Neles™ Top-guided globe valve
Series GU

Neles™ series GU globe valves are top-guided, single seat and contoured trim providing superior control performance and high reliability in wide range of applications. Standard units are equipped with Neles diaphragm actuators and valve controllers for precise flow control, extended operation life and performance monitoring online.



Construction

- Compact and lightweight construction
- Wide variety of trims with different Cv and characteristics
- 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

- Neles 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
- Temperature limits -29 ... +425 °C / (-20 ... +797 °F) with standard bonnet construction and over +425 °C (+797 °F) and under -29 °C / (-20 °F) with extended bonnets
- Tendril™ multi-hole trim for high pressure drop and cavitation applications
- Suitable for pressure swing adsorption (PSA) service with a soft-seated design and low-emission packing.
- Micro trim for small flow and/or to get rid of the stability problems in high pressure drop application
- Inherently characterized trims offered in equal percentage, linear and quick opening.

Safety and quality

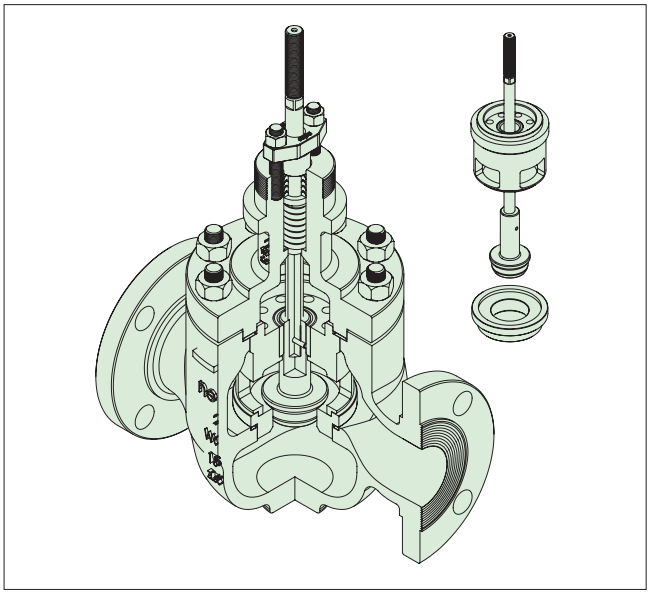
- Rugged one piece body to minimizes the leak paths and makes the valve less prone to pipe stress
- Strictly tested to ensure specified performance with quality assurance systems in accordance to ISO 9001
- Certified ISO 15848 fugitive emissions
- Certified CE/PED & ATEX, TSG & EAC (GOST-R)
- Certified 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
- Neles digital valve controller with online diagnostics enables performance follow up and predictive maintenance
- Efficient asset management with any FDT frame application and excellent networking capabilities

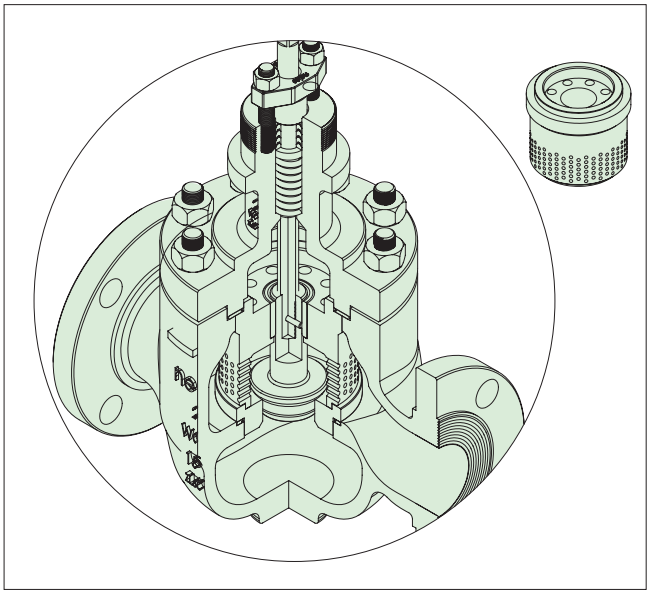
Different trim designs

Contoured trim



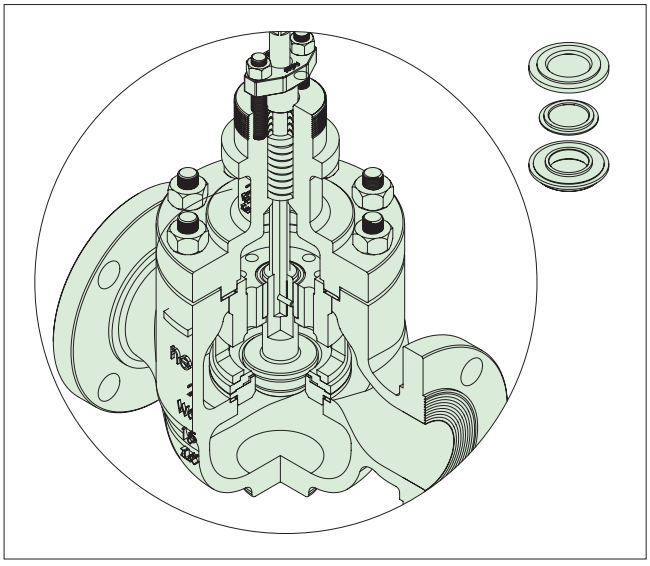
Quick change, general contoured trim
Quick change, general contoured plug offers a smooth flow profile. The trim is most suited to low pressure drop application and is used in the majority of control applications.

Tendril (multi-hole) trim



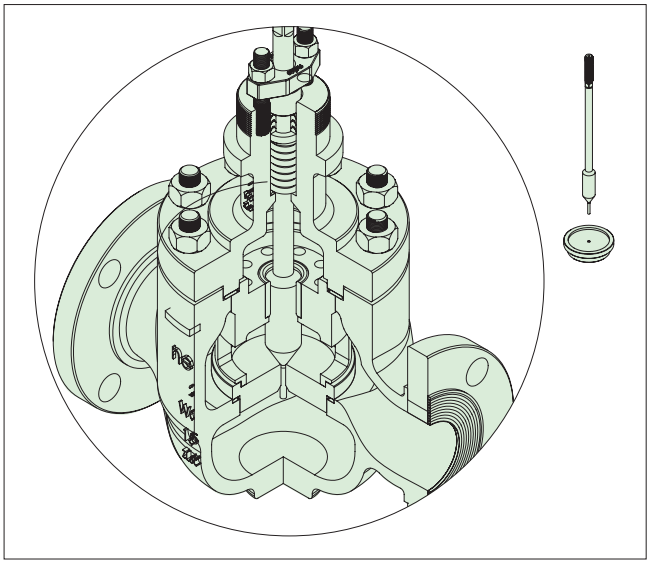
Tendril trim
Tendril is a multi-hole trim where the flow is divided through multiple holes in which pressure progressively reduces while passing through the trim. This gives excellent resistance to cavitation and reduces noise in high pressure drop applications.

