BMT

Check · Relief · Excess Flow Valves

- Check Valves (SPCV, SHCV, SOCV, SOACV, SACV)
- Industrial Excess Flow Valves
- Relief Valves (SRVL, SRVH)
- Bleed & Purge Valves

SUPERLOK®

Mako Products - Superlokworld.com

MAKO PRODUCTS

844-200-MAKO (6256)
sales@mako-products.net

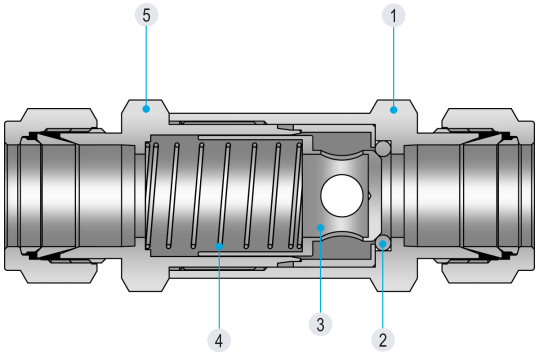
Check Valves

SPCV Series

Features

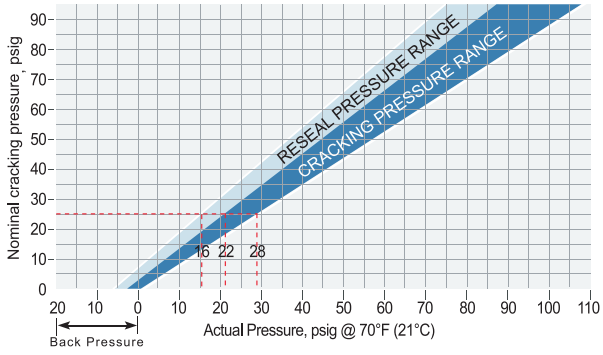
- Fixed cracking pressure.
- Pressure rating up to 3000 psig @70˚F(21˚C)
- Temperature rating up to 375˚F (191˚C) with viton o-ring
- Variety of end connections.
- Each and every valves are tested for cracking pressure and reseal performance at the factory.

Materials of Construction



No.	Description	Material
*1	Inlet Body	ASTM A276 Type 316
*2	O-Ring	Viton
*3	Poppet	ASTM A276 Type 316
*4	Spring	304 Stainless Steel
*5	Outlet Body	ASTM A276 Type 316

* Wetted components



O-Rings

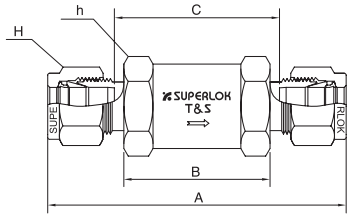
O-ring Material	Temperature Rating˚F(˚C)	Designator
Buna N	-10 to 250 (-23 to 121)	-N
Ethylene Propylene	-70 to 250 (-57 to 121)	-E
Viton (Fluorocarbon)	-10 to 375 (-23 to 191)	***(Blank)***
Kalrez	-15 to 500 (-26 to 260)	-K
Neoprene	-35 to 225 (-37 to 107)	-P

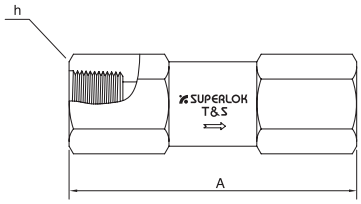
Back Pressure

Back pressure may be required to reseal the valves with nominal cracking pressure of 5psi or lower.

Example : For a valve with a spring having a rated cracking pressure of 25 psig (1.72 bar), the actual cracking pressure ranges between 22 and 28 psig (1.52 to 1.93 bar). The re-seal pressure range would be 16 to 22 psig (1.10 to 1.52 bar). Check valves having springs with rated crack pressure of 3 psig (0.21 bar) or less may require up to 4 psig (0.28 bar) back pressure to re-seal bubble-tight.

