

## PISTON SENSING PRESSURE SUSTAINING VALVES PS31SS (1" to 2" – DN 25 to DN 50)

### DESCRIPTION

The ADCA PS31SS is a series of direct acting, spring-loaded, piston sensing pressure sustaining valves.

These regulators are designed for use with compressed air, water and other gases and liquids compatible with the construction materials and valve design.

They are suitable for pressure sustaining applications at the point of use in laundry and dyeing machines, food industries, sterilizers, etc.

### MAIN FEATURES

Compact design.

Full stainless steel construction.

Various sealing options to meet compatibility requirements.

**OPTIONS:** Gauge connection on body.  
Different soft sealings for liquids and gases.  
Top cap (adjustment screw with cover).  
Degreased for oxygen application.

**USE:** Compressed air, water and other gases and liquids compatible with the construction.

**AVAILABLE MODELS:**

PS31SS – stainless steel, piston sensing.

**SIZES:** 1" to 2"; DN 25 to DN 50.

**CONNECTIONS:** Female threaded ISO 7 Rp or NPT (only available from 1 1/4" to 2").  
Flanged EN 1092-1 PN 40 (only available from DN 32 to DN 50) or PN 63.  
Flanged ASME B16.5 Class 150 or 300 (only available from 1 1/4" to 2") or Class 600.

**INSTALLATION:** Horizontal installation.  
See IMI – Installation and maintenance instructions.



### LIMITING CONDITIONS

VALVE MODEL	PS31SS				
	Class 150	Class 300	Class 600	PN 40	PN 63 *
Body design conditions					
Maximum upstream pressure	16 bar	40 bar	50 bar	40 bar	50 bar
Minimum upstream pressure	3 bar				
Maximum design temperature	80 °C				

\* Rating PN 63 for threaded versions.

**Warning: A pressure sustaining valve is not a safety relief valve and must not be used for that purpose!**

### FLOW RATE COEFFICIENTS (m³/h)

SIZE	1" – DN 25	1 1/4" – DN 32	1 1/2" – DN 40	2" – DN 50
Kvs	7,5	8,2	14,4	15,4

### CE MARKING – GROUP 2 (PED – EUROPEAN DIRECTIVE)

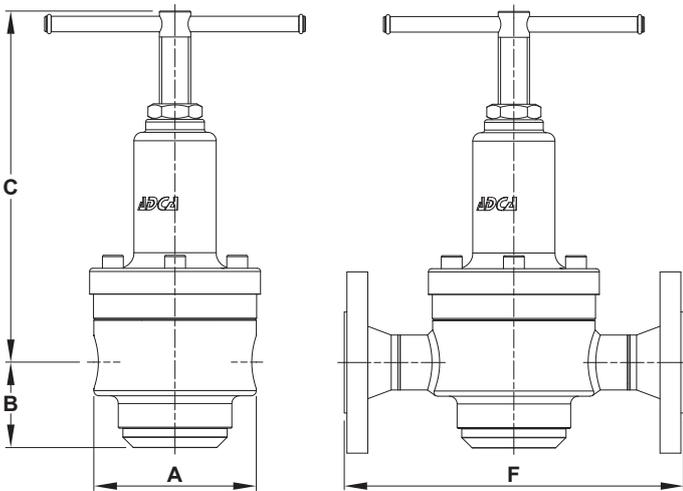
CLASS 150	PN 40 / PN 63 CL. 300 / CL. 600	CATEGORY
1" to 2" DN 25 to 50	1" and 1 1/4" DN 25 and 32	SEP
–	1 1/2" and 2" DN 40 and 50	1

