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ISO 9001

spirax/sarco

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'C' Series Valve Options

Description

The Spirax Sarco 'C' series valve range has a number of available options. The options relate to valve stem sealing, trim materials, valve flow characteristics and C_v capacity values. They are described in (and may be selected from) this TI.

Valve characteristics

See typical flow characteristic curves chart opposite

The standard characteristic for the 'C' series valve is equal percentage (E), however the following options are available:

Equal percentage	E
Linear	L
Fast opening	F
Modified equal percentage	M

Note: Modified special characteristic trims are designed upon request.

Valve stem sealing

PTFE chevron (P)

Design temperature	14°F to 482°F (-10°C to +250°C)
Material	PTFE chevron

Graphite (H)

Design temperature	14°F to 572°F (-10°C to +300°C) standard bonnet 14°F to 1004°F (-10°C to +540°C) extended bonnet
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Bellows (B)

Design temperature	14°F to 752°F (-10°C to +400°C)
Material	Carbon steel housing ASTM 216 WCB
Pressure rating	ANSI 150

Plug and seat treatment

Hardened (T)

Design temperature	14°F to 797°F (-10°C to +425°C)
Material	Stainless steel AISI 431
Leakage	ANSI Class IV

PTFE soft seat (G)

Design temperature	14°F to 356°F (-10°C to +180°C)
Material	PTFE
Leakage	ANSI Class VI

Hard face (W)

Design temperature	14°F to 1004°F (-10°C to +540°C)
Material	Hard faced stellite AISI 316
Leakage	ANSI Class IV or V

Single and multiple stage cage

Noise reducing perforated cage (P)

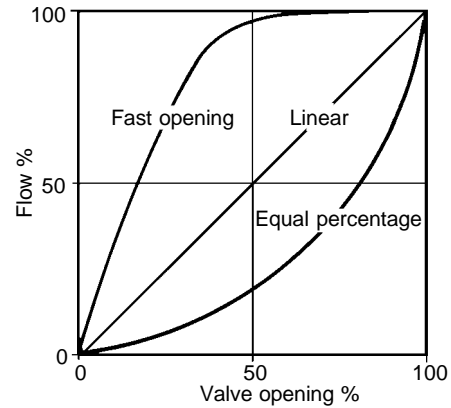
Design temperature	14°F to 1004°F (-10°C to +540°C)
Material	Stainless steel AISI 316 ENC

Anti-cavitation cage (A)

Design temperature	14°F to 662°F (-10°C to +350°C)
Material	Stainless steel AISI 316 ENC

Valve capacities see overleaf

Typical valve flow characteristics



'C' series valve selection guide

Valve size	1", 1½", 2", 2½", 3", 4", 5", 6" & 8" DN25, 40, 50, 65, 80, 100, 125, 150 & 200	<input type="text" value="2"/>
Valve series	C = Cage trim	<input type="text" value="C"/>
Valve characteristic	E = Equal percentage L = Linear F = Fast opening M = Modified equal percentage	<input type="text" value="E"/>
Body material	4 = Carbon steel 6 = Stainless steel 8 = Alloy steel	<input type="text" value="4"/>
Connections	2 = Butt weld (2" to 8") 3 = Flanged 4 = Socket weld (1", 1½" and 2")	<input type="text" value="3"/>
Stem sealing options	P = PTFE chevron H = Graphite B = Bellows	<input type="text" value="P"/>
Seating options	T = AISI 431 hardened G = PTFE soft seat W = Hard faced stellite AISI 316	<input type="text" value="T"/>
Type of trim	C = Standard cage P = Noise reducing perforated cage A = Anti-cavitation cage	<input type="text" value="C"/>
Number of stages	1 = One 2 = Two 3 = Three Other = To be specified	<input type="text" value="1"/>
Trim balancing	B = Balanced U = Unbalanced	<input type="text" value="U"/>
Bonnet type	S = Standard H = Extended for high temperature L = Extended for low temperature	<input type="text" value="S"/>
Reduced trim	0 = No Reduction 1 = 1 Reduction 2 = 2 Reductions 3 = 3 Reductions	<input type="text" value="1"/>
C _v	To be specified	<input type="text" value="Cv 35"/>
Connection type	To be specified	<input type="text" value="ANSI 300"/>
<input type="text" value="2"/> <input type="text" value="C"/> <input type="text" value="E"/> <input type="text" value="4"/> <input type="text" value="3"/> <input type="text" value="P"/> <input type="text" value="T"/> <input type="text" value="C"/> <input type="text" value="1"/> <input type="text" value="U"/> <input type="text" value="S"/> <input type="text" value="1"/> <input type="text" value="Cv 35"/> <input type="text" value="ANSI 300"/>		

