



## Sanitary Safety Relief Valves



*Inspired Innovation Making A Difference*



### SSRV-81, 81V Series

Small capacity

For small skids, chromatography and piping



### SSRV-83, 83X Series

Medium capacity

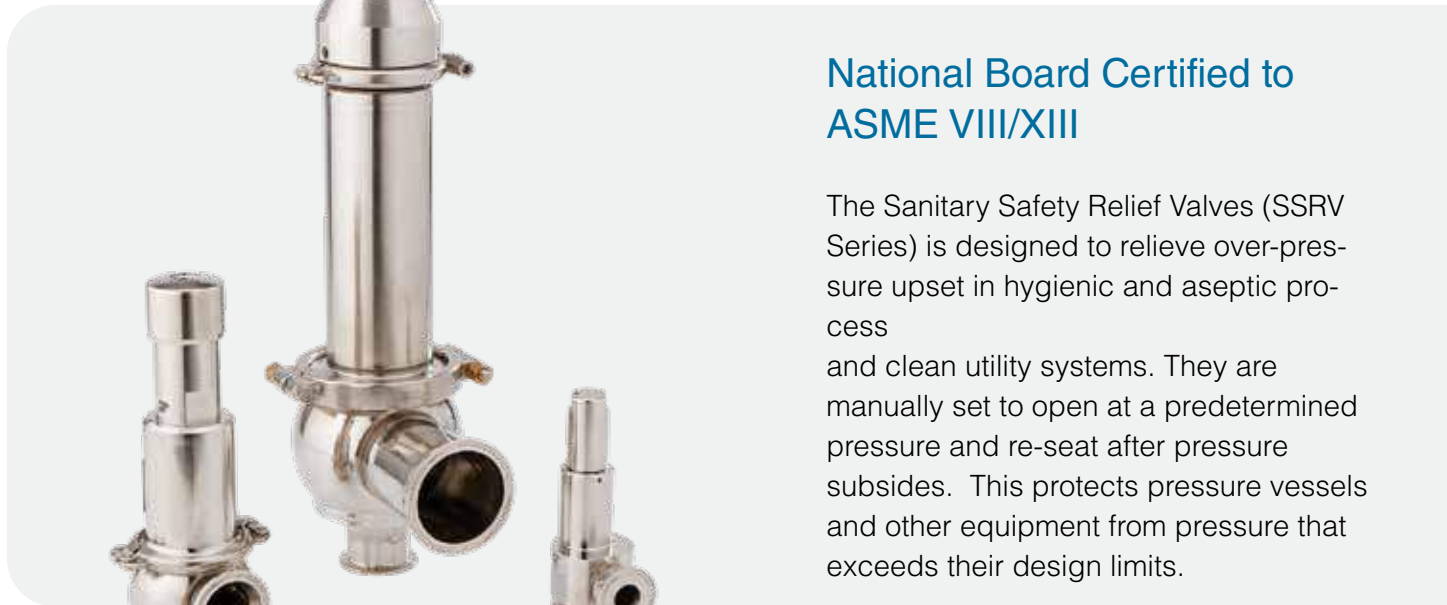
Larger skids, clean steam systems, small tanks



### SSRV-88 Series

Large capacity

Large steam systems, large tanks



## National Board Certified to ASME VIII/XIII

The Sanitary Safety Relief Valves (SSRV Series) is designed to relieve over-pressure upset in hygienic and aseptic process and clean utility systems. They are manually set to open at a predetermined pressure and re-seat after pressure subsides. This protects pressure vessels and other equipment from pressure that exceeds their design limits.

## Features

**ASME SECTION VIII/XIII** compliant valves designed and manufactured in the United States

**High cleanability:** L/D < 1.5

**Optional** manual or pneumatic lift device for Clean-in-Place

**Standard surface finish** ASME BPE SF1, 20 Ra  $\mu\text{in}$  (0,5 Ra  $\mu\text{m}$ ). ASME BPE SF5 and SF4 15 Ra  $\mu\text{in}$  (0,4 Ra  $\mu\text{m}$ ) optional. Electropolished standard.

**FDA and USP** Class VI seats, o-rings and bellows seal

**Bellows seal isolates** process from valve internals when valve is open or closed on 83, 83X and 88 Series

**ASME SA479 316L, AL6XN, Hastelloy C-22** are available

## Applications

- Bioreactor - fermenter vessel and vessel jackets
- Formulation and other Pharma process vessels
- Clean air \ gas distribution systems for point of use
- Clean steam systems
- WFI and USP PW vessels
- Any hygienic or aseptic process vessel or system

## Documentation

The following documentation is kept in an electronic database and included with each order at no charge:

- Steriflow Unicert; Certificate of Compliance for:
  - Material, including MTR's
  - Surface Finish
  - FDA/USP Class VI
- Each Unicert document lists the order's individual valve serial / suffix numbers and wetted component heat numbers. MTR's for each heat number follow on attached pages. The serial number and heat numbers are directly traceable to each individual valve.

## SSRV-81V Specifications

Available Connection Size and Type	Inlet	Outlet
	1/2" - 1" MNPT, FNPT	1/2" - 1" FNPT
	1/2" - 1" ASME BPE Tri-clamp	1/2" - 1" ASME BPE Tri-clamp
Body and Wetted Trim Materials	Standard	
	ASME SA479 316L (UNS 31603), AL6XN®, Hastelloy® C-22; other materials available	
Wetted Seat and O-Ring Material	Vulcanized Soft Seat	FDA and USP Class VI compliant elastomers
	EPDM, rated to 325°F / 163°C	EPDM, rated to 325°F / 163°C
	Consult factory for other options	Viton, rated to 400°F / 204°C
Body Pressure / Temperature Rating	550 psi @ 450°F / 37,9 bar @ 232°C	
Available Set Point Range	15 – 232 psi / 1,03 - 16 bar	
Model & Seat Type	Vulcanized soft seat	

\* Contact Factory for valves with set points below 15 psi / 1 bar

Flow Factor - United States - ASME sec. VIII/XIII	Approval No.	M02158
	S/G	Rated slope acc. to ASME VIII/XIII, Div. 1 UG-131 (d) (2) S: 4.41 pph / psid G: 1.57 SCFM / psia
	Approval No.	M02158
	L	Rated slope acc. to ASME VIII/XIII, Div. 1 UG-131 (d) (2) L: 2.21 GPM / $\sqrt{\text{psid}}$
Orifice Diameter / Area	Diameter	Area
	Ø 0.394 in / 10mm	0.122 in <sup>2</sup> / 78.5mm <sup>2</sup>

