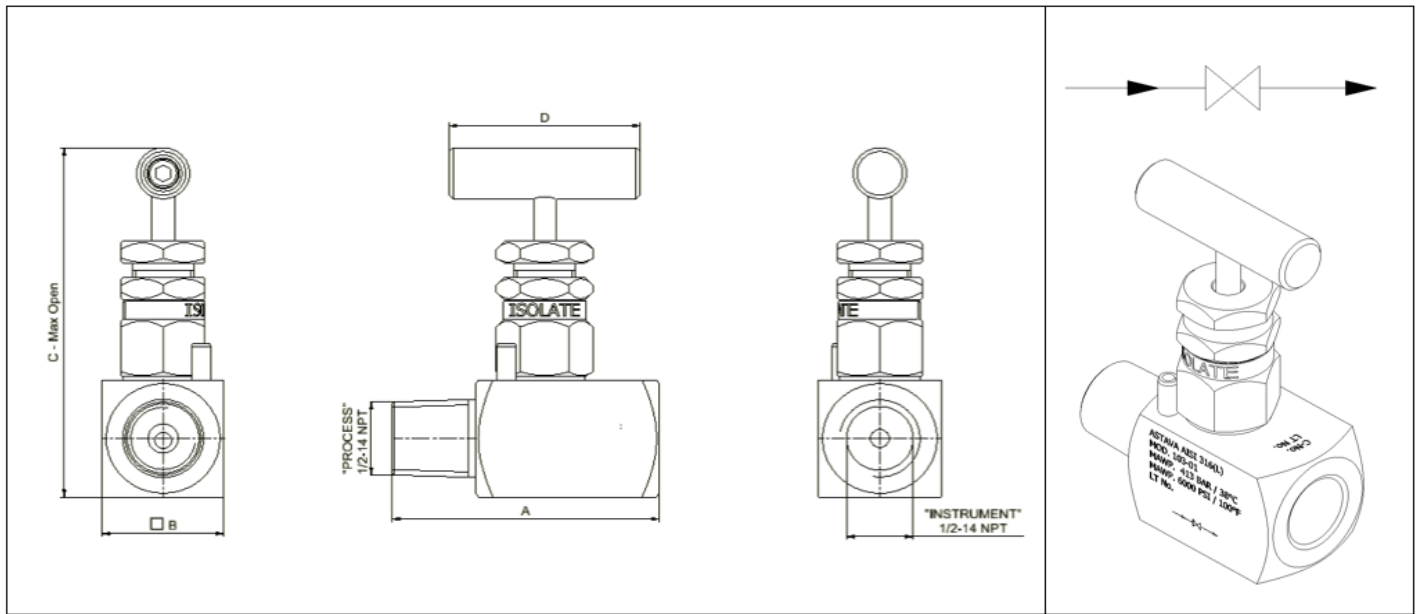


103 Series, Needle Valves, Single Block, Male x Female



Conformance Standards

NACE MR0175 / ISO 15156, NACE MR0103 / ISO 17495

CRN (Canadian Registration Number) Approved/Registered

ASTM B31.3 Process Piping, ASTM B16.34 Valves - Flanged, Threaded, and Welded End

MSS-SP-99 (ANSI)

End Connections

	Process Inlet Connection	Instrument Connection	Vent / Test
Standard	Male 1/2 NPT	Female 1/2 NPT	N/A
Optional	Male 1/4, 3/8, 3/4 NPT Male BSPP "G" Thread BW SW Custom	Female 1/4, 3/8, 3/4 NPT Female BSPP "G" Thread BW SW Custom	N/A

Orifice	
Standard	5MM (0.197 in.)
Optional	Custom

Mounting	
Standard	No
Optional	Available upon request Note that body dimensions may change as a result

Materials of Construction			
Body / Bonnet	Stem	Standard Stem Tip	Optional Stem Tip
316 / 316L	Kolsterised® 316 Ti	Non-Rotating Ball, Ceramic Al ₂ O ₃	Non-Rotating V-Tip, K-500
Monel® 400	Monel® K-500	Non-Rotating Ball, Ceramic Al ₂ O ₃	Non-Rotating V-Tip, K-500
Hastelloy® C-276	Hastelloy® C-276	Non-Rotating Ball, Ceramic Al ₂ O ₃	Non-Rotating V-Tip, C-276
Duplex® F-51	Duplex® F-51	Non-Rotating Ball, Ceramic Al ₂ O ₃	Non-Rotating V-Tip, F-51
Super Duplex® F-53	Super Duplex® F-53	Non-Rotating Ball, Ceramic Al ₂ O ₃	Non-Rotating V-Tip, F-53