Contoured soft seat trim



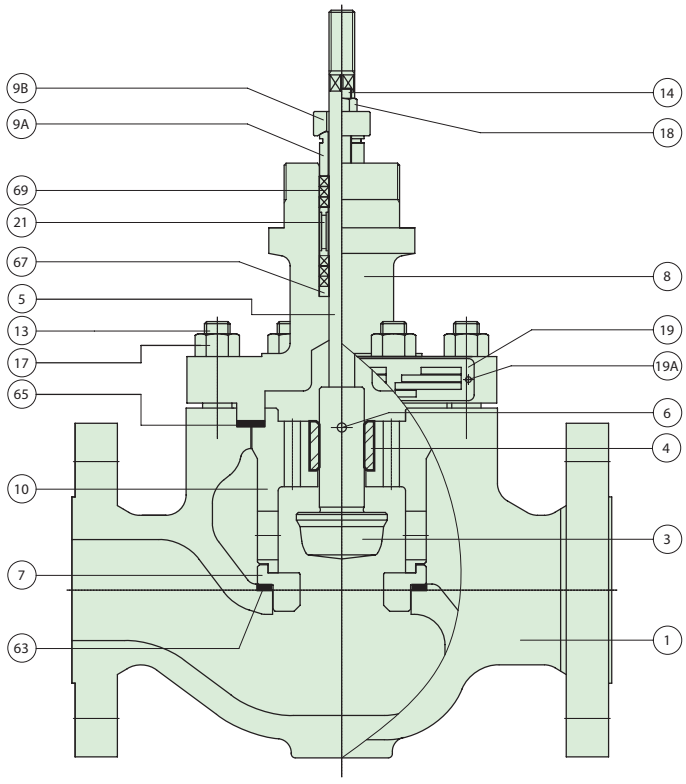
Soft seat trim
An alteration of the standard contoured trim is the soft seated option. The seat ring is manufactured with a clamped on shroud which locks the soft seated ring in position. When the soft face contacts the seating point it deforms the softer ring ensuring a high degree of closure. The soft seated trim is used on applications where bubble tight shut off is required.

Micro trim



Micro trim
The micro trim design is seat guided construction, capable of handling high pressure drops, without instability problems. This trim design has an inherent characteristic of linear, and has excellent rangeability. It is an ideal selection for the control of very low flow rates. Please contact Valmet for micro trim applications.

Components & materials



Body material: Carbon steel or alloy steel

Part no.	Description	Material
1	BODY	ASTM A216 GR WCB
2	PLUG SET	410 SS / 630 SS
3*	PLUG	410 STAINLESS STEEL
4	GUIDE BUSHING	440C STAINLESS STEEL
5*	STEM	630 STAINLESS STEEL
6*	PLUG PIN	316 STAINLESS STEEL
7	SEAT RING	410 STAINLESS STEEL
8	BONNET	ASTM A216 GR WCB
9A	GLAND	304 STAINLESS STEEL
9B	GLAND FLANGE	A351 CF8
10	RETAINER	630 STAINLESS STEEL
13	STUD	A193 Gr.B7 M
14	STUD	A193 Gr.B8M
17	HEXAGON NUT	A194 Gr.2HM
18	HEXAGON NUT	A194 Gr.8M
19	IDENTIFICATION PLATE	304 STAINLESS STEEL
19A	RIVET	304 STAINLESS STEEL
21	LANTERN RING	304 STAINLESS STEEL
63	SEAT GASKET	S/W GASKET, 316L SS + GRAPHITE
65	BODY GASKET	S/W GASKET, 316L SS + GRAPHITE
67	PACKING SPACER	304 STAINLESS STEEL
69	PACKING RING	PTFE + CARBON FIBER

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
   440C SS : ASTM A276 gr.440C or JIS 440C stainless steel
   410 SS : ASTM A276 gr. 410 or JIS 410 stainless steel
   630 SS : 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 identification plate is attached to the body when only the bare stem valve is required. And the identification plate is attached to the actuator yoke when the completed valve and actuator is delivered

Body material: Stainless steel

Material	Spare
ASTM A351 GR CF8M	
316 SS / 316 SS	Cat 3
316 STAINLESS STEEL	
316 + COBALT BASED ALLOY	
316 STAINLESS STEEL	
316 STAINLESS STEEL	
316 STAINLESS STEEL	Cat 3
ASTM A351 GR CF8M	
304 STAINLESS STEEL	
A351 CF8	
A351 CF8M	Cat 3
A193 Gr. B8M	
A193 Gr. B8M	
A194 Gr. 8M	
A194 Gr. 8M	
304 STAINLESS STEEL	
304 STAINLESS STEEL	
304 STAINLESS STEEL	
S/W GASKET, 316L SS + GRAPHITE	Cat 1
S/W GASKET, 316L SS + GRAPHITE	Cat 1
304 STAINLESS STEEL	
PTFE + CARBON FIBER	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 Valmet
4. Cryogenic application: ASTM A320 B8M & 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 identification plate is attached to the body when only the bare stem valve is required. And the identification plate is attached to the actuator yoke when the completed valve and actuator is delivered.

GU, Application guide

GU, Temperature range and seat leakage class with different bonnet and seat application

Valve size DN / Inch	ASME rating	Seat type	Temperature range (°C)		Seat leakage class (ANSI B 16.104)	
			General bonnet	Extension bonnet	Standard	Optional
15/0.5... 150/6	150... 600	Metal	-29...+425	-109...+593	IV	V
		Soft	-29...+232	-109...+232	VI	
15 / 1/2... 80/3	900... 2500	Metal	-29...+425	-109...+593	IV	V, VI

Temperature range with different body and stud/nut materials

Body, bonnet material	Stud bolt, nut material	Temp. range, (°C)	Sign
Carbon steel (WCB, A105)	ASTM A193-B7M STUD / ASTM A194-2HM NUT	-29...+425	G
Cr-Mo steel(WC6, WC9)	A193 gr. B16 STUD A194 gr. 7 NUT	-29…+593	H
Stainless steel (CF3, CF8,CF3M, CF8M)	ASTM A193-B8M / ASTM A194 -8M NUT	-196...+425	D

Trim materials

GU, Trim				Temperature range (°C)	Sign
Plug	Stem	Seat	Retainer		
410 SS	630 SS	410 SS	630 SS	-29...+425	P1XBCS1R1X
316 SS	316 SS	316 SS	316 SS	-196...+425	T6XTCS1T6X
316 SS + Cobalt based alloy	316 SS	316 SS + Cobalt based alloy	316 SS	-196...+425	T6ATCS1T6A
316SS + Full cobalt based alloy	316SS	316SS + Full cobalt based alloy	CF8M / 316SS	-196…+425	T6ATCS1T6A.....E (Sign 19)
316SS + Full cobalt based alloy (both plug & plug guide)	XM-19	316SS + Full cobalt based alloy	CF8M / 316SS	-196…+593	T6ATCS1T6A…..H (sign 19)
420 J2	XM-19	420 J2	420 J2	-10...+540	P2XVXS1P2X
316 SS	316 SS	316 SS + PTFE	316 SS	-49...+232	*
Inconel 718	XM-19	F91	F91	-29...+593	*
Inconel 625, 718, 750				-196...+593	

