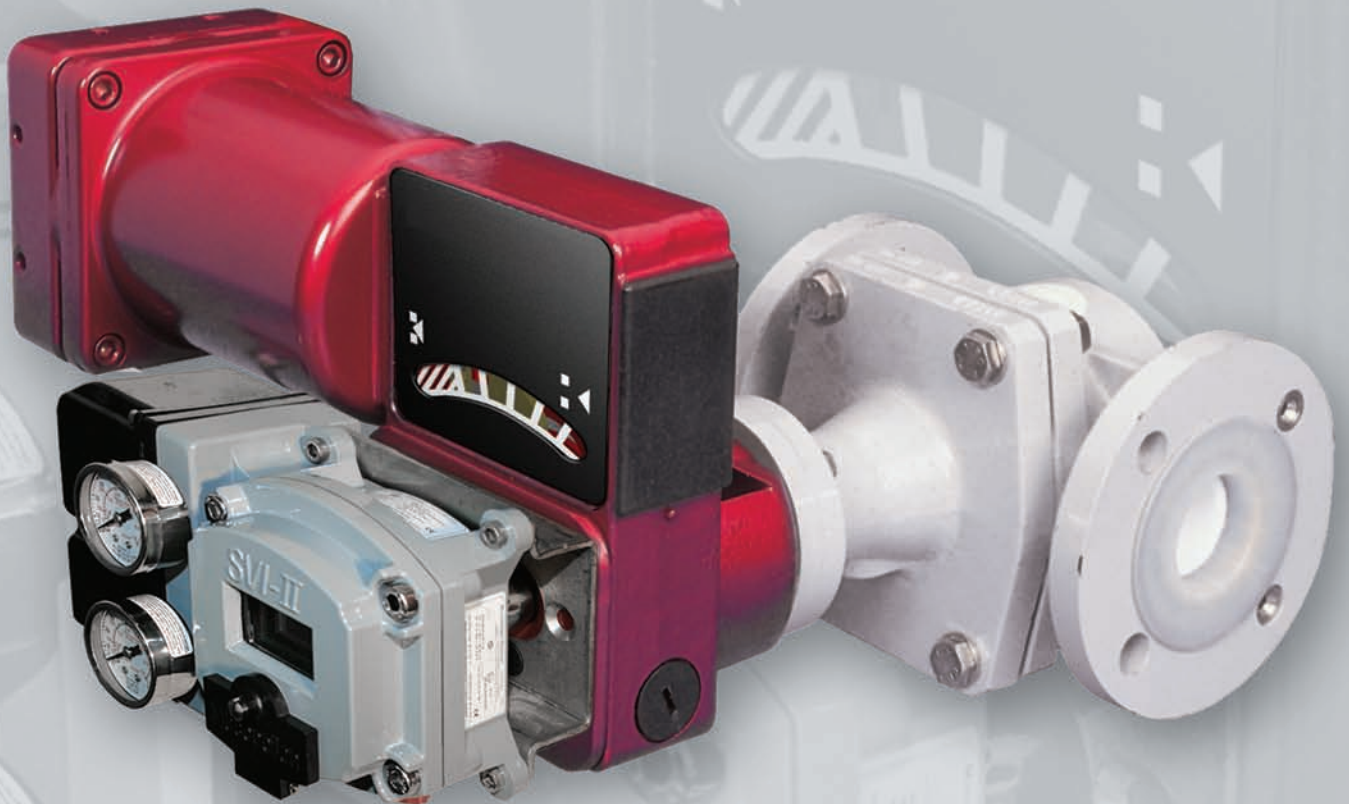


# 31000 Series

## Rotary Control Valves



Eccentric Rotary  
Control Valves  
with PFA Liner

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## Foreword

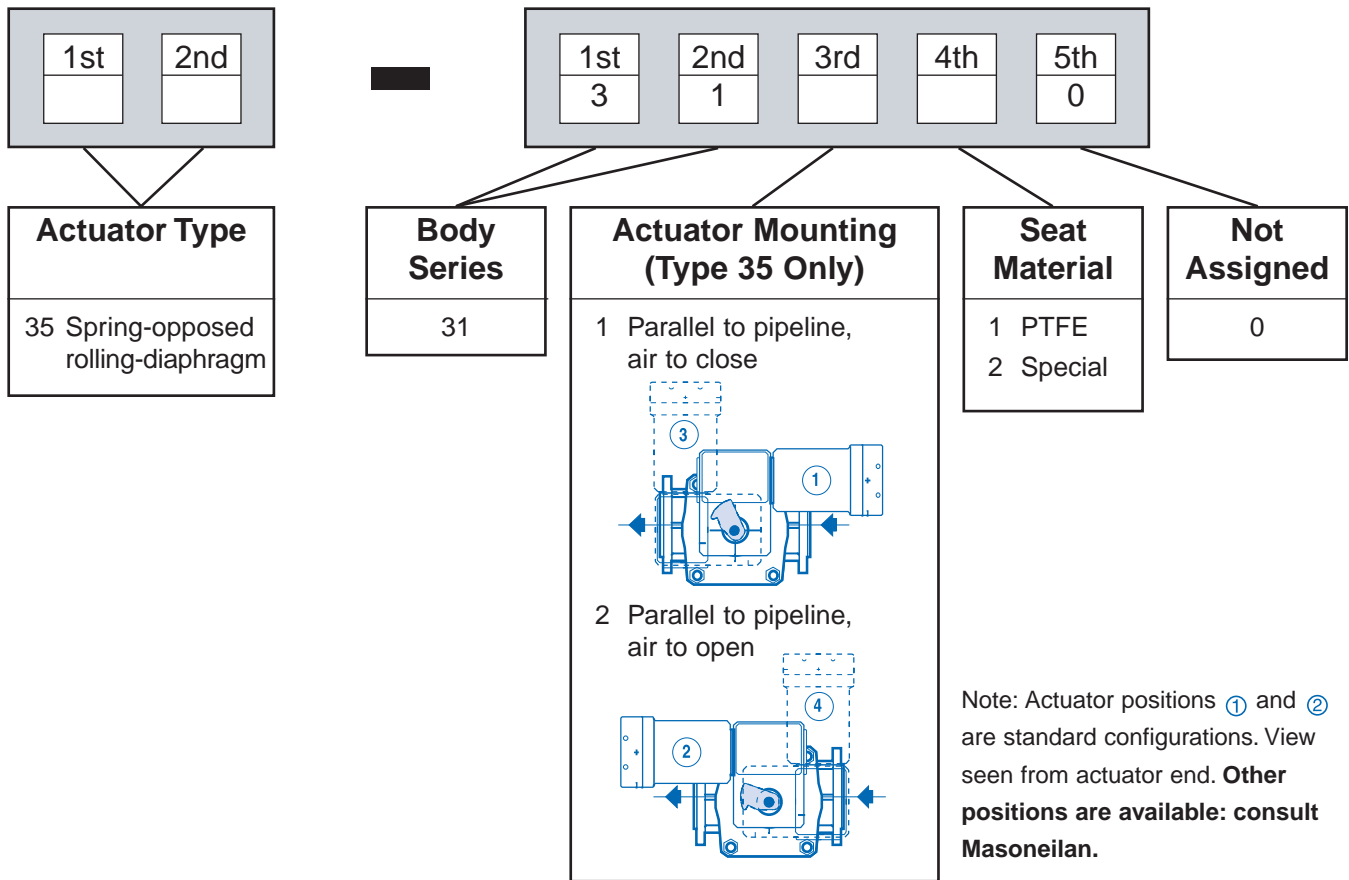
The 31000 Series control valve is a PFA lined control valve for corrosive applications which incorporates the following features:

- **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

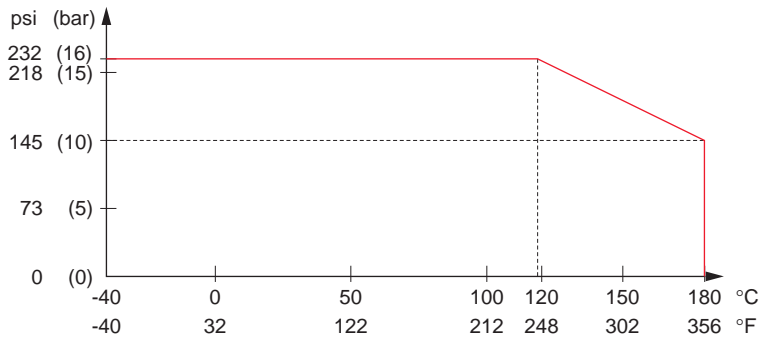
Valve size		PN connections		ANSI connections	
inch	mm	Flanges	Face to face dimensions	Flanges	Face to face dimensions
1, 2, 3	25, 50, 80	PN 10 ① PN 16 (125 AARH)	IEC 534-3 ② Table II	150 RF ③ (125 AARH)	ANSI B16.10 Globe Control Valve

