



HYDROREX

Check Valves

Technical Datasheet

SPIR STAR

Hydrorex
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LOW, MEDIUM & HIGH PRESSURE CHECK VALVES

0-2000, 6000, 10000, 15000, 20000 & 60000 Psi

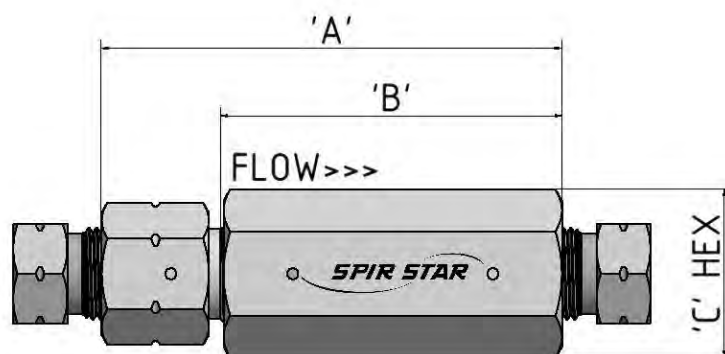
- SPIR STAR check valves distinguish themselves by their long useful life and prevent return flow and damage in pressure systems.
- In this range of products, SPIR STAR AG offers both ball and O-ring check valves. While the O-ring check valve is frequently used in gas applications, the ball check valve can often be found in applications with high temperatures and dynamic pressures.

Technical data:

Thread Types:	High-Pressure, Medium-Pressure and NPT	
Valve Types:	Soft Seated Check Valves Ball Seated Check Valves	
Material:	Body: 316 Stainless Steel Sealing: PEEK	
Max. Working Pressure:	4.140 bar // 60.000 psi	
Cracking Pressure:	1 bar // 10 psi	
Temperature:	Soft seated valve HP/MP: -45°C bis +204 °C Soft seated valve NPT: -18°C bis +204°C Ball seated valve HP/MP: -80°C bis +260°C Ball seated valve NPT: -18°C bis +204°C	

High-Pressure

Soft Seated-Check Valve 0-60000 Psi



Part Number	Thread Description	Tube Thread	Screw-in Thread	Orifice		Repair Kit	Suitable Tubing
				mm	inch		
Working pressure 4.140 bar / 60.000 psi							
SS-CVHF4-SS	HF4	1/4"x28UNF LH	9/16"x18UNF	2,388	0,094	RK-CVHF4/HF6SS	TU-HP4-60K
SS-CVHF6-SS	HF6	3/8"x24UNF LH	3/4"-16UNF	3,175	0,125	RK-CVHF4/HF6SS	TU-HP6-60K
SS-CVHF9-SS	HF9	9/16"x18UNF LH	1-1/8"x12UNF	4,775	0,188	RK-CVHF9SS	TU-HP9-60K

Part Number	Unit	Dimensions												
		A	B	C	DI	D2	E	F	G	H	I	J	K	L
SS-CVHF4-SS	mm	82,80	63,50	31,75	-	-	-	-	-	-	-	-	-	-
	inch	3,26	2,50	1,25	-	-	-	-	-	-	-	-	-	-
SS-CVHF6-SS	mm	95,25	69,85	31,75	-	-	-	-	-	-	-	-	-	-
	inch	3,75	2,75	1,25	-	-	-	-	-	-	-	-	-	-
SS-CVHF9-SS	mm	117,60	85,85	38,10	-	-	-	-	-	-	-	-	-	-
	inch	4,63	3,38	1,50	-	-	-	-	-	-	-	-	-	-



SS-CVHF-4SS

1/4 Female HP Check V.

9/16-18 UNF

0-60000 Psi



SS-CVHF-6SS

3/8 Female HP Check V.

