STEAM EQUIPMENT

# PRESSURE REDUCING VALVE
# RP16

DESCRIPTION

The ADCA RP16G series pressure reducing valves are self-actuated direct action proportional action type, operating without auxiliary energy, designed for use on steam, compressed air, industrial inert gases and liquids compatible with the construction.

They are suitable for reducing steam pressure in all energy and process systems where pressures should be kept constant.

Connections are flanged.

OPERATION

Pressure reduction is achieved by means of variable throttling of the inlet flow at the valve seat by variation of the flow area between seat and disc. The outlet pressure which is transmitted through the feed-back line to the diaphragm chamber counteracts the spring force acting on the valve spindle and controls the valve aperture corresponding to the spring setting and thus to the required outlet pressure.

MAIN FEATURES

Simple and robust construction

| | |
|---|---|
| OPTIONS: | Nitrile rubber soft seated version for air and gas applications where tight shut-off is required. |
| USE: | Saturated steam, compressed air and other gases and liquids compatible with the construction. |
| AVAILABLE MODELS: | RP16G and RP16GN – PN16 cast iron<br>Suffix N : soft seated with nitrile rubber |
| SIZES: | DN 15 to DN 50 |
| CONNECTIONS: | RP16G Flanged EN 1092-2 |
| INSTALLATION: | Horizontal installation.<br>An "Y" strainer , steam separator and steam trap should be provided upstream the valve.<br>See IMI, installation and maintenance instructions. |

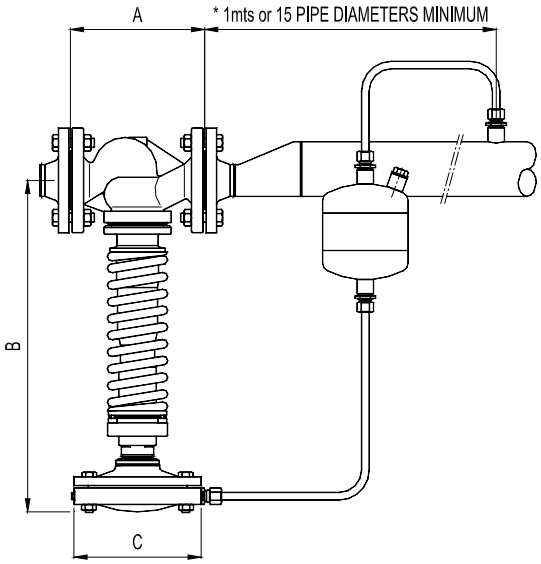
| CE MARKING (PED-European Directive 97/23/EC) | |
|---|---|
| **PN 16** | **Category** |
| DN15 to DN50 | SEP - art. 3, paragraph3 |

| LIMITING CONDITIONS | | |
|---|---|---|
| | **RP16G Cast iron** | **RP16GN * Cast iron** |
| Body design conditions | PN16 | PN16 |
| Max.upstream pressure | 13 bar | 13 bar |
| Max.downstream pressure | 13 bar | 13 bar |
| Min.downstream pressure | 0,5 bar | 0,5 bar |
| Max.operating temperature | 200°C | 90°C |
| Max.reducing ratio | 5:1 | 5:1 |
| Max.cold hydraulic test | 24 bar | 24 bar |
| Max.hydraulic factory valve body test | 24 bar | 24 bar |

Suffix N : - a maximum turndown ratio 10:1 should be observed.PTFE can also be offered.

VALSTEAM ADCA

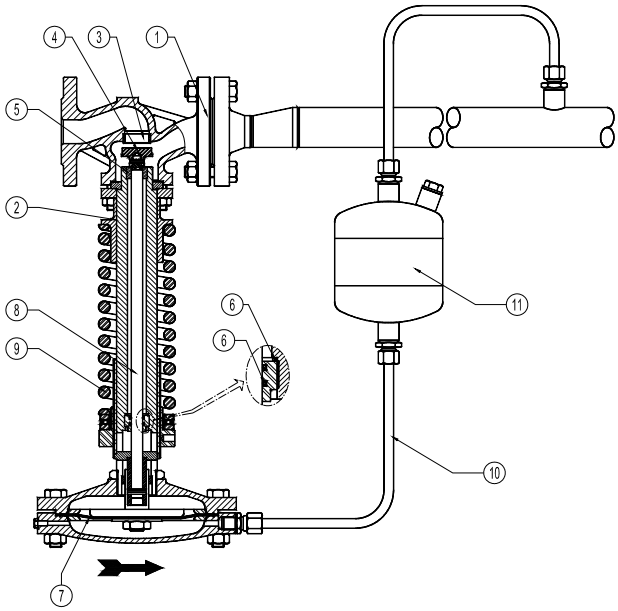
| DIMENSIONS (mm) | | | | | | |
|---|---|---|---|---|---|---|
| VALVE | | | | ACTUATOR | | |
| SIZE DN | A | B | WGT. Kgs | TYPE | C | WGT. Kgs |
| 15 | 130 | 440 | 12,7 | **A1** | 172 | 4,3 |
| 20 | 150 | 440 | 12,7 | **A11** | 172 | 4,3 |
| 25 | 160 | 440 | 13,7 | **A2** | 220 | 7,3 |
| 32 | 180 | 445 | 15,7 | **A21** | 220 | 7,3 |
| 40 | 200 | 445 | 17,7 | **A3** | 282 | 11,3 |
| 50 | 230 | 540 | 25,7 | **A4** | 340 | 16,3 |




