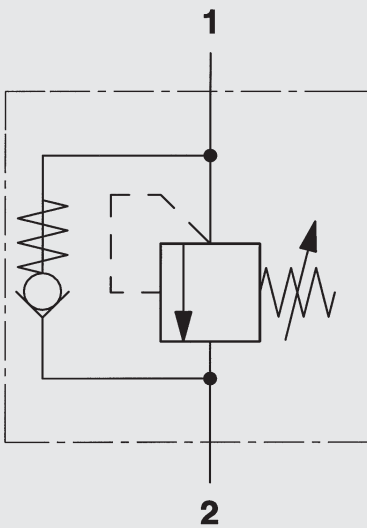
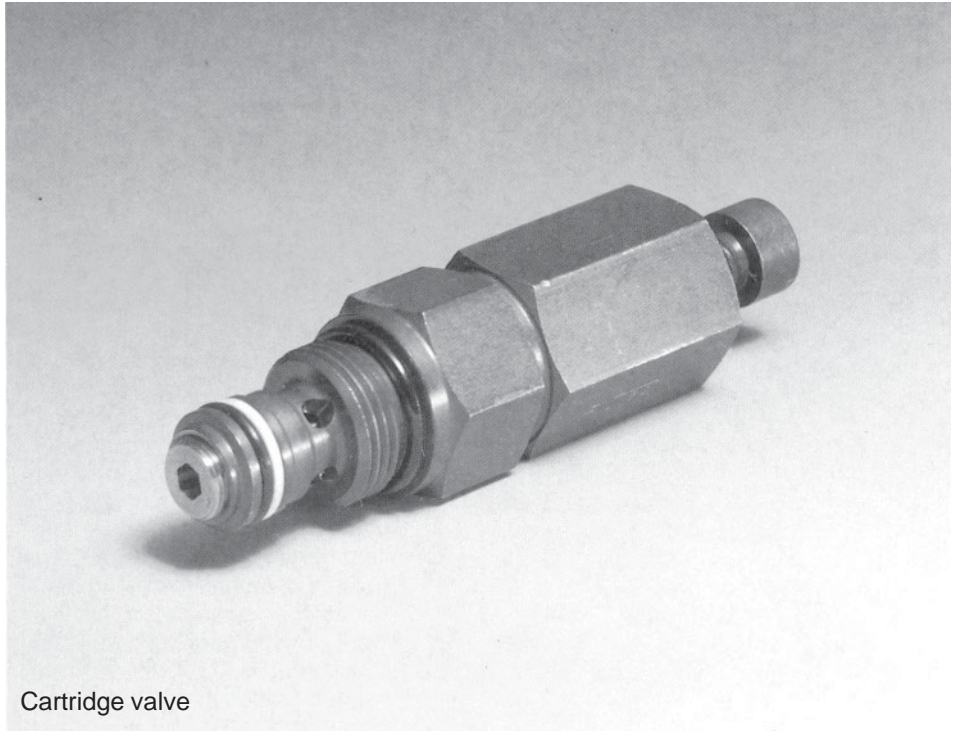


