

C-LOK

Instrument Valve Co., Ltd.

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NEEDLE VALVE



C-LOK the high quality instrumentation valves & fittings specialized production manufacture

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Instrument Valve Co., Ltd.

C-LOK the high quality instrumentation valves & fittings specialized production manufacture

General Purpose Needle Valve

V1 Series

Features

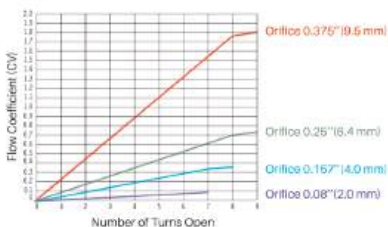
- Working pressure:
- Stainless steel: up to 5000 psig (345 bar)
- Steel: up to 3000 psig (207 bar)
- Brass: up to 3000 psig (207 bar)
- Working temperature:
- PTFE: -65°F to 450°F (-54°C to 232°C)
- PEEK: -65°F to 600°F (-54°C to 315°C)
- Panel mountable
- Packing nut permits stem packing adjustment
- Live-loaded packing system
- Compact design

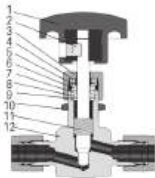
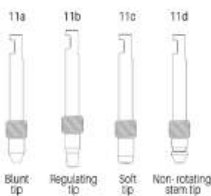


Technical Data

Temperature		Valve body material			
		316 SS	Carbon Steel	Alloy 400	Brass
°F	°C	Working pressure, psig (bar)			
-65~-20	-53~-28	5000(344)	—	3000(207)	3000(207)
-20~100	-28~37	5000(344)	3000(207)	3000(207)	3000(207)
200	93	4295(295)	2730(188)	2640(181)	2350(162)
250	121	4085(281)	2695(185)	2555(176)	2200(151)
300	148	3875(266)	2660(183)	2470(170)	2050(141)
350	176	3715(255)	2615(180)	2430(167)	1470(101)
400	204	3560(245)		2390(164)	390(27)
450	232	3435(236)		2380(163)	
500	260	3310(228)		2375(163)	
600	315	3130(215)			

Flow Data at 100°F (37°C)





General Purpose Needle Valve

V1 Series

Materials of Construction

Item	Part	Valve Body Materials			
		316 SS	Brass	Steel	Alloy 400
1	Handle	Anodized aluminum/Stainless steel/Black knob			
2	Set screw	Nickel cadmium-plated steel			
3	Packing nut	316 SS/A276	Brass 360/B15	12L14/A108	Alloy R-405/B164
4	Gland	304 SS/A276			
5	Packing springs	S17700/A693			
6	Packing gland	304 SS/A276			
7	Upper packing	PTFE / PCTFE / PEEK			
8	Lower packing				
9	Lower gland	316 SS/A276		Alloy 400/B127	
10	Panel nut	316 SS/B783			
11	Stem	Chrome-plated 316 SS/A276			Alloy R-405/B164
12	Body	316 SS/A182	Brass 377/B283	Chrome-plated 11L17/A108	Alloy 400/B564
	Lubricant	Molybdenum disulfide-based and silicone-based			