## SSRV-81 High Pressure Specifications

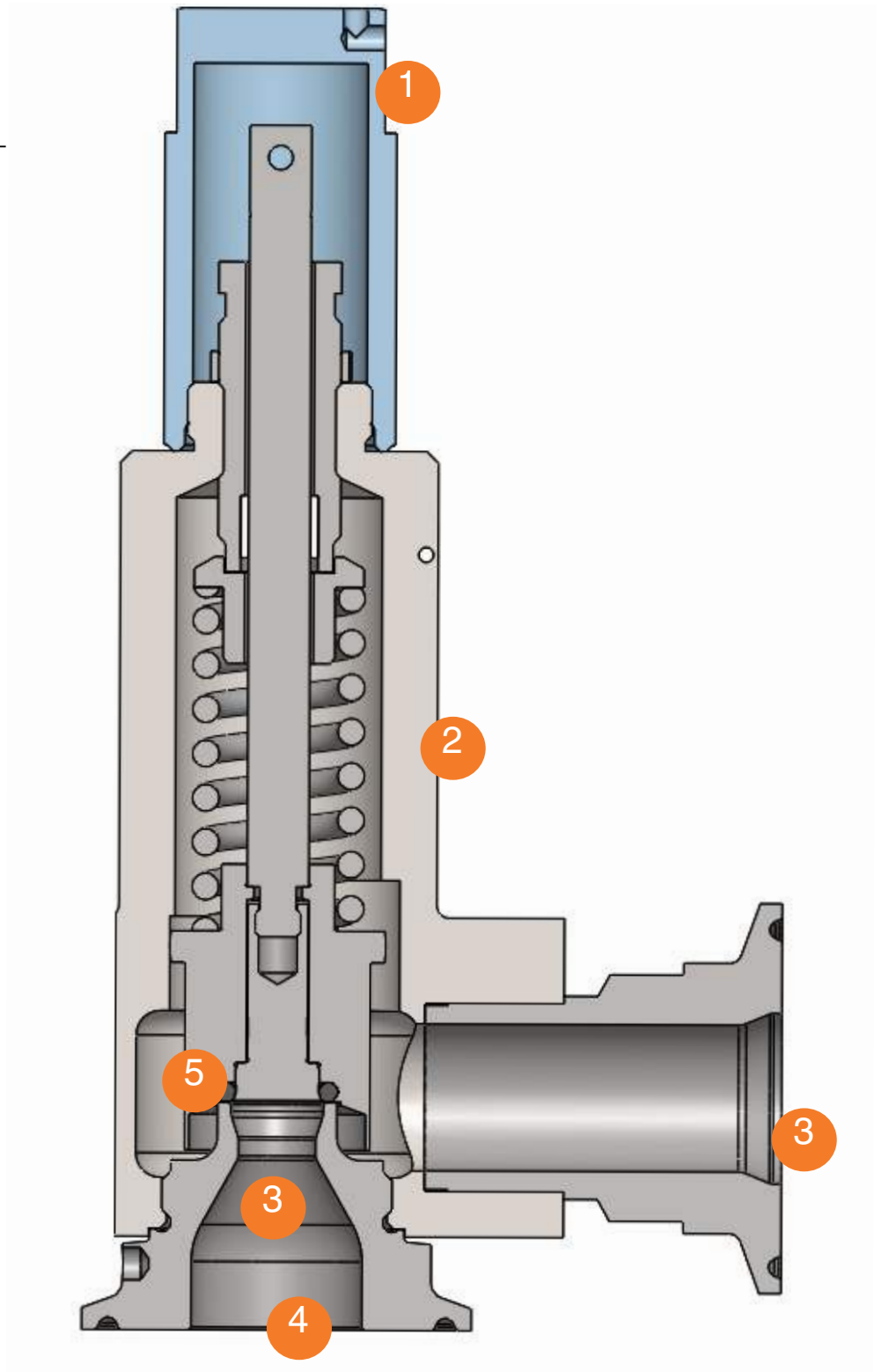
Available Connection Size and Type	Inlet	Outlet
	1/2" - 1" MNPT, FNPT	1/2" - 1" FNPT
	1/2" - 1" ASME BPE Tri-clamp	1/2" - 1" ASME BPE Tri-clamp
Body and Wetted Trim Materials	Standard	
	ASME SA479 316L (UNS 31603), AL6XN®, Hastelloy® C-22; other materials available	
Wetted Seat and O-Ring Material	O-Ring Soft Seat	FDA and USP Class VI compliant elastomers
	EPDM, rated to 325°F / 163°C	EPDM, rated to 325°F / 163°C
	Viton, rated to 400°F / 204°C	Viton, rated to 400°F / 204°C
		Kalrez, rated to 450°F / 232°C
Body Pressure / Temperature Rating	550 psi @ 450°F / 37,9 bar @ 232°C	
Available Set Point Range	233-500 psi* / 16,06 - 34,47 bar	
Model & Seat Type	Elastomer O-Ring seat	

\* Contact Factory for valves with set points below 15 psi / 1 bar

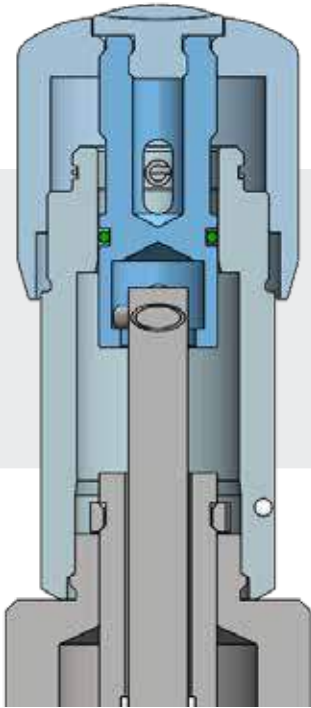
Flow Factor - United States - ASME sec. VIII/XIII	Approval No.	M02158
	S/G	Rated slope acc. to ASME VIII/XIII, Div. 1 UG-131 (d) (2) S: 4.41 pph / psid G: 1.57 SCFM / psia
	Approval No.	M02158
	L	Rated slope acc. to ASME VIII/XIII, Div. 1 UG-131 (d) (2) L: 2.21 GPM / √psid
Orifice Diameter / Area	Diameter	Area
	Ø 0.394 in / 10mm	0.122 in <sup>2</sup> / 78.5mm <sup>2</sup>

## SSRV-81 Design Features

1. Gas tight cap standard
2. All 316L barstock construction; other materials upon request
3. ASME BPE SF1, SF4, or SF5 surface finish
4. Cleanable design, L/D < 1.5
5. Seat o-ring material FDA and USP Class VI compliant; molded plug for the 81V Series (not shown)



## SSRV-81/81V Additional Lift Options

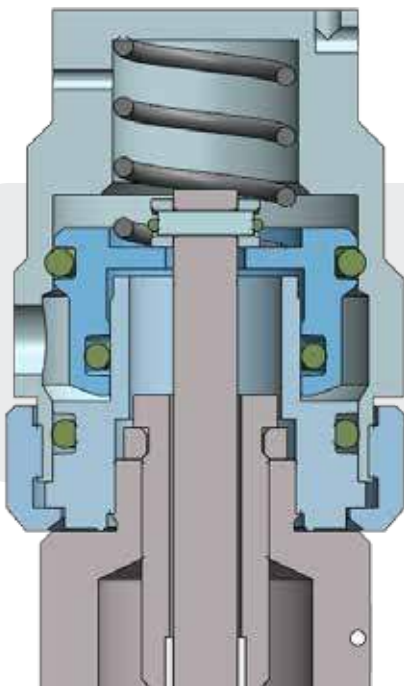


### **Gas tight lifting knob for manual applications**

Manually lift the valve to 70% open

Easily open the valve for cleaning without removing the valve from process

Does not affect set pressure



### **Pneumatic lift for auto lifting**

Pneumatic lift for automated open and close

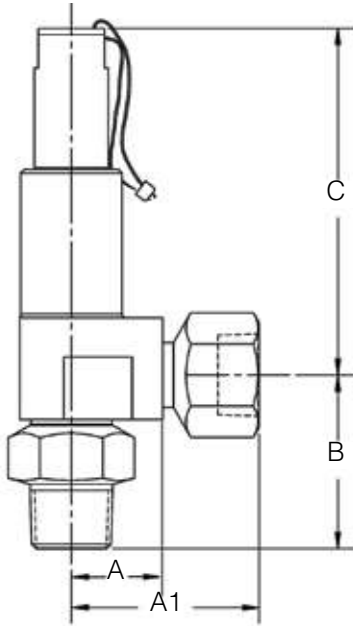
Easily open the valve for cleaning without removing the valve from process

