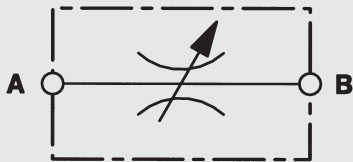


## Flow Control Valves DVE



up to 350 bar  
up to 160 l/min



# 1. DESCRIPTION

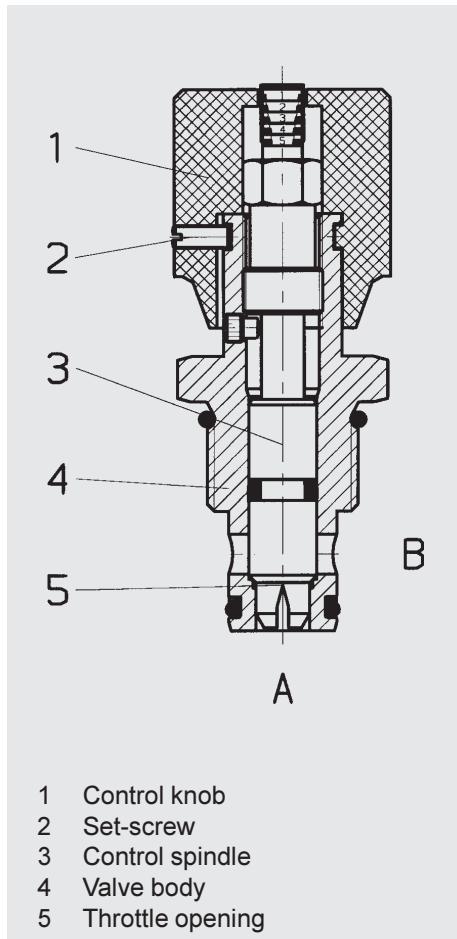
## 1.1. GENERAL

HYDAC flow control valves DVE are, in accordance with DIN-ISO 1219, valves which are designed to control the flow rate in oil hydraulic systems by means of an adjustable constriction of the cross-section.

The flow rate is dependent on pressure differential and viscosity. HYDAC flow control valves DVE have a specially designed throttle mechanism to enable fine adjustment and shut-off of the flow. The flow control and shut-off function works in both directions.

Further advantages of these valves are:

- Compact construction as cartridge valve.
- For installation in control blocks.
- A high level of safety is achieved through patented spindle safety mechanism.
- A set-screw locks the setting.
- Choice of four sizes ensures best possible adaptability to the system.
- Simple assembly due to service-friendly cartridge valve technology.
- Mounting position is optional.



## 1.2. FUNCTION

HYDAC flow control valves consist essentially of a valve body, a special control spindle and the control knob. Starting with the control spindle in the fully closed position when the flow is shut off, the flow rate increases according to the relevant graph (see point 2.2.8) as the number of turns of the control knob is increased.

The control knob with its coloured scale and scale rings permits accurate repetition of the settings. The size of the coloured triangle on the rings indicates the size of the flow area. An increase in the size of the coloured triangle corresponds to an increase in flow area. A set-screw locks the setting. The flow is controlled in both directions.

## 1.3. APPLICATIONS

HYDAC flow control valves DVE are used:

- for regulating the speed of loads
  - for system-related damping in hydraulic circuits
  - for pressure-dependent control of flow rates in general
  - to release pressure from accumulator systems
  - as an emergency drain for lowering a load
- Areas of application include, for example:
- Hydraulic units
  - Elevating platforms
  - Mobile hydraulics

## 1.4. NOTE

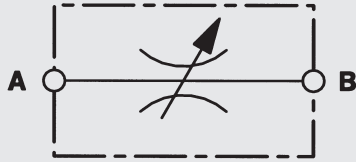
When fitting the valves into control blocks and housings the recommended torque ratings must be observed.

## 2. TECHNICAL SPECIFICATIONS

### 2.1. GENERAL

#### 2.1.1 Designation and symbol

Flow control valve DVE



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

DVE - 10 - 01 . X / 0

**Designation** \_\_\_\_\_  
DVE = flow control valve

**Size** \_\_\_\_\_  
08  
10  
12  
16

**Type** \_\_\_\_\_  
01 = technical specifications as per this brochure  
12 = nickel-plated valve body, steel spindle with 0.3 mm throttle gap, protective dome nut, adjustment with tool

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

**Threaded connection** \_\_\_\_\_  
0 = parallel pipe thread to ISO 228

#### Standard models

Stock no.	Model code
705 426	DVE-08-01.X/0
705 430	DVE-10-01.X/0
705 434	DVE-12-01.X/0
705 438	DVE-16-01.X/0

Please quote stock no. when ordering.  
Delivery for non-standard models is longer and the price is higher.

