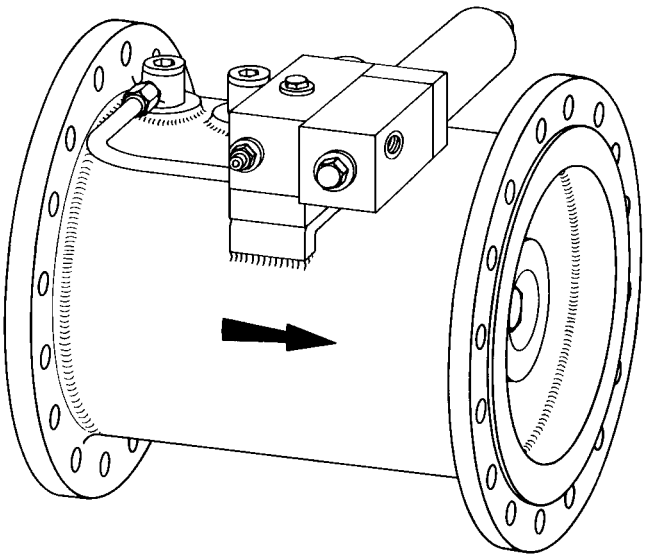
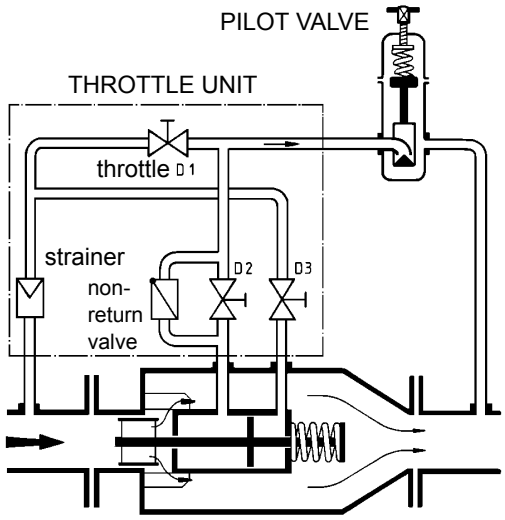
# PRESSURE REDUCING VALVES

pilot-controlled, inline-design
for liquids up to 80 / 130 °C

**Type 814**
**815**






## TECHNICAL DATA

| | |
|---|---|
| MEDIUM | liquids |
| NOMINAL PRESSURE | PN 16 - 25/10 - 25 |
| CONNECTION | DN 100 - 800 |
| INLET PRESSURE | up to 25 bar |
| OUTLET PRESSURE | 1 - 20 bar<br>in 3 adjusting ranges |
| DIFFERENTIAL PRESS. | min. 2 bar |
| TEMPERATURE | up to 80 / 130 °C |
| KVS-VALUE | 60 - 2100 $m^3/h$ |

## DESCRIPTION

Pilot-controlled Pressure reducing valves control the pressure at the outlet side.

The pressure regulating valve type 814/815 is a self acting regulating valve of tubular shape consisting of a main valve to which a pilot valve and a throttle unit with strainer are connected by rigid piping. The valve cone has a metallic seal. The sealing is equal to or better than VDI/VDE rule 2174.

With the pipeline depressurised the main valve is closed by a preloaded spring. A pressure difference (p1 - p2) of at least 2 bar is required to cause the valve to open. The pilot valve is open as long as the outlet pressure is below the set pressure. The throttle valve D1 causes a pressure drop which results in the control pressure inside the main valve spring housing being approximately equal to the outlet pressure. The inlet pressure overcomes the control pressure and closing spring force and opens the main valve.

When the outlet pressure reaches the set pressure, the pilot valve reducees the control line cross section. This causes the control pressure to encrease and push the main valve plunger into a regulating position in which the opening and closing forces are in a balance.

The pilot valve closes as soon as the outlet pressure exceeds the set pressure. The control pressure is equal to the inlet pressure, the forces acting on the plunger are in a balance and the main valve is kept closed by its spring.
The throttles are designed to optimise the control characteristic. The bypass line around D2 which contains a non-return valve, causes quick shut-off.

The pressure regulating valve has internal controling piping. The 1/2" BSPT trigger lines must be installed at the site.
The valve may be equipped with electrical limit switches.

The pressure reducing valves type 814 and 815 are different in nominal diameter and KVS-values.

Mankenberg reserves the right, to alter or improve the designs or specifications of the products described herein without notice.

