

Masoneilan® 28000 Series Varipak® Control Valves

Specification Data

CH28000

10/06

Masoneilan

Masoneilan

**Precise Microflow Valves
with Compact Design
and Flexible Capabilities**

DRESSER®

Table of Contents

Numbering System	3
Micro-Flow Control Innovation	4
General Data	5
Materials of Construction	6
Standard Flangeless Varipak	8
Standard Flanged Varipak	9
Varilog® Anti-Cavitation Varipak	10
High Pressure Varipak	11
Bellows Seal Varipak	12
Cryogenic Varipak	13
Accessories and Options	14
Standard Actuator Options	15

Foreword

Designed specifically for low flow applications, the Masoneilan 28000 Series Varipak provides excellent throttling control performance with a wide range of options and capabilities. Design optimization has also resulted in an extremely integrated and compact assembly. Key design features include:

Heavy Top-Guiding

Rugged valve plug support is provided along the entire stroke length using an integrated plug guide and seat ring. This ensures excellent plug stability and control even under high pressure drop conditions. Heavy guiding is critical for controlling vibration damage, providing dependable control and seating performance, and minimizing trim mechanical wear.

Application Flexibility

Ten standard contoured trim designs are available providing flexible application using the same body platform. This helps to eliminate the effects of valve oversizing and improves control loop performance resulting in higher process efficiency.

Adjustable C_v

In addition to multiple standard trim sets, the Varipak is also available with an adjustable C_v option. This feature allows users to easily increase or decrease the C_v setting in order to accommodate changing operating conditions. Adjustment is achieved by simply setting a knob within the actuator assembly (see page 4 for details).

Compact Assembly

Maximum space savings is provided by the Varipak assembly through modular design and force amplification actuator technology. The actuator also includes a low profile top-mounted handwheel option.

Anti-Cavitation Trim

Varipak is also available with an effective high pressure liquid letdown anti-cavitation trim solution - the Varilog® trim. This

unique design includes a multi-stage axial flow plug and liner, which provides dirt tolerant operation and high wear resistance.

Design Flexibility

Other standard configurations include a High Pressure ANSI Class 2500 design, a zero emissions Bellows Seal design, and a design for cryogenic applications. The Varipak is also available with an angle body design to accommodate existing piping configurations.

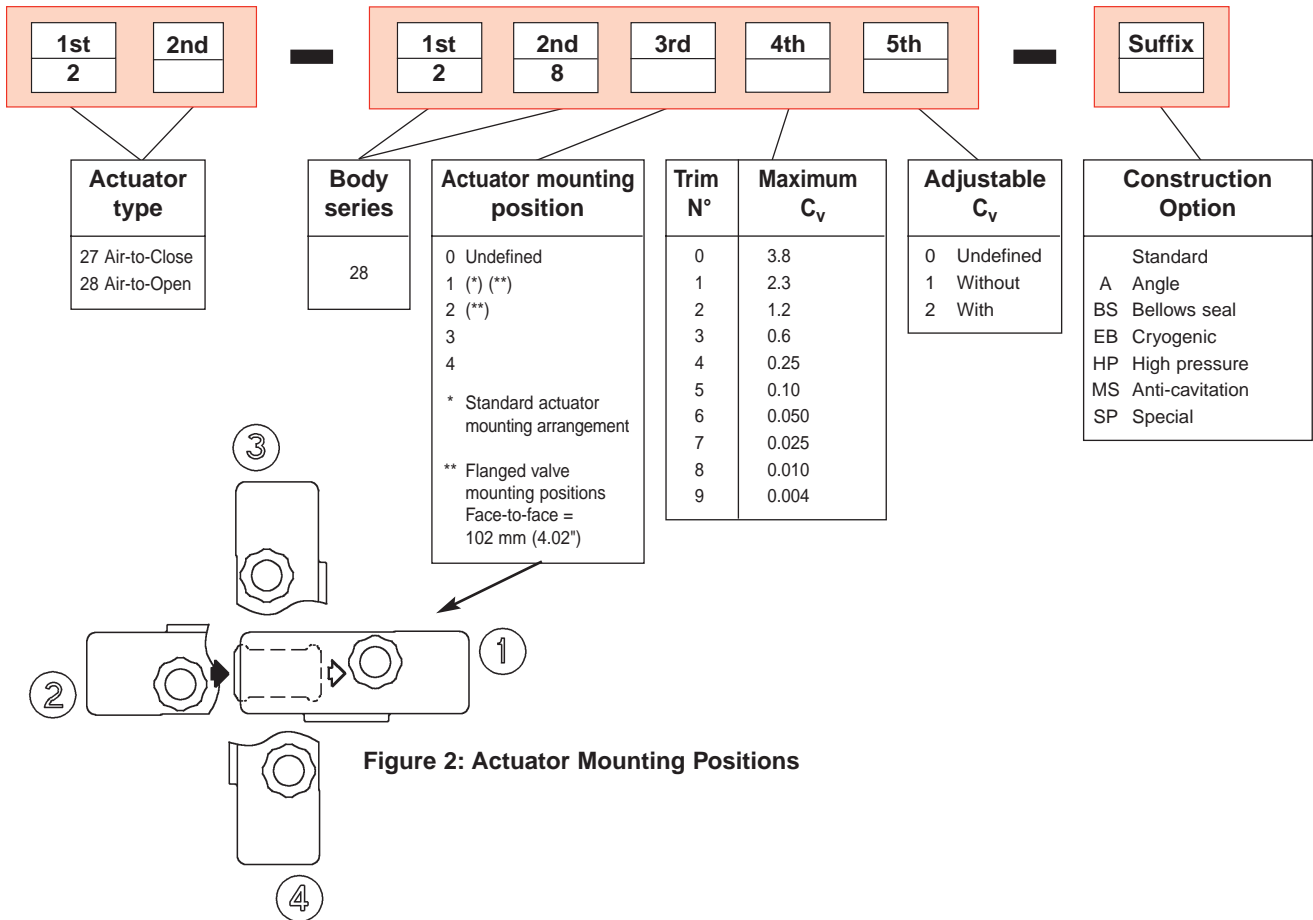
Ease of Maintenance

Varipak's simple top-entry body construction includes an integrated body and bonnet design, which allows for easy access and removal of the quick change trim. The integral liner and seat ring also reduces components and simplifies assembly and disassembly. Modularity of the actuator design further enhances maintainability of this unique valve assembly.