Table of Dimensions





Part No.		Cv	End Connection	Dimensions				
				A	B	C	h	H
SPCV	S2	0.10	1/8 SUPERLOK	57.15	26.6	31.2	15.88	11.11
	F2N	0.47	1/8 Female NPT	50.00	-	-	15.88	-
	S4	0.47	1/4 SUPERLOK	62.16	26.6	31.4	15.88	14.28
	F4N	0.47	1/4 Female NPT	57.10	-	-	19.05	-
	S6	1.50	3/8 SUPERLOK	76.20	37.6	42.4	22.22	17.46
	F6N	1.70	3/8 Female NPT	73.90	-	-	22.22	-
	S8	1.70	1/2 SUPERLOK	86.58	42.9	40.8	25.40	22.22
	F8N	2.60	1/2 Female NPT	90.60	-	-	27.00	-
	S10	2.60	5/8 SUPERLOK	91.68	48.0	42.8	28.50	25.40
	S12	4.50	3/4 SUPERLOK	99.78	56.1	51.1	31.80	28.57
	F12N	4.50	3/4 Female NPT	99.78	-	-	31.80	-
	S16	4.50	1 SUPERLOK	111.22	58.4	48.9	38.10	38.10
	F16N	4.50	1 Female NPT	114.30	-	-	41.27	-

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- Unless otherwise specified, all dimensions are in millimeters.
- Sizes, pressure classes, and end connections not listed are available upon request.
- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

Technical Data

- Cracking pressure: the differential pressure between inlet and outlet, at which an initial flow is passing through the valve.
- Reseal pressure: the differential pressure between outlet and inlet, at which no flow is passing through the valve.

Cracking and Reseal Pressure			down stream pressure, psi (bar)	
Nominal Cracking Pressure, psi (bar)	Cracking Pressure Range, psi(bar)	Reseal Pressure, psi (bar)		
1/3 (0.02)	up to 3 (0.21)	up to 6 (0.4) downstream pressure	1/8 in 1/4 in	1000 (68.9)
1 (0.07)	up to 4 (0.28)	up to 6 (0.4) downstream pressure		
10 (0.69)	7 to 15 (0.5 to 1.1)	3 (0.21) upstream pressure	3/8 in, 1/2 in 3/4 in, 1 in	200 (13.7)
25 (1.8)	20 to 30 (1.4 to 2.1)	17 (1.2) upstream pressure		

*For cracking pressure of 25psi (1.8bar), downstream pressure is 3000psig (206bar).

Ordering Information

Example : SPCV - S 12 - 10P - K - B
(1) (2) (3) (4) (5)

1. End Connection

□ **S** = SUPERLOK Tube Fitting
□ **M** = Male Thread
□ **F** = Female Thread

2. Connection Size

Fractional Tube	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
	2	4	6	8	10	12	16
Metric Tube	6mm	8mm	10mm	12mm	16mm	22mm	25mm
	6M	8M	10M	12M	16M	22M	25M

Thread (inch)	1/8	1/4	3/8	1/2	3/4	1
Screwed NPT	2N	4N	6N	8N	12N	16N
Screwed BSPT	2R	4R	6R	8R	12R	16R

3. Cracking Pressure

□ **0.3P** = 1/3 psi
□ **1P** = 1 psi
□ **10P** = 10 psi
□ **25P** = 25 psi

4. Seal Material

□ ***(Blank)*** = Viton
□ **N** = NBR
□ **E** = EPDM
□ **K** = Kalez

5. Body Material

□ ***(Blank)*** : 316 Stainless Steel
□ **B** : Brass

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.

High Pressure Check Valves

SHCV SERIES

Features

- Pressure rating up to 6,000psig(413bar) at 100℉ (37℃)
- Temperature rating up to 375℉ (190℃) with viton seal (standard)
- Cracking pressure fixed from 1/3 to 25psig (0.02 to 1.7bar)
- Variety of end connections
- 316 stainless steel body material as standard.
- Each and every valve is tested for cracking pressure and reseal performance at the factory.

