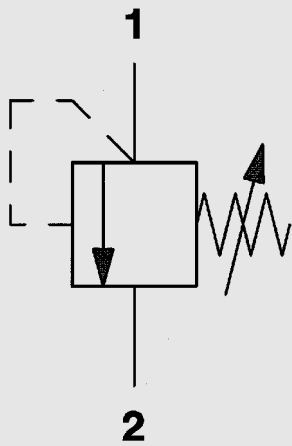
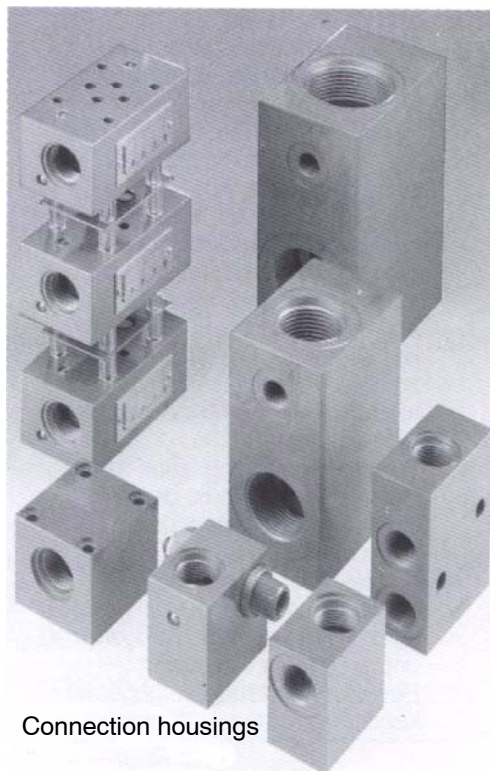
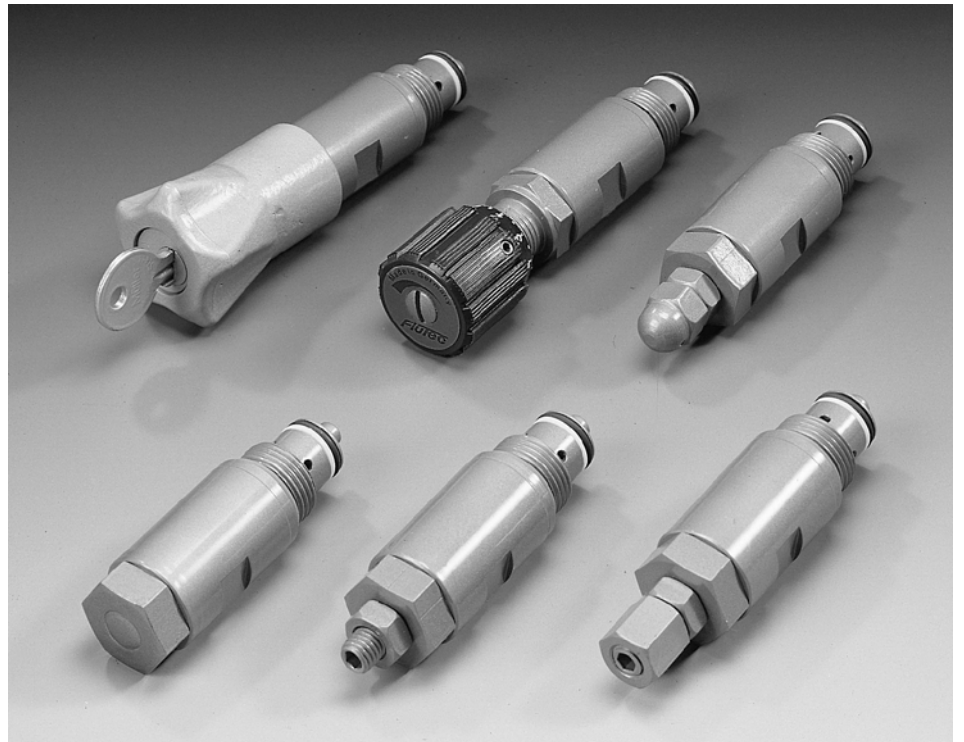