Figure 1: Varipak Family

Numbering System



Particulars contained in this publication are for general information only and Masoneilan reserves the right to modify the contents without prior notice. No warranty either expressed or implied is either given or intended.

Optimized C_v Characteristics

VariPak is far superior to conventional microflow valves in that it provides the user with a very wide range of nominal C_v ranges from 0.0016 to 3.8, using only eight plugs and five seats.

Precise C_v Calibration and Selection - C_v and F_L

Valve Sizes			Trim No.	Flow Coefficient C _v									Critical Flow Factor F _L
.5" (15mm)	.75" (20mm)	1" (25mm)		With Adjustable C _v Function									
				Min	Risk-Free ⁽³⁾			Max	Without Adjustable C _v Function				
•	•	•	9	0.0016	0.0020	0.0024	0.0028	0.0032	0.0036	0.0040	0.0040	0.85	
•	•	•	8	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.010	0.85	
•	•	•	7	0.010	0.013	0.016	0.019	0.021	0.023	0.025	0.025	0.85	
•	•	•	6	0.020	0.025	0.030	0.035	0.040	0.045	0.050	0.050	0.85	
•	•	•	5	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.10	0.85	
•	•	•	4	0.10	0.13	0.16	0.19	0.21	0.23	0.25	0.25	0.90	
•	•	•	3	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.60	0.90
•	•	•	2	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.2	0.92
•	•	•	1	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.3	0.92
	• ⁽²⁾	• ⁽¹⁾	0	1.5	1.9	2.3	2.6	2.9	3.2	3.5	3.8	3.8	0.92

(1) Flangeless, flanged or threaded connections.

(2) Flangeless connections.

(3) The "Risk-free" setting allows for easy valve capacity adjustments in the field to meet changing service conditions.

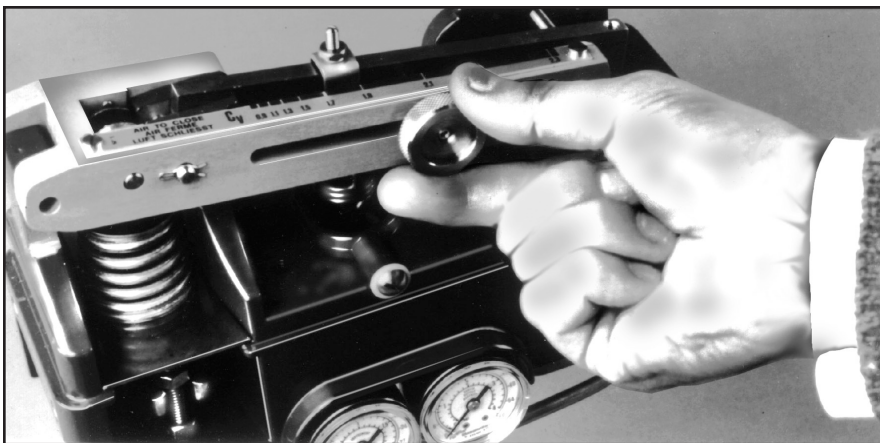


Figure 3: Flow Coefficient Adjustment

General Data

Body

Type

- globe style with angle style option

Sizes

- 1" (DN 25) standard
- 1/2" (DN 15) and 3/4" (DN 20) optional

Materials

- Standard:
type 316L St. St.
- Optional:
Monel®, Hastelloy® C, Alloy 20, others

Options

- Flanged valve
- Anti-cavitation Varilog®
- High pressure
- Bellows seal
- Cryogenic
- Angle valve
- NACE version

Trim

Plug type

- contoured, heavy top guided, multistaged anticavitation (Varilog)

Seat type

- metal seat

C_v ratio

- 500/1 at max. C_v
- 200/1 at min. C_v

Flow characteristics

- linear (trim No. 0 to 5)
- modified linear (trim No. 6 to 9)

Flow direction

- flow-to-open

Actuator

Type

- spring-opposed rolling diaphragm

Action

- direct or reverse, easily performed without additional parts

C_v adjustment

- optional adjustable knob / lever

Handwheel

- optional top mounted

Air connection

- 1/8" NPT

Temperature Range/Seat Leakage

Valve Type	Temperature Range ⁽¹⁾	Seat Class ⁽²⁾	
Standard and High Pressure Valves	-320°F to +650°F (-192°C to +343°C)	IV	V
Cryogenic Valves	-455°F to +300°F (-270°C to +150°C)		
Varilog Anti-Cavitation Valves	-20°F to +650°F (-29°C to +343°C)		

(1) Please consult Masoneilan for applications outside the temperature range.

(2) Class IV seat leakage is standard and Class V is optional. Seat leakage class ratings per IEC 534-4 and ANSI/FCI 70-2.

Ratings/End Connections**

Valve Sizes		Maximum C _v	ANSI Class 150-1500 ISO PN 20-250					ANSI Class 150-600 ISO PN 20-100
inches	mm		Flangeless	Threaded	SW	BW	Flanged Face-to-Face: 6.3" (160mm)	Flanged Face-to-Face: 4" (102mm)
.5	15	2.3	•	•	•		•	•
.75	20	2.3	• ^(*)	•	•		•	•
1	25	3.8	•	•	•	•	•	•

* Available with maximum rating of ANSI Class 600 / ISO PN 100.

