

## DIAPHRAGM SENSING PRESSURE SUSTAINING VALVE PS7

### DESCRIPTION

The ADCA PS7 series direct acting, spring-loaded diaphragm sensing pressure sustaining valves are designed for use on steam and compressed air and other gases compatible with the materials of construction.

They are suitable for pressure sustaining applications where very small loads are involved. They are also specifically recommended to operate as pilot valves in combination with other pressure regulators.

### MAIN FEATURES

Compact design.  
 Stainless steel diaphragm.

OPTIONS:            1/8" gauge connection on body.  
                          Top cap (adjustment screw with cover).  
                          External sensing connection.  
                          Low pressure top.  
                          Dome loaded version.

USE:                    Steam, compressed air and other gases compatible with the construction.

### AVAILABLE

MODELS:            PS7S – carbon steel.  
                          PS7SS – stainless steel.

SIZES:                1/4" and 3/8".

CONNECTIONS:    Female threaded ISO 7 Rp or NPT.

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



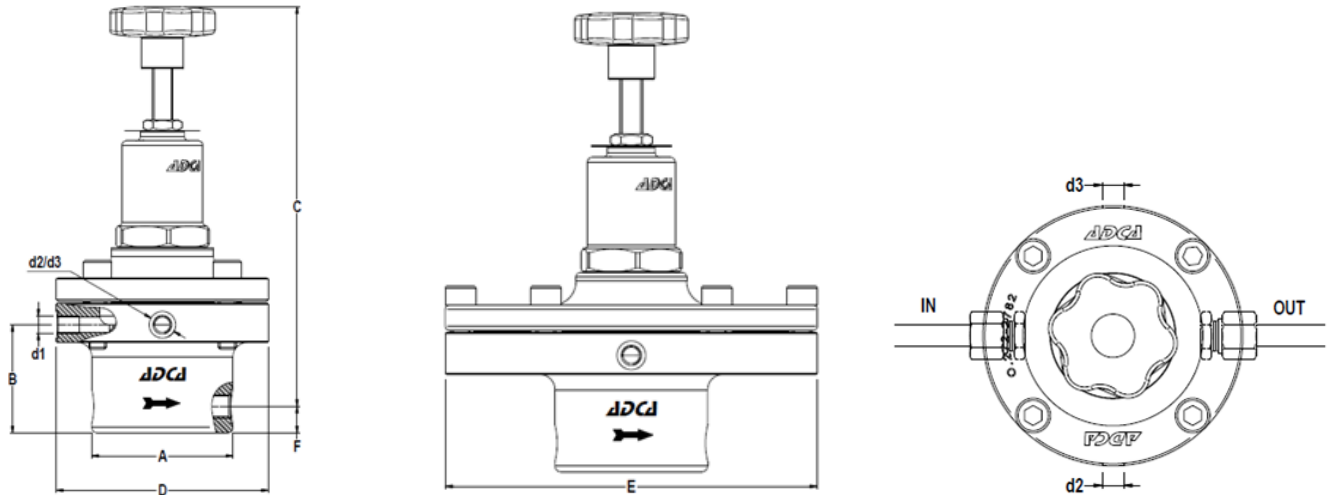
| CE MARKING – GROUP 2 (PED – European Directive) |          |
|---|----------|
| PN 40   | Category |
| 1/4" to 3/8"                                    | SEP      |

| FLOW RATE COEFFICIENTS (m <sup>3</sup> /h) |      |      |
|--|------|------|
| SIZE                                       | 1/4" | 3/8" |
| Kvs  | 0,8  | 0,8  |

| LIMITING CONDITIONS         |          |
|-----------------------------|----------|
| Valve model                 | PS7      |
| Body design conditions      | PN 40    |
| Maximum upstream pressure   | 17 bar   |
| Minimum upstream pressure   | 0,35 bar |
| Maximum downstream pressure | 17 bar   |
| Maximum design temperature  | 300 °C   |

\* 0,07 bar with low pressure top (limited at 7 bar inlet). The low pressure diaphragm should be fitted for outlet pressures from 0,07 up to 0,5 bar. Pressure and temperature limiting conditions may change if soft seating is used.