Special designs on request.

| KVS-VALUES [$m^3/h$] | | | | | | |
|---|---|---|---|---|---|---|
| | nominal diameter DN | | | | | |
| Type | 100 | 125 | 150 | 200 | 250 | 300 |
| 814 | 60 | 100 | 120 | 180 | 250 | 400 |
| 815 | 180 | 200 | 250 | 400 | 600 | 800 |

| KVS-VALUES [$m^3/h$] | | | | | | |
|---|---|---|---|---|---|---|
| | nominal diameter DN | | | | | |
| Type | 350 | 400 | 500 | 600 | 700 | 800 |
| 814 | 600 | 800 | 1200 | 1800 | 2000 | 2100 |
| 815 | 1200 | 1800 | | | | |

| ADJUSTING RANGES [bar] | | |
|---|---|---|
| 1 - 5 | 4 - 12 | 10 - 20 |
| PN 16 - 25/10 | PN 16 - 25/25 | PN 16 - 25/40 |

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# PRESSURE REDUCING VALVES

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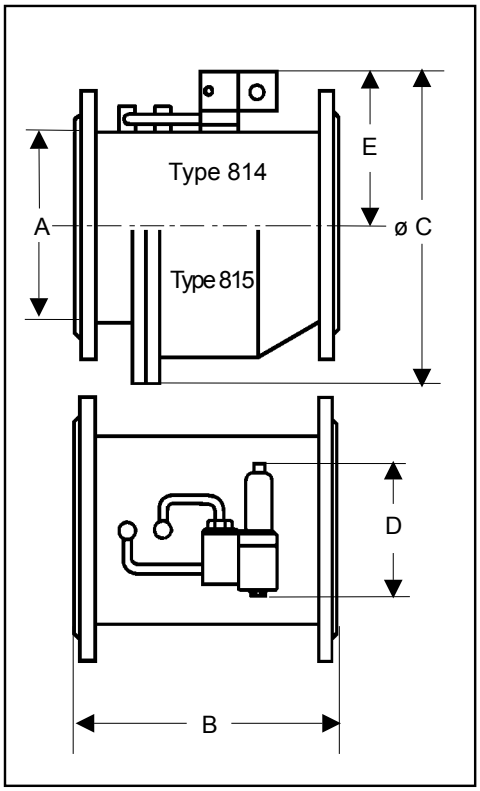
**Type 814**
**815**

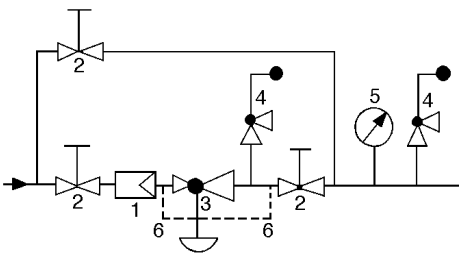
| MATERIALS | | |
|---|---|---|
| TEMPERATURE | 80 °C | 130 °C |
| BODY | steel welded / CrNiMo-steel welded | |
| INNER PARTS | CrNiMo-steel | |
| VALVE SEALING | CrNiMo-steel | |
| O-RINGS | NBR | EPDM |
| PILOT VALVE<br>CONTROL LINES<br>THROTTLE UNIT | CrNiMo-steel | |




| DIMENSIONS [mm] | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | nominal diameter DN | | | | | | | | | | | |
| Type | Size | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 | 700 | 800 |
| 814, 815 | A | Flansche nach DIN 2501 | | | | | | | | | | | |
| 814 | B | | | 350 | 400 | 450 | 500 | 550 | 600 | 700 | 800 | 900 | 1000 |
| 815 | B | 350 | 400 | 480 | 600 | 730 | 850 | 980 | 1100 | | | | |
| 815 | ø C max. | 360 | 400 | 425 | 485 | 555 | 620 | 730 | 845 | | | | |
| 814, 815 | D max. | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 |
| 814 | E max. | | | 220 | 240 | 270 | 300 | 320 | 350 | 400 | 450 | 500 | 550 |
| 815 | E max. | 220 | 240 | 270 | 300 | 320 | 350 | 400 | 450 | | | | |

| WEIGHTS [kg] | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | nominal diameter DN | | | | | | | | | | | |
| Type | PN | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 | 700 | 800 |
| 814 | 16 | | | 65 | 75 | 120 | 150 | 190 | 240 | 300 | 360 | 420 | 500 |
| | 25 | | | 80 | 90 | 135 | 165 | 220 | 280 | 360 | 400 | 480 | 580 |
| 815 | 16 | 85 | 110 | 125 | 170 | 220 | 270 | 340 | 400 | | | | |
| | 25 | 90 | 115 | 135 | 180 | 240 | 300 | 370 | 430 | | | | |

## RECOMMENDED INSTALLATION




1 strainer *
2 shuttoff valves
**3 pressure reducer**
4 safety valve *
5 pressure gauge *
6 sense lines G 1/2

* use MANKENBERG-products

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