

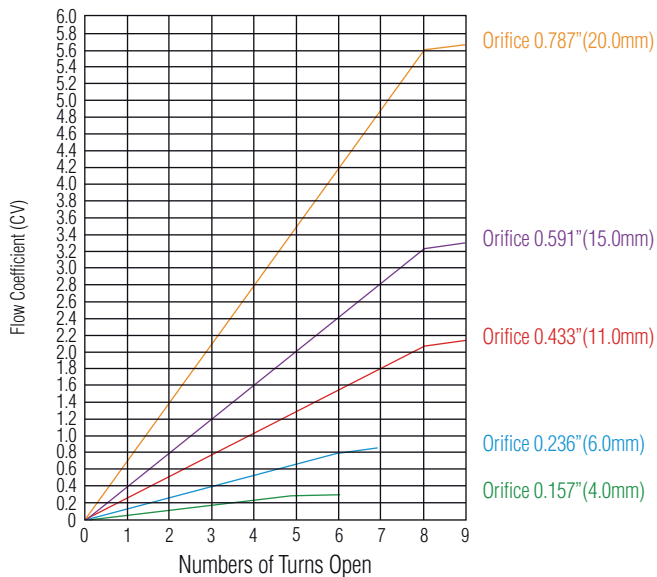
# Bar Stock Needle Valves

## Features

- Pressure up to 6000 psig (414bar) for standard series
- Pressure up to 10000 psig (689 bar) for high pressure series
- Temperature from -65°F to 1200 °F (-54°C to 649°C)
- With Grafoil packing.
- Non-rotating stem tip
- Packing bellow stem thread isolates the thread lubricants from the media.
- Boby to bonnet seal with metal to metal constant compression,
- Isolates bonnet from the media.
- Back seating design protects the packing in fully open position.
- Panel mountable
- 100% factory tasted



## Flow Data at 100°F (37°C)



# Bar Stock Needle Valves

## Technical Data

Standard pressure series (V4)

Temperature		Valve body material				
		316 SS	Alloy 400	Alloy C-276	Titanium	Brass
°F	°C	Working pressure, psig (bar)				
-65--100	-53-38	6000(414)	5000(344)	6000(414)	3570(245)	3000(207)
200	93	5160(356)	4400(303)	6000(414)	3110(214)	2350(162)
250	121	4910(338)	4260(293)	6000(414)	2840(195)	2200(151)
300	148	4660(321)	4120(283)	6000(414)	2570(177)	2050(141)
350	176	4470(307)	4050(279)	5975(411)	2385(164)	1470(101)
400	204	4280(295)	3980(274)	5880(405)	2200(151)	390(27)
450	232	4130(285)	3970(273)	5710(393)	2055(141)	
500	260	3980(274)	3960(272)	5540(381)	1885(129)	
600	315	3760(259)		5040(347)	1625(111)	
650	343	3960(254)		4905(337)		
700	371	3600(248)		4730(325)		
750	399	3510(242)		4430(305)		
800	426	3460(238)		4230(291)		
850	454	3380(232)		4060(279)		
900	482	3280(225)		3745(258)		
950	510	3220(221)		3220(221)		
1000	538	3030(208)		3030(208)		
1050	566	3000(207)		3000(207)		
1100	593	2685(184)		2685(184)		
1150	621	2285(157)		2285(157)		
1200	649	1715(118)		1545(106)		