Does not affect set pressure

Reduced operator error

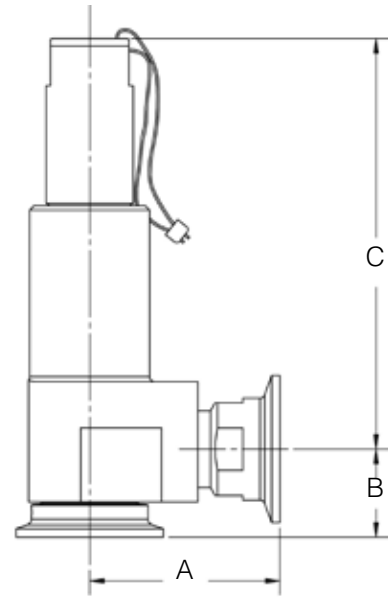
# SSRV-81, SSRV-81V Dimensions

With Gas-Tight Cap & MNPT Inlets



MNPT adapters available, consult factory

With Gas-Tight Cap & Tri-C End Connections



End Connection Size	IN				
INLET X OUTLET	A	A1	B	C	D
1/2" MNPT X 1/2" FNPT	1.46	3.00	2.65	5.54	3.00
1/2" MNPT X 3/4" FNPT	1.46	3.00	2.65	5.54	3.00
3/4" MNPT X 3/4" FNPT	1.46	3.00	2.65	5.54	3.00
3/4" MNPT X 1" FNPT	1.46	3.00	2.65	5.54	3.00
1" MNPT X 1" FNPT	1.46	3.00	2.78	5.54	3.00

End Connection Size	IN		
INLET X OUTLET	A	B	C
1/2" TC X 1/2" TC	2.75	1.58	5.54
1/2" TC X 3/4" TC	2.75	1.58	5.54
3/4" TC X 3/4" TC	2.75	1.58	5.54
3/4" TC X 1" TC	2.57	1.58	5.54
1" TC 1" TC	2.57	1.19	5.54

End Connection Size	MM				
INLET X OUTLET	A	A1	B	C	D
1/2" MNPT X 1/2" FNPT	37,1	76,2	67,3	141	76,2
1/2" MNPT X 3/4" FNPT	37,1	76,2	67,3	141	76,2
3/4" MNPT X 3/4" FNPT	37,1	76,2	67,3	141	76,2
3/4" MNPT X 1" FNPT	37,1	76,2	67,3	141	76,2
1" MNPT X 1" FNPT	37,1	76,2	70,6	141	76,2

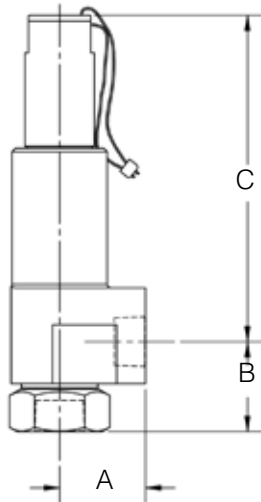
End Connection Size	MM		
INLET X OUTLET	A	B	C
1/2" TC X 1/2" TC	69,8	40,1	141
1/2" TC X 3/4" TC	69,8	40,1	141
3/4" TC X 3/4" TC	69,8	40,1	141
3/4" TC X 1" TC	65,3	40,1	141
1" TC 1" TC	65,3	40,1	141



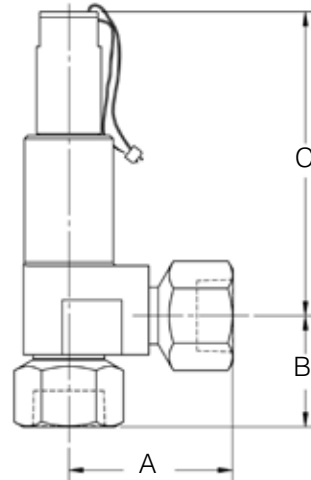
# SSRV-81, SSRV-81V Dimensions

With Gas-Tight Cap & FNPT Inlets

1/2" & 3/4" Outlet



1" Outlet



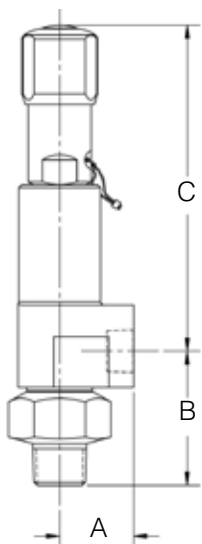
MNPT adapters available, consult factory

End Connection Size	IN		
INLET X OUTLET	A	B	C
1/2" FNPT X 1/2" FNPT	1.46	1.53	5.54
1/2" FNPT X 3/4" FNPT	1.46	1.53	5.54
3/4" FNPT X 3/4" FNPT	1.46	1.53	5.54
3/4" FNPT X 1" FNPT	1.46	1.53	5.54
1" FNPT X 1" FNPT	3.00	2.03	5.54

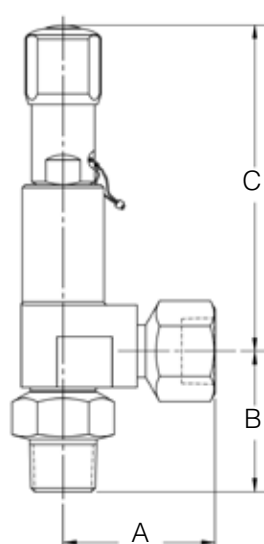
End Connection Size	MM		
INLET X OUTLET	A	B	C
1/2" FNPT X 1/2" FNPT	37,1	38,9	141
1/2" FNPT X 3/4" FNPT	37,1	38,9	141
3/4" FNPT X 3/4" FNPT	37,1	38,9	141
3/4" FNPT X 1" FNPT	37,1	38,9	141
1" FNPT X 1" FNPT	76,2	51,6	141

With Gas-Tight Lifting Knob & MNPT Inlets

1/2" & 3/4" Outlet



1" Outlet

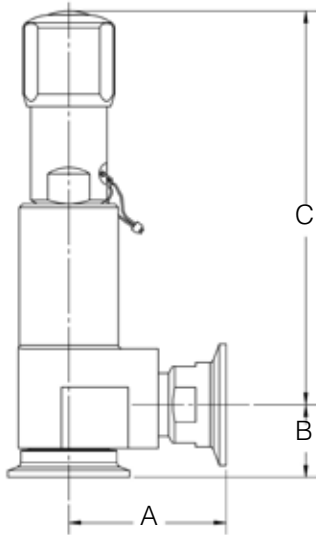


End Connection Size	IN		
INLET X OUTLET	A	B	C
1/2" MNPT X 1/2" FNPT	1.46	2.65	6.64
1/2" MNPT X 3/4" FNPT	1.46	2.65	6.64
3/4" MNPT X 3/4" FNPT	1.46	2.65	6.64
3/4" MNPT X 1" FNPT	1.46	2.65	6.64
1" MNPT X 1" FNPT	3.00	2.78	6.64

End Connection Size	MM		
INLET X OUTLET	A	B	C
1/2" MNPT X 1/2" FNPT	37,1	67,3	168,6
1/2" MNPT X 3/4" FNPT	37,1	67,3	168,6
3/4" MNPT X 3/4" FNPT	37,1	67,3	168,6
3/4" MNPT X 1" FNPT	37,1	67,3	168,6
1" MNPT X 1" FNPT	76,2	70,6	168,6

# SSRV-81, SSRV-81V Dimensions

With Gas-Tight Lifting Knob & Tri-C End Connections



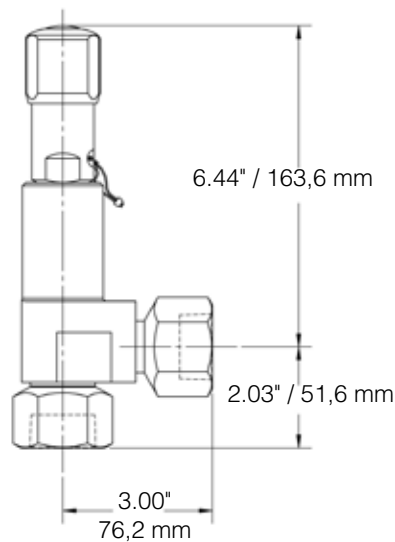
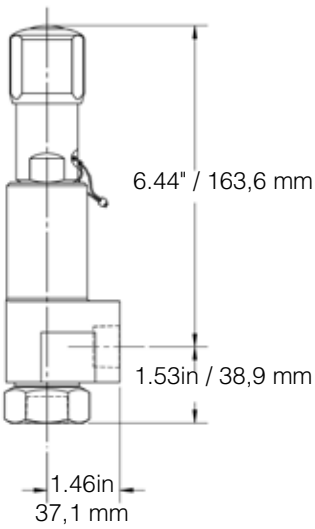
End Connection Size	IN		
	A	B	C
1/2" TC X 1/2" TC	2.75	1.58	6.44
1/2" TC X 3/4" TC	2.75	1.58	6.44
3/4" TC X 3/4" TC	2.75	1.58	6.44
3/4" TC X 1" TC	2.57	1.58	6.44
1" TC X 1" TC	2.57	1.19	6.44

