

Neles™ cage-guided globe valves

Series GB

Neles series GB cage-guided globe valves providing superior control performance and high reliability in wide range of applications. Standard units are equipped with Neles diaphragm or piston actuators and valve controllers for precise flow control, extended operation life and performance monitoring online.

Construction

- Compact and lightweight construction
- Large range of trims with different Cv and characteristics per body size to fit many process conditions
- Both metal and soft seats are available depending on the application
- Optional bellows seal for toxic or other applications where no stem seal leakage is allowed
- Wide material selection for different applications
- Many end connection styles available for different applications
- Valve with dimensions specified by EN/DIN standard
- Extension bonnet design for wide temperature range

Accurate control

- Stable control with good rangeability
- ND9000 or NDX digital valve controller for auto-calibration and accurate control
- Accurate and sensitive diaphragm and piston actuators

Wide range of applications

- Suitable for gas, liquid and steam
- Wide temperature ranges from -196... +593 °C / (-320 ... +1099 °F) with different bonnet constructions
- Large variation of trim designs from standard cage to Tendril 1 or Tendril 2 for low noise and anti-cavitation applications
- Various seat and seal ring options for wide range of applications

Design application flexibility

- Wide range of applicable noise control components, silencers, baffle plates
- Inherently characterized trims offered in equal percentage, linear
- Large range of Cv's per body size allowing for wide applicable in process conditions
- High integrity cage guiding system and clamped cage for heavy duty guiding on severe service applications
- Low emission packings available



Safety and quality

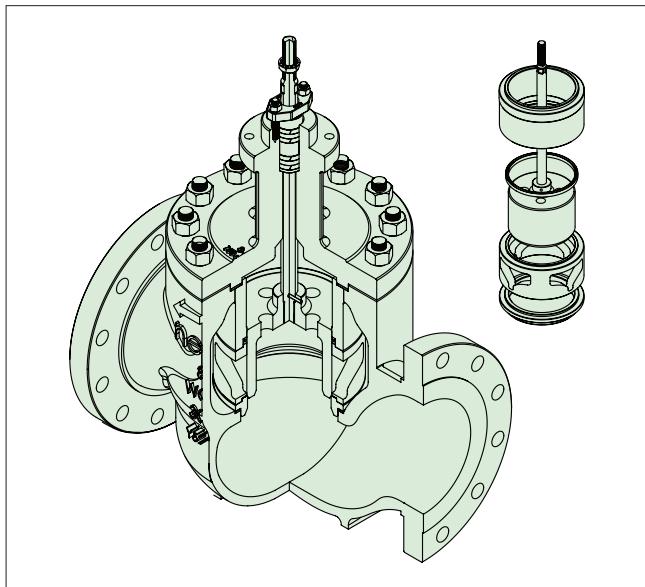
- Rugged one piece body to minimizes the leak paths and makes the valve less prone to pipe stress
- Strictly tested to ensure specified performance with quality assurance systems in accordance to ISO 9001
- Certified ISO 15848 fugitive emissions
- Certified CE/PED & ATEX, TSG & EAC (GOST-R)
- Certified SIL(Safety Integrity Level) in accordance to IEC61508

Easy maintenance

- Quick change trim and top entry construction for easy in-line maintenance
- Self guiding components for easy valve assembly
- Flow characteristics can be easily changed with interchangeable trim components
- ND digital valve controller with online diagnostics enables performance follow up and predictive maintenance
- Efficient asset management with any FDT frame application

Different trim designs

Conventional trim

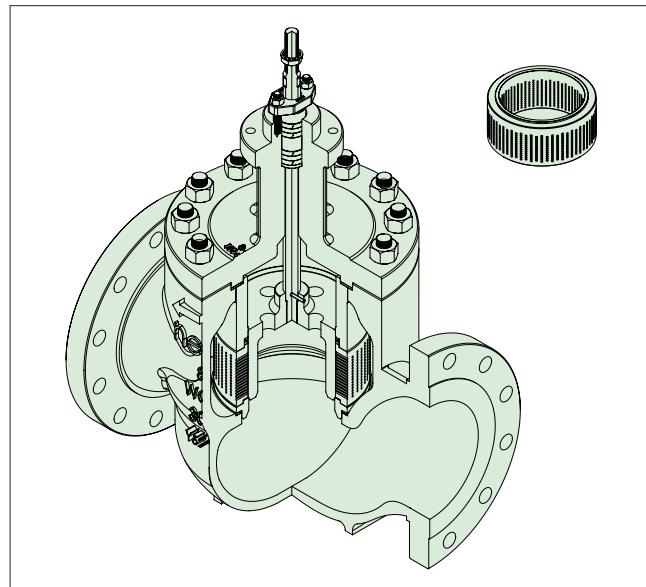


Pressure energized seal ring, standard cage trim

Standard cage trim is equipped with a specially designed window-shape cage and a balanced plug. The window area defines the flow path through the valve and the flow characteristic of the valve (linear, equal percentage etc.).

The trim has balancing holes that are located on the top of the plug. This trim is suited for both high and low pressure drop application and is used in the majority of control applications.

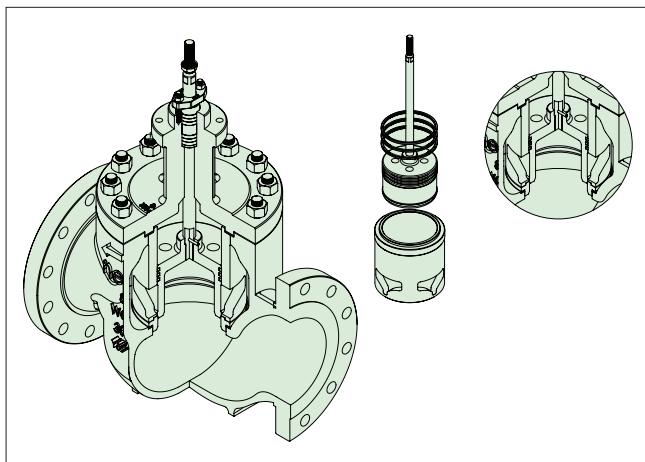
Tendril™ (Multi-hole) trim



Tendril (Multi-hole) trim

Tendril is a multi-hole trim where the flow is divided through multiple holes in which pressure progressively reduces while passing through the trim. This gives excellent resistance to cavitation and reduces noise in high pressure drop applications. Tendril trim is available as Tendril 1 or Tendril 2 design depending on pressure drop and potential for cavitation.

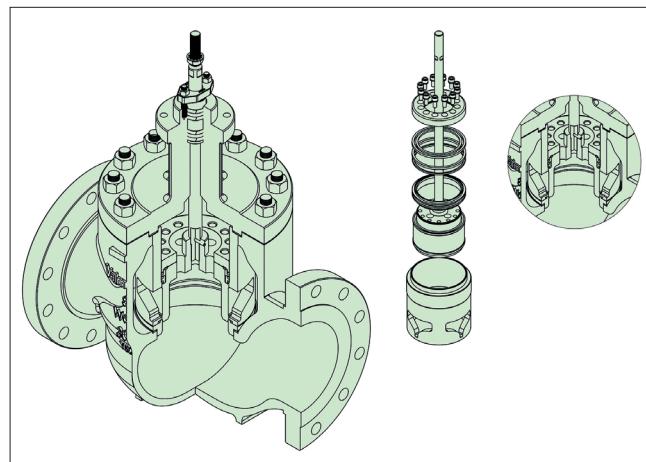
High temperature graphite seal trim



Multiple graphite seal rings, one-piece cage trim

Multiple graphite seal ring construction is ideal solution for high temperature applications requiring FCI 70-2 Class III or IV tightness. It can be used in various high temperature applications, including high pressure service. The trim is compatible with both standard cage and Tendril trims

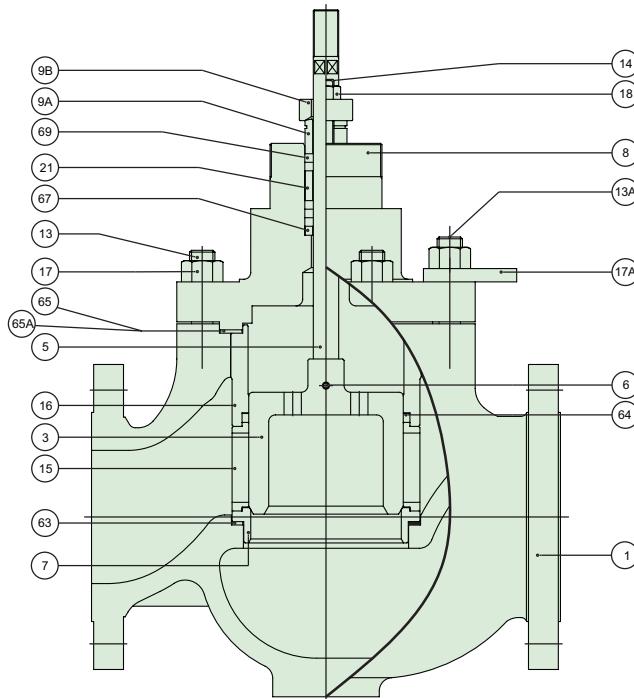
High temperature metal seal trim



High temperature metal seal trim

High temperature metal seal trim will enable the valve to achieve tightness of FCI 70-2 Class V at high temperature up to 593°C. This seal is compatible with both standard trim and anti-cavitation trim.

Components & materials



Body material: Carbon steel or alloy steel

Part no.	Description	Material
1	BODY	A216 WCB / ALLOY STEEL AVAILABLE
2	PLUG SET	410 SS / 630 SS
3*	PLUG	410 STAINLESS STEEL
5*	STEM	630 STAINLESS STEEL
6*	PLUG PIN	316 STAINLESS STEEL
7	SEAT RING	410 STAINLESS STEEL
8	BONNET	A216 WCB / ALLOY STAINLESS STEEL
9A	GLAND	304 STAINLESS STEEL
9B	GLAND FLANGE	A351 CF8
13 / 13A	STUD	A193 Gr.B7M
14	STUD	A193 Gr.B8M
15	CAGE	630 STAINLESS STEEL + HCr
16	CAGE GUIDE	630 STAINLESS STEEL + HCr
17	HEXAGON NUT	A194 Gr.2HM
17A	LIFTING PLATE	JIS G3101-SS400
18	HEXAGON NUT	A194 Gr.8M
21	LANTERN RING	304 STAINLESS STEEL
63	SEAT GASKET	S/W GASKET, 316L SS + GRAPHITE
64	SEAL RING	PTFE + GRAPHITE
65	BODY GASKET	S/W GASKET, 316L SS + GRAPHITE
65A	BODY GASKET	S/W GASKET, 316L SS + GRAPHITE
67	PACKING SPACER	304 STAINLESS STEEL
69	PACKING RING	PTFE + CARBON FIBER or GRAPHITE

Note.

