

Masoneilan™ 31000 Series

Eccentric Rotary Control Valve with PFA Liner

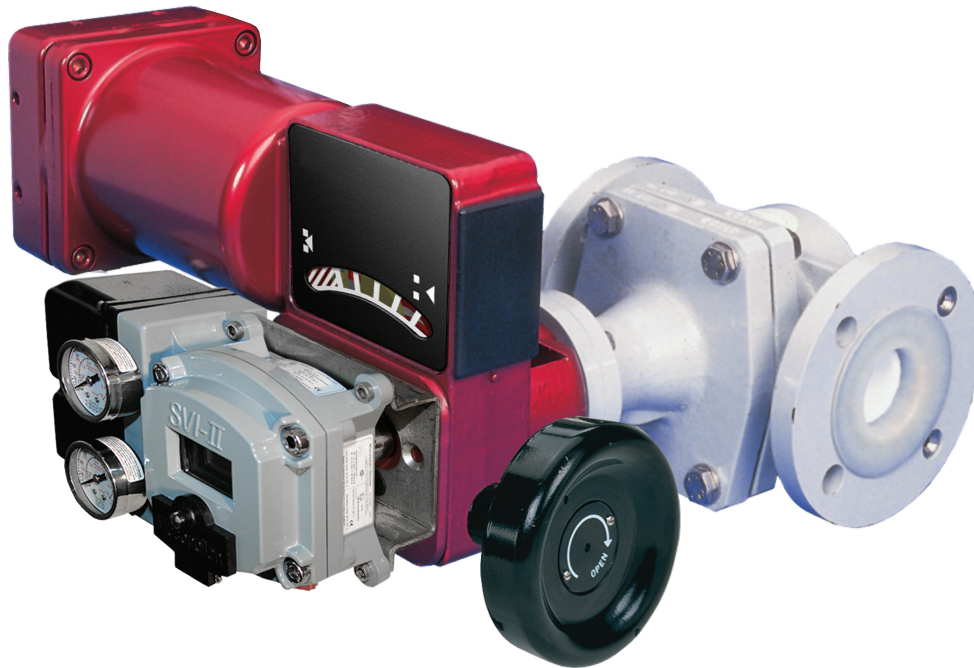


Table of contents

| | |
|----------------------------------|----|
| Features..... | 3 |
| Numbering System..... | 4 |
| General Data..... | 5 |
| Connections..... | 6 |
| Pressure/Temperature Rating..... | 6 |
| Seat Leakage..... | 6 |
| C_v and F_L | 7 |
| Materials of Construction..... | 8 |
| Dimensions and Weight..... | 10 |

Features

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

Excellent Performance

The eccentric rotary plug design provides excellent throttling control accuracy, low dynamic forces and tight shut off. The straight through flow pattern results in high flow capacities.

Corrosion Resistance

PFA lining with guaranteed minimum wall thickness provides resistance to most corrosive fluids.

Reduced Fugitive Emissions

The rotary design inherently reduces wear on the packing as compared to a typical linear valve. Additionally, the standard design includes PTFE/Graphite packing, chevron rings, backed-up by a double O-ring follower to provide further reliability in corrosive applications.

