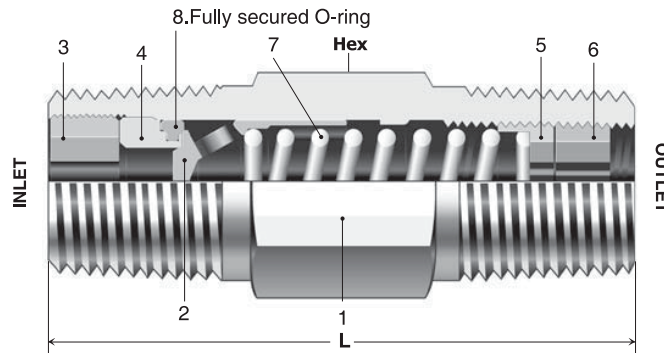


## VA33 Series One-Piece Adjustable Check Valves / VDA33 Series In-Line Adjustable Check Valves

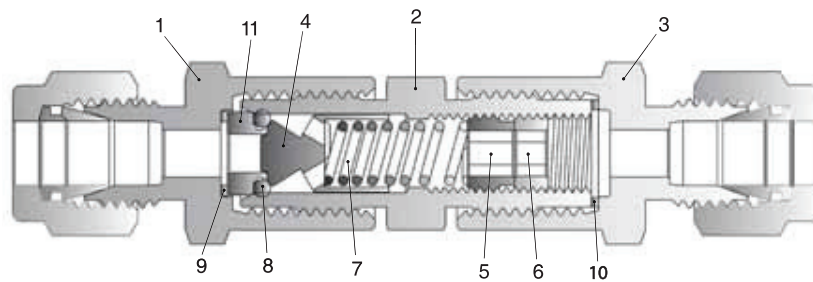
### Features

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

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 Tapped		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 Tapped		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.	

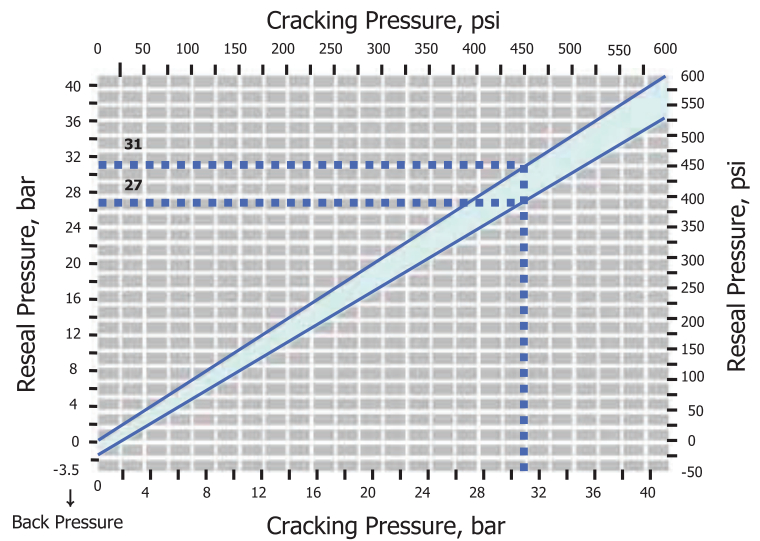


Table 3. Spring Cracking Pressure Range Designator

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).

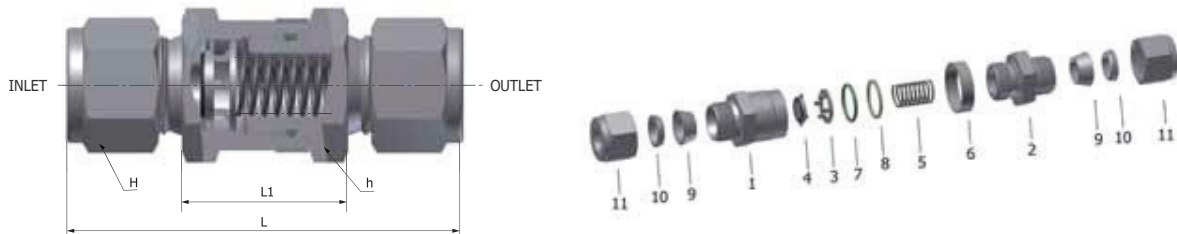
## How to adjust cracking pressure

Step 1	Step 2	Step 3
<p>Slightly unscrew the locking screw counter-clockwise.</p>	<ol style="list-style-type: none"> <li>Gently slide the allen key up to adjustable screw position.</li> <li>Adjust cracking pressure. <ul style="list-style-type: none"> <li>To increase cracking pressure, turn adjustable screw clockwise.</li> <li>To decrease cracking pressure, turn adjustable screw counter-clockwise.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>Move out the allen key up to the locking screw position.</li> <li>To lock out the locking screw, turn the allen key clockwise.</li> </ol>

## 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 valve with CNG compatible 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	Minimum 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	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	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	
	F-8N-	1/2 in. Female NPT	77.0 (3.03)	-	-	1-1/16	
	M-6N-	3/8 in. Male NPT	59.9 (2.36)	31.2 (1.23)	-	1	
M-8N-	1/2 in. Male NPT	69.3 (2.73)	31.2 (1.23)	-	1	6000 (413)	
VH36C- VCH36C-	D-12T-	3/4 in. DK-Lok	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-

VP33B-F-8N-

VH36C-D-16T-

BN-

VT-

EP-

1/3-

1-

3-

S

B

S

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

### 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

### O-ring

Prefix "9ORG", select an applicable valve series and seal material designator.

Example : 9ORG-V33A-BN

### 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)

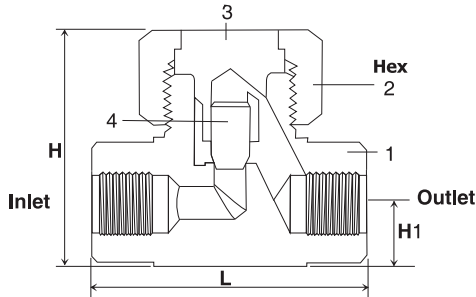
Examples : SK-VH36A-VT, SK-VH36B-BN.

# IDK-LOK® Check Valves

## 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 orifice.
- 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							
	F4N-S	1/4 in. Female NPT							
	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							
	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							
	F8N-S	1/2 in. Female NPT							
	SW8T-S	1/2 in. Tube Socket Weld							

### 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.

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