| MATERIALS | | |
|---|---|---|
| POS. | DESIGNATION | MATERIAL |
| 1 | Valve body (PN16) | GJS-400-18LT / 0.7033 |
| 2 | Piston body | GJS-400-15 / 0.7040 |
| 3 | Valve seat | HARDENED ST.STEEL |
| 4 | * Valve disc | HARDENED ST.STEEL |
| 4 | * Soft valve disc | AISI 304 / 1.4301 ; NBR |
| 5 | Guide | AISI 304 / 1.4301 |
| 6 | * O-Rings | NBR |
| 7 | * Diaphragm chamber | GJL-250 / 0.6025 |
| 8 | Spindle | AISI 304 / 1.4301 |
| 9 | Regulating spring | SPRING STEEL |
| 10 | * Impulse line | COPPER |
| 11 | * Condensate vessel a) | S235JRG2 / 1.0038 |

* Available spare parts.

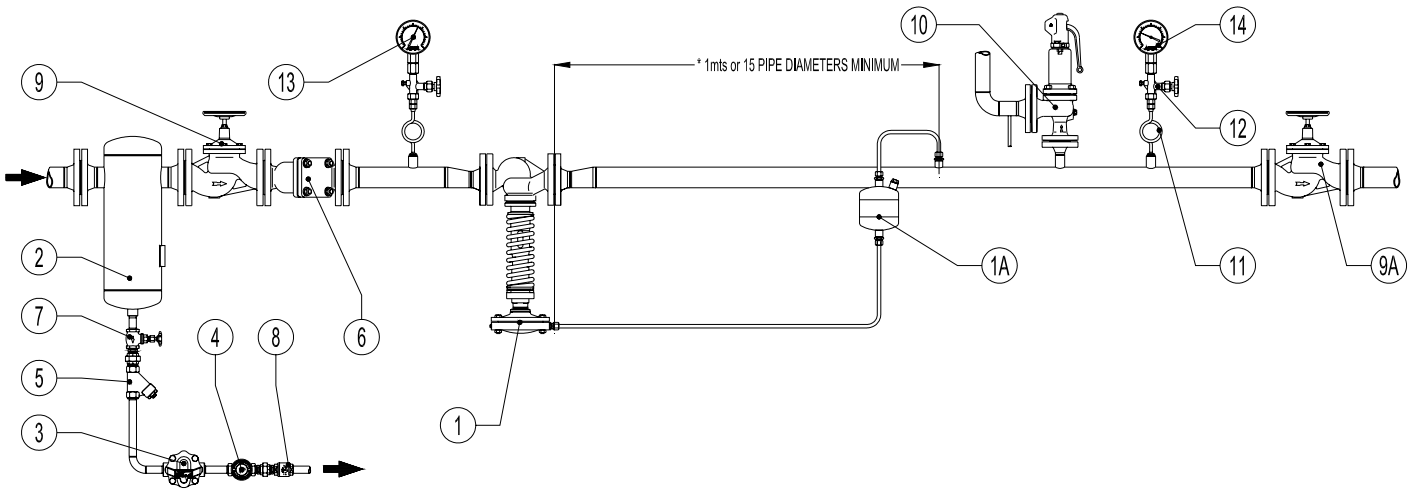
a) Not necessary when in operation with low temperature compressed air or water.