3/4-16 UNF

0-60000 Psi



SS-CVHF-9SS

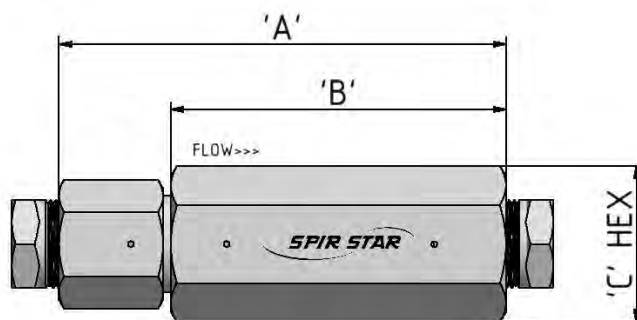
9/16 Female HP Check V.

1-1/8-12 UNF

0-60000 Psi

Medium-Pressure

Soft Seated-Check Valve - 0-20000 Psi



Part Number	Thread Description	Tube Thread	Screw-in Thread	Orifice		Repair Kit	Suitable Tubing
				mm	inch		
Working pressure 1.380 bar / 20.000 psi							
SS-CVMF4-SS	MF4	1/4"x28UNF LH	7/16"-20UNF	3,175	0,125	RK-CVNF4/MF4SS	TU-MP4-20K
SS-CVMF6-SS	MF6	3/8"x24UNF LH	9/16"x18UNF	5,563	0,219	RK-CVNF6/MF6SS	TU-MP6-20K
SS-CVMF9-SS	MF9	9/16"x18UNF LH	13/16"-16UNF	9,119	0,359	RK-CVNF8/MF9SS	TU-MP9-20K
SS-CVMF12-SS	MF12	3/4"x16UNF LH	3/4"x14NPSM	13,106	0,516	RK-CVNF12/MF12SS	TU-MP12-20K
SS-CVMF16-SS	MF16	1"x14UNF LH	1-3/8"x12UNF	17,475	0,688	RK-CVNF16/MF16SS	TU-MP16-20K

Part Number	Unit	Dimensions												
		A	B	C	D1	D2	E	F	G	H	I	J	K	L
SS-CVMF4-SS	mm	77,98	63,50	25,40	-	-	-	-	-	-	-	-	-	-
	inch	3,07	2,50	1,00	-	-	-	-	-	-	-	-	-	-
SS-CVMF6-SS	mm	88,39	66,00	28,70	-	-	-	-	-	-	-	-	-	-
	inch	3,48	2,60	1,13	-	-	-	-	-	-	-	-	-	-
SS-CVMF9-SS	mm	120,90	88,90	35,05	-	-	-	-	-	-	-	-	-	-
	inch	4,76	3,50	1,38	-	-	-	-	-	-	-	-	-	-
SS-CVMF12-SS	mm	143,00	111,25	44,45	-	-	-	-	-	-	-	-	-	-
	inch	5,63	4,38	1,75	-	-	-	-	-	-	-	-	-	-
SS-CVMF16-SS	mm	177,80	133,35	54,10	-	-	-	-	-	-	-	-	-	-
	inch	7,00	5,25	2,13	-	-	-	-	-	-	-	-	-	-



SS-CVMF4-SS

1/4 Female MP Check V.

7/16-20 UNF

0-20000 Psi



SS-CVMF6-SS

3/8 Female MP Check V.

9/16-18 UNF

0-20000 Psi



SS-CVMF9-SS

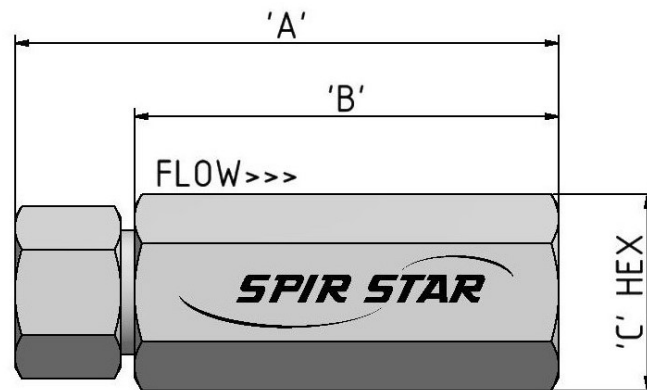
9/16 Female MP Check V.

