Check Valves

(V33,VP33,VA33,VDA33,VH36,VL36,VCH36 Series)

Rev. 01-01
Aug. 2023

DK-LOK®
Check Valves

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V33, VP33, VA33, VDA33, VH36 and VL36 Series
for VCH36 Series for CNG/NGV applications
Pressures up to 3,000 psig (206 bar) and 6,000 psig (413 bar)

Features

- Fixed cracking pressure valves : V33, VP33, VH36, VCH36 Series
- Adjustable cracking pressure valves : VA33, VDA33 Series
- Lift Check valves : VL36 Series

Technical Information

Valve Series	V33 Series			VP33 Series	VA33 & VDA33 Series	VH36 Series	
	V33A, V33B, V33C, V33D	V33E, V33F		VP33A, VP33B	VA33A, VA33B, VDA33	VH36A, VH36B	VH36C
Materials	SS316 & Brass	SS316	Brass	SS316 & Brass	SS316 & Brass	SS316	SS316
Maximum Working Pressure @70°F (21°C) Unit : psig (bar)	3000 (206)	2000 (137)	1500 (103)	3000 (206)	3000 (206)	6000 (413)*	5000 (344)*
Temperature Ratings °F (°C)	Seal Material	Designator		Rating	Seal Material	Designator	Rating
	FKM O-ring	VT		-10 to 375 (-23 to 190)[a]	EPDM O-ring	EP	-50 to 300 (-45 to 148)
	NBR O-ring	BN		-10 to 250 (-23 to 121)	FFKM O-ring	KZ	-10 to 600 (-23 to 315)
	(a)VH36 Series with FKM O-ring : -10 to 400 °F (-23 to 204 °C) • FKM is standard for SS316 valves. • NBR is standard for Brass valves.						
Cracking Pressure	Refer to spring table of each valve series						

Cracking, Reseal and Back Pressure @ 70°F(21°C)

- Cracking Pressure : Valve poppet is actuated when the pressure difference between the inlet (upstream) and the outlet (downstream) reaches the range of cracking pressure.
- Reseal Pressure : Valves that have higher cracking pressure can be resealed to bubble-tight by the spring force. The reseal pressure is the pressure at the same flow direction, but lower than the cracking pressure.
- Back Pressure : Valves that have cracking pressure of 5 psig (0.34 bar) and lower may not be able to return to the bubble-tight seal. This may require back pressure to press the seal to form a bubble-tight contact in addition to the spring force.

Class Ratings

Valve Series	V33 Series				VP33, VA33, VDA33 Series		VH36 Series	
	V33A, V33B, V33C, V33D		V33E, V33F		VP33A, VP33B, VA33A, VA33B, VDA33		VH36A, VH36B	VH36C
Temperature, °F (°C)	Working Pressure, psig (bar)							
	SS316	Brass	SS316	Brass	SS316	Brass	SS316	SS316
-18 to 100 (-28 to 38)	3000 (206)	3000 (206)	2000 (137)	1500 (103)	3000 (206)	3000 (206)	6000 (413)	5000 (344)
200 (93)	2575 (177)	2600 (179)	1715 (118)	1300 (89)	2575 (177)	2600 (179)	5160 (355)	4290 (295)
225 (175)	2510 (172)	2500 (172)	1670 (115)	1250 (86)	2510 (172)	2500 (172)	5030 (346)	4180 (288)
250 (121)	2450 (168)	2405 (165)	1630 (112)	1200 (82)	2450 (168)	2405 (165)	4910 (338)	4080 (281)
300 (148)	2325 (160)	-	1545 (106)	-	2325 (160)	-	4660 (321)	3875 (267)
350 (176)	2255 (155)	-	1490 (102)	-	2255 (155)	-	4470 (308)	3720 (256)
375 (190)	2185 (150)	-	1450 (99)	-	2185 (150)	-	4375 (301)	3640 (250)
400 (204)	-	-	-	-	-	-	4280 (294)	3560 (245)

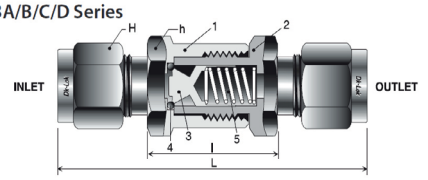
* VH36 & VCH36 Series is Pressure ratings may be limited by the end connection. See Page 7, Dimensions Table.

V33 series

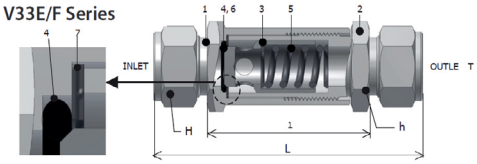
Features

- Working pressure up to 3,000 psig (206 bar)

V33A/B/C/D Series



V33E/F Series



Material of Construction

Component	Valve Body Materials	
	Stainless Steel	Brass
	Material Grade/ASTM	
1. Body	SS316 /A276, A479	Brass 360 /B16
2. Connector		
3. Poppet		
4. O-ring*	FKM	NBR
5. Spring	SS302/A313	
6. O-ring seal	FKM	NBR
7. Washer	SS316 With PTFE Coting	

Wetted parts are listed in blue.
4. O-ring* on V33E & V33F Series is secured in poppet groove.

Lubrication :

- Silicon-based Lubricant for Poppet.
- Molybdenum Dry Film Lubricant for SS316 Body Threads.

Operation

- Valves that have not been actuated for a period of time may require a higher cracking pressure than the set cracking pressure.
- DK-Lok check valves prevent reverse flow in circuits. Do not use them as relief valves.
- DK-Lok check valves are designed to prevent loss of media caused by failed connections and for uni-directional flow control of fluids in chemical processing, power generation, oil and gas industries.

Factory Test, Cleaning and Packaging

- Every valve is factory tested for cracking and reseals performance.
- Every valve is cleaned, and packaged in accordance with DK-Lok cleaning standard of DC-01.
- Special cleaning and packaging in accordance with DK-Lok DC-11 in compliance with ASTM G93 Level C is available on request.

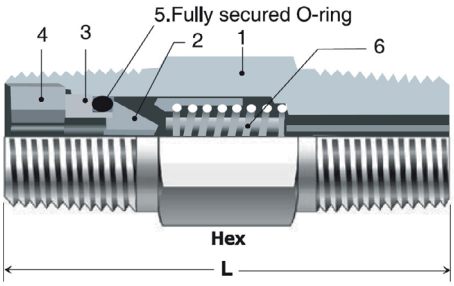
Ordering Information and Dimensions

Basic Ordering Number		End Connections Inlet	End Connections Outlet	Orifice mm (in.)	Cv	Dimensions mm (in.) h-Hex	H-Hex	L	l
V33A-	D-2T-	1/8 in. DK-Lok		4.8 (0.19)	0.16	15.88 (5/8)	11.11 (7/16)	55.60 (2.19)	25.00 (0.98)
	M-2N-	1/8 in. Male NPT			0.47		-	44.40 (1.75)	-
	F-2N-	1/8 in. Female NPT					-	46.50 (1.83)	25.00 (0.98)
	D-4T-	1/4 in. DK-Lok					14.29 (9/16)	60.00 (2.36)	
	D-6M-	6 mm DK-Lok					14.00		
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok				14.29 (9/16)	56.40 (2.22)	
	M-4N-	1/4 in. Male NPT					-	53.40 (2.10)	
V33B-	F-4N-	1/4 in. Female NPT		7.1 (0.28)	1.48	19.05 (3/4)	-	56.80 (2.24)	-
	D-6T-	3/8 in. DK-Lok					17.46 (11/16)	65.50 (2.58)	27.10 (1.07)
	D-10M-	10 mm DK-Lok					19.00		
	M-6N-	3/8 in. Male NPT					-	55.50 (2.19)	
V33C-	F-6N-	3/8 in. Female NPT		10.0 (0.39)	1.7	22.22 (7/8)	-	63.80 (2.51)	-
	D-8T-	1/2 in. DK-Lok					22.22 (7/8)	80.20 (3.16)	36.20 (1.43)
	D-12M-	12 mm DK-Lok					22.00		
	M-8N-	1/2 in. Male NPT					-	74.40 (2.93)	
V33D-	F-8N-	1/2 in. Female NPT		13.5 (0.53)	2.6	28.58 (1-1/8)	-	84.70 (3.33)	-
	D-10T-	5/8 in. DK-Lok					25.40 (1)	91.80 (3.61)	48.10 (1.89)
V33E-	D-12T-	3/4 in. DK-Lok		16.0 (0.63)	5.2	31.75 (1-1/4)	28.58(1-1/8)	110.70 (4.35)	66.1 (2.6)
	M-12N-	3/4 in. Male NPT					-	105.30 (4.15)	
	F-12N-	3/4 in. Female NPT					-	103.00 (4.06)	-
V33F-	D-16T-	1 in. DK-Lok		18.0 (0.71)	8.0	34.93 (1-3/8)	38.1 (1-1/2)	120.8 (4.75)	68 (2.68)
	M-16N-	1 in. Male NPT					-	115.8 (4.56)	
	F-16N-	1 in. Female NPT				41.28 (1-5/8)	-	111 (4.37)	

Table 1. **Spring Cracking, Reseal and Back Pressure @ 70 °F (21 °C) (for V33)**

Spring Nominal Cracking Pressure Designator		Cracking Pressure Ranges				Reseal Pressures psig (bar)
		Min. Pressure		Max. Pressure		
psig	bar	psig	bar	psig	bar	
1/3	0.02	0	0	3	0.21	Up to 6 (0.41) Back pressure
1	0.07	0	0	4	0.28	Up to 6 (0.41) Back pressure
3	0.21	2	0.14	7	0.48	Up to 4 (0.28) Back pressure
10	0.69	7	0.48	15	1.03	Minimum 3 (0.21) Reseal pressure
25	1.72	20	1.38	30	2.07	Minimum 17 (1.17) Reseal pressure
50	3.45	40	2.76	60	4.14	Minimum 35 (2.41) Reseal pressure
75	5.17	60	4.14	90	6.20	Minimum 53 (3.65) Reseal pressure
100	6.89	80	5.51	120	8.27	Minimum 70 (4.82) Reseal pressure

VP33 Series One-Piece Check Valves



Features

- O-ring seal blow-out proof design
- One piece body construction.
- Working pressure up to 3,000 psig (206 bar)

Materials of Construction

Component	Valve Body Materials	
	Stainless Steel	Brass
	Material Grade/ASTM	
1. Body	SS316 /A276, A479	Brass 360 /B16
2. Poppet		
3. O-ring Holder		
4. Locking Screw		
5. O-ring	FKM	NBR
6. Spring	SS302/A313	

Wetted parts are listed in blue.

Lubrication :

- Silicon-based Lubricant on Poppet
- Molybdenum Dry Film Lubricant on SS316 Locking Screw.