Technical Data

Series	Orifice (mm)	Working and Back Pressure @70℉(20℃)	Flow Coefficient (Cv)	Nominal Cracking Pressure
SHCV1	4.8	6000psig (413bar)	0.67	1/3, 1, 5, 10, 25 psig (0.02, 0.06, 0.34, 0.68, 1.7 bar)
SHCV2	7.8		1.80	
SHCV3	15.0	5000psig (344bar)	4.70	

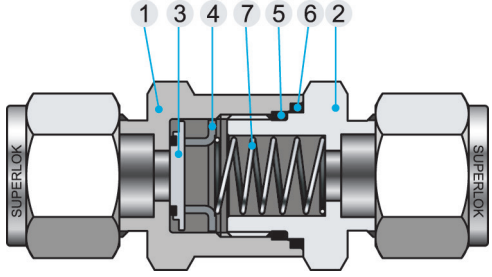
Seal Materials

Material	Temperature Rating	Designator
Viton	-10℉ to 375℉ (-23℃ to 190℃)	***(Blank)***
NBR	-10℉ to 250℉ (-23℃ to 121℃)	**N**
Ethylene Propylene	-50℉ to 300℉ (-45℃ to 148℃)	**E**

Cracking Pressure and Reseal Pressure at 70℉ (20℃)

Nominal Spring Size, psig(bar)	Cracking Pressure Range, psig(bar)	Min. Reseal Pressure, psig(bar)	Designator
1/3 (0.02)	0~3 (0~0.20)	6 (0.41) back pressure	0.3P
1 (0.068)	0~4 (0~0.27)	5 (0.34) back pressure	1P
5 (0.34)	3~9 (0.20~0.62)	2 (0.13) back pressure	5P
10 (0.68)	7~15 (0.48~1.0)	3 (0.20)	10P
25 (1.7)	20~30 (1.3~2.0)	17 (1.1)	25P

Materials of Construction



No.	Component	Material
*1	Inlet Body	A276-316
*2	Outlet Body	A276-316
*3	Poppet	Viton-bonded SS316
*4	Poppet Stopper	Stainless Steel 316
*5	O-Ring	Viton(Standard)
6	Packing	PTFE
*7	Spring	Stainless Steel 304

* Wetted components

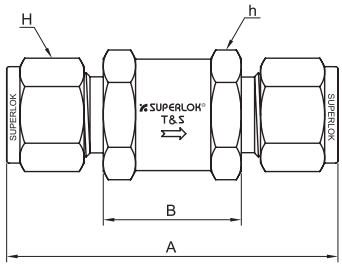


Table of Dimensions

Part No.		Orifice	Cv Max.	End Connection	Pressure Rating psig (bar)	Dimensions mm(in.)			
						A	B	H	h
SHCV1	S2	4.8	0.67	1/8″ SUPERLOK	6000(413)	57.7	26.4	11.1(9/16)	17.5(11/16)
	S4			1/4″ SUPERLOK		61.7		14.3(7/16)	
	S6M			6mm SUPERLOK				14	
	F4N			1/4″ FEMALE NPT		54.1	-	-	
	M2N			1/8″ MALE NPT		45.5	26.4		
	M4N			1/4″ MALE NPT		55.1			
SHCV2	S6	7.8	1.8	3/8″ SUPERLOK	6000(413)	69.9	31.2	17.5(11/16)	25.4(1)
	S8			1/2″ SUPERLOK		75.2		22.2(7/8)	
	S8M			8mm SUPERLOK		68.6		16	
	S10M			10mm SUPERLOK		71.1		19	
	S12M			12mm SUPERLOK		75.2		22	
	F6N			3/8″ FEMALE NPT	5000(344)	64.8	-	-	
	F8N			1/2″ FEMALE NPT	4600(316)	77.0			26.9(1-1/16)
	M6N			3/8″ MALE NPT	6000(413)	59.9	31.2		
	M8N			1/2″ MALE NPT		69.3			
SHCV3	S12	15	4.7	3/4″ SUPERLOK	5000(344)	89.4	45.2	28.6(1-1/8)	41.3(1-5/8)
	S16			1″ SUPERLOK	4700(323)	98.6	45.5	38.1(1-1/2)	
	S22M			22mm SUPERLOK	5000(344)	88.4		32	
	S25M			25mm SUPERLOK		98.6		40	
	F12N			3/4″ FEMALE NPT	4300(296)	82.0	-	-	
	F16N			1″ FEMALE NPT	4100(282)	97.3			
	M12N			3/4″ MALE NPT	5000(344)	83.6	45.5		
	M16N			1″ MALE NPT		93.2	45.7		

