

**FD-LOK<sup>®</sup>**

# Hexagonal Bar Stock Needle Valves

V5 Series and V5H Series



SS-V5-F8-6

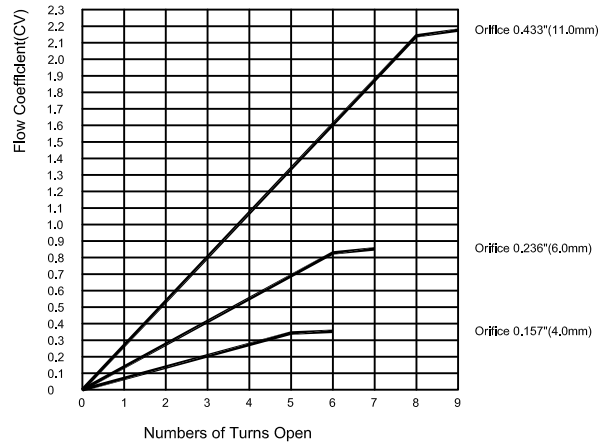


SS-V5-M8-F8-6

# Features

- ⊙ Pressure up to 6000 psig(414 bar) for standard series  
Pressure up to 10000 psig(689 bar) for high pressure series
- ⊙ Temperature from -65°F to 450°F(-54 °C to 232 °C)  
with PTFE packing,  
Temperature from -65°F to 1200°F(-54 °C to 649 °C)  
with Grafoil packing
- ⊙ Hexagonal valve body
- ⊙ Non-rotating stem tip
- ⊙ Packing below stem thread isolates the thread  
lubricants from the media
- ⊙ Body to bonnet seal with metal to metal constant compression,  
isolates bonnet thread from the media
- ⊙ Back seating design protects the packing in fully  
open position
- ⊙ Panel mountable
- ⊙ 100% factory tested

## Flow Data at 100°F (37 °C)



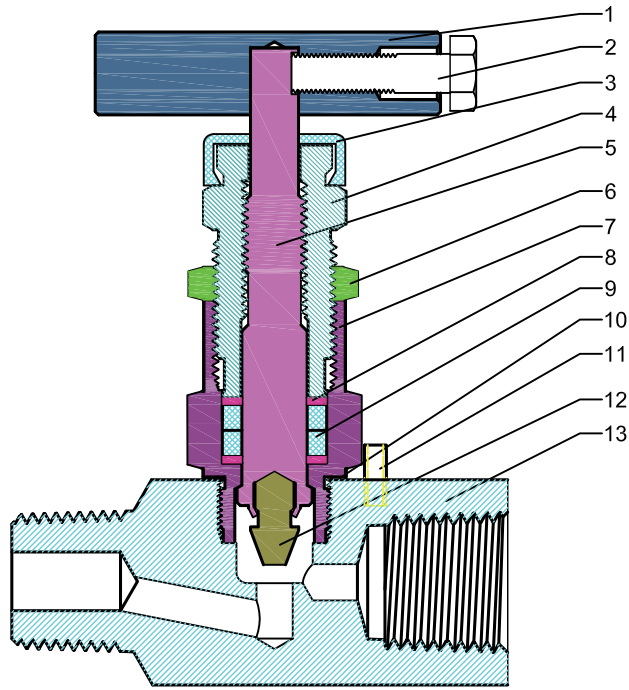
# Technical Data

## Standard pressure series(V5)

Temperature		Valve body material				
		316 SS	Alloy 400	Alloy C-276	Titanium	Brass
°F	°C	Working pressure, psig (bar)				
-65~100	-53~37	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	3690(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)		