*Please contact Valmet

Gasket applications

Body, bonnet material	Gasket material	Temp. range (°C)	Sign
Carbon steel WCB, A105	S/W (Spiral wound) 316L SS + Graphite	-29...+425	S
Stainless steel CF8, CF8M, CF3, CF3M	S/W (Spiral wound) 316L SS + Graphite	-56..+425	S
	S/W (Spiral wound) 316L SS + PTFE	-196...+232	L
Cr.Mo. Steel WC6, WC9, F22, C12A, F91	S/W (Spiral wound)316L SS + High Graphite	-29...+593	H

Please contact Valmet

Flow direction

Fluid media	Flow to open	Flow to close
Liquid	o	*
Steam Gas	o	*

*Please contact Valmet

Cv ratio 50: 1

Flow characteristics Equal percentage, linear and quick open

Packing applications

Packing material	Temp (°C)	Pressure class	Sign
PTFE + Carbon Fiber (Braided TEF + Graphite), standard	-196...+260	Up to CL900	G
PTFE V-Ring	- 49...+232	Up to CL600	T
Graphite (with Mold + Braided)	-56...+400	Up to CL2500	F*
Hi-Graphite (with Mold + Braided)	-56...+593	Up to CL2500	H

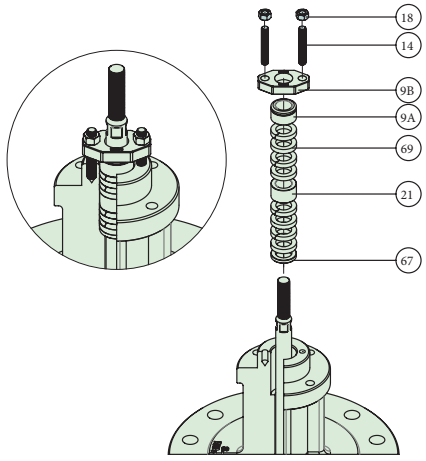
*Graphite packing with low emission, live loaded construction can be applicable up to +450 °C

GU, Ratings & end connetions

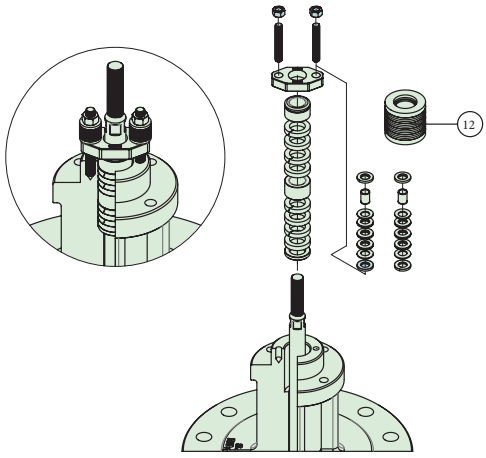
Valve size DN / Inch"	GU, ASME ratings							
	Class 150 - 600				Class 900 - 2500			
	RF	RTJ	SW	BW	RF	RTJ	SW	BW
25 / 1	O	O	O		O	O	O	
40 / 1-1/2	O	O	O		O	O	O	
50 / 2	O	O	O		O	O	O	O
80 / 3	O	O		O				
100 / 4	O	O		O				

Note1. RF:Raised Face, RTJ: Ring Joint, SW:Socket Weld, BW: Butt Weld

Packing constructions



Standard construction



Low emission with live loaded spring

9A	Gland
9B	Gland flange
12	Disk spring assembly
14	Stud
18	Hexagon nut
21	Lantern ring
67	Packing spacer
69	Packing ring

Rated Cv and trim table (Globe single seat, unbalanced type, series GU)

20. Sign	Trim type	21. Sign	Trim characteristic	22. Sign	Description	Rated Cv Body size and stroke													
						0.5"	Str.	0.75"	Str.	1"	Str.	1.5"	Str.	2"	Str.	3"	Str.	4"	Str.	6"	Str.
A	General plug	L	Linear	FC	General / Full capacity	7	(20)	9	(20)	13.5	(20)	28	(20)	49	(20)	100	(40)	190	(40)	295	(60)
		E	Equal %	1A	General / 1-Step reduction	4	(20)	5.5	(20)	8.5	(20)	16	(20)	28	(20)	70	(40)	120	(40)	165	(60)
				2A	General / 2-Step reduction	2.3	(20)	3	(20)	5.4	(20)	10.5	(20)	17	(20)	42	(40)	72	(40)	85	(60)
				3A	General / 3-Step reduction	1.5	(20)	2	(20)	3.1	(20)	6	(20)	10	(20)	25	(40)	42	(40)	50	(60)
				4A	General / 4-Step reduction	0.8	(20)	1.2	(20)	2	(20)	4	(20)								
				5A	General / 5-Step reduction	0.5	(20)	0.7	(20)	1.2	(20)	2.2	(20)								
				6A	General / 6-Step reduction	0.3	(20)	0.4	(20)	0.8	(20)	1.2	(20)								
				FT	Tendril / Full capacity	7	(20)	9	(20)	13.5	(20)	28	(20)	49	(20)	100	(40)	190	(40)	IQI	(60)
				1T	Tendril / 1-Step reduction	4	(20)	5.5	(20)	8.5	(20)	16	(20)	28	(20)	70	(40)	120	(40)	IQI	(60)
				2T	Tendril / 2-Step reduction	2.3	(20)	3	(20)	5.4	(20)	10.5	(20)	17	(20)	42	(40)	72	(40)	IQI	(60)
				3T	Tendril / 3-Step reduction	1.5	(20)	2	(20)	3.1	(20)	6	(20)	10	(20)	25	(40)	42	(40)	IQI	(60)
				4T	Tendril / 4-Step reduction	0.8	(20)	1.2	(20)	2	(20)	4	(20)								
				5T	Tendril / 5-Step reduction	0.5	(20)	0.7	(20)	1.2	(20)	2.2	(20)								
				6T	Tendril / 6-Step reduction	0.3	(20)	0.4	(20)	0.8	(20)	1.2	(20)								
C	Micro plug	L	Linear	FC	General / Full capacity	0.1	(20)	0.1	(20)	0.1	(20)										
				1A	General / 1-Step reduction	0.06	(20)	0.06	(20)	0.06	(20)										
				2A	General / 2-Step reduction	0.03	(20)	0.03	(20)	0.03	(20)										
				3A	General / 3-Step reduction	0.01	(20)	0.01	(20)	0.01	(20)										
				4A	General / 4-Step reduction	0.006	(20)	0.006	(20)	0.006	(20)										
				5A	General / 5-Step reduction	0.003	(20)	0.003	(20)	0.003	(20)										
Y	Special	Y	Special	YY	Special	Please contact sales office for more information															

- Rated Cv is different depending on trim type and characteristic.
- Str. : valve stroke length (mm). It should be matched with actuator stroke length.