1. Plug/Seat hard facing (Cobalt based alloy) & Soft seat are available
2. Materials description
 - 316 SS : ASTM A276 gr. 316 or JIS 316 stainless steel
 - 410 SS : ASTM A276 gr. 410 or JIS 410 stainless steel
 - 17-4PH : ASTM A564 630 (H1100) or JIS 630 (H1100) St. Steel
3. Above standard materials to be applicable depending on specific service conditions. Other optional materials to consult Valmet.
4. Optional materials to meet to requirements of NACE MR 01-75 are available
5. The materials are subject to change as equivalent depending on detail design
6. The part no. 3*, 5*, 6* are delivered as a set with part no. 2
7. The part no. 65A applicable only for 20" and 24"

Body material: Stainless steel

Material	Spare parts
A351 CF8M	
CF8M + HCr/ 316 SS	Cat 3
316 STAINLESS STEEL	
A351 CF8M	
304 STAINLESS STEEL	
A351 CF8	
A193 Gr. B8M	
A193 Gr. B8M	
316 STAINLESS STEEL + HCr	Cat 3
316 STAINLESS STEEL + HCr	Cat 3
A194 Gr. 8M	
304 STAINLESS STEEL	
A194 Gr. 8M	
304 STAINLESS STEEL	
S/W GASKET, 316L SS + GRAPHITE	Cat 1
PTFE + GRAPHITE	Cat 1
S/W GASKET, 316L SS + GRAPHITE	Cat 1
S/W GASKET, 316L SS + GRAPHITE	Cat 1
304 STAINLESS STEEL	
PTFE + CARBON FIBER or GRAPHITE	Cat 1

Note.

1. Plug/Seat hard facing (Cobalt based alloy) & Soft seat are available
2. Materials description
 - 316 SS : ASTM A276 gr. 316 or JIS 316 stainless steel
3. Above standard materials to be applicable depending on specific service conditions, other optional materials to consult Neles.
4. Cryogenic application : ASTM A320 B7M & 8M for studs (13) and nuts (17)
5. Optional materials to meet to requirements of NACE MR 01-75 are available
6. The materials are subject to change as equivalent depending on detail design
7. The part no. 3*, 5*, 6* are delivered as a set with part no. 2
8. The part no. 65A is applicable only for 20" and 24"

GB, Applications guide

Temperature range

PTFE + Graphite pressure energized seal with metal seat:

-56...+260 °C

PTFE + Graphite + Carbon pressure energized seal with metal seat:

-56...+320 °C

PTFE pressure energized seal with metal seat:

-196...+232 °C

High temperature graphite seal with metal seat:

-56...+540 °C

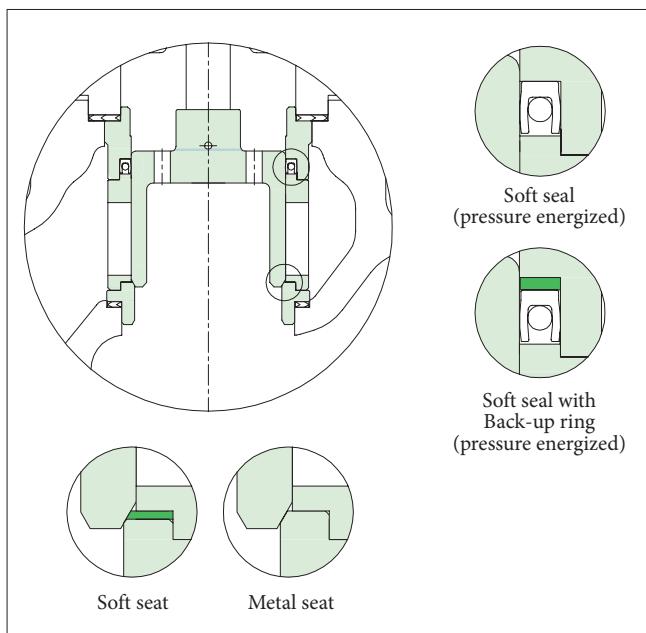
High temperature metal seal with metal seat:

-56...+593 °C

Shut off classification

ANSI FCI 70-2 Class IV and V available with metal and soft seat.

Pressure energized seal ring construction



Temperature range with different body and stud/nut materials

Body, bonnet material	Stud molt, nut application	Temp. range (°C)	Sign 18
Carbon steel (WCB)	ASTM A193-B7M STUD / ASTM A194-2HM NUT	-29...+425	G
Stainless steel (CF3, CF8, CF3M, CF8M)	ASTM A193-B8M / ASTM A194 -8M NUT	-196...+425	D
Stainless steel (CF3, CF8, CF3M, CF8M)	A453 gr. 660 / A453 gr. 660	-196...+593	E
Cr.Mo. Steel (WC6, WC9,C12A)	ASTM A193-B16 STUD / ASTM A194-4 NUT	-29...+593	H

Trim materials

Plug	Stem	Seat	Cage	Temp.range (°C)	Sign 8, 9, 10, 11, 12, 13
410 SS	630 SS	410 SS	630 SS + HCr	-29...+425	P1 X BC S1 R1 X
316 SS	316 SS	316 SS	316 SS + HCr	-196...+425	T6 X TC S1 R6 X
316 SS + Cobalt based	316 SS	316 SS + Cobalt based	316 SS + HCr	-196...+425	T6 A TC S1 R6 A
420 J2	XM-19	420 J2	420 J2	-10...+540	P2 X VM S1 P2 X
316 SS + Cobalt based	XM-19	316 SS + Cobalt based	316 SS + HCr	-196...+593	T6 A VM S1 R6 A

Gasket applications

Body, bonnet material	Gasket material	Temp. range (°C)	Sign 17
Carbon steel (WCB)	S/W (Spiral wound) 316L SS + Graphite	-29...+425	S
Stainless steel (CF8, CF8M, CF3, CF3M)	S/W (Spiral wound) 316L SS + Graphite S/W (Spiral wound) 316L SS + PTFE	-56...+425 -196...+232	S L
Stainless steel (CF8, CF8M, CF3, CF3M)	S/W (Spiral wound) 316L SS + Hi Graphite	-29...+593	H
Cr.Mo. Steel (WC6, WC9, C12A)	S/W (Spiral wound) 316L SS + Hi Graphite	-29...+593	H

Packing applications

Packing material	Temp (°C)	Pressure class	Sign 15
PTFE + Carbon Fiber (Braided TEF + Graphite)	-196...+260	Up to CL900	G
PTFE V-Ring	-49...+232	Up to CL600	T
Graphite (with Mold + Braided), Standard packing	-196...+400	Up to CL2500	F (with sign 14 'S')
Graphite (with Mold + Braided), Live loaded emission packing	-196...+450	Up to CL2500	F (with sign 14 'E')
Hi-Graphite (with Mold + Braided)	-54...+593	Up to CL2500	H

Flow directions

	General trim & high temperature trim			Pilot plug trim		
	General	Tendril	Omega	General	Tendril	Omega
Gas	FTC	FTO	FTO	FTC	FTC	FTC
Liquid	FTC	FTC	FTC	FTC	FTC	FTC

FTO: Flow to Open
FTC: Flow to Close

Cv Ratio 50 : 1

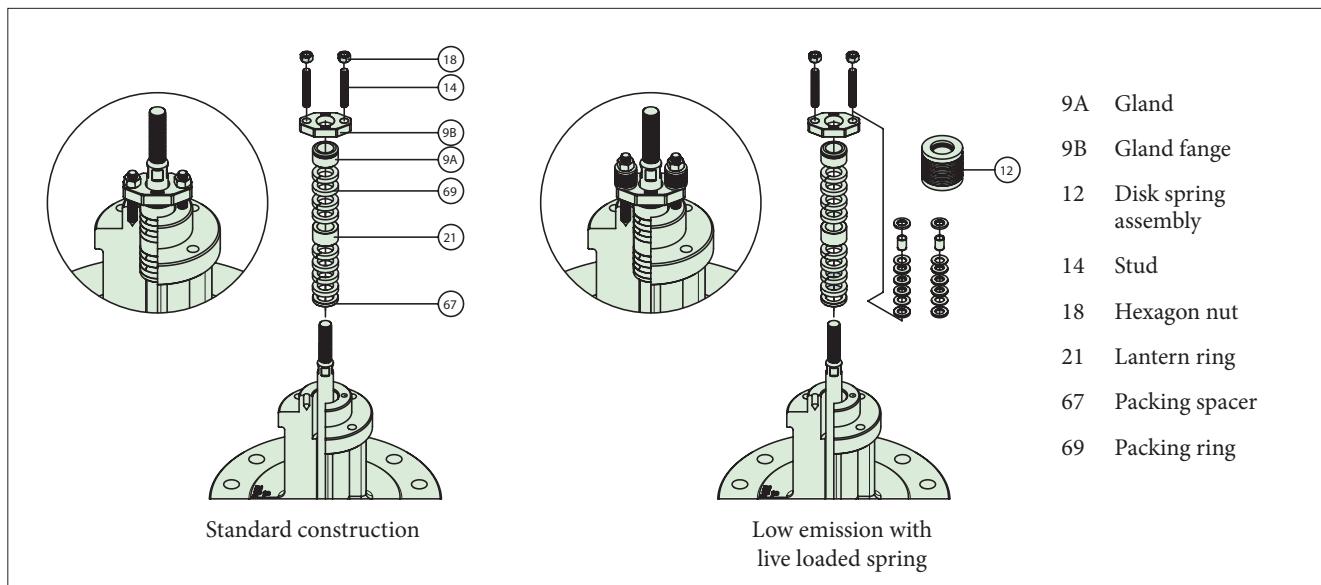
Flow Characteristics Equal percentage, linear

GB, Ratings & end connections

Valve size DN / Inch	GB, ASME ratings							
	Class 150 ... 600				Class 900 ... 1500			
	RF	RTJ	SW	BW	RF	RTJ	SW	BW
50/2	O	O	O	O	O	O	O	O
65/2.5	O	OA	OA	OA	NA	NA	NA	NA
80/3	O	O		O	O	O	O	O
100/4	O	O		O	O	O	O	O
150/6	O	O		O	O	O	O	O
200/8	O	O		O	O	O	O	O
250/10	O	O		O	O	O		
300/12	O	O		O	O	O		
350/14	O	O		O	O	O		
400/16	O	O		O	O	O		
450/18	O	O		O				
500/20	O	O		O				
600/24	O	O		O				

*Note 1. RF: Raised face flange, RTJ: Ring joint, SW: Socket weld, BW: Butt weld.
Bigger sizes are available, please contact Valmet.

