

PRESSURE REDUCING VALVES RPW45B (EN)

DESCRIPTION

The ADCA RPW45B series pressure reducing valves are single seated, diaphragm sensing proportional controllers that operate without auxiliary energy.

Designed for use with water, compressed air and other liquids and gases compatible with the construction.

MAIN FEATURES

Pressure balancing through robust piston design.

Soft sealing to meet tight shut-off requirements.

Robust construction (fit-and-forget).

Interchangeable actuators and adjustment springs.

OPTIONS: Low-noise flow divider.
Sensing pipe on body.

USE: Water, compressed air and other liquids or gases compatible with the construction.

AVAILABLE MODELS: RPW45BG – SG iron.
RPW45BS – carbon steel.
RPW45Bi – stainless steel.

SIZES: DN 50 to DN 100.

CONNECTIONS: Flanged EN 1092-1 PN 16 or PN 40.
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-1/-2 on request.

AVAILABLE ACTUATORS: A1, A10, A12, A3 and A4 – carbon steel.
A2 and A21 – SG iron or carbon steel.
A1i, A10i, A12i, A2i, A21i, A3i and A4i – stainless steel.

INSTALLATION: See IMI – Installation and maintenance instructions.



RPW45BS



RPW45Bi



**RPW45BS
with sensing pipe
on body**

| CE MARKING – GROUP 2 (PED – European Directive) | | |
|--|--------------|---------------|
| PN 16 | PN 40 | Category |
| DN 50 | – | SEP |
| DN 65 to 100 | DN 50 to 100 | 1 (CE marked) |

LIMITING CONDITIONS – VALVE (mm)

| MODEL | RPW45BG, RPW45BS and RPW45Bi | RPW45BS and RPW45Bi |
|---|------------------------------|---------------------|
| Body design conditions | PN 16 | PN 40 |
| Maximum upstream pressure | 16 bar | 40 bar |
| Maximum downstream pressure | 13 bar | 18 bar |
| Minimum downstream pressure | 0,2 bar | 0,2 bar |
| Maximum operating temperature | 130 °C | 130 °C |
| Maximum reducing ratio | 10:1 | 10:1 |
| Rangeability | 10:1 | 10:1 |
| Maximum hydraulic factory valve body test | 24 bar | 60 bar |

Remark: Other soft materials and temperature limits on request.

LIMITING CONDITIONS – ACTUATOR (mm)

| ACTUATOR MODEL | A1 and A1i | A10 and A10i | A12 and A1i | A21 and A21i | A2 and A2i | A3 and A3i | A4 and A4i |
|----------------------------------|------------|--------------|-------------|--------------|------------|------------|------------|
| Maximum operating pressure (bar) | 25 | 25 | 25 | 18 | 12 | 2,5 | 1,5 |
| Maximum operating temperature | 90 °C * | | | | | | |

* With liquids at higher temperature, the sensing pipe should prevent exceeding the maximum operating temperature of the actuator.

FLOW RATE COEFFICIENTS (m³/h)

| SIZE | DN 50 | DN 65 | DN 80 | DN 100 |
|------|-------|-------|-------|--------|
| Kvs | 26,5 | 51,5 | 79,5 | 129,5 |

ACTUATOR AND SPRING SELECTION TABLE

| SIZE | | A4 and A4i | A3 and A3i | A2 and A2i | A21 and A21i | A1 and A1i | A10 and A10i | A12 and A12i | |
|--------|------------------------|------------|------------|------------|--------------|------------|--------------|--------------|----------|
| DN 50 | Regulating range (bar) | 0,2 to 0,5 | 0,4 to 1 | 0,7 to 1,6 | 1,4 to 3,5 | 2,5 to 5,5 | 3,5 to 8 | 5 to 10 | 8 to 18 |
| | Spring N° | 67 | 61 | 61 | 61 | 61 | 61 | 61 | 61 |
| DN 65 | Regulating range (bar) | 0,2 to 0,5 | 0,4 to 1 | 0,7 to 1,6 | 1,4 to 3,5 | 2,5 to 5,5 | 3,5 to 8 | 5 to 10 | 8 to 18 |
| | Spring N° | 67 | 61 | 61 | 61 | 61 | 61 | 61 | 61 |
| DN 80 | Regulating range (bar) | 0,2 to 0,5 | 0,4 to 1,2 | 0,7 to 2 | 1,8 to 4,5 | 2,5 to 5,5 | 3,5 to 9 | 5 to 12 | 10 to 18 |
| | Spring N° | 68 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| DN 100 | Regulating range (bar) | 0,2 to 0,6 | 0,4 to 1,2 | 0,7 to 2 | 1,8 to 4,5 | 2,5 to 5,5 | 3,5 to 9 | 5 to 12 | 10 to 18 |
| | Spring N° | 69 | 63 | 63 | 63 | 63 | 63 | 63 | 63 |

HOW TO SIZE (USING Kvs)

Please consult formulas on IS PV10.00 E or consult the manufacturer.