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- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

Ordering information

Example : **SHCV2 - S 10M - 1P - E - B**

1 **2** **3** **4** **5** **6**

1. Valve Series

- □ **SHCV1**
- □ **SHCV2**
- □ **SHCV3**

2. End Connection

- □ **S** = SUPERLOK Tube Fitting
- □ **M** = Male Thread
- □ **F** = Female Thread

3. Connection Size

Fractional Tube	1/8″	1/4″	3/8″	1/2″	3/4″	1″
	2	**4**	**6**	**8**	**12**	**16**

Metric Tube	6mm	8mm	10mm	12mm	16mm	22mm	25mm
	6M	**8M**	**10M**	**12M**	**16M**	**22M**	**25M**

Thread (inch)	1/8	1/4	3/8	1/2	3/4	1
Screwed NPT	**2N**	**4N**	**6N**	**8N**	**12N**	**16N**
Screwed BSPT	**2R**	**4R**	**6R**	**8R**	**12R**	**16R**

4. Cracking Pressure

- □ **0.3P** = 1/3 psi
- □ **1P** = 1 psi
- □ **5P** = 5 psi
- □ **10P** = 10 psi
- □ **25P** = 25 psi

5. Seal Material

- □ ***(Blank)*** = Viton (Standard)
- □ **N** = NBR
- □ **E** = EPDM

6. Body Material

- □ ***(Blank)*** = 316 Stainless Steel
- □ **B** = Brass

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.

One-Piece Check Valves

SOCV SERIES

Features

- One-piece Body
- Working pressure up to 3000 psig (206bar)
- Temperature rating up to 375℉(190℃) with viton seal standard.
- Cracking pressure fixed from 1/3 to 25psig (0.02 to 1.7 bar)
- NPT and ISO pipe end connections
- 316 stainless steel body as standard
- Each and every valve is tested for cracking pressure and reseal performance at the factory.

Technical Data

Nominal Cracking Pressure	1/3, 1, 10 and 25psig (0.02, 0.06, 0.68,1.7bar)
Maximum Working Pressure at 70℉ (20℃)	3000psig (206bar)
Maximum Back Pressure at 70℉ (20℃)	3000psig (206bar)
Flow Coefficient (Cv)	• SOCV1 / SOCV2 : 0.35 • SOCV3 / SOCV4 : 1.20
Temperature Rating	• VITON O-ring : -10℉ to 375℉ (-23℃ to 190℃) • NBR O-ring : -10℉ to 250℉ (-23℃ to 121℃)

Cracking Pressure and Reseal Pressure

SOCV Series Valves with nominal cracking pressure of 20 psig (1.3 bar) or lower may require back pressure to reseal bubble-tight.