13/16-16 UNF

0-20000 Psi

NPT

Soft Seated-Check Valve 0-15000 Psi



Part Number	Thread Description	Tube Thread	Screw-in Thread	Orifice		Repair Kit	Suitable Tubing
				mm	inch		
Working pressure 690 bar / 10.000 psi							
SS-CVNF12-SS	NF12		3/4"	13,106	0,516	RK-CVNF12/MF12SS	
SS-CVNF16-SS	NF16		1"	17,475	0,688	RK-CVNF16/MF16SS	
Working pressure 1.035 bar / 15.000 psi							
SS-CVNF4-SS	NF4		1/4"	4,775	0,188	RK-CVNF4/MF4SS	
SS-CVNF6-SS	NF6		3/8"	5,563	0,219	RK-CVNF6/MF6SS	
SS-CVNF8-SS	NF8		9/16"	9,119	0,359	RK-CVNF8/MF9SS	



Part Number	Unit	Dimensions												
		A	B	C	D1	D2	E	F	G	H	I	J	K	L
SS-CVNF4-SS	mm	81,28	63,50	25,40	-	-	-	-	-	-	-	-	-	-
	inch	3,20	2,50	1,00	-	-	-	-	-	-	-	-	-	-
SS-CVNF6-SS	mm	90,42	66,00	28,70	-	-	-	-	-	-	-	-	-	-
	inch	3,56	2,60	1,13	-	-	-	-	-	-	-	-	-	-
SS-CVNF8-SS	mm	117,60	88,90	35,10	-	-	-	-	-	-	-	-	-	-
	inch	4,63	3,50	1,38	-	-	-	-	-	-	-	-	-	-
SS-CVNF12-SS	mm	143,00	111,25	44,45	-	-	-	-	-	-	-	-	-	-
	inch	5,63	4,38	1,75	-	-	-	-	-	-	-	-	-	-
SS-CVNF16-SS	mm	177,80	133,35	54,10	-	-	-	-	-	-	-	-	-	-
	inch	7,00	5,25	2,13	-	-	-	-	-	-	-	-	-	-



HIGH PRESSURE CHECK VALVES

SHCV SERIES



Features

- Pressure rating up to 6,000psig(413bar) at 100 °F (37°C)
- Temperature rating up to 375 °F (190°C) 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 at the factory.

Technical Data

Series	Orifice (mm)	Working and Back Pressure @70 °F(20 °C)	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

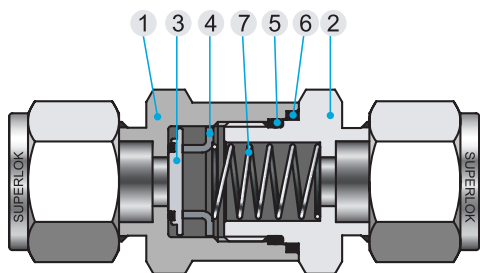
Material	Temperature Rating	Designator
Viton	-10 °F to 375 °F (-23°C to 190°C)	Standard
NBR	-10 °F to 250 °F (-23°C to 121°C)	N
Ethylene Propylene	-50 °F to 300 °F (-45°C to 148°C)	E

To order add the seal material designator to the ordering number.
ex) SHCV1-S8-1P-N

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

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	SS316
2	Outlet Body	SS316
3	Poppet	Viton-bonded SS316
4	Poppet Stopper	SS316
5	O-Ring	Viton standard
6	Packing	PTFE
7	Spring	SS304

Testing

All valves are factory tested for cracking pressure and reseal performance.

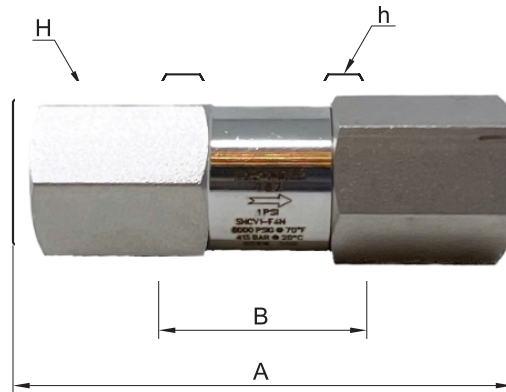


Table of Dimensions

Order Number		Orifice (mm)	Cv Max.	End Connection	Pressure Rating psig (bar)	Dimensions (mm)			
Series	Part No.					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)
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		

Dimensions, shown on the above table, are measured based on finger-tight.