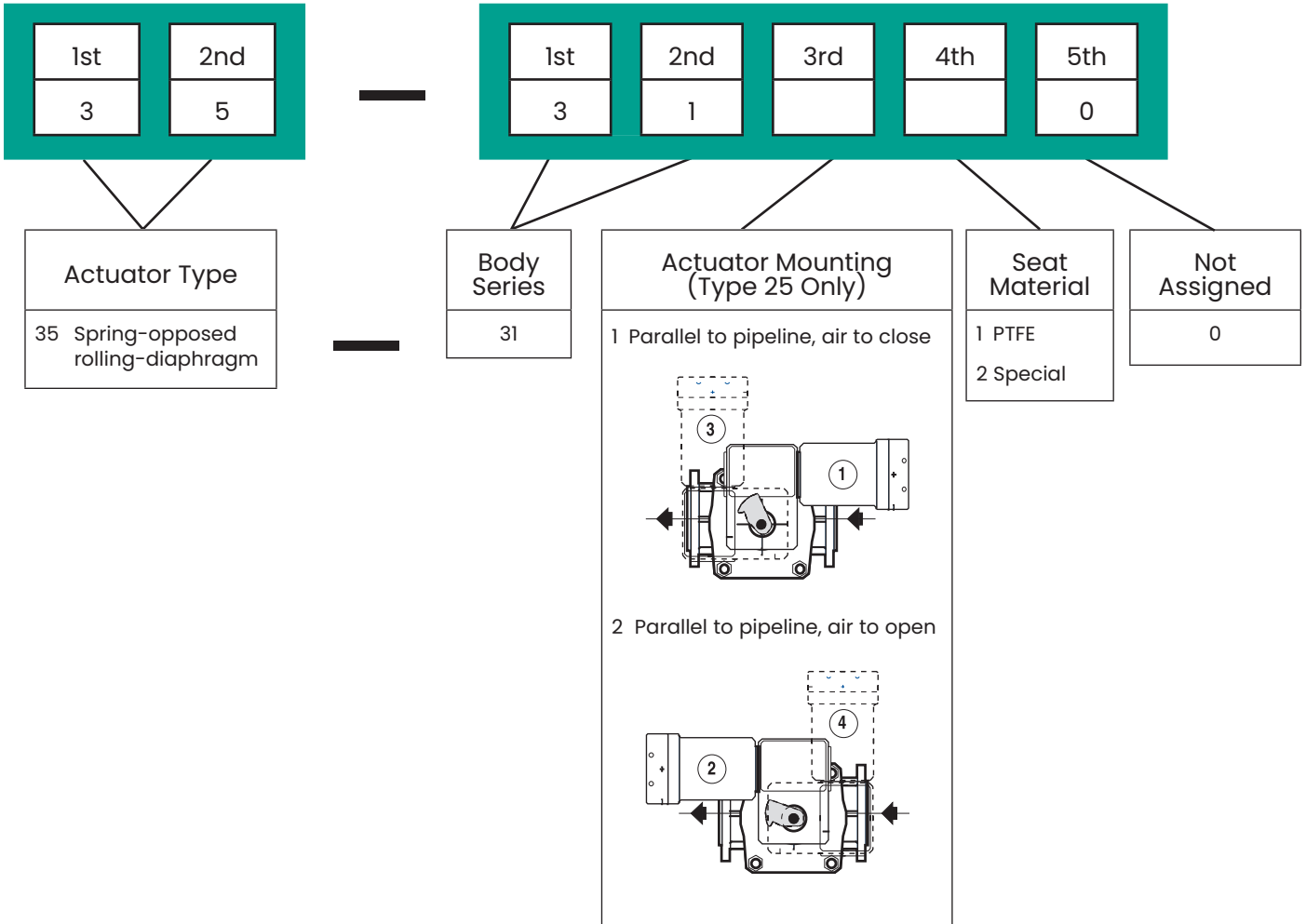
Ease of Maintenance

The compact dimensions and low weight design allows for easy installation and removal without compromising piping forces.

Reliability

The dovetail grooves provide mechanical anchoring between metal body and PFA lining to ensure high performance under vacuum and at high temperature. The powerful, field proven rolling diaphragm actuator provides positive fail-safe action. The actuator linkage is totally enclosed that comes with a combination handwheel and adjustable limit stop with locking mechanism. All actuators are available with a complete line of options and accessories.

Numbering system



Note:
 Actuator positions 1 and 2 are standard configurations. View seen from actuator end.
 Other positions are available: consult Baker Hughes.

General data

Body and Bonnet

| | |
|---------------------|---|
| Type: | Cast, one piece, top entry, self flushing with steam/hotwater jacket (SJ) |
| Optional: | |
| Material: | Nodular ductile iron, heat treated |
| Lining: | PFA, translucent, melt processed |
| Optional: | antistatic material |
| Connections: | Flanged |
| Bonnet connection: | Through-bolted |
| Outside protection: | Epoxy coating |

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 Baker Hughes) |

| | |
|-----------------------|---|
| Optional: | PFE O-ring |
| 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 |

Actuator:¹

| | |
|-----------|---|
| Type: | Spring-opposed rolling-diaphragm (Model 35) |
| Yoke: | Cast iron |
| Optional: | auxiliary handwheel/limit-stop manual actuator (Model 20) |