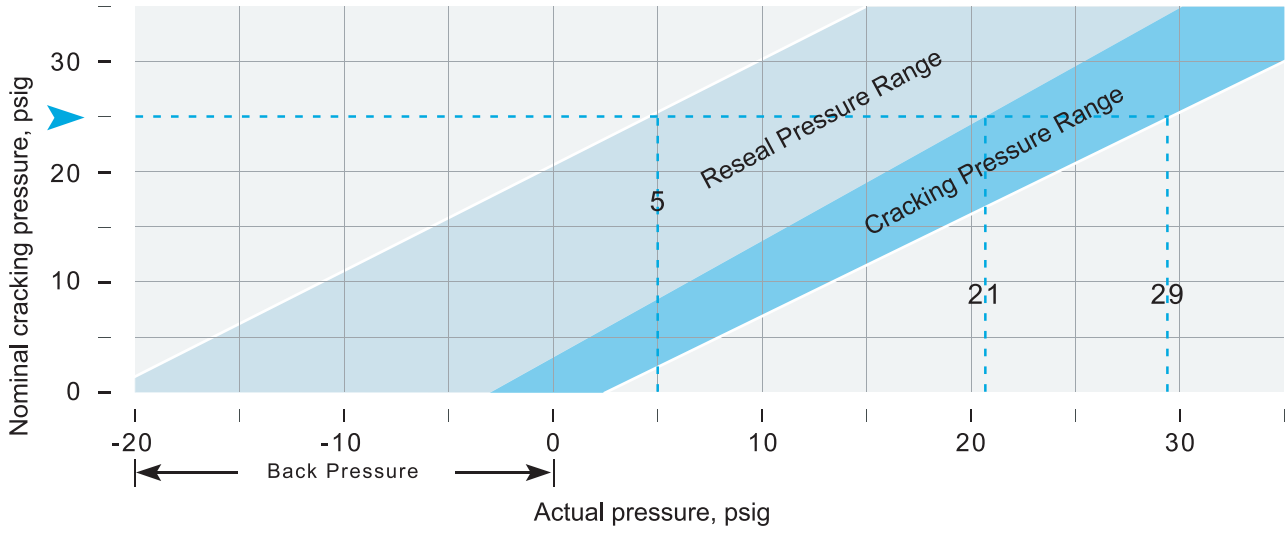
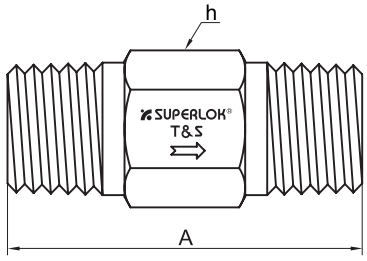


Table of Dimensions



Part No.		End Connection		A	h Hex mm (in.)
		Inlet	Outlet		
SOCV1	M4N	1/4 Male NPT	1/4 Male NPT	41.2	14.3 (9/16)
	M4R	1/4 Male ISO	1/4 Male ISO		
SOCV2	F4N	1/4 Female NPT	1/4 Female NPT	61.2	19.1 (3/4)
	F4R	1/4 Female ISO	1/4 Female ISO	64.5	
	M4N-F4N	1/4 Male NPT	1/4 Female NPT	44.5	
	F4N-M4N	1/4 Female NPT	1/4 Male NPT	58.2	
SOCV3	M8N	1/2 Male NPT	1/2 Male NPT	57.9	22.2 (7/8)
SOCV4	F8N	1/2 Female NPT	1/2 Female NPT	94.2	26.9 (1-1/16)
	M8N-F8N	1/2 Male NPT	1/2 Female NPT	71.9	

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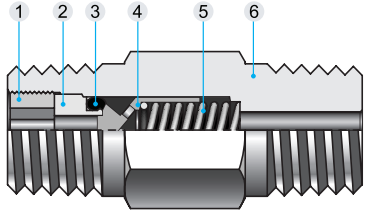
Materials of Construction



No.	Component	Valve Body Materials	
		Stainless Steel	Brass
*1	Insert Lock Screw	316SS / A276	Brass
*2	Insert	316SS / A276	Brass
*3	O-Ring	VITON	NBR
*4	Poppet	316SS / A276	Brass
*5	Spring	SS304	
*6	Body	316SS / A276	Brass

* Wetted components

Ordering information

Example : **SOCV2 - F 4N - 1P - N - B**

1 2 3 4 5 6

1. Vavle Series

□ **SOCV1** □ **SOCV3**
□ **SOCV2** □ **SOCV4**

2. End Connection

□ **M** = Male Thread
□ **F** = Female Thread

3. Connection Size

Thread (inch)	1/4	1/2	3/4
Screwed NPT	**4N**	**8N**	**12N**
Screwed BSPT	**4R**	**8R**	**12R**

4. Cracking Pressure

□ **0.3P** = 1/3 psi □ **10P** = 10 psi
□ **1P** = 1 psi □ **25P** = 25 psi

5. Seal Material

□ ***(Blank)*** = Viton (Standard)
□ **N**= NBR

6. Body Material

□ ***(Blank)*** = 316 Stainless Steel
□ **B** = Brass

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.