How to order

Example: 1 off 2" CE43PTC1U1S1 C_v 35 flanged to ANSI 300.

Valve capacities Flow coefficient C_v (US) depending on the various trim options - K_{VS} values are shown in brackets.

Type of cage trim	Flow characteristic	Valve size	C_v (K_{VS}) by valve size and trim reduction								
			1" DN25	1½" DN40	2" DN50	2½" DN65	3" DN80	4" DN100	5" DN125	6" DN150	8" DN200
			Travel	¾" (20 mm)	1⅜" (30 mm)	1½" (38 mm)	2" (50 mm)	2½" (65 mm)	3" (75 mm)		
One stage standard	Fast opening Linear and Equal %	Full area	19 (16)	35 (30)	63 (54)	95 (81)	130 (111)	216 (185)	293 (250)	386 (330)	560 (480)
		Reduction 1	- -	19 (16)	35 (30)	63 (54)	95 (81)	130 (111)	216 (185)	293 (250)	386 (330)
		Reduction 2	- -	- -	19 (16)	35 (30)	63 (54)	95 (81)	130 (111)	216 (185)	293 (250)
		Reduction 3	- -	- -	- -	19 (16)	35 (30)	63 (54)	95 (81)	130 (111)	216 (185)
One stage low noise	Linear	Maximum	15 (13)	35 (30)	60 (51)	100 (86)	140 (120)	250 (214)	320 (274)	425 (364)	650 (556)
		Reduction 1	- -	15 (13)	35 (30)	60 (51)	100 (86)	140 (120)	250 (214)	320 (274)	425 (364)
		Reduction 2	- -	- -	15 (13)	35 (30)	60 (51)	100 (86)	140 (120)	250 (214)	320 (274)
		Reduction 3	- -	- -	- -	15 (13)	35 (30)	60 (51)	100 (86)	140 (120)	250 (214)
	Modified Equal %	Maximum	15 (13)	30 (26)	55 (47)	85 (73)	120 (103)	200 (171)	250 (214)	360 (308)	530 (453)
		Reduction 1	- -	15 (13)	30 (26)	55 (47)	85 (73)	120 (103)	200 (171)	250 (214)	360 (308)
		Reduction 2	- -	- -	15 (13)	30 (26)	55 (47)	85 (73)	120 (103)	200 (171)	250 (214)
		Reduction 3	- -	- -	- -	15 (13)	30 (26)	55 (47)	85 (73)	120 (103)	200 (171)
	Equal %	Maximum	15 (13)	25 (21)	45 (39)	75 (64)	95 (81)	150 (128)	210 (178)	280 (240)	425 (364)
		Reduction 1	- -	15 (13)	25 (21)	45 (39)	75 (64)	95 (81)	150 (128)	210 (178)	280 (240)
		Reduction 2	- -	- -	15 (13)	25 (21)	45 (39)	75 (64)	95 (81)	150 (128)	210 (178)
		Reduction 3	- -	- -	- -	15 (13)	25 (21)	45 (39)	75 (64)	95 (81)	150 (128)
Two stage low noise (Flow under)	Linear	Maximum	- -	17(14.5)	28 (24)	46 (39)	70 (60)	125 (107)	170 (145)	250 (214)	440 (376)
		Reduction 1	- -	- -	17 (14.5)	28 (24)	46 (39)	70 (60)	125 (107)	170 (145)	250 (214)
		Reduction 2	- -	- -	- -	17 (14.5)	28 (24)	46 (39)	70 (60)	125 (107)	170 (145)
		Reduction 3	- -	- -	- -	- -	17(14.5)	28 (24)	46 (39)	70 (60)	125 (107)
	Modified Equal %	Maximum	- -	15 (13)	26 (22)	43 (37)	65 (56)	115 (98)	155 (133)	230 (197)	400 (342)