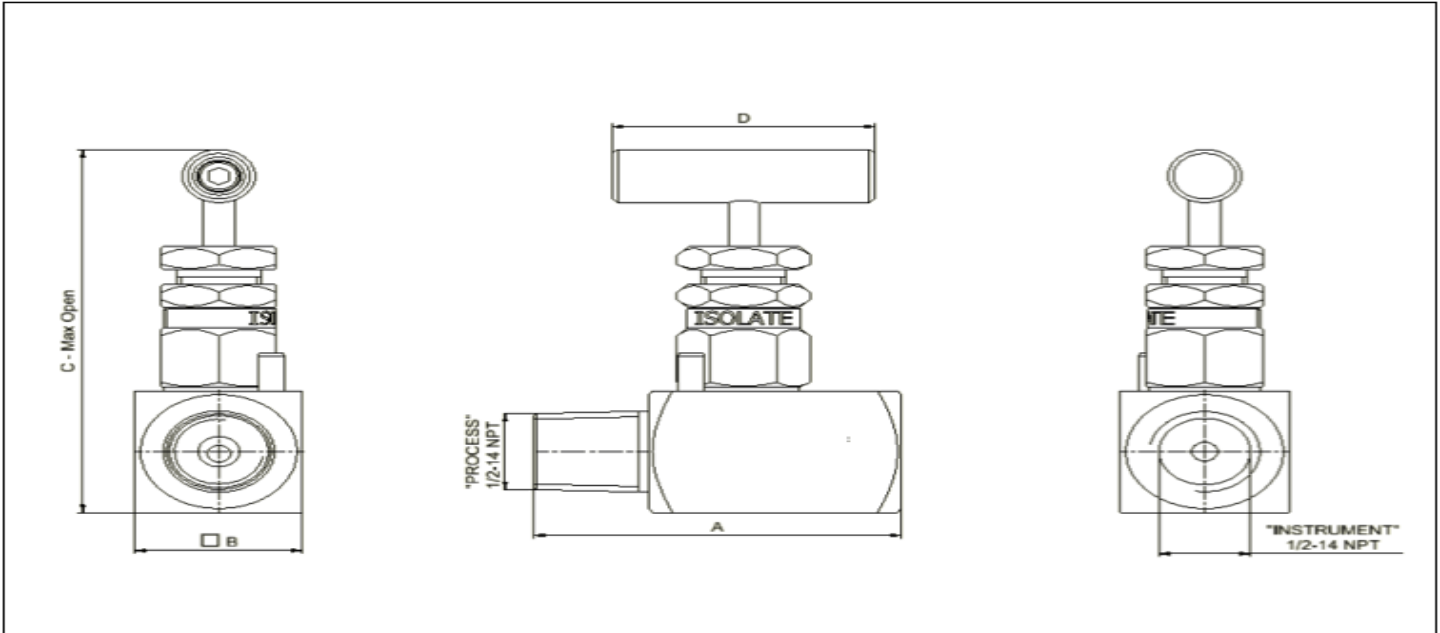
Bonnet Styles / Packing Materials ¹				
Bonnet Style	Stem Packing	Pressure / 100°F (38°C)	Pressure / Min Temp	Pressure / Max Temp
Standard	PTFE (Packing)	6 kpsi (413 bar)	6 kpsi (413 bar)/-76°F (-60°C)	3 kpsi (200 bar)/446°F 230°C
	Viton® FKM (O-Ring)	6 kpsi (413 bar)	6 kpsi (413 bar)/-4°F (-20°C)	3 kpsi (200 bar) 392°F/ 200°C
	Grafoil (Packing)	6 kpsi (413 bar)	6 kpsi (413 bar)/-76°F (-60°C)	3 kpsi (200 bar)/752°F 400°C
	Custom	-	-	-
10,000 PSI	PTFE (Packing)	10 kpsi (690 bar)	10 kpsi (413 bar)/-76°F (-60°C)	3 kpsi (200 bar)/446°F 230°C
	Viton® FKM (O-Ring)	10 kpsi (690 bar)	10 kpsi (413 bar)/-4°F (-20°C)	3 kpsi (200 bar) 392°F/ 200°C
	Grafoil (Packing)	10 kpsi (690 bar)	10 kpsi (413 bar)/-76°F (-60°C)	3 kpsi (200 bar) / 400°C
	Custom	-	-	-
Fugitive Emissions Shell FET 77/312 ISO 15848-2 TA Luft	PTFE (Packing)	6 kpsi (413 bar)	6 kpsi (413 bar)/-76°F (-60°C)	3 kpsi (200 bar)/446°F 230°C
	Viton® FKM (O-Ring)	6 kpsi (413 bar)	6 kpsi (413 bar)/-4°F (-20°C)	3 kpsi (200 bar) 392°F/ 200°C
	Custom	-	-	-
Fire Safe API 607/ BS 6755 Part 2	Supergraf Premier®	6 kpsi (413 bar)/-76°F (-60°C)	6 kpsi (413 bar)/-76°F (-60°C)	3,000 psi (200 bar) /842°F 450°C