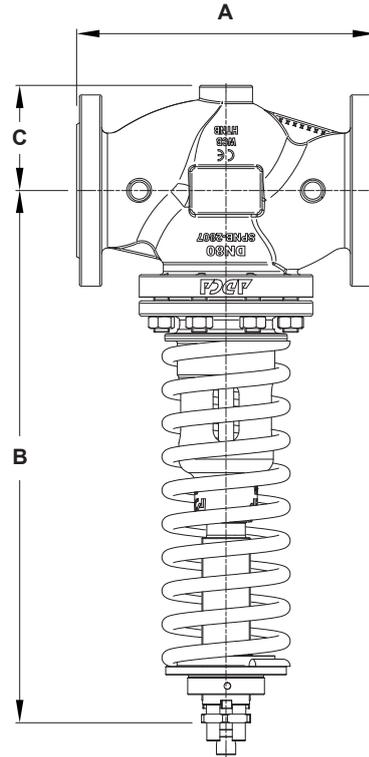
HOW TO ORDER

RPW45BS DN 80 PN 16 valve complete with spring N° 62, A2A actuator with sensing pipe on body.

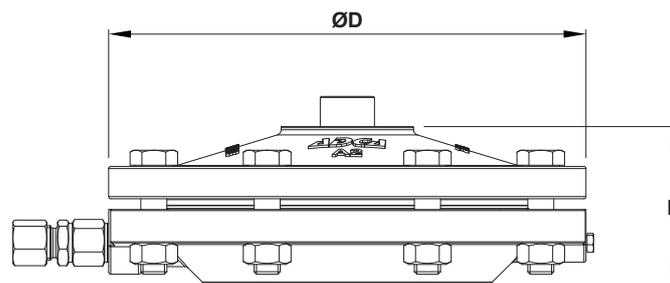
INSTALLATION

Horizontal installation with the actuator vertically, pointing downwards (recommended, specially for liquid service) or upwards.

The sensing pipe, if not fitted on the valve body, must be installed downstream of the valve at a minimum of 1 meter away or 15 pipe diameters.

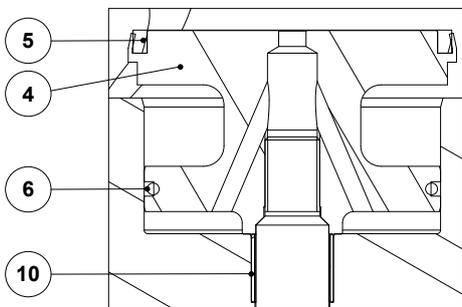
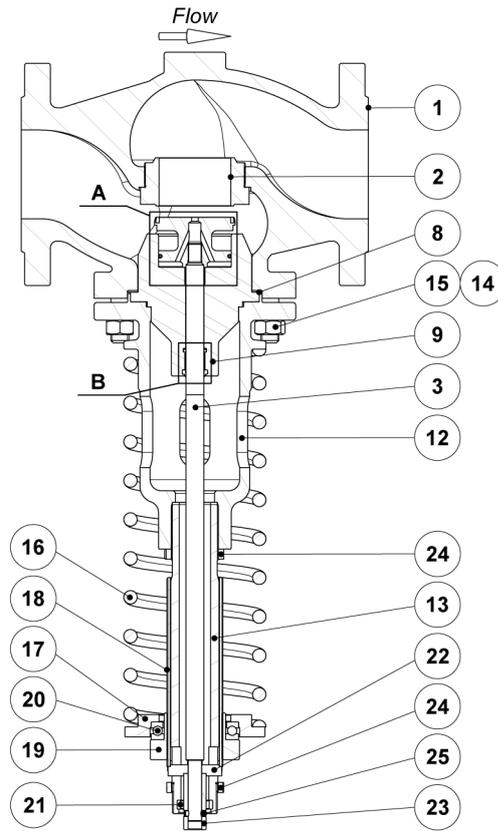


| DIMENSIONS – VALVE (mm) | | | | |
|-------------------------|-------|-------|-------|--------|
| DIMENSION | SIZE | | | |
| | DN 50 | DN 65 | DN 80 | DN 100 |
| A | 230 | 290 | 310 | 350 |
| B | 470 | 495 | 556 | 597 |
| C | 85 | 100 | 110 | 130 |
| WEIGHT (kg) | 23,9 | 37,3 | 48,1 | 58,2 |