End Connection Size	MM		
	A	B	C
1/2" TC X 1/2" TC	69,9	40,1	163,6
1/2" TC X 3/4" TC	69,9	40,1	163,6
3/4" TC X 3/4" TC	69,9	40,1	163,6
3/4" TC X 1" TC	65,3	40,1	163,6
1" TC X 1" TC	65,3	30,2	163,6

With Gas-Tight Lifting Knob & FNPT Inlets

1/2", & 3/4" Outlet

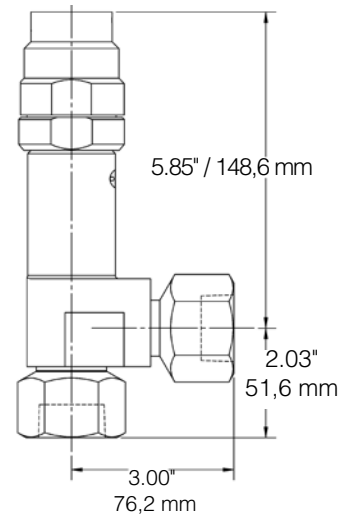
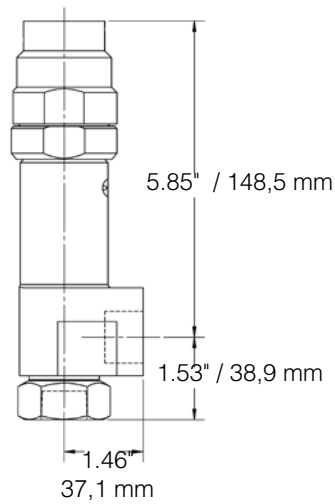
1" Outlet



With Pneumatic Lift & FNPT End Connections

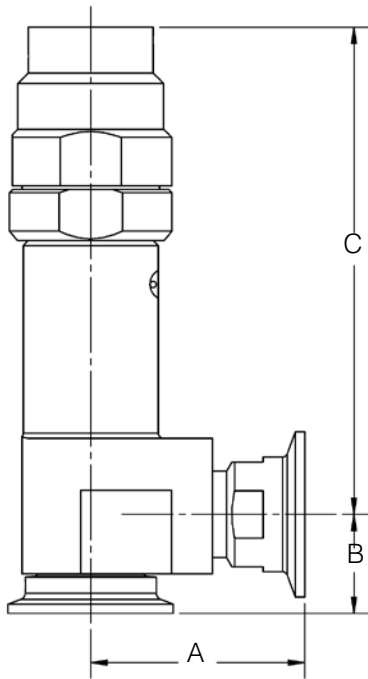
1/2", & 3/4" Outlet

1" Outlet



## SSRV-81, SSRV-81V Dimensions

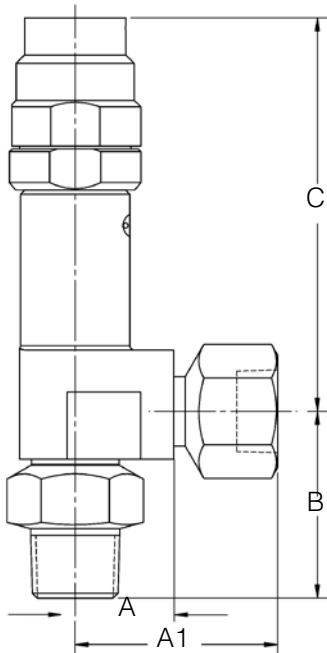
With Pneumatic Lift & US BPE Tri-C End Connections



End Connection Size	IN		
	A	B	C
<b>INLET X OUTLET</b>			
1/2" TC X 1/2" TC	2.75	1.58	5.85
1/2" TC X 3/4" TC	2.75	1.58	5.85
3/4" TC X 3/4" TC	2.75	1.58	5.85
3/4" TC X 1" TC	2.57	1.58	5.85
1" TC X 1" TC	2.57	1.19	5.85

End Connection Size	MM		
	A	B	C
<b>INLET X OUTLET</b>			
1/2" TC X 1/2" TC	69,9	40,1	148,6
1/2" TC X 3/4" TC	69,9	40,1	148,6
3/4" TC X 3/4" TC	69,9	40,1	148,6
3/4" TC X 1" TC	65,3	40,1	148,6
1" TC X 1" TC	65,3	30,2	148,6

With Pneumatic Lift & US BPE Tri-C End Connections



End Connection Size	IN			
	A	A1	B	C
<b>INLET X OUTLET</b>				
3/8" MNPT X 3/8" FNPT	1.46	3.00	2.48	5.85
3/8" MNPT X 1/2" FNPT	1.46	3.00	2.48	5.85
1/2" MNPT X 1/2" FNPT	1.46	3.00	2.65	5.85
1/2" MNPT X 3/4" FNPT	1.46	3.00	2.65	5.85
3/4" MNPT X 3/4" FNPT	1.46	3.00	2.65	5.85
3/4" MNPT X 1" FNPT	1.46	3.00	2.65	5.85
1" MNPT X 1" FNPT	1.46	3.00	2.78	5.85

End Connection Size	MM			
	A	A1	B	C
<b>INLET X OUTLET</b>				
3/8" MNPT X 3/8" FNPT	37,1	76,2	63,0	148,6
3/8" MNPT X 1/2" FNPT	37,1	76,2	63,0	148,6
1/2" MNPT X 1/2" FNPT	37,1	76,2	67,3	148,6
1/2" MNPT X 3/4" FNPT	37,1	76,2	67,3	148,6
3/4" MNPT X 3/4" FNPT	37,1	76,2	67,3	148,6
3/4" MNPT X 1" FNPT	37,1	76,2	67,3	148,6
1" MNPT X 1" FNPT	37,1	76,2	70,6	148,6

## SSRV-83 Specifications

Available Connection Size and Type	Inlet	Outlet
	1-1/2" ASME BPE Tri-clamp	2" ASME BPE Tri-clamp
Body and Wetted Trim Materials	Standard	
	ASME SA479 316L (UNS 31603), AL6XN®, Hastelloy®C-22	
Wetted Seat and O-Ring Material	Elastomers are all FDA and USP Class VI compliant:	
	EPDM, rated to -49°F to 302°F / -45°C to 150°C	
	Viton, rated to 400°F / 204°C	
	Kalrez® FFKM rated to 32°F to 450°F / 0°C to 232°C	
Bellows Process Seal Material	Elastomers are all FDA and USP Class VI compliant	
	EPDM, rated to -49°F to 302°F / -45°C to 150°C	
	Viton, rated to 400°F / 204°C	
Body Pressure / Temperature Rating	255 psi @ 450°F steam*/gas/liquid / 17,6 bar @ 232°C	
Available Set Point Range	15-232 psi** / 1,03 bar - 16 bar	

\* Steam only allowed up to 90 psi / 6,2 bar

\*\* Contact Factory for valves with set points below 15 psi / 1 bar

Flow Factor - United States - ASME Sec. VIII/XIII	Approval No.	M02204
	S/G	Rated slope acc. to ASME VIII, Div. 1 UG-131 (d) (2) S: 15.99 pph / psid G: 5.69 SCFM / psid
	Approval No.	M02192
	L	Rated slope acc. to ASME VIII, Div. 1 UG-131 (d) (2) L: 8.15 GPM / √psid
Orifice Diameter / Area	Diameter	Area
	Ø 0.984 in / 25mm	0.760 in <sup>2</sup> / 491mm <sup>2</sup>