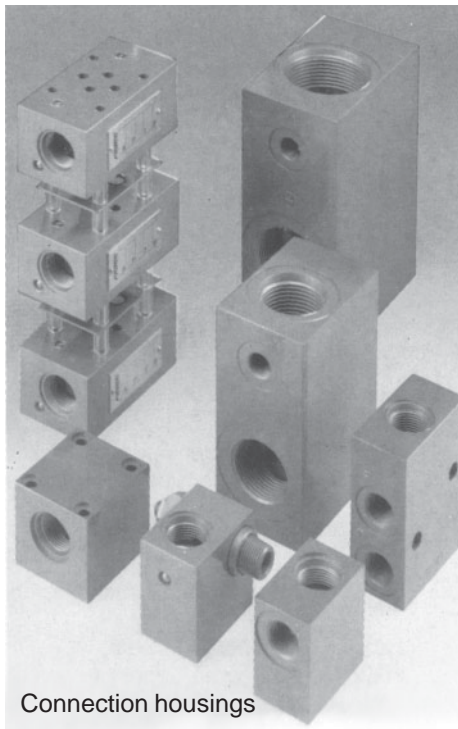
## Pressure Sequence Valves DZ5E



up to 350 bar  
up to 20 l/min



Cartridge valve



Connection housings

# 1. DESCRIPTION

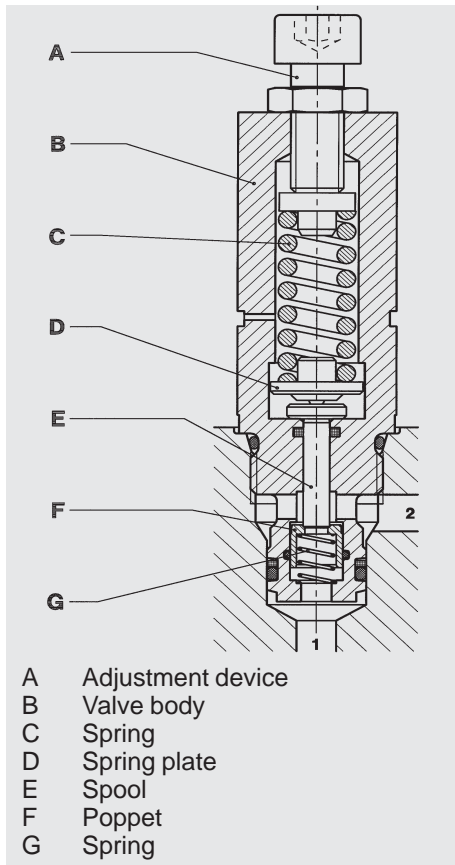
## 1.1. GENERAL

According to DIN-ISO 1219, HYDAC pressure sequence valves DZ5E are valves for oil hydraulic systems to connect additional units by opening the outlet against a spring force.

The built-in check valve allows free flow in the reverse direction.

Further advantages of these valves are:

- standardised installation dimensions mean that they are flexible and suited to many different applications
- their compact design allows space-saving installation in connection housings, control blocks, etc. especially where installation space is limited
- optimum system adaptation by means of various pressure ranges
- simple assembly due to service-friendly cartridge valve technology
- a wide range of connection housings is available for optimum adaptation to a multitude of applications



## 1.2. FUNCTION

HYDAC pressure sequence valves DZ5E are direct-operated, spring-loaded seat valves with a built-in check valve for oil hydraulic systems. The valve basically consists of a valve body, a poppet, the hardened and polished spool, the spring and the adjustment device for setting the initial spring tension. The spring force holds the spool in its original position against the spring force of the poppet. The connection from 1 to 2 is blocked. If the pressure across port 1 now exceeds the appropriate initial force of the spring, the spool and poppet move together in a closed condition to the upper limit of the poppet. If the pressure continues to rise the spool unblocks the connection from 1 to 2. This opens the connection to the additional units from port 2. The sequence pressure is independent of the pressure across port 2 as the spring space is separated from the hydraulic part by a sealing packet. To allow free flow from port 2 to port 1 the spool is pushed back into its original position by the spring and the poppet opens against the corresponding spring.

## 1.3. APPLICATION

HYDAC pressure sequence valves DZ5E are used:

- for connecting cylinders in additional sequence circuits
- as a pressure relief valve if the cracking pressure is not to be affected by the dynamic pressure in the tank
- if necessary as a pressure relief valve if free flow is required in the reverse direction

Areas of application are, for example:

- hydraulic units
- clamping hydraulics

## 1.4. NOTE

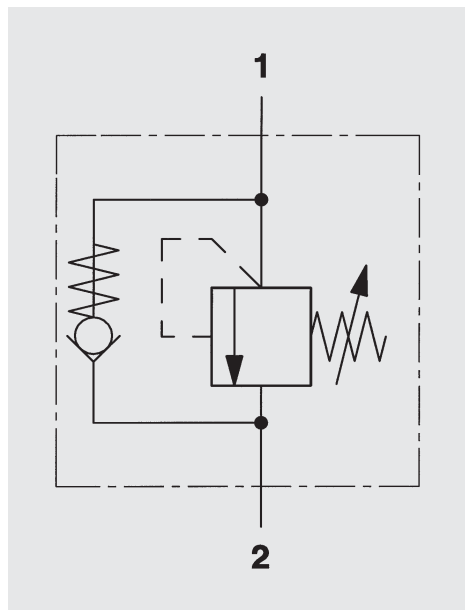
When fitting the valves into control blocks and housings please ensure that the recommended torque rating is observed (see point 3).

Please take port connections into account (see point 3).

