# PISTON SENSING PRESSURE SUSTAINING VALVE
# PS31

DESCRIPTION

The ADCA PS31 series direct acting, spring-loaded piston sensing pressure sustaining valves are designed for use on compressed air, water, and other gases or liquids compatible with the materials of the construction.
They are suitable for pressure sustaining applications where low capacity is required.
This valve main purpose is to maintain the upstream pressure under control.

**PS31SS 1/2" – DN 15**

MAIN FEATURES

Compact design.
Machined from bar stock materials or investment casting.

OPTIONS: Different soft valves for water and gases.
1/4" gauge connection on body.
Top cap (adjustment screw with cover).

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

AVAILABLE MODELS: PS31SS – stainless steel, piston sensing.

SIZES: 1/2" to 2"; DN 15 to DN 50.

CONNECTIONS: Female threaded ISO 7 Rp or NPT.
Flanged EN 1092-1 PN 40 or PN 63.

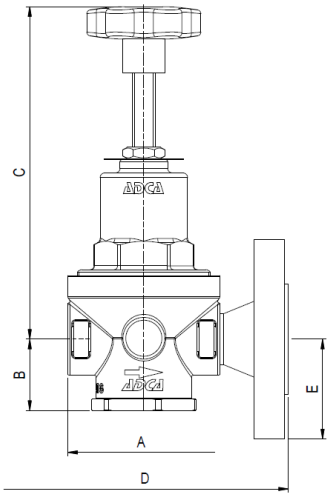
INSTALLATION: Horizontal installation.
A "Y" strainer should be installed upstream of the valve.
See IMI – Installation and maintenance instructions.

| FLOW RATE COEFFICIENTS (m³/h) | | | | | | |
|---|---|---|---|---|---|---|
| **SIZE (DN)** | **15** | **20** | **25** | **32** | **40** | **50** |
| **Kvs** | 3 | 3,5 | 7,5 | 8,2 | 14,4 | 15,4 |

| CE MARKING – GROUP 2 (PED – European Directive) | |
|---|---|
| **PN 63** | **Category** |
| 1/2" to 11/4" – DN 15 to 32 | SEP |
| 11/2" to 2" – DN 40 to 50 | 1 (CE marked) |

| LIMITING CONDITIONS | |
|---|---|
| **Valve model** | **PS31SS** |
| Body design conditions | PN 63 |
| Maximum upstream pressure | 50 bar |
| Minimum upstream pressure | 3 bar |
| Maximum design temperature * | 80 ºC |

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

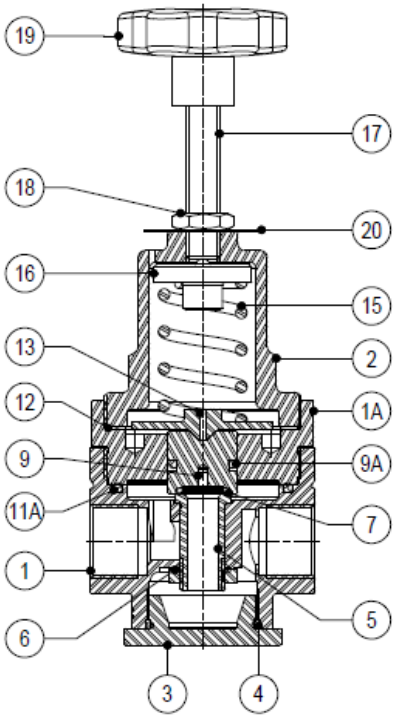



| DIMENSIONS (mm) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| THREADED | | | | | PN 40 | | | PN 63 | | | |
| SIZE | A | B | C | WEIGHT (kg) | D * | E | WEIGHT (kg) | D * | E PN 63 | E PN 100 | WEIGHT (kg) |
| **1/2" – DN 15** | 80 | 38 | 175 | 2,6 | 150 | 47,5 | 4 | 210 | 52,5 | 52,5 | 4,9 |
| **3/4" – DN 20** | 80 | 38 | 175 | 2,6 | 150 | 52,5 | 4,7 | 230 | 70 | 70 | 6,9 |
| **1" – DN 25** | 105 | 66 | 320 | 8,6 | 160 (230) | 57,5 | 10,7 (12,4) | 230 | 70 | 70 | 15,1 |
| **11/4" – DN 32** | 125 | 66 | 320 | 9,7 | 260 | 70 | 13,5 | 260 | 77,5 | 77,5 | 16,5 |
| **11/2" – DN 40** | 205 | 86 | 305 | 14,8 | 200 | 75 | 18,1 | 260 | 85 | 85 | 22,1 |
| **2" – DN 50** | 205 | 80 | 305 | 15,1 | ** 230 | 82,5 | 20,3 | 300 | 90 | 97,5 | 24,6 |