General Purpose Needle Valve

V1 Series

Table of Dimensions

Basic Model Number	End Connection		Orifice in.(mm)	Cv
	Inlet	Outlet		
-V1-F2-2	1/8 Female NPT	1/8 Female NPT	0.08(2.0)	0.09
-V1-S2-2	1/8" OD	1/8" OD		
-V1-SM3-2	3mm OD	3mm OD		
-V1-F2-4	1/8 Female NPT	1/8 Female NPT	0.157(4.0)	0.35
-V1-M2-4	1/8 Male NPT	1/8 Male NPT		
-V1-M4-4	1/4 Male NPT	1/4 Male NPT		
-V1-S4-4	1/4" OD	1/4" OD		
-V1-SM6-4	6mm OD	6mm OD		
-V1-SM8-4	8mm OD	8mm OD		
-V1-F4-6	1/4 Female NPT	1/4 Female NPT	0.25(6.4)	0.73
-V1-F6-6	3/8 Female NPT	3/8 Female NPT		
-V1-M6-6	3/8 Male NPT	3/8 Male NPT		
-V1-M8-6	1/2 Male NPT	1/2 Male NPT		
-V1-S6-6	3/8" OD	3/8" OD		
-V1-S8-6	1/2" OD	1/2" OD		
-V1-SM10-6	10mm OD	10mm OD		
-V1-SM12-6	12mm OD	12mm OD		
-V1-SM14-6	14mm OD	14mm OD		
-V1-MM20-6	M20 x1.5 Male ISO	M20 x1.5 Male ISO		
-V1-F8-10	1/2 Female NPT	1/2 Female NPT	0.375(9.5)	1.80
-V1-F12-10	3/4 Female NPT	3/4 Female NPT		
-V1-M12-10	3/4 Male NPT	3/4 Male NPT		
-V1-S8-10	1/2" OD	1/2" OD		
-V1-S12-10	3/4" OD	3/4" OD		
-V1-SM14-10	14mm OD	14mm OD		

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Bar Stock Needle Valve

V4 Series



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
- 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)



Bar Stock Needle Valve

V4 Series

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	-54~38	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	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)		

Bar Stock Needle Valve

V4 Series

Technical data

High pressure series(V4H)

Temperature		Valve body material
		316 SS
°F	°C	Working pressure, psig (bar)
-65~100	-54~38	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)

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Panel Mounting



Stem Type

10a



Blunt

10b



Regulating

10c

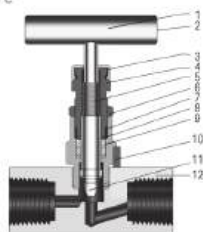


Ball

10d



Soft



Bar Stock Needle Valve

V4 Series

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/B36
5	Stem	Chrome-plated 316 SS/A276	Alloy R-405/B164	Alloy C-276/B574	184.8373.Titanium Gr 4/B348	Chrome-plated 316 SS/A276
6	Lack nut	316 SS/B183				Brass 360/B36
7	Bonnet	316 SS/A479	Alloy R-405/B164	Alloy C-276/B574	Titanium Gr 4/B348	Brass 360/B36
8	Packing washer	316 SS/A276				
9	Packing	PTFE / PCTFE / PEEK / Gralox				
10	Lock pin	304 SS/A276				
11	Stem tip	Chrome-plated 316 SS/A276	Alloy R-405/B164	Alloy C-276/B574	184.8373.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/B36
	Seat	Weld stainless optional				
Lubricant		Molybdenum disulfide-based				



Bar Stock Needle Valve

V4 Series

Table of Dimensions

Basic Model Number	End Connection		Orifice in.(mm)	Cv
	Inlet	Outlet		
-V4-F4-4	1/4 Female NPT	1/8 Female NPT	0.157(4.0)	0.35
-V4-M4-F4-4	1/4 Male NPT	1/4 Female NPT		
-V4-M4-4	1/4 Male NPT	1/4 Male NPT		
-V4-F6-4	3/8 Female NPT	3/8 Female NPT		
-V4-M6-F6-4	3/8 Male NPT	3/8 Female NPT		
-V4-M6-4	3/8 Male NPT	3/8 Male NPT		
-V4-F8-5	1/2 Female NPT	1/2 Female NPT	0.197(5.0)	0.73
-V4-M8-F8-5	1/2 Male NPT	1/2 Female NPT		
-V4-M8-5	1/2 Male NPT	1/2 Male NPT		
-V4-F12-6	3/4 Female NPT	3/4 Female NPT	0.236(6.0)	0.85
-V4-M12-F12-6	3/4 Male NPT	3/4 Female NPT		
-V4-M12-6	3/4 Male NPT	3/4 Male NPT		
-V4-F16-8	1 Female NPT	1 Female NPT	0.315(8.0)	1.62
-V4-M16-F16-8	1 Male NPT	1 Female NPT		
-V4-M16-8	1 Male NPT	1 Male NPT		