Packing constructions



Rated Cv and trim table (Globe single seat, balanced type, series GB)

Sign	TRIM TYPE	Sign	TRIM CHARACTERISTIC	Sign	Description	RATED Cv												
						Body Size and Stroke												
						2" Str.	2.5" Str.	3" Str.	4" Str.	6" Str.	8" Str.	10" Str.	12" Str.	14" Str.	16" Str.	18" Str.	20" Str.	24" Str.
A	Balanced plug	E	Equal %	FC	General / Full capacity	71 (40)	99 (50)	138 (50)	210 (50)	340 (60)	560 (70)	830 (80)	1240 (120)	1650 (140)	2090 (160)	2700 (180)	4700 (240)	6400 (280)
A	High temp graphite seal plug			1A	General / 1-Step reduction	50 (40)	44 (50)	110 (50)	160 (50)	270 (60)	450 (70)	655 (80)	960 (120)	1275 (140)	1680 (160)	1900 (180)	2500 (240)	3700 (280)
A	High temp metal seal plug			2A	General / 2-Step reduction	24 (40)	NA	50 (50)	82 (50)	136 (60)	236 (70)	374 (80)	524 (120)	746 (140)	854 (160)	1140 (180)	1500 (240)	2350 (280)
				3A	General / 3-Step reduction	14 (40)	NA	32 (50)	50 (50)	82 (60)	142 (70)	224 (80)	314 (120)	446 (140)	512 (160)	680 (180)	900 (240)	1350 (280)
				FT	Tendril 1 / Full capacity	50 (40)	66 (50)	82 (50)	135 (50)	235 (60)	370 (70)	500 (80)	840 (120)	1110 (140)	1400 (160)	1900 (180)	2500 (240)	3600 (280)
				1T	Tendril 1 / 1-Step reduction	35 (40)	47 (50)	58 (50)	95 (50)	170 (60)	265 (70)	370 (80)	600 (120)	785 (140)	1020 (160)	1300 (180)	1800 (240)	2550 (280)
				2T	Tendril 1 / 2-Step reduction	20 (40)	NA	35 (50)	58 (50)	100 (60)	170 (70)	225 (80)	355 (120)	480 (140)	600 (160)	780 (180)	1100 (240)	1550 (280)
				3T	Tendril 1 / 3-Step reduction	10 (40)	NA	20 (50)	32 (50)	58 (60)	105 (70)	125 (80)	205 (120)	290 (140)	350 (160)	470 (180)	650 (240)	900 (280)
				FM	Tendril 2 / Full capacity	47 (40)	NA	74 (50)	130 (50)	230 (60)	330 (70)	470 (80)	770 (120)	1050 (140)	1320 (160)	1700 (180)	2200 (240)	3300 (280)
				1M	Tendril 2 / 1-Step reduction	33 (40)	NA	56 (50)	92 (50)	165 (60)	245 (70)	330 (80)	570 (120)	720 (140)	960 (160)	1220 (180)	1570 (240)	2300 (280)
				2M	Tendril 2 / 2-Step reduction	19 (40)	NA	33 (50)	52 (50)	95 (60)	145 (70)	190 (80)	330 (120)	430 (140)	550 (160)	720 (180)	950 (240)	1360 (280)
				3M	Tendril 2 / 3-Step reduction	8 (40)	NA	16 (50)	25 (50)	52 (60)	80 (70)	110 (80)	190 (120)	270 (140)	295 (160)	430 (180)	570 (240)	830 (280)
		L	Linear	FC	General / Full capacity	74 (40)	106 (50)	142 (50)	230 (50)	380 (60)	600 (70)	950 (80)	1270 (120)	1740 (140)	2215 (160)	2700 (180)	4700 (240)	6400 (280)
				1A	General / 1-Step reduction	48 (40)	57 (50)	98 (50)	160 (50)	275 (60)	455 (70)	700 (80)	970 (120)	1300 (140)	1530 (160)	1900 (180)	2500 (240)	3700 (280)
				2A	General / 2-Step reduction	26 (40)	NA	56 (50)	86 (50)	150 (60)	254 (70)	398 (80)	550 (120)	776 (140)	940 (160)	1140 (180)	1500 (240)	2350 (280)
				3A	General / 3-Step reduction	16 (40)	NA	34 (50)	52 (50)	90 (60)	152 (70)	238 (80)	340 (120)	464 (140)	568 (160)	680 (180)	900 (240)	1350 (280)
				FT	Tendril 1 / Full capacity	52 (40)	77 (50)	102 (50)	160 (50)	290 (60)	460 (70)	630 (80)	980 (120)	1300 (140)	1580 (160)	2100 (180)	2800 (240)	4000 (280)
				1T	Tendril 1 / 1-Step reduction	40 (40)	58 (50)	75 (50)	120 (50)	220 (60)	340 (70)	460 (80)	735 (120)	985 (140)	1145 (160)	1450 (180)	2000 (240)	2800 (280)
				2T	Tendril 1 / 2-Step reduction	27 (40)	NA	40 (50)	70 (50)	130 (60)	195 (70)	255 (80)	405 (120)	565 (140)	670 (160)	870 (180)	1200 (240)	1700 (280)
				3T	Tendril 1 / 3-Step reduction	10 (40)	NA	21 (50)	46 (50)	75 (60)	105 (70)	140 (80)	240 (120)	310 (140)	415 (160)	520 (180)	720 (240)	1000 (280)
				FM	Tendril 2 / Full capacity	50 (40)	NA	100 (50)	155 (50)	280 (60)	425 (70)	590 (80)	920 (120)	1240 (140)	1530 (160)	1900 (180)	2500 (240)	3650 (280)
				1M	Tendril 2 / 1-Step reduction	35 (40)	NA	74 (50)	115 (50)	215 (60)	330 (70)	450 (80)	720 (120)	970 (140)	1130 (160)	1350 (180)	1750 (240)	2550 (280)
				2M	Tendril 2 / 2-Step reduction	23 (40)	NA	33 (50)	65 (50)	120 (60)	190 (70)	240 (80)	380 (120)	550 (140)	640 (160)	800 (180)	1050 (240)	1530 (280)
				3M	Tendril 2 / 3-Step reduction	8 (40)	NA	18 (50)	38 (50)	67 (60)	100 (70)	130 (80)	220 (120)	290 (140)	390 (160)	480 (180)	630 (240)	920 (280)
Y	Special	Y	Special	YY	Special	Please contact Valmet for more information												

GB Series Cv vs travel Standard trim (Cage)

ASME Class: 150# - 1500#

Size: 2" - 16"

Flow characteristic: linear

Valve travel [%]							10	20	30	40	50	60	70	80	90	100	
F _L							0.890	0.888	0.885	0.883	0.880	0.878	0.875	0.872	0.870	0.840	
Valve size		Orifice diameter		Travel			Rated Cv										
Inch	mm	Sign	Inch	mm	Inch												
2	50	FC					4.9	13.9	22.2	30.3	39.5	48.6	57.3	64.7	69.5	74	
		1A	2.5	64.5	1.6		3.5	7.6	12.5	17.3	22.4	27.6	33.1	38.5	43.6	48	
		2A					2.6	5.2	7.7	10.3	12.9	15.4	18.0	20.6	23.2	26	
		3A					1.6	3.2	4.8	6.3	7.9	9.5	11.1	12.7	14.3	16	
2.5	65	FC	3.5	89	2		5.50	14.60	29.50	43.50	56.00	69.00	76.00	85.00	100.00	106.00	
		1A					4.4	11.0	16.5	22.9	28.2	34.5	41.2	47.2	52.0	57.0	
		FC					8.0	22.0	39.0	59.0	75.0	90.0	105.0	119.0	130.0	142	
		1A					6.2	16.6	26.9	36.9	46.6	56.8	67.4	78.0	87.8	98	
3	80	2A	3.5	89.0	2.0		50	4.5	11.1	16.6	22.2	27.7	33.3	38.8	44.4	49.9	56
		3A					3.4	6.7	10.1	13.5	16.8	20.2	23.6	26.9	30.3	34	
		FC					19.3	41.5	74.4	105.3	133.4	164.5	187.6	206.4	219.3	230	
		1A					8.0	25.4	43.1	60.4	77.2	93.8	110.7	127.6	143.9	160	
4	100	2A	4.4	111.5	2.0		50	6.0	17.0	25.5	34.1	42.6	51.1	59.6	68.1	76.6	86
		3A					5.2	10.3	15.4	20.6	25.7	30.9	36.0	41.2	46.3	52	
		FC					23.0	62.0	123.5	181.0	229.1	269.3	315.2	349.9	370.1	380	
		1A					12.0	40.9	71.4	101.4	130.6	158.9	186.7	214.7	242.2	275	
6	150	2A	5.3	133.6	2.4		60	9.5	29.7	44.6	59.4	74.3	89.1	104.0	118.8	133.7	150
		3A					8.0	17.8	26.7	35.6	44.6	53.5	62.4	71.3	80.2	90	
		FC					28.2	94.2	185.6	288.0	377.1	449.1	514.1	571.9	590.0	600	
		1A					14.5	52.5	108.0	172.0	232.0	299.0	365.0	417.0	430.0	455	
8	200	2A	6.9	175.5	2.8		70	10.0	45.0	75.4	100.6	125.7	150.9	176.0	201.2	226.3	254
		3A					9.0	30.1	45.1	60.2	75.2	90.3	105.3	120.4	135.4	152	
		FC					45.9	189.3	329.3	461.8	583.3	689.9	778.5	847.7	897.9	950	
		1A					25.0	103.6	183.3	260.7	337.5	414.1	489.4	562.3	631.5	700	
10	250	2A	8.4	214.2	3.1		80	17.0	78.8	118.2	157.6	197.0	236.4	275.8	315.2	354.6	398
		3A					12.0	46.7	70.1	93.5	116.8	140.2	163.6	186.9	210.3	238	
		FC					93.2	250.0	463.3	660.0	840.0	990.0	1115.0	1205.0	1250.0	1270	
		1A					66.7	167.8	276.8	382.9	485.5	586.9	692.1	796.9	893.0	970	
12	300	2A	10.4	264.8	4.7		120	25.0	108.9	163.4	218.0	272.3	326.7	381.2	435.6	490.1	550
		3A					17.0	67.3	101.0	134.6	168.3	202.0	235.6	269.3	302.9	340	
		FC					127.4	407.5	673.4	915.6	1128.5	1316.5	1474.2	1593.1	1671.4	1740	
		1A					91.3	233.3	393.0	548.1	696.8	838.0	976.4	1105.4	1221.2	1300	
14	350	2A	12.4	315.5	5.5		140	52.0	153.7	230.5	307.3	384.1	460.9	537.8	614.6	691.4	776
		3A					27.0	91.9	137.8	183.7	229.7	275.6	321.6	367.5	413.4	464	
		FC					189.0	497.0	891.8	1248.0	1535.4	1791.5	1950.0	2063.0	2161.6	2215	
		1A					101.3	276.5	448.1	615.0	779.1	941.9	1101.6	1255.7	1398.9	1530	
16	400	2A	14.1	357.7	6.3		160	71.0	186.1	279.2	372.2	465.3	558.4	651.4	744.5	837.5	940
		3A					47.0	112.5	168.7	224.9	281.2	337.4	393.6	449.9	506.1	568	
		FC					230.4	605.8	1087.1	1521.3	1871.6	2183.8	2377.0	2514.7	2634.9	2700.0	
		1A					125.8	343.4	556.4	763.8	967.6	1169.7	1368.0	1559.4	1737.2	1900.0	
18	450	2A	14.7	374	7.0		180	86.1	225.7	338.6	451.4	564.3	677.2	790.0	902.9	1015.7	1140.0
		3A					56.3	134.6	202.0	269.3	336.6	403.9	471.2	538.6	605.9	680.0	
		FC					350.0	880.0	1500.0	2200.0	2860.0	3425.0	3900.0	4270.0	4560.0	4700.0	
		1A					175.0	438.0	730.0	1035.0	1325.0	1600.0	1870.0	2125.0	2370.0	2500.0	
20	500	2A	19.6	498	9.4		240	93.0	245.0	410.0	585.0	755.0	925.0	1085.0	1250.0	1405.0	1500.0
		3A					55.0	150.0	245.0	350.0	450.0	545.0	645.0	740.0	835.0	900.0	
		FC					715.0	2025.0	3120.0	4010.0	4720.0	5285.0	5740.0	6050.0	6300.0	6400.0	
		1A					205.0	620.0	1060.0	1525.0	1960.0	2365.0	2750.0	3105.0	3430.0	3700.0	
24	600	2A	23.5	598	11.0		280	120.0	385.0	650.0	925.0	1185.0	1440.0	1685.0	1925.0	2150.0	2350.0
		3A					50.0	200.0	355.0	510.0	665.0	810.0	960.0	1100.0	1245.0	1350.0	