All dimensions are for reference only, subject to change.

Ordering information

SHCV2 - **S** **6** - **1P** - **SS**

1 2 3 4 5

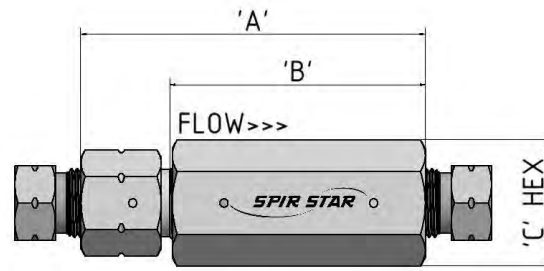
1 : Valve Series 2 : End Connection Type 3 : Connection Size 4 : Cracking Pressure Designator

5 : Body Material Designator [SS : 316 stainless steel(standard), B : Brass]

Ball Seated-Check Valve



High-Pressure

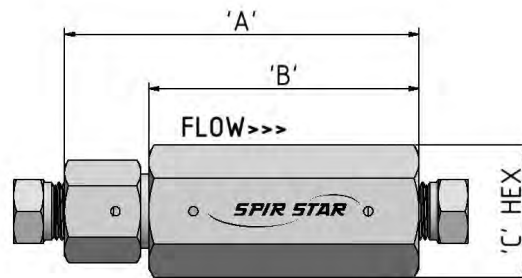


Part Number	Thread Description	Tube Thread	Screw-in Thread	Orifice		Repair Kit	Suitable Tubing
				mm	inch		
Working pressure 4.140 bar / 60.000 psi							
SS-CVHF4-BS	HF4	1/4"x28UNF LH	9/16"x18UNF	2,388	0,094	RK-CVHF4/HF6BS	TU-HP4-60K
SS-CVHF6-BS	HF6	3/8"x24UNF LH	3/4"-16UNF	3,175	0,125	RK-CVHF4/HF6BS	TU-HP6-60K
SS-CVHF9-BS	HF9	9/16"x18UNF LH	1-1/8"x12UNF	4,775	0,188	RK-CVHF9BS	TU-HP9-60K

Part Number	Unit	Dimensions												
		A	B	C	D1	D2	E	F	G	H	I	J	K	L
SS-CVHF4-BS	mm	82,80	63,50	31,75	-	-	-	-	-	-	-	-	-	-
	inch	3,26	2,50	1,25	-	-	-	-	-	-	-	-	-	-
SS-CVHF6-BS	mm	95,25	69,85	31,75	-	-	-	-	-	-	-	-	-	-
	inch	3,75	2,75	1,25	-	-	-	-	-	-	-	-	-	-
SS-CVHF9-BS	mm	117,60	85,85	38,10	-	-	-	-	-	-	-	-	-	-
	inch	4,63	3,38	1,50	-	-	-	-	-	-	-	-	-	-