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



**DIMENSIONS (mm)**

| SIZE | A  | B  | C   | D   | E * | F  | d1 ** | d2 *** | d3 *** | WEIGHT (kg) |
|------|----|----|-----|-----|-----|----|-------|--------|--------|-------------|
| 1/4" | 80 | 61 | 225 | 120 | 195 | 15 | 1/8   | 1/8    | 1/8    | 4,8         |
| 3/8" | 80 | 61 | 225 | 120 | 195 | 15 | 1/8   | 1/8    | 1/8    | 4,8         |

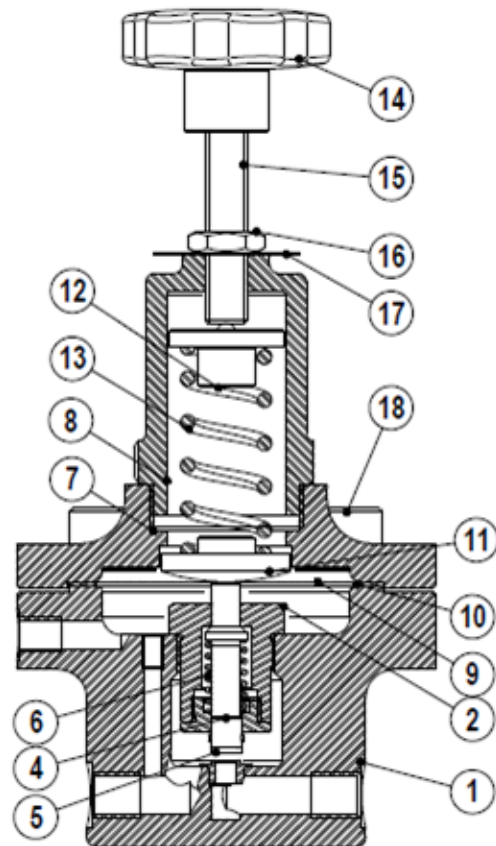
\* Low pressure diaphragm; \*\* Optional sensing line connection; \*\*\* Optional pressure gauge connections. As standard, in ISO 7 Rp threaded version, these connections are female threaded ISO 7 Rp. In NPT threaded version, these connections are female threaded NPT.

**MATERIALS**

| POS. N° | DESIGNATION          | MATERIAL                           |
|---------|----------------------|------------------------------------|
| 1       | Valve body           | S355JR / 1.0045; AISI 316 / 1.4401 |
| 2       | * Pilot valve body   | A351 CF8 / 1.4308                  |
| 4       | Pushrod              | AISI 316 / 1.4401                  |
| 5       | * Valve plug         | AISI 420; EPDM; PTFE, etc.         |
| 6       | * Spring             | AISI 302 / 1.4300                  |
| 7       | Top cover            | A351 CF8 / 1.4308                  |
| 8       | Spring cover         | A351 CF8 / 1.4308                  |
| 9       | * Diaphragm          | AISI 301 / 1.4310                  |
| 10      | * Gasket             | Stainless steel / Graphite         |
| 11      | Lower spring carrier | Brass                              |
| 12      | Top spring carrier   | Brass                              |
| 13      | * Adjustment spring  | Spring steel                       |
| 14      | Handwheel            | Plastic                            |
| 15      | Adjustment screw     | AISI 304 / 1.4301                  |
| 16      | Locknut              | Stainless steel A2-70              |
| 17      | Spring Id. plate     | Aluminium                          |
| 18      | Bolts                | Steel 10.9; Stainless steel A2-70  |

\* 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.