## 2. TECHNICAL SPECIFICATIONS

### 2.1. GENERAL

#### 2.1.1 Designation and symbol Pressure sequence valve



#### 2.1.2 Model code (also order example)

**DZ5E - 01 X - 250 V 190**

#### Pressure sequence valve

**Type** \_\_\_\_\_  
01 = technical specifications as per this brochure

**Series** \_\_\_\_\_  
(determined by manufacturer)

**Setting pressure range** \_\_\_\_\_  
(see also 2.2.9)

100 = up to 100 bar  
250 = up to 250 bar  
350 = up to 350 bar

**Type of adjustment** \_\_\_\_\_  
V = adjustable

**Sequence pressure setting** \_\_\_\_\_  
no details = no setting

#### Standard models:

| Stock no. (= order no.) | Model code     |
|-------------------------|----------------|
| 710297                  | DZ5E-01X-100 V |
| 710296                  | DZ5E-01X-250 V |
| 710299                  | DZ5E-01X-350 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**  
Seat valve, direct-operated

2.1.4 **Type of mounting**  
Cartridge valve

2.1.5 **Mounting position**  
Optional

2.1.6 **Weight**  
DZ5E... 0.22 kg

2.1.7 **Direction of flow**  
From 1 to 2  
pressure sequence function  
From 2 to 1 free flow

2.1.8 **Ambient temperature range**  
min. - 20 °C  
max. + 80 °C

2.1.9 **Materials**  
Valve body: free-cutting steel  
Closing element: hardened and polished steel, wear-resistant  
Seals: compatible with hydraulic oil to DIN 51524 Part 1 and 2

2.1.10 **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 350 bar  
Outlet (port 2): up to 350 bar

### 2.2.2 Operating pressure ranges

Up to 100 bar  
Up to 250 bar  
Up to 350 bar

For lowest setting pressures see point 2.2.9. Sequence 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. 10 mm<sup>2</sup>/s  
max. 380 mm<sup>2</sup>/s

### 2.2.6 Filtration

Max. permissible contamination level of the operating fluid to ISO 4406 Class 21/19/16 (NAS 1638 Class 10). We therefore recommend a filter with a minimum retention rate of  $\beta_{20} \geq 100$ .

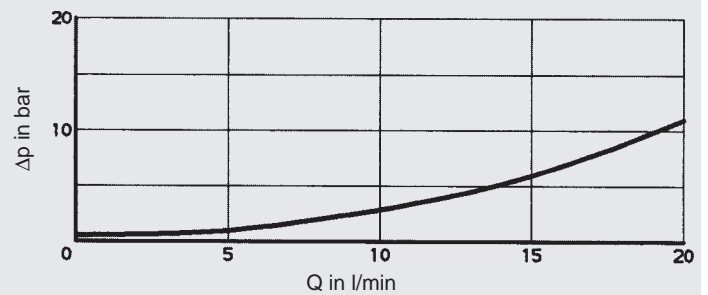
The fitting of filters and regular replacement of elements guarantees correct functioning, reduces wear and tear and increases the service life.

### 2.2.7 Cracking pressure

Direction of flow 2 → 1  
Cracking pressure: 0.5 bar

### 2.2.8 Pressure drop, dependent on flow rate

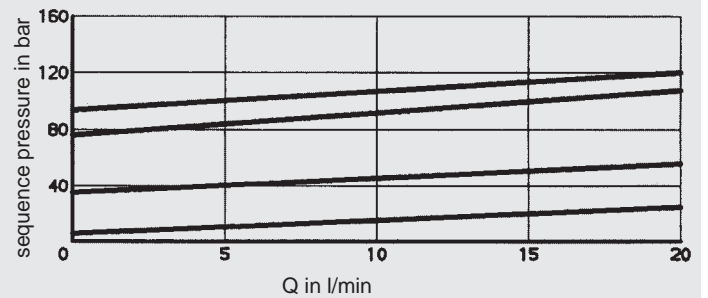
Measured at  $v = 36 \text{ mm}^2/\text{s}$  and  $t_{\text{oil}} = 50 \text{ °C}$   
Direction of flow 2 → 1



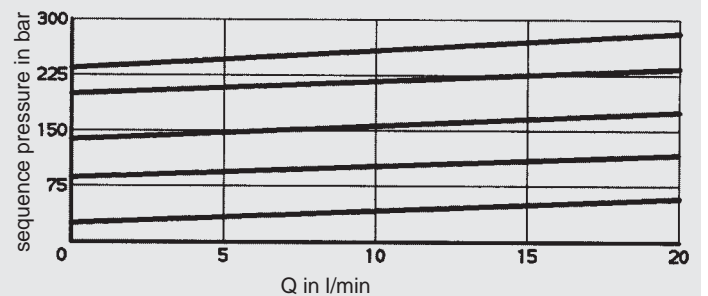
### 2.2.9 Sequence pressure, dependent on flow rate

Measured at  $v = 36 \text{ mm}^2/\text{s}$  and  $t_{\text{oil}} = 50 \text{ °C}$   
Direction of flow 1 → 2

#### Pressure range ... 100 bar



#### Pressure range ... 250 bar



#### Pressure range ... 350 bar