** Please consult Masoneilan for applications requiring ANSI Class 2500 / ISO PN 420 rating.

Materials

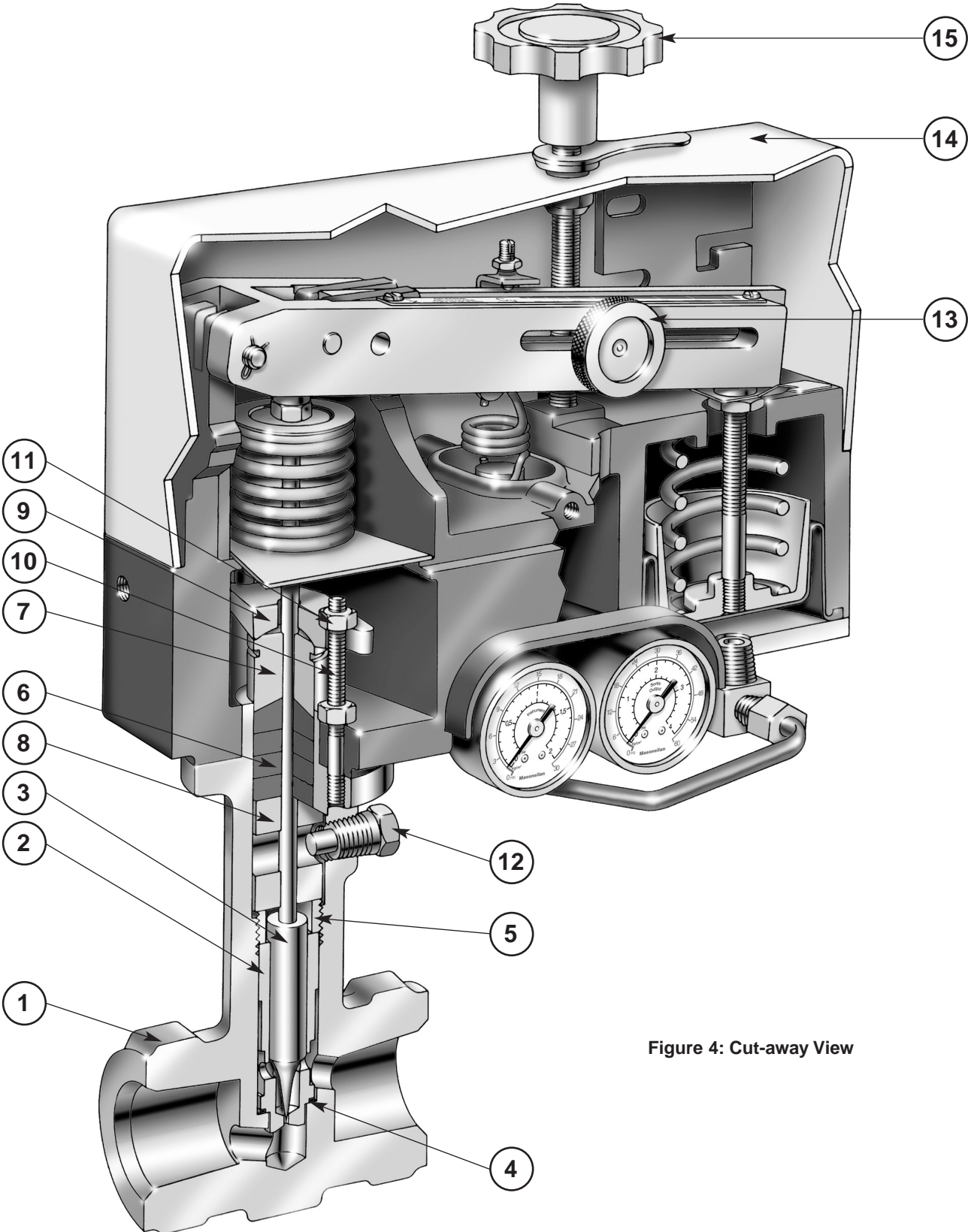


Figure 4: Cut-away View

Materials

Materials* (Standard and NACE Construction)⁽¹⁾

Ref. No.	Temperature Range	-320°F -196°C	+450°F +232°C	+650°F +343°C	-20°F -29°C	+450°F +232°C
		Standard Materials (<i>Optional Materials</i>)			NACE Materials	
1	Body	316L St. St. ASTM A182 Gr. F 316L (forging)			22 HRC Max.	
		316L St. St. ASTM A351 Gr. CF3M (casting)				
		<i>Optional: Monel®, Hastelloy® C, Alloy 20</i>				
2	Seat	17-4 PH St. St. ASTM A564 Gr. 630 Condition H900 (Max C _V ≥ 0.10, trims No. 0 to 5)			MONEL K 500 35 HRC Max.	
		Solid Stellite® No. 6 (Max C _V ≤ 0.05, trims No. 6 to 9)				
		<i>Optional: 440C St. St., Monel®, Hastelloy® C, Alloy 20</i>				
3	Plug and Stem S/A	Plug Solid Stellite® No. 6 (Max C _V ≥ 0.10, trims No. 0 to 5)			22 HRC Max.	
		Stem 316 St. St. (Max C _V ≥ 0.10, trims No. 0 to 5)				
		One Piece Solid Stellite® No. 12 (Max C _V ≤ 0.05, trims No. 6 to 9)				
		<i>Optional: 440C St. St., Monel®, Hastelloy® C, Alloy 20</i>				
4	Seat Ring Gasket	Grafoil® with 316 St. St. inserts			PTFE Fiberglass Reinforced	
5	Seat Ring Retainer	17-4 PH St. St. ASTM A564 Gr. 630 Condition H1075			MONEL K 500 35 HRC Max.	
6	Packing	Kevlar® PTFE (standard up to ASME Class 1500)			Kevlar® PTFE (standard up to ASME Class 1500)	
		Lattyflon® (with optional Viton® O-rings)			Lattyflon® (with optional Viton® O-rings)	
7	Packing Follower	303 St. St. ASTM A582 TY 303			ASTM A479 TY 304 22 HRC Max.	
8	Packing Spacer	316 St. St. ASTM A479 TY 316			22 HRC Max.	
9	Packing Flange	304 St. St. AISI 304			ASTM A743 Gr. CF8 22 HRC Max.	
10	Packing Flange Studs	304 St. St. ASTM A193 Gr. B8			304 St. St. ASTM A193 Gr. B8 (Class III)	
					304 St. St. ASTM A193 Gr. B8 (Class I or II) 22 HRC Max.	
11	Packing Flange Nuts	304 St. St. ASTM A193 Gr. 8			304 St. St. ASTM A194 Gr. 8 (Class III)	
					304 St. St. ASTM A194 Gr. 8A (Class I or II) 22 HRC Max.	
12	Safety Pin	316 St. St. ASTM A479 TY 316			22 HRC Max.	
13	C _V Adjustment Knob	Stainless Steel			Stainless Steel	
14	Actuator Cover	Polycarbonate			Polycarbonate	
		<i>Optional: Stainless Steel</i>			<i>Optional: Stainless Steel</i>	
15	Handwheel (optional)	Lexan® + Austenitic St. St.			Lexan® + Austenitic St. St.	