OPTIONS

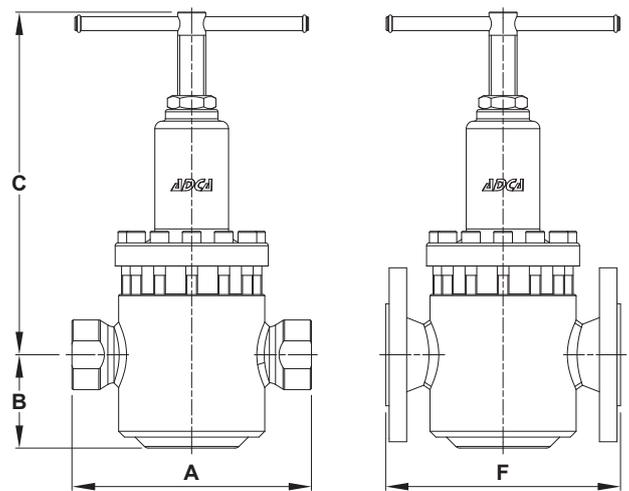
GAUGE CONNECTION



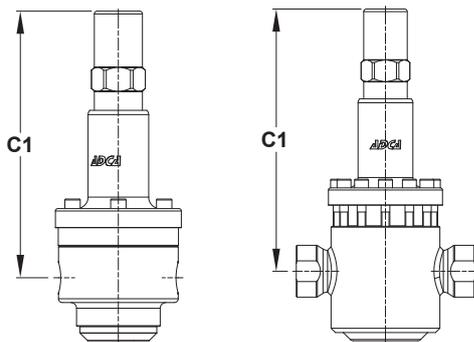
TOP CAP



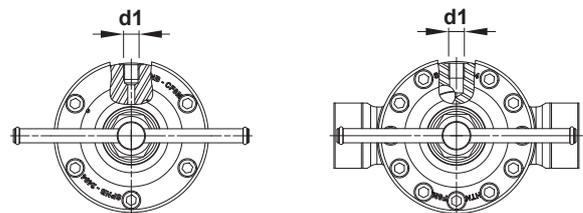
1" and 1 1/4" – DN 25 and DN 32



1 1/2" and 2" – DN 40 and DN 50



Optional top cap



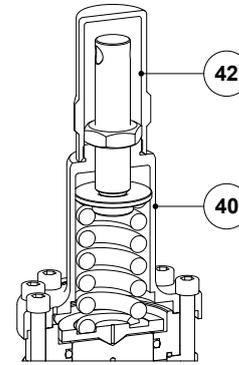
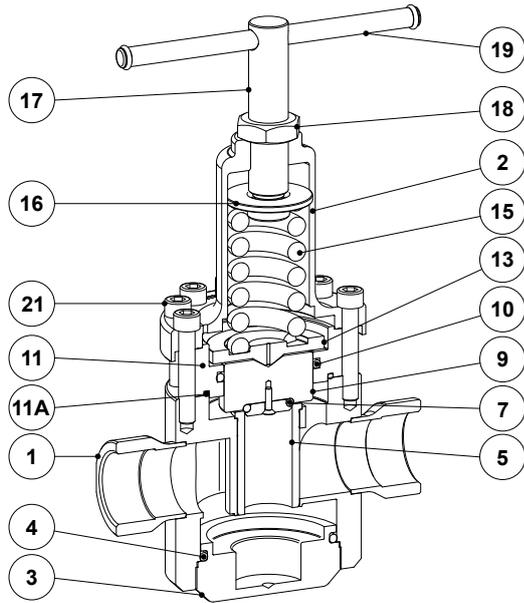
Optional gauge connection

DIMENSIONS (mm)

SIZE	THREADED					PN 40		PN 63		CLASS 150		CLASS 300		CLASS 600		
	A	B	C	C1	d1	WGT. (kg)	F *	WGT. (kg)								
1" – DN 25 **	125	66	271	280	1/4"	8,6	–	–	230	15,1	–	–	–	–	230	13,5
1 1/4" – DN 32	125	66	271	280	1/4"	9,7	260	13,5	260	16,5	260	12,6	260	13,7	260	15,2
1 1/2" – DN 40	205	81	296	304	1/4"	14,8	201	18,1	260	22,1	235	17,8	248	20	264	21
2" – DN 50	205	75	302	310	1/4"	15,1	230	20,3	300	24,6	254	19	267	20,7	300	24,3

\* Different face to face dimensions on request; \*\* Only available with PN 63 or Class 600 flanged connections.

Remarks: As standard, in versions manufactured with EN 1092-1 flanges or ISO 7 Rp threads, connection d1 is female threaded ISO 228. In versions with ASME B16.5 flanges or NPT threads, this connection is female threaded NPT.



Optional top cap

MATERIALS		
POS. No.	DESIGNATION	MATERIAL
1	Valve body	AISI 316 / 1.4401
2	Spring cover	A351 CF8M / 1.4408
3	Bottom cover	AISI 316 / 1.4401
4	* O-ring	** NBR; EPDM; FPM
5	Valve seat	AISI 316 / 1.4401
7	Valve seal	** NBR; EPDM; PTFE; FPM
9	Piston	AISI 316 / 1.4401
10	* Piston o-ring	** NBR; EPDM; FPM
11	Piston sleeve	AISI 316 / 1.4401
11A	* O-ring	** NBR; EPDM; PTFE; FPM
13	Spring plate	AISI 304 / 1.4301
15	* Adjustment spring	AISI 302 / 1.4300
16	Top spring plate	Brass
17	Adjustment stem	AISI 304 / 1.4301
18	Lock nut	Stainless steel A2-70
19	Adjustment knob	Plastic
21	Bolt	Stainless steel A2-70
40	Cover	A351 CF8M / 1.4408
42	Top cap	AISI 316 / 1.4401

\* Available spare parts. \*\* Others on request.

Remark: All valves have a serial number. In case of non-standard valves this number must be supplied if spare parts are ordered.



ORDERING CODES PS31SS												
<b>VALVE MODEL</b>	PS31	.	5	W	N	C				.	A	25
PS31SS – Piston sensing pressure sustaining valve	PS31											
<b>REGULATING RANGE</b>												
No. 5 – 3 to 30 bar			5									
No. 6 – 5 to 50 bar			6									
<b>APPLICATION</b>												
Water				W								
Gases				G								
Oxygen (degreased)				O								
<b>VALVE SEALING</b>												
NBR					N							
EPDM					E							
PTFE (a)					T							
FPM					V							
<b>MAXIMUM INLET PRESSURE</b>												
30 bar						C						
50 bar						D						
<b>GAUGE CONNECTIONS</b>												
Without gauge ports									(1)			
Gauge port on the left side (relative to the flow direction)									4			
Gauge port on the right side (relative to the flow direction)									3			
Gauge ports on both sides									2			
<b>TOP CAP AND RELIEVING</b>												
Non-relieving									(1)			
Non-relieving with top cap (adjustment screw with cover)									T			
<b>PIPE CONNECTIONS</b>												
Female threaded ISO 7 Rp											A	
Female threaded NPT ASME B1.20.1											C	
Flanged EN 1092-1 PN 40											N	
Flanged EN 1092-1 PN 63											O	
Flanged ASME B16.5 Class 150											U	
Flanged ASME B16.5 Class 300											V	
Flanged ASME B16.5 Class 600											W	
<b>SIZE</b>												
1" or DN 25 (only available with PN 63 and Class 600 flanged connections)												25
1 1/4" or DN 32												32
1 1/2" or DN 40												40
2" or DN 50												50
<b>SPECIAL CONSTRUCTION / ADDITIONAL OPTIONS</b>												
A full description must to be provided and validated in case of a non-standard construction												E

(1) Omitted if a standard valve is requested.

(a) All seals except bottom cover and piston o-rings, which are supplied in FPM or others on request.