* Different lenghts and ASME flanges available on request;
** Only available with flat flanges EN 1092-1 type 01 A. Welding neck type 11 B flanges as option with 300 mm minimum face to face dimensions.
() : Alternative.

| MATERIALS | | |
|---|---|---|
| POS. | DESIGNATION | MATERIAL |
| **1** | Valve body **a)** | A351 CF8M / 1.4408 (AISI 316 / 1.4401) |
| **1A** | Piston sleeve | AISI 316 / 1.4401 |
| **2** | Top cover **b)** | A351 CF8M / 1.4408 (AISI 316 / 1.4401) |
| **3** | Seat cover **a)** | A351 CF8M / 1.4408 (AISI 316 / 1.4401) |
| **4** | * O-ring | NBR |
| **5** | Valve seat | AISI 316 / 1.4401 |
| **6** | Sealing | NBR |
| **7** | * O-ring | NBR; EPDM; PTFE, etc. |
| **9** | Piston | AISI 316 / 1.4401 |
| **9A** | * O-ring | NBR; EPDM; PTFE, etc. |
| **11A** | * O-ring | NBR; EPDM; PTFE, etc. |
| **12** | Gasket | Aluminium |
| **13** | Spring plate | AISI 304 / 1.4301 |
| **15** | * Adjustment spring | Spring steel |
| **16** | Top spring plate | Brass |
| **17** | Adjustment screw | AISI 304 / 1.4301 |
| **18** | Locknut | Stainless steel A2-70 |
| **19** | Handwheel | Plastic |
| **20** | Spring Id. plate | Aluminium |

* Available spare parts.




Remarks: All valves have a serial number. In case of non-standard valves, this number must be supplied if spare parts are ordered.
**a)** Bar stock execution on request (standard for sizes DN 32 to DN 50).
**b)** Bar stock execution on request.

## ORDERING CODES PS31

| Valve model | PS31 | . | 5 | W | N | C | 4 | . | | A | 15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PS31SS – piston sensing pressure sustaining valve | PS31 | | | | | | | | | | | |
| **Regulating range** | | | | | | | | | | | | |
| Nº 5 – 3 to 30 bar | | | 5 | | | | | | | | | |
| Nº 6 – 5 to 50 bar | | | 6 | | | | | | | | | |
| | | | | | | | | | | | | |
| **Application** | | | | | | | | | | | | |
| Water | | | | W | | | | | | | | |
| Gases | | | | G | | | | | | | | |
| Oxygen (degreased) | | | | O | | | | | | | | |
| **Seal material a)** | | | | | | | | | | | | |
| NBR | | | | | N | | | | | | | |
| EPDM | | | | | E | | | | | | | |
| PTFE **b)** | | | | | T | | | | | | | |
| FPM / Viton | | | | | V | | | | | | | |
| **Maximum inlet pressure** | | | | | | | | | | | | |
| 30 bar | | | | | | C | | | | | | |
| 50 bar | | | | | | D | | | | | | |
| **Gauge port 1/4" c)** | | | | | | | | | | | | |
| 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 | | | | | |
| **Relieving** | | | | | | | | | | | | |
| Non-relieving | | | | | | | | | (1) | | | |
| | | | | | | | | | | | | |
| **Pipe connection** | | | | | | | | | | | | |
| Female threaded ISO 7 Rp | | | | | | | | | | A | | |
| Female threaded NPT ASME B1.20.1 | | | | | | | | | | C | | |
| Socket weld (SW) ASME B16.11 | | | | | | | | | | H | | |
| Butt weld (BW) ASME B16.25 | | | | | | | | | | I | | |
| 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 | | |
| **Size** | | | | | | | | | | | | |
| 1/2" or DN 15 | | | | | | | | | | | 15 | |
| 3/4" or DN 20 | | | | | | | | | | | 20 | |
| ... | | | | | | | | | | | | |
| **Special valves / Extras** | | | | | | | | | | | | |
| Full description or additional codes have to be added in case of non-standard combination. | | | | | | | | | | | | E |

(1) Omitted if a standard valve is requested.
**a)** Valve limited to the materials maximum operating temperature. Consult manufacturer for more details.
**b)** Valve seal only, other seals in Viton.
**c)** Gauge port can also be used as external sensing line.