Notes:

- (1) Materials and processes in accordance with the requirements of NACE specification MR0103. Applications requiring compliance to MR0175, 2003 Rev. or ISO 15156 would require engineering review.
- (2) Materials designated for these parts conform to NACE Class III bolting requirements.
- (3) Materials designated for these parts conform to NACE Class I or Class II bolting requirements.
- (4) Consult Masoneilan for NACE Applications above ANSI Class 600 rating.

Material not applicable

* Materials noted throughout text are for reference only. Masoneilan reserves the right to supply trade name material or equivalent.

Standard Flangeless Varipak - 28000 Series



Figure 5: Standard Flangeless Varipak

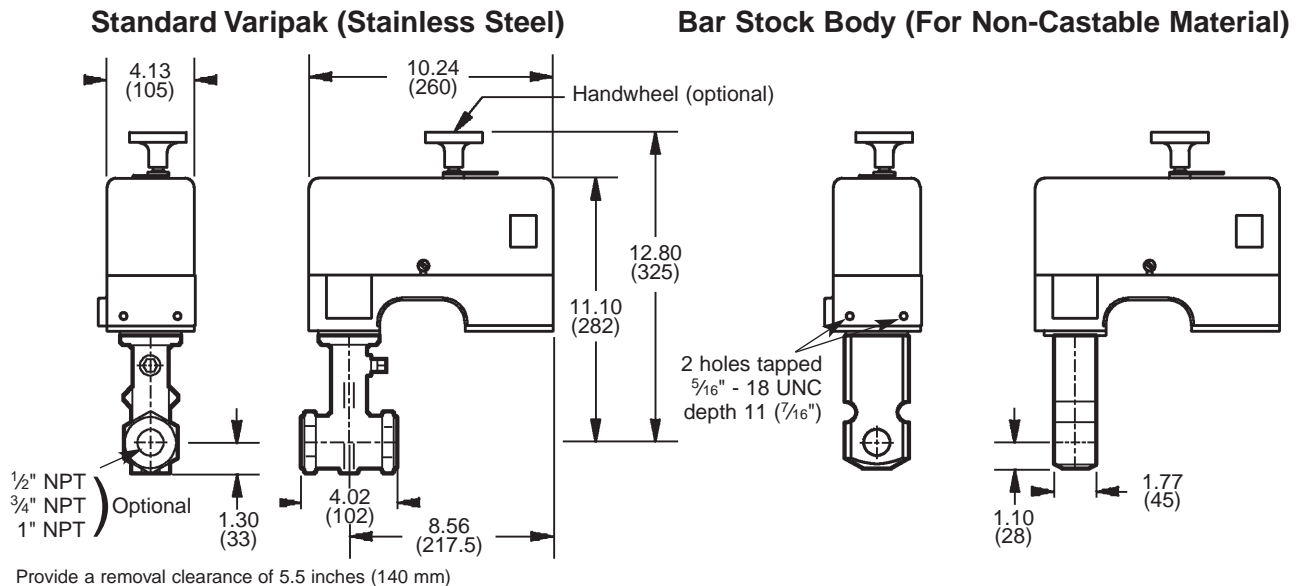
The standard flangeless Varipak valve is widely used in all industries. This can be attributed to the overall compactness and simplicity of the flangeless construction, and the wide application range of the stainless steel body design.

- Numbering system: see page 3.
- General data: see page 5.
- Materials: standard construction, see page 7.
- Accessories and options: see page 14.

Rated C_v Range /Weight

Body / Actuator Assembly Weight	Rated C_v Range
15.4 lbs (7 kg)	3.8 to 0.0040 (trim No. 0 to 9)

Dimensions - inches (mm)



Standard Flanged Varipak - 28000 Series



The Varipak is also available in flanged configurations with connections and ratings as indicated in the table below.

- Numbering system: see page 3.
- General data: see page 5.
- Materials: standard construction, see page 7.
- Accessories and options: see page 14.

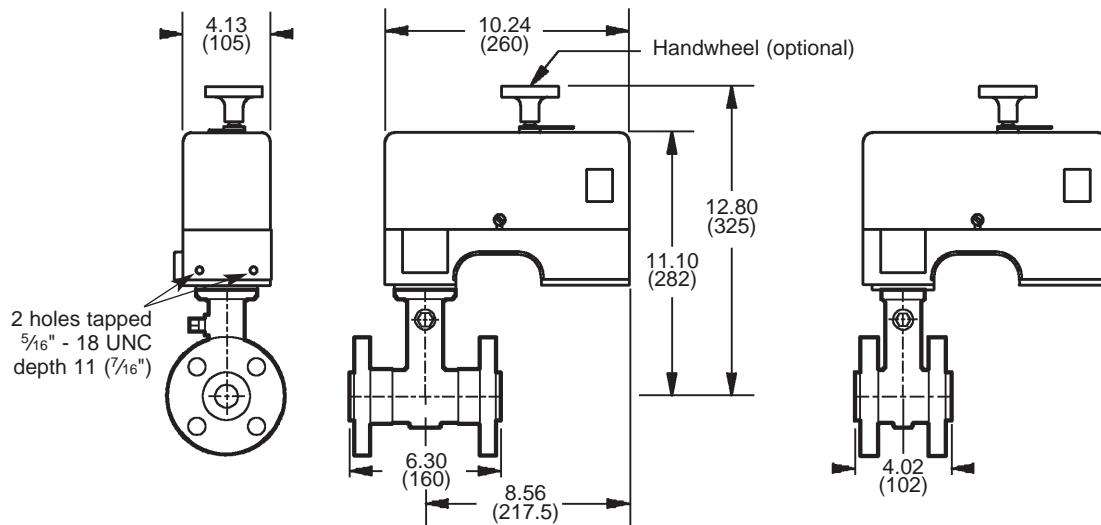
Figure 6: Standard Flanged Varipak

Flange Ratings/Weight

Face-to-Face Dimensions	Flange Ratings	Body/Actuator S/A Weight*	Rated C _v Range
4" (102mm)	ANSI Class 150-600 ISO PN 20-100 (raised face only)	8 to 10 kg (17.4 to 22 lbs)	3.8 to 0.0040 (trim No. 0 to 9)
6.3" (160mm)	ANSI Class 150-1500 ISO PN 20-250 DIN PN 10-250 (RF, FF, RTS, etc...)	10 to 12 kg (22 to 26.5 lbs)	