1. Refer to specific actuator and accessory specification literature for complete information.

Connections

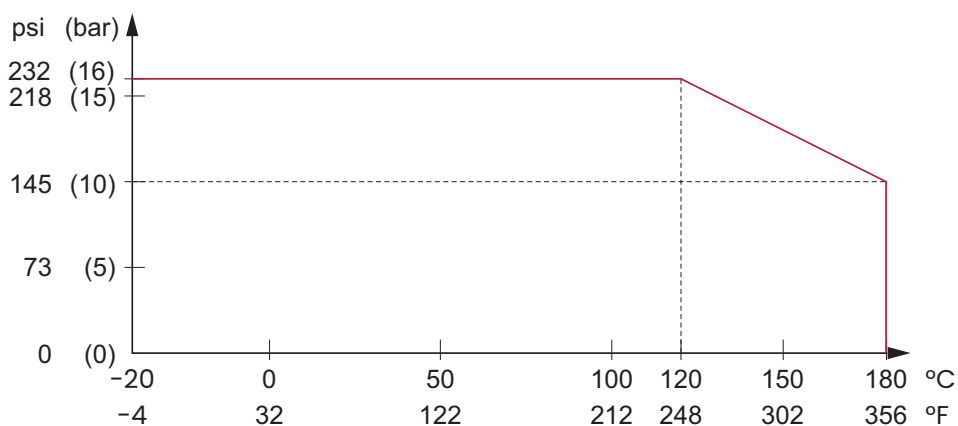
| Valve Size | | PN Connections | | ASME Connections | |
|------------|------------|---|------------------------------------|-----------------------------------|---------------------------------------|
| Inches | mm | Flanges | Face to Face Dimensions | Flanges | Face to Face Dimensions |
| 1, 2, 3 | 25, 50, 80 | PN 10 ¹ PN 16 (125 AARH) | IEC 534-3 ² Table II | 150 RF ³ (125 AARH) | ASME 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 ASME B16.5

Pressure/temperature rating



Vacuum operation within the same temperature range.