Additional Options
Oxygen Clean per ASTM G-93
Anti-Tamper Bonnets
Locking Device Bonnets
Panel Mounting Bonnets
ASTM B31.1 Power Piping (Bolted Standard Bonnet)
Various Packing Materials Including: EPDM, PEEK™, Silicon Elastomer, etc.
Various Body Construction Materials
Various End Connections Including: BSPT, Two Ferrule Integral connection, Single Ferrule Integral Connection

Footnotes
1. Packing material ratings based on manufacturer's specifications

Dimensional Measurements

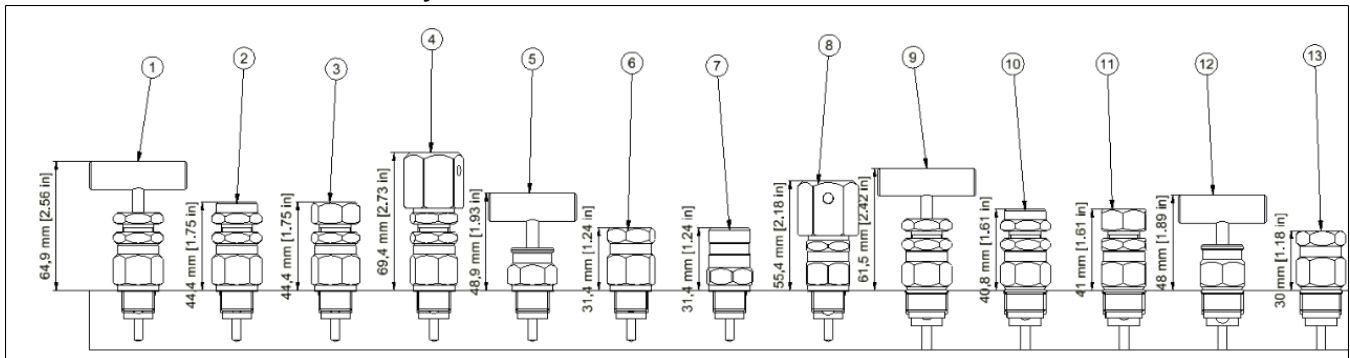
Drawing: 103 Series, Standard Packing Style Bonnet



End Connection Size	Pressure Rating	A		B		C		D	
		mm	in	mm	in	mm	in	mm	in
1/4", 1/2", 3/8"	413 bar / 6 kpsi	70	2.76	32	1.26	95	3.74	50	1.97
3/4"	413 bar / 6 kpsi	85	3.35	40	1.57	103	4.06	50	1.97
1/4", 1/2", 3/8"	690 bar / 10 kpsi	85	3.35	40	1.57	107	4.21	70	2.76

*Drawing Upon Request

Refer to Bonnet Style Dimensional Reference List for Detailed Measurements



Bonnet Style Dimensional Reference List

Key	Bonnet Style	Max Height from Body
1	Standard Packing Bonnet	2.56 in (64.9 mm)
2	Standard Packing Bonnet, Anti-Tamper Vent	1.75 in (44.4 mm)
3	Standard Packing Bonnet, Anti-Tamper Equalize	1.75 in (44.4 mm)
4	Standard Packing Bonnet, Anti-Tamper, Locking Device	2.73 in (69.4 mm)
5	Standard O-Ring Bonnet	1.93 in (48.9 mm)
6	Standard O-Ring Bonnet, Anti-Tamper Vent	1.24 in (31.4 mm)
7	Standard O-Ring Bonnet, Anti-Tamper Equalize	1.24 in (31.4 mm)
8	Standard O-Ring Bonnet, Anti-Tamper, Locking Device	1.28 in (55.4 mm)
9	Fugitive Emissions Bonnet, Packing Style	2.42 in (61.5 mm)
10	Fugitive Emission Bonnet, Packing Style, Anti-Tamper Vent	1.61 in (40.8 mm)
11	Fugitive Emissions Bonnet, Packing Style, Anti-Tamper Equalize	1.61 in (40.8 mm)
12	Fugitive Emissions Bonnet, O-Ring Style	1.89 in (48.0 mm)
13	Fugitive Emissions Bonnet, O-Ring Style, Anti-Tamper Vent, Equalize	1.18 in (30.0 mm)