One-Piece Adjustable Check Valves

SOACV SERIES

Features

- One-Piece body
- Working pressure up to 3000psig (206 bar)
- Cracking pressure adjustable from 3 to 600psig (0.2 to 41.3bar)
- NPT and ISO pipe end connections in 1/4 and 1/2 in. sizes
- 316 stainless steel body as standard
- Each and every valve is tested for cracking pressure and reseal performance at the factory.

Technical Data

Description	SOACV1, SOACV2	SOACV3
Cracking Pressure Ranges	• 3 to 50psi (0.2 to 3.4bar) • 50 to 150psi (3.4 to 10.3bar) • 150 to 350psi (10.3 to 24.1bar) • 350 to 600psi (24.1 to 41.3bar)	
Working and Back Pressure at 70˚F (20˚C)	3000psig (206bar)	
Temperature Rating	• VITON O-Ring : -10˚F to 375˚F (-23˚C to 190˚C) • NBR O-Ring :-10˚F to 250˚F (-23˚C to 121˚C)	
Flow Coefficient (Cv)	0.35	1.20

Cracking and Reseal Pressure at 70˚F (20˚C)

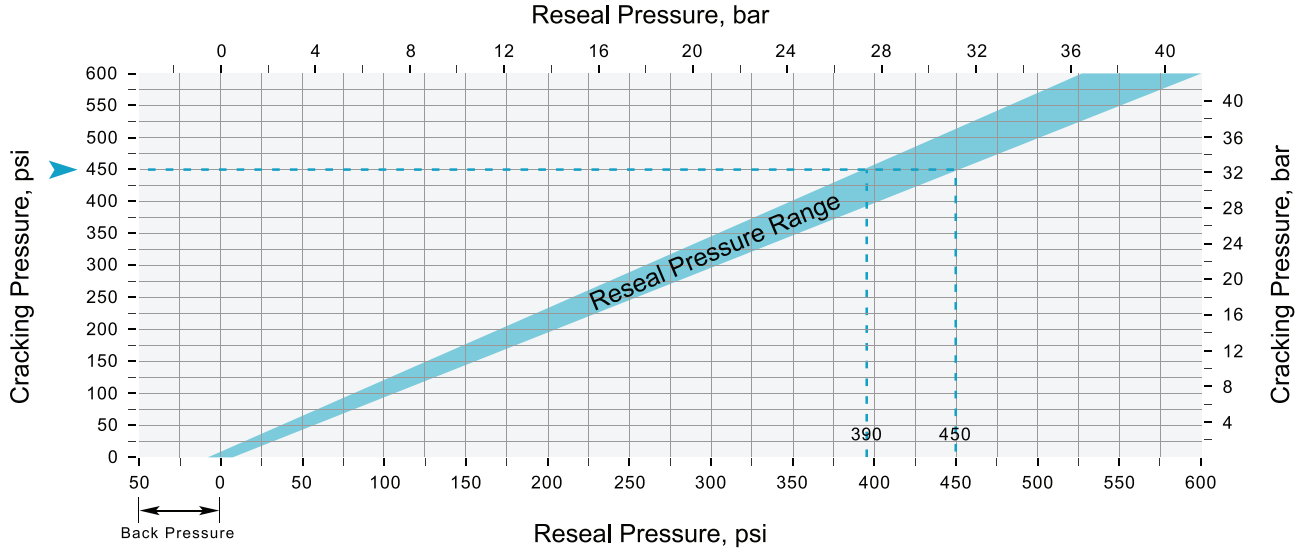
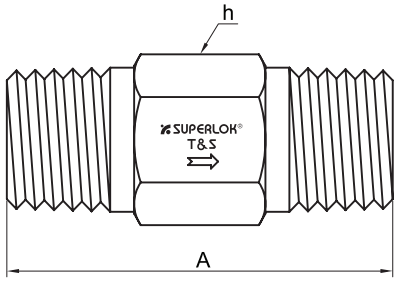


Table of Dimensions



Part No.		End Connection	A	h Hex mm (in.)
SOACV1	M4N	1/4 Male NPT	41.1	14.3 (9/16)
	M4R	1/4 Male ISO	41.1	14.3 (9/16)
SOACV2	F4N	1/4 Female NPT	75.7	19.1 (3/4)
SOACV3	M8N	1/2 Male NPT	65.0	22.2 (7/8)
	M8R	1/2 Male ISO	65.0	22.2 (7/8)