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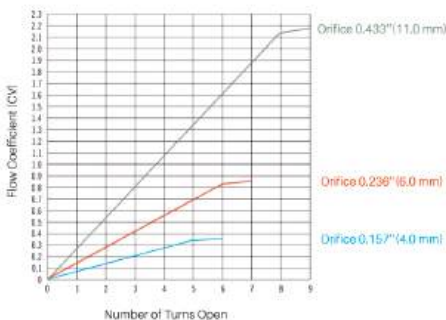
Hexagonal bar Stock Needle Valves

V5 Series

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 threads
- lubricants from the media
- Bory 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 (38°C)



Hexagonal bar Stock Needle Valves

V5 Series

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)		

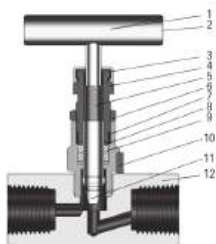
Hexagonal Bar Stock Needle Valve

V5 Series

Technical data

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)



Hexagonal Bar Stock Needle Valve

V5 Series

Material of Construction

Item	Part	Valve Body Material				
		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 8-405/B164	Alloy C-276/B574	184.B373.Titanium Gr 4/B348	Chrome-plated 316 SS/A276
6	Lock nut	316 SS/B183				Brass 360/B16
7	Barrel	316 SS/A479	Alloy 8-405/B164	Alloy C-276/B574	Titanium Gr 4/B348	Brass 360/B16
8	Packing washer	316 SS/A276				
9	Packing	PTFE / PCTFE / PEEK / Graphite				
10	Lock pin	304 SS/A276				
11	Stem tip	Chrome-plated 316 SS/A276	Alloy 8-405/B164	Alloy C-276/B574	184.B373.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	Nitrile seals optional				
Lubricant		Molybdenum disulfide-based				

Hexagonal Bar Stock Needle Valve

V5 Series

Technical data

High pressure series(V5H)

Basic Model Number	End Connection		Orifice in.(mm)	Cv
	Inlet	Outlet		
-V5-F4-4	1/4 Female NPT	1/4 Female NPT	0.157 (4.0)	0.35
-V5-M4-F4-4	1/4 Male NPT	1/4 Female NPT		
-V5-S4-4	1/4" OD	1/4" OD		
-V5-F6-4	3/8 Female NPT	3/8 Female NPT		
-V5-S6-4	3/8" OD	3/8" OD		
-V5-SM8-4	8 mm OD	8 mm OD		
-V5-F8-4	1/2 Female NPT	1/2 Female NPT		
-V5-M8-F8-4	1/2 Male NPT	1/2 Female NPT		
-V5-F6-5	1/2 Female NPT	1/2 Female NPT	0.197 (5.0)	0.73
-V5-M8-F8-5	1/2 Male NPT	1/2 Female NPT		
-V5-S8-5	1/2" OD	1/2" OD		
-V5-SM12-5	12 mm OD	12 mm OD		
-V5-SM14-5	14 mm OD	14 mm OD		
-V5-SW8-5	1/2" Tube socket weld	1/2" Tube socket weld		
-V5-F12-5	3/4 Female NPT	3/4 Female NPT		
-V5-M12-F12-5	3/4 Male NPT	3/4 Female NPT		
-V5-F6-6	1/2 Female NPT	1/2 Female NPT	0.236 (6.0)	0.85
-V5-M8-F8-6	1/2 Male NPT	1/2 Female NPT		
-V5-F12-6	3/4 Female NPT	3/4 Female NPT		
-V5-M12-F12-6	3/4 Male NPT	3/4 Female NPT		
-V5-S12-6	3/4" OD	3/4" OD		
-V5-SM14-6	14 mm OD	14 mm OD		
-V5-SM16-6	16 mm OD	16 mm OD		
-V5-SW12-6	3/4" Tube socket weld	3/4" Tube socket weld		