NOTE

C_v: Valve flow coefficient

F_L: Liquid pressure recovery factor

F_C: Full capacity

2A: 2-Step reduction

1A: 1-Step reduction

3A: 3-Step reduction

GB Series Cv vs travel Standard trim (Cage)

ASME Class: 150# - 1500#

Size: 2"-16"

Flow characteristic: EQ-%

Valve travel [%]							10	20	30	40	50	60	70	80	90	100
F _L							0.890	0.890	0.890	0.889	0.887	0.885	0.880	0.876	0.871	0.842
Valve size		Orifice diameter		Travel			Rated Cv									
Inch	mm	Sign	Inch	mm	Inch		2.00	4.00	6.00	9.00	14.00	21.00	33.00	50.00	66.00	71
2	50	FC					1.07	3.28	5.45	7.57	9.75	12.79	17.86	26.28	39.68	50
		1A	2.5	64.5	1.6		0.59	1.19	1.60	2.48	4.57	8.16	12.88	17.74	21.59	24
		2A					0.34	0.70	0.94	1.45	2.67	4.76	7.51	10.35	12.59	14
		3A														
2.5	65	FC	3.5	89	2		6.10	11.40	16.34	22.34	33.70	48.70	68.80	84.50	94.80	99.00
		1A					1.3	3.3	5.4	8.0	11.2	16.5	23.7	32.3	40.4	44.0
		FC					4.00	8.50	14.50	22.00	33.50	51.00	75.00	108.00	128.00	138
		1A					2.50	3.72	6.61	11.10	18.35	29.43	45.56	67.65	91.99	110
3	80	2A	3.5	89.0	2.0		1.22	2.48	3.34	5.17	9.52	17.00	26.82	36.97	44.98	50
		3A					0.78	1.59	2.14	3.31	6.09	10.88	17.17	23.66	28.79	32
		FC					5.60	12.90	23.40	36.90	59.60	86.50	128.20	163.90	188.60	210
		1A					2.75	6.68	11.68	17.92	28.59	46.21	71.85	105.81	141.21	160
4	100	2A	4.4	111.5	2.0		2.00	4.07	5.48	8.48	15.61	27.88	43.99	60.62	73.76	82
		3A					1.22	2.48	3.34	5.17	9.52	17.00	26.82	36.97	44.98	50
		FC					6.50	15.00	27.70	47.10	77.10	123.80	198.50	265.20	316.00	340
		1A					3.40	11.12	22.00	32.25	50.35	81.67	126.81	187.40	246.30	270
6	150	2A	5.3	133.6	2.4		3.32	6.76	9.08	14.06	25.89	46.24	72.95	100.54	122.34	136
		3A					2.00	4.07	5.48	8.48	15.61	27.88	43.99	60.62	73.76	82
		FC					6.50	23.00	45.00	83.00	138.00	220.00	325.00	445.00	510.00	560
		1A					5.60	19.00	39.00	58.00	94.00	148.00	222.00	310.00	405.00	450
8	200	2A	6.9	175.5	2.8		4.00	11.72	15.76	24.39	44.92	80.23	126.59	174.47	212.29	236
		3A					3.00	7.05	9.48	14.68	27.03	48.27	76.17	104.98	127.73	142
		FC					8.10	33.20	65.70	124.40	216.80	350.10	493.20	619.90	747.60	830
		1A					6.52	26.50	47.14	76.22	126.33	219.81	343.21	460.04	566.24	655
10	250	2A	8.4	214.2	3.1		6.13	18.58	24.97	38.66	71.19	127.15	200.62	276.49	336.42	374
		3A					5.47	11.13	14.96	23.15	42.64	76.15	120.16	165.60	201.50	224
		FC					22.40	64.30	111.10	179.80	303.10	546.80	795.00	996.00	1155.00	1240
		1A					15.54	44.65	73.67	110.47	174.20	277.57	441.34	650.51	837.52	960
12	300	2A	10.4	264.8	4.7		12.79	26.03	34.99	54.16	99.74	178.14	281.08	387.39	471.35	524
		3A					7.67	15.60	20.97	32.45	59.77	106.75	168.43	232.14	282.45	314
		FC					24.70	82.30	158.30	266.70	427.00	693.90	1015.80	1277.20	1514.70	1650
		1A					18.94	60.21	103.15	164.81	260.61	405.54	630.90	903.93	1141.45	1275
14	350	2A	12.4	315.5	5.5		16.21	37.06	49.81	77.10	142.00	235.61	400.17	551.51	671.05	746
		3A					10.89	22.16	29.78	46.10	84.89	151.62	239.24	329.72	401.19	446
		FC					35.10	100.40	167.00	268.40	471.00	849.30	1265.10	1603.90	1911.60	2090
		1A					26.32	73.03	119.55	175.70	286.98	477.71	773.09	1125.40	1432.44	1680
16	400	2A	14.1	357.7	6.3		20.85	42.42	57.03	88.27	162.55	290.33	458.10	631.35	768.20	854
		3A					12.50	25.43	34.19	52.92	97.46	174.06	274.65	378.52	460.56	512
		FC					45.3	129.7	215.7	346.7	608.5	1097.2	1634.3	2072.0	2469.5	2700.0
		1A					29.8	82.6	135.2	198.7	324.6	540.3	874.3	1272.8	1620.0	1900.0
18	450	2A	14.7	374	7.0		27.8	56.6	76.1	117.8	217.0	387.6	611.5	842.8	1025.5	1140.0
		3A					16.6	33.8	45.4	70.3	129.4	231.2	364.8	502.7	611.7	680.0
		FC					80.0	210.0	435.0	895.0	1690.0	2670.0	3480.0	4105.0	4540.0	4700.0
		1A					50.0	135.0	227.0	400.0	685.0	1080.0	1475.0	1845.0	2200.0	2500.0
20	500	2A	19.6	498	9.4		28.0	80.0	135.0	195.0	320.0	568.0	830.0	1085.0	1330.0	1500.0
		3A					17.0	60.0	110.0	180.0	275.0	395.0	530.0	665.0	795.0	900.0
		FC					100.0	390.0	860.0	1700.0	3010.0	4250.0	5140.0	5750.0	6135.0	6400.0
		1A					55.0	215.0	400.0	670.0	1055.0	1595.0	2205.0	2765.0	3275.0	3700.0
24	600	2A	23.5	598	11.0		30.0	150.0	315.0	535.0	805.0	1135.0	1480.0	1815.0	2130.0	2350.0
		3A					20.0	105.0	205.0	340.0	500.0	685.0	880.0	1075.0	1265.0	1350.0

NOTE

 C_v : Valve flow coefficient F_L : Liquid pressure recovery factor F_C : Full capacity

1A: 1-Step reduction

2A: 2-Step reduction

3A: 3-Step reduction

GB Series CV vs travel Standard trim (Tendril 1)

ASME Class: 150# - 1500#

Size: 2"-16"

Flow characteristic: LINEAR

Valve travel [%]						10	20	30	40	50	60	70	80	90	100	
F _L						0.912	0.915	0.917	0.920	0.923	0.926	0.929	0.930	0.925	0.920	
Valve size		Orifice diameter		Travel		Rated Cv										
Inch	mm	Sign	Inch	mm	Inch	mm										
2	50	FT					3.0	11.8	19.7	26.6	33.2	39.0	43.8	47.7	50.8	52
		1T	2.5	64.5	1.6	40	1.9	7.7	13.0	17.7	22.4	26.8	31.0	34.8	38.3	40
		2T					1.2	4.8	8.1	11.2	14.3	17.2	20.1	22.8	25.4	27
		3T					0.4	1.7	2.9	4.0	5.2	6.3	7.4	8.5	9.6	10
2.5	65	FT	3.5	89	2	50	7.4	15.2	21.5	28.2	37.8	46.3	53.9	61.0	69.0	77.0
		1T					5.9	12.4	17.5	22.3	29.5	36.0	41.6	47.7	52.8	58.0
		FT					7.5	23.0	36.9	49.9	61.9	73.2	82.9	91.2	98.0	102
		1T					4.7	14.6	23.7	32.4	40.6	48.8	56.4	63.6	70.4	75
3	80	2T	3.5	89.0	2.0	50	2.4	7.6	12.4	17.1	21.7	26.2	30.5	34.8	38.9	40
		3T					1.2	3.9	6.4	8.9	11.3	13.8	16.1	18.4	20.7	21
		FT					8.5	32.6	55.1	75.9	95.6	113.8	130.5	144.6	156.2	160
		1T	4.4	111.5	2.0	50	5.3	20.4	34.8	48.3	61.5	74.1	86.7	98.5	109.6	120
4	100	2T					2.9	11.3	19.5	27.3	34.9	42.4	49.9	57.1	64.2	70
		3T					1.9	7.6	13.2	18.5	23.8	28.9	34.2	39.2	44.1	46
		FT					13.8	54.4	95.1	134.3	170.9	204.3	234.1	259.9	281.9	290
		1T	5.3	133.6	2.4	60	9.0	35.2	61.8	88.2	114.1	139.2	163.1	185.7	206.9	220
6	150	2T					4.9	18.9	33.1	47.3	61.6	75.9	90.1	104.1	117.9	130
		3T					2.9	10.8	18.8	26.9	35.0	43.2	51.4	59.5	67.7	75
		FT					19.7	87.1	152.3	213.7	271.5	323.2	368.8	409.4	444.2	460
		1T	6.9	175.5	2.8	70	12.7	56.0	98.8	140.5	181.6	220.5	257.3	292.4	324.9	340
8	200	2T					6.4	28.0	49.5	70.8	92.4	113.6	134.4	155.2	175.5	195
		3T					3.6	15.6	27.5	39.3	51.4	63.3	75.1	87.1	99.0	105
		FT					39.7	122.6	206.9	287.7	361.2	430.8	493.5	548.0	597.7	630
		1T	8.4	214.2	3.1	80	25.7	78.3	132.7	186.4	237.5	288.4	337.1	382.2	426.0	460
10	250	2T					14.2	41.5	69.9	98.4	126.0	154.4	182.4	209.4	236.8	255
		3T					8.4	23.2	38.6	54.1	69.1	84.6	100.2	115.3	130.8	140
		FT					76.8	216.1	351.6	478.6	594.1	696.7	786.2	863.1	928.4	980
		1T	10.4	264.8	4.7	120	48.9	136.8	224.6	310.8	394.0	473.3	548.1	617.8	682.3	735
12	300	2T					25.2	68.8	112.8	156.8	200.8	244.4	287.5	330.0	371.7	405
		3T					15.4	40.7	66.1	91.7	117.4	143.1	168.8	194.5	220.0	240
		FT					89.2	275.6	460.6	634.1	789.1	929.1	1050.3	1151.4	1237.4	1300
		1T	12.4	315.5	5.5	140	56.5	174.0	293.5	410.7	521.9	629.9	731.6	824.7	912.3	985
14	350	2T					29.7	90.1	152.1	214.2	274.8	336.1	396.5	454.9	513.1	565
		3T					16.4	48.4	81.3	114.3	146.8	179.9	212.9	245.3	278.2	310
		FT					121.6	332.6	546.9	756.9	949.0	1121.7	1274.6	1402.5	1508.5	1580
		1T	14.1	357.7	6.3	160	73.6	198.0	326.6	458.4	586.9	712.2	834.3	948.3	1055.2	1145
16	400	2T					41.5	108.3	177.2	248.6	319.8	391.4	464.1	535.3	605.7	670
		3T					26.9	68.0	110.1	153.6	197.1	241.1	286.2	330.8	375.6	415
		FT					161.6	442.0	726.9	1006.0	1261.3	1490.8	1694.1	1864.0	2004.9	2100.0
		1T	14.7	374	7.0	180	93.2	250.7	413.6	580.5	743.2	901.9	1056.5	1200.8	1336.2	1450.0
18	450	2T					53.9	140.6	230.1	322.7	415.2	508.2	602.6	695.1	786.5	870.0
		3T					33.7	85.2	137.9	192.5	247.0	302.2	358.6	414.5	470.7	520.0
		FT					215.4	589.3	969.2	1341.4	1681.7	1987.8	2258.8	2485.4	2673.2	2800.0
		1T	19.6	498	9.4	240	128.6	345.8	570.4	800.6	1025.2	1244.0	1457.2	1656.3	1843.1	2000.0
20	500	2T					74.3	194.0	317.3	445.2	572.7	701.0	831.2	958.7	1084.8	1200.0
		3T					46.6	118.0	191.0	266.5	342.0	418.4	496.6	574.0	651.7	720.0
		FT					307.7	841.9	1384.6	1916.3	2402.5	2839.7	3226.8	3550.5	3818.9	4000.0
		1T	23.5	598	11.0	280	180.1	484.1	798.6	1120.9	1435.2	1741.6	2040.1	2318.9	2580.3	2800.0
24	600	2T					105.3	274.8	449.5	630.6	811.3	993.1	1177.6	1358.1	1536.8	1700.0
		3T					64.8	163.9	265.3	370.1	475.0	581.1	689.7	797.2	905.1	1000.0