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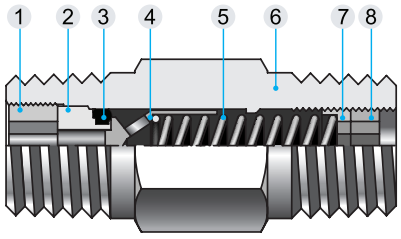
- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

Materials of Construction



No.	Component	Valve Body Materials	
		Stainless Steel	Brass
*1	Insert Lock Screw	316SS / A276	Brass
*2	Insert	316SS / A276	Brass
*3	O-Ring	VITON	NBR
*4	Poppet	316SS / A276	Brass
*5	Spring	SS304	
*6	Body	316SS / A276	Brass
*7	Adjusting screw	316SS / A276	Brass
*8	Locking screw	316SS / A276	Brass

* Wetted components

Ordering information

Example : **SOACV1 - M 4N - A - N - B**

1 **2** **3** **4** **5** **6**

1. Vavle Series

□ **SOACV1** □ **SOACV2** □ **SOACV3**

2. End Connection

□ **M** = Male Thread
□ **F** = Female Thread

3. Connection Size

Thread (inch)	1/4	3/8	1/2
Screwed NPT	**4N**	**6N**	**8N**
Screwed BSPT	**4R**	**6R**	**18R**

4. Cracking Pressure

□ **A** = 3~50psi □ **C** = 150~300psi
□ **B** = 50~150psi □ **D** = 350~600psi

5. Seal Material

□ ***(Blank)*** = Viton (Standard)
□ **N**= NBR

6. Body Material

□ ***(Blank)*** = 316 Stainless Steel
□ **B** = Brass

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.

Adjustable Check Valves

SACV SERIES

Features

- Working pressures up to 3000 psig (206 bar)
- Temperature range from -10˚F to 375˚F (-23˚C to 191˚C) with Viton Seal
- Cracking pressures adjustable from 3 to 600psi (0.2 to 14.3bar)
- Variety of end connections
- 316 stainless steel body as standard
- Each and every valve is tested for cracking pressure and reseal performance at the factory.

Technical Data

Cracking Pressure Ranges	• 3 to 50psi (0.2 to 3.4bar) • 50 to 150psi (3.4 to 10.3bar) • 150 to 350psi (10.3 to 24.1bar) • 350 to 600psi (24.1 to 41.3bar)
Working and Back Pressure at 70˚F (20˚C)	3000psig (206bar)
Temperature Rating	• VITON O-Ring : -10˚F to 375˚F (-23˚C to 190˚C) • NBR O-Ring :-10˚F to 250˚F (-23˚C to 121˚C)
Flow Coefficient (Cv)	0.37

Cracking and Reseal Pressure at 70˚F (20˚C)