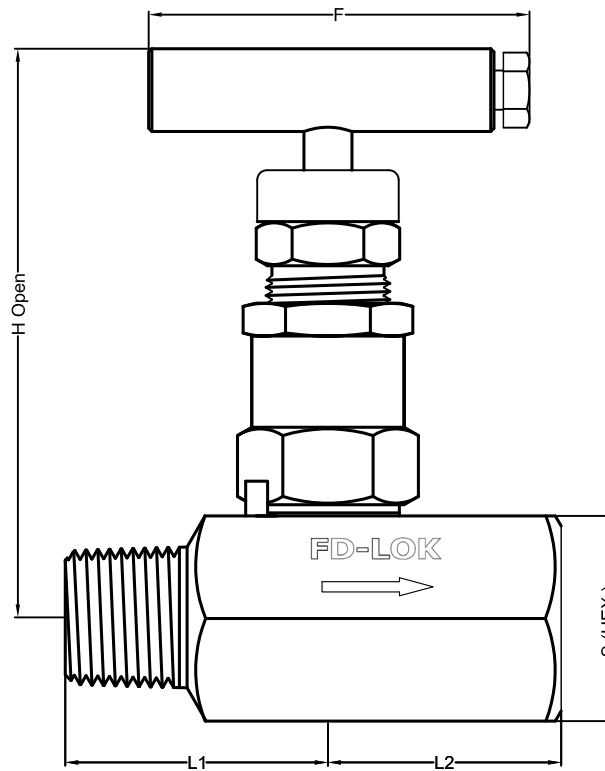
## High pressure series(V5H)

Temperature		Valve body material
		316 SS
°F	°C	Working pressure, psig (bar)
-65~100	-53~37	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)



## Materials of Construction

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	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	O-ring	FKM				
11	Lock pin	304 SS/A276				
12	Stem tip	Chrome-plated 316 SS/A276	Alloy R-405/B164	Alloy C-276/B574	Titanium Gr 4/B348	Chrome-plated 316 SS/A276
		Different tips optional				
13	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				



