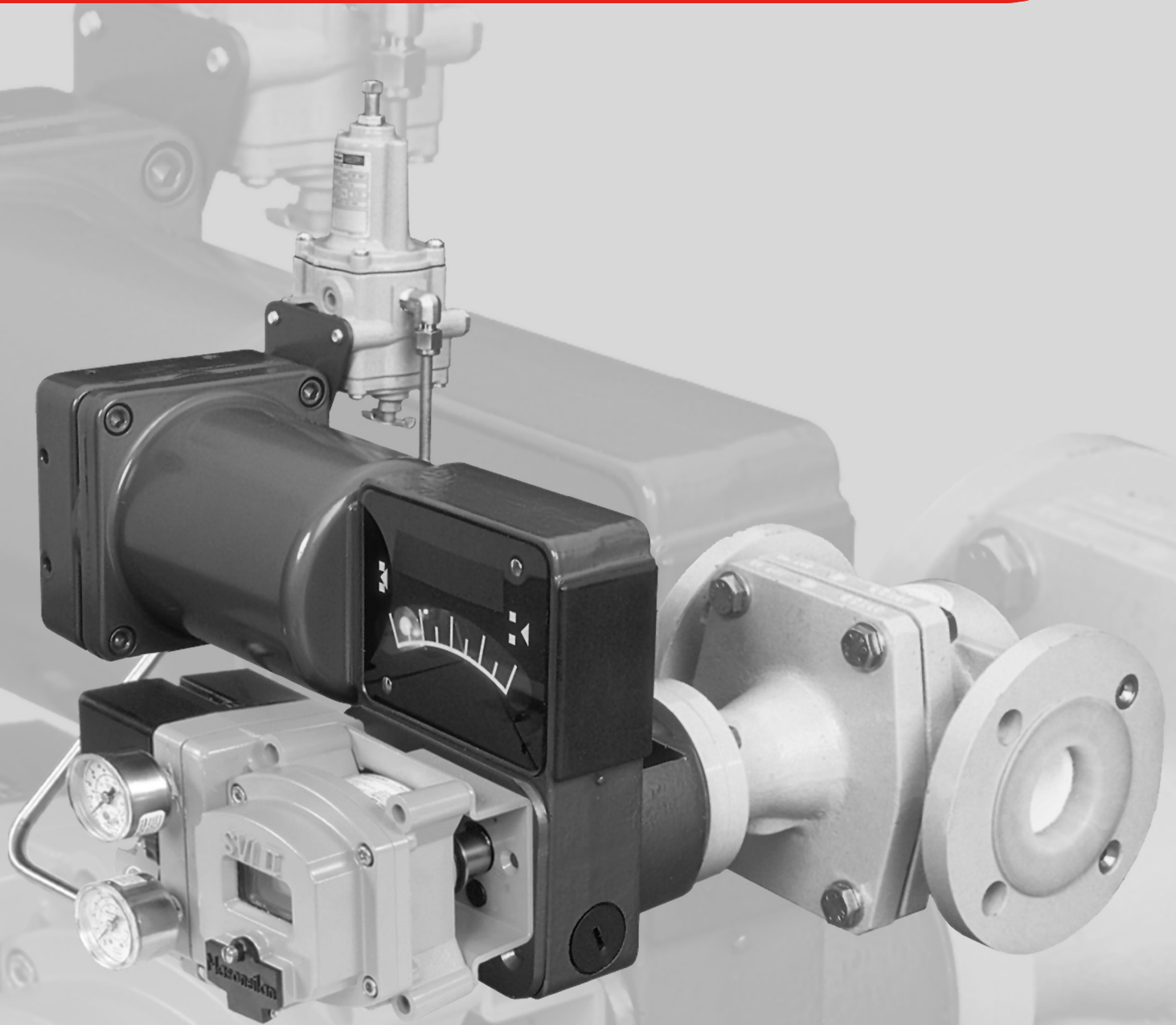


Masoneilan® 31000 Series Rotary Control Valves

Specification Data

CF3000

10/05



**Eccentric Rotary
Control Valves
with PFA Liner**



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Foreword

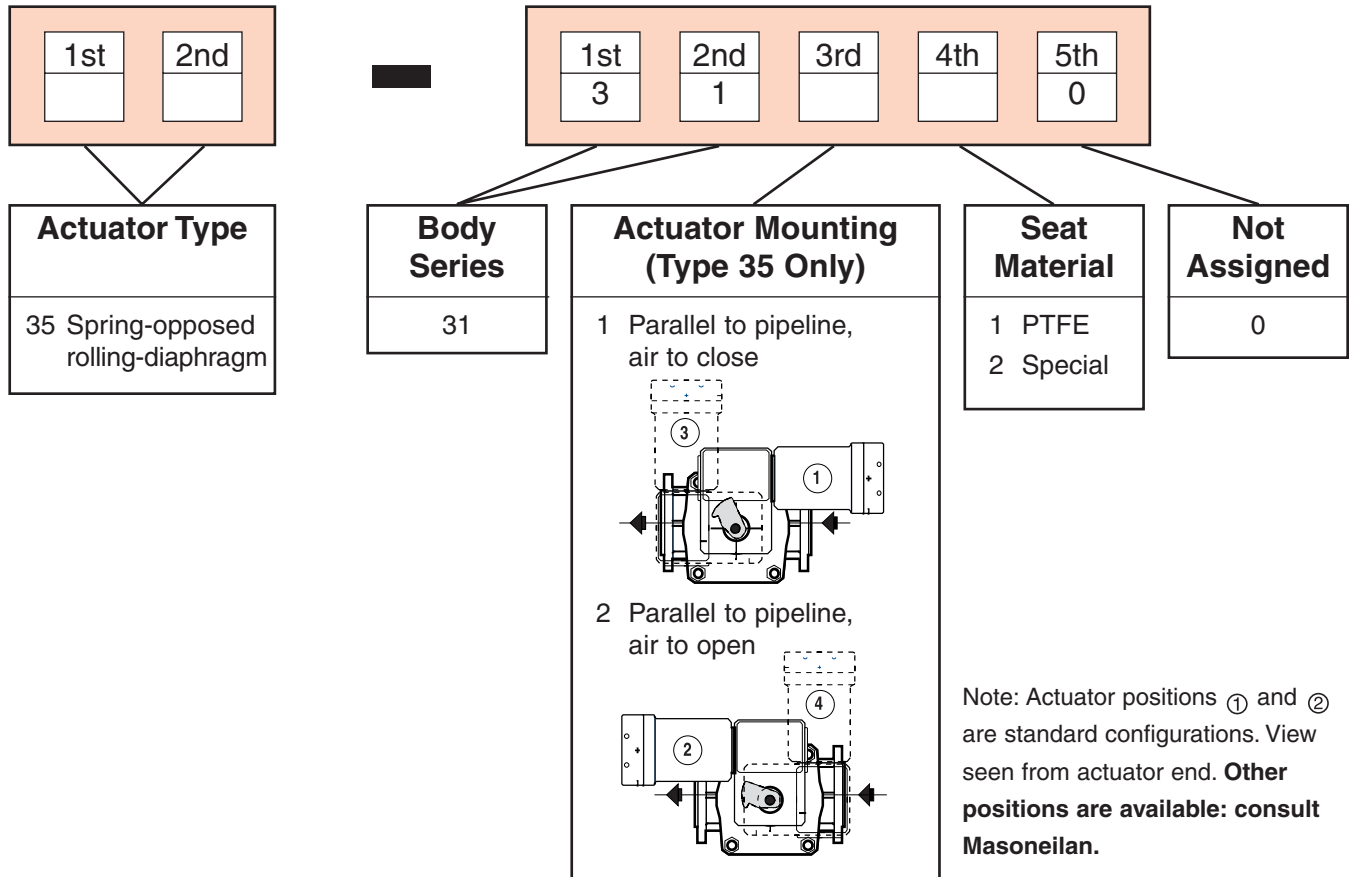
The 31000 Series control valve is a PFA lined control valve for corrosive applications which incorporates the following features:

- **Eccentric rotary plug** providing excellent throttling control accuracy, low dynamic forces and tight shut off.
- **PFA lining with guaranteed minimum wall thickness** provides resistance to most corrosive fluids.
- **Straight through flow pattern** resulting in high flow capacities.
- **PTFE/Graphite packing, chevron rings**, backed-up by a double O-ring follower.
- **Compact dimensions and low weight** without compromise to piping forces.