		Reduction 1	- -	- -	15 (13)	26 (22)	43 (37)	65 (56)	115 (98)	155 (133)	230 (197)
		Reduction 2	- -	- -	- -	15 (13)	26 (22)	43 (37)	65 (56)	115 (98)	155 (133)
		Reduction 3	- -	- -	- -	- -	15 (13)	26 (22)	43 (37)	65 (56)	115 (98)
	Equal %	Maximum	- -	13 (11)	22 (19)	40 (34)	60 (52)	110 (94)	145 (125)	210 (180)	370 (317)
		Reduction 1	- -	- -	13 (11)	22 (19)	40 (34)	60 (52)	110 (94)	145 (125)	210 (180)
		Reduction 2	- -	- -	- -	13 (11)	22 (19)	40 (34)	60 (52)	110 (94)	145 (125)
		Reduction 3	- -	- -	- -	- -	13 (11)	22 (19)	40 (34)	60 (52)	110 (94)
Three stage low noise (Flow under)	Linear	Maximum	- -	13 (11)	20 (17)	35 (30)	50 (43)	85 (73)	105 (90)	155 (133)	280 (240)
		Reduction 1	- -	- -	13 (11)	20 (17)	35 (30)	50 (43)	85 (73)	105 (90)	155 (133)
		Reduction 2	- -	- -	- -	13 (11)	20 (17)	35 (30)	50 (43)	85 (73)	105 (90)
		Reduction 3	- -	- -	- -	- -	13 (11)	20 (17)	35 (30)	50 (43)	85 (73)
	Modified Equal %	Maximum	- -	10 (8.5)	15 (13)	30 (26)	45 (39)	75 (64)	95 (81)	145 (124)	250 (214)
		Reduction 1	- -	- -	10 (8.5)	15 (13)	30 (26)	45 (39)	75 (64)	95 (81)	145 (124)
		Reduction 2	- -	- -	- -	10 (8.5)	15 (13)	30 (26)	45 (39)	75 (64)	95 (81)
		Reduction 3	- -	- -	- -	- -	10 (8.5)	15 (13)	30 (26)	45 (39)	75 (64)
	Equal %	Maximum	- -	7 (6)	10 (8.5)	25 (21.5)	30 (26)	55 (47)	75 (64)	115 (99)	200 (171)
		Reduction 1	- -	- -	7 (6)	10 (8.5)	25(21.5)	30 (26)	55 (47)	75 (64)	115 (99)
		Reduction 2	- -	- -	- -	7 (6)	10 (8.5)	25(21.5)	30 (26)	55 (47)	75 (64)
		Reduction 3	- -	- -	- -	- -	7 (6)	10 (8.5)	25(21.5)	30 (26)	55 (47)
One stage Anti-cavitation (Flow over)	Linear	Maximum	15 (13)	30 (26)	55 (47)	85 (73)	120 (103)	200 (171)	250 (214)	360 (308)	530 (453)
		Reduction 1	- -	15 (13)	30 (26)	55 (47)	85 (73)	120 (103)	200 (171)	250 (214)	360 (308)
		Reduction 2	- -	- -	15 (13)	30 (26)	55 (47)	85 (73)	120 (103)	200 (171)	250 (214)
		Reduction 3	- -	- -	- -	15 (13)	30 (26)	55 (47)	85 (73)	120 (103)	200 (171)
Two stage Anti-cavitation (Flow over)	Linear	Maximum	- -	15 (13)	26 (22)	43 (37)	65 (56)	115 (98)	155 (133)	230 (197)	400 (342)
		Reduction 1	- -	- -	15 (13)	26 (22)	43 (37)	65 (56)	115 (98)	155 (133)	230 (197)
		Reduction 2	- -	- -	- -	15 (13)	26 (22)	43 (37)	65 (56)	115 (98)	155 (133)
		Reduction 3	- -	- -	- -	- -	15 (13)	26 (22)	43 (37)	65 (56)	115 (98)

For conversion C_v (UK) = C_v (US) x 0.833 K_{VS} = C_v (US) x 0.855