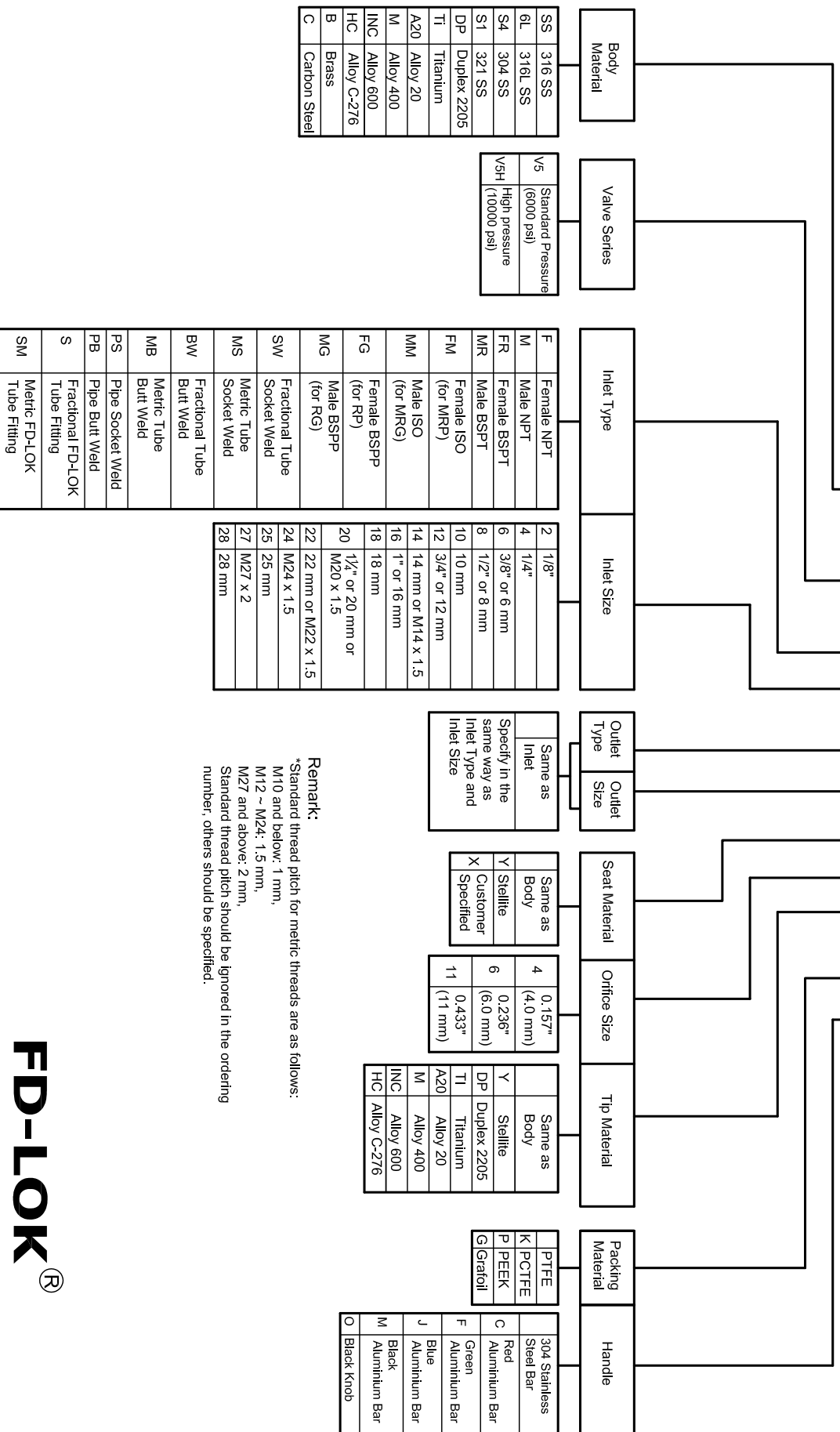
**Table of Dimensions**

Valve Series	Basic Model Number	End Connection		Orifice in. (mm)	Cv	L1	L2	H	F	S
		Inlet	Outlet			in. (mm)				
V3	-V5-F4-4	1/4" Female NPT	1/4" Female NPT	0.157 (4.0)	0.35	1.06 (26.9)	1.06 (26.9)	3.02 (76.7)	2.17 (55)	0.5 (12.7)
	-V5-M4-F4-4	1/4" Male NPT	1/4" Female NPT			1.12 (28.6)	1.06 (26.9)			
	-V5-S4-4	1/4" FD-LOK	1/4" FD-LOK			1.34 (34.0)	1.34 (34.0)			
	-V5-F6-4	3/8" Female NPT	3/8" Female NPT			1.12 (28.6)	1.12 (28.6)			
	-V5-S6-4	3/8" FD-LOK	3/8" FD-LOK			1.41 (35.8)	1.41 (35.8)			
	-V5-SM8-4	8 mm FD-LOK	8 mm FD-LOK			1.41 (35.8)	1.41 (35.8)			
	-V5-F8-4	1/2" Female NPT	1/2" Female NPT			1.34 (34.0)	1.34 (34.0)			
	-V5-M8-F8-4	1/2" Male NPT	1/2" Female NPT			1.81 (46.0)	1.34 (34.0)			
	-V5-F6-6	1/2" Female NPT	1/2" Female NPT	0.236 (6.0)	0.85	1.50 (38.1)	1.50 (38.1)	3.27 (83.1)	2.17 (55)	0.625 (15.9)
	-V5-M8-F8-6	1/2" Male NPT	1/2" Female NPT			2.00 (50.8)	1.50 (38.1)			
	-V5-S8-6	1/2" FD-LOK	1/2" FD-LOK			1.52 (38.6)	1.52 (38.6)			
	-V5-SM12-6	12 mm FD-LOK	12 mm FD-LOK			1.52 (38.6)	1.52 (38.6)			
	-V5-SM14-6	14 mm FD-LOK	14 mm FD-LOK			1.56 (39.6)	1.56 (39.6)			
	-V5-SW8-6	1/2" Tube socket weld	1/2" Tube socket weld			1.28 (32.5)	1.28 (32.5)			
	-V5-F12-6	3/4" Female NPT	3/4" Female NPT			1.50 (38.1)	1.50 (38.1)			
	-V5-M12-F12-6	3/4" Male NPT	3/4" Female NPT			2.00 (50.8)	1.50 (38.1)			
	-V5-F6-11	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)	3.0 (76.2)	0.75 (19.1)
	-V5-M8-F8-11	1/2" Male NPT	1/2" Female NPT			2.00 (50.8)	1.56 (39.6)			
	-V5-F12-11	3/4" Female NPT	3/4" Female NPT			2.00 (50.8)	1.63 (41.3)			
	-V5-M12-F12-11	3/4" Male NPT	3/4" Female NPT			2.00 (50.8)	1.63 (41.3)			
-V5-S12-11	3/4" FD-LOK	3/4" FD-LOK								
-V5-SM14-11	14 mm FD-LOK	14 mm FD-LOK	1.97 (50.0)			1.97 (50.0)				
-V5-SM16-11	16 mm FD-LOK	16 mm FD-LOK								
-V5-SW12-11	3/4" Tube socket weld	3/4" Tube socket weld	1.75 (44.5)			1.75 (44.5)				