- **Dovetail grooves for mechanical anchoring** between metal body and PFA lining to ensure high performance under vacuum and at high temperature.
- Powerful, field proven rolling diaphragm actuator providing positive fail-safe action.
- **Totally enclosed actuator linkage.**
- Combination handwheel/adjustable limit stop with locking mechanism.
- Complete line of options and accessories.

Trade names noted are for reference only. Masoneilan reserves the right to supply trade named material or its equivalent.

Numbering System



General Data

• Body and Bonnet

type: cast, one piece, top entry, self flushing
optional: with steam/hot water jacket (SJ)

material: nodular ductile iron, heat treated
 lining: PFA, translucent, melt processed
optional: antistatic material

connections: flanged
 bonnet connection: through-bolted
 outside protection: epoxy coating

capacity: full capacity and reduced factor in all sizes
 flow characteristic: modified linear
 C_v ratio: 80:1
 packing: PTFE/Graphite, chevron type rings backed up by a double O-ring follower
optional: leak detector or flushing connection

• **Flow Direction:** flow to close

• Trim

plug type: eccentrically rotating
 plug materials: PFA coated stainless steel
 seat ring type: conical, sealed with O-ring
 seat ring material: Virgin PTFE
optional: other materials (consult Masoneilan)
optional: PFE O-ring

• Actuator*

type: spring-opposed rolling-diaphragm (Model 35)
 yoke: cast iron
optional: auxiliary handwheel / limit-stop manual actuator (Model 20)

* Refer to specific actuator and accessory specification literature for complete information

Connections

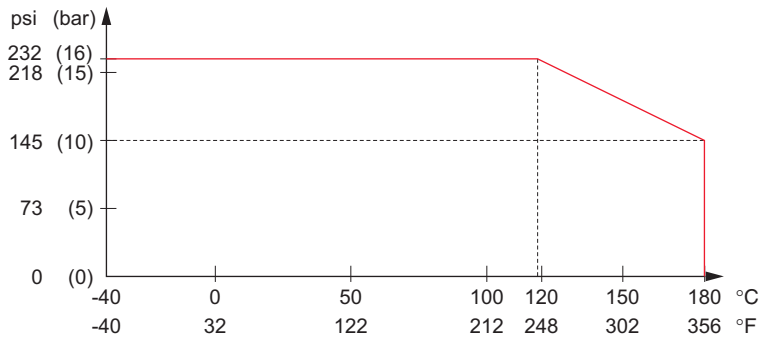
| Valve size | | PN connections | | ANSI connections | |
|------------|------------|--------------------------------|-------------------------|------------------------|------------------------------------|
| inch | mm | Flanges | Face to face dimensions | Flanges | Face to face dimensions |
| 1, 2, 3 | 25, 50, 80 | PN 10 ① PN 16 (125 AARH) | IEC 534-3 ② Table II | 150 RF ③ (125 AARH) | ANSI B16.10 Globe Control Valve |

① Connections according to all standard PN (ISO, EN and equivalent national standards, AFNOR, BS, DIN, etc.)