Pressure Relief Valves

DB4E



up to 630 bar
up to 30 l/min



Connection housings

1. DESCRIPTION

1.1. GENERAL

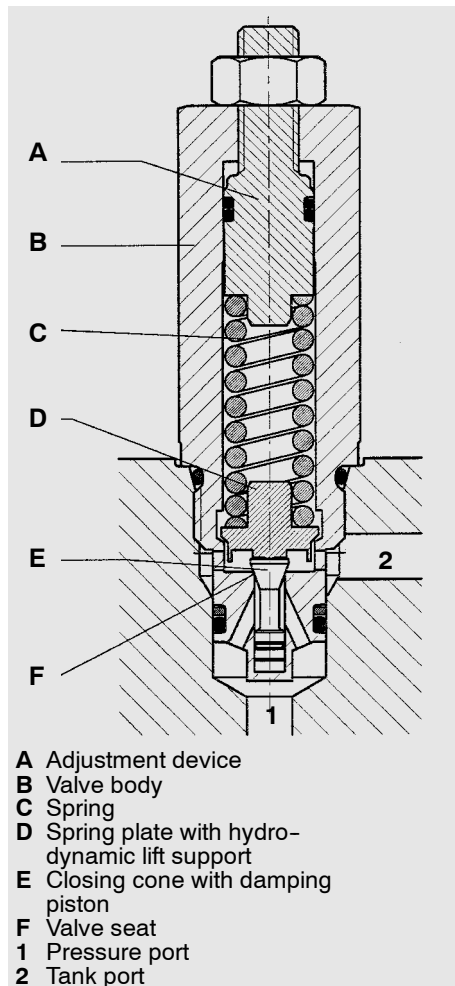
According to DIN-ISO 1219, HYDAC pressure relief valves DB4E are valves for oil hydraulic systems used for controlling pressure by opening the outlet to the tank when the inlet pressure exceeds the spring force.

The damping unit fitted on the pressure side ensures that a stable operation is maintained over the whole capacity range and that the noise level is kept to a minimum. An excellent constant-pressure performance is achieved by means of the hydrodynamic lift support. Further advantages of these valves are as follows:

- standardised installation dimensions means that they are suited to many different applications
- their compact design provides space-saving installation in connection housings, control blocks, etc. especially in confined installation conditions
- low hysteresis and high stability ensure accurate pressure control
- optimum system adaptation by means of various pressure ranges
- simple assembly by means of service-friendly cartridge valve technology
- a wide range of connection housings is available for optimum adaptation to a multitude of applications
- the zinc-plated surface is suitable for use in mobile applications without additional coatings.

In accordance with pressure vessel regulations pressure set and lead sealed pressure relief valves are available for oil hydraulic systems.

The corresponding valve specifications are set out in the brochure "HYDAC Pressure Relief Valves DB4 CE" no. E 5.163../..



1.2. FUNCTION

HYDAC pressure relief valves DB4E are direct-operated, spring-loaded cone seat valves for oil hydraulic systems. The valve basically consists of a valve body with built-in valve seat, a hardened and polished closing cone and the adjustment device for setting the initial spring tension. The spring applies this force to the closing cone and pushes it against the valve seat. On the opposite side of the closing cone the system pressure acts via port 1 of the valve. If the hydraulic pressure force is below the pre-set spring tension, the valve is closed. If the hydraulic pressure force exceeds the pre-set spring tension, the closing cone is lifted off the valve seat and the operating fluid flows from pressure port 1 to tank port 2. This limits the pressure across port 1. To ensure that a stable operation is maintained, the closing cone is securely located in the damping piston which has to displace oil in an aperture with each movement of the closing cone. This produces a damping force each time, opposing the direction of movement.