GU Series Cv vs Travel (General contoured)

ANSI Class: 150# - 1500

Size: 1/2" - 6" Flow characteristic: LINEAR

Valve travel [%]							10	20	30	40	50	60	70	80	90	100
F_L							0.93	0.93	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90
Valve size		Orifice diameter			Travel		Rated Cv									
Inch	mm	Sign	Inch	mm	Inch	mm										
1/2"	15	FC	0.6	15.7	0.8	20	0.53	1.27	1.95	2.66	3.38	4.09	4.76	5.51	6.67	7.0
		1A	0.4	11.0			0.36	0.74	1.23	1.61	1.99	2.37	2.72	3.05	3.41	4.0
		2A	0.3	8.0			0.28	0.53	0.79	1.07	1.32	1.52	1.71	1.88	2.03	2.3
		3A	0.3	6.4			0.19	0.36	0.52	0.67	0.82	0.97	1.15	1.28	1.38	1.5
		4A	0.3	6.4			0.09	0.17	0.25	0.32	0.40	0.47	0.54	0.61	0.68	0.8
		5A	0.3	6.4			0.06	0.11	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.5
		6A	0.3	6.4			0.04	0.07	0.10	0.12	0.15	0.18	0.21	0.24	0.27	0.3
3/4"	20	FC	0.7	17.2	0.8	20	0.85	1.68	2.57	3.31	4.04	4.74	5.43	6.18	7.61	9.0
		1A	0.5	13.0			0.35	0.82	1.40	2.17	2.78	3.39	3.98	4.53	5.03	5.5
		2A	0.4	9.0			0.29	0.74	1.08	1.40	1.73	2.13	2.37	2.60	2.80	3.0
		3A	0.3	7.2			0.24	0.44	0.63	0.81	0.99	1.16	1.32	1.47	1.62	2.0
		4A	0.3	6.4			0.13	0.24	0.36	0.48	0.60	0.72	0.84	0.96	1.08	1.2
		5A	0.3	6.4			0.08	0.15	0.22	0.28	0.35	0.42	0.49	0.56	0.63	0.7
		6A	0.3	6.4			0.05	0.09	0.13	0.17	0.21	0.25	0.28	0.32	0.36	0.4
1"	25	FC	0.9	22.3	0.8	20	1.29	2.62	4.02	5.42	6.83	8.13	8.90	10.25	11.93	13.5
		1A	0.6	15.0			0.77	1.54	2.31	3.15	3.92	4.68	5.42	6.12	7.00	8.5
		2A	0.5	11.5			0.46	0.94	1.43	1.94	2.46	3.02	3.52	4.00	4.44	5.4
		3A	0.4	9.0			0.28	0.56	0.86	1.16	1.47	1.77	2.07	2.36	2.66	3.1
		4A	0.3	7.2			0.18	0.37	0.57	0.78	0.99	1.20	1.41	1.61	1.79	2.0
		5A	0.3	6.4			0.11	0.23	0.35	0.47	0.59	0.71	0.83	0.95	1.07	1.2
		6A	0.3	6.4			0.07	0.14	0.21	0.28	0.34	0.41	0.48	0.55	0.62	0.8
1-1/2"	40	FC	1.2	30.0	0.8	20	2.64	5.38	8.46	11.77	15.22	18.77	21.56	24.09	26.50	28.0
		1A	0.8	21.5			1.63	3.16	4.70	6.25	7.90	9.52	11.12	12.68	14.18	16.0
		2A	0.6	16.0			0.95	1.89	2.86	3.86	4.88	5.88	6.90	7.92	8.86	10.5
		3A	0.5	12.5			0.57	1.13	1.72	2.33	2.96	3.58	4.19	4.78	5.33	6.0
		4A	0.4	10.0			0.37	0.74	1.14	1.54	1.96	2.38	2.79	3.18	3.55	4.0
		5A	0.3	7.0			0.19	0.38	0.57	0.78	0.99	1.19	1.40	1.60	1.78	2.2
		6A	0.3	6.4			0.12	0.24	0.36	0.47	0.59	0.71	0.83	0.95	1.06	1.2
2"	50	FC	1.7	43.9	0.8	20	4.13	9.24	14.48	19.71	25.09	30.56	35.97	40.01	44.64	49.0
		1A	1.3	33.4			2.27	4.97	7.88	10.94	13.72	16.51	19.28	22.03	24.97	28.0
		2A	0.8	21.5			1.26	2.76	4.37	6.05	7.77	9.53	11.23	12.73	14.32	17.0
		3A	0.6	16.0			0.82	1.78	2.80	3.86	4.93	5.98	7.01	7.98	8.89	10.0
3"	80	FC	2.8	72.0	1.5	40	9.96	21.06	32.40	42.65	52.98	63.70	76.67	86.07	91.15	100.0
		1A	1.9	47.0			5.35	11.64	18.74	26.58	33.66	40.46	47.18	53.74	60.34	70.0
		2A	1.3	34.0			3.47	7.21	11.20	15.38	19.69	24.06	28.45	31.99	35.66	42.0
		3A	1.0	25.0			2.17	4.47	6.86	9.32	11.81	14.29	16.73	19.08	21.29	25.0
4"	100	FC	3.6	91.5	1.5	40	12.67	27.12	47.27	66.04	85.99	106.88	127.85	147.47	167.93	190.0
		1A	2.4	60.0			7.32	15.77	25.33	36.43	51.05	63.30	75.78	88.32	103.94	120.0
		2A	1.7	43.0			7.02	13.84	20.64	27.41	34.07	43.44	50.85	57.09	63.09	72.0
		3A	1.3	32.0			4.03	8.16	12.45	16.82	21.18	25.44	29.51	33.31	37.67	42.0
6"	150	FC	4.5	115.0	2.4	60	28.43	57.15	86.05	112.26	136.07	159.16	181.59	212.57	263.12	295.0
		1A	3.0	75.0			16.09	32.01	47.67	63.09	78.18	93.11	105.76	117.42	137.91	165.0
		2A	1.8	46.5			8.78	17.43	25.90	34.15	42.13	49.78	57.07	63.94	71.49	85.0
		3A	1.4	35.5			4.32	9.07	14.14	19.45	24.88	30.32	35.64	40.72	45.42	50.0