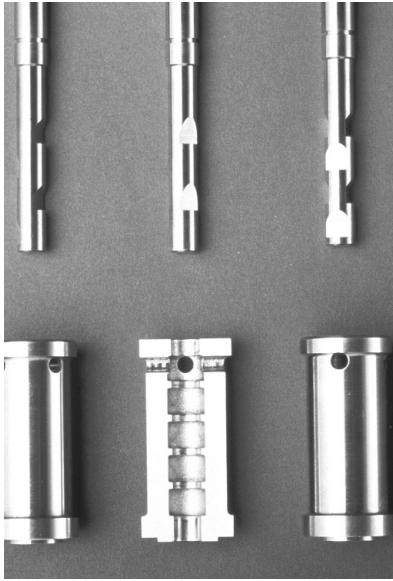
*depending on rating.

Dimensions - inches (mm)



Provide a removal clearance of 5.5 inches (140 mm)

Varilog® Anti-Cavitation Varipak - 28000 MS Series



The Varilog multi-stage trim design provides unmatched anticavitation performance in low flow applications.

It minimizes erosion and vibrations, which typically leads to failure in conventional single-seated valves. The Varilog trim is available with the standard Varipak body designs in either the flanged or flangeless configurations.

- Numbering system: see page 3.
- General data: see page 5.
- Accessories and options: see page 14.
- Materials: see chart below.

Figure 7: Varilog Trim Subassembly

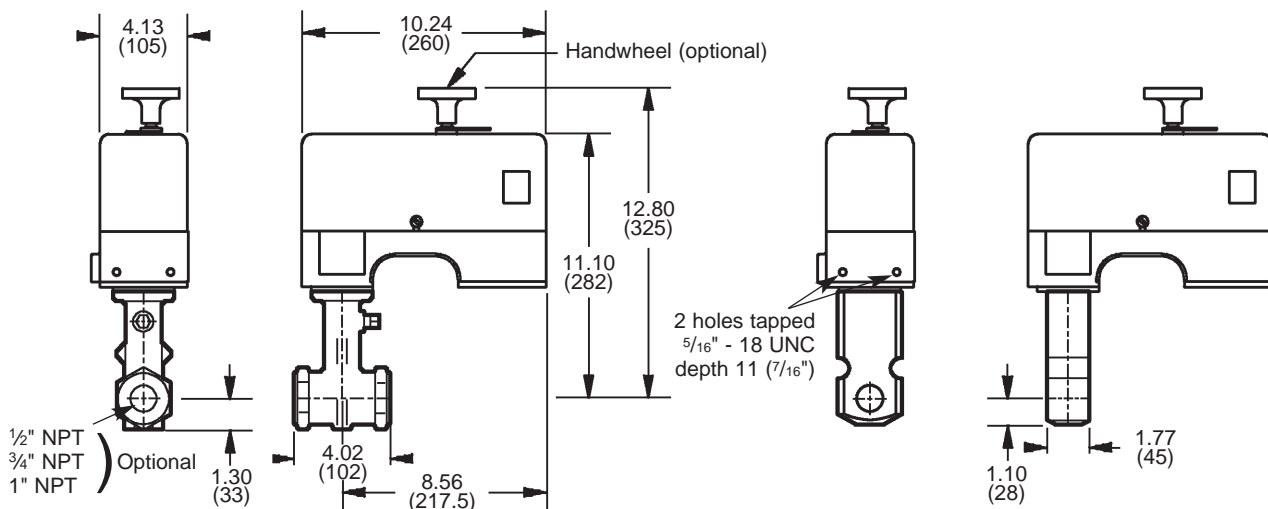
Specific Characteristics

Rated C _v Range	Critical Flow Factor F _L	Temperature Range	Materials	
			0.60 to 0.050 (trim No. 3 to 6)	≥ 0.98
			Plug	One part from solid Stellite No. 12 or ASTM A 276 type 440 C St. St.
			Other Parts	Standard Construction: see page 7

Dimensions - inches (mm)

Standard Varipak (Stainless Steel)

Bar Stock Body (For Non-Castable Material)



Provide a removal clearance of 5.5 inches (140 mm)

High Pressure Varipak - 28000 HP Series



Figure 8: High Pressure Varipak

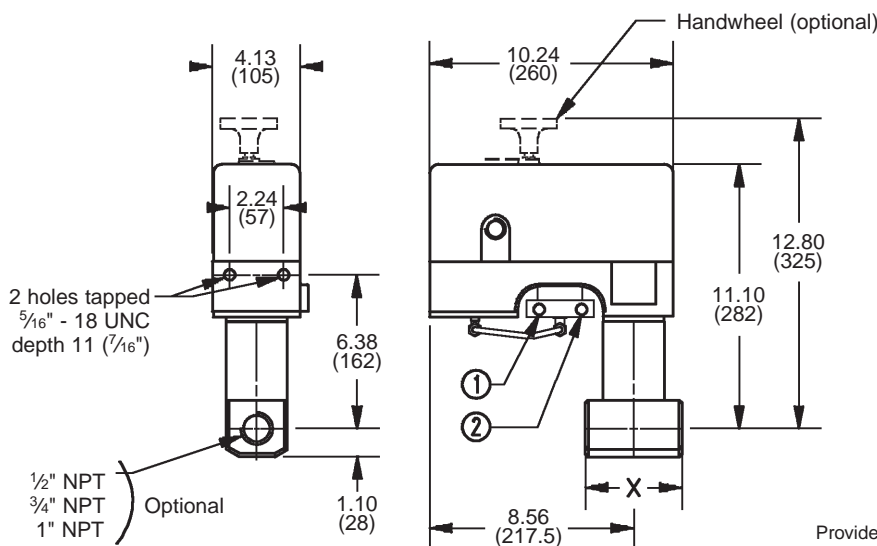
Where very high upstream pressure occurs or where the pressure drop exceeds the pressure rating of the standard body (see page 8), a high pressure Varipak is the recommended choice.

- Numbering system: see page 3.
- General data: see page 5.
- Accessories and options: see page 14.
- Materials: see chart below.