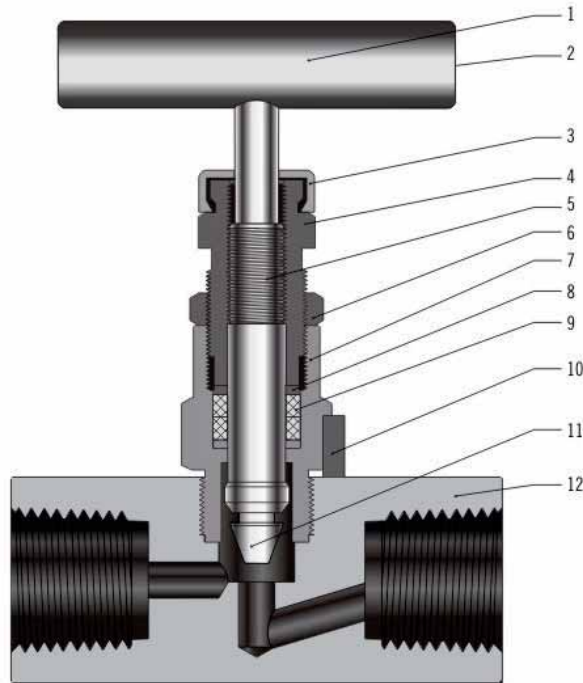
High pressure series(V4H)

		Valve body material
		316 SS
°F	°C	Working pressure, psig (bar)
-65--100	-53-38	10000(689)
200	93	9290(640)
250	121	8840(609)
300	148	8390(578)
350	176	8045(554)
400	204	7705(530)
450	232	7435(512)
500	260	7165(493)
600	315	6770(466)
650	343	6660(458)
700	371	6480(446)
750	399	6335(436)
800	426	6230(429)
850	454	6085(419)
900	482	5905(406)
950	510	5795(399)
1000	538	5450(375)
1050	566	5400(372)
1100	593	4835(333)
1150	621	4115(283)
1200	649	3085(212)

# Bar Stock Needle Valves

## Materials of Construction

V4 series

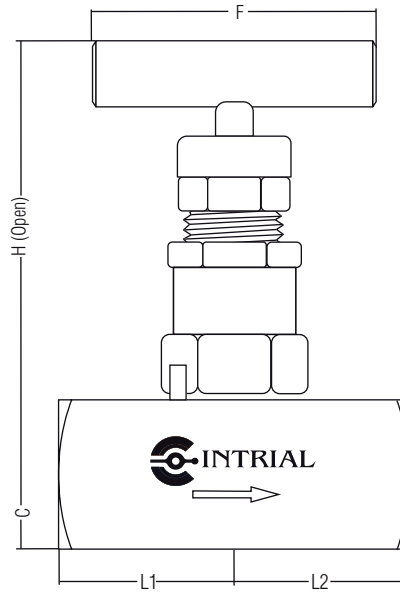


Item	Part	Valve body Materials				
		316 SS	Alloy 400	Alloy C-276	Titanium	Brass
1	Handle	Stainless steel/Anodized aluminum/Black knob				
2	Set screw	Nickel cadmium-plated steel				
3	Dust cap	Plastic				
4	Gland	316 SS/A276				Brass 360/B16
5	Stem	Chrome-plated 316 SS/A276	Alloy R-405/B164	Alloy C-276/B574	t84.8373; Titanium Gr 4/B348	Chrome-plated 316 SS/A276
6	Lock nut	316 SS/B783				Brass 360/B16
7	Bonnet	316 SS/A479	Alloy R-405/B164	Alloy C-276/B574	Titanium Gr 4/B348	Brass 360/B16
8	Packing washer	316 SS/A276				
9	Packing	PTFE/PCTFE/PEEK/Grafoil				
10	Lock pin	304 SS/A276				
11	Stem pin	Chrome-plated 316 SS/A276	Alloy R-405/B164	Alloy C-276/B574	t84.8373; Titanium Gr 4/B348	Chrome-plated 316 SS/A276
		Different tips optional				
12	Body	316 SS/A479 316 SS/A182	Alloy 400/B164 B127, B564	Alloy C-276/B564	Titanium Gr 4/B348 or Titanium Gr 4/B381	Brass 360/B16
	Seat	Weld stellite optional				
	Lubricant	Molybdenum disulfide-based				