1.3. APPLICATION

HYDAC pressure relief valves DB4E are used:

- as safety valves for limiting pressure to the maximum permissible
- as safety valves for cylinders, pumps and other pressure generators
- for limiting pressure in hydraulic units and control blocks
- for pressure control of hydraulic circuits

Areas of application could be, for example:

- hydraulic units
- elevating platforms
- mobile hydraulics
- clamping hydraulics
- force or torque limiting on drive elements

1.4. NOTE

When fitting the valves into control blocks and housings the given torques must be observed!

Note port configuration!

Important

If the connections are incorrect, or the pressure has been incorrectly set above the operating pressure, the safety function of the valve is no longer operational.

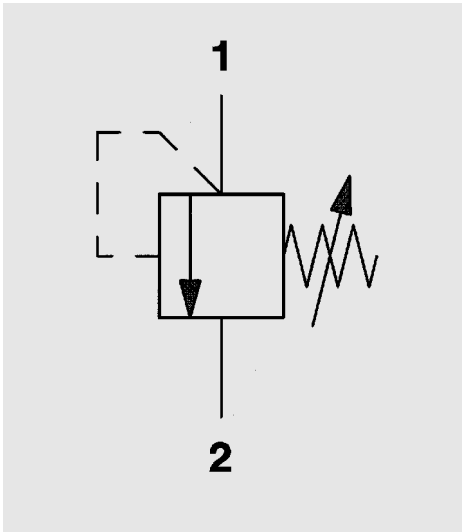
Max. pressure across tank port 2: 350 bar

Please note

The cracking pressure of the valve increases by the amount of pressure across tank port 2!

2. TECHNICAL SPECIFICATIONS

- 2.1. GENERAL
2.1.1. Designation and symbol
Pressure relief valve



2.1.2 Model code
(also order example)

DB4E - 01 X - 350 F 315

Pressure relief valve

Type
01 = standard, zinc-plated

Series
(determined by manufacturer)

Setting pressure range
(see also 2.2.7.)
100 = up to 100 bar
200 = up to 200 bar
350 = up to 350 bar
630 = up to 630 bar

Type of adjustment
V = adjustable with tool (standard)
M = maximum pressure relief of the setting range, adjustable with tool
S = scaled knob, adjustable by hand
F = fixed setting, cannot be adjusted
P = can be lead-sealed, adjustable with tool
A = hand wheel, lockable, adjustable by hand
(hand wheel with locking bolt cylinder type 2 H simultaneous locking: lock E 10)

Cracking pressure setting
V,P = if no details are given, cracking pressure is approx. 10 bar (spring relaxed)
F = factory set cracking pressure in bar
M = maximum adjustable cracking pressure in bar

Standard models

Stock no. (= order no.)	Model code
716001	DB4E-01X-100 V
716002	DB4E-01X-200 V
716003	DB4E-01X-350 V
716004	DB4E-01X-630 V

Please quote stock number when ordering.
Delivery for non-standard models is longer and the price is higher.

2.1.3. Type of construction

Cone seat valve

2.1.4. Type of mounting

Cartridge valve

2.1.5. Mounting position

Optional

2.1.6. Weight

DB4E...0.14 kg

2.1.7. Flow direction

from 1 to 2 pressure relief function
from 2 to 1 leakage-free

2.1.8. Ambient temperature range

min. -20 5C
max. +80 5C

2.1.9. Materials

Valve body: high tensile steel
Closing element: hardened and polished steel, wear-resistant

2.1.10. Seals

FPM and PTFE

2.1.11. Type of connection

Suitable connection housings with installation dimensions 06020 are available.
See separate housing brochure no.: E 5.252../..