② Equivalent to DIN 3202/F1

③ Connections according to ANSI B16.5

Pressure/Temperature Rating



Vacuum operation within the same temperature range

Seat Leakage

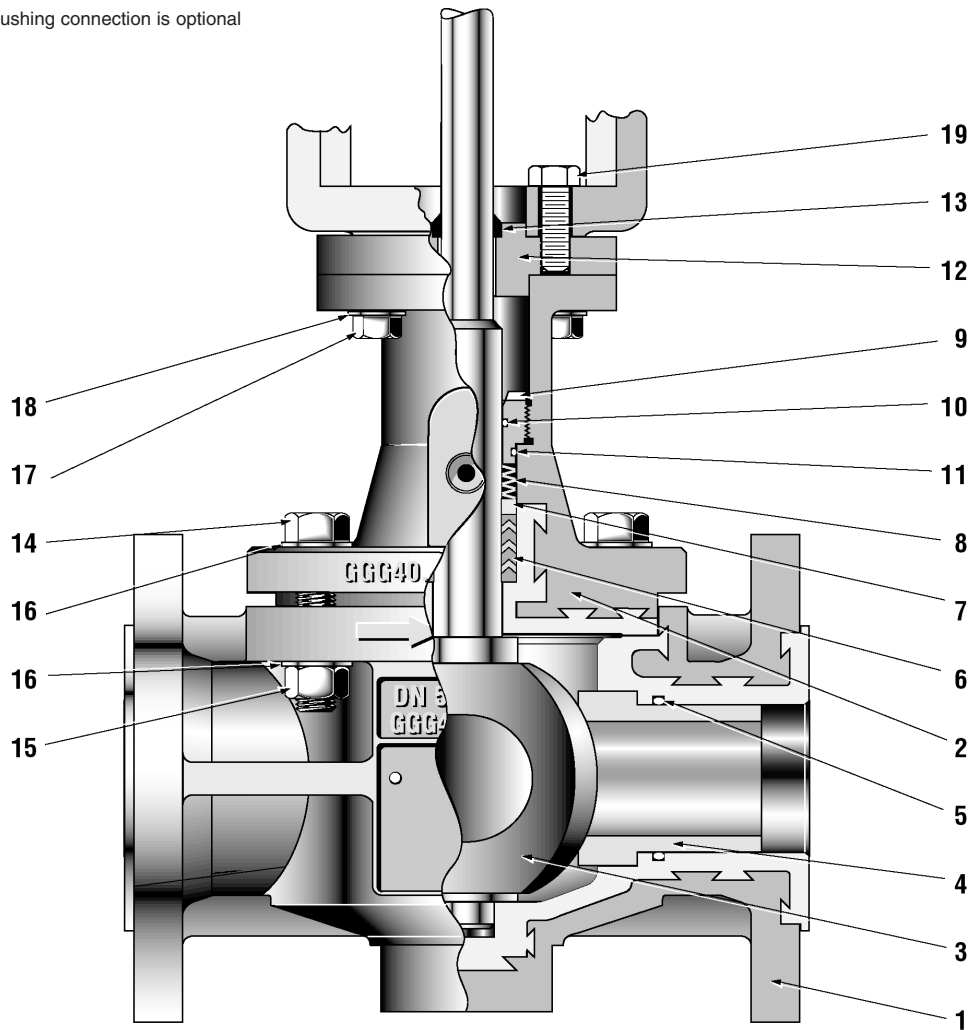
Leakage Class VI, according to IEC 534-4 and ANSI/FCI 70.2

C_V and F_L

| Valve Size | | Orifice Diameter | Actuator Travel | F_L | C_V |
|------------|----|------------------|-----------------|-------|-------|
| inch | mm | in. (mm) | in. (mm) | | |
| 1 | 25 | - | 3.5 (89) | 0.64 | 1.2 |
| | | - | 3.5 (89) | 0.64 | 2 |
| | | - | 3.5 (89) | 0.64 | 3 |
| | | - | 3.5 (89) | 0.64 | 4 |
| | | .394 (10) | 3.5 (89) | 0.64 | 5 |
| | | .472 (12) | 3.5 (89) | 0.64 | 8 |
| | | .669 (17) | 3.5 (89) | 0.64 | 14 |
| | | .827 (21) | 3.5 (89) | 0.64 | 20 |
| 2 | 50 | - | 3.5 (89) | 0.64 | 10 |
| | | .945 (24) | 3.5 (89) | 0.64 | 33 |
| | | 1.299 (33) | 3.5 (89) | 0.64 | 59 |
| | | 1.575 (40) | 3.5 (89) | 0.64 | 82 |
| 3 | 80 | 1.732 (44) | 3.5 (89) | 0.64 | 104 |
| | | 2.283 (58) | 3.5 (89) | 0.64 | 182 |
| | | 3.071 (71) | 3.5 (89) | 0.64 | 260 |