## SSRV-83X Specifications

Available Connection Size and Type	Inlet	Outlet
	1" ASME BPE Tri-clamp	1 -1/2" ASME BPE Tri-Clamp
Body and Wetted Trim Materials	Standard	
	ASME SA479 316L (UNS 31603), AL6XN®, Hastelloy®C-22	
Wetted Seat and O-Ring Material	Elastomers are all FDA and USP Class VI compliant	
	EPDM, rated to -49°F to 302°F / -45°C to 150°C	
	Viton, rated to 400°F / 204°C	
	Kalrez® FFKM rated to 32°F to 450°F / 0°C to 232°C	
Bellows Process Seal Material	Elastomers are all FDA and USP Class VI compliant	
	EPDM, rated to -49°F to 302°F / -45°C to 150°C	
	Viton, rated to 400°F / 204°C	
Body Pressure / Temperature Rating	255 psi @ 450°F steam* / gas / liquid / 17,6 bar @ 232°C	
Available Set Point Range	15-232 psi** / 1,03 - 16 bar	

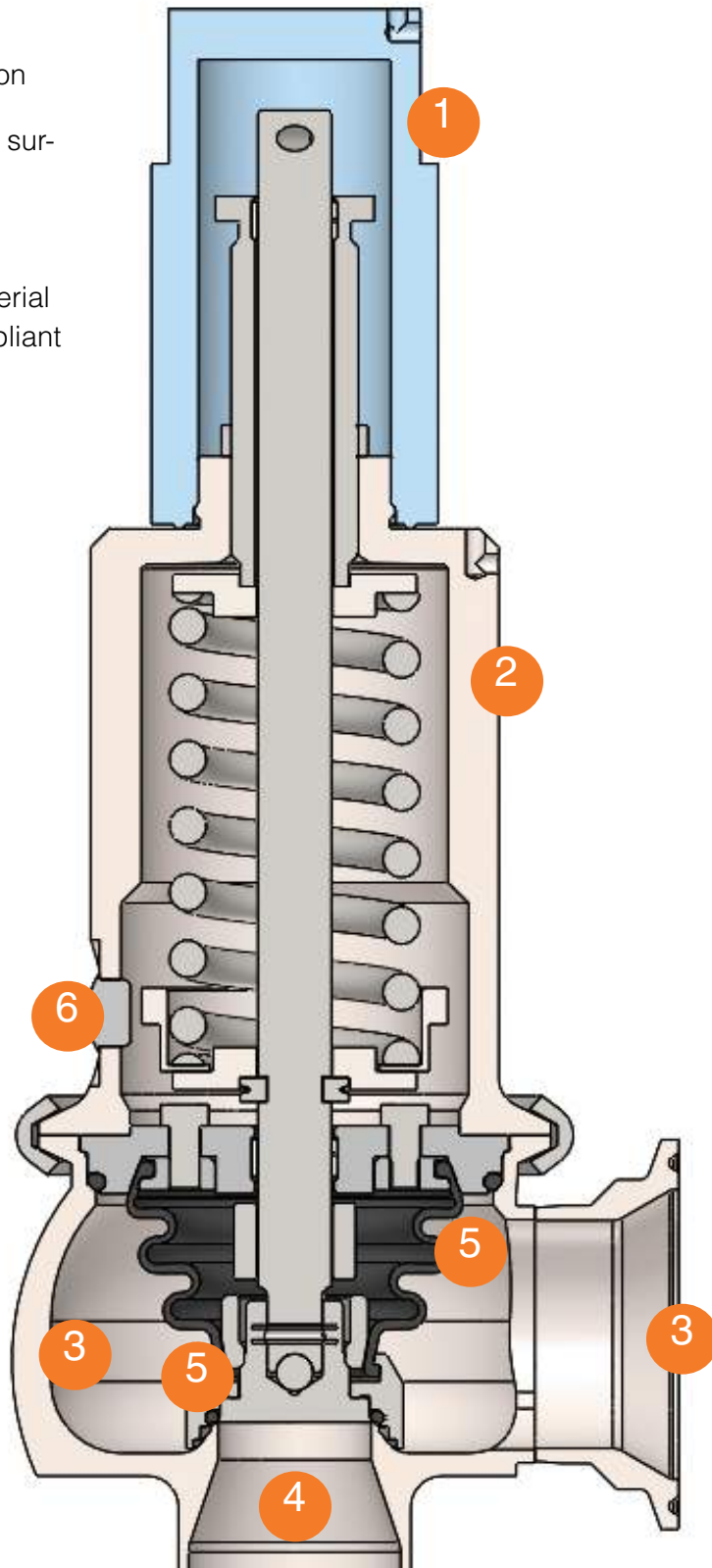
\* Steam only allowed up to 90 psi / 6,2 bar

\*\* Contact Factory for valves with set points below 15 psi / 1 bar

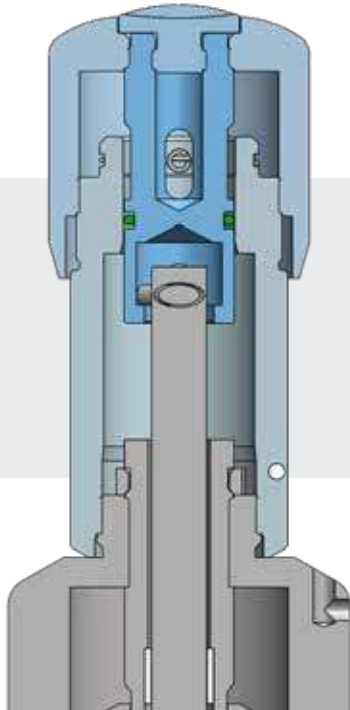
Flow Factor - United States - ASME Sec. VIII/XIII	Approval No.	M02170
	S/G	Rated slope acc. to ASME VIII, Div. 1 UG-131 (d) (2) S: 5.59 pph / psid G: 1.99 SCFM / psia
	Approval No.	M02158
	L	Rated slope acc. to ASME VIII, Div. 1 UG-131 (d) (2) L: 3.407 GPM / $\sqrt{\text{psid}}$
Orifice Diameter / Area	Diameter	Area
	Ø 0.512 in (13mm)	0.206 in <sup>2</sup> (133mm <sup>2</sup> )

## SSRV-83 Typical Features

1. Gas tight cap option
2. All 316L barstock construction
3. ASME BPE SF1, SF4, or SF5 surface finish
4. Cleanable design, L/D < 1.5
5. Seat o-ring and bellows material FDA and USP Class VI compliant
6. Optional lift indicator



## SSRV-83X Typical Options

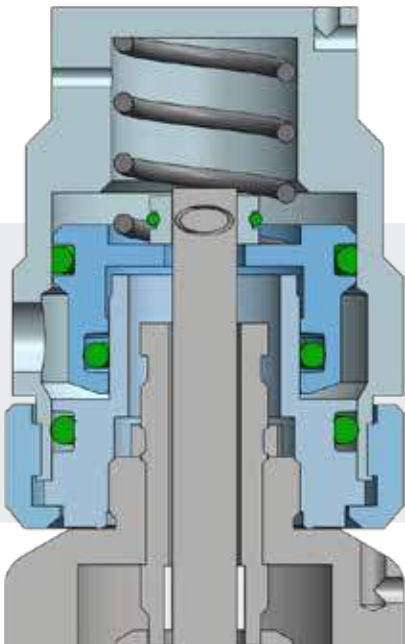


### **Gas tight lifting knob for manual applications**

Manually lift the valve to 70% open

Easily open the valve for cleaning without removing the valve from process

Does not affect set pressure



### **Pneumatic lift for auto lifting**

Pneumatic lift for automated open and close

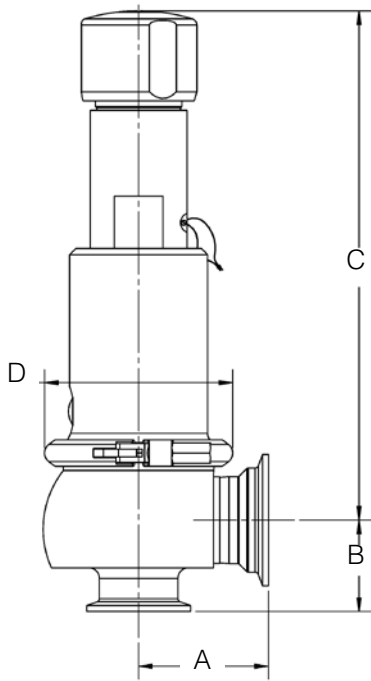
Easily open the valve for cleaning without removing the valve from process