Ordering Information and Dimensions

Basic Ordering Number		End Connections		Cv	Dimensions mm (in.)	
		Inlet	Outlet		L	Hex.
VP33A-	M-4N-	1/4 in. Male NPT		0.35	41 (1.62)	14.28 (9/16)
	M-4R-	1/4 in. ISO Male Tapered				
	F-4N-	1/4 in. Female NPT			61 (2.41)	19.05 (3/4)
	F-4R-	1/4 in. ISO Female Tapered			64 (2.54)	
	MF-4N-	1/4 in. Male NPT	1/4 in. Female NPT		44 (1.75)	
	FM-4N-	1/4 in. Female NPT	1/4 in. Male NPT		58 (2.28)	
VP33B-	M-8N-	1/2 in. Male NPT		1.20	58 (2.28)	22.22 (7/8)
	F-8N-	1/2 in. Female NPT			94 (3.71)	26.98 (1-1/16)
	MF-8N-	1/2 in. Male NPT	1/2 in. Female NPT		72 (2.83)	

Table 2. **Spring Cracking, Reseal and Back Pressure @ 70°F (21°C)**

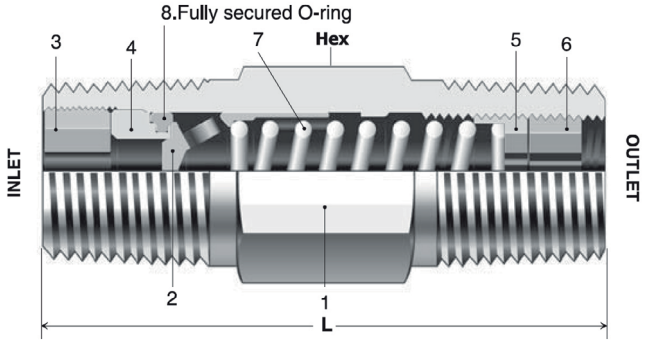
Spring Nominal Cracking Pressure Designator		Cracking Pressure Ranges				Reseal Pressures psig (bar)
		Min. Pressure		Max. Pressure		
psig	bar	psig	bar	psig	bar	
1/3	0.02	0	0	3	0.21	6 to 20 (0.41 to 1.38) back pressure
1	0.07	0	0	4	0.28	5 to 20 (0.34 to 1.38) back pressure
10	0.69	7	0.48	13	0.90	3 to 10 (0.21 to 0.69) back pressure
25	1.72	21	1.45	29	2.00	Minimum 5 (0.34) Reseal pressure

VA33 Series One-Piece Adjustable Check Valves / VDA33 Series In-Line Adjustable Check Valves

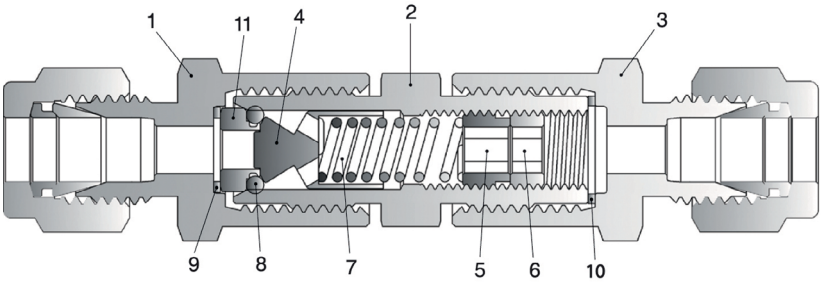
Features

- Cracking pressure adjustable from 3 to 600 psig (0.2 to 41.3 bar)
- Working pressure up to 3,000 psig (206 bar)
- Temperature up to 190°C (375°F)with FKM O-ring
- Standard materials : 316 stainless steel and brass.

VA33 Series



VDA33 Series



Materials of Construction

Component		Valve Body Materials	
		Stainless Steel	Brass
		Material Grade/ASTM	
VA33 Series	VDA33 Series		
1. Body	1. Inlet body 2. Center body 3. Outlet body	SS316 /A276, A479	Brass 360 / B16
2. Poppet 360 / B16	4. Poppet		
3. Insert locking screw	-		
4. Insert	11. Insert		
5. Adjustable screw	5. Adjustable screw		
6. Locking screw	6. Locking screw		
7. Spring	7. Spring	SS302/A313	
8. O-ring	8. O-ring	FKM, Optional FFKM	NBR
	9. Inlet gasket 10. Outlet gasket	TFE coated SS316	

Wetted parts are listed in blue.

Lubrication :

- Silicon-based Lubricant on Poppet
- Molybdenum Dry Film Lubricant on SS316 Locking Screw and Insert Locking Screw.

VA33 Series Ordering Information and Dimensions

Basic Ordering Number		End Connections	Cv	L		Hex
				mm	in.	
VA33A-	F-4N	1/4 in. Female NPT	0.35	75.7	2.98	3/4
	M-4N-	1/4 in. Male NPT		41.1	1.62	9/16
	M-4R-	1/4 in. ISO Male Tappered		41.1	1.62	9/16
VA33B-	M-8N-	1/2 in. Male NPT	1.2	65.0	2.56	7/8
	M-8R-	1/2 in. ISO Male Tappered		65.0	2.56	7/8

VDA33 Series Ordering Information and Dimensions

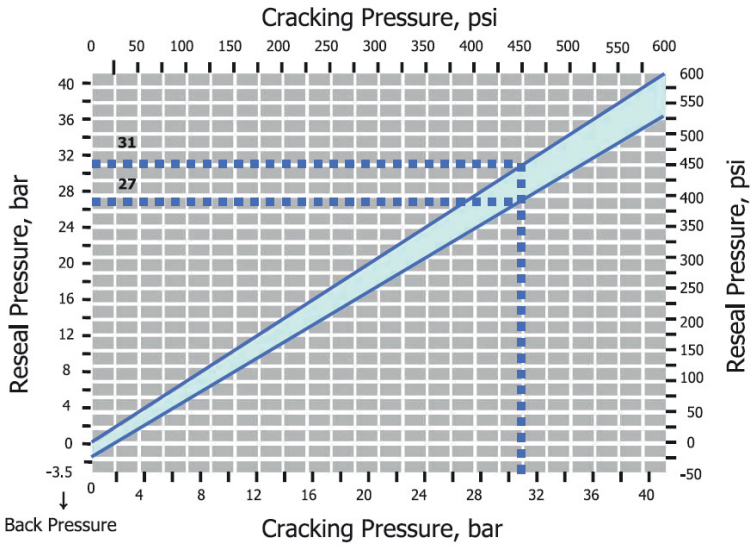
Basic Ordering Number		End Connections		Cv	Dimensions mm(in.)		
		Inlet	Outlet		L	H	h
VDA33	D-4T-S	1/4 in. DK-Lok		0.37	82.0(3.23)	9/16 in.	5/8 in.
	D-6M-S	6mm DK-Lok			82.0(3.23)	14mm	
	D-8M-S	8mm DK-Lok			84.3(3.32)	16mm	
	MD-4N4T-S	1/4 in. Male NPT	1/4 in. DK-Lok		79.2(3.12)	9/16 in.	

Table 3. **Spring Cracking Pressure Range Designator**

Cracking Pressure Range @21 °C (70 °F)		Designator
psig	bar	
3 to 50	0.2 to 3.4	3
50 to 150	3.4 to 10.3	50
150 to 350	10.3 to 24.1	150
350 to 600	24.1 to 41.3	350

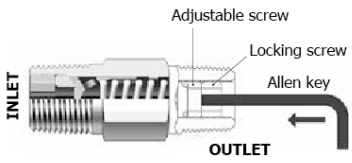
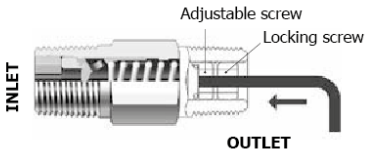
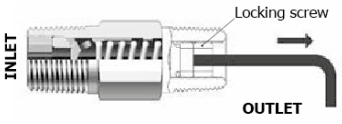
Cracking Pressure vs Reseal pressure

VA33 and VDA33 Series valves set to crack at 20 psig(1.3 bar) or lower may require back pressure(downstream pressure) to reseal the valve bubble tight.



Example shown : For a valve set to crack at 31 bar (450 psig), the minimum reseal pressure would be 27 bar (390psig).

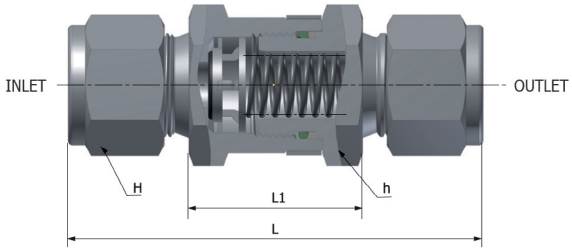
How to adjust cracking pressure

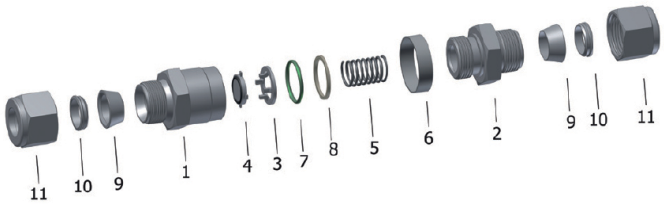
Step 1	Step 2	Step 3
		
Sllghtly unscrew the locking screw counter-clockwise.	1. Gently slide the allen key up to adjustable screw position. 2. Adjust cracking pressure. • To increase cracking pressure, turn adjustable screw clockwise. • To decrease cracking pressure, turn adjustable screw counter-clockwise.	1. Move out the allen key up to the locking screw position. 2. To lock out the locking screw, turn the allen key clockwise.

VH36 Series High Pressure Check Valves / VCH36 Series CNG/NGV Check Valves

Features

- High pressure 6,000 psig (413 bar)
- Seal blow-out proof design with the bonded seal on poppet.





Materials of Construction

Component	Valve Body Material Stainless Steel Material Grade/ASTM
1. Body	SS316 /A479, A276
2. Connector	
3. Poppet stop	
4. Poppet with bonded seal	Poppet: SS316 /A479, A276 Bonded Seal : FKM, optional EPDM & Kalrez HNBR standard for VCH36 Series
5. Spring	SS302 /A313
6. Indicator ring*	SS316 /A276
7. O-ring	FKM / HNBR standard for VCH36 Series
8. Backup ring	PTFE /D1710
9. 10. 11. DK-Lok Front & Back Ferrule and Nut	SS316 /A479, A276

Wetted parts are listed in blue.

* Indicator ring bears the information of spring designator.

Lubrication :

- Silicon-based Lubricant on Poppet
- Molybdenum Dry Film Lubricant on SS316 Connector threads

CNG Certifications

VCH36 Series check with CNG compativle HNBR O-ring are available with CNG certifications.

Certificates	ECE R110	ANSI / AGA NGV 3.1-1995 CGV NGV 12.3-M95	ISO 15500
Certificate No.	110R-000186	2010-REPORT-014 (00)	2010-REPORT-013 (00)
Classification	Class 0	Check valve	Check valve
Temperature	-40 to 120 °C (-40 to 250 °F)	-40 to 121 °C (-40 to 250 °F)	-40 to 121 °C (-40 to 250 °F)
Working Pressure	274 bar @ 120 °C	273 bar @ 121 °C	273 bar @ 121 °C

Table 4. **Spring Cracking, Reseal and Back Pressure @ 70°F (21°C)**

Spring Nominal Cracking Pressure Designator		Cracking Pressure Ranges				Reseal Pressures psig (bar)
		Min. Pressure		Max. Pressure		
psig	bar	psig	bar	psig	bar	
1/3	0.02	0	0	3	0.21	Up to 6 (0.41) back pressure
1	0.07	0	0	4	0.28	Up to 5 (0.35) back pressure
5	0.34	3	0.21	9	0.62	Up to 2 (0.14) back pressure
10	0.69	7	0.48	15	1.03	Minimum 3 (0.21) Reseal pressure
25	1.72	20	1.38	30	2.07	Mini mum 17 (1.2) Reseal pressure

Sour Gas Service

Materials of VH36 series valves for sour gas service are selected in accordance with the requirements of NACE MR0175

- Spring : alloy X-750/AMS5699
- Nominal Cracking Pressure : 1/3, 1, and 5 psig (0.03, 0.07 and 0.035 bar)
- Seal : ethylene propylene.