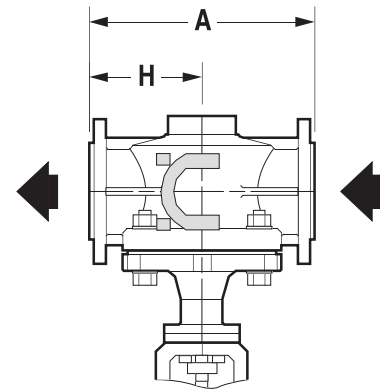
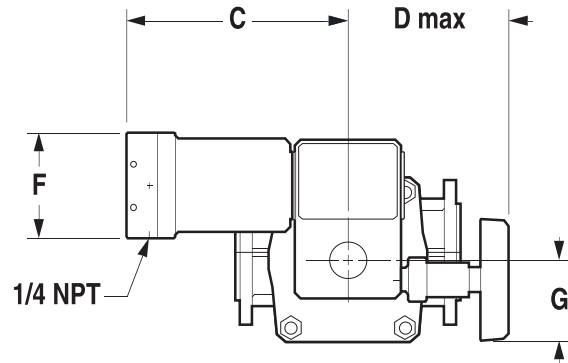
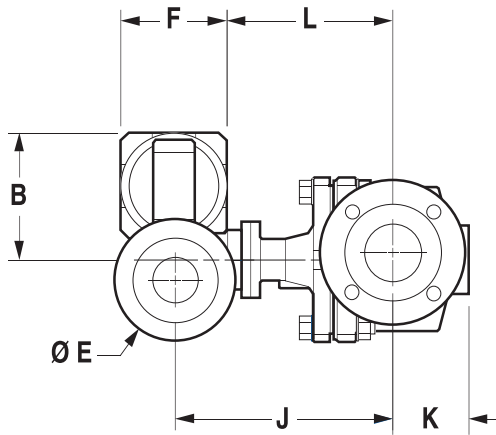
Materials of Construction

Note: leak detector or flushing connection is optional



| Ref. No. | Description | Standard Materials (Optional Materials) |
|----------|----------------------------|--|
| 1 | Body | Ductile Iron ASTM A395/PFA Lined |
| 2 | Bonnet | Ductile Iron ASTM A395/PFA Lined |
| 3 | Plug | PFA encapsulated Stainless Steel |
| 4 | Seat Ring | Virgin Solid PTFE <i>Other Materials (Consult Masoneilan)</i> |
| 5 | O-Ring | FEP coated Viton® <i>Perfluoroelastomer (PFE)</i> |
| 6 | Packing | PTFE/Graphite - Chevron Ring System |
| 7 | Packing Box Ring | Stainless Steel |
| 8 | Disc Springs (Set) | Spring Steel |
| 9 | Packing Follower | Stainless Steel |
| 10-11 | O-Rings | Viton® |
| 12 | Actuator Connecting Flange | Stainless Steel |
| 13 | Wiper Ring | Neoprene |
| 14-19 | Bolting | Stainless Steel |

Dimensions and Weights



Dimensions (inches)

| Valve Size | | A | | B | C | D | E | F | G | H | | J | K | L | Weight* (lbs) |
|------------|----|----------------|----------------------|------|-------|------|------|------|------|----------------|----------------------|-------|------|------|------------------|
| inch | DN | PN 10 PN 16 | ANSI Class 150 | | | | | | | PN 10 PN 16 | ANSI Class 150 | | | | |
| 1 | 25 | 6.30 | 7.25 | 6.93 | 11.81 | 8.31 | 6.42 | 5.52 | 4.61 | 3.15 | 3.62 | 10.04 | 2.05 | 7.28 | 40 |
| 2 | 50 | 9.06 | 10.00 | 6.93 | 11.81 | 8.31 | 6.42 | 5.52 | 4.61 | 4.53 | 5.00 | 10.63 | 3.07 | 7.87 | 60 |
| 3 | 80 | 12.21 | 11.75 | 6.93 | 11.81 | 8.31 | 6.42 | 5.52 | 4.61 | 6.10 | 5.87 | 11.42 | 3.94 | 8.66 | 97 |

* Including Handwheel

Sales Office Locations

BELGIUM

Dresser Valves Europe
Boulevard du Souverain 207 B2 Vorstlaan,
B-1160 Brussels, Belgium
Phone: +32-2-344-0970
Fax: +32-2-344-1123

BRAZIL

Dresser Industria E Comercio Ltda
Divisao Masoneilan
Rua Senador Vergueiro, 433
09521-320 Sao Caetano Do Sul
Sao Paulo, Brazil
Phone: 55-11-453-5511
Fax: 55-11-453-5565

CANADA

Ontario
Dresser - Masoneilan
DI Canada, Inc.
835 Harrington Court, 2nd Floor
Burlington, Ontario L7N 3P3, Canada
Phone: 905-335-3529
Fax: 905-336-7628

CHINA

Dresser Flow Control, Beijing Rep. Office
Suite 2403, Capital Mansion
6 Xinyuannan Rd. Chaoyang District
Beijing 100004, China
Phone: +86-10-8486-5272
Fax: +86-10-8486-5305