ANSI Class: 150# - 1500#

Size: 1/2" - 6" Flow characteristic: EQ%

Valve travel [%]					10	20	30	40	50	60	70	80	90	100
F_L					0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.91	0.91	0.90
Valve size		Orifice diameter			Travel		Rated Cv							
Inch	mm	Sign	Inch	mm	Inch	mm									
1/2"	15	FC	0.6	15.7	0.8	20	0.16	0.36	0.56	0.89	1.38	2.16	3.42	4.84	6.44	7.0
		1A	0.4	11.0			0.06	0.16	0.31	0.49	0.78	1.46	2.17	2.88	3.53	4.0
		2A	0.3	8.0			0.08	0.16	0.23	0.34	0.59	0.94	1.37	1.70	2.01	2.3
		3A	0.3	6.4			0.05	0.09	0.14	0.20	0.35	0.56	0.82	1.11	1.33	1.5
		4A	0.3	6.4			0.02	0.04	0.06	0.08	0.16	0.28	0.41	0.54	0.66	0.8
		5A	0.3	6.4			0.01	0.02	0.04	0.05	0.10	0.17	0.25	0.33	0.41	0.5
		6A	0.3	6.4			0.01	0.01	0.02	0.03	0.06	0.11	0.15	0.20	0.25	0.3
3/4"	20	FC	0.7	17.2	0.8	20	0.24	0.45	0.67	1.07	1.85	2.93	4.02	5.23	7.13	9.0
		1A	0.5	13.0			0.06	0.20	0.40	0.67	1.11	1.79	2.79	3.71	4.74	5.5
		2A	0.4	9.0			0.05	0.17	0.28	0.45	0.78	1.20	1.80	2.35	2.72	3.0
		3A	0.3	7.2			0.04	0.09	0.15	0.21	0.41	0.68	1.00	1.30	1.67	2.0
		4A	0.3	6.4			0.03	0.06	0.09	0.13	0.25	0.42	0.62	0.82	1.01	1.2
		5A	0.3	6.4			0.01	0.03	0.05	0.08	0.14	0.23	0.34	0.45	0.58	0.7
		6A	0.3	6.4			0.01	0.02	0.03	0.04	0.08	0.14	0.21	0.27	0.33	0.4
1"	25	FC	0.9	22.3	0.8	20	0.27	0.57	0.91	1.55	2.75	4.66	7.08	9.49	11.63	13.5
		1A	0.6	15.0			0.12	0.29	0.51	0.83	1.56	2.70	4.14	5.61	7.03	8.5
		2A	0.5	11.5			0.07	0.19	0.33	0.53	0.97	1.67	2.65	3.59	4.37	5.4
		3A	0.4	9.0			0.03	0.09	0.19	0.32	0.58	1.00	1.52	2.05	2.54	3.1
		4A	0.3	7.2			0.03	0.08	0.13	0.22	0.40	0.67	1.00	1.35	1.70	2.0
		5A	0.3	6.4			0.03	0.05	0.08	0.13	0.25	0.43	0.64	0.85	1.06	1.2
		6A	0.3	6.4			0.01	0.03	0.04	0.07	0.14	0.24	0.35	0.46	0.59	0.8
1-1/2"	40	FC	1.2	30.0	0.8	20	0.45	1.12	2.00	3.07	5.91	10.57	16.18	21.57	25.66	28.0
		1A	0.8	21.5			0.23	0.58	1.06	1.69	3.16	5.36	7.97	10.69	13.44	16.0
		2A	0.6	16.0			0.20	0.44	0.71	1.02	1.88	3.25	4.93	6.71	8.59	10.5
		3A	0.5	12.5			0.09	0.22	0.40	0.62	1.13	2.02	3.17	4.26	5.21	6.0
		4A	0.4	10.0			0.05	0.14	0.26	0.41	0.79	1.36	2.08	2.83	3.45	4.0
		5A	0.3	7.0			0.03	0.08	0.13	0.21	0.39	0.69	1.07	1.43	1.74	2.2
		6A	0.3	6.4			0.03	0.06	0.09	0.13	0.23	0.40	0.59	0.78	0.98	1.2
2"	50	FC	1.7	43.9	0.8	20	1.21	2.46	3.31	5.12	9.42	16.83	26.55	36.59	44.52	49.0
		1A	1.3	33.4			0.32	0.82	1.51	2.87	5.48	9.31	13.77	18.31	23.17	28.0
		2A	0.8	21.5			0.17	0.47	0.88	1.63	3.18	5.47	8.21	11.09	13.68	17.0
		3A	0.6	16.0			0.15	0.37	0.66	1.02	1.89	3.29	5.01	6.71	8.41	10.0
3"	80	FC	2.8	72.0	1.5	40	2.01	4.47	7.37	12.28	22.52	38.62	62.02	79.57	90.09	100.0
		1A	1.9	47.0			1.00	2.51	4.50	6.96	12.95	23.65	36.15	47.82	58.70	70.0
		2A	1.3	34.0			0.73	1.61	2.64	3.95	7.53	13.57	21.26	28.97	34.99	42.0
		3A	1.0	25.0			0.36	0.89	1.59	2.46	4.51	8.08	12.55	16.82	20.78	25.0
4"	100	FC	3.6	91.5	1.5	40	2.90	6.72	11.48	17.16	29.35	56.26	86.65	120.90	153.84	190.0
		1A	2.4	60.0			1.56	3.77	6.63	10.11	18.42	32.83	55.27	77.53	98.63	120.0
		2A	1.7	43.0			1.45	3.05	4.82	8.10	14.86	24.20	35.22	49.81	61.14	72.0
		3A	1.3	32.0			0.88	1.82	2.84	4.44	8.42	14.38	21.12	27.79	34.17	42.0
6"	150	FC	4.5	115.0	2.4	60	4.23	9.72	16.43	25.73	49.58	89.69	140.01	195.77	256.78	295.0
		1A	3.0	75.0			2.83	6.73	11.68	17.72	31.53	53.90	883.75	113.11	140.55	165.0
		2A	1.8	46.5			1.36	3.61	6.68	10.62	17.82	28.66	42.88	57.38	71.53	85.0
		3A	1.4	35.5			0.91	1.90	2.95	4.26	7.77	13.68	21.42	29.72	37.96	50.0

NOTE
Cv: Valve flow coefficient
FL: Liquid pressure recovery factor
FC: Full capacity
1A: 1-Step reduction 2A: 2-Step reduction 3A: 3-Step reduction
4A: 4-Step reduction 5A: 5-Step reduction 6A: 6-Step reduction

Contoured trim (with Tendril 1)