Ball Seated-Check Valve

Medium -Pressure

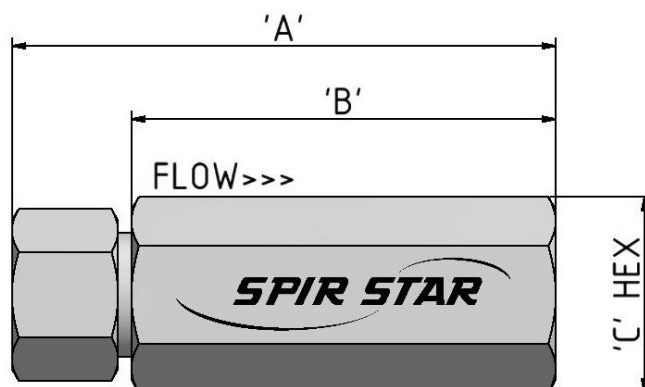


Part Number	Thread Description	Tube Thread	Screw-in Thread	Orifice		Repair Kit	Suitable Tubing
				mm	inch		
Working pressure 1.380 bar / 20.000 psi							
SS-CVMF4-BS	MF4	1/4"x28UNF LH	7/16"-20UNF	3,175	0,125	RK-CVNF4/MF4BS	TU-MP4-20K
SS-CVMF6-BS	MF6	3/8"x24UNF LH	9/16"x18UNF	5,563	0,219	RK-CVNF6/MF6BS	TU-MP6-20K
SS-CVMF9-BS	MF9	9/16"x18UNF LH	13/16"-16UNF	9,119	0,359	RK-CVNF8/MF9BS	TU-MP9-20K
SS-CVMF12-BS	MF12	3/4"x16UNF LH	3/4"x14NPSM	13,106	0,516	RK-CVNF12/MF12BS	TU-MP12-20K
SS-CVMF16-BS	MF16	1"x14UNF LH	1-3/8"x12UNF	17,475	0,688	RK-CVNF16/MF16BS	TU-MP16-20K

Part Number	Unit	Dimensions												
		A	B	C	D1	D2	E	F	G	H	I	J	K	L
SS-CVMF4-BS	mm	77,98	63,50	25,40	-	-	-	-	-	-	-	-	-	-
	inch	3,07	2,50	1,00	-	-	-	-	-	-	-	-	-	-
SS-CVMF6-BS	mm	88,39	66,00	28,70	-	-	-	-	-	-	-	-	-	-
	inch	3,48	2,60	1,13	-	-	-	-	-	-	-	-	-	-
SS-CVMF9-BS	mm	120,90	88,90	35,05	-	-	-	-	-	-	-	-	-	-
	inch	4,76	3,50	1,38	-	-	-	-	-	-	-	-	-	-
SS-CVMF12-BS	mm	143,00	111,25	44,45	-	-	-	-	-	-	-	-	-	-
	inch	5,63	4,38	1,75	-	-	-	-	-	-	-	-	-	-
SS-CVMF16-BS	mm	177,80	133,35	54,10	-	-	-	-	-	-	-	-	-	-
	inch	7,00	5,25	2,13	-	-	-	-	-	-	-	-	-	-

NPT

Ball Seated-Check Valve 0-15000 Psi



Part Number	Thread Description	Tube Thread	Screw-in Thread	Orifice		Repair Kit	Suitable Tubing
				mm	inch		
Working pressure 690 bar / 10.000 psi							
SS-CVNF12-BS	NF12		3/4"	13,106	0,516	RK-CVNF12/MF12BS	
SS-CVNF16-BS	NF16		1"	17,475	0,688	RK-CVNF16/MF16BS	
Working pressure 1.035 bar / 15.000 psi							
SS-CVNF4-BS	NF4		1/4"	4,775	0,188	RK-CVNF4/MF4SS	
SS-CVNF6-BS	NF6		3/8"	5,563	0,219	RK-CVNF6/MF6BS	
SS-CVNF8-BS	NF8		9/16"	9,119	0,359	RK-CVNF8/MF9BS	

Part Number	Unit	Dimensions												
		A	B	C	D1	D2	E	F	G	H	I	J	K	L
SS-CVNF4-BS	mm	81,28	63,50	25,40	-	-	-	-	-	-	-	-	-	-
	inch	3,20	2,50	1,00	-	-	-	-	-	-	-	-	-	-
SS-CVNF6-BS	mm	90,42	66,00	28,70	-	-	-	-	-	-	-	-	-	-
	inch	3,56	2,60	1,13	-	-	-	-	-	-	-	-	-	-
SS-CVNF8-BS	mm	117,60	88,90	35,10	-	-	-	-	-	-	-	-	-	-
	inch	4,63	3,50	1,38	-	-	-	-	-	-	-	-	-	-
SS-CVNF12-BS	mm	143,00	111,25	44,45	-	-	-	-	-	-	-	-	-	-
	inch	5,63	4,38	1,75	-	-	-	-	-	-	-	-	-	-
SS-CVNF16-BS	mm	177,80	133,35	54,10	-	-	-	-	-	-	-	-	-	-
	inch	7,00	5,25	2,13	-	-	-	-	-	-	-	-	-	-