**Remarks:**

- a. FD-LOK means FD-LOK double ferrule tube fittings.
- b. Dimensions shown with FD-LOK nuts finger-tight. All dimensions are for reference only, subject to change. For dimensions not shown above, consult the factory please.
- c. The sizes and types listed are standard. Other sizes and types are available upon request.
- d. Dimensions of high pressure (10000 psi) V5H valves are not listed. If needed, consult the factory please.

# SS-V5-M8-F8-Y6Y-GM



Body Material	SS 316 SS 6L 316L SS S4 304 SS S1 321 SS DP Duplex 2205 TI Titanium A20 Alloy 20 M Alloy 400 INC Alloy 600 HC Alloy C-276 B Brass C Carbon Steel
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Valve Series	V5 Standard Pressure (6000 psi) V5H High pressure (10000 psi)
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Inlet Type	F Female NPT M Male NPT FR Female BSPT MR Male BSPT FM Female ISO (for MRP) MM Male ISO (for MRG) FG Female BSPP (for RP) MG Male BSPP (for RG)
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Inlet Size	2 1/8" 4 1/4" 6 3/8" or 6 mm 8 1/2" or 8 mm 10 10 mm 12 3/4" or 12 mm 14 14 mm or M14 x 1.5 16 1" or 16 mm 18 18 mm 20 1 1/4" or 20 mm or M20 x 1.5 22 22 mm or M22 x 1.5 24 M24 x 1.5 25 25 mm 27 M27 x 2 28 28 mm
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Outlet Type	Same as Inlet Specify in the same way as Inlet Type and Inlet Size
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Seat Material	Same as Body Y Stellite X Customer Specified
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Orifice Size	4 0.157" (4.0 mm) 6 0.236" (6.0 mm) 11 0.433" (11 mm)
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Tip Material	Same as Body Y Stellite DP Duplex 2205 TI Titanium A20 Alloy 20 M Alloy 400 INC Alloy 600 HC Alloy C-276
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Packing Material	PTFE K PCTFE P PEEK G Grafoil
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Handle	304 Stainless Steel Bar C Red Aluminum Bar F Green Aluminum Bar J Blue Aluminum Bar M Black Aluminum Bar O Black Knob
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**Remark:**  
 \*Standard thread pitch for metric threads are as follows:  
 M10 and below: 1 mm,  
 M12 ~ M24: 1.5 mm,  
 M27 and above: 2 mm,  
 Standard thread pitch should be ignored in the ordering number, others should be specified.

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