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

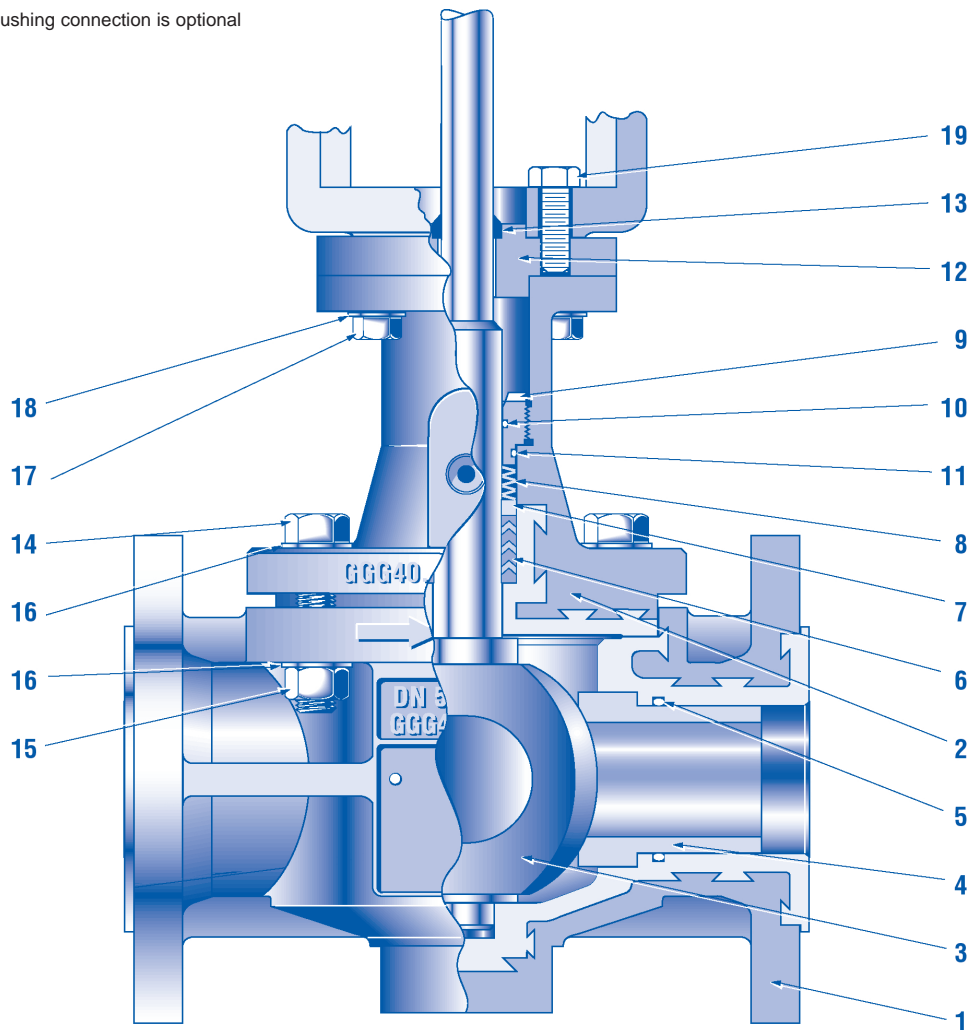
Leakage Class VI, according to IEC 534-4 and ANSI/FCI 70.2

## $C_V$ 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

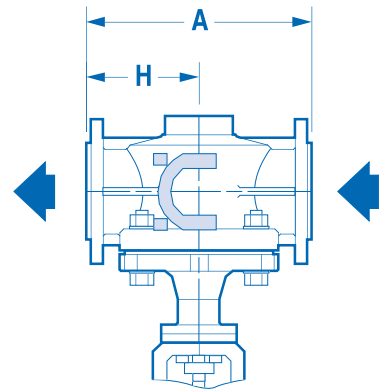
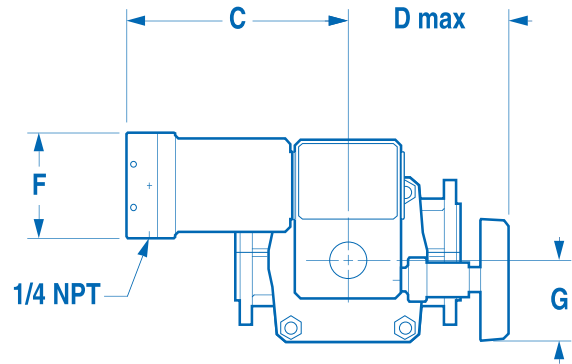
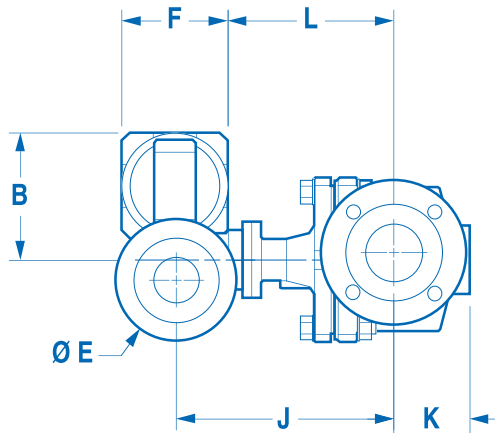
# Materials of Construction