To order, insert-SG in the ordering number.
i.e., VH36B-D-8T-SG-S

Ordering Information and Dimensions

Basic Ordering Number		End Connections	Cv	Dimensions mm (in.)				Pressure Rating psig (bar)
				L	L1	H	h	
VH36A- VCH36A-	D-2T-	1/8 in. DK-Lok	0.67	57.7 (2.27)	26.4 (1.04)	11.11 (7/16)	11/16	6000 (413)
	D-4T-	1/4 in. DK-Lok		61.7 (2.43)	26.4 (1.04)	14.29 (9/16)		
	D-6M-	6 mm DK-Lok		61.7 (2.43)	26.4 (1.04)	14		
	F-4N-	1/4 in. Female NPT		54.1 (2.13)	-	-		
	M-2N-	1/8 in. Male NPT		45.5 (1.79)	26.4 (1.04)	-		
	M-4N-	1/4 in. Male NPT		55.1 (2.17)	26.4 (1.04)	-		
VH36B- VCH36B-	D-6T-	3/8 in. DK-Lok	1.8	69.9 (2.75)	31.2 (1.23)	17.46 (11/16)	1	6000 (413)
	D-8T-	1/2 in. DK-Lok		75.2 (2.96)	31.2 (1.23)	22.22 (7/8)	1	
	D-8M-	8 mm DK-Lok		68.6 (2.70)	31.2 (1.23)	16	1	
	D-10M-	10 mm DK-Lok		71.1 (2.80)	31.2 (1.23)	19	1	
	D-12M-	12 mm DK-Lok		75.2 (2.96)	31.2 (1.23)	22	1	
	F-6N-	3/8 in. Female NPT		64.8 (2.55)	-	-	1	5300 (365)
	F-8N-	1/2 in. Female NPT		77.0 (3.03)	-	-	1-1/16	4900 (337)
	M-6N-	3/8 in. Male NPT		59.9 (2.36)	31.2 (1.23)	-	1	6000 (413)
	M-8N-	1/2 in. Male NPT		69.3 (2.73)	31.2 (1.23)	-	1	
VH36C- VCH36C-	D-12T-	3/4 in. DK-Lok	4.7	89.4 (3.52)	45.2 (1.78)	28.58 (1-1/8)	1-5/8	5000 (344)
	D-16T-	1 in. DK-Lok		98.6 (3.88)	45.5 (1.79)	38.1 (1-1/2)		4700 (323)
	D-22M-	22 mm DK-Lok		88.4 (3.48)	45.5 (1.79)	32		4900 (337)
	D-25M-	25 mm Dk-Lok		98.6 (3.88)	45.5 (1.79)	40		4600 (316)
	F-12N-	3/4 in. Female NPT		82.0 (3.23)	82.0 (3.23)	-		4600 (316)
	F-16N-	1 in. Female NPT		97.3 (3.83)	97.3 (3.83)	-		4400 (303)
	M-12N-	3/4 in. Male NPT		83.6 (3.29)	45.5 (1.79)	-		5000 (344)
	M-16N-	1 in. Male NPT		93.2 (3.67)	45.7 (1.80)	-		

How to Order

Select valve basic ordering number, applicable seal, spring nominal cracking pressure, and body material.

V33A-D-4T- **BN-** **1/3-** **S**
VP33B-F-8N- **VT-** **1-** **B**
VH36C-D-16T- **EP-** **3-** **S**

Seal Material Designator	Spring Nominal Cracking Pressure Designator	Valve Body Material Designator
FKM : Nil for SS316 Valve **NBR** : Nil for Brass Valve **HNBR** : Nil for VCH36 CNG valves **FKM** : VT **NBR** : BN **EPDM** : EP **FFKM** : KZ	**1/3** : 1/3 psig **1** : 1 psig **3** : 3 psig **10** : 10 psig **25** : 25 psig **Note** : Select the spring designator from Table 1, 2, 3 and 4 of each valve Series.	**S** : 316 stainless steel **B** : Brass (exceptional VH36 Series)

Spare Kits for Field Assembly

Spring

Prefix "9SPR" and select an applicable valve series and the designator of the spring nominal cracking pressure.
9SPR-(Valve series)-(spring designator)-2
Example : 9SPR-V33A-1/3-2

O-ring

Prefix "9ORG", select an applicable valve series and seal material designator.
Example : 9ORG-V33A-BN

How to order VH36 Series spring kit.

VH36 spring kit contains a spring and an indicator ring.
Select an applicable valve series and the designator of the spring nominal cracking pressure.
(Valve series)-RINGSPR-(spring designator)-SA
Example : VH36A-RINGSPR-5-SA

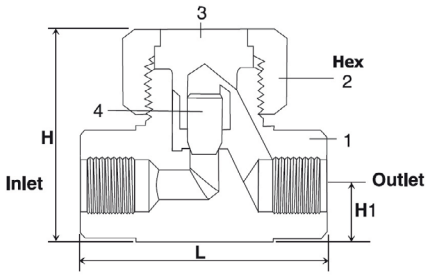
How to order VH36 Series seal kit.

VH36 seal kit contains (Refer to VH36 Materials of Construction) #4. Poppet with bonded seal, #7. O-ring and #8. Backup ring.
Select an applicable valve series and seal material designator
SK-(valve series)-(seal material designator)
Examples : SK-VH36A-VT, SK-VH36B-BN.

VL36 Series Lift Check Valves

Features

- Working pressure up to 6,000 psig (413 bar)
- Temperature up to 900 °F (482 °C)
- Metal to metal seat



Operation

- Operation of this valve heavily depends on gravity assistance. Thus mounting horizontally with bonnet nut upward to allow poppet to operate vertically.
- Reverse flow closes the valve, keeping poppet in the or ce.
- Forward flow opens the valve, lifting the poppet
- Lift check valve is primarily for use in liquid systems. If a slight amount of leakage can be tolerated it can be used with heavy gases.
- Reverse flow Cv is limited to less than 0.1% of forward Cv.

Materials of Construction

Component	Valve Body Material
	Stainless Steel
	Material Grade/ASTM
1. Body	SS316/A276 or A479
2. Bonnet Nut	SS316/A276 or A479
3. Bonnet	TYPE630/A564
4. Poppet	SS316/A276 or A479

Complete Ordering Number and Dimensions

Complete Ordering Number		End Connection	Orifice		Cv	Dimensions mm (in.)			
			mm	inch		L	H	H1	Hex
VL36A-	D4T-S	1/4 in. DK-Lok	4.0	0.156	0.30	61.0 (2.40)	37.3 (1.47)	9.9 (.39)	7/8
	D6M-S	6 mm DK-Lok							
	F2N-S	1/8 in. Female NPT				50.8 (2.00)			
	F4N-S	1/4 in. Female NPT				46.0 (1.81)			
	SW4T-S	1/4 in. Tube Socket Weld							
VL36B-	D6T-S	3/8 in. DK-Lok	6.4	0.250	0.64	71.9(2.83)	47.0 (1.85)	12.7 (.50)	1 1/4
	F4N-S	1/4 in. Female NPT				57.2 (2.25)			
	SW6T-S	3/8 in. Tube Socket Weld							
	SW8T-S	1/2 in. Tube Socket Weld							
VL36C-	D8T-S	1/2 in. DK-Lok	11.1	0.437	2.20	99.6 (3.92)	62.0 (2.44)	15.7 (.62)	1 1/2
	D12T-S	3/4 in. DK-Lok							
	F6N-S	3/8 in. Female NPT				79.2(3.12)			
	F8N-S	1/2 in. Female NPT							
	SW8T-S	1/2 in. Tube Socket Weld				79.5 (3.13)			

Pressure-Temperature Ratings

ASME Class	2500
Material Group	2.2
Material Name	SS316
Temp. °F(°C)	Working Pressure psig (bar)
-65 to 100 (-53 to 37)	6000 (413)
200 (93)	5160 (355)
300 (148)	4660 (321)
400 (204)	4280 (294)
500 (260)	3980 (274)
600 (315)	3760 (259)
700 (371)	3600 (248)
800 (426)	3460 (238)
900 (482)	3280 (225)

How to order : Select a complete ordering number. i.e., VL36A-D-4T-S.

All dimensions shown are for reference only and subject to change. Dimensions with DK-LOK are in finger-tight position.
We reserve the right to change specification stated in this catalog for our continuing program of product improvement.

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

VC34 CNG Check Valves

Rev. 01-01
Aug. 2023

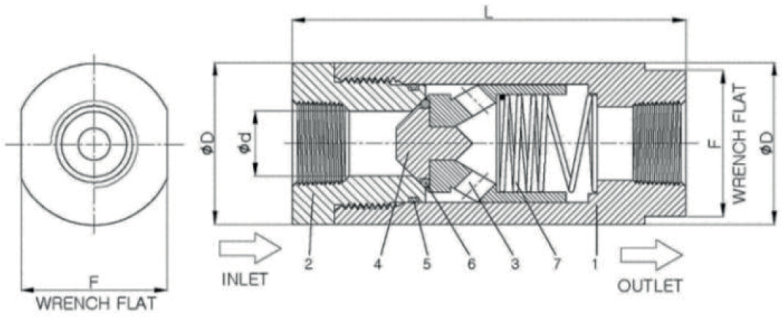
DK-LOK®
Check Valves

CNG Check Valves

Rev.01-01
Aug.2023

Features

- High Flow check valve.
- Bar stock two piece study design.
- Poppet O-ring secured on groove provides leak-tight seal.
- Unidirectional flow control of fluids
- Prevent loss of media caused by failed connections.



Materials of Construction

No.	Component	Material	Q'ty
1	Body	SS 316	1
2	Connector	SS 316	1
3	Poppet	SS 316	1
4	Poppet Cap	SS 316	1
5	O-ring	HNBR	1
6	O-ring	HNBR	1
7	Spring	SS 304	1

Technical Data

Flow Rate: 2090 SCFM (3551 Nm^3/hr)
Working Pressure: 3600 psi (248 bar)
Burst Pressure: 25,000 psi (1724 bar)
Temperature Range: - 40 to 120 °C (-40 to 250 °F)

Ordering Number and Dimensions

Ordering Number	End Connections		Dimension in.(mm)			
	Inlet	Outlet	D	d	L	F
VC34-F16N-S	1" Female NPT		2.48 (63)	1 (25.4)	6.04 (153.5)	2.24 (57)
VC34-F16R-S	1" Female ISO 7-1					

Factory Test, Cleaning and Packaging

Every valve is factory tested for cracking and reseal performance and cleaned, packaged in accordance with DK-LOK cleaning standard of DC-01.