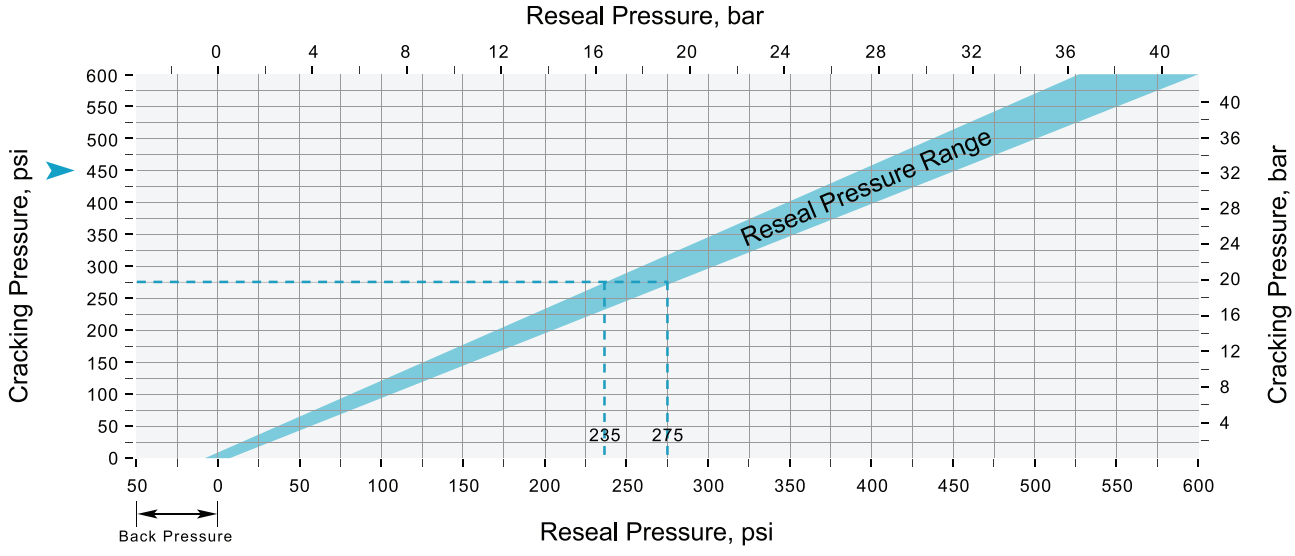
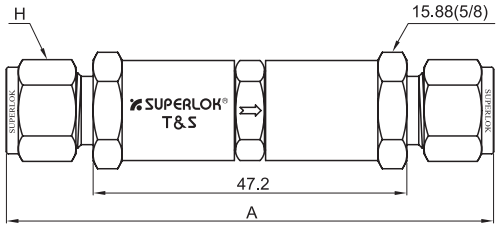


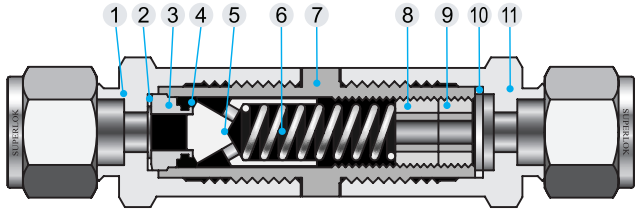
Table of Dimensions



Part No.		End Connections		A (mm)	H mm(in.)
		Inlet	Outlet		
SACV	S4	1/4″ SUPERLOK		82.0	14.3 (9/16)
	S6M	6mm SUPERLOK			14
	S8M	8mm SUPERLOK		84.3	16
	M4N-S4	1/4 Male NPT	1/4″ SUPERLOK	79.2	14.3 (9/16)

- Dimensions and Drawings are for reference only and are subject to change without prior notice.
- Unless otherwise specified, all dimensions are in millimeters.
- Sizes, pressure classes, and end connections not listed are available upon request.
- Dimensions shown with SUPERLOK nuts finger-tight, where applicable.

Materials of Construction



No.	Component	Valve Body Materials	
		Stainless steel	Brass
*1	Inlet body	316SS / A276	Brass
*2	Inlet gasket	PTFE - coated 316SS	
*3	Insert	316SS / A276	Brass
*4	O-Ring	VITON	NBR
*5	Poppet	316SS / A276	Brass
*6	Spring	SS304	
*7	Center body	316SS / A276	Brass
*8	Adjust screw	316SS / A276	316SS / A276
*9	Locking screw	316SS / A276	316SS / A276
*10	Outlet gasket	PTFE - coated 316SS	
*11	Outlet Body	316SS / A276	Brass

* Wetted components

Ordering information

Example : **SACV - S 6M - A - N - B**
1 2 3 4 5

1. End Connection
□ **S** = SUPERLOK Tube Fitting
□ **M** = Male Thread

2. Connection Size

Size	1/4in.	3/8in.	6mm	8mm
Fractional Tube	4	6	6M	8M
Screwed NPT	4N	-	-	-
Screwed BSPT	4R	-	-	-

3. Cracking Pressure
□ **A** = 3~50psi
□ **B** = 50~150psi
□ **C** = 150~300psi
□ **D** = 350~600psi

4. Seal Material
□ ***(Blank)*** = Viton
□ **N** = NBR

5. Body Material
□ ***(Blank)*** = 316 Stainless Steel
□ **B** = Brass

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.