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

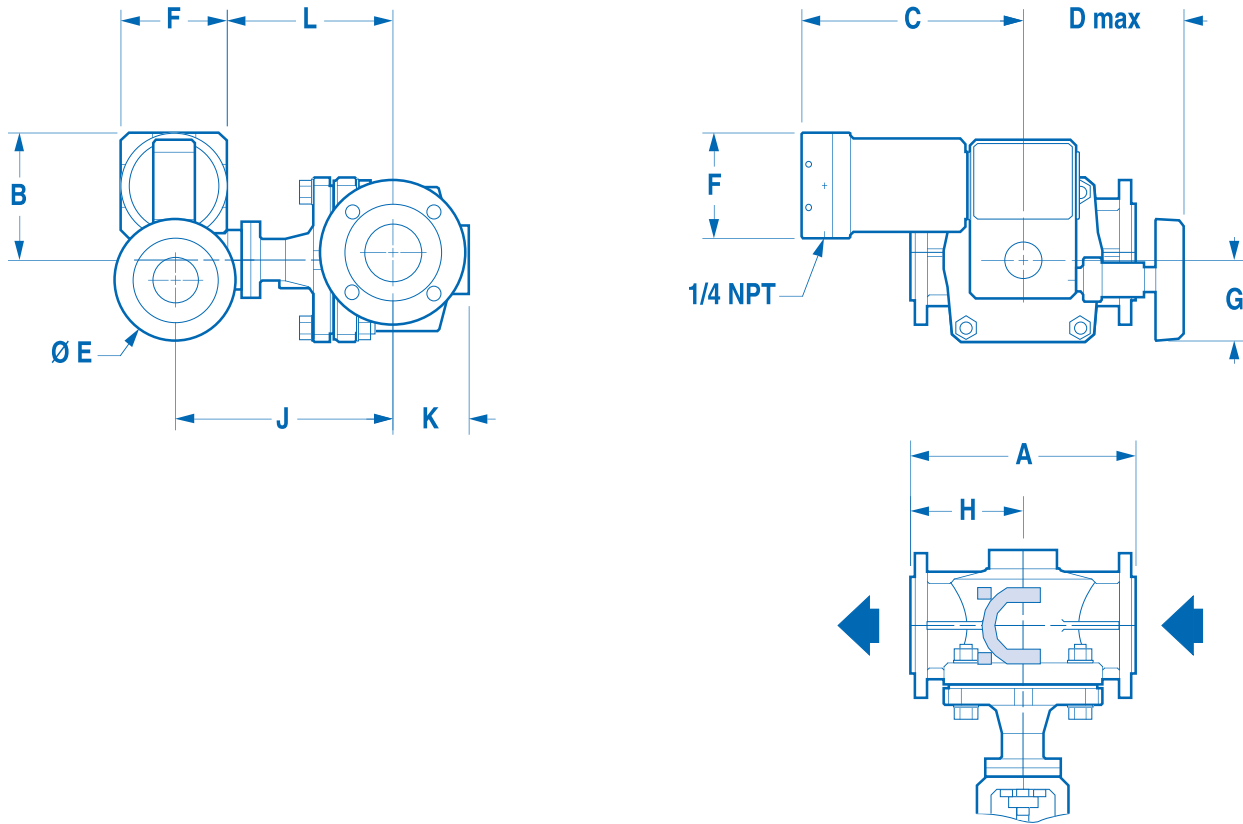


## Dimensions (inches)

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

## 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

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## About Dresser, Inc.

Dresser, Inc. is a leader in providing highly engineered infrastructure products for the global energy industry. The company has leading positions in a broad portfolio of products including valves, actuators, meters, switches, regulators, piping products, natural gas-fueled engines, retail fuel dispensers and associated retail point of sale systems and air and gas handling equipment.

Leading brand names within the Dresser portfolio include Dresser Wayne® retail fueling systems, Waukesha® natural gas-fired engines, Masoneilan® control valves, Mooney® regulators, Consolidated® pressure relief valves, and Roots® blowers and rotary gas meters. It has manufacturing and customer service facilities located strategically worldwide and a sales presence in more than 100 countries. The company's website can be accessed at [www.dresser.com](http://www.dresser.com).

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Headquartered in Houston, Dresser Masoneilan is a leading brand in the Dresser, Inc. portfolio. With a history of innovation and technological leadership that goes back more than 125 years, Dresser Masoneilan delivers flexible, best-fit process control valve solutions with interoperable instrumentation and smart technologies for a wide range of applications and industries. An "open architecture" technology platform offers more product application and operational flexibility. With strategically located manufacturing operations and a worldwide network of service and support facilities, Dresser Masoneilan delivers comprehensive process control solutions and services to a global market.

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