

MIL 27000 - Compact Globe Control Valves





Table of Contents

Introduction	01
Features	02
Typical Applications	03
Technical Information	04 - 05
<ul style="list-style-type: none"> • Model Decodification • Standard Sizes / Ratings / End Connections • General Data • Seat Leakage Class / Temperature Range • Flow Coefficients (Rated Cv) 	
Construction	06 - 07
Dimensions and Weights	08



Introduction

MIL 27000 series compact globe control valves are designed with built-in versatility making them the most widely used control valve well suited to handle a wide variety of process applications.

The single ported shank guided valve with a very unique compact construction makes it the most preferred choice for every industrial segment.



Features

Compact and Lightweight Construction

Unique compact design, makes the mounting of the valves possible in cramped locations like pharmaceutical plants where mounting space is a constraint.

Shank Guiding

Rugged, shank guiding provides support to ensure plug stability.

Reduced Capacity

In addition to full area trim, reduced trim options are also available to provide a wider flow range capability.

Trim Type

Standard construction offers a threaded seat ring. Contoured plugs are available with equal percentage or linear characteristics.

Field-reversible Actuator

The air failure action of the actuator can be reversed at site with the usage of minimal spare parts.

Optional Handwheel

Compact top mounted handwheel is an add-on feature for manual operation.

Tight Shut-off

Class IV leakage as per FCI 70.2 is standard. Optional construction meets Class V & VI seat leakage rates as per FCI 70.2.





Typical Applications

MIL 27000 series compact globe control valves are adapted for use in any industrial segment for applications with moderate pressure drop.

These valves can also be used for fluids containing small particulate presence.

In addition, these valves can handle viscous fluids in refineries and petrochemicals.

Compact globe control valves also find extensive use in

Pharmaceutical, Chemical and Bio-medical industries where accurate monitoring and controlling of the valve position is critical as it affects the product quality. Equally attractive feature is the overall compactness offered by the valve which overcomes any kind of space constraints at the site.





Technical Information

Model Decodification

1 st 2	2 nd —	—	3 rd 2	4 th 7	5 th —	6 th —	7 th —
ACTUATOR TYPE			BODY SERIES		PLUG TYPE	TRIM TYPE	SEAT TYPE
20 - Hand Operated 27 - Air to close 28 - Air to open			27. Compact Globe Control Valve		0. Undefined 1. Unbalanced Contoured	0. Undefined 1. Linear 2. Equal % 3. Customized	0. Undefined 4. Clamped (Quick change) 5. Threaded Metal Seat 6. Threaded Soft Seat

Standard Sizes / Ratings / End Connections

VALVE SIZE (inch)	RATING (ASME CLASS)	END CONNECTION
0.5 - 4	150# & 300#	F B S

F: Flanged B: Butt Weld S: Socket Weld

General Data

BODY		BONNET	
Type	: Globe	Type	: Stud bolted
Recommended Flow direction	: Flow to open	Temperature range	: -27 °C to 427 °C
GLAND SEAL		TRIM	
Type	: Adjustable packing box with PTFE or Graphite moulded split rings	Plug Type:	Unbalanced contoured
Option	: Ecolock (varying density for low emission, PTFE or Graphite) or PTFE V Rings	Seat Type: Option	Threaded metal or Soft seat : Seat ring with Carbon Filled PTFE insert for Class VI leakage
Temperature Range	: ≤ 180 °C : PTFE, > 180 °C : Graphite	Guiding	: Heavy Shank Guiding
		Rangeability	: 30 : 1
		Characteristics	: Linear, Equal % , on-off



Seat Leakage Class / Temperature Range

VALVE SIZE (inch)	RATING (ASME CLASS)	SEAT TYPE	TEMPERATURE RANGE (°C)		SEAT LEAKAGE CLASS (FCI 70.2)	
			MIN	MAX	STANDARD	OPTIONAL
0.5 to 4	150# to 300#	Metal Seat	-27	427	Class IV	Class V
		Soft Seat	-27	232	Class VI	

Flow Coefficients - Rated Cv

VALVE SIZE (inch)	RATING (ASME CLASS)	STROKE (inch)	ORIFICE DIA (inch) Vs RATED Cv					
			0.25	0.375	0.50	0.812	1.25	1.625
0.5	upto 300#	0.50	0.25, 0.6, 1, 1.7	2.5	3.8	6	–	
0.75			0.25, 0.6, 1, 1.7	2.5, 3.8	6	9	12	
1			0.25, 0.6, 1, 1.7	2.5, 3.8	6	9, 12	15	
1.5		0.75	0.25, 0.6, 1, 1.7	2.5, 3.8	6	10, 13	20, 24	34
2			0.25, 0.6, 1, 1.7	2.5, 3.8	6	11, 15	21, 25	45