FRANCE

Masoneilan - Dresser Produits Industriels
Energy 5
130/190 Boulevard de Verdun
92413 Courbevoie cedex, France
Phone: +33-1-4904-9000
Fax: +33-1-4904-9010

Dresser Produits Industriels S.A.S.,
Masoneilan Customer Service Centre
55 rue de la Mouche, Zone Industrielle
69540 Irigny, France
Phone: +33-4-72-39-06-29
Fax: +33-4-72-39-21-93

GERMANY

Dresser Valves Europe GmbH
Heiligenstrasse 75
Viersen D-41751, Germany
Phone: +49-2162-8170-0
Fax: +49-2162-8170-280

Dresser Valves Europe GmbH
Uhlandstrasse 58
60314 Frankfurt, Germany
Phone: +49-69-439350
Fax: +49-69-4970802

INDIA

Dresser Valve India Pvt. Ltd.
305/306, "Midas", Sahar Plaza
Mathurdas Vasarji Road
J.B. Nagar, Andheri East
Mumbai, 400059, India
Phone: +91-22- 8381134
Fax: +91-22-8354791

Dresser Valve India Pvt. Ltd.
205, Mohta Building
4 Bhikaiji Cama Place
New Delhi, 110 066, India
Phone: +91-11-6164175
Fax: +91-11-6165074

ITALY

Dresser Italia S.r.l.
Masoneilan Operations
Via Cassano, 77
80020 Casavatore, Napoli Italy
Phone: +39-081-7892-111
Fax: +39-081-7892-208

JAPAN

Niigata Masoneilan Co. Ltd. (NIMCO)
20th Floor, Marive East Tower
WBG 2-6 Nakase, Mihama-ku,
Chiba-shi, Chiba 261-7120 Japan
Phone: +81-43-297-9222
Fax: +81-43-299-1115

KOREA

Dresser Korea Inc.
2015 Kuk Dong Building 60-1
3-Ka, Choongmu-ro Chung-Ku
Seoul, Korea
Phone: +82-2-2274-0792
Fax: +82-2-2274-0794

KUWAIT

Dresser Flow Solutions
Middle East Operations
10th Floor, Al Rashed Complex
Fahad Salem Street, P.O. Box 242
Safat, 13003, Kuwait
Phone: +965-9061157
Fax: +965-3718590

MALAYSIA

Dresser Flow Solutions
Business Suite, 19A-9-1, Level 9
UOA Centre, No. 19, Jalan Pinang
50450 Kuala Lumpur, West Malaysia
Phone: +60-3-2163-2322
Fax: +60-3-2161-1362

MEXICO

Dresser Valve de Mexico, S.A. de C.V.
Henry Ford No. 114, Esq. Fulton
Fraccionamiento Industrial San Nicolas
54030 Tlalnepantla Estado de Mexico
Phone: 52-5-310-9863
Fax: 52-5-310-5584

THE NETHERLANDS

Dresser Valves Europe
Steenhouwerstraat 11
3194 AG Hoogvliet, The Netherlands
Phone: +31-10-438-4122
Fax: +31-10-438-4443

NIGERIA

Dresser Flow Solutions
Plot 293, Akin Olugbade Street
Victoria Island, Lagos, Nigeria
Phone: +234-1-555-4229
Fax: +234-1-555-7969

RUSSIA

DS Controls
Nekhinskaya Street, 61
Veliky Novgorod
Russia, 173021
Phone: +7-8162-11-3099
Fax: +7-8162-11-2981

SAUDI ARABIA

Dresser AL Rushaid
Valve & Instrument Co., Ltd. (Darvico)
P.O. Box 10145
Jubail Industrial City 31961, Saudi Arabia
Phone: +966-3-341-0278
Fax: +966-3-341-7624

SINGAPORE

Dresser Singapore PTE Ltd.
16 Tuas Avenue 8
Singapore 639231
Phone: +65-6-861-6100
Fax: +65-6-861-7197

SOUTH AFRICA

Dresser Limited
P.O. Box 2234
16 Edendale Road
Eastleigh, Edenvale 1610
Republic of South Africa
Phone: +27-11-452-1550
Fax: +27-11-452-6542

SPAIN

Masoneilan S.A.
C/Murcia 39 C
08830 Sant Boi de Llobregat
Barcelona, Spain
Phone: +34-93-652-6430
Fax: +34-93-661-3450