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

VX36 Series
Excess Flow Valves

Rev. 01-01
Aug. 2023

DK-LOK®
Check Valves

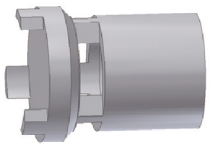
VX36 Series Excess Flow Valves

Pressures up to 6,000 psig (413 bar)

Rev.01-01
Aug.2023

Features

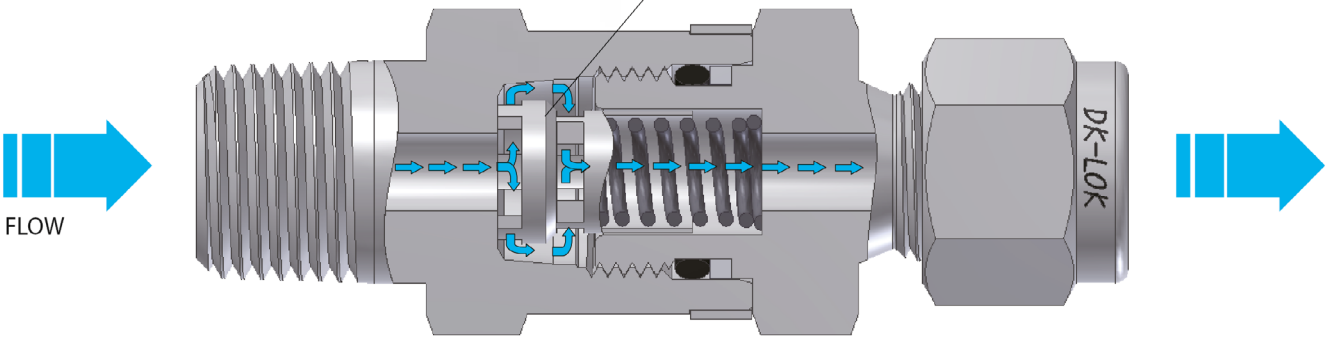
- Designed to stop uncontrolled release of system fluid on downstream line rupture.
- Pressure up to 6,000 psig (413 bar)
- Temperature rating up to 400 °F (204 °C)
- Stainless steel construction
- DK-Lok and PIPE END connections up to 1/2 in.



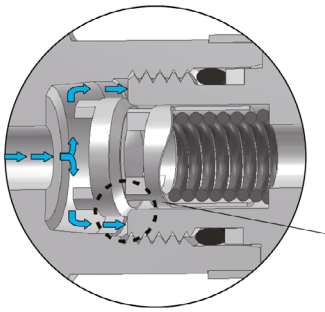
Poppet

- High flow performance
- Bleed vent integrated
- Reliable tripping

Valve in Open Position

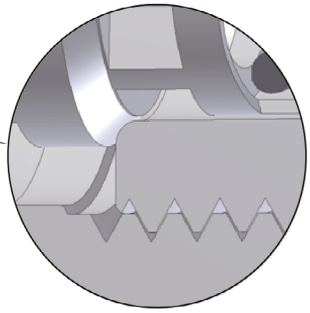


Valve in Tripped Position



Metal Seat

- Durable and repeatable
- Minimal maintenance



Bleed Vent integrated on Poppet

- Pressure equalization
- Reset the poppet to re-open the valve

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Operation

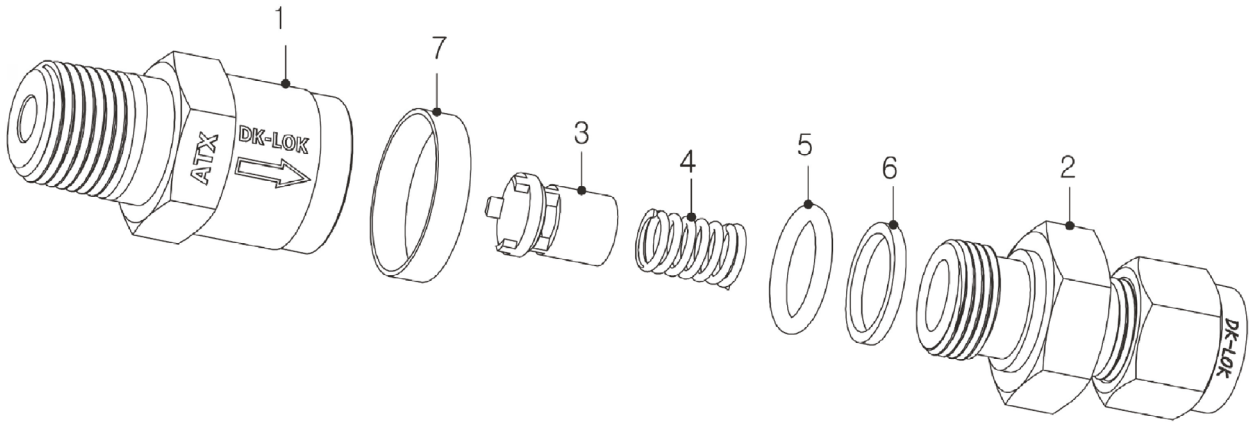
The spring loaded poppet keeps the valve open position in the normal operation.
When an excess flow occurs downstream, the poppet immediately moves to the tripped position to stop rapid release of system fluid.

The valve returns to open position when pressure equalizes through the bleed vent constructed on poppet. The spring in the poppet resets the valve to open position. The least volume of flow goes through the bleed vent that is less than 1% of the valve flow rate while the valve in the tripped position.

Spring-loaded poppet design allows valve for use in vertical, horizontal or in any orientation.

Factory Test, Cleaning and Packaging

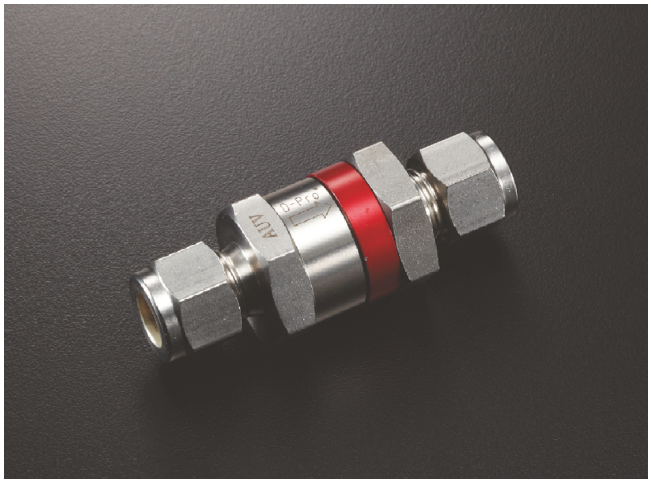
- Every valve is factory tested for performance in the tripped and open position.
- Valves are cleaned and packaged as per the requirements of DK Tech's product cleaning standard of DC-01.
- Oil free special cleaning and packaging in compliance with ASTM G93 Level C is available on request.



Materials of Construction

Component	Material
*1. Body	SS316/ASTM A276 or ASTM A479
*2. Connector	
*3. Poppet	
*4. Spring	SS302/ASTM A313
*5. O-ring	Standard FKM O-ring Optional NBR, EPDM, and FFKM
6. Backup ring	Standard PTFE / ASTM D1710 Optional PEEK
7. Indicator ring	Red-color anodized Aluminium

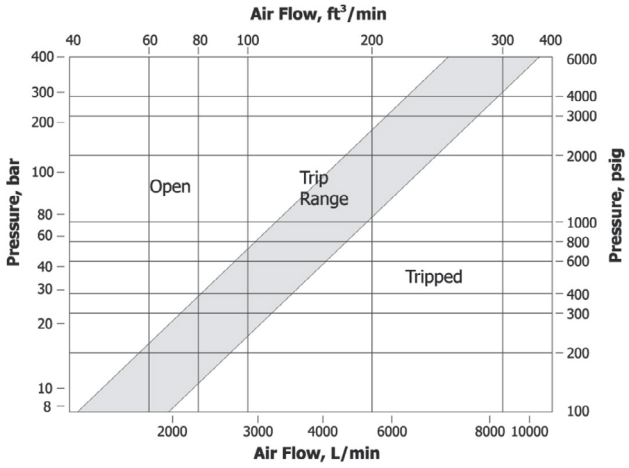
* Wetted parts and lubricants listed in blue.



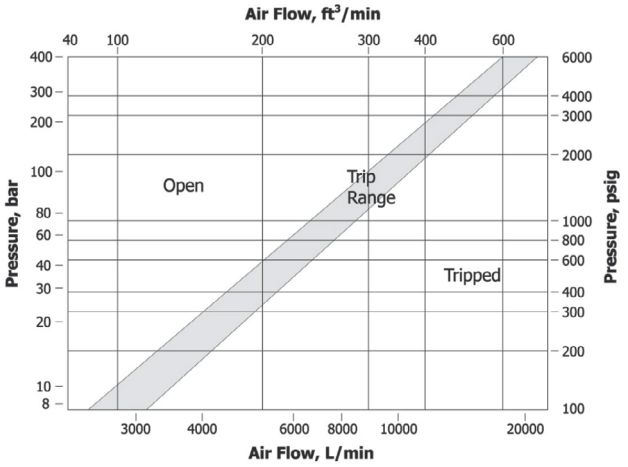
VX36 Series Flow Rate @ 70 °F (20 °C)

The valve stops rapid release of system fluid if a line rupture or similar thing occurs on the downstream by poppet's tripping into the metal seat position when flow volume through the valve increases to a set value.

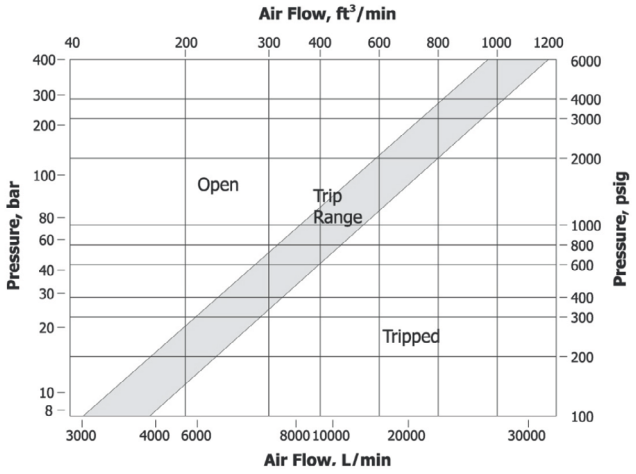
VX36A Series Air



VX36B Series Air



VX36C Series Air



VX36A, B,C Series Water

Series	Cv	Trip Range U.S. gal/min (L/min)
VX36A	0.5	3.9 to 5.8 (14.7 to 21.9)
VX36B	1.1	8.2 to 10.0 (31.0 to 37.8)
VX36C		11.2 to 14.9 (42.3 to 56.3)

Pressure-Temperature Ratings

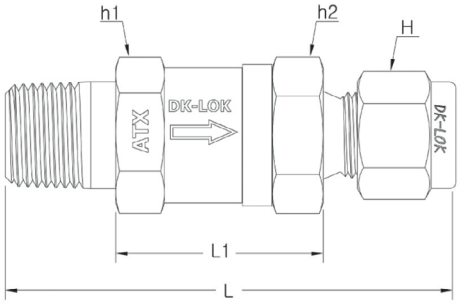
• Rating based on valve with standard FKM O-Ring.

ASME Class / Material Group	2500 / 2.2
Material	Stainless Steel 316
Temp. °F(°C)	Working Pressure psig (bar)
-10 (-23)~100 (37)	6,000 (413)
200 (93)	5,160 (355)
250 (121)	4,910 (338)
300 (148)	4,660 (321)
400 (204)	4,280 (294)

Optional O-ring Materials

• FKM O-Rings are standard. Add the designator to the ordering number for valve with optional O-ring material.