# Bar Stock Needle Valves

## Table of Dimensions

V4 series



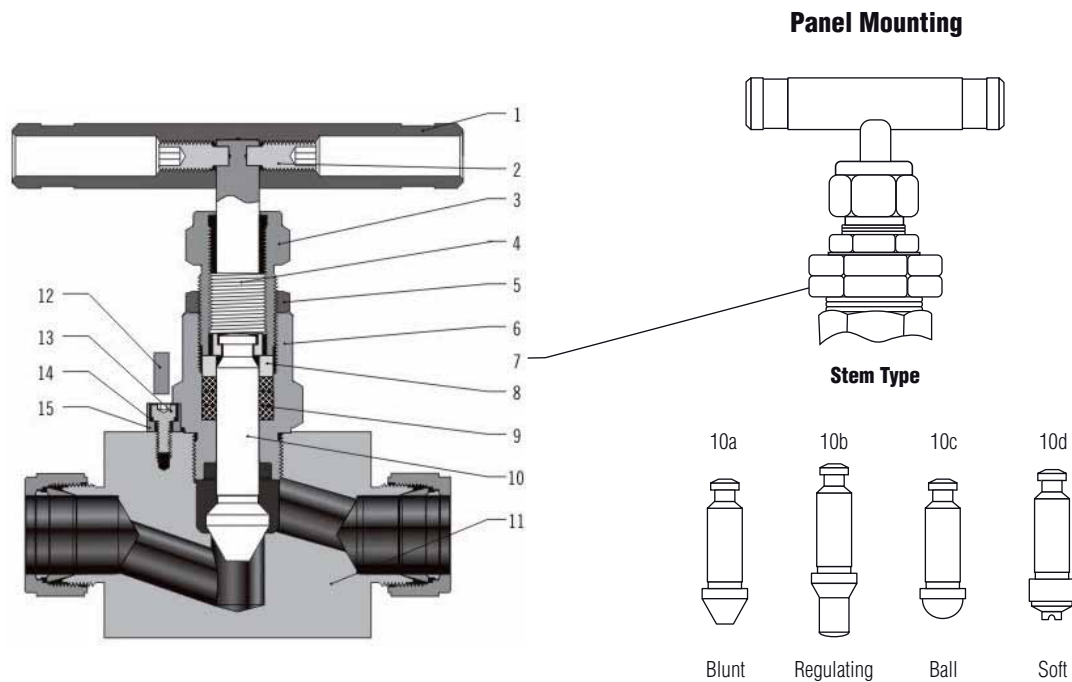
Basic Model Number	End Connection		Orifice in.(mm)	Cv	L1	L2	H	F	C
	Inlet	Outlet			in.(mm)				
INT-XX-V4-F4-4	1/4 Female NPT	1/8 Female NPT	0.157(4.0)	0.35	1.20(30.5)	1.20(30.5)	3.04(77.3)	2.17(55)	0.5(12.7)
INT-XX-V4-M4-F4-4	1/4 Male NPT	1/4 Male NPT			1.26(32)	1.26(32)			
INT-XX-V4-M4-4	1/4 Male NPT	1/4 Male NPT			1.26(32)	1.26(32)			
INT-XX-V4-F6-4	3/8 Female NPT	3/8 Female NPT			1.20(30.5)	1.20(30.5)			
INT-XX-V4-M6-F6-4	3/8 Male NPT	3/8 Male NPT			1.26(32)	1.26(32)			
INT-XX-V4-M6-4	3/8 Male NPT	3/8 Male NPT							
INT-XX-V4-F8-5	1/2 Female NPT	1/2 Female NPT	0.197(5.0)	0.73	1.34(34)	1.34(34)	3.06(77.7)	2.17(55)	0.563(14.3)
INT-XX-V4-M8-F8-5	1/2 Male NPT	1/2 Male NPT			1.44(36.5)	1.44(36.5)			
INT-XX-V4-M8-5	1/2 Male NPT	1/2 Male NPT			1.44(36.5)	1.44(36.5)			
INT-XX-V4-F12-6	3/4 Female NPT	3/4 Female NPT	0.236(6.0)	0.85	1.5(38)	1.5(38)	3.11(79)	2.17(55)	0.75(19.05)
INT-XX-V4-M12-F12-6	3/4 Male NPT	3/4 Male NPT			1.57(40)	1.57(40)			
INT-XX-V4-M12-6	3/4 Male NPT	3/4 Male NPT			1.57(40)	1.57(40)			
INT-XX-V4-F16-8	1 Female NPT	1 Female NPT	0.315(8.0)	1.62	1.67(42.5)	1.67(42.5)	3.38(86)	2.17(55)	0.875(22.22)
INT-XX-V4-M16-F16-8	1 Male NPT	1 Male NPT			1.77(45)	1.77(45)			
INT-XX-V4-M16-8	1 Male NPT	1 Male NPT			1.77(45)	1.77(45)			