NOTE

C_v: Valve flow coefficient

F_L: Liquid pressure recovery factor

F_C: Full capacity

2A: 2-Step reduction

1A: 1-Step reduction

3A: 3-Step reduction

GB Series Cv vs travel

Standard trim (Tendril 1)

ASME Class: 150# - 1500#

Size: 2"-16"

Flow characteristic: EQ-%

Valve travel [%]						10	20	30	40	50	60	70	80	90	100	
F _L						0.912	0.912	0.913	0.915	0.916	0.919	0.922	0.93	0.925	0.922	
Valve size		Orifice diameter		Travel		Rated Cv										
Inch	mm	Sign	Inch	mm	Inch	mm										
2	50	FC					0.4	2.4	4.4	8.1	13.7	20.5	28.3	36.4	44.1	50.0
		1A	2.5	64.5	1.6	40	0.4	2.4	4.2	5.9	9.5	14.6	20.4	25.7	30.7	35.0
		2A					0.2	1.0	2.3	4.0	6.2	8.9	11.9	14.8	17.7	20.0
		3A					0.2	1.0	2.2	3.4	4.5	5.7	6.8	7.9	9.0	10.0
2.5	65	FT	3.5	89	2	50	2.4	5.0	7.9	11.1	16.3	23.0	34.2	45.7	56.2	66.0
		1T					0.8	1.4	3.4	5.8	9.8	14.2	21.7	34.0	42.4	47.0
		FC					0.7	2.7	6.3	12.5	20.9	31.5	43.6	57.0	71.1	82.0
		1A					0.7	2.7	4.7	8.5	14.8	23.6	33.3	42.5	51.3	58.0
3	80	2A	3.5	89	2	50	0.7	2.7	4.7	8.5	13.3	18.1	22.6	27.1	31.3	35.0
		3A					0.3	1.4	3.1	5.5	8.0	10.5	12.9	15.3	17.6	20.0
		FC					1.0	5.2	9.5	17.1	30.3	48.2	71.3	95.5	117.5	135.0
		1A					0.5	2.6	6.3	13.0	22.3	34.2	48.8	65.1	82.1	95.0
4	100	2A	4.4	111.5	2	50	0.5	2.6	4.8	8.7	15.6	24.6	33.8	42.5	51.1	58.0
		3A					0.5	2.6	4.8	8.5	12.6	16.6	20.7	24.6	28.5	32.0
		FC					1.6	7.5	16.2	33.1	58.4	91.7	131.8	172.1	208.6	235.0
		1A					1.6	7.5	13.4	22.2	39.2	64.5	92.9	120.7	147.3	170.0
6	150	2A	5.3	133.6	2.4	60	0.9	3.8	6.8	11.1	19.5	32.0	48.7	67.1	85.4	100.0
		3A					0.9	3.8	6.8	11.1	18.8	26.9	35.0	43.2	51.4	58.0
		FC					1.5	12.8	35.3	68.6	113.2	167.1	227.7	288.0	341.3	370.0
		1A					1.5	8.5	21.5	45.3	80.7	122.9	163.9	204.1	242.0	265.0
8	200	2A	6.9	175.5	2.8	70	0.8	4.3	10.8	22.6	40.3	63.6	91.9	122.8	152.7	170.0
		3A					0.8	4.3	8.0	15.1	28.0	44.6	61.2	78.0	94.6	105.0
		FC					4.2	19.1	48.4	91.6	147.0	216.6	295.8	370.8	441.5	500.0
		1A					4.2	12.2	31.1	63.9	109.2	165.6	221.2	273.6	325.3	370.0
10	250	2A	8.4	214.2	3.1	80	4.2	12.2	21.5	43.8	73.9	105.0	136.0	166.0	196.5	225.0
		3A					2.9	6.8	11.5	22.6	39.3	57.3	75.4	93.0	111.1	125.0
		FC					7.4	26.7	75.3	153.7	260.7	391.7	527.8	648.9	754.0	840.0
		1A					7.4	18.8	52.7	116.3	202.8	289.5	373.5	453.9	529.8	600.0
12	300	2A	10.4	264.8	4.7	120	4.5	10.2	27.1	58.6	104.8	156.2	207.5	258.3	308.3	355.0
		3A					4.5	10.2	27.1	52.5	78.0	103.7	129.4	155.1	180.7	205.0
		FC					6.7	30.7	93.6	195.6	332.7	504.5	687.7	849.2	992.0	1110.0
		1A					6.7	21.0	67.3	152.6	264.7	378.6	489.2	593.3	693.8	785.0
14	350	2A	12.4	315.5	5.5	140	4.0	11.1	34.1	76.5	137.3	207.6	277.7	345.7	414.0	480.0
		3A					4.0	11.1	34.1	70.6	107.0	144.2	181.4	217.9	255.1	290.0
		FC					9.4	44.5	125.3	258.1	439.8	664.3	890.8	1090.8	1263.7	1400.0
		1A					9.4	30.8	94.0	207.6	349.8	493.0	635.9	771.9	901.1	1020.0
16	400	2A	14.1	357.7	6.3	160	6.1	16.7	47.8	102.8	180.1	263.7	349.8	434.9	519.6	600.0
		3A					6.1	16.7	47.8	90.1	132.6	175.8	220.2	264.5	309.0	350.0
		FC					12.7	60.4	170.1	350.2	596.8	901.6	1209.0	1480.4	1715.0	1900.0
		1A					12.0	39.2	119.8	264.6	445.8	628.3	810.5	983.8	1148.5	1300.0
18	450	2A	14.7	374	7	180	9.1	25.0	72.0	133.6	234.1	342.8	454.7	565.3	675.5	780.0
		3A					8.2	25.0	64.2	120.9	178.0	236.1	295.8	355.1	415.0	470.0
		FC					16.8	79.5	223.8	460.8	785.3	1186.3	1590.8	1947.9	2256.6	2500.0
		1A					16.6	54.3	165.9	366.3	617.2	869.9	1122.2	1362.2	1590.2	1800.0
20	500	2A	19.6	498	9.4	240	12.8	35.0	100.0	188.5	330.1	483.5	641.3	797.3	952.6	1100.0
		3A					11.3	34.0	88.7	167.2	246.2	326.5	409.0	491.1	573.9	650.0
		FC					24.1	114.5	322.2	663.6	1130.9	1708.2	2290.7	2805.0	3249.4	3600.0
		1A					23.5	76.9	235.0	519.0	874.4	1232.4	1589.9	1929.8	2252.8	2550.0
24	600	2A	23.5	598	11	280	18.1	49.3	140.9	265.6	465.1	681.3	903.6	1123.4	1342.4	1550.0
		3A					15.7	47.1	122.9	231.6	340.9	452.0	566.3	680.0	794.6	900.0

NOTE

C_v: Valve flow coefficientF_L: Liquid pressure recovery factorF_C: Full capacity

2A: 2-Step reduction

1A: 1-Step reduction

3A: 3-Step reduction

GB Series Cv vs travel Standard trim (Tendril 2)

ASME Class: 150# - 1500#

Size: 2"-16"