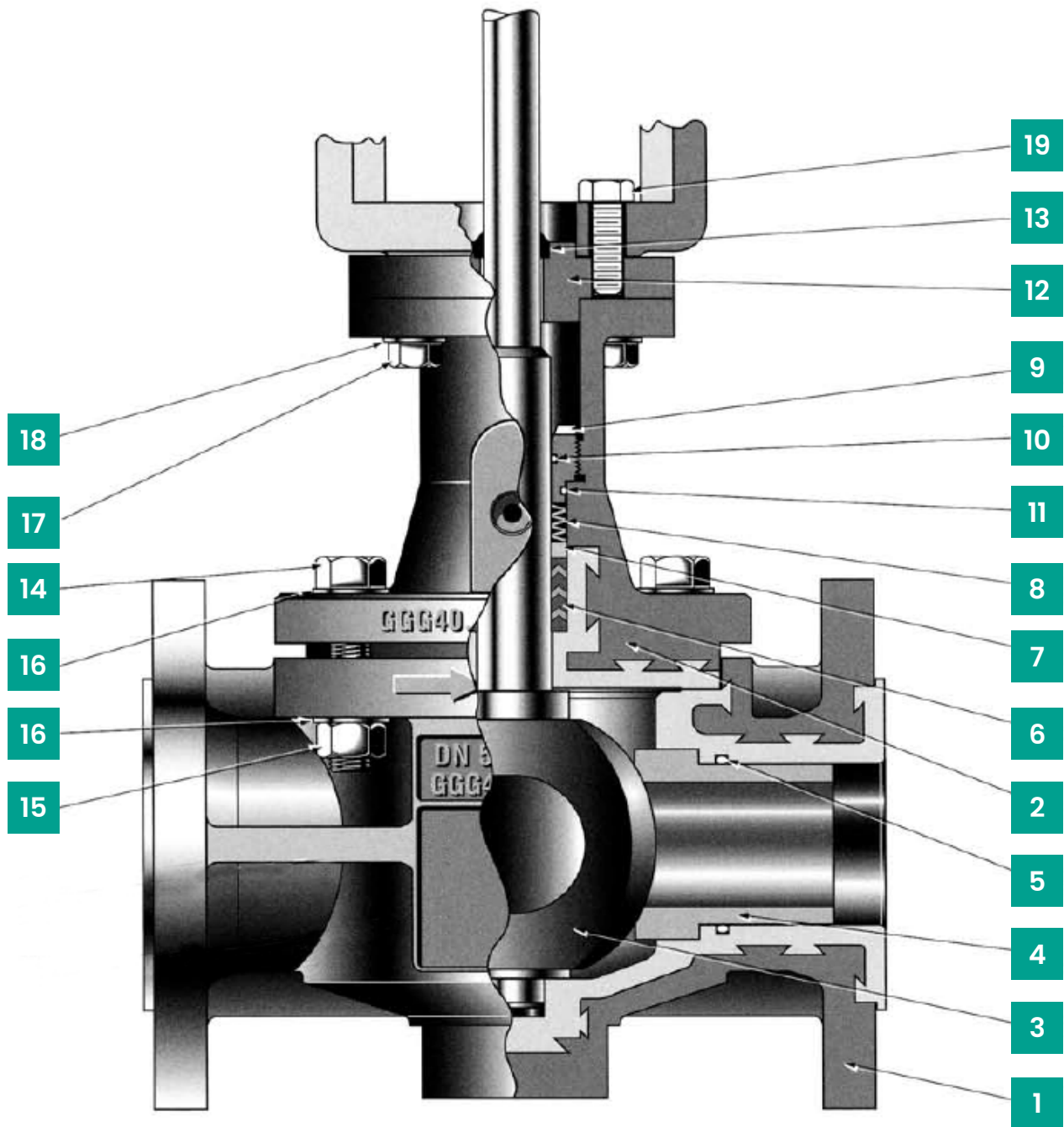
Seat leakage

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

C_V and F_L

| Valve Size | | Orifice Diameter | Actuator Travel | F _L | C _V |
|------------|----|------------------|-----------------|----------------|----------------|
| Inches | mm | inl (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

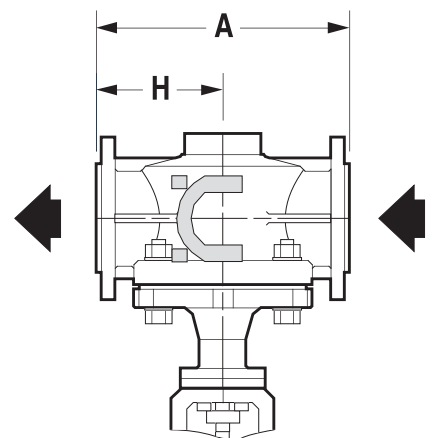
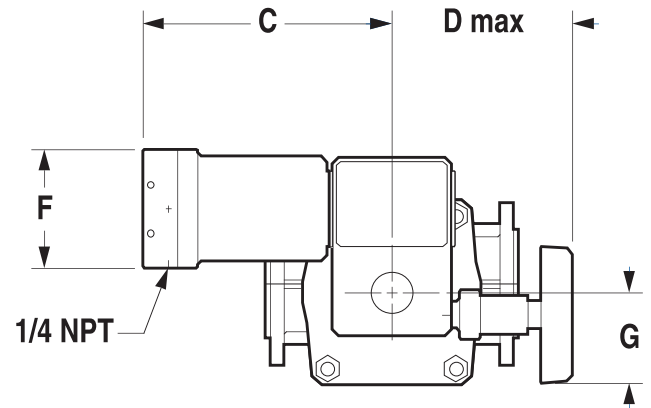
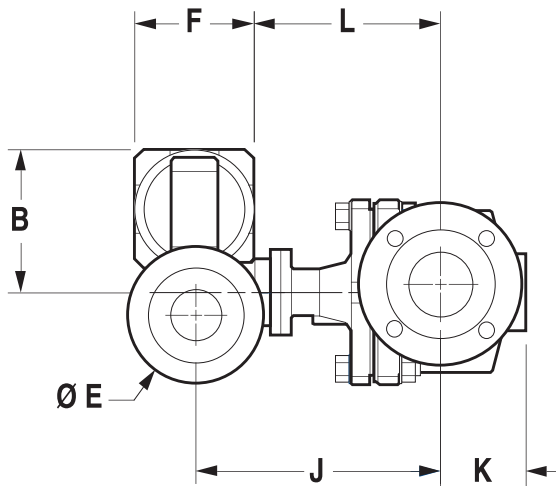


Note: leak detector or flushing connection is optional

Materials of construction

| 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 Baker Hughes)</i> |
| 5 | O-Ring | FEP coated Viton* <i>Perfl uoroelastomer (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 up to 19 | Bolting | Stainless Steel |

