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spirax sarco

TI-F12-24
CH Issue 3

CE43

5" (DN125) to 8" (DN200)

Carbon Steel Cage Design, Two-Port Control Valves

Description

The CE43 series is a range of carbon steel two-port, cage trim, control valves conforming to ASME B 16.34, ASME VIII standards in sizes 5" to 8" (DN125 to DN200) available with ASME and PN flange connections. When used in conjunction with a pneumatic linear actuator 'C' series valves will provide characterised modulating or on/off control.

Compatible actuators and positioners:

Pneumatic actuators	PN1000 series, spring-to-close PN2000 series, spring-to-open
	PP5 (pneumatic)
Positioners	EP5 (electropneumatic) SP2 (smart electropneumatic)

Refer to the relevant Technical Information Sheet for further details.

Sizes and pipe connections

5", 6" and 8" (DN125, DN150 and DN200)
Flanged to ASME (ANSI) 150, 300 or 600 (Raised face or ring type joint), PN16, PN25, PN40, PN63, and PN100 (Raised face with ASME (ANSI) face-to-face dimension).

Options

Trim	Equal %, linear, fast opening (on/off) characteristics, soft seat, hard faced, low noise and anti-cavitation (single and multi-cage).
Stem seal	PTFE chevron, graphite packing and bellows.
Plug	Balanced or unbalanced to: ASME (ANSI) Class IV, V or VI shut-off.

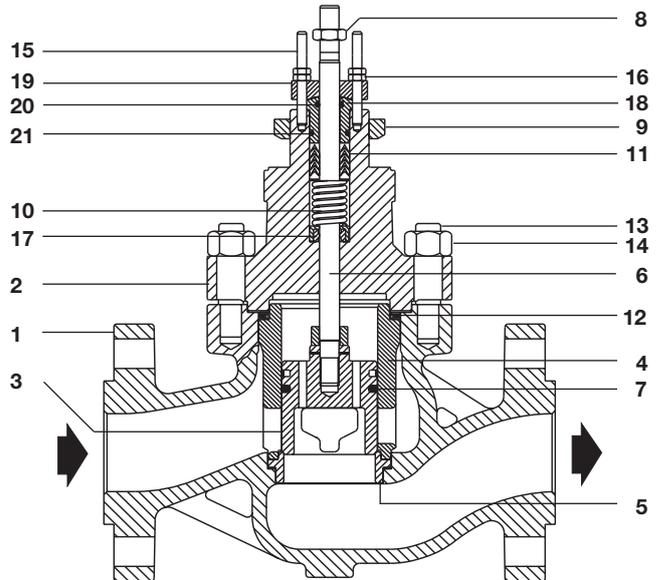
See 'C' series valve options Technical Information Sheet TI-F12-23.

Technical data

Plug design	Unbalanced plug	
	PTFE sealed balanced plug	
	Graphite sealed balanced plug	
Trim design	Cage trim with equal percentage, linear and fast opening flow characteristic options.	
Leakage	Class IV Metal-to-metal seat	IEC 534-4
	Class IV & V Hard face stellite	IEC 534-4
	Class VI PTFE soft seat	IEC 534-4
Flow characteristic	CE valves Equal percentage	
	CF valves Fast opening	
	CL valves Linear	
	CM valves Modified equal percentage	
Rangeability	50:1 Equal percentage	
	30:1 Linear	
Travel	5" and 6" (DN125 and DN150)	2½" (65 mm)
	8" (DN200)	3" (75 mm)

Limiting conditions

Body design conditions	ASME (ANSI) 300 and ASME (ANSI) 600	
	Standard PTFE chevron stem seals	14°F to +482°F (-10°C to +250°C)
Design temperature	Graphite packing stem seals	Standard bonnet 14°F to +572°F (-10°C to +300°C)
		Extended bonnet 14°F to +797°F (-10°C to +425°C)
	Graphite sealed balanced plug (Class IV)	797°F (425°C)
	PTFE sealed balanced plug (Class VI)	356°F (180°C)
Designed for a maximum cold hydraulic test pressure of:	ASME (ANSI) 300	1110 psi g (76.6 bar g)
	ASME (ANSI) 600	2220 psi g (153 bar g)
Maximum differential pressure	See relevant actuator TI	



Materials

No.	Part	Material
1	Body	Carbon steel ASTM A216 WCB
2	Bonnet	Carbon steel ASTM A216 WCB
3	Valve plug	Stainless steel AISI 431 hardened
4	Valve cage	Stainless steel AISI 316 ENC
5	Valve seat	Stainless steel AISI 431
6	Valve stem	Stainless steel AISI 316
7	Valve plug sealing rings	PTFE and graphite or graphite
8	Lock-nut	Stainless steel AISI 316
9	Mounting nut	Zinc plated carbon steel
10	Gland spring	Stainless steel AISI 302
11	Gland seal	PTFE chevron or graphite
12	Bonnet gasket	Reinforced exfoliated graphite
13	Bonnet studs	Carbon steel ASTM A 193 B7
14	Bonnet nuts	Carbon steel ASTM A 194 2H
15	Stuffing box studs	Carbon steel ASTM A 193 B7
16	Stuffing box nuts	Carbon steel ASTM A 194 2H
17	Stem scraper	Glass filled PTFE
18	Stuffing box bush	Stainless steel AISI 316
19	Stuffing box ring	Stainless steel AISI 316
20	Valve stem wiper	Fluorelastomer
21	'O' ring	Fluorelastomer

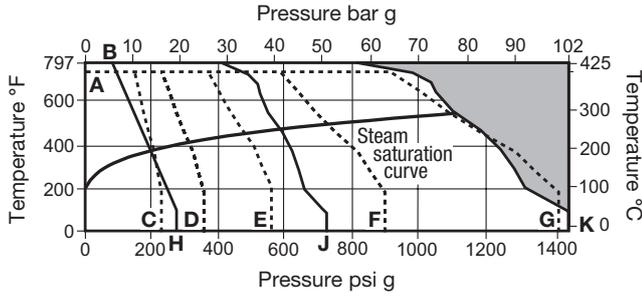
Local regulations may restrict the use of this product to below the conditions quoted.