O-ring Materials	Designator	Temperature Rating °F(°C)
FKM	Nil	-10 ~ 400 (-23 ~204)
NBR	BN	-4 ~ 221 (-20 ~ 105)
EPDM	EP	-50 ~ 300 (-45 ~ 148)
FFKM	KZ	-10 ~ 400 (-23 ~ 204)



Ordering Information and Dimensions

Basic Ordering Number		End Connections		Pressure Rating @ 100°F (37°C), psig(Bar)	Cv	Dimensions, mm (in.)				
		Inlet	Outlet			L	L1	H	h1	h2
VX36A-	D-4T-	1/4 in. DK-Lok		6000 (413)	0.5	61.7 (2.43)	26.4 (1.04)	9/16 in.	11/16 in.	
	D-6M	6 mm DK-Lok		6000 (413)		61.7 (2.43)	26.4 (1.04)	14 mm	11/16 in.	
	M-2N-	1/8 in. Male NPT		6000 (413)		45.5 (1.79)	26.4 (1.04)	-	11/16 in.	
	F-2N-	1/8 in. Female NPT		6000 (413)		47.5 (1.87)	-	-	11/16 in.	
	M-4N-	1/4 in. Male NPT		6000 (413)		55.1 (2.17)	26.4 (1.04)	-	11/16 in.	
	M-4R-	1/4 in. Male PT		6000 (413)		55.1 (2.17)	26.4 (1.04)	-	11/16 in.	
	F-4N-	1/4 in. Female NPT		6000 (413)		54.1 (2.13)	-	-	11/16 in.	
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok	6000 (413)		58.4 (2.3)	26.4 (1.04)	9/16 in.	11/16 in.	
	MF-4N	1/4 in. Male NPT	1/4 in. Female NPT	6000 (413)		54.6 (2.15)	-	-	11/16 in.	
VX36B-	D-6T-	3/8 in. DK-Lok		6000 (413)	1.1	69.9 (2.75)	31.2 (1.23)	11/16 in.	1 in.	
	D-8M	8 mm DK-Lok		6000 (413)		68.6 (2.70)	31.2 (1.23)	16 mm	1 in.	
	M-6N-	3/8 in. Male NPT		6000 (413)		59.9 (2.36)	31.2 (1.23)	-	1 in.	
	F-6N-	3/8 in. Female NPT		5300 (365)		64.8 (2.55)	-	-	1 in.	
	MD-6N6T-	3/8 in. Male NPT	3/8 in. DK-Lok	6000 (413)		64.9 (2.56)	31.2 (1.23	11/16 in.	1 in.	
	MF-6N-	3/8 in. Male NPT	3/8 in. Female NPT	5300 (365)		62.4 (2.45)	-	-	1 in.	
VX36C-	D-8T-	1/2 in. DK-Lok		6000 (413)	1.1	75.2 (2.96)	31.2 (1.23)	7/8 in.	1 in.	
	D-12M-	12 mm DK-Lok		6000 (413)		75.2 (2.96)	31.2 (1.23)	22 mm	1 in.	
	M-8N-	1/2 in. Male NPT		6000 (413)		69.3 (2.73)	31.2 (1.23)	-	1 in.	
	M-8R-	1/2 in. Male PT		6000 (413)		69.6 (2.74)	31.2 (1.23)	-	1 in.	
	F-8N-	1/2 in. Female NPT		4900 (337)		77.0 (3.03)	-	-	1-1/16 in.	
	F-8R-	1/2 in. Female PT		4900 (337)		83.6 (3.29)	-	-	1-1/16 in.	
	MD-8N8T-	1/2 in. Male NPT	1/2 in. DK-Lok	6000 (413)		72.6 (2.86)	31.2 (1.23)	7/8 in.	1 in.	
	MF-8N-	1/2 in. Male NPT	1/2 in. Female NPT	4900 (337)		69.7 (2.53)	-	-	1 in.	1-1/16 in.

All dimensions shown are for reference only and subject to change. Dimensions with DK-Lok are in finger-tight position.

How to Order

Select valve basic ordering number, applicable options, and body material.

VX36A-D-4T- **BN-** **S**

VX36A-D-4T- **EP-** **S**

VX36C-D-8T- **KZ-** **PK-** **S**

O-ring Material Designator	Backup Ring	Valve Body Material Designator
Nil : FKM **BN** : NBR **EP** : EPDM **KZ** : FFKM (Kalrez)	**Nil** : PTFE **PK** : PEEK	**S** : 316 stainless steel

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

IDK-LOK

V61 Series

Rev. 01-01
Aug. 2023

DK-LOK®
Relief Valves

V61 Series Vent Relief valves

Rev.01-01
Aug.2023

Working Pressure up to 400 psig (28 bar)

Features

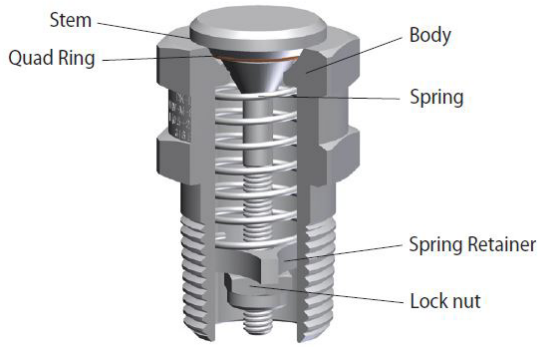
- Precise cracking pressure with high reliability.
- Keeping the sealing to 95~98% of Set Pressure at least.
- Reliable Reseal performance.
- Tamper proof design.

Design and applocation

V61 Series Vent relief valves is designed to vent out the excess pressure from the line automatically to keep the required line pressure safely when the line pressure is exceeded over the limitation unusually. This valves can be used in the case that the working fluid is not harmful when vented out. The level of cracking pressure should be set by adjusting the force of the spring in the valve before this valve is installed in the system.

Installation and Operation

This valve should be positioned perpendicularly to the direction of fluid flow in the line and that position should be considered and the vented fluid should be not directed to the personnel operating and the parts that has any influences on that. The line system should be run to check the performance of the valve after the personnel operating move to the safty zone. Because this valve is opened automatically when the excess of the required line pressure.



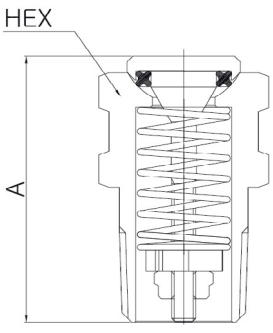
Materials of construction

Component	Valve Body Material	
	SS316	Brass
Body	ASTM A276 / A479 TYPE 316	ASTM B16 / Brass 360 (Nickel plated)
Stem	ASTM A276 / A479 TYPE 316	ASTM B16 / Brass 360
Quad-Ring	FKM	NBR
Spring	STAINLESS STEEL 302	STAINLESS STEEL 302
Spring retainer	ASTM A276 / A479 TYPE 316	ASTM B16 / Brass 360
Lock nut	STAINLESS STEEL	STAINLESS STEEL

· Lubricants listed in blue.

Ordering Number and Table of Dimensions

Basic Ordering No.	Pipe Size NPT	Orifice mm(inch)	Dimension mm(inch)	
			A	Hex.
V61-M-2N	1/8" Male NPT	4.74 (0.187)	24.6 (0.97)	12.7(1/2)
V61-M--4N	1/4" Male NPT	6.98 (0.275)	30.48 (1.2)	15.87 (5/8)
V61-M-6N	3/8" Male NPT	8.76 (0.345)	31.5 (1.24)	19.05 (3/4)
V61-M-8N	1/2" Male NPT	10.41 (0.41)	44.5 (1.75)	25.4 (1.0)
V61-M-12N	3/4" Male NPT	14.47 (0.57)	57.15 (2.25)	28.57 (1-1/8)
V61-M-16N	" Male NPT	19.94 (0.785)	79.25 (3.12)	38.1 (1-1/2)



Technical Data

1. Set Pressure Range : 0.5 to 150 psig
   (0.03 to 10.4 bar)
2. Temperature Range : -65° to 400°F
   (-54°C to 204°C)

(differ from material selection)

Material	Designator	Temperature Rating
FKM	V	-20 to 400°F (-28°C to 204°C)
NBR	N	-40 to 250°F (-40°C to 121°C)
EPDM	EP	-65 to 300°F (-54°C to 148°C)

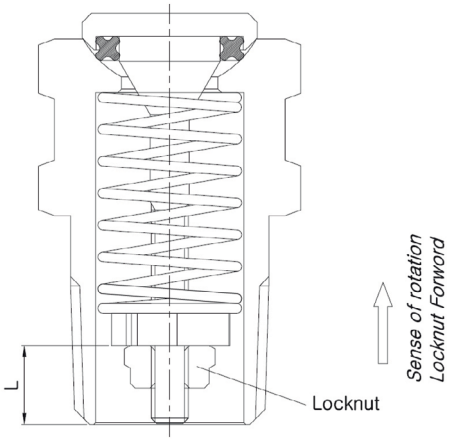
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Technical Data

Cracking & Reseal Tolerance

	Cracking Pressure	Tolerance
Cracking	below 2 psig (0.14 bar)	± 10%
	2 to 150 psig (0.14 to 10.3 bar)	± 5%

	Cracking Pressure	Tolerance
Reseal	2 ~ 10 psig (0.14 to 1.7 bar)	80% of Cracking
	10 ~ 150 psig (0.7 to 10.3 bar)	92% of Cracking



According to system line's requested pressure,
Turn the locknut(with JIG as picture.1)as picture and set the cracking pressure.

* Ordering Jig Part No. : V61 - JIG

JIG Reference <picture.1>

Spring Cracking Pressure Range Designator and Flow Data

Designator	Cracking Pressure Range @ 20°C (70°F), psig (bar)	Standard Cracking Pressure (The Middle Point Cracking) psig (bar)	Flow Data for Size, SCFM					
			1/8"	1/4"	3/8"	1/2"	3/4"	1"
1	0.5 to 2.5 (0.03 to 0.17)	1.6 (0.11)	0.13	0.13	0.20	0.83	1.23	-
5	2.6 to 7.5 (0.18 to 0.51)	5(0.34)	0.57	0.62	0.97	1.83	1.37	2.92
10	7.6 to 15 (0.52 to 1.03)	11.5 (0.79)	0.92	1.15	1.80	2.50	1.58	1.90
20	16 to 35 (1.1 to 2.41)	26 (1.79)	1.50	2.05	2.50	3.67	3.75	5.17
50	36 to 75 (2.48 to 5.17)	56 (3.86)	4.33	8.58	9.17	24.30	17.50	9.17
100	76 to 125 (5.24 to 8.61)	100 (6.89)	8.33	33.52	21.67	62.08	34.67	76.67
150	126 to 150 (8.68 to 10.4)	138 (9.5)	10.17	38.17	19.00	66.67	57.50	91.67

Factory Test

Every valve is factory tested for standard set cracking and performance.

How to Order

Select valve basic ordering number, applicable seal, spring nominal cracking pressure, and body material.

