

spirax/sarco

'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 Cv 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
--------------------	---

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

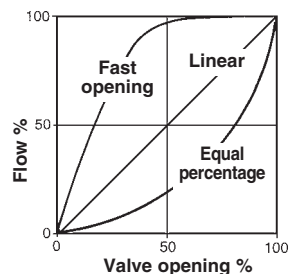
Noise reducing perforated cage (P)

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

Typical valve flow characteristics



'C' series valve selection guide

Valve size	1", 1-1/2", 2", 2-1/2", 3", 4", 5", 6" & 8 DN25, 40, 50, 65, 80, 100, 125, 150 & 200	2"
Valve series	C = Cage trim	C
Valve characteristic	L = Linear E = Equal percentage F = Fast opening M = Modified equal percentage	E
Body material	4 = Carbon steel 6 = Stainless Steel 8 = Alloy Steel	4
Connections	2 = Butt weld (2" to 8") 3 = Flanged 4 = Socket weld (1", 1-1/2" and 2")	3
Stem sealing options	P = PTFE chevron H = Graphite B = Bellows	P
Seating options	T = AISI 431 hardened G = PTFE soft seat W = Hard face 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	U
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	1
Cv	To be specified	C_v 35
Connection type	To be specified	ANSI 300

2" C E 4 3 P T C 1 U S 1 C_v 35 ANSI 300

How to order

Example: 1 of 2" CE43 PTC1US1 C_v35 flanged to ANSI 300.

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only. In the interests of development and improvement of the product, we reserve the right to change the specification.

'C' Series Valve Options

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 side	Cv (Kvs) by valve size and trim reduction								
			1" DN25	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80	4" DN100	5" DN125	6" DN150	8" DN200
			Travel	3/4" (20mm)	1-3/16" (30mm)	1-1/2" (38mm)	2" (50mm)	2-1/2" (65mm)	3" (75mm)		
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)
Three 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