UNITED ARAB EMIRATES

Dresser Flow Solutions
Middle East Operations
P.O. Box 61302
Roundabout 8
Units JA01 & JA02
Jebel Ali Free Zone
Dubai, U. A. E.
Phone: +971-4-8838-752
Fax: +971-4-8838-038

UNITED KINGDOM

DI U.K. Ltd.
East Gillibrands
Skelmersdale,
Lancashire WN8 9TU, England
Phone: +44-1695-52600
Fax: +44-1695-50569

DI U.K. Ltd.
Unit 4, Suite 1.1, Nobel House
Grand Union Office Park
Packet Boat Lane
Uxbridge, Middlesex UB8 2GH
Phone: +44-1895-454-900
Fax: +44-1895-454-917

UNITED STATES

Dresser - Masoneilan
85 Bodwell Street
Avon, MA 02322-1190
Phone: 508-586-4600
Fax: 508-427-8971

Dresser - Masoneilan
4841 Leopard Street
Corpus Christi, TX 78408-2621
Phone: 361-877-2414
Fax: 361-584-1196

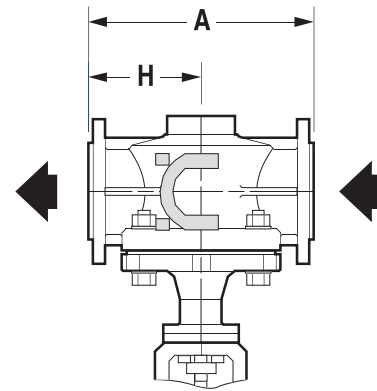
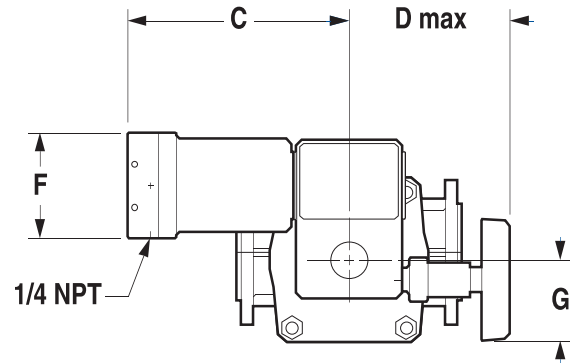
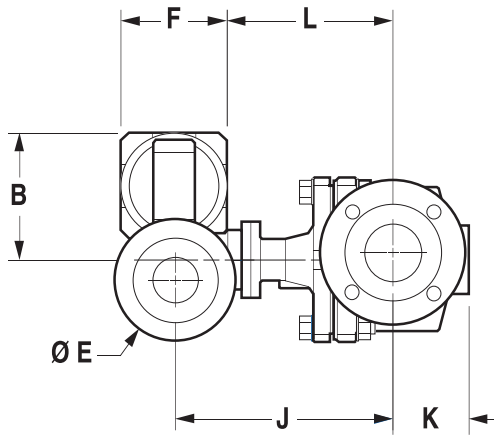
Dresser - Masoneilan
Dresser Direct
1250 Hall Court
Deer Park, TX 77536
Phone: 281-884-1000
Fax: 281-884-1010

Dresser - Masoneilan
16250 Port Northwest Drive
Houston, TX 77041
Phone: 832-590-2300
Fax: 832-590-2529

Dresser - Masoneilan
2950 East Birch Street
Brea, CA 92821
Phone: 714-572-1528
Fax: 714-572-1463



Dimensions and Weights



Dimensions (millimeters)

| Valve Size | | A | | B | C | D | E | F | G | H | | J | K | L | Weight* (KG) |
|------------|----|----------------|----------------------|-----|-----|-----|-----|-----|-----|----------------|----------------------|-----|-----|-----|--------------|
| inch | DN | PN 10 PN 16 | ANSI Class 150 | | | | | | | PN 10 PN 16 | ANSI Class 150 | | | | |
| 1 | 25 | 160 | 184 | 176 | 300 | 211 | 163 | 140 | 117 | 80 | 92 | 255 | 52 | 185 | 18 |
| 2 | 50 | 230 | 254 | 176 | 300 | 211 | 163 | 140 | 117 | 115 | 127 | 270 | 78 | 200 | 27 |
| 3 | 80 | 310 | 298 | 176 | 300 | 211 | 163 | 140 | 117 | 155 | 149 | 290 | 100 | 220 | 44 |

* Including Handwheel