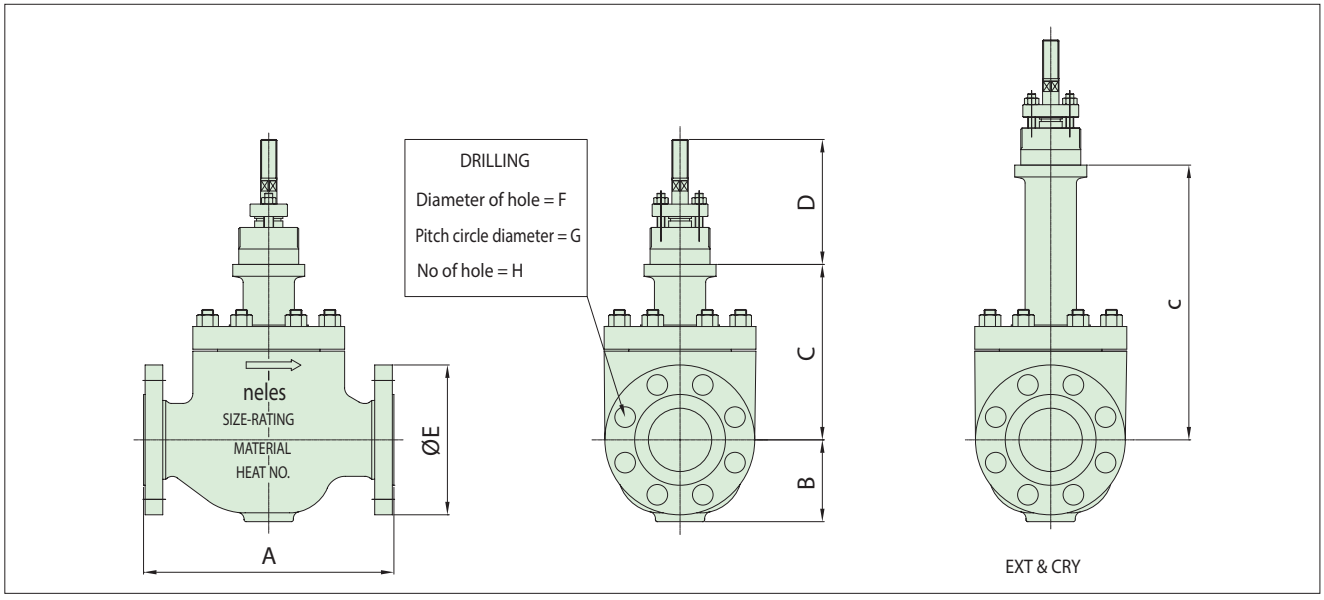
ANSI Class: 150# - 1500#

Size: 1/2" - 4"

Valve travel [%]							10	20	30	40	50	60	70	80	90	100
F_L							0,95	0,95	0,95	0,94	0,94	0,94	0,93	0,93	0,91	0,91
Valve size		Orifice diameter			Travel		Rated Cv									
Inch	mm	Sign	Inch	mm	Inch	mm										
1/2"	15	FT	0.6	15.7	0.8	20	0.53	1.27	1.95	2.66	3.38	4.09	4.76	5.51	6.67	7.0
		1T	0.4	11.0			0.36	0.74	1.23	1.61	1.99	2.37	2.72	3.05	3.41	4.0
		2T	0.3	8.0			0.28	0.53	0.79	1.07	1.32	1.52	1.71	1.88	2.03	2.3
		3T	0.3	6.4			0.19	0.36	0.52	0.67	0.82	0.97	1.15	1.28	1.38	1.5
		4T	0.3	6.4			0.09	0.17	0.25	0.32	0.40	0.47	0.54	0.61	0.68	0.8
		5T	0.3	6.4			0.06	0.11	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.5
		6T	0.3	6.4			0.04	0.07	0.10	0.12	0.15	0.18	0.21	0.24	0.27	0.3
3/4"	20	FT	0.7	17.2	0.8	20	0.85	1.68	2.57	3.31	4.04	4.74	5.43	6.18	7.61	9.0
		1T	0.5	13.0			0.35	0.82	1.40	2.17	2.78	3.39	3.98	4.53	5.03	5.5
		2T	0.4	9.0			0.29	0.74	1.08	1.40	1.73	2.13	2.37	2.60	2.80	3.0
		3T	0.3	7.2			0.24	0.44	0.63	0.81	0.99	1.16	1.32	1.47	1.62	2.0
		4T	0.3	6.4			0.13	0.24	0.36	0.48	0.60	0.72	0.84	0.96	1.08	1.2
		5T	0.3	6.4			0.08	0.15	0.22	0.28	0.35	0.42	0.49	0.56	0.63	0.7
		6T	0.3	6.4			0.05	0.09	0.13	0.17	0.21	0.25	0.28	0.32	0.36	0.4
1"	25	FT	0.9	22.3	0.8	20	1.29	2.62	4.02	5.42	6.83	8.13	8.90	10.25	11.93	13.5
		1T	0.6	15.0			0.77	1.54	2.31	3.15	3.92	4.68	5.42	6.12	7.00	8.5
		2T	0.5	11.5			0.46	0.94	1.43	1.94	2.46	3.02	3.52	4.00	4.44	5.4
		3T	0.4	9.0			0.28	0.56	0.86	1.16	1.47	1.77	2.07	2.36	2.66	3.1
		4T	0.3	7.2			0.18	0.37	0.57	0.78	0.99	1.20	1.41	1.61	1.79	2.0
		5T	0.3	6.4			0.11	0.23	0.35	0.47	0.59	0.71	0.83	0.95	1.07	1.2
		6T	0.3	6.4			0.07	0.14	0.21	0.28	0.34	0.41	0.48	0.55	0.62	0.8
1-1/2"	40	FT	1.2	30.0	0.8	20	2.64	5.38	8.46	11.77	15.22	18.77	21.56	24.09	26.50	28.0
		1T	0.8	21.5			1.63	3.16	4.70	6.25	7.90	9.52	11.12	12.68	14.18	16.0
		2T	0.6	16.0			0.95	1.89	2.86	3.86	4.88	5.88	6.90	7.92	8.86	10.5
		3T	0.5	12.5			0.57	1.13	1.72	2.33	2.96	3.58	4.19	4.78	5.33	6.0
		4T	0.4	10.0			0.37	0.74	1.14	1.54	1.96	2.38	2.79	3.18	3.55	4.0
		5T	0.3	7.0			0.19	0.38	0.57	0.78	0.99	1.19	1.40	1.60	1.78	2.2
		6T	0.3	6.4			0.12	0.24	0.36	0.47	0.59	0.71	0.83	0.95	1.06	1.2
2"	50	FT	1.7	43.9	0.8	20	4.13	9.24	14.48	19.71	25.09	30.56	35.97	40.01	44.64	49.0
		1T	1.3	33.4			2.27	4.97	7.88	10.94	13.72	16.51	19.28	22.03	24.97	28.0
		2T	0.8	21.5			1.26	2.76	4.37	6.05	7.77	9.53	11.23	12.73	14.32	17.0
		3T	0.6	16.0			0.82	1.78	2.80	3.86	4.93	5.98	7.01	7.98	8.89	10.0
3"	80	FT	2.8	72.0	1.5	40	9.96	21.06	32.40	42.65	52.98	63.70	76.67	86.07	91.15	100.0
		1T	1.9	47.0			5.35	11.64	18.74	26.58	33.66	40.46	47.18	53.74	60.34	70.0
		2T	1.3	34.0			3.47	7.21	11.20	15.38	19.69	24.06	28.45	31.99	35.66	42.0
		3T	1.0	25.0			2.17	4.47	6.86	9.32	11.81	14.29	16.73	19.08	21.29	25.0
4"	100	FT	3.6	91.5	1.5	40	12.67	27.12	47.27	66.04	85.99	106.88	127.85	147.47	167.93	190.0
		1T	2.4	60.0			7.32	15.77	25.33	36.43	51.05	63.30	75.78	88.32	103.94	120.0
		2T	1.7	43.0			7.02	13.84	20.64	27.41	34.07	43.44	50.85	57.09	63.09	72.0
		3T	1.3	32.0			4.03	8.16	12.45	16.82	21.18	25.44	29.51	33.31	37.67	42.0