XX: See Material code in page 25.

# Bar Stock Needle Valves

## Materials of Construction

2V4 series



Item	Component	Valve body Material				
		316 SS	Alloy 400	Titanium	Alloy C-276	Brass
1	Handle	Anodized aluminum or stainless steel or Black knob				
2	Set screw	Nickel cadmium-plated steel				
3	Packing Bolt	321 SS/A276			Brass 360/B16	
4	Upper Stem	316 SS/A276				
5	Lock Nut	316 SS/B783			Brass 360/B16	
6	Bonnet	304 SS/A479	Alloy R-405/B164	Titanium Gr4/B348	Alloy C-276/B574	Brass 360/B16
7	Panel Nut	316 SS/B783			Brass 360/B16	
8	Gland	321 SS/A276				
9	Packing	PTFE or PEEK or graphite				
10a 10b 10c 10d	Lower Stem	Chrome-plated 316 SS/A276	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574	Chrome-plated 316 SS/A276
Optional						
11	Body	316 SS/A479 316 SS/A182	Alloy R-400/B164 B127, B564	Titanium Gr 4/B348 or Titanium Gr 4/B381	Alloy C-276/B574	Brass 360/B16
	Seat	Weld stellite optional				
12	Lock Pin	304 SS/A276				
13	Screw	304 SS/A276				
14	Spring Washer	304 SS/A276				
15	Bush	304 SS/A276				
Lubricant		Molybdenum disulfide-based				

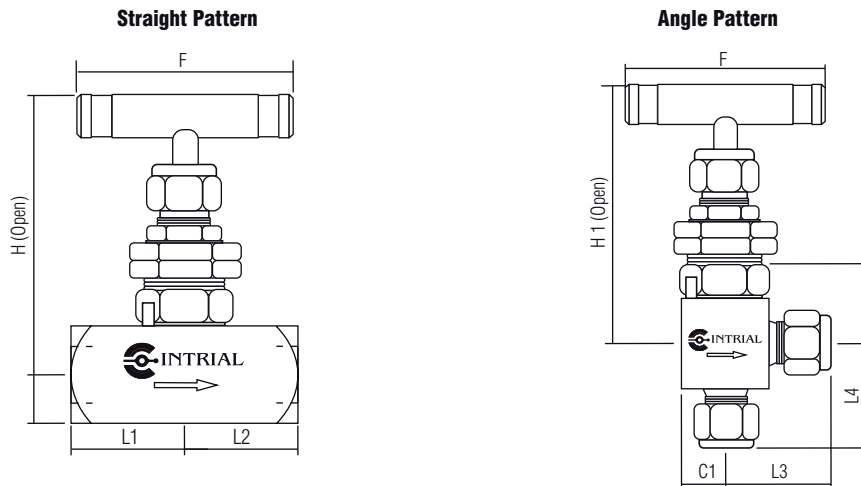
1. Item 12 is applied in valves with orifice size 4.0 & 6.0. For valves with orifice size 11.0, 15.0 & 20.0, item 13, 14 & 15 are used instead of item 12.