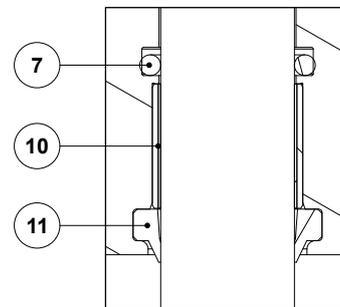


| DIMENSIONS – ACTUATOR (mm) | | | | | | | |
|----------------------------|------------|--------------|--------------|------------|--------------|------------|------------|
| DIMENSION | ACTUATOR | | | | | | |
| | A1 and A1i | A10 and A10i | A12 and A12i | A2 and A2i | A21 and A21i | A3 and A3i | A4 and A4i |
| ØD | 172 | 172 | 172 | 220 | 220 | 282 | 340 |
| E | 67 | 67 | 67 | 74 | 74 | 71 | 81 |
| WEIGHT (kg) | 4,3 | 4,3 | 4,3 | 7,3 | 7,3 | 11,3 | 16,3 |

MATERIALS



Detail A

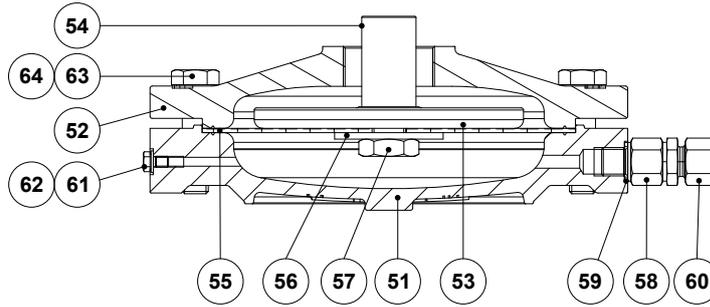


Detail B

MATERIALS – VALVE

| POS. N° | DESIGNATION | DN 50 | DN 65 to 100 |
|---------|---|----------------------------|----------------------------|
| 1 | Valve body (RPW45BG) | GJS-400-15 / 0.7040 | GJS-400-15 / 0.7040 |
| | Valve body (RPW45BS) | A216 WCB / 1.0619 | A216 WCB / 1.0619 |
| | Valve body (RPW45Bi) | A351 CF8M / 1.4408 | A351 CF8M / 1.4408 |
| 2 | Seat | AISI 316 / 4.4401 | AISI 316 / 4.4401 |
| 3 | Stem | AISI 304 / 1.4301 | AISI 304 / 1.4301 |
| 4 | * Valve plug | AISI 316 / 4.4401 | AISI 316 / 4.4401 |
| 5 | Seal ring | EPDM | EPDM |
| 6 | O-ring | EPDM | EPDM |
| 7 | O-ring | EPDM | EPDM |
| 8 | Gasket | Stainless steel / Graphite | Stainless steel / Graphite |
| 9 | Stem guide | AISI 304 / 1.4301 | AISI 304 / 1.4301 |
| 10 | Guide bushing | Bronze / PTFE | Bronze / PTFE |
| 11 | Scraper | Viton | Viton |
| 12 | Piston body (RPW45BG and RPW45BS) | A216 WCB / 1.0619 | A216 WCB / 1.0619 |
| | Piston body (RPW45Bi) | A351 CF8M / 1.4408 | A351 CF8M / 1.4408 |
| 13 | Piston body extension (RPW45BG and RPW45BS) | - | P355T1 / 1.0421 |
| | Piston body extension (RPW45Bi) | - | AISI 304 / 1.4301 |
| 14 | Stud (RPW45BG and RPW45BS) | Steel 8.8; EN 10269 steel | Steel 8.8; EN 10269 steel |
| | Stud (RPW45Bi) | Stainless steel A2-70 | Stainless steel A2-70 |
| 15 | Nut (RPW45BG and RPW45BS) | Steel 8.8; EN 10269 steel | Steel 8.8; EN 10269 steel |
| | Nut (RPW45Bi) | Stainless steel A2-70 | Stainless steel A2-70 |
| 16 | * Adjustment spring | Spring steel | Spring steel |
| 17 | Lower spring plate (RPW45BG and RPW45BS) | C45E / 1.1191 | C45E / 1.1191 |
| | Lower spring plate (RPW45Bi) | AISI 304 / 1.4301 | AISI 304 / 1.4301 |
| 18 | Threaded tube | CuZn39Pb3 | CuZn39Pb3 |