Specific Characteristics

Rated C _v Range	Body Rating	Seat Leakage	Materials	
			0.60 to 0.0040 (trim No. 3 to 9)	ANSI Class 2500 ISO PN 420

Dimensions - inches (mm)

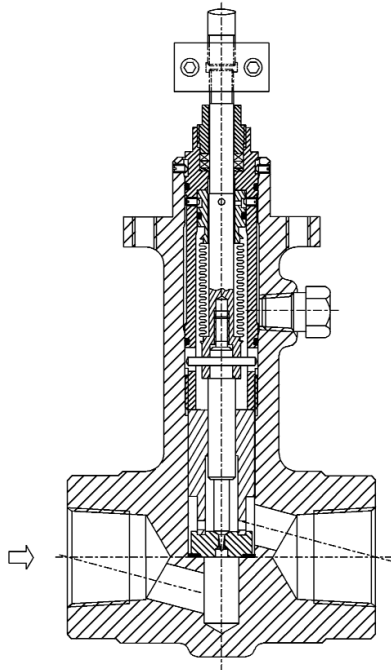


- ① 1/4" NPT Supply Connection
- ② 1/4" NPT Instrument Connection

Valve Sizes		X	
inches	mm	inches	mm
.5	15	3.15	80
.75	20	4.02	102
1	25		

Provide a removal clearance of 5.5 inches (140 mm)

Bellows Seal Varipak - 28000 BS Series



A version of the Varipak with bellows seal is available for applications requiring zero leakage at the packing box.

This type of valve is often needed for applications involving the handling of flammable, toxic or explosive fluids.

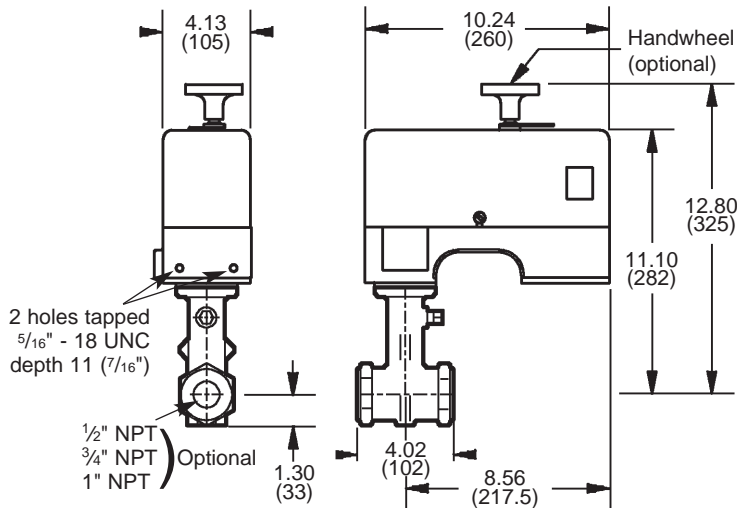
- Numbering system: see page 3.
- General data: see page 5.
- Accessories and options: see page 14.
- Materials: see chart below.

Figure 9a: Bellows Seal Varipak

Specific Characteristics

Rated C _v Range	Body Rating	Seat Leakage	Operating Pressures	Materials	
				Body	Plug and Seat: Standard Materials Bellows Assembly: 316L St. St. Viton® O-rings
2.3 to 0.0040 (trim No. 1 to 9)	ANSI Class 150-600 ISO PN 10-100	Class IV	800 psi at +212°F (55 bar at +100°C) 580 psi at +392°F (40 bar at +200°C)	Other Parts	Standard Construction: see page 7

Dimensions - inches (mm)



Provide a removal clearance of 5.5 inches (140 mm)

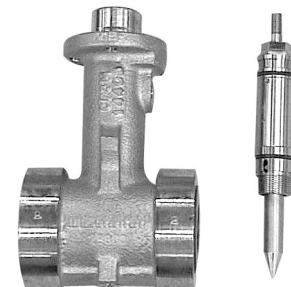


Figure 9b: Plug and Bellows Subassembly

Cryogenic Varipak - 28000 EB Series

Simplified maintenance

The cryogenic Varipak meets the requirements of cryogenic processes requiring thermal insulation. An 'insulating interface' sets up between the valve body ('cold zone') and the body extension located in the higher temperature area ('warm zone'). The valve body assembly and its thermal extension are positioned inside the 'cold box'. The plug can be easily removed and inspected without disturbing the valve body. This precludes any preliminary, complicated dismounting, and more importantly, prevents interfering in any way with the 'cold box'.

Body

The valve body, manufactured from a material suitable for low temperatures, maintains ductility in service. It can be conveniently mounted to suit any specific piping needs. However, arrangements must be made so that the angle between the valve axis and vertical does not exceed 60°.

The bonnet is located away from the cryogenic fluid, which means that the body gasket is not inside the cold zone. This design prevents any leakage of the cryogen into the insulated zone.

Body extension

The body extension and coupling sleeve are thin-walled metal tubes so as to minimize the inflow of heat by conduction. The annular space is reduced in order to exclude any convection currents.

Plug

The design of the plug allows the working parts to be perfectly centered in relation to the seat and provides a uniform temperature zone for the guiding.

- Numbering system: see page 3.
- General data: see page 5.
- Accessories and options: see page 14.
- Materials: see chart below.

Specific Characteristics

Rated C _v Range	Temperature Range	Body Rating	Seat Leakage	Materials	
3.8 to 0.10 (trim No. 0 to 5)	-455°F to +300°F (-270°C to + 150°C)	ANSI Class 150-600 ISO PN 20-100 excepted trim No. 0: ANSI Class 150-300 ISO PN 20-50	Class IV	Body and Extension	ASTM A 182 Gr. F 316L
				Plug/Stem	Standard Material
				Seat	Trim No. 0: Standard Material Trim No. 1 to 5: ASTM A 564 Gr. 630 Condition H900 Type 17-4 PH. St. St.
				O-ring Seat Gasket	PTFE
				Other Parts	Standard Construction: see page 7

Dimensions - inches (mm)