2. Contact the authorized representative or INTRIAL for valves other materials.

# Bar Stock Needle Valves

## Table of Dimensions

2V4 series



Basic Model Number	End Connection		Orifice in.(mm)	Cv	L1	L2	H	F	C
	Inlet	Outlet			in.(mm)				
INT-XX-2V4-F2-4	1/8 Female NPT	1/8 Female NPT	0.157(4.0)	0.35	1.00(25.4)	1.00(25.4)	2.85(72.4)	2.17(55)	0.5(12.7)
INT-XX-2V4-F4-4	1/4 Female NPT	1/4 Female NPT			1.06(26.9)	1.06(26.9)			
INT-XX-2V4-M4-4	1/4 Male NPT	1/4 Male NPT			1.03(26.2)	1.03(26.2)			
INT-XX-2V4-M6-4	3/8 Male NPT	3/8 Male NPT			1.19(30.2)	1.19(30.2)			
INT-XX-2V4-S4-4	1/4" INTRIAL	1/4" INTRIAL			1.20(30.5)	1.20(30.5)			
INT-XX-2V4-SM6-4	6 mm INTRIAL	6 mm INTRIAL							
INT-XX-2V4-SM8-4	8 mm INTRIAL	8 mm INTRIAL	0.236(6.0)	0.85	1.13(28.6)	1.13(28.6)	3.5(88.9)	2.5(63.5)	0.563(14.3)
INT-XX-2V4-F4-6	1/4 Female NPT	1/4 Female NPT							
INT-XX-2V4-F6-6	3/8 Female NPT	3/8 Female NPT							
INT-XX-2V4-M6-6	3/8 Male NPT	3/8 Male NPT							
INT-XX-2V4-S6-6	3/8" INTRIAL	3/8" INTRIAL							
INT-XX-2V4-S8-6	1/2" INTRIAL	1/2" INTRIAL							
INT-XX-2V4-SM10-6	10 mm INTRIAL	10 mm INTRIAL							
INT-XX-2V4-SM12-6	12 mm INTRIAL	12 mm INTRIAL							
INT-XX-2V4-SM14-6	14 mm INTRIAL	14 mm INTRIAL							
INT-XX-2V4-SW6-6	3/8"Tube socket weld	3/8"Tube socket weld							
INT-XX-2V4-SW8-6	1/2"Tube socket weld	1/2"Tube socket weld							
INT-XX-2V4-MS12-6	12 mmTube socket weld	12 mmTube socket weld							
INT-XX-2V4-MS14-6	14 mmTube socket weld	14 mmTube socket weld							
INT-XX-2V4-MS16-6	16 mmTube socket weld	16 mmTube socket weld							
INT-XX-2V4-MB14-6	14 mmTube butt weld	14 mmTube butt weld	1.50(38.1)	1.50(38.1)					
INT-XX-2V4-MB16-6	16 mmTube butt weld	16 mmTube butt weld							
INT-XX-2V4-MU14-6	14 mmMU	14 mmMU	2.92(74.1)	2.92(74.1)					
INT-XX-2V4-MU16-6	16 mmMU	16 mmMU							
INT-XX-2V4-MM20-6	M20 x 1.5 Male ISO	M20 x 1.5 Male ISO	1.50(38.1)	1.50(38.1)					
INT-XX-2V4-MM22-6	M22 x 1.5 Male ISO	M22 x 1.5 Male ISO							

XX: See Material code in page 25.