Does not affect set pressure

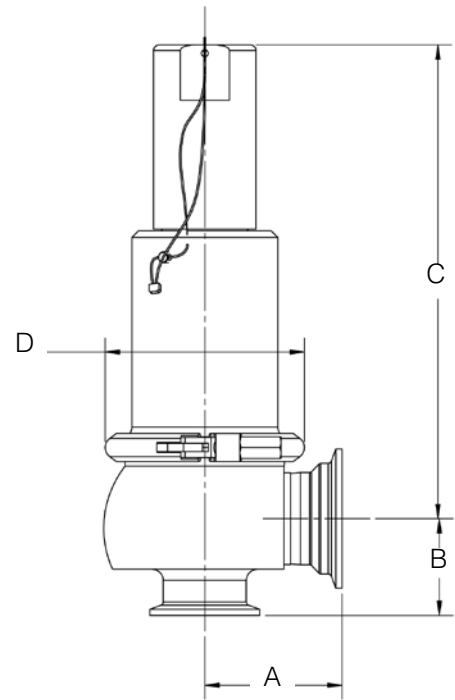
Reduced operator error

# SSRV-83, SSRV-83X Dimensions

With Gas-Tight Lift Knob & US BPE Tri-C End Connections



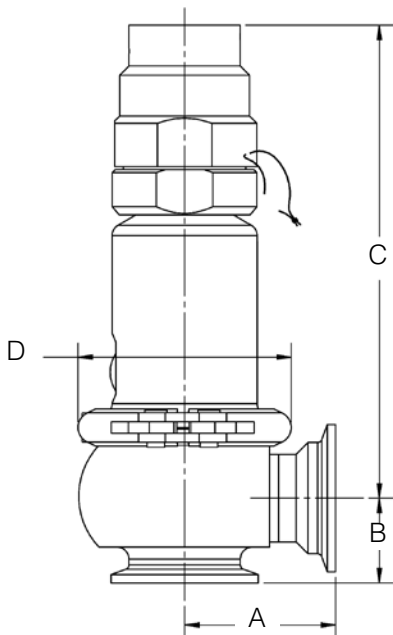
With Gas-Tight Cap & US BPE Tri-C End Connections



Model	End Connection Size	IN			
		A	B	C	D
83X	1" x 1-1/2"	2.04	1.14	6.98	2.88
83	1-1/2" X 2"	2.48	1.75	9.20	3.60

Model	End Connection Size	MM			
		A	B	C	D
83X	1" x 1-1/2"	51,8	29,0	177	73,2
83	1-1/2" X 2"	63,0	44,5	234	91,4

With Pneumatic Lift & US BPE Tri-C End Connections



Model	End Connection Size	IN			
		A	B	C	D
83X	1" x 1-1/2"	2.04	1.14	6.38	2.88
83	1-1/2" X 2"	2.48	1.75	8.70	3.60

Model	End Connection Size	MM			
		A	B	C	D
83X	1" x 1-1/2"	51,8	29,0	162	73,2
83	1-1/2" X 2"	63,0	44,5	220,9	91,4



## SSRV-88 Specifications

Available Connection Size and Type	Inlet		Outlet
	88-1	1-1/2" ASME BPE Tri-Clamp	2" ASME BPE Tri-Clamp
	88-2	2" ASME BPE Tri-Clamp	3" ASME BPE Tri-Clamp
	88-3	2" ASME BPE Tri-Clamp	3" ASME BPE Tri-Clamp
Body and Wetted Trim Materials	Standard		
	ASME SA479 316L (UNS 31603), AL6XN®, Hastelloy®C-22		
Wetted Seat and O-Ring Material	Elastomers are all FDA and USP Class VI compliant		
	EPDM, rated to -49°F to 302°F / -45°C to 150°C		
	Kalrez® FFKM rated to 32°F to 450°F / 0°C to 232°C		
	Viton, rated to 400°F / 204°C		
Bellows Process Seal Material	Elastomers are all FDA and USP Class VI compliant		
	EPDM, rated to -49°F to 302°F / -45°C to 150°C		
	Viton, rated to 400°F / 204°C		
Body Pressure / Temperature Rating	255 psi @ 450°F steam*/gas/liquid / 17,6 bar @ 232°C		
Available Set Point Range	All models – Water: 15 – 232 psi / 1,03 - 16,0 bar		
	All models – Air/Gas/Steam: 20 – 232 psi / 1,37 - 16,0 bar		

\* Steam only allowed up to 90 psi / 6,2 bar

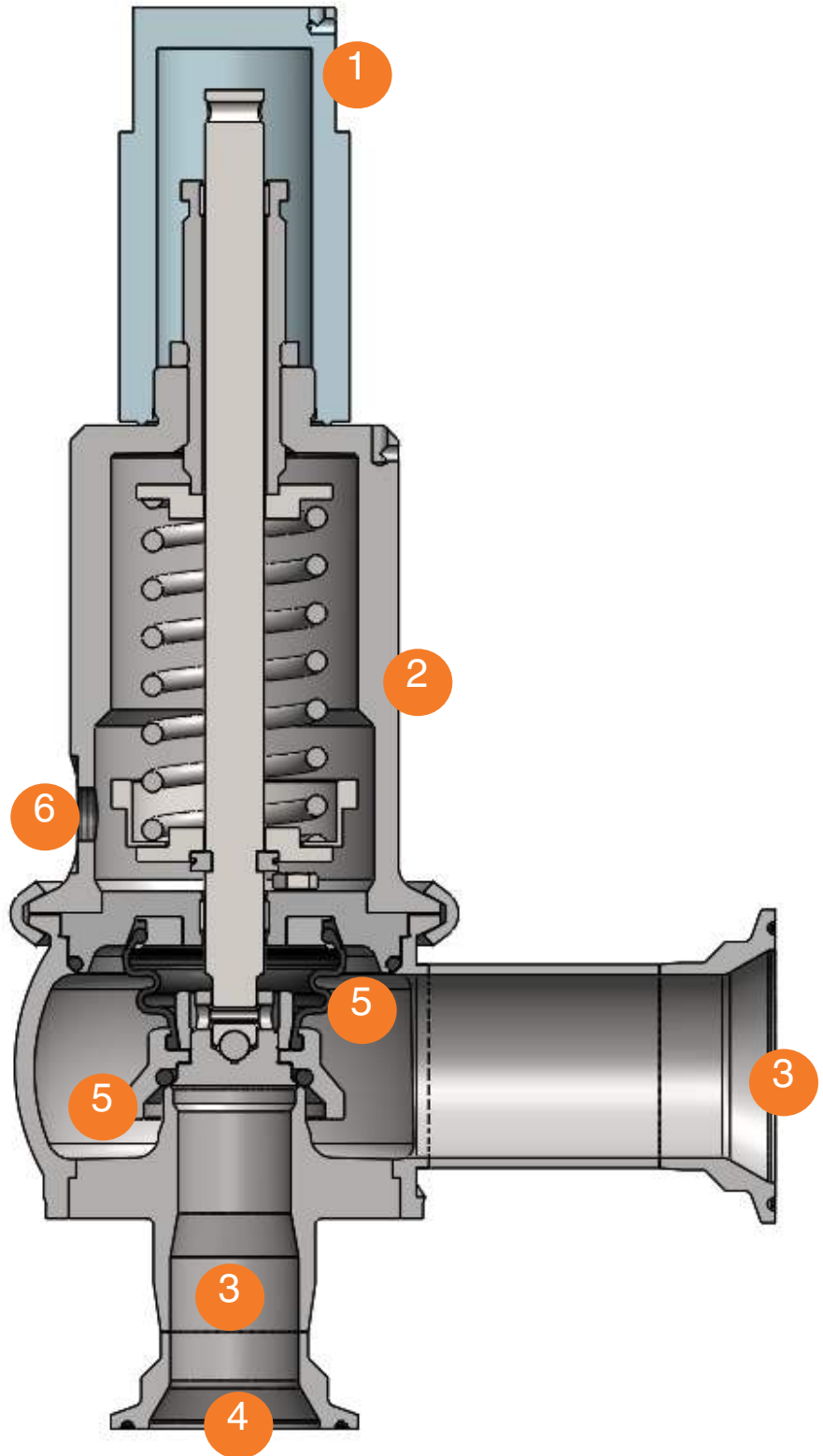
\*\* Contact Factory for valves with set points below 15 psi / 1 bar