V61 - **NIL-** **KZ-** **EP-** **1-** **S** **B**

Seal Material Designator	Spring Nominal Cracking Pressure Designator	Valve Body Material Designator
FKM : Nil for SS316 Valve **NBR** : Nil for Brass Valve **FKM** : V **NBR** : N **EPDM** : EP	"Note : Select the spring desigtor 1 ,5, 10, 20, 50, 100, 150"	**S** : SS316 **B** : Brass

IDK-LOK

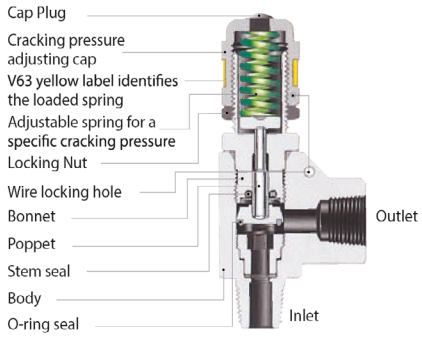
V63-V66 Series Relief Valves

Rev. 01-01
Aug. 2023

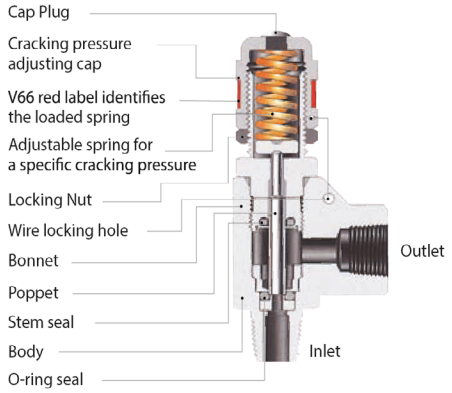
V63 & V66 Series Relief Valves

Rev.01-01
Aug.2023

V63 Series for working pressure 300 psig (20.6 bar)



V66 Series for working pressure 6,000 psig (413 bar)



Technical Data

V63 Series Technical Data

- Maximum working pressure : 300 psig @ 68°F (20.6 bar @ 20°C)
- Cracking pressure range : 10 to 225 psig (0.68 to 15.5 bar)

Table 1. V63 Series Spring Designator

Spring Designator	Cracking Pressure		Color Code
	psig	bar	
RVS-L	10 to 225	0.68 to 15.5	RED

- Orifice : 4.8 mm (0.19 in.)

V63/66 Series Temperature Rating

Seal Material	Temperature Rating, °C (°F)	
	V63 Series	V66 Series
FKM (Viton)	-12 ~ -135 (10.4 ~ 275)	-4 ~ 121 (24.8 ~ 250)
Buna N	-23 ~ 148 (-9.4 ~ 298)	-17 ~ 121 (1.4 ~ 250)
Ethylene Propylene (EPDM)	-40 ~ 148 (-40 ~ 298)	-1 ~ 121 (30.2 ~ 250)

V66 Series Technical Data

- Maximum working pressure : 6,000 psig @ 68°F (413 bar @ 20°C)
- Orifice size : 3.4 mm (0.13 in.)
- Cracking pressure range : 50 to 6,000 psig (3.4 to 413 bar)

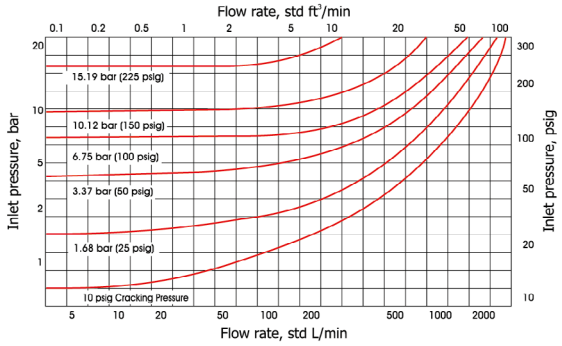
Table 2. **V66 Series Spring Designators**

Spring Designator	Cracking Pressure		Color Code
	psig	bar	
RVS-A	50 to 350	3.4 to 24	WHITE
RVS-B	350 to 750	24 to 51.6	BLUE
RVS-C	750 to 1500	51.6 to 103	CLEAR
RVS-D	1500 to 2250	103 to 155	BLACK

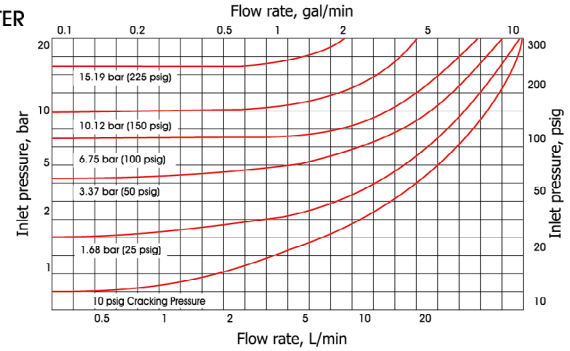
Spring Designator	Cracking Pressure		Color Code
	psig	bar	
RVS-E	2250 to 3000	155 to 206	GREEN
RVS-F	3000 to 4000	206 to 275	YELLOW
RVS-G	4000 to 5000	275 to 344	BROWN
RVS-H	5000 to 6000	344 to 413	ORANGE

V63 Series Flow Rate

AIR

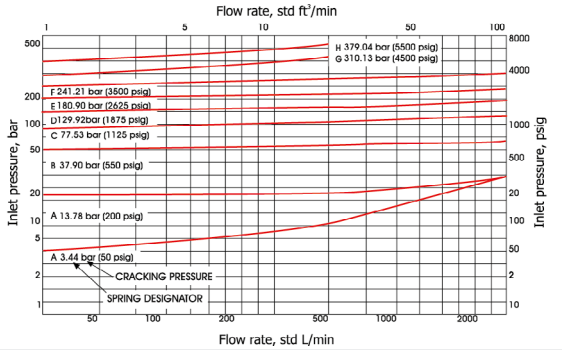


WATER

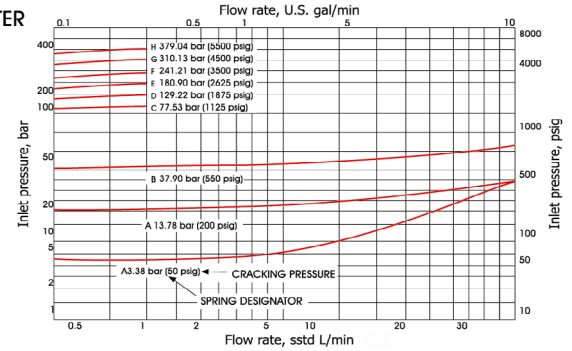


V66 Series Flow Rate

AIR



WATER



Factory Test

Every valve is factory tested for cracking and reseal performance.

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

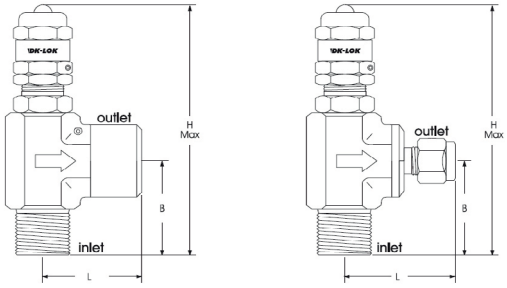
How To Adjust Valve Cracking Pressure

The valve user shall set a specific cracking pressure of the valve supplied.

1. To increase the cracking pressure of the valve, turn the adjusting cap clockwise to compress the spring.
2. To reduce the cracking pressure, turn counterclockwise.
3. Start the pump with the spring relaxed (eight threads showing with the Locking Nut at bottom), with the discharging port open, check the gauge pressure as you turn the adjusting cap clockwise to increase the pressure to the desired operating range.
4. If the system has more than one outlet, set the valve pressure with one outlet open, and then check again with all outlets open to make sure that the set pressure is within the desired operating range.
5. Set the Locking Nut and the wire to maintain the set cracking pressure.

Operation

- Install the valve between the pump outlet as close as possible, and any shutoff device in the discharge line. The preferable mounting position is vertical with the adjusting cap at the top.
- D-Pro relief valve bypasses the system fluid to prevent instrument or sensitive gauge in the system from excess pressure.
- When the inlet pressure overcomes the set spring pressure on the poppet, the poppet lifts off the valve seat, allowing flow to bypass and thereby balance the system pressure.
- If the valve has not been actuated for a period of time, it may initially crack above the set cracking pressure.
- Cracking pressure is only sensitive to inlet pressure, and is not affected by outlet pressure.
- Cv reduction : Valve flow may be reduced by the restriction of pipe and tubing connected.



Material of Construction	
Cap Plug	Polypropylene
Adjusting Cap	ASTM A276 / A479 Type 316
Spring	Stainless Steel 302
Locking Nut	ASTM A276 / A479 Type 316
Bonnet	
Poppet	
Stem & O-ring seal	Standard Viton, optional EPDM and Buna N
Body	ASTM A182 F316

Ordering information and Dimensions

Basic Ordering Number		End Connections		Orifice mm(in.)	Dimensions mm (in.)		
		Inlet	Outlet		H	B	L
V63- and V66-	D-4T-	1/4 DK-Lok		V63 : 4.8 (0.19) V66 : 3.4 (0.13)	100 (3.93)	37 (1.45)	39 (1.53)
	D-6M-	6 mm DK-Lok					
	D-8M-	8 mm DK-Lok				38 (1.49)	40 (1.57)
	D-8T-	1/2 DK-Lok			105 (4.13)	44 (1.73)	42 (1.65)
	D-12M-	12 mm DK-Lok					
	MD-8N8T-	1/2 Male NPT	1/2 DK-Lok		98 (3.85)	36 (1.41)	42 (1.65)
	MD-8N12M-	1/2 Male NPT	12 mm DK-Lok				
	MF-4N-	1/4 Male NPT	1/4 Female NPT		94 (3.70)	32 (1.25)	30 (1.18)
	MF-4R-	1/4 Male ISO 7/1	1/4 Female ISO 7/1				
	MF-6N-	3/8 Male NPT	3/8 Female NPT				35 (1.37)
	MF-6R-	3/8 Male ISO 7/1	3/8 Female ISO 7/1				
	MF-8N-	1/2 Male NPT	1/2 Female NPT		98 (3.85)	36 (1.41)	38 (1.49)
	MF-8R-	1/2 Male ISO 7/1	1/2 Female ISO				

Model Shown :
V66-MF-4N-A

All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

How to order

Please select the desired valve basic ordering number, the applicable seal, spring designator and CE certified option from the table below.

Example : V66-D-4T

-BN	-B	-CE
Seat Designator	Spring Designator	CE certified
Nil : Standard Viton **BN** : Buna N **EP** : EPDM	Refer to Table 1, Table 2 for spring designator	**CE** : Valve to 2014/68/EU

Factory pressure set valve

To order, specify the set pressure on the valve ordering number.
Example : V66-D-4T-60BAR or V66-D-4T-870PSI

Valve without spring installed

To order, do not specify spring designator on the ordering number.
Example : V66-D-4T
Note : The valve with no spring installed is supplied with the label stated “NO SPRING INSTALLED” on the adjusting cap.

Spring for field assembly

To order, select an applicable spring from the spring designator table 1 & 2. Spring kit includes spring, sticker and wire. Example : RVS-A

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

IDK-LOK

V64 Series

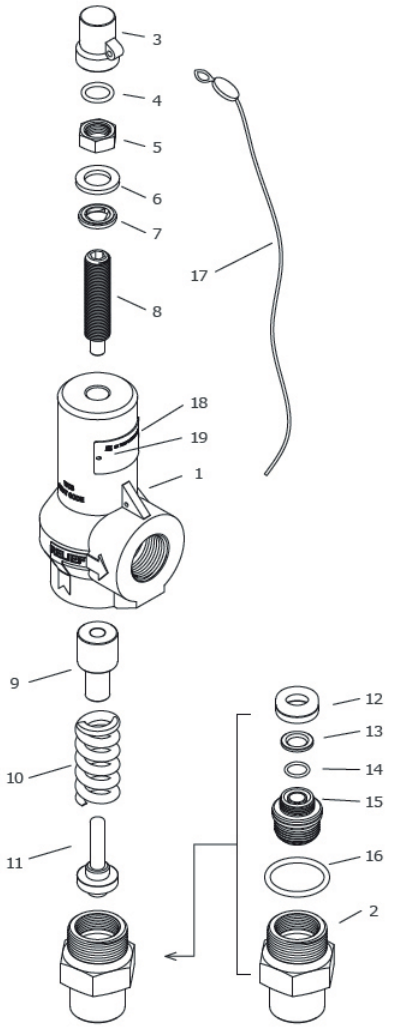
Rev. 02-01
Jan. 2024

DK-LOK®
Relief Valves

V64 Series

PED Certified Relief Valves

Rev.02-01
Jan.2024



Features

- **Wide Media Applications :**
  Air, Gases, CNG, and Liquid relief applications.
- **High Performance Soft Seat :**
  Provides Repetitive & Reliable Bubble-tight Seal.
- **Orifice:** 0.404 in. (10.26 mm)
- **Working Pressure:** 6,000 psi (413 bar)
- **Cracking Pressure Range:**
  15 to 5,500 psig (1.03 to 379 bar)

Valves are supplied with protective painted surface.