(Critical flow factor C_f or $F_L = 0.90$)

VALVE SIZE (inch)	RATING (ASME CLASS)	STROKE (inch)	ORIFICE DIA (inch) Vs RATED Cv				
			1.25	1.5	2	2.625	3.15
3	upto 300#	1.5	30	50	65	80, 110	140
4			30	50	65	80, 110	140, 170

Actuator Selection (Spring - Diaphragm Actuator)

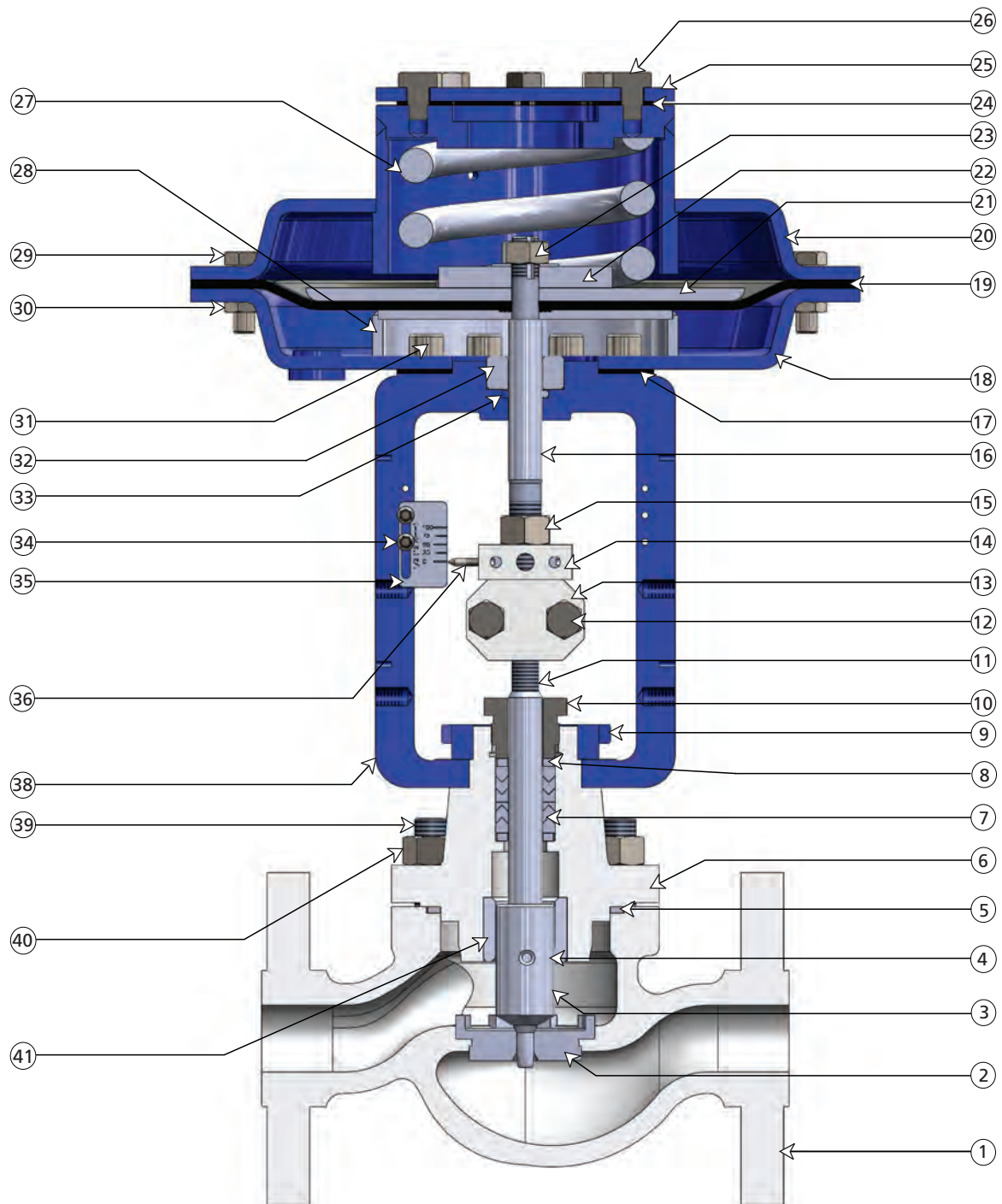
VALVE SIZE (inch)	RATING	STROKE (inch)	ORIFICE (inch)	ACTUATOR SIZE (inch)	SHUT-OFF PRESSURE (kg/cm ²)			SPRING RANGE/ SUPPLY PRESSURE (psig)	
					CLASS IV	CLASS V	CLASS VI	ATO [*] (28)	ATC [*] (27)
0.5 - 1	upto 300#	0.5	0.25	9	30	30	10	20-50 / 55	6-30 / 50
			0.375						
			0.5						
			0.812						
			1.25**						
1.5 & 2		0.75	0.25		30	30	10	16-50 / 55	6-30 / 55
			0.375						
			0.5						
			0.812						
			1.25						
			1.625						