**REGULATING RANGES**

| SPRING COLOUR           | GREEN<br>w/ 1 diaphragm            | BLUE<br>w/ 1 diaphragm | RED<br>w/ 2 diaphragms | BLACK<br>w/ 2 diaphragms |
|-------------------------|------------------------------------|------------------------|------------------------|--------------------------|
| <b>Regulating range</b> | 0,07 to 0,5 bar *<br>0,35 to 2 bar | 1,5 to 5,5 bar         | 3,5 to 8,5 bar         | 7 to 17 bar              |

\* With special low pressure top assembly.

| ORDERING CODES PS7   |              |   |          |          |  |            |          |            |          |           |
|--|--------------|---|----------|----------|--|------------|----------|------------|----------|-----------|
| Valve model  | PS7S         | . | 1        | S        |  | S          |          | .A         | 08       |           |
| PS7S – carbon steel pilot pressure sustaining valve  | <b>PS7S</b>  |   |          |          |  |            |          |            |          |           |
| PS7SS – stainless steel pilot pressure sustaining valve                                    | <b>PS7SS</b> |   |          |          |  |            |          |            |          |           |
| <b>Regulating range</b>  |              |   |          |          |  |            |          |            |          |           |
| Green spring – 0,35 to 2 bar – single diaphragm  |              |   | <b>1</b> |          |  |            |          |            |          |           |
| Blue spring – 1,5 to 5,5 bar – single diaphragm  |              |   | <b>2</b> |          |  |            |          |            |          |           |
| Red spring – 3,5 to 8,5 bar – double diaphragm   |              |   | <b>3</b> |          |  |            |          |            |          |           |
| Black spring – 7 to 17 bar – double diaphragm  |              |   | <b>4</b> |          |  |            |          |            |          |           |
| <b>Application</b>   |              |   |          |          |  |            |          |            |          |           |
| Steam  |              |   |          | <b>S</b> |  |            |          |            |          |           |
| Gases  |              |   |          | <b>G</b> |  |            |          |            |          |           |
| <b>Seal material a)</b>  |              |   |          |          |  |            |          |            |          |           |
| Metal to metal   |              |   |          |          |  | <b>(1)</b> |          |            |          |           |
| EPDM   |              |   |          |          |  | <b>E</b>   |          |            |          |           |
| PTFE   |              |   |          |          |  | <b>T</b>   |          |            |          |           |
| FPM / Viton  |              |   |          |          |  | <b>V</b>   |          |            |          |           |
| <b>Diaphragm</b>   |              |   |          |          |  |            |          |            |          |           |
| Standard diaphragm   |              |   |          |          |  |            | <b>S</b> |            |          |           |
| Low pressure diaphragm   |              |   |          |          |  |            | <b>L</b> |            |          |           |
| <b>Gauge port 1/8" b)</b>  |              |   |          |          |  |            |          |            |          |           |
| Without gauge ports  |              |   |          |          |  |            |          | <b>(1)</b> |          |           |
| Gauge port on the left side (relative to the flow direction)                               |              |   |          |          |  |            |          | <b>4</b>   |          |           |
| Gauge port on the right side (relative to the flow direction)                              |              |   |          |          |  |            |          | <b>3</b>   |          |           |
| Gauge ports on both sides  |              |   |          |          |  |            |          | <b>2</b>   |          |           |
| <b>Pipe connection</b>   |              |   |          |          |  |            |          |            |          |           |
| Female threaded ISO 7 Rp   |              |   |          |          |  |            |          |            | <b>A</b> |           |
| Female threaded NPT ASME B1.20.1   |              |   |          |          |  |            |          |            | <b>C</b> |           |
| <b>Size</b>  |              |   |          |          |  |            |          |            |          |           |
| 1/4"   |              |   |          |          |  |            |          |            |          | <b>08</b> |
| 3/8"   |              |   |          |          |  |            |          |            |          | <b>10</b> |
| <b>Special valves / Extras</b>   |              |   |          |          |  |            |          |            |          |           |
| Full description or additional codes have to be added in case of non-standard combination. |              |   |          |          |  |            |          |            |          | <b>E</b>  |

(1) Omitted if a standard valve is requested.

a) Valve limited to the materials maximum operating temperature. Contact manufacturer for more details.

b) Gauge port can also be used as external sensing line.