2-way flow control valve type **UDRD6**... serves to control fluid flow rate independently of pressure and temperature in direction **A** to **B** and allows free flow in the opposite direction **B** to **A** (in version with a check valve). The valve may be mounted in a hydraulic circuit in any position.

### DESCRIPTION OF OPERATION

After supplying pressurized oil into line A of the valve a flow rate is stabilized at the throttling gap (1). By rotating handknob (2) clockwise (in range of 10 scale divisions – about 300°) the throttling gape (1) broadens and flow through the valve increases. Constant flow independent of pressure is held by pressure compensator (3). Free flow from line **B** to **A** is ensured by check valve (4) – in version with check valve (UDRD6 – 22/...R).
## TECHNICAL DATA

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic fluid</td>
<td>mineral oil</td>
</tr>
<tr>
<td><strong>Required filtration</strong></td>
<td>up to 16 µm</td>
</tr>
<tr>
<td><strong>Recommended filtration</strong></td>
<td>up to 10 µm</td>
</tr>
<tr>
<td>Nominal fluid viscosity</td>
<td>37 mm²/s at temperature 55°C</td>
</tr>
<tr>
<td>Viscosity range</td>
<td>2.8 up to 380 mm²/s</td>
</tr>
<tr>
<td>Fluid temperature range (in a tank)</td>
<td>recommended</td>
</tr>
<tr>
<td></td>
<td>40°C up to 55°C</td>
</tr>
<tr>
<td></td>
<td>max.</td>
</tr>
<tr>
<td></td>
<td>−20°C up to +70°C</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>−20°C up to +70°C</td>
</tr>
<tr>
<td><strong>Maximum operating pressure</strong></td>
<td>31.5 MPa</td>
</tr>
<tr>
<td>Tolerance of flow control for constant pressure and temperature</td>
<td>+ 5 %</td>
</tr>
<tr>
<td><strong>The least pressure difference before and behind the valve</strong></td>
<td>1.5 MPa</td>
</tr>
<tr>
<td>Flow stability at pressure change</td>
<td>+ 5 %</td>
</tr>
<tr>
<td>Weight</td>
<td>1.4 kg</td>
</tr>
</tbody>
</table>

## SCHEMES

Simplified and detailed graphic symbols of flow control valves type UDRE6...

<table>
<thead>
<tr>
<th>Detailed Symbol</th>
<th>Simplified Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>version UDRE6/...R...</td>
<td></td>
</tr>
</tbody>
</table>

![Simplified Symbol]

<table>
<thead>
<tr>
<th>Detailed Symbol</th>
<th>Simplified Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>version UDRE6/...M...</td>
<td></td>
</tr>
</tbody>
</table>

![Detailed Symbol]![Simplified Symbol]
OVERALL AND CONNECTION DIMENSIONS

1 – Sealing ring o-ring 9,2 × 1,8 – 4 pcs/kit
2 – Porting pattern – configuration of surface holes in subplate in accordance with the following standards:
   - CETOP RP 121H – identified by CETOP 4.2-4-03 (nominal size CETOP 03)
   - ISO 4401 – identified by ISO 4401-03-02-0-94 mounting bolts M5 × 30 – 10,9 – 4 pcs/kit in accordance with PN - EN ISO 4762 tightening torque Md = 9 Nm
NOTE: (*) – dimensions related to centers of deep holes (with sealing rings item 1 – 2 pcs) in housing of flow control valve in order to apply an accordance with CETOP RP 121H, ISO 4401
3 – Subplate surface required
4 – Space required to remove the key from the lock of the adjustment
PERFORMANCE CURVES

measured at viscosity $\nu = 41 \text{ mm}^2/\text{s}$ and temperature $t = 50 \degree \text{C}$

**Characteristic of flow in relation to the valve setting**

Characteristic curves of flow relation to handknob position on scale for flow control valves with different settable flow ranges

flow direction $A \rightarrow B$

![Flow Characteristic Diagram](flow_characteristic_diagram.png)

**Characteristic of flow resistance**

Characteristic curves of flow resistance through check valve – version UDRD6-22/...R...

flow direction $B \rightarrow A$

![Flow Resistance Diagram](flowResistance_diagram.png)
### HOW TO ORDER

<table>
<thead>
<tr>
<th>Nominal size (NS)</th>
<th>NS6 = 6</th>
</tr>
</thead>
</table>
| Series number | (20 – 29) - connection and installation dimensions unchanged = 2X  
series 22 = 22 |
| Flow range (A→B) |  
up to 0,3 dm³/min  
up to 0,6 dm³/min  
up to 1,0 dm³/min  
up to 1,5 dm³/min  
up to 2,5 dm³/min  
up to 5,0 dm³/min  
up to 10 dm³/min  
up to 20 dm³/min  
up to 32 dm³/min  
up to 43 dm³/min |  
= 0,3 Q  
= 0,6 Q  
= 1,0 Q  
= 1,5 Q  
= 2,5 Q  
= 5 Q  
= 10 Q  
= 20 Q  
= 32 Q  
= 43 Q |
| Version |  
with check valve = R  
without check valve = M |
| Sealing |  
NBR (for fluids on mineral oil base) = no designation  
FKM (for fluids on phosphate ester base) = V |
| Further requirements in clear text (to be agreed with the manufacturer) |

**NOTES:**  
The valve should be ordered according to the above coding.  
The **symbols in bold are preferred versions in short delivery time.**  
Coding example: UDRD6 – 22/20 Q M
SUBPLATES AND MOUNTING BOLTS

Subplates should be ordered according to data sheet **WK 496 480**. Symbols of subplates:
- **G 341/01** – threaded connections **G 1/4**
- **G 342/01** – threaded connections **G 3/8**
- **G 502/01** – threaded connections **G 1/2**
- **G 341/02** – threaded connections **M14 × 1,5**
- **G 342/02** – threaded connections **M16 × 1,5**

Subplates and mounting bolts **M5 × 30 – 10,9** – 4 pcs/kit in accordance with PN – EN ISO 4762 must be ordered separately.

Tightening torque for bolts **Md = 9 Nm**

**NOTE:**
Subplate symbols in bold are preferred versions in short delivery time.