Note: Premium cleaning is available - consult factory for details

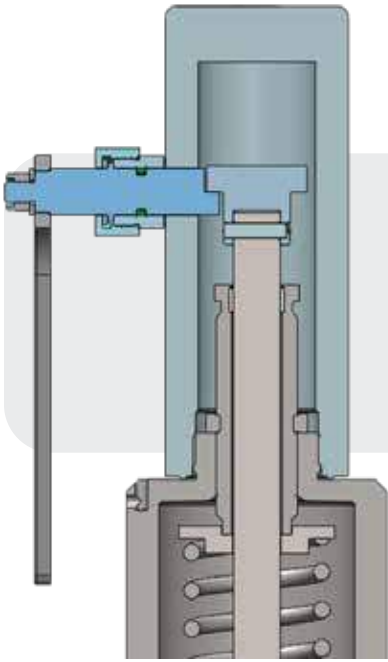
Coefficient of Discharge - United States - ASME Sec. VIII/XIII	Approval No.		M01449
	L		Coefficient of Discharge, KD tested at National Board Laboratories L: 0.546
	Approval No.		M02383
	A/G/S		Coefficient of Discharge, KD tested at National Board Laboratories Kd: 0.546
Orifice Diameter / Area	Diameter		Area
	88-1	Ø 0.906 in / 23 mm	0.644 in <sup>2</sup> / 416 mm <sup>2</sup>
	88-2	Ø 1.457 in / 37 mm	1.667 in <sup>2</sup> / 1075 mm <sup>2</sup>
	88-3	Ø 1.811 in / 46 mm	2.576 in <sup>2</sup> / 1662 mm <sup>2</sup>

## SSRV-88 Typical Features

1. Gas tight cap option
2. All 316L barstock construction
3. ASME BPE SF1, SF4, or SF5 surface finish
4. Cleanable design, L/D < 1.5
5. Seat o-ring and bellows material FDA and USP Class VI compliant
6. Optional lift indicator



## SSRV-88 Typical Options

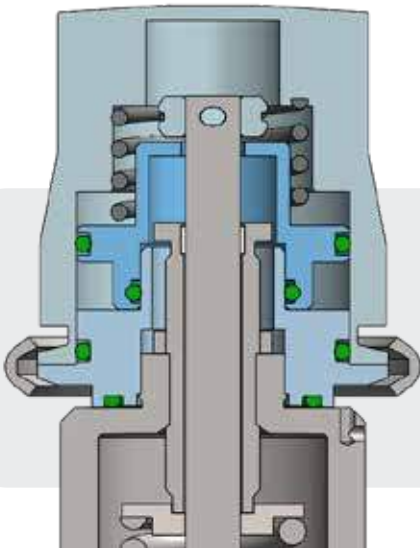


### **Gas tight lift lever for manual applications**

Manually lift the valve to 70% open

Easily open the valve for cleaning without removing the valve from process

Does not affect set pressure



### **Pneumatic lift for auto lifting**

Pneumatic lift for automated open and close

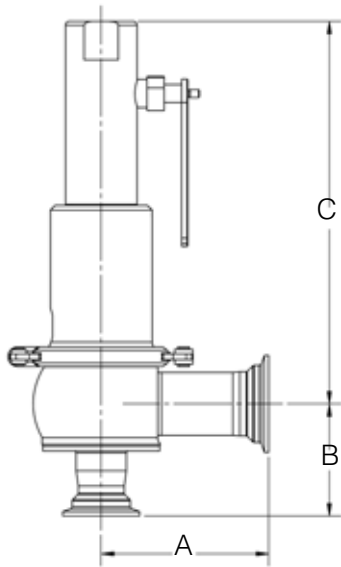
Easily open the valve for cleaning without removing the valve from process

Does not affect set pressure

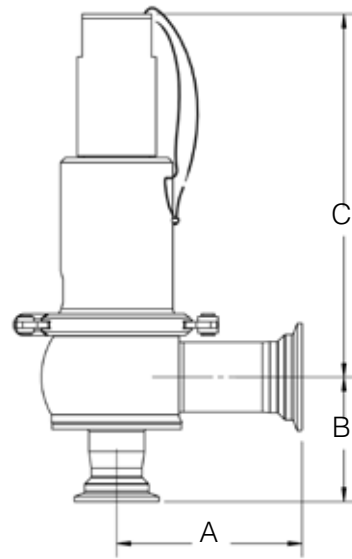
Reduced operator error

# SSRV-88 Dimensions

With Gas-Tight Lift Lever



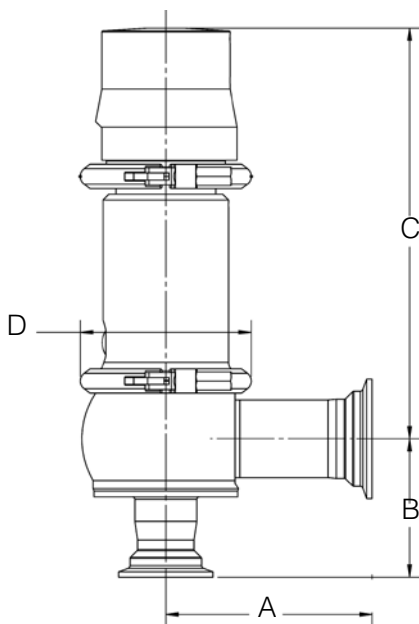
With Gas-Tight Cap



Model	End Connection Size	IN		
		A	B	C
88-1	1-1/2" TC X 2" TC	4.34	2.91	9.94
88-2	2" TC X 3" TC	5.63	3.60	16.55
88-3	2" TC X 3" TC	5.89	4.10	16.83

Model	End Connection Size	MM		
		A	B	C
88-1	1-1/2" TC X 2" TC	110	74	252
88-2	2" TC X 3" TC	143	91	420
88-3	2" TC X 3" TC	150	104	427

With Pneumatic Lift & US BPE Tri-C End Connections



Model	End Connection Size	IN			
		A	B	C	D
88-1	1-1/2" X 2"	2.91	4.34	8.64	3.60
88-2	2" X 3"	3.60	5.66	16.46	5.24
88-3	2" X 3"	4.10	5.89	16.83	5.24

Model	End Connection Size	MM			
		A	B	C	D
88-1	1-1/2" X 2"	73,9	110	219	91,4
88-2	2" X 3"	94,1	143,7	418	133
88-3	2" X 3"	104	149,6	427	133

# 81V / 81 Series Ordering Schematic

Model	Model Orifice
XXX	X

Body, Plug Wetted Material
X

1&2	3&4	5&6	7&8	9&10
X	X	X	X	X

Model & Seat Type	
81V	Elastomer plug set (set pressures up to 232 psi); Orifice (0.394in)
81	Elastomer O-Ring seat (set pressures 232-500 psi); Orifice (0.394in)