| 19 | Spring adjusting nut (RPW45BG and RPW45BS) | C45E / 1.1191 | C45E / 1.1191 |
| | Spring adjusting nut (RPW45Bi) | AISI 304 / 1.4301 | AISI 304 / 1.4301 |
| 20 | Ball bearing | Zinc plated steel | Zinc plated steel |
| 21 | Spacer (RPW45BG and RPW45BS) | S355J2G3 / 1.0570 | S355J2G3 / 1.0570 |
| | Spacer (RPW45Bi) | AISI 304 / 1.4301 | AISI 304 / 1.4301 |
| 22 | Pressure star (RPW45BG and RPW45BS) | S235JR / 1.0038 | S235JR / 1.0038 |
| | Pressure star (RPW45Bi) | AISI 304 / 1.4301 | AISI 304 / 1.4301 |
| 23 | Pressure tube (RPW45BG and RPW45BS) | C45E / 1.1191 | C45E / 1.1191 |
| | Pressure tube (RPW45Bi) | AISI 304 / 1.4301 | AISI 304 / 1.4301 |
| 24 | Lock nut (RPW45BG and RPW45BS) | C45E / 1.1191 | C45E / 1.1191 |
| | Lock nut (RPW45Bi) | AISI 303 / 1.4305 | AISI 303 / 1.4305 |
| 25 | Pin | AISI 303 / 1.4305 | AISI 303 / 1.4305 |

* Available spare parts.



A series

| MATERIALS – ACTUATOR | | | | |
|----------------------|-------------------------|-------------------------------|---|--|
| POS. N° | DESIGNATION | A1, A10, A12, A3 and A4 | A2 and A21 | A1i, A10i, A12i, A2i, A21i, A3i and A4i |
| 51 | Lower diaphragm chamber | A216 WCB / 1.0619 | GJS-400-15 / 0.7040; A216 WCB / 1.0619 | A351 CF8M / 1.4408 |
| 52 | Upper diaphragm chamber | A216 WCB / 1.0619 | GJS-400-15 / 0.7040; A216 WCB / 1.0619 | A351 CF8M / 1.4408 |
| 53 | Pressure plate | A216 WCB / 1.0619 | GJS-400-15 / 0.7040 | A351 CF8M / 1.4408; AISI 304 / 1.4301 |
| 54 | Diaphragm plate spindle | A216 WCB / 1.0619 | GJS-400-15 / 0.7040 | A351 CF8M / 1.4408; AISI 304 / 1.4301 |
| 55 | * Diaphragm | Neoprene reinforced polyamide | Neoprene reinforced polyamide | Neoprene reinforced polyamide |
| 56 | Washer | Copper | Copper | AISI 304 / 1.4301 |
| 57 | Hex nut | CuZn39Pb3 | CuZn39Pb3 | AISI 304 / 1.4301 |
| 58 | Flow restrictor | AISI 303 / 1.4305 | AISI 303 / 1.4305 | AISI 303 / 1.4305 |
| 59 | Gasket | Copper | Copper | Copper |
| 60 | Compression fitting | AISI 316Ti / 1.4571 | AISI 316Ti / 1.4571 | AISI 316Ti / 1.4571 |
| 61 | Vent screw | Zinc plated steel | Zinc plated steel | AISI 304 / 1.4301 |
| 62 | Washer | Copper | Copper | AISI 304 / 1.4301 |
| 63 | Bolt | Zinc plated steel | Zinc plated steel | AISI 304 / 1.4301 |
| 64 | Nut | Zinc plated steel | Zinc plated steel | AISI 304 / 1.4301 |

* Available spare parts.