Flow characteristic: Linear

Valve travel [%]						10	20	30	40	50	60	70	80	90	100	
F _L						0.922	0.925	0.928	0.931	0.934	0.937	0.938	0.94	0.936	0.932	
Valve size		Orifice diameter		Travel		Rated Cv										
Inch	mm	Sign	Inch	mm	Inch	mm										
2	50	FC					2.9	10.7	17.7	24.2	30.1	35.5	40.3	44.4	47.7	50.0
		1A	2.5	64.5	1.6	40	1.7	6.2	10.4	14.4	18.2	21.8	25.3	28.6	31.8	35.0
		2A					1.0	3.8	6.5	9.0	11.5	13.9	16.2	18.4	20.6	23.0
		3A					0.4	1.3	2.3	3.2	4.1	5.0	5.9	6.8	7.6	8.0
3	80	FC					7.7	22.4	36.0	48.5	60.4	71.2	80.9	89.2	96.2	100.0
		1A	3.5	89	2	50	4.9	14.5	23.5	31.9	40.1	47.9	55.4	62.6	69.3	74.0
		2A					2.0	6.0	9.9	13.7	17.4	21.0	24.5	27.9	31.3	33.0
		3A					1.0	3.1	5.1	7.1	9.0	10.9	12.8	14.7	16.5	18.0
4	100	FC					8.4	30.4	50.7	70.3	88.6	105.9	121.7	135.9	148.0	155.0
		1A	4.4	111.5	2	50	5.7	20.6	34.7	48.4	61.4	74.2	86.4	98.2	109.3	115.0
		2A					2.8	10.5	17.9	25.2	32.2	39.1	45.9	52.6	59.1	65.0
		3A					1.6	6.1	10.4	14.7	18.8	23.0	27.1	31.1	35.1	38.0
6	150	FC					13.9	49.6	85.4	120.4	153.7	184.6	212.9	238.3	260.7	280.0
		1A	5.3	133.6	2.4	60	9.8	34.6	59.7	84.8	109.4	133.3	156.3	178.1	198.6	215.0
		2A					5.2	18.1	31.1	44.2	57.4	70.6	83.7	96.6	109.5	120.0
		3A					2.9	9.9	16.9	24.0	31.1	38.3	45.4	52.6	59.8	67.0
8	200	FC					18.9	74.7	130.1	183.2	233.6	280.3	323.3	362.1	397.0	425.0
		1A	6.9	175.5	2.8	70	13.3	52.3	91.5	129.9	167.5	203.6	238.4	271.2	302.3	330.0
		2A					7.2	28.0	49.1	70.0	91.0	111.6	132.2	152.3	172.3	190.0
		3A					3.9	15.0	26.2	37.3	48.6	59.7	70.9	82.1	93.2	100.0
10	250	FC					36.1	109.6	182.6	253.6	321.1	384.4	442.8	496.3	544.7	590.0
		1A	8.4	214.2	3.1	80	25.4	76.3	127.3	178.0	227.6	275.8	322.2	366.6	408.7	450.0
		2A					13.4	38.7	64.1	89.6	115.2	140.6	166.0	191.1	215.9	240.0
		3A					7.8	21.1	34.5	47.9	61.4	74.9	88.4	101.9	115.4	130.0
12	300	FC					70.4	195.0	317.4	433.7	541.5	639.4	726.8	803.7	870.7	920.0
		1A	10.4	264.8	4.7	120	48.9	134.7	220.6	304.8	386.4	464.3	537.9	606.7	670.7	720.0
		2A					24.0	64.4	105.2	146.1	186.9	227.5	267.7	307.5	346.5	380.0
		3A					14.6	37.9	61.3	84.8	108.5	132.1	155.8	179.5	203.0	220.0
14	350	FC					82.7	253.5	421.0	580.2	727.6	860.9	979.3	1082.4	1171.0	1240.0
		1A	12.4	315.5	5.5	140	56.1	171.5	286.8	400.0	509.6	614.4	713.5	806.2	892.2	970.0
		2A					29.7	89.5	149.6	209.8	269.8	329.4	388.1	446.0	502.7	550.0
		3A					16.0	46.9	78.0	109.2	140.5	171.8	203.1	234.4	265.6	290.0
16	400	FC					114.4	310.6	510.7	705.8	889.4	1057.2	1206.6	1336.4	1446.8	1530.0
		1A	14.1	357.7	6.3	160	72.5	193.6	318.8	445.4	570.9	693.6	811.7	924.1	1030.0	1130.0
		2A					40.2	104.0	169.8	236.9	305.0	373.5	442.0	510.3	578.0	640.0
		3A					25.7	64.4	104.0	144.2	185.1	226.4	268.2	310.1	352.3	390.0
18	450	FC					142.1	385.7	634.2	876.5	1104.5	1312.9	1498.4	1659.6	1796.7	1900.0
		1A	14.7	374	7	180	86.6	231.3	380.9	532.1	682.1	828.6	969.7	1104.1	1230.5	1350.0
		2A					50.2	130.0	212.2	296.1	381.2	466.8	552.5	637.9	722.5	800.0
		3A					31.6	79.3	127.9	177.5	227.8	278.7	330.0	381.7	433.6	480.0
20	500	FC					186.9	507.5	834.5	1153.3	1453.3	1727.4	1971.5	2183.7	2364.0	2500.0
		1A	19.6	498	9.4	240	112.3	299.8	493.7	689.7	884.2	1074.1	1257.0	1431.2	1595.1	1750.0
		2A					65.9	170.7	278.5	388.7	500.3	612.7	725.2	837.2	948.3	1050.0
		3A					41.5	104.0	167.9	233.0	299.0	365.8	433.2	501.0	569.1	630.0
24	600	FC					272.9	741.0	1218.4	1683.8	2121.8	2522.1	2878.4	3188.2	3451.5	3650.0
		1A	23.5	598	11	280	163.6	436.8	719.4	1005.0	1288.4	1565.1	1831.7	2085.4	2324.3	2550.0
		2A					96.1	248.7	405.9	566.4	729.0	892.8	1056.7	1220.0	1381.8	1530.0
		3A					60.6	151.9	245.2	340.2	436.6	534.2	632.6	731.6	831.0	920.0

NOTE

C_v: Valve flow coefficient

F_L: Liquid pressure recovery factor

F_C: Full capacity

1A: 1-Step reduction

2A: 2-Step reduction

3A: 3-Step reduction

GB Series Cv vs travel Standard trim (Tendril 2)

ASME Class: 150# - 1500#

Size: 2"-16"

Flow characteristic: EQ-%

Valve travel [%]						10	20	30	40	50	60	70	80	90	100	
F _L						0.922	0.922	0.923	0.925	0.928	0.931	0.934	0.941	0.936	0.934	
Valve size		Orifice diameter		Travel		Rated Cv										
Inch	mm	Sign	Inch	mm	Inch	mm										
2	50	FC	2.5	64.5	1.6	40	0.4	1.8	3.8	7.5	12.6	18.8	26.0	33.7	41.3	47.0
		1A					0.4	1.8	3.2	5.2	8.8	13.8	19.0	24.0	28.7	33.0
		2A					0.2	0.9	2.0	3.5	5.5	7.8	10.4	13.4	16.4	19.0
		3A					0.2	0.9	1.8	2.8	3.7	4.6	5.5	6.3	7.2	8.0
3	80	FC	3.5	89	2	50	0.6	2.2	5.7	11.4	19.2	28.7	39.8	52.1	65.2	74.0
		1A					0.6	2.2	3.9	7.8	14.0	22.0	31.8	41.5	50.8	56.0
		2A					0.6	2.2	3.9	7.8	12.6	17.2	21.7	26.1	30.3	33.0
		3A					0.3	1.1	2.7	4.7	6.7	8.6	10.5	12.4	14.3	16.0
4	100	FC	4.4	111.5	2	50	0.8	4.3	11.1	23.1	39.3	59.7	81.2	101.5	119.9	130.0
		1A					0.4	3.4	9.0	17.2	27.6	40.3	54.3	68.2	81.5	92.0
		2A					0.4	2.2	3.9	8.0	14.5	22.9	30.9	38.9	46.6	52.0
		3A					0.4	2.2	3.9	7.2	10.4	13.6	16.8	19.9	23.0	25.0
6	150	FC	5.3	133.6	2.4	60	1.3	8.6	23.1	45.0	74.2	108.9	142.8	174.6	203.8	230.0
		1A					1.3	5.2	15.0	32.0	55.2	79.2	102.7	125.7	147.9	165.0
		2A					0.7	2.7	7.6	15.9	28.0	42.3	56.7	71.0	85.3	95.0
		3A					0.7	2.6	5.1	11.0	18.1	25.2	32.3	39.4	46.6	52.0
8	200	FC	6.9	175.5	2.8	70	1.2	10.7	30.1	59.2	98.1	145.6	198.0	247.2	293.1	330.0
		1A					1.2	6.5	20.2	43.8	77.0	113.0	148.4	182.6	215.8	245.0
		2A					0.7	3.3	10.1	21.9	38.6	59.9	82.3	104.4	126.4	145.0
		3A					0.7	2.8	6.8	15.8	27.0	38.1	49.4	60.5	71.7	80.0
10	250	FC	8.4	214.2	3.1	80	4.6	15.5	44.0	90.9	155.6	226.1	293.7	357.5	416.9	470.0
		1A					3.6	10.8	29.8	60.8	104.1	152.1	199.4	245.6	290.4	330.0
		2A					2.5	9.0	21.4	39.9	64.1	89.6	115.2	140.6	166.0	190.0
		3A					2.5	4.7	11.2	23.6	38.5	53.5	68.4	83.5	98.5	110.0
12	300	FC	10.4	264.8	4.7	120	6.9	35.8	90.7	171.8	277.6	395.8	506.6	607.9	698.8	770.0
		1A					5.0	17.9	55.5	119.2	200.4	280.9	359.3	434.7	506.3	570.0
		2A					3.3	9.8	28.4	60.0	104.1	151.5	198.7	245.6	291.9	330.0
		3A					3.3	9.8	28.3	51.7	75.2	98.8	122.5	146.1	169.8	190.0
14	350	FC	12.4	315.5	5.5	140	6.0	31.3	105.7	231.2	392.6	549.2	695.0	828.1	947.1	1050.0
		1A					4.4	21.2	70.7	154.2	255.2	355.1	452.6	546.9	637.3	720.0
		2A					2.8	11.2	35.8	77.3	134.5	194.7	254.8	314.4	373.4	430.0
		3A					2.8	11.2	35.8	69.2	102.8	136.5	170.2	203.9	237.6	270.0
16	400	FC	14.1	357.7	6.3	160	8.9	47.1	146.4	312.3	509.8	702.4	883.9	1050.2	1198.5	1320.0
		1A					6.8	32.2	97.4	205.7	336.5	468.3	598.6	725.3	846.8	960.0
		2A					4.8	17.4	49.4	101.9	173.1	248.1	324.2	400.7	477.0	550.0
		3A					4.8	17.4	47.8	82.0	116.9	152.3	188.1	224.3	260.7	295.0
18	450	FC	14.7	374	7	180	11.4	60.6	188.5	402.2	656.5	904.6	1138.4	1352.5	1543.6	1700.0
		1A					8.7	40.9	123.7	261.4	427.6	595.1	760.7	921.8	1076.1	1220.0
		2A					7.0	25.4	69.6	133.4	226.6	324.8	424.4	524.5	624.5	720.0
		3A					7.0	25.4	69.6	119.6	170.4	222.0	274.2	326.9	380.1	430.0
20	500	FC	19.6	498	9.4	240	14.8	78.5	244.0	520.5	849.6	1170.7	1473.2	1750.3	1997.6	2200.0
		1A					11.2	52.6	159.2	336.4	550.2	765.8	978.9	1186.2	1384.9	1570.0
		2A					9.3	33.7	92.3	176.0	299.0	428.6	559.9	692.0	824.0	950.0
		3A					9.3	33.7	92.3	158.5	225.9	294.2	363.4	433.4	503.8	570.0
24	600	FC	23.5	598	11	280	22.1	117.7	366.0	780.8	1274.5	1756.0	2209.9	2625.4	2996.4	3300.0
		1A					16.4	77.1	233.3	492.9	806.1	1121.9	1434.1	1737.7	2028.8	2300.0
		2A					13.6	49.0	134.4	252.0	428.1	613.6	801.6	990.7	1179.6	1360.0
		3A					13.6	49.0	134.4	230.8	328.9	428.4	529.2	631.0	733.6	830.0