2.2. HYDRAULIC DETAILS

2.2.1. Nominal pressure

Inlet (port 1): up to 630 bar
Outlet (port 2): up to 350 bar

2.2.2. Operating pressure ranges

... up to 100 bar
... up to 200 bar
... up to 350 bar
... up to 630 bar

for lowest setting pressures see
2.2.7. Pressure, dependent on flow rate

2.2.3. Operating fluid

Mineral oil to DIN 51524 Part 1 and 2

2.2.4. Operating fluid temperature range

min. - 20 °C
max. + 80 °C

2.2.5. Viscosity range

min. 2.8 mm²/s
max. 800 mm²/s

2.2.6. Filtration

Max. permissible contamination level of the operating fluid to ISO class 21/19/16 (NAS 1638 class 10).

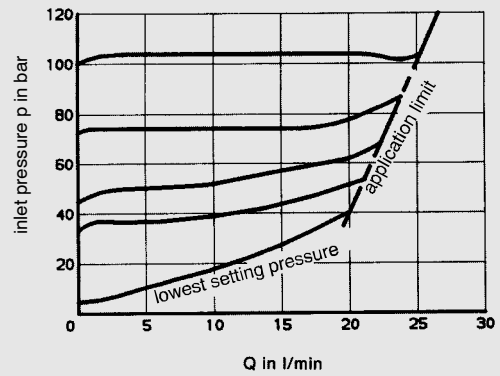
We recommend a filter with a minimum retention rate of $\beta_{20} \geq 100$.

The fitting of filters and regular replacement of elements ensures correct functioning, reduces wear and tear and increases the service life.

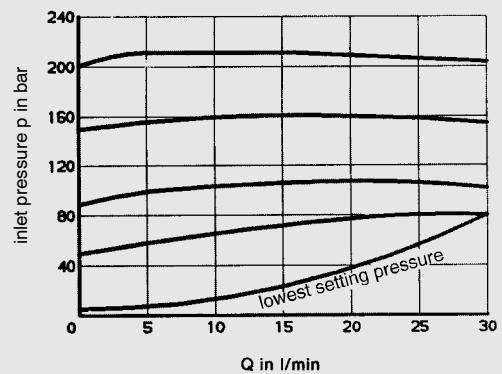
2.2.7. Pressure, dependent on flow rate

(measured at $n = 36 \text{ mm}^2/\text{s}$ and $t_{\text{oil}} = 50 \text{ °C}$)

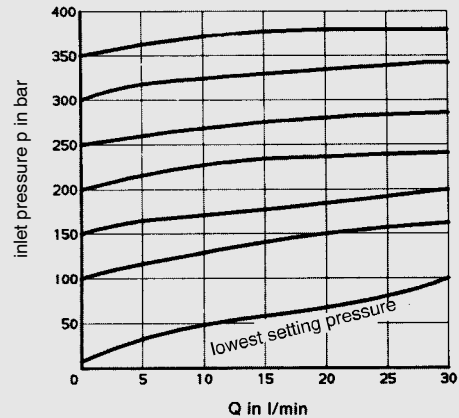
Pressure range...100 bar



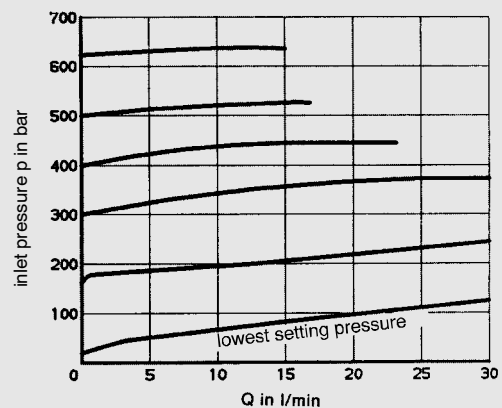
Pressure range...200 bar



Pressure range...350 bar



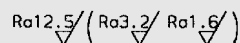
Pressure range...630 bar



DB4E



Installation dimensions 06020:



Cartridge form tools

Tool	Stock No.
Countersink	170033
Reamer	1000768
Tap	1002648
Plug gauge	168840

4. 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.