# Bar Stock Needle Valves



## Table of Dimensions

2V4 series

Basic Model Number	End Connection		Orifice in.(mm)	Cv	L1	L2	H	F	G		
	Inlet	Outlet			in.(mm)						
INT-XX-2V4-F8-11	1/2 Female NPT	1/2 Female NPT	0.433(11.0)	2.18	1.56(39.6)	1.56(39.6)	4.12(104.8)	3.5(88.9)	0.875(22.2)		
INT-XX-2V4-F12-11	3/4 Female NPT	3/4 Female NPT			1.63(41.3)	1.63(41.3)					
INT-XX-2V4-M12-11	3/4 Male NPT	3/4 Male NPT			1.97(50.0)	1.97(50.0)					
INT-XX-2V4-S12-11	3/4" INTRIAL	3/4" INTRIAL									
INT-XX-2V4-SM14-11	14 mm INTRIAL	14 mm INTRIAL			1.75(44.5)	1.75(44.5)					
INT-XX-2V4-SM16-11	16 mm INTRIAL	16 mm INTRIAL									
INT-XX-2V4-SM18-11	18 mm INTRIAL	18 mm INTRIAL									
INT-XX-2V4-MS14-11	14 mm Tube socket weld	14 mm Tube socket weld									
INT-XX-2V4-MS16-11	16 mm Tube socket weld	16 mm Tube socket weld									
INT-XX-2V4-SW12-11	3/4" Tube socket weld	3/4" Tube socket weld									
INT-XX-2V4-MB14-11	14 mm Tube buttt weld	14 mm Tube buttt weld									
INT-XX-2V4-MB16-11	16 mm Tube buttt weld	16 mm Tube buttt weld									
INT-XX-2V4-MU14-11	14 mm UMB	14 mm UMB								2.98(75.7)	2.98(75.7)
INT-XX-2V4-MM27-11	M27 x 2 Male ISO	M27 x 2 Male ISO								1.56(39.7)	1.56(39.7)
INT-XX-2V4-F12-15	3/4 Female NPT	3/4 Female NPT	0.591(15)	3.27	1.75(44.5)	1.75(44.5)	5.0(127)	5.0(127)	1.14(29.0)		
INT-XX-2V4-SW16-15	1" Tube socket weld	1" Tube socket weld									
INT-XX-2V4-MS25-15	25 mm Tube socket weld	25 mm Tube socket weld									
INT-XX-2V4-MS28-15	28 mm Tube socket weld	28 mm Tube socket weld									
INT-XX-2V4-PS12-15	3/4" Pipe socket weld	3/4" Pipe socket weld									
INT-XX-2V4-SM20-15	20 mm INTRIAL	20 mm INTRIAL								2.35(59.7)	2.35(59.7)
INT-XX-2V4-SM22-15	22 mm INTRIAL	22 mm INTRIAL									
INT-XX-2V4-F16-18	1 Female NPT	1 Female NPT	0.708(18)	5.65	1.97(50.0)	1.97(50.0)	5.2(132)	5.5(140)	1.25(31.75)		
INT-XX-2V4-MS25-18	25 mm Tube socket weld	25 mm Tube socket weld									
INT-XX-2V4-SW16-18	1" Tube socket weld	1" Tube socket weld									
INT-XX-2V4-MS28-18	28 mm Tube socket weld	28 mm Tube socket weld									
INT-XX-2V4-PS12-18	3/4" Pipe socket weld	3/4" Pipe socket weld									
INT-XX-2V4-PS16-18	1" Pipe socket weld	1" Pipe socket weld									

### Remarks:

- INTRIAL means INTRIAL double ferrule tube fittings.
- Dimensions show with INTRIAL nuts finger-tight. All dimensions are for reference only, subject to change. For dimensions not shown above, consult the factory please.
- The sizes and types listed are standard. Other sizes and types are available upon request.
- Dimensions or high pressure (10000 psi) V3H valves are not listed. If needed, consult the factory please.

XX: See Material code in page 25.

# Bar Stock Needle Valves



## Ordering Information

Order Code Example

**INT - 6L - V4 - F8 - S12 - Y11 Y - GL**

