



up to 15 l/min up to 350 bar

# FUNCTION



3

Δ

# Accumulator charging valve **DL10-01**

Spool Type, Direct-Acting UNF Cartridge – 350 bar

## **ADVANTAGES**

- For use with load sense accumulator charge systems or similar
- Industry common cavity
- Hardened internal parts to ensure minimal wear and extended service life
- All external surfaces Zinc Nickel plated corrosion resistant, 1000 hours minimum Salt Fog to red rust protection per ASTM B1117

## **FUNCTION DESCRIPTION**

The accumulator charging valve is a hydraulically piloted unloading valve. In the spring biased position, free flow is allowed from port 2 to 3. Increasing pressure at port 1 creates spool movement against the spring. As the spool transitions, pressure at port 2 is blocked and pressure at port 3 is vented to tank at the predetermined unloading pressure. The charged accumulator will keep the valve in the shifted state until the pressure decays to 80% of the unload pressure, at which point the spring will reset the spool to its biased position.

#### Note

Reloading pressures are influenced by pressure at port T.

# **APPLICATION EXAMPLE**



| SPECIFICATIONS*                   |                                  |   |  |  |
|-----------------------------------|----------------------------------|---|--|--|
| Operating pressure                | max. 350 bar                     | max. 350 bar                                      |  |  |
| Nominal flow                      | max. 15 l/min                    | max. 15 l/min                                     |  |  |
| Internal leakage                  | < 80 ml/min. at 207 bar          |   |  |  |
|                                   | leakage-free from port 1         | leakage-free from port 1 to 2                     |  |  |
| Reloading differential            | 20%                              | 20%   |  |  |
| Sensitivity pressure/turn         | 11.5 % of pressure rang          | 11.5 % of pressure range                          |  |  |
| Media operating temperature range | NBR: min. –30 °C to max. +100 °C |   |  |  |
|                                   | FKM: min. –20 °C to max. +120 °C |   |  |  |
| Ambient temperature range         | NBR: min. –30 °C to max. +120 °C |   |  |  |
|                                   | FKM: min. –20 °C to ma           | FKM: min. –20 °C to max. +120 °C                  |  |  |
| Operating fluid                   | Hydraulic oil to DIN 515         | Hydraulic oil to DIN 51524 Part 1, 2 and 3        |  |  |
| Viscosity range                   | min. 7.4 mm²/s to max.           | min. 7.4 mm²/s to max. 420 mm²/s                  |  |  |
| Filtration                        | Class 21/19/16 accordir          | Class 21/19/16 according to ISO 4406 or cleaner   |  |  |
| Installation                      | No orientation restriction       | No orientation restrictions                       |  |  |
| MTTFd                             | 150 - 1200 years, accor          | 150 - 1200 years, according to DIN EN ISO 13849-1 |  |  |
| Materials                         | Valve body and spool:            | hardened and ground steel                         |  |  |
|                                   | Seals:                           | NBR (standard)                                    |  |  |
|                                   |                                  | FKM (optional)                                    |  |  |
|                                   | Back-up rings:                   | solid thermoplastic polyester                     |  |  |
| Cavity                            | FC10-4                           |   |  |  |
| Weight                            | 0.35 kg                          |   |  |  |

\* see "Conditions and instructions for valves" in brochure 53.000

# DIMENSIONS



\*Torque: Steel manifold (ultimate tensile strength < 360 N/mm<sup>2</sup>): 46 – 50 Nm Aluminium manifold (ultimate tensile strength < 330 N/mm<sup>2</sup>): 36 – 40 Nm (tool acc. to DIN EN ISO 6789, tool type II class A or B) For further information see brochure No. 53.000 "Conditions and instructions for valves"



Allowed drilling zone (for manifold design)

\*\* Sharp edges should be avoided by rounding to a radius of 0.1 mm to 0.2 mm largest pre-drilling diameter (nominal tool diameter) \*\*\*

millimeter subject to technical modifications

# MODEL CODE

|  | <u>DL10</u> - 0 | <u>)1 - C - I</u> | <u>1</u> - <u>20</u> | - <u>400</u> | <u>¥ 180</u> |
|--|-----------------|-------------------|----------------------|--------------|--------------|
| Basic model  |                 |                   |                      |              |              |
| Accumulator charging valve, UNF  |                 |                   |                      |              |              |
| Туре   |                 |                   |                      |              |              |
| 01 = standard  |                 |                   |                      |              |              |
| Body and ports   |                 |                   |                      |              |              |
| C = cartridge only<br>AS8 = SAE-8, aluminum<br>SS8 = SAE-8, steel<br>SB4 = G1/2", steel<br>AB4 = G1/2", aluminum |                 |                   |                      |              |              |
| Seals  |                 |                   |                      |              |              |
| N = NBR (standard)<br>V = FKM  |                 |                   |                      |              |              |
| Unload and reload pressure range   |                 |                   |                      |              |              |
| 20 = 20% of pressure setting   |                 |                   |                      |              |              |
| Pressure range (in PSI/10)<br>400 = 35 to 275 bar (4000 PSI)<br>other pressure ranges on request                 |                 |                   |                      |              |              |
| Type of adjustment<br>V = Allen Head (Hex 5/32")   |                 |                   |                      |              |              |
| 0-41'  |                 |                   |                      |              |              |
| Setting pressure   |                 |                   |                      |              |              |

No details = set at 50% max. pressure for the range 180 = customized setting (desired PSI/10)

## **TYPICAL PERFORMANCE**



## MATERIAL OVERVIEW

#### Standard models

| Code                    | Part No. |
|-------------------------|----------|
| DL10-01-C-N-20-400V     | 2610409  |
| Other models on request |          |

#### Standard in-line bodies

| Code                    | Material           | Ports | Pressure | Part No. |
|-------------------------|--------------------|-------|----------|----------|
| FH104-AS8               | Aluminum, anodized | SAE-8 | 210 bar  | 3038110  |
| FH104-SS8               | Steel, plated      | SAE-8 | 350 bar  | 3037868  |
| FH104-SB4               | Steel, plated      | G1/2" | 350 bar  | 3037784  |
| FH104-AB4               | Aluminum, anodized | G1/2" | 210 bar  | 3038097  |
| Other models on request |                    |       |          |          |

#### Accessories, seal kits

| Code        | Material | Part No. |
|-------------|----------|----------|
| FS UNF 10/N | NBR      | 3651557  |
| FS UNF 10/V | FKM      | 3651559  |

#### Accessories, form tools

| Tool     | Part No. |
|----------|----------|
| Rougher  | 2580248  |
| Finisher | 2580249  |

### NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

Only documents currently obtained via the website are valid.