NOTE

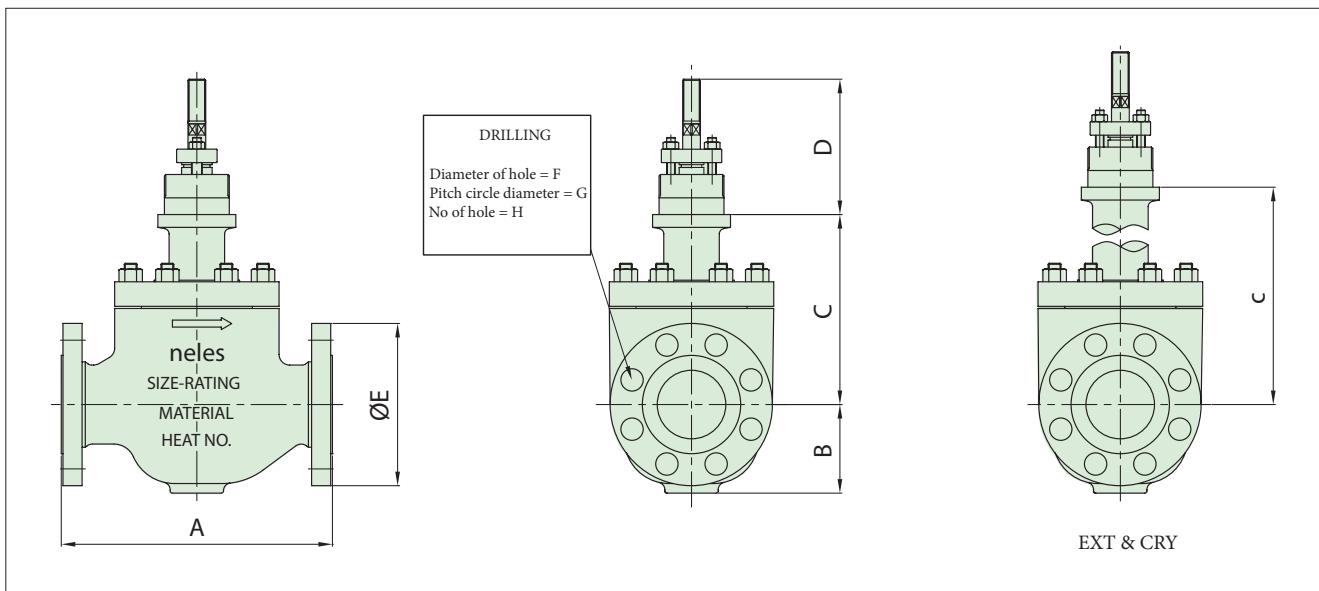
C_v: Valve flow coefficientF_L: Liquid pressure recovery factorF_C: Full capacity

1A: 1-Step reduction

2A: 2-Step reduction

3A: 3-Step reduction

GB, Valve dimensions and weights



150 #/ 300 #/ 600

Dimension (mm)	A			B			C			D			E			F			G			H			Weight (kg) (Approximate)		
	Size (mm)	150#	300#	600#	150#	300#	600#	STD	EXT	CRY	COMMON	150#	300#	600#	150#	300#	600#	150#	300#	600#	150#	300#	600#	150#	300#	600#	
50		254	267	286	83	83	83	178	333	458	110	150	165	165	19.1	19.1	19.1	120.7	127	127	4	8	8	30	32	40	
65		277	292	OA	91	99	OA	222	OA	OA	114	178	191	OA	19.1	22.2	OA	139.7	147.3	OA	4	8	OA	49	51	OA	
80		298	318	337	109	109	120	222	395	545	115	190	210	210	19.1	22.2	22.2	152.4	168.3	168.3	4	8	8	65	67	72	
100		352	368	394	135	135	135	248	402	552	140	230	255	275	19.1	22.2	25.4	190.5	200	215.9	8	8	8	100	103	112	
150		451	473	508	170	170	178	340	467	642	150	280	320	355	22.2	22.2	28.6	241.3	269.9	292.1	8	12	12	185	195	240	
200		543	568	610	230	230	230	451	557	732	150	345	380	420	22.2	25.4	31.8	298.5	330.2	349.2	8	12	12	363	385	443	
250		673	708	752	275	275	275	488	670	870	150	405	445	510	25.4	28.6	34.9	387.4	431.8	431.8	12	16	16	552	595	681	
300		737	775	819	350	350	350	543	716	916	164	485	520	560	25.4	31.8	34.9	431.8	450.8	489	12	16	20	905	955	1020	
350		889	927	972	385	385	385	616	846	1046	210	535	585	605	28.6	31.8	38.1	476.3	514.4	527	12	20	20	1170	1230	1311	
400		1016	1057	1108	440	440	440	692	909	1109	220	595	650	685	28.6	34.9	41.3	539.8	571.5	603.2	16	20	20	1380	1460	1587	
450		1137	1190	1308	450	450	450	790	1008	1208	189	635	711	743	31.8	34.9	44.5	577.8	628.6	654	16	24	20	1504	1732	2171	
500		1662	1704	1767	540	540	540	860	1109	1349	210	698	775	813	31.8	34.9	44.5	635	685.8	723.9	20	24	24	2573	2811	3534	
600		1999	2056	2120	630	630	630	1079	1309	1509	217	813	914	940	34.9	41.3	50.8	749.3	812.8	838.2	20	24	24	4134	4769	5962	

Dimension (inch)	A			B			C			D			E			F			G			H			Weight (lbs) (Approximate)		
	Size (inch)	150#	300#	600#	150#	300#	600#	STD	EXT	CRY	COMMON	150#	300#	600#	150#	300#	600#	150#	300#	600#	150#	300#	600#	150#	300#	600#	
2"		10	10.5	11.3	3.3	3.3	3.3	7	13.1	18	4.3	5.9	6.5	6.5	0.75	0.75	0.75	4.8	5	5	4	8	8	66	71	88	
2.5"		10.9	11.5	OA	3.6	3.9	OA	8.7	OA	OA	4.5	7	7.5	OA	0.75	0.87	OA	5.5	5.8	OA	4	8	OA	108	113	OA	
3"		11.7	12.5	13.3	4.3	4.3	4.7	8.7	15.6	21.5	4.5	7.5	8.3	8.3	0.75	0.87	0.87	6	6.6	6.6	4	8	8	143	148	159	
4"		13.9	14.5	15.5	5.3	5.3	5.3	9.8	15.8	21.7	5.5	9.1	10	10.8	0.75	0.87	1	7.5	7.9	8.5	8	8	8	220	227	247	
6"		17.8	18.6	20	6.7	6.7	7	13.4	18.4	25.8	5.9	11	12.6	14	0.87	0.87	1.13	9.5	10.6	11.5	8	12	12	408	430	529	
8"		21.4	22.4	24	9.1	9.1	9	17.8	21.9	28.8	5.9	13.6	15	16.5	0.87	1	1.25	11.8	13	13.8	8	12	12	800	849	977	
10"		26.5	27.9	29.6	10.8	10.8	10.8	19.2	26.4	34.3	5.9	15.9	17.5	20.1	1	1.13	1.37	14.3	15.3	17	12	16	16	1217	1312	1501	
12"		29	30.5	32.2	13.8	13.8	13.8	21.4	28.2	36.1	6.45	19.1	20.5	22.1	1	1.25	1.37	17	17.8	19.3	12	16	20	1995	2105	2249	
14"		35	36.5	38.2	15.2	15.2	15.2	24.3	33.3	41.2	8.3	21.1	23	23.8	1.13	1.25	1.5	18.8	20.3	20.8	12	20	20	2579	2712	2890	
16"		40	41.6	43.6	17.3	17.3	17.3	27.2	35.8	43.7	8.7	23.4	25.6	27	1.13	1.37	1.63	21.3	22.5	23.8	16	20	20	3042	3219	3499	
18"		44.8	46.9	51.5	17.7	17.7	17.7	31.1	39.7	47.6	7.4	25.0	28.0	29.3	1.25	1.38	1.75	22.7	24.7	25.7	16	24	20	3316	3818	4786	
20"		65.4	67.1	69.6	21.3	21.3	21.3	33.9	43.7	53.1	8.3	27.5	30.5	32.0	1.25	1.38	1.75	25.0	27.0	28.5	20	24	24	5672	6197	7791	
24"		78.7	80.9	83.5	24.8	24.8	24.8	42.5	51.5	59.4	8.5	32.0	36.0	37.0	1.38	1.63	2.00	29.5	32.0	33.0	20	24	24	9114	10514	13144	

900#/1500#

Dimension (mm)	Size (mm)	A		B		C		D		E		F		G		H		Weight (kg) (Approximate)	
		900#	1500#	900#	1500#	STD	EXT	COMMON	900#	1500#	900#	1500#	900#	1500#	900#	1500#	900#	1500#	
050	375	375	113	113	240	380	110	215	215	25.4	25.4	165.1	165.1	8	8	67	67		
080	441	460	142	142	322	430	115	240	265	25.4	31.7	190.5	203.2	8	8	150	163		
100	511	530	182	182	376	475	140	290	310	31.8	34.9	235	241.3	8	8	244	255		
150	714	768	210	240	420	500	150	380	395	31.8	39	317.5	317.5	12	12	530	540		
200	914	972	290	290	550	600	150	470	485	38.1	45	393.7	393.7	12	12	698	821		
250	991	1067	310	350	600	700	150	545	585	38.1	51	469.9	482.6	16	12	955	1137		
300	1130	1219	385	385	680	800	140	610	675	38.1	54	533.4	571.5	20	16	1180	1240		
350	1257	1257	385	385	770	920	210	640	750	41.3	61	558.8	635	20	16	1387	1477		
400	1422	1422	450	450	850	1050	220	705	825	44.5	67	616	704.8	20	16	1601	1721		

Dimension (inch)	Size (inch)	A		B		C		D		E		F		G		H		Weight (lbs) (Approximate)	
		900#	1500#	900#	1500#	STD	EXT	COMMON	900#	1500#	900#	1500#	900#	1500#	900#	1500#	900#	1500#	
2"	14.8	14.8	4.5	4.5	9.5	15	4.3	8.5	8.5	1	1	6.5	6.5	8	8	148	148		
3"	17.4	18.1	5.6	5.6	12.7	16.9	4.5	9.5	10.4	1	1.25	7.5	8	8	8	8	331	359	
4"	20.1	20.9	7.2	7.2	14.8	18.7	5.5	11.4	12.2	1.25	1.37	9.3	9.5	8	8	538	562		
6"	28.1	30.2	8.3	9.5	16.5	19.7	5.9	15	15.6	1.25	1.54	12.5	12.5	12	12	1168	1190		
8"	36	38.3	11.4	11.4	21.7	23.6	5.9	18.5	19.1	1.5	1.77	15.5	15.5	12	12	1539	1810		
10"	39	42	12.2	13.8	23.6	27.6	5.9	21.5	23	1.5	2.01	18.5	19	16	12	2105	2507		
12"	44.5	48	15.2	15.2	26.8	31.5	5.9	24	26.6	1.5	2.13	21	22.5	20	16	2601	2734		
14"	49.5	49.5	15.2	15.2	30.3	36.2	8.3	25.2	29.5	1.63	2.4	22	25	20	16	3058	3256		
16"	56	56	17.7	17.7	33.5	41.3	8.3	27.8	32.5	1.75	2.64	24.3	27.8	20	16	3530	3794		

*Bigger sizes and higher ratings are available, please contact sales office for more information

DIN Valve (PN10-PN40)

Face to Face acc. to DIN 3202-1 / EN 558 series 1

Flange acc. to EN1092-1 type 21

Dual material marking (ASTM & EN) will be available on pressure retaining parts.

e.g. A216 gr. WCB/1.0619, A351 gr. CF8M/1.4408

Dimension (mm)	A		B		C		D		E		F		G		H		Weight (kg)	
	PN 10-16	PN 25-40	PN 10-16	PN 25-40	STD	EXT	CRY	COMMON	PN 10-16	PN 25-40								
50	230	230	75	75	178	333	458	110	165	165	18	18	125	125	4	4	25	27
80	310	310	109	109	222	395	545	115	200	200	18	18	160	160	8	8	55	57
100	350	350	130	130	248	402	552	140	220	235	18	22	180	190	8	8	80	83

How to order

Globe balanced, cage guided type, series GB

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
GB	03	C	W	A	J2	B	P1	X	BC	S1	R1	X	S	G	T	S	G	X	A	E	FC

Valve constructions

1. Valve series					
GB					Globe balanced, cage guided type
2. Body size					
02	2"	/DN50	16	16"	/DN400
2H	2.5"	/DN65	18	18"	/DN450
03	3"	/DN80	20	20"	/DN500
04	4"	/DN100	24	24"	/DN600
06	6"	/DN150	28	28"	/DN700
08	8"	/DN200	30	30"	/DN750
10	10"	/DN250	32	32"	/DN800
12	12"	/DN300	36	36"	/DN900
14	14"	/DN350	YY	Special	

6. Body material			
J2	A216 gr. WCB	S6	A351 gr. CF8M
J4	A217 gr. WC6	CG	A217 gr. WC9
S1	A351 gr. CF3M	J1	A216 gr. WCC
YY	Special		

- Bonnet material is equivalent to body material.
- * ASME valve face to face length according to ISA 75.08, EN valve face to face length according to ISA 75.08.
- * The body, bonnet, trim materials are subject to change as equivalent depending on detail design.
- * See 'Neles Globe Type code Instruction' for further options and explanations.