Table 1. **Materials of Construction**

No.	Component	Valve Body Materials	
		Carbon Steel	Stainless Steel
	Standard O-ring Type		
1	Body	ASTM A216 Gr. WCB	ASTM A351 CF3M
2	Seat Frame	ASTM A105 or Equivalent	ASTM A479/A276 Type316
3	Cap	Carbon Steel	Stainless Steel
4	Cap O-Ring	Rubber	
5	Jam Nut	Carbon Steel	Stainless Steel
6	Flat Washer	Carbon Steel	Stainless Steel
7	Bonded Seal	NBR inner ring bonded to carbon steel outer ring	
8	Adjustable Screw	Carbon Steel with Cr Plated	Stainless Steel
9	Spring Keeper	Stainless Steel	
10	Spring	AISI 1086 or Equivalent	
11	Disc	ASTM A479/A276 Type316	
12	Seat Cap	ASTM A479/A276 Type316	
13	Seat Support	ASTM A479/A276 Type316	
14	Seat O-Ring	FKM (see Table 2 for optional O-rings)	
15	Insert Holder	ASTM A479/A276 Type316	
16	Body O-Ring	FKM (see Table 2 for optional O-rings)	
17	Lead Seal Wire	Stainless Steel	
18	Name Plate	Stainless Steel	
19	Rivet Bolt	Stainless Steel	
	Optional PCTFE Type (only spring spec. No.9~11)		
12-1	Seat Cap	ASTM A476/A276 Type316	
14-1	Seat	PCTFE	

· Wetted parts are listed in blue.

V64 Series Technical Data

Working Pressure	Cracking Pressure Range	Orifice	Orifice Area
6,000 psig (413 bar)	15 to 5,500 psig (1.03 to 379 bar)	0.404 in. (10.26 mm)	0.128 in.² (82.58 mm²)

Table 2. **Elastomer O-ring Technical Information**

Component	Temp. Rating °F (°C)		Recommended Media
	Min.	Max.	
FKM (Viton)*	-15 (-26)	400 (204)	Hydrocarbons, H2S, Mineral Oil/Grease, Silicone Oil/Grease, Fuels, Chlorinated Hydrocarbons.
HNBR	-25 (-31)	325 (162)	Hydrocarbons, CO2, Dilute Acids, Water and Steam Less than 300 °F.
EPDM	-70 (-56)	250 (121)	Glycols, Organic Acids, Inorganic Acids, Hydraulic Fluids, Solvents.

* In case of CNG service, FKM of special compound is applied and temperature service is applicable to -40°F (-40°C).

Operation

When the inlet pressure overcomes the spring set pressure, it causes the valve to open, releasing flow to bypass and thereby balance the pressure.

Factory Test

Every valve is factory tested for cracking and reseal performance.

Certifications

Certificates		Cerificate No.
PED 97/23/EC (Pressure Equipment Directive)	Module B	HSBI-10-11-045
	Module D	HSBI-10-11-046
CSEL (China Special Equipment License)		TSF700E53-2023

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Ordering Number and Dimensions

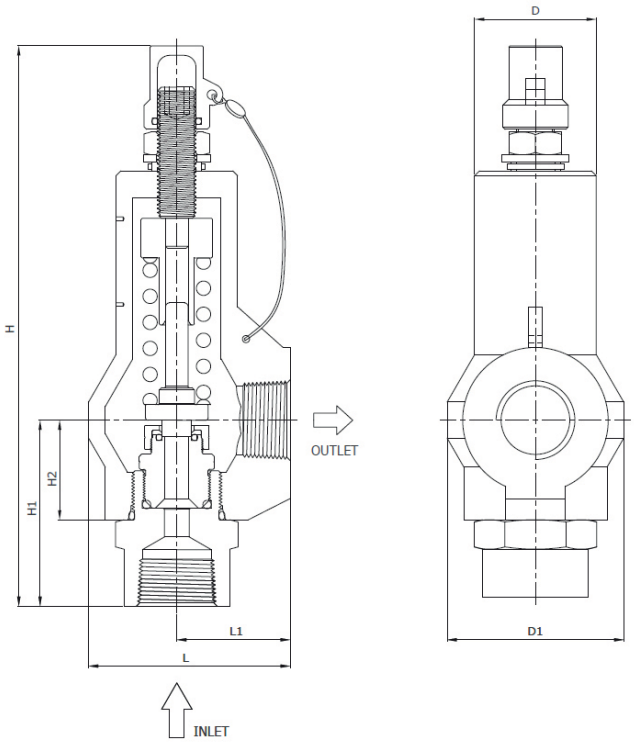


Table 3. **Flow Rate**

Flow rate measured by overpressure of 110% or 3 psig.

Media	Air	Gas	Water
Density	0.0764	0.0458	62.306
SG	1	0.6	1
Temp.	60 °F	60 °F	70 °F
Factor	Kd Factor 0.838	Kd Factor 0.838	K Factor 0.62
Set Pressure psig (bar)	SCFM	SCFM	GPM
15 (1.03)	64	80	13
20 (1.3)	74	93	14
25 (1.7)	84	105	16
30 (2.0)	94	117	17
50 (3.4)	137	171	22
100 (6.8)	245	306	32
150 (10.3)	353	441	39
200 (13.7)	462	576	45
250 (17.2)	570	711	50
300 (20.6)	678	846	55
400 (27.5)	894	1117	63
500 (34.4)	1111	1387	71
600 (41.3)	1327	1657	77
700 (48.2)	1543	1927	84
900 (62.0)	1976	2467	95
1000 (68.9)	2192	2737	100
1500 (103)	3274	4088	122
1750 (120)	3815	4763	132
2000 (137)	4355	5438	141
2500 (172)	5437	6789	158
3000 (206)	6519	8139	173
4000 (275)	8682	10840	200
4500 (310)	9763	12191	212
5000 (344)	10845	13541	224
5500 (379)	11927	14892	235

Table 4. **Basic Ordering Number and Dimensions**

Basic Ordering Number		End Connections		Dimensions in. (mm)						
		Inlet	Outlet	H	H1	H2	L	L1	D	D1
V64-	F8N16N-	1/2 in. Female NPT	1 in. Female NPT	9.25 (235)	3.07 (78.0)	1.64 (41.8)	3.32 (84.50)	1.87 (47.5)	2.00 (51.0)	2.36 (60.0)
	F12N16N-	3/4 in. Female NPT								
	MF8N16N-	1/2 in. Male NPT								
	MF12N16N-	3/4 in. Male NPT								
	MF16N-	1 in. Male NPT								

Ordering Information

Select the desired valve basic ordering number in the table 4, applicable O-Ring designator, Spring designator, and Valve body material in the table below.

O-Ring Material Designators	Spring Set Pressure Designators Unit: psig		Valve Body Material Designators	Example of a complete Ordering Number.
Applicable to components number of 14, and 16 in the table 1. • Nil: Standard FKM O-Ring • HN: HNBR • EP: EPDM	• 1 : 15-35(Brown) • 2 : 36-70(Light Blue) • 3 : 71-200(Yellow) • 4 : 201- 350(Light Green) • 5 : 351-750(Red)	• 6 : 751 - 1300(Orange) • 7 : 1301 - 1800(Silver) • 8 : 1801 - 2800(Black) • 9 : 2801 - 3700(Dark Brown) • 10 : 3701 - 5500(Gray) • 11 : 5800 (Gold)	• C: Carbon Steel • S: Stainless Steel	V64-F12N16N-EP-8-C V64-MF16N-PC-10-C **Factory Set Valve** To order, specify the set pressure on the valve ordering number. i.e., V64-F8N16N-1200-C
Seat Material Designators	• Nil: Standard O-Ring Type, • PC: PCTFE Type(only spring spec. No.9~11)			

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.
Valves function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