NOTE
Cv: Valve flow coefficient
FL: Liquid pressure recovery factor
FC: Full capacity
1A: 1-Step reduction 2A: 2-Step reduction 3A: 3-Step reduction
4A: 4-Step reduction 5A: 5-Step reduction 6A: 6-Step reduction

GU, Valve dimensions and weights



150 #/ 300 #/ 600

Dimension (mm)	A			B			C			D	E			F			G			H			Weight (kg) (Approximte)		
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#
15	184	190	203	44.5	47.5	47.5	142	250	400	110	90	95	95	15.9	15.9	15.9	60.3	66.7	66.7	4	4	4	14	15	23
20	184	194	206	49	57.5	57.5	142	250	400	110	100	115	115	15.9	19.1	19.1	69.9	82.6	82.6	4	4	4	14	15	23
25	184	197	210	55	63	63	142	250	400	110	110	125	125	15.9	19.1	19.1	79.4	88.9	88.9	4	4	4	14	15	23
40	222	235	251	65	78	78	161	269	419	110	125	155	155	15.9	22.2	22.2	98.4	114.3	114.3	4	4	4	22	23	27
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	25	27	32
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	55	57	62
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	80	83	92

Dimension (inch)	A			B			C			D	E			F			G			H			Weight (lbs) (Approximte)		
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#
1/2"	7.24	7.48	7.99	1.75	1.87	1.87	5.59	9.84	15.74	4.33	3.54	3.74	3.74	0.63	0.63	0.63	2.37	2.63	2.63	4	4	4	31	33	51
3/4"	7.24	7.64	8.11	1.93	2.26	2.26	5.59	9.84	15.74	4.33	3.94	4.53	4.53	0.63	0.75	0.75	2.75	3.25	3.25	4	4	4	31	33	51
1"	7.24	7.76	8.27	2.17	2.48	2.48	5.59	9.84	15.74	4.33	4.33	4.92	4.92	0.63	0.75	0.75	3.13	3.5	3.5	4	4	4	31	33	51
1-1/2"	8.74	9.25	9.88	2.56	3.07	3.07	6.34	10.59	16.49	4.33	4.92	6.1	6.1	0.63	0.87	0.87	3.87	4.5	4.5	4	4	4	49	51	60
2"	10	10.51	11.26	3.27	3.27	3.27	7.01	13.11	18.03	4.33	5.91	6.5	6.5	0.75	0.75	0.75	4.75	5	5	4	8	8	55	60	71
3"	11.73	12.52	13.27	4.29	4.29	4.72	8.74	15.55	21.45	4.53	7.48	8.27	8.27	0.75	0.87	0.87	6	6.63	6.63	4	8	8	121	126	137
4"	13.86	14.49	15.51	5.31	5.31	5.31	9.76	15.82	21.73	5.51	9.06	10.04	10.83	0.75	0.87	1	7.5	7.87	8.5	8	8	8	176	183	203

P.C.D = Pitch Circle Diameter

900 #/ 1500

Dimension (mm)	A		B		C		D	E		F		G		H		Weight (kg) (Approximte)	
Size (mm)	900#	1500#	900#	1500#	STD	EXT	COMMON	900#	1500#	900#	1500#	900#	1500#	900#	1500#	900#	1500#
15	292	292	78	78	236	330	150	120	120	22.2	22.2	82.6	82.6	4	4	60	60
20	292	292	78	78	236	330	150	130	130	22.2	22.2	88.9	88.9	4	4	60	60
25	292	292	82	82	236	330	150	150	150	25.4	25.4	101.6	101.6	4	4	60	60
40	333	333	100	100	240	380	150	180	180	28.5	28.5	123.8	123.8	4	4	63	63
50	375	375	113	113	240	380	225	215	215	25.4	25.4	165.1	165.1	8	8	67	67
80	441	460	142	142	322	430	225	240	265	25.4	31.7	190.5	203.2	8	8	150	163

Dimension (inch)	A		B		C		D	E		F		G		H		Weight (lbs) (Approximte)	
Size (inch)	900#	1500#	900#	1500#	STD	EXT	COMMON	900#	1500#	900#	1500#	900#	1500#	900#	1500#	900#	1500#
1/2"	11.5	11.5	3.07	3.07	9.29	13	5.9	4.72	4.72	0.87	0.87	3.25	3.25	4	4	132	132
3/4"	11.5	11.5	3.07	3.07	9.29	13	5.9	5.12	5.12	0.87	0.87	3.5	3.5	4	4	132	132
1"	11.5	11.5	3.23	3.23	9.29	13	5.9	5.91	5.91	1	1	4	4	4	4	132	132
1-1/2"	13.11	13.11	3.94	3.94	9.45	15	5.9	7.09	7.09	1.12	1.12	4.87	4.87	4	4	139	139
2"	14.76	14.76	4.45	4.45	9.45	15	8.86	8.46	8.46	1	1	6.5	6.5	8	8	148	148
3"	17.36	18.11	5.59	5.59	13.19	17	8.86	9.45	10.43	1	1.25	7.5	8	8	8	331	359

NOTE
P.C.D = Pitch Circle Diameter

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)	
Size (mm)	PN 10-16	PN 25-40	PN 10-16	PN 25-40	STD	EXT	CRY	COMMON	PN 10-16	PN 25-40	PN 10-16	PN 25-40	PN 10-16	PN 25-40	PN 10-16	PN 25-40	PN 10-16	PN 25-40
25	160	160	50	50	142	250	400	110	115	115	14	14	85	85	4	4	14	15
40	200	200	65	65	161	269	419	110	150	150	18	18	110	110	4	4	22	23
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 unbalanced, top guided type, series GU

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
GU	01	C	W	A	J2	B	P1	X	BC	S1	R1	X	S	G	X	S	G	X	A	L	FC

Valve constructions

1.	Valve series
GU	Globe unbalanced, topguided type

2.	Body size		
0H	0.5" / DN 15	3Q	0.75" / DN 20
01	1" / DN 25	1H	1-1/2" / DN 40
02	2" / DN 50	03	3" / DN 80
04	4" / DN 100		
	Optional body size		
06	6" / DN 150	YY	Special

3.	Pressure rating		
C	ASME class 150	D	ASME class 300
F	ASME class 600	G	ASME class 900
H	ASME class 1500	I	ASME Class 2500
J	EN PN 10	K	EN PN 16
L	EN PN 25	M	EN PN 40
N	EN PN 63	P	EN PN 100
B	EN PN 160	E	EN PN 250
Y	EN PN 320	R	JIS 10K
T	JIS 20K		