7. Model code	
B	Model B

Trim constructions

8. Plug material		
	Material	Description
P1	CA15	General for carbon steel valve
T6	CF8M	General for stainless steel valve
P2	CA 40	General for high temp. Cr-Mo valve
S1	CF3M	
YY	Special	

9. Plug application		
X	Not applicable	
A	Cobalt based alloy	
Y	Special	

10. Stem material		
	Material	Description
BC	630 SS	General for carbon steel valve
TC	316 SS	General for stainless steel valve
FC	316L SS	
VX	XM-19	High temperature

11. Seat type		
S1	Single metal seat	
T1	Single soft seat	
YY	Special	

12. Seat / cage material			
	Seat	Cage	Cage guide
R1	CA15	CB7Cu-1 + HCr	CB7Cu-1 + HCr
R6	CF8M	CF8M + HCr	CF8M + HCr
P2	CA40	CA40	CA40
R3	CF3M	CF3M + HCr	CF3M + HCr
YY	Special	Special	Special

- CA15 / AISI 410 is general for carbon steel valve.
- CF8M / AISI 316 is general for stainless steel valve.

13. Seat application		
X	Not applicable	
A	Cobalt based alloy	
P	Insert PTFE	
Q	Insert PTFE + Cobalt based alloy	
Y	Special	

Others

14.	Packing / bellows type	17.	Gasket material
S	General packing	S	S/W gasket type, 316L SS + Graphite
E	Low emission, live loaded	L	S/W gasket type, 316L SS + PTFE
C	Bellows Seal (316L SS, Formed)	H	S/W gasket type, 316L SS + Hi-Graphite
Y	Special	Y	Special

15.	Packing material	18.	Stud / nut material
G	PTFE + Carbon fiber	G	A193 gr. B7M / A194 gr. 2HM
F	Graphite	D	A193 gr. B8M / A194 gr. 8M
C	PTFE + Carbon fiber (ATEX)	K	A320 gr. B8M cl. 2 / A194 gr. 8M
T	PTFE V-Ring	H	A193 gr. B16 / A194 gr. 7
H	Hi-Graphite	E	A453 gr. 660 / A453 gr. 660
Y	Special	Y	Special

16.	Seal ring material	19.	Options
G	PTFE + Graphite	X	Not applicable
H	PTFE + Graphite + Carbon	E	Anti-erosion
M	Graphite (High temp graphite seal)	L	Lub. & Isol. valve
N	Graphite + metal (High temp metal seal)	W	Water seal
T	PTFE	Y	Special
Y	Special		

* Face to face length according to ISA 75.08 (EN558 series 38, 39) and DIN3202-1 (EN558 series 1).

* For DIN f to f valve, dual material marking (ASTM & EN) will be available on pressure retaining parts.

e.g. A216 gr. WCB/1.0619, A351 gr. CF8M/1.4408

* The body, bonnet, trim materials are subject to change as equivalent depending on detail design.

* See 'Neles Globe Type code Instruction' for further options and explanations.

* Round bar material such as AISI 410SS (for A743 gr. CA 15), AISI 316SS (for A351 gr. CF8M), SUS420J2 (for A743 gr. CA40) and AISI 630SS (for A747 gr. CB7Cu-1) can be used depending on manufacturing process.

20. Sign	TRIM TYPE	21. Sign	TRIM CHARACTERISTIC	22. Sign	Description	RATED Cv													
						2" Str.	2.5" Str.	3" Str.	4" Str.	6" Str.	8" Str.	10" Str.	12" Str.	14" Str.	16" Str.	18" Str.	20" Str.	24" Str.	
A	Balanced plug	E	Equal %	FC	General / Full capacity	71 (40)	99 (50)	138 (50)	210 (50)	340 (60)	560 (70)	830 (80)	1240 (120)	1650 (140)	2090 (160)	2700 (180)	4700 (240)	6400 (280)	
A	High temp graphite seal plug			1A	General /1-Step reduction	50 (40)	44 (50)	110 (50)	160 (50)	270 (60)	450 (70)	655 (80)	960 (120)	1275 (140)	1680 (160)	1900 (180)	2500 (240)	3700 (280)	
A	High temp metal seal plug			2A	General /2-Step reduction	24 (40)	NA	50 (50)	82 (50)	136 (60)	236 (70)	374 (80)	524 (120)	746 (140)	854 (160)	1140 (180)	1500 (240)	2350 (280)	
				3A	General /3-Step reduction	14 (40)	NA	32 (50)	50 (50)	82 (60)	142 (70)	224 (80)	314 (120)	446 (140)	512 (160)	680 (180)	900 (240)	1350 (280)	
				FT	Tendril 1 / Full capacity	50 (40)	66 (50)	82 (50)	135 (50)	235 (60)	370 (70)	500 (80)	840 (120)	1110 (140)	1400 (160)	1900 (180)	2500 (240)	3600 (280)	
				1T	Tendril 1 /1-Step reduction	35 (40)	47 (50)	58 (50)	95 (50)	170 (60)	265 (70)	370 (80)	600 (120)	785 (140)	1020 (160)	1300 (180)	1800 (240)	2550 (280)	
				2T	Tendril 1 /2-Step reduction	20 (40)	NA	35 (50)	58 (50)	100 (60)	170 (70)	225 (80)	355 (120)	480 (140)	600 (160)	780 (180)	1100 (240)	1550 (280)	
				3T	Tendril 1 /3-Step reduction	10 (40)	NA	20 (50)	32 (50)	58 (60)	105 (70)	125 (80)	205 (120)	290 (140)	350 (160)	470 (180)	650 (240)	900 (280)	
				FM	Tendril 2 / Full capacity	47 (40)	NA	74 (50)	130 (50)	230 (60)	330 (70)	470 (80)	770 (120)	1050 (140)	1320 (160)	1700 (180)	2200 (240)	3300 (280)	
				1M	Tendril 2 /1-Step reduction	33 (40)	NA	56 (50)	92 (50)	165 (60)	245 (70)	330 (80)	570 (120)	720 (140)	960 (160)	1220 (180)	1570 (240)	2300 (280)	
				2M	Tendril 2 /2-Step reduction	19 (40)	NA	33 (50)	52 (50)	95 (60)	145 (70)	190 (80)	330 (120)	430 (140)	550 (160)	720 (180)	950 (240)	1360 (280)	
				3M	Tendril 2 /3-Step reduction	8 (40)	NA	16 (50)	25 (50)	52 (60)	80 (70)	110 (80)	190 (120)	270 (140)	295 (160)	430 (180)	570 (240)	830 (280)	
	L	Linear		FC	General / Full capacity	74 (40)	106 (50)	142 (50)	230 (50)	380 (60)	600 (70)	950 (80)	1270 (120)	1740 (140)	2215 (160)	2700 (180)	4700 (240)	6400 (280)	
				1A	General /1-Step reduction	48 (40)	57 (50)	98 (50)	160 (50)	275 (60)	455 (70)	700 (80)	970 (120)	1300 (140)	1530 (160)	1900 (180)	2500 (240)	3700 (280)	
				2A	General /2-Step reduction	26 (40)	NA	56 (50)	86 (50)	150 (60)	254 (70)	398 (80)	550 (120)	776 (140)	940 (160)	1140 (180)	1500 (240)	2350 (280)	
				3A	General /3-Step reduction	16 (40)	NA	34 (50)	52 (50)	90 (60)	152 (70)	238 (80)	340 (120)	464 (140)	568 (160)	680 (180)	900 (240)	1350 (280)	
				FT	Tendril 1 / Full capacity	52 (40)	77 (50)	102 (50)	160 (50)	290 (60)	460 (70)	630 (80)	980 (120)	1300 (140)	1580 (160)	2100 (180)	2800 (240)	4000 (280)	
				1T	Tendril 1 /1-Step reduction	40 (40)	58 (50)	75 (50)	120 (50)	220 (60)	340 (70)	460 (80)	735 (120)	985 (140)	1145 (160)	1450 (180)	2000 (240)	2800 (280)	
				2T	Tendril 1 /2-Step reduction	27 (40)	NA	40 (50)	70 (50)	130 (60)	195 (70)	255 (80)	405 (120)	565 (140)	670 (160)	870 (180)	1200 (240)	1700 (280)	
				3T	Tendril 1 /3-Step reduction	10 (40)	NA	21 (50)	46 (50)	75 (60)	105 (70)	140 (80)	240 (120)	310 (140)	415 (160)	520 (180)	720 (240)	1000 (280)	
				FM	Tendril 2 / Full capacity	50 (40)	NA	100 (50)	155 (50)	280 (60)	425 (70)	590 (80)	920 (120)	1240 (140)	1530 (160)	1900 (180)	2500 (240)	3650 (280)	
				1M	Tendril 2 /1-Step reduction	35 (40)	NA	74 (50)	115 (50)	215 (60)	330 (70)	450 (80)	720 (120)	970 (140)	1130 (160)	1350 (180)	1750 (240)	2550 (280)	
				2M	Tendril 2 /2-Step reduction	23 (40)	NA	33 (50)	65 (50)	120 (60)	190 (70)	240 (80)	380 (120)	550 (140)	640 (160)	800 (180)	1050 (240)	1530 (280)	
				3M	Tendril 2 /3-Step reduction	8 (40)	NA	18 (50)	38 (50)	67 (60)	100 (70)	130 (80)	220 (120)	290 (140)	390 (160)	480 (180)	630 (240)	920 (280)	
Y	Special	Y	Special	YY	Special	Please contact Valmet for more information													

- Rated Cv is different depending on trim characteristic.

- Str. : valve stroke length(mm). It should be matched with actuator stroke length.

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