In the interests of development and improvement of the product, we reserve the right to change the specification without notice.

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Operating range for body material and flange type only.

Note: See limiting conditions for stem and plug limitations.

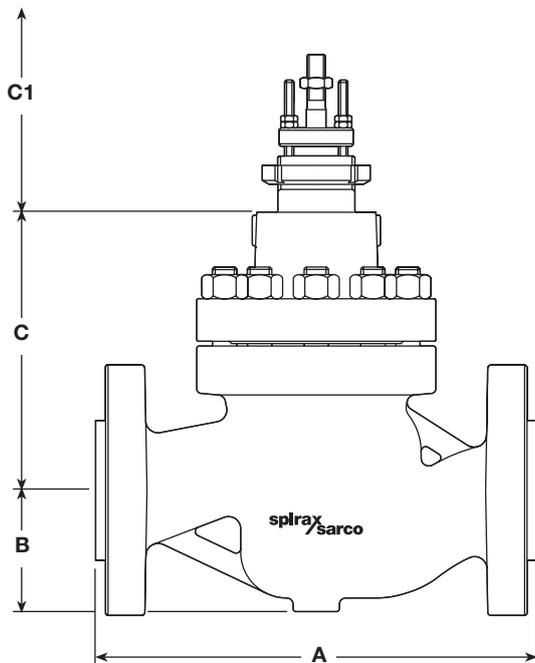


The product must not be used in this region.

A-C PN16, A-D PN25, A-E PN40, A-F PN63, A-G PN100
 B-H ASME 150, B-J ASME 300, B-K ASME 600

Dimensions (approximate) in inches and (mm)

Valve size	5" DN125	6" DN150	8" DN200	
A	ASME 300 PN25 - PN40	16 ³ / ₄ " (425)	18 ⁵ / ₈ " (473)	22 ³ / ₈ " (568)
	ASME 600 PN63 - PN100	18" (457)	20" (508)	24" (610)
B	6 ¹ / ₂ " (165)	7" (178)	8 ¹ / ₄ " (210)	
C	11 ³ / ₈ " (290)	13 ⁹ / ₁₆ " (339)	14 ⁵ / ₈ " (370)	
C1	Extended bonnet	16 ¹¹ / ₁₆ " (425)	18 ¹¹ / ₁₆ " (474)	19 ¹⁴ / ₁₆ " (505)
	Bellows sealed bonnet	27" (690)	29" (739)	30 ¹ / ₄ " (770)



Weights (approximate) in lbs and (kg)

Valve size	5" DN125	6" DN150	8" DN200
Weights	264 (120)	396 (180)	660 (300)

Valve flow coefficients at 100% lift

C_v (US) for single stage trims (K_vs shown in brackets).

Size	Equal % C _v (K _v s)	F _L
5" (DN125)	293 (250)	0.85
6" (DN150)	386 (330)	0.85
8" (DN200)	560 (480)	0.85

Three reduced C_v are available for equal percentage and linear trims, for further details see TI-F12-23 'C' series valve options.

For conversion C_v (UK) = C_v (US) x 0.833 K_vs = C_v (US) x 0.855

Sizing

Please consult Spirax Sarco.

Installation

The valve should be installed in a horizontal pipeline with the direction of flow as indicated by the arrow on the valve name-plate. The actuator position will depend on the type fitted to the valve. Full instructions are supplied with the product.

'C' series valve selection guide

Valve size	5", 6" and 8" DN125, 150 and 200	5"
Valve series	C = Cage trim	C
Valve characteristic	E = Equal percentage F = Fast opening L = Linear M = Modified equal percentage	E
Body material	4 = Carbon steel	4
Connections	2 = Butt weld 3 = Flanged	3
Stem sealing options	P = PTFE chevron H = Graphite B = Bellows	P
Seating options	T = AISI 431 hardened G = PTFE soft seat W = Hard faced stellite AISI 316	T
Type of trim	C = Standard cage P = Noise reducing perforated cage A = Anti-cavitation cage	C
Number of stages	1 = One 2 = Two 3 = Three Other = To be specified	1
Trim balancing	B = Balanced U = Unbalanced	B
Bonnet type	S = Standard H = Extended for high temperature L = Extended for low temperature	S
Reduced trim	0 = No Reduction 1 = 1 Reduction 2 = 2 Reductions 3 = 3 Reductions	0
C _v	To be specified	Cv 293
Connection type	To be specified	ASME 300

5" C E 4 3 P T C 1 B S 0 Cv 293 ASME 300

How to order

Example: 1 off 5" CE43PTC1BS0 Cv 293 flanged to ASME 300.

Spare parts

See TI-F12-22