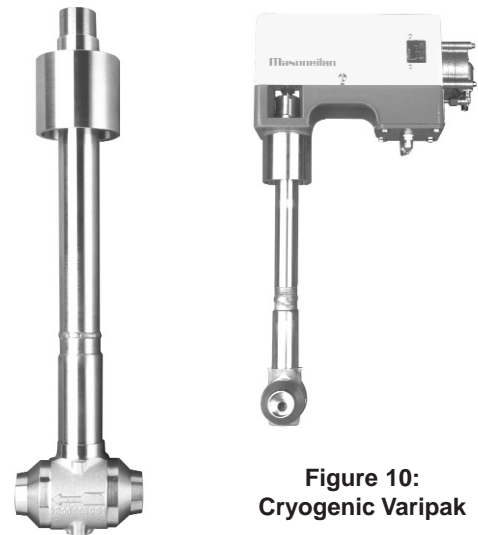
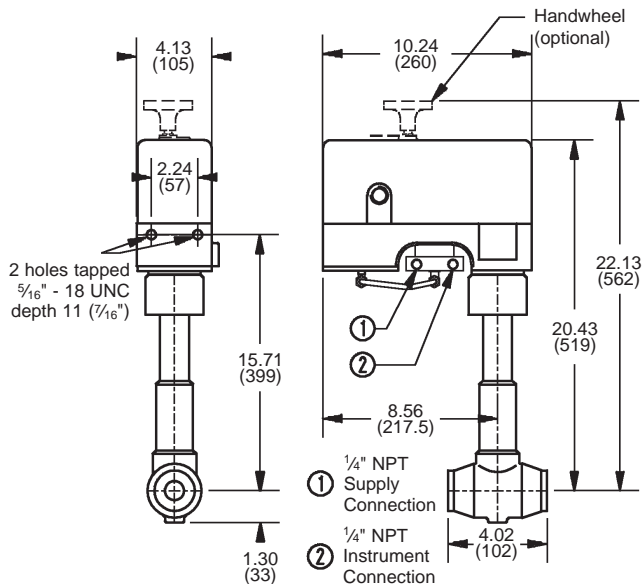
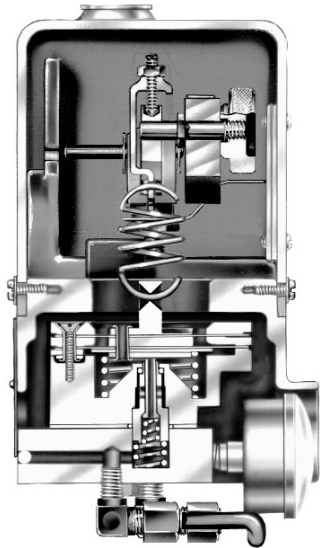


Figure 10:
Cryogenic Varipak

Provide a removal clearance of 5.5 inches (140 mm)

Accessories and Options



**Figure 11: Model 7700P
Pneumatic Positioner**

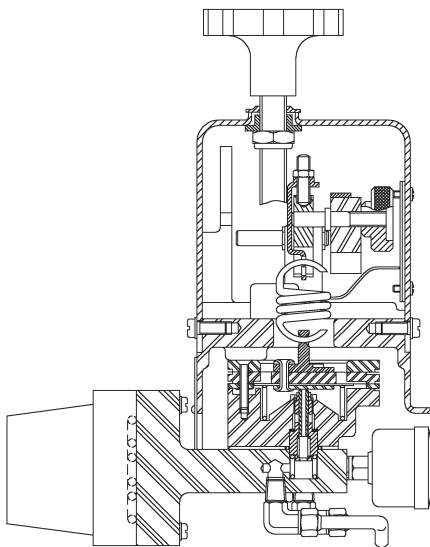
Pneumatic Positioner (Model 7700P)

<i>Type</i>	pneumatic, force balance
<i>Mounting</i>	built-in bracket in actuator
<i>Action</i>	direct: increasing instrument signal increases air output
<i>Characteristics</i>	linear
<i>Instrument signal</i>	200 to 1000, 400 to 2050 or 3 to 15, 6 to 30 or 3 to 27 psi (200 to 1850 mbar) 3 to 9, and 9 to 15 psi (200 to 600 and 600 to 1000 mbar) split range
<i>Connections</i>	1/4" NPT instrument and supply — 1/8" NPT output
<i>Average air consumption</i>	0.15 scfm at 30 psi supply (0.26 Nm ³ /h at 2.1 bar supply)
<i>Max. air output</i>	4.20 scfm (7 Nm ³ /h)

<i>Supply pressure effect</i>	0.05% of full stroke variation per psi supply pressure change (0.07% per 100 mbar)
<i>Open loop gain</i>	70
<i>Linearity</i>	± 0.5%
<i>Sensitivity</i>	0.1%
<i>Repeatability</i>	0.1%
<i>Full stroke time</i>	less than one second
<i>Weight</i>	3.3 lbs (1.5 kg)

Other Accessories

Proximity sensors and limit switches
Digital positioners - HART® and Fieldbus Foundation
Handwheel, airsets and solenoid valves



**Figure 12: Model 7700E
Electropneumatic Positioner**

Electropneumatic Positioner (Model 7700E)

<i>Type</i>	electropneumatic, force balance
<i>Mounting</i>	compact, without external linkage to the actuator (see Fig. 8)
<i>Action</i>	direct: increasing instrument signal increases air output
<i>Characteristics</i>	linear
<i>Instrument signal</i>	4-20 mA
<i>Air connections</i>	1/4" NPT supply - 1/8" NPT output
<i>Average air consumption</i>	0.24 scfm (0.4 Nm ³ /h)
<i>Electrical connections</i>	1/2" NPT or M20
<i>Weight</i>	7.7 lbs (3.5 kg)

Hazardous Location Protection

<i>ATEX Approvals (94/9/EC Directive)</i>	Explosionproof No. SIRA 02 ATEX 1274 Intrinsic Safety No. SIRA 02 ATEX 2277 X
<i>FM (Factory Mutual) Approvals</i>	Explosionproof Intrinsic Safety Non-incendive and Dust-ignitionproof
<i>CSA Approvals (Canadian Standards Association)</i>	Explosionproof Intrinsic Safety Non-incendive