IDK-LOK

V64H Series

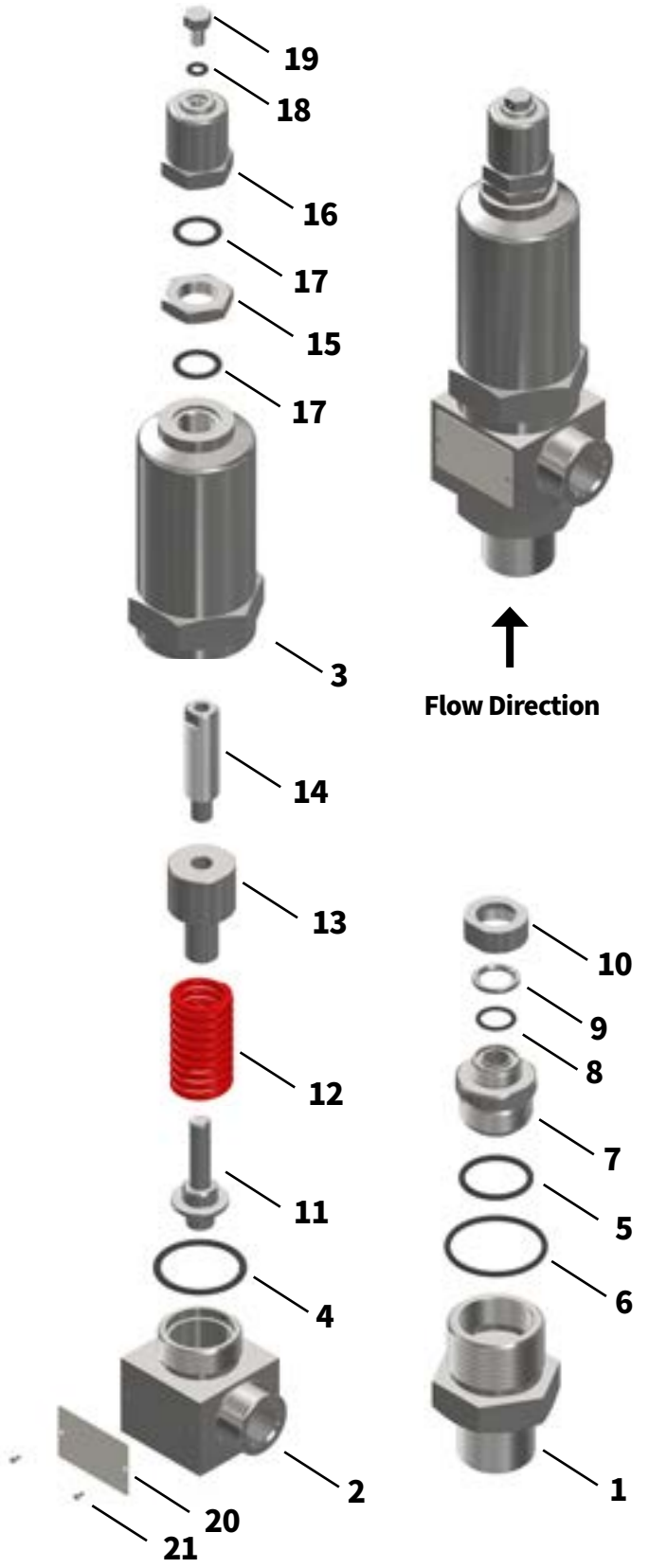
Rev. 01-01
Aug. 2023

V64H Series

Safety Valve

Rev.01-01
Aug.2023

Low Pressure Type



Features

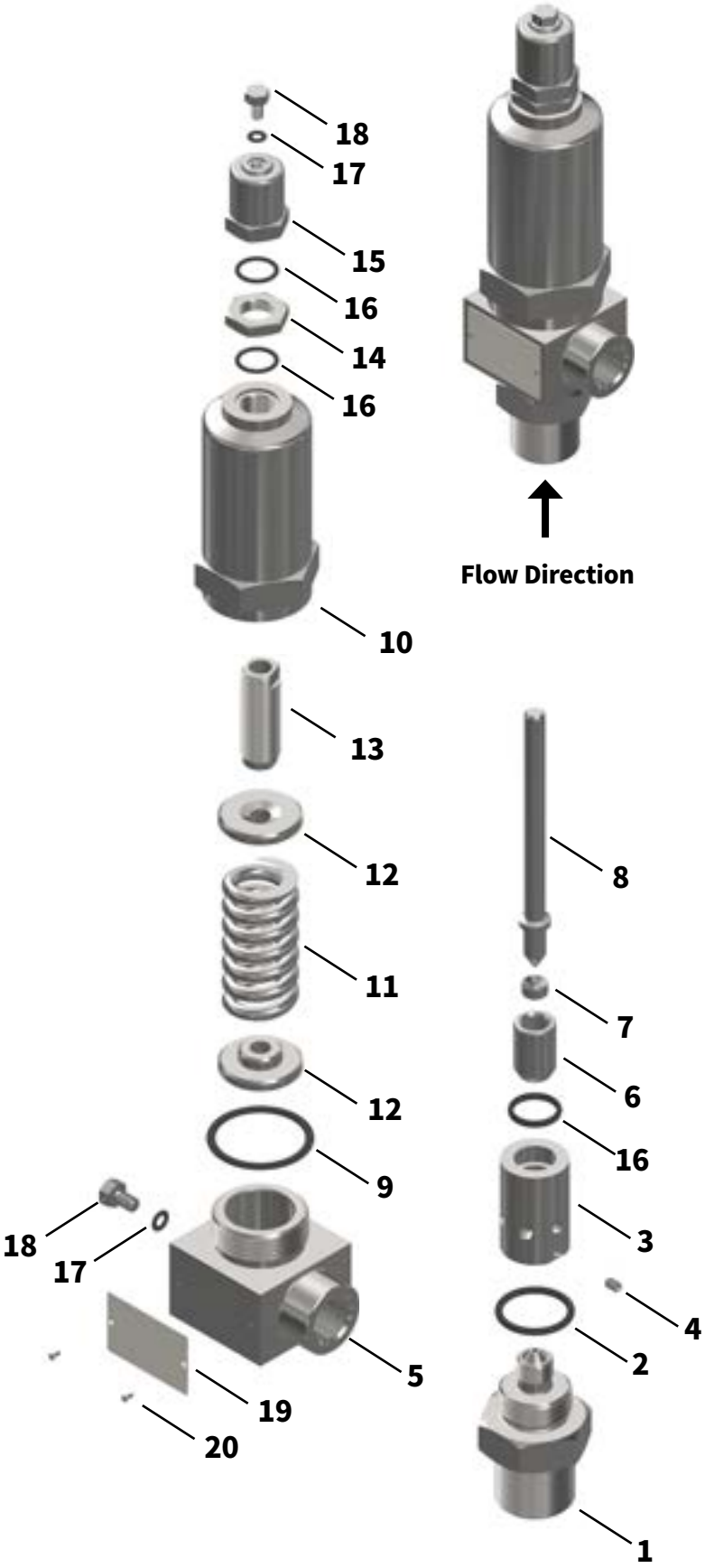
- **Wide Media Applications :**
  Air, Gases and Liquid relief applications.
- **High Performance Soft Seat :**
  Provides Repetitive & Reliable Bubble-tight seal.
- **Orifice :** 0.404 in. (10.26 mm)
- **Working Pressure :** 6,000 psig (413 bar)
- **Cracking Pressure Range :** 10 to 5,500 psig (0.7 to 379.2 bar)
- **Temp. Range :** -15 ~ 400°F (-26 ~ 204°C)
- **Inlet Thread/Screw :** NPT, PT

Table 1. Materials of Construction

No.	Component	Materials
1	Seat Frame	ASTM A 276 TYPE 316
2	Body Lower	ASTM A 276 TYPE 316
3	Body Upper	ASTM A 276 TYPE 316
4	O-Ring	FKM
5	O-Ring	FKM
6	O-Ring	FKM
7	Insert Holder	ASTM A 276 TYPE 316
8	O-Ring	FKM
9	Disc Guide	ASTM A 276 TYPE 316
10	Disc Cap	ASTM A 276 TYPE 316
11	Disc	ASTM A 276 TYPE 316
12	Spring	17-7 PH (SS313)
13	Spring Keeper	Stainless Steel 304
14	Adjustable Screw	Stainless Steel 304
15	Jam Nut	Stainless Steel 304
16	Cap	Stainless Steel 316
17	O-Ring	FKM
18	O-Ring	FKM
19	Vent Bolt	Stainless Steel 304
20	Name Plate	Stainless Steel 304
21	Rivet Bolt	Stainless Steel 304

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

High Pressure Type



Features

- **Wide Media Applications :**
  Air, Gases and Liquid relief applications.
- **High Performance Soft Seat :**
  Provides Repetitive & Reliable Bubble-tight seal
- **Orifice :** 0.098 in. (2.5 mm)
- **Working Pressure :** 14,500 psig (1,000 bar)
- **Cracking Pressure Range :**
  5,501 to 14,000 psig (379.3 to 965.2 bar)
- **Temp. Range :** -15 ~ 400°F (-26 ~ 204°C)
- **Inlet Thread/Screw :** Unified Screw

Table 2. Materials of Construction

No.	Component	Material
1	Seat Frame	ASTM A 276 TYPE 316
2	O-Ring	FKM
3	Insert Holder	ASTM A 276 TYPE 316
4	Set Screw	Stainless Steel 304
5	Body Lower	ASTM A 276 TYPE 316
6	Disc Cap (PAI)	ASTM A 276 TYPE 316 + PAI Seat
7	Disc Guide	ASTM A 276 TYPE 316
8	Disc	ASTM A479 TYPE 316 + Stellite
9	O-Ring	FKM
10	Body Upper	ASTM A 276 TYPE 316
11	Spring	SWOSC-V or EQUIVALENT
12	Spring Keeper	Stainless Steel 304
13	Adjustable Screw	Stainless Steel 304
14	Jam Nut	Stainless Steel 304
15	Cap	Stainless Steel 316
16	O-Ring	FKM
17	O-Ring	FKM
18	Vent Bolt	Stainless Steel 304
19	Name Plate	Stainless Steel 304
20	Rivet Bolt	Stainless Steel 304

Ordering Number and Dimensions

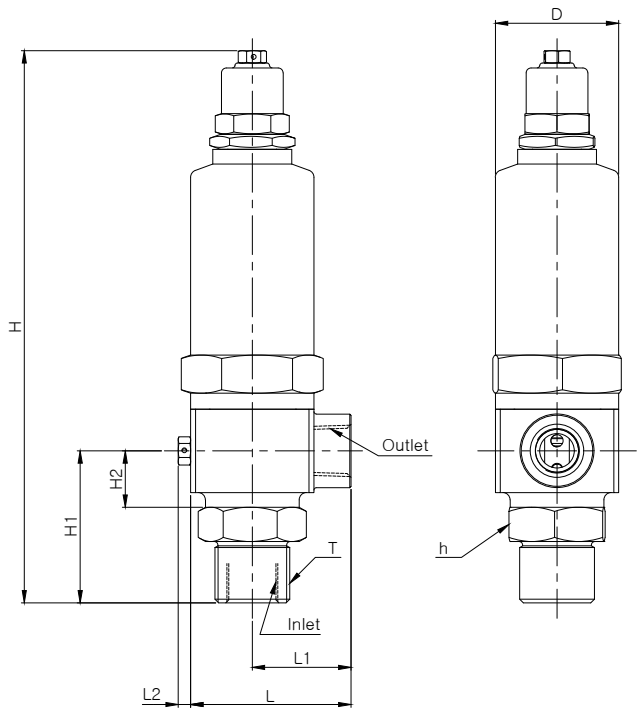


Table 3. Spring Range

Spring No.	Set Pressure Range, psig (bar)		Spring Color
	Min.	Max.	
1	10 (0.7)	20 (1.4)	Brown
2	21 (1.5)	70 (4.8)	Light Blue
3	71 (4.9)	175 (12.0)	Yellow
4	176 (12.1)	350 (24.1)	Light Green
5	351 (24.2)	750 (51.7)	Red
6	751 (51.8)	1,300 (89.6)	Orange
7	1,301 (89.7)	1,800 (124.1)	Silver
8	1,801 (124.2)	2,800 (193.0)	Black
9	2,801 (193.1)	3,700 (255.1)	Dark Brown
10	3,701 (255.2)	5,500 (379.2)	Gray
11	5,501 (379.3)	10,000 (689.4)	Colorless
12	10,001 (689.5)	11,000 (758.4)	Red
13	11,001 (758.5)	14,000 (965.2)	Green

Table 4. Basic Ordering Number and Dimensions

Basic Ordering Number		End Connections		Dimensions in. (mm)									
		Inlet	Outlet	Orifice	T	H	H1	H2	L	L1	L2	D	h
V64H-	F-8N	1/2 in. Female NPT	1/2 in. Female NPT	0.404 (10.26)	M30x1.5P	8.858 (225)	2.441 (62)	0.906 (23)	2.587 (65.7)	1.575 (40)	-	2 (50.8)	Hex. 1-3/4"
	F-9U8N	13/16-16UN Female Unified Thread		0.098 (2.5)	M30x1.5P	8.858 (225)	2.441 (62)	0.906 (23)	2.559 (65)	1.575 (40)	0.197 (5)	2 (50.8)	Hex. 1-1/2"
	F-8U8N	3/4-16UNF Female Unified Thread		0.098 (2.5)	M30x1.5P	8.858 (225)	2.441 (62)	0.906 (23)	2.559 (65)	1.575 (40)	0.197 (5)	2 (50.8)	Hex. 1-1/2"

Ordering Information

Select the desired valve basic ordering number in the table 4, applicable Spring designator, and Valve body material in the table below.

Spring Set Pressure Designators	Body Material Designators	Example of a Complete Ordering Number
See table 3. Spring Range above	S: Stainless Steel	V64H-**F-8N-5-S** V64H-**F-9U8N-11-S**

Operation

When the inlet pressure overcomes the set spring pressure, it causes the valve to open, releasing flow to bypass and thereby balance the system pressure

Factory Test

Every valve is factory tested for cracking and reseal performance.

Safety Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.
Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK

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