Dimensions and weights

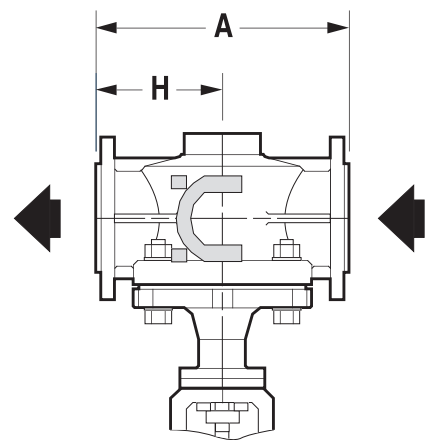
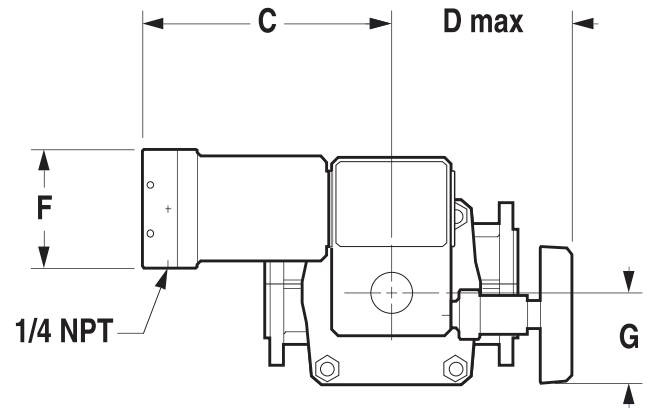
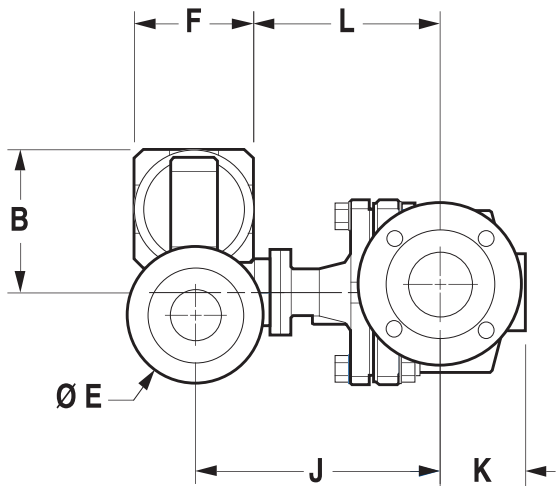


Dimensions (inches)

| Valve Size | | A | | B | C | D | E | F | G | H | | J | K | L | Weight ¹ (lbs) |
|------------|----|----------------|----------------------|------|-------|------|------|------|------|----------------|---------------------|-------|------|------|------------------------------|
| Inch | DN | PN 10 PN 16 | ASME Class 150 | | | | | | | PN 10 PN 16 | ASME Class 50 | | | | |
| 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 |

1. Including Handwheel

Dimensions and weights



Dimensions (millimeters)

| Valve Size | | A | | B | C | D | E | F | G | H | | J | K | L | Weight ¹ (kg) |
|------------|----|----------------|----------------------|-----|-----|-----|-----|-----|-----|----------------|---------------------|-----|-----|-----|-----------------------------|
| Inch | DN | PN 10 PN 16 | ASME Class 150 | | | | | | | PN 10 PN 16 | ASME Class 50 | | | | |
| 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 |

1. Including Handwheel

Direct Sales Office Locations

Australia

Brisbane
Phone: +61-7-3001-4319

Perth
Phone: +61-8-6595-7018

Melbourne
Phone: +61-3-8807-6002

Brazil

Phone: +55-19-2104-6900

China

Phone: +86-10-5738-8888

France

Courbevoie
Phone: +33-1-4904-9000

India

Mumbai
Phone: +91-22-8354790

New Delhi

Phone: +91-11-2-6164175

Italy

Phone: +39-081-7892-111

Japan

Tokyo
Phone: +81-03-6871-9008

Korea

Phone: +82-2-2274-0748

Malaysia

Phone: +60-3-2161-03228

Mexico

Phone: +52-55-3640-5060

Russia

Veliky Novgorod
Phone: +7-8162-55-7898

Moscow

Phone: +7-495-585-1276

Saudi Arabia

Phone: +966-3-341-0278

Singapore

Phone: +65-6861-6100

South Africa

Phone: +27-11-452-1550

South & Central America and the Caribbean

Phone: +55-12-2134-1201

Spain

Phone: +34-935-877-605

United Arab Emirates

Phone: +971-4-8991-777

United Kingdom

Phone: +44-7919-382-156

United States

Houston, Texas

Phone: +1-713-966-3600

Find the nearest local Channel Partner in your area:
valves.bakerhughes.com/contact-us

Tech Field Support & Warranty:

Phone: +1-866-827-5378
valvesupport@bakerhughes.com

valves.bakerhughes.com

Copyright 2020 Baker Hughes Company. All rights reserved. Baker Hughes provides this information on an "as is" basis for general information purposes. Baker Hughes does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. Baker Hughes hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. Baker Hughes reserves the right to make changes in specifications and features shown herein, or discontinue the product described at any time without notice or obligation. Contact your Baker Hughes representative for the most current information. The Baker Hughes logo and Masoneilan are trademarks of Baker Hughes Company. Other company names and product names used in this document are the registered trademarks or trademarks of their respective owners.