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Toggle Valves

V10 Series

Features

- Maximum working pressure: 300 psig (20.7 bar)
- Straight and angle pattern
- Compact design
- Quick opening or closing
- Nonrotating stemtip
- Leak-tight perform once testing for every valve with nitrogen at the maximum working pressure

Technical Data

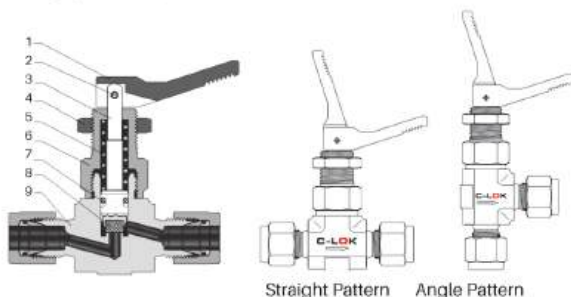
Orifice	Working Pressure at 100°F(37°C)
2.0 mm	300 psig
3.2 mm	
6.4 mm	200psig

O-ring Material	Tem perature Rating
FKM (Standard)	-20°F to 200°F (-28°C to 93°C)
Buna N	-20°F to 250°F (-28°C to 121°C)
Buna C	-20°F to 250°F (-53°C to 121°C)
Ethylene Propylene	-20°F to 250°F (-28°C to 121°C)

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Toggle Valves

V10 Series

Standard Materials of Construction

Item	Component	Valve Body Material			
		316 SS	304 SS	321 SS	Brass
1	Handle	Stainless steel			
2	Pin	Stainless steel			
3	Stem	316 ss/A276	304 SS/A276		
4	Panel Nut	304 SS/A276			Brass 360/B16
5	Spring	PTFE-plated S17700/A313			
6	Bonnet	316 SS/A276	316 SS/B783	321 SS/A276	Brass 360/B16
7	O-ring	Fluorocarbon FKM			
8	Stem Tip	PTFE/D1710			
9	Body	316 SS/A182	304 SS/A182	321 SS/A182	Brass 377/B283
Lubricant		Molybdenum disulfide-based and silicone-based			

Toggle Valves

V10 Series

Dimensions

Basic Ordering Num ber	Connection Type and Size		Orifice in.(mm)	Cv
	Inlet	Outlet		
-V10-F2-2	1/8 Male NPT	1/8 Male NPT	0.08 (2.0)	0.11
-V10-M2-S2-2	1/8 Male NPT	1/8"OD		
-V10-S2-2	1/8"OD	1/8"OD		
-V10-SM 3-2	3 mm OD	3 mm OD		
-V10-F2-3	1/8 Female NPT	1/8 Female NPT	0.125 (3.2)	0.20
-V10-M2-3	1/8 Male NPT	1/8 Male NPT		
-V10-M4-3	1/4 Male NPT	1/4 Male NPT		
-V10-M4-S4-3	1/4 Male NPT	1/4"OD		
-V10-S4-3	1/4"OD	1/4"OD		
-V10-SM6-3	6 mm OD	6 mm OD		
-V10-SM8-3	8 mm OD	8 mm OD	0.25 (6.4)	0.70
-V10-F4-6	1/4 Female NPT	1/4 Female NPT		
-V10-F6-6	3/8 Female NPT	3/8 Female NPT		
-V10-M6-6	3/8 Male NPT	3/8" Male NPT		
-V10-S6-6	3/8"OD	3/8"OD		
-V10-S8-6	1/2"OD	1/2"OD		
-V10-SM10-6	10 mm OD	10 mm OD		
-V10-SM12-6	12 mm OD	12 mm OD		
-V10-MM20-6	M20×1.5 Male ISO	M20×1.5 Male ISO		
-V10-MM22-6	M22×1.5 Male ISO	M22×1.5 Male ISO		