Body & Wetted Component Material	
6L	316L / 316L
HC	Hastelloy - C22
XN	AL6XN

1&2	End Connections / Finish		
Size (Inlet x Outlet)		Finish	
A	1" BPE TRI-C x 1" BPE T/C	C	20Ra IN / 40Ra OUT Electropolish
B	3/4" BPE TRI-C x 1" BPE T/C	D	20Ra IN / 20Ra OUT Electropolish
C	3/4" BPE TRI-C x 3/4" BPE T/C	E	15Ra* IN / 40Ra OUT Electropolish
D	1/2" BPE TRI-C x 3/4" BPE T/C	F	15Ra* IN / 20Ra OUT Electropolish
E	1/2" BPE TRI-C x 1/2" BPE T/C	G	32Ra IN / as machined OUT
F	1" FNPT x 1" FNPT		
G	3/4" FNPT x 1" FNPT		
H	3/4" FNPT x 3/4" FNPT		
J	1/2" FNPT x 3/4" FNPT		
K	1/2" FNPT x 1/2" FNPT		
L	1" MNPT x 1" FNPT		
M	3/4" MNPT x 1" FNPT		
N	3/4" MNPT x 3/4" FNPT		
P	1/2" MNPT x 3/4" FNPT		
Q	1/2" MNPT x 1/2" FNPT		
R	1" BPE TRI-C x 1" FNPT		
S	3/4" BPE TRI-C x 1" FNPT		
T	3/4" BPE TRI-C x 3/4" FNPT		
U	1/2" BPE TRI-C x 3/4" FNPT		
V	1/2" BPE TRI-C x 1/2" FNPT		

\* Always wetted surface only

3&4	Trim
81V Only (Plug)	
DD	EPDM Vulcanized Soft Seat (FDA, USP Class VI)
VV	Viton* O-Ring Seat (FDA, USP Class VI)
81 Only (O-Ring)	
DD	Ebleed needs to be extended to the edge of the artboardM O-Ring Seat (FDA, USP Class VI)
CC	Kalrez O-Ring Seat (FDA, USP Class VI)
VV	Viton* O-Ring Seat (FDA, USP Class VI)
ZZ	Non-Standard

\* Viton O-Ring not recommended for steam

5&6	Bonnet
H1	Gas Tight Cap 40Ra Electropolish
H2	Gas Tight Cap 20Ra Electropolish
H3	Gas Tight Lifting Knob 40Ra Electropolish
H4	Gas Tight Lifting Knob 20Ra Electropolish
H5	Pneumatic Lift 40Ra Electropolish
H6	Pneumatic Lift 20Ra Electropolish

7&8	Setpoint	
Code	Range	Model
03	15-20*	81V
04	20-26	81V
05	26-45	81V
06	45-64	81V
07	64-102	81V
08	102-145	81V
09	145-232	81V
11	232-377	81-ORING
16	377-500	81-ORING

\* Contact Factory for valves with set points below 15 psi / 1 bar

9&10	81V / 81 SSRV Setting
GL	Gas/Liquid
ST	Steam

# 83x / 83 Series Ordering Schematic

Model	Model Orifice	Body, Plug Wetted Material	1&2	3&4	5&6	7&8	9&10	11&12
XXX	X	X	X	X	X	X	X	X

Model & Seat Type	
83	Orifice (0.984 in.)
83X	Orifice (0.512 in.)

Body & Wetted Component Material	
6L	316L / 316L
HC	Hastelloy - C22
XN	AL6XN

1&2	End Connections / Finish		
Size (Inlet x Outlet)		Finish	
A	A/G/S 83X 1" x 1-1/2" BPE	C	20Ra IN / 40Ra OUT Electropolish
B	Liquid 83X 1" x 1-1/2" BPE	D	20Ra IN / 20Ra OUT Electropolish
C	83: 1-1/2" x 2" BPE	E	15Ra IN / 40Ra OUT Electropolish
		F	15Ra IN / 20Ra OUT Electropolish
		G	32Ra IN / as machined OUT
ZZ	Non-Standard		

3&4	Trim
DD	EPDM Bellows, EPDM O-rings (FDA, USP Class VI)
CC	EPDM Bellows, Kalrez O-rings (FDA, USP Class VI)
VV	Viton Bellows, Viton* O-rings (FDA, USP Class VI)
ZZ	Non-Standard

\* Viton O-Ring not recommended for steam

5&6	Bonnet
H1	Gas Tight Cap 40Ra Electropolish
H2	Gas Tight Cap 20Ra Electropolish
H3	Gas Tight Lifting Knob 40Ra Electropolish
H4	Gas Tight Lifting Knob 20Ra Electropolish
H5	Pneumatic Lift 40Ra Electropolish
H6	Pneumatic Lift 20Ra Electropolish

7&8	Setpoint		
83 Only		83X Only	
Code	Range	Code	Range
40	15-20* Liquid	04	15-18*
41	15-20* Air/Gas/Steam	05	18-26
42	20-28	06	26-36
43	28-37	07	36-47
44	37-49	08	47-65
45	49-70	09	65-96
46	70-102	10	96-142
47	102-144	11	142-232
48	144-185		
49	185-232		
ZZ	Non-Standard		

\* Contact Factory for valves with set points below 15 psi / 1 bar

9&10	SSRV Setting		
83 Only		83X Only	
AL	Air/Gas 15-20 PSI	GL	Gas & Liquids
AG	Air/Gas 21-232 PSI	ST	Steam
LL	Liquid 15-169 PSI		
LH	Liquid 170-232 PSI		
SL	Steam 14-20 PSI		
ST	Steam 21-232 PSI		

11&12	Special Options
LX	Lift Indicator

# 88 Series Ordering Schematic

Model	Model Orifice	Body, Plug Wetted Material
XXX	X	X

1&2	3&4	5&6	7&8	9&10	11&12
X	X	X	X	X	X

Model & Seat Type	
88-1	Orifice (0.906 in)
88-2	Orifice (1.457 in)
88-3	Orifice (1.811 in)

Body & Wetted Component Material	
6L	316L / 316L
HC	Hastelloy - C22
XN	AL6XN

1&2	End Connections / Finish		
Size (Inlet x Outlet)		Finish	
A	88-1: 1 1/2" x 2" BPE	C	20Ra IN / 40Ra OUT Electropolish
B	88-2: 2" x 3" BPE	D	20Ra IN / 20Ra OUT Electropolish
C	88-3: 2" x 3" BPE	E	15Ra IN / 40Ra OUT Electropolish
		F	15Ra IN / 20Ra OUT Electropolish
		G	32Ra IN / as machined OUT
ZZ	Non-Standard		

3&4	Trim
DD	EPDM Bellows, EPDM O-rings (FDA, USP Class VI)
CC	EPDM Bellows, Kalrez O-rings (FDA, USP Class VI)
VV	Viton* Bellows, Viton O-Rings (FDA, USP Class VI)
ZZ	Non-Standard

\* Viton O-Ring not recommended for steam

5&6	Bonnet
H1	Gas Tight Cap 40Ra Electropolish
H2	Gas Tight Cap 20Ra Electropolish
H3	Gas Tight Lifting Knob 40Ra Electropolish
H4	Gas Tight Lifting Knob 20Ra Electropolish
H5	Pneumatic Lift 40Ra Electropolish
H6	Pneumatic Lift 20Ra Electropolish

7&8	Setpoint				
88-1		88-2		88-3	
Code	Range	Code	Range	Code	Range
53	15-20*	04	15-17*	13	15-20*
54	20-26	05	17-22	14	20-28
55	26-33	06	22-32	15	28-39
56	33-51	07	32-38	16	39-53
57	51-73	08	38-49	17	53-77
58	73-123	09	49-78	18	77-114
59	123-181	10	78-123	19	114-150
60	181-232	11	123-181	20	150-232
		12	181-232		
ZZ	Non- Standard				

\* Contact Factory for valves with set points below 15 psi / 1 bar

9&10	SSRV Setting
LL	Liquids
AG	Air/Gas
ST	Steam

11&12	Special Options
LX	Lift Indicator



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