4.	End connection
W	Flanged RF, ASME B16.5
C	Flanged RF, EN1092-1 (ISA 75.08.01/EN 558 series 38,39)
D	Flanged RF, EN1092-1 (DIN 3202-1 / EN 558 series 1)
V	Socket welding, ASME B16.11
Q	Butt welding, ASME B16.25
Z	Ring joint flange, ASME B16.5
Y	Special

5.	Bonnet construction	
	Bonnet type	Actuator connection
A	General	Applicable for VD_25/29/37
B	General	Applicable for VD_48/55
C	General	Applicable for VC_30, VB_32
E	Extension	Applicable for VD_25/29/37
F	Extension	Applicable for VD_48/55
G	Extension	Applicable for VC_30, VB_32
P	Cryogenic	Applicable for VD_25/29/37
Q	Cryogenic	Applicable for VD_48/55
R	Cryogenic	Applicable for VC_30, VB_32
	Optional bonnet construction	
J	Bellows seals	Applicable for VD_25/29/37
K	Bellows seals	Applicable for VD_48/55
L	Bellows seals	Applicable for VC_30, VB_32
Y	Special	Special

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

- Bonnet material is equivalent with body material.

7.	Model code
B	Model B

Trim constructions

8.	Plug material	
	Material	Description
P1	410 SS	General for carbon steel valve
T6	316 SS	General for stainless steel valve
VM	Alloy 6	Use for small Cv and Micro plug
P2	420J2	General for Cr-Mo valve
	Optional plug material	
S1	316L SS	
YY	Special	Special materials

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

10.	Stem material	
	Material	Description
BC	630 SS	General for carbon steel valve
TC	316 SS	General for stainless steel valve
VX	XM-19	General for Cr-Mo valve
	Optional stem material	
FC	316L SS	

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

12.	Seat / retainer material		
	Seat	Retainer	Guide bushing
R1	CA15 / 410 SS	CB7Cu-1 / 630 SS	AISI 440C
T6	CF8M / 316 SS	CF8M / 316 SS	AISI 316 + Alloy 6
V6	Alloy 6	CF8M / 316 SS	AISI 316 + Alloy 6
P2	420J2	CA40/420J2	AISI 440C
	Optional Seat / Retainer Material		
R2	420J2 SS	CB7Cu-1 / 630 SS	AISI 440C
R3	316 SS	316 SS	AISI 316 + Alloy 6
YY	Special	Special	Special

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

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

Others

14.	Packing / bellows type
S	General packing
E	Low emission, live loaded
	Optional packing / Bellows type
C	Bellows Seal (316L SS, Formed)
Y	Special

15.	Packing material
G	PTFE + Carbon fiber
F	Graphite
T	PTFE V-Ring
C	PTFE + Carbon fiber (ATEX)
H	Hi-Graphite
	Optional packing material
Y	Special

16.	Seal ring material
X	Not applicable

17.	Gasket material
S	S/W gasket type, 316L SS + Graphite
L	S/W gasket type, 316L SS + PTFE
H	S/W gasket type, 316L SS + Hi-Graphite
	Optional gasket material
Y	Special

18.	Stud / nut material
G	A193 gr. B7M / A194 gr. 2HM
D	A193 gr. B8M / A194 gr. 8M
K	A320 gr. B8M cl. 2 / A194 gr. 8M
H	A193 gr. B16 / A194 gr. 7
E	A453 gr. 660/ A453 gr. 660
	Optional stud / Nut material
Y	Special

19.	Options
X	Not applicable
E	Anti-erosion
H	Alloy 6 coating on plug & plug guide for High temp. (top-guided valve only)
	Special options
L	Lub. & Isol. valve
W	Water seal
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.
* Please see 'Neles Globe Typecode Instruction' for further options.

Trim type & rated Cv

20. Sign	Trim type	21. Sign	Trim characteristic	22. Sign	Description	Rated Cv Body size and stroke													
						1/2"	Str.	3/4"	Str.	1"	Str.	1-1/2"	Str.	2"	Str.	3"	Str.	4"	Str.	6"	Str.
A	General plug type	L	Linear	FC	Full capacity	7	(20)	9	(20)	13.5	(20)	28	(20)	49	(20)	100	(40)	190	(40)	295	(60)
		E	Equal %	1A	1-Step reduction	4	(20)	5.5	(20)	8.5	(20)	16	(20)	28	(20)	70	(40)	120	(40)	165	(60)
				2A	2-Step reduction	2.3	(20)	3	(20)	5.4	(20)	10.5	(20)	17	(20)	42	(40)	72	(40)	85	(60)
				3A	3-Step reduction	1.5	(20)	2	(20)	3.1	(20)	6	(20)	10	(20)	25	(40)	42	(40)	50	(60)
				4A	4-Step reduction	0.8	(20)	1.2	(20)	2	(20)	4	(20)								
				5A	5-Step reduction	0.5	(20)	0.7	(20)	1.2	(20)	2.2	(20)								
				6A	6-Step reduction	0.3	(20)	0.4	(20)	0.8	(20)	1.2	(20)								
		L	Linear	FT	Tendril 1 / Full capacity	7	(20)	9	(20)	13.5	(20)	28	(20)	49	(20)	100	(40)	190	(40)		
		E	Equal %	1T	Tendril 1 / 1-Step reduction	4	(20)	5.5	(20)	8.5	(20)	16	(20)	28	(20)	70	(40)	120	(40)		
				2T	Tendril 1 / 2-Step reduction	2.3	(20)	3	(20)	5.4	(20)	10.5	(20)	17	(20)	42	(40)	72	(40)		
				3T	Tendril 1 / 3-Step reduction	1.5	(20)	2	(20)	3.1	(20)	6	(20)	10	(20)	25	(40)	42	(40)		
				4T	Tendril 1 / 4-Step reduction	0.8	(20)	1.2	(20)	2	(20)	4	(20)								
				5T	Tendril 1 / 5-Step reduction	0.5	(20)	0.7	(20)	1.2	(20)	2.2	(20)								
				6T	Tendril 1 / 6-Step reduction	0.3	(20)	0.4	(20)	0.8	(20)	1.2	(20)								
C	Micro plug type	L	Linear	FC	Full capacity	0.1	(20)	0.1	(20)	0.1	(20)										
				1A	1-Step reduction	0.06	(20)	0.06	(20)	0.06	(20)										
				2A	2-Step reduction	0.03	(20)	0.03	(20)	0.03	(20)										
				3A	3-Step reduction	0.01	(20)	0.01	(20)	0.01	(20)										
				4A	4-Step reduction	0.006	(20)	0.006	(15)	0.006	(20)										
				5A	5-Step reduction	0.003	(20)	0.003	(15)	0.003	(20)										
Y		Y	Special	YY	Special	Contact Valmet for Cv details															

* Rated Cv is separeted depending on the trim type & trim characteristic.
* Optional rated Cv to meet to specific Cv are available.
* (Str) is the valve stroke.
* For trims without the specified Cv values, please contact Valmet.

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