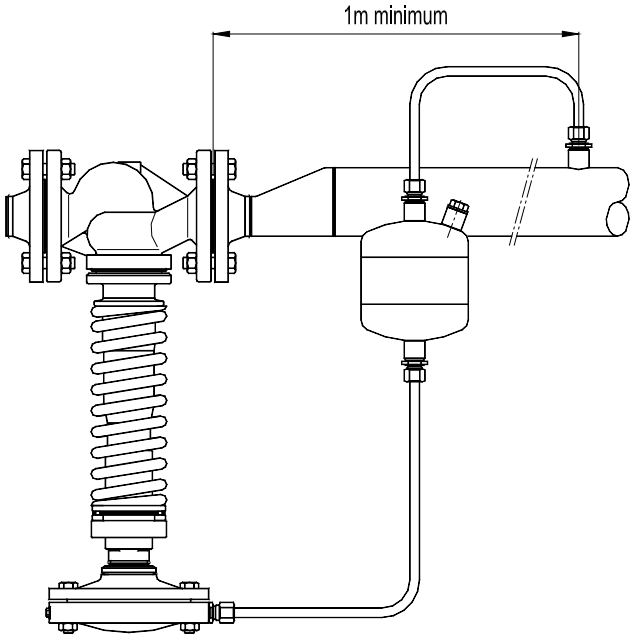



| ACTUATOR AND SPRING SELECTION TABLE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| VALVE SIZE DN | Kvs m3/h | ACTUATOR | | | | | | |
| | | | A-4 | A-3 | A-2 | A-21 | A-1 | A-11 |
| **15** | **3,8** | **Outlet (bar)** | 0,5 - 0,99 | 1,0 - 1,6 | 1,7 - 3,8 | 3,9 - 5,5 | 5,6 - 8,2 | 8,3 - 13 |
| | | **Spring Nº.** | 60 | 60 | 60 | 60 | 60 | 60 |
| **20** | **5,1** | **Outlet (bar)** | 0,5 - 0,99 | 1,0 - 1,6 | 1,7 - 3,8 | 3,9 - 5,5 | 5,6 - 8,2 | 8,3 - 13 |
| | | **Spring Nº.** | 60 | 60 | 60 | 60 | 60 | 60 |
| **25** | **9,1** | **Outlet (bar)** | 0,5 - 0,99 | 1,0 - 1,6 | 1,7 - 3,8 | 3,9 - 5,5 | 5,6 - 8,2 | 8,3 - 13 |
| | | **Spring Nº.** | 60 | 60 | 60 | 60 | 60 | 60 |
| **32** | **11,8** | **Outlet (bar)** | 0,5 - 0,99 | 1,0 - 1,6 | 1,7 - 3,8 | 3,9 - 5,5 | 5,6 - 8,2 | 8,3 - 13 |
| | | **Spring Nº.** | 60 | 60 | 60 | 60 | 60 | 60 |
| **40** | **14,4** | **Outlet (bar)** | 0,5 - 0,99 | 1,0 - 1,6 | 1,7 - 3,8 | 3,9 - 5,5 | 5,6 - 8,2 | 8,3 - 13 |
| | | **Spring Nº.** | 60 | 60 | 60 | 60 | 60 | 60 |
| **50** | **26,5** | **Outlet (bar)** | 0,5 - 0,99 | 1,0 - 1,9 | 2,0 - 4,2 | 4,3 - 6,9 | 7 - 8,5 | 8,6 - 13 |
| | | **Spring Nº.** | 61 | 61 | 61 | 61 | 64 | 64 |

**HOW TO SIZE ( using Kvs) :** please consult formulas on IS PV10.00 E or consult factory.

# Typical Installation




| MATERIALS | | |
|---|---|---|
| ***POS.*** | ***DESIGNATION*** | ***MODEL*** |
| 1 | Pressure reducing valve | ADCA RP16G |
| 1A | Water seal pot | POP |
| 2 | Humidity separator | ADCA S 25 |
| 3 | Steam trap | ADCA FLT series |
| 4 | Sigh glass | ADCA SW 12 |
| 5 | Y Strainer | ADCA IS 16 |
| 6 | Y Strainer | ADCA IS16F |
| 7 | Stop valve | ADCA GV32B |
| 8 | Check valve | ADCA RT |
| 9 | Stop valve | ADCA VF16 |
| 9A | Stop valve | ADCA VF16 |
| 10 | Safety valve | - |
| 11 | Coil | ADCA GSC-40 |
| 12 | Gauge cock | ADCA GC-400 |
| 13 | Upsteam pressure gauge | ADCA MAN-100 |
| 14 | Downstream pressure gauge | ADCA MAN-100 |

Remarks :
**By-pass** : if overpressure can not be accepted the use of by-pass is not recommended. In alternative, for critical process, two pressure reducing stations should be installed in parallel.
PN ratings and materials according to the operating pressures.
* The balance pipe connection is recommended to enter downstream pipe at a minimum of 1 meter from valve.
Installation instructions are available (IMI-RP16) and typical assembling drawing.
Special assembling designs may be produced on request.