Standard Actuator Options

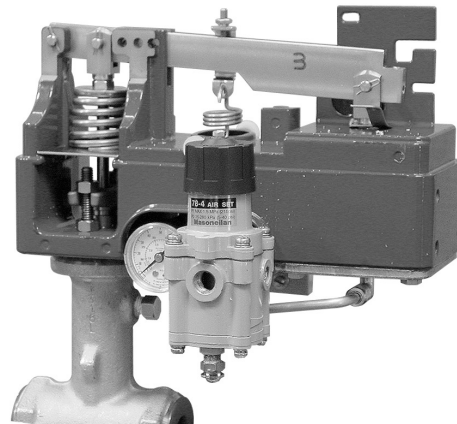
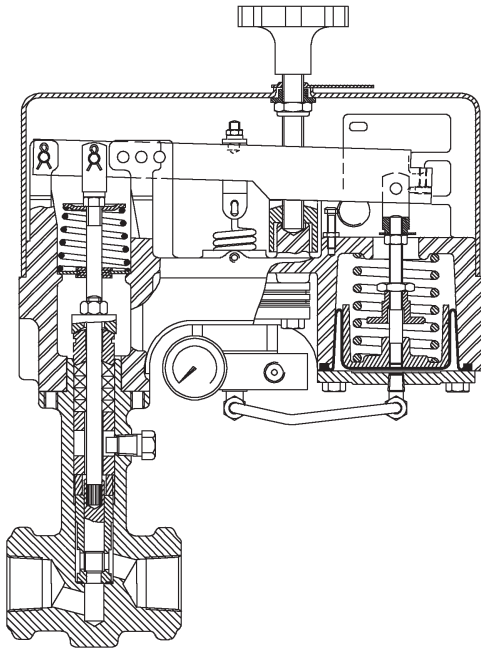


Figure 14: Varipak with Non-Adjustable C_v Actuator (cover removed)

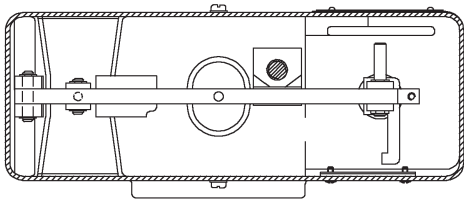


Figure 13: Non Adjustable C_v Actuator

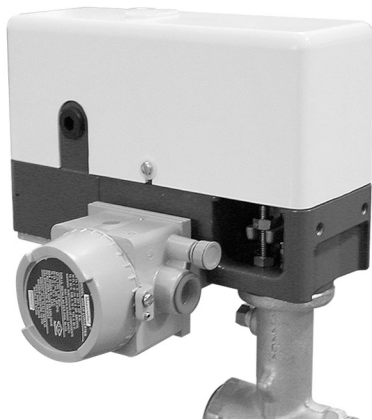


Figure 15: Varipak with 7700E Electropneumatic Positioner

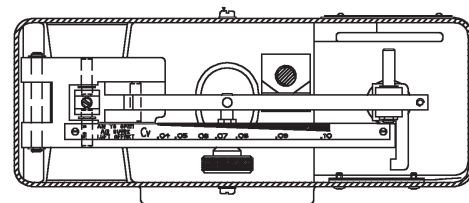
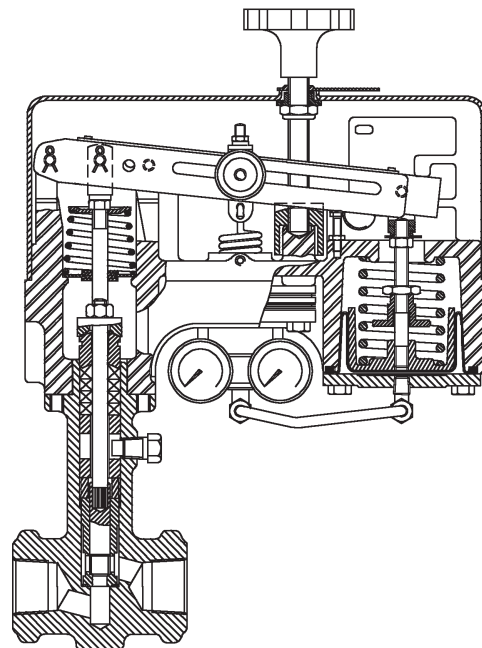


Figure 16: Adjustable C_v Actuator

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 Funchal, 129 - Conj. 5A
04551-060 - Sao Paulo - SP Brazil
Phone: 55-11-2146-3600
Fax: 55-11-2146-3610

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 Solutions
Beijing Rep. Office
Suite 1703, Capital Mansion
6 Xinyuannan Rd. Chaoyang District
Beijing 100004, China
Phone: +86-10-8486-4515
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
Umlandstrasse 58
60314 Frankfurt, Germany
Phone: +49-69-439350
Fax: +49-69-4970802

INDIA

Dresser Valve India Pvt. Ltd.
305/306, "Midas", Sahar Plaza
Mathurdas VasANJI Road
J.B. Nagar, Andheri East
Mumbai, 400059, India
Phone: +91-22-8354790
Fax: +91-22-8354791

Dresser Valve India Pvt. Ltd.
205, Mohta Building
4 Bhikaji Cama Place
New Delhi, 110 066, India
Phone: +91-11-2-6164175
Fax: +91-11-5-1659635

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.
2109 Kuk Dong Building
60-1, ChoongMoo-ro 3-ka
Joong-gu, Seoul, Korea 100-705
Phone: +82-2-2274-0748
Fax: +82-2-2274-0720

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: +965-3987879

MALAYSIA

Dresser Flow Solutions
Business Suite, 19A-9-1, Level 9
UOA Centre, No. 19, Jalan Pinang
50450 Kuala Lumpur, West Malaysia
Phone: +60-3-2161-0322
Fax: +60-3-2163-3612

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

Sales Office Locations

RUSSIA

DS Controls
Nekhinskaya Street, 61
Veliky Novgorod
Russia, 173021
Phone: +7-8162-15-7898
Fax: +7-8162-15-7921

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: +65-6-6861-6100
Fax: +65-6-6861-7172

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: +34-93-652-6444

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: +44-1695-52601

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: +44-1895-454-919

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: 361-881-8182
Fax: 361-881-8246

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

Dresser Flow Solutions
(Contractor Sales)
16240 Port Northwest Drive
Houston, TX 77041
Phone: 832-590-2303
Fax: 832-590-2529

Dresser - Masoneilan
12015 Mora Drive, Unit 2
Santa Fe Springs, CA 90670
Phone: 562-941-7610
Fax: 562-941-7810



CH28000 SD - 10/06
Varipak® 28000 Series
Control Valves