* - Actuator Action : ATO : Air to Open, ATC : Air To Close, ** - Available for 0.75" and 1"

For more sizes consult KSB MIL

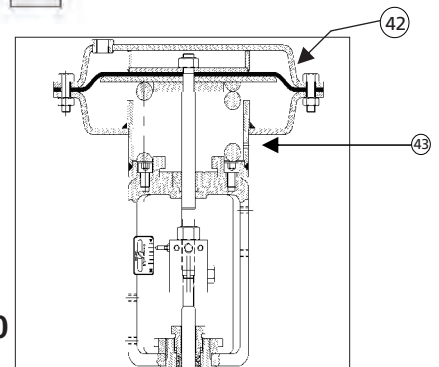


Construction



28 Type MIL 27000 (Air to Open)

**27 Type Actuator for use with MIL 27000
(Air to Close)**





Construction

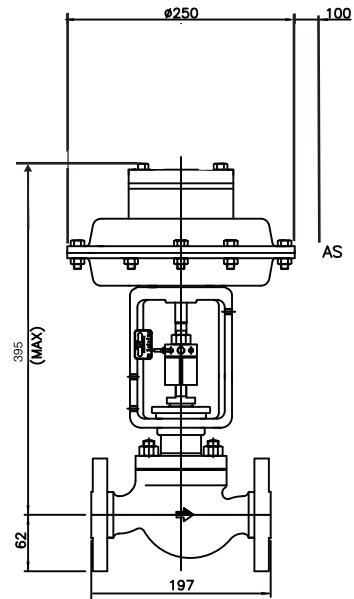
DRAWING REF. NO	PART NAME	MATERIAL
1	Valve body	Carbon Steel: ASTM A 216 Gr. WCC
2	Seat Ring	Stainless Steel: ASTM A 479 TY 316
3	Valve Plug	Stainless Steel: ASTM A 479 TY 316
4	Plug Pin	Stainless Steel: ASTM A 479 TY 316
5	Body Gasket	SS 316L + Graphite
6	Bonnet	ASTM A105
7	Packing	Braided PTFE
8	Packing Washer	Carbon Steel: ASTM A 240 Gr. 304
9	Yoke Nut	ASTM A105
10	Packing Nut	Stainless Steel: ASTM A 479 TY 304
11	Plug Stem	Stainless Steel: ASTM A 479 TY 316
12	Coupling Screw	BS 970 080 M40(EN8) Zn
13	Coupling	BS 970 080 M40(EN8) Zn
14	Actuator Stem Clamp	BS 970 080 M40(EN8) Zn
15	Actuator Stem Lock Nut	BS 970 080 M40(EN8) Zn
16	Actuator Stem	Stainless Steel: ASTM A 479 TY 316
17	O-Rings	Nitrile (Buna N70)
18	Name Plate	ASTM A 240Gr 304
19	Diaphragm	Neoprene + Nylon Insert
20	Spring Barrel S/A (ATO & ATC)	IS 2062GrA
21	Diaphragm Plate	IS 2062 GrA
22	Stroke Indicator	ASTM A479 TY 316
23	Actuator Stem Nut	BS 970 080 M40(EN8) Zn
24	Upper Diaphragm Case	IS 2062 GrA
25	Yoke	ASTM A216 Gr WCC
26	Stroke Scale	ASTM A240 Gr 304
27	Actuator Spring	Spring Steel
28	Diaphragm Stop	BS 970 080 M40(EN8) Zn
29	Body Stud	ASTM A193 Gr B7
30	Body Nut	ASTM A194 Gr 2H
31	Guide Bush	ASTM A276 TY 440C
32	Actuator Blind	Actuator Blind



Dimensions and Weights

VALVE SIZE (Inch)	RATING (ASME CLASS)	DIMENSIONS (mm)					UNPACKED WEIGHT (kg)
		A	B	C	D	H	
1	300	197	62	277.09 ⁽³⁾	250	95.75	17
				378.59 ⁽⁴⁾			
		197	62	267 ⁽⁵⁾	250	95.75	17
				391 ⁽⁶⁾			

(3) 28- Without hand wheels (3) 28- With hand wheels (5) 27- Without hand wheels (6) 27- With hand wheels



- The unique construction of body provides compactness
- Field-reversible actuator
- Optional Handwheel
- Different types of characteristics are available
- Value engineered product



Technology that **makes its mark**

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