#### 2.1.3 Type of construction

Slot type flow control valve  
with shut-off function

#### 2.1.4 Type of mounting

Cartridge valve

#### 2.1.5 Mounting position

Optional

#### 2.1.6 Weight

DVE-08	...	0.15 kg
DVE-10	...	0.25 kg
DVE-12	...	0.50 kg
DVE-16	...	0.70 kg

#### 2.1.7 Direction of flow

Optional  
preferably from A to B

#### 2.1.8 Ambient temperature range

min. - 20 °C  
max. + 80 °C

#### 2.1.9 Materials

Valve body:  
free-cutting steel, phosphate-plated

Control spindle:  
free-cutting steel, phosphate-plated

Control knob:  
polyamide

Seals:  
FPM and PTFE

#### 2.1.10 Nominal size

NG08  
NG10  
NG12  
NG16

#### 2.1.11 Type of connection

Cartridge valve for fitting into  
control blocks.

## 2.2. HYDRAULIC DETAILS

### 2.2.1 Nominal pressure

$p_N = 350$  bar  
across all ports

### 2.2.2 Operating fluid

Mineral oil to DIN 51524 Part 1 and 2

### 2.2.3 Fluid temperature range

min.  $-20$  °C  
max.  $+80$  °C

### 2.2.4 Viscosity range

min.  $2.8$  mm<sup>2</sup>/s  
max.  $800$  mm<sup>2</sup>/s

### 2.2.5 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.

### 2.2.6 Type of adjustment

Manually using control knob or on model 12, using Allen key.

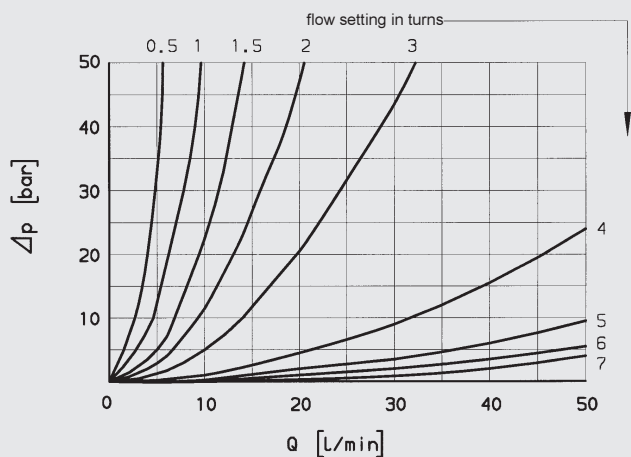
### 2.2.7 Flow rate

DVE-08...Q = 50 l/min  
DVE-10...Q = 80 l/min  
DVE-12...Q = 160 l/min  
DVE-16...Q = 160 l/min

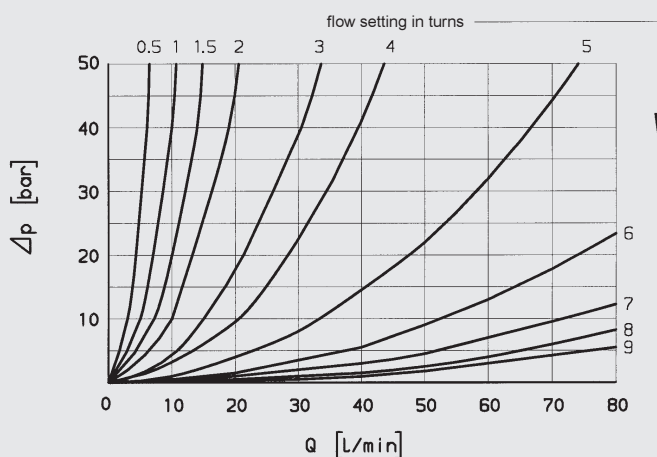
### 2.2.8 Pressure drops, dependent on flow rate

Pressure differential  $\Delta p$  depending on flow rate Q at constant flow setting measured at  $\nu = 34$  mm<sup>2</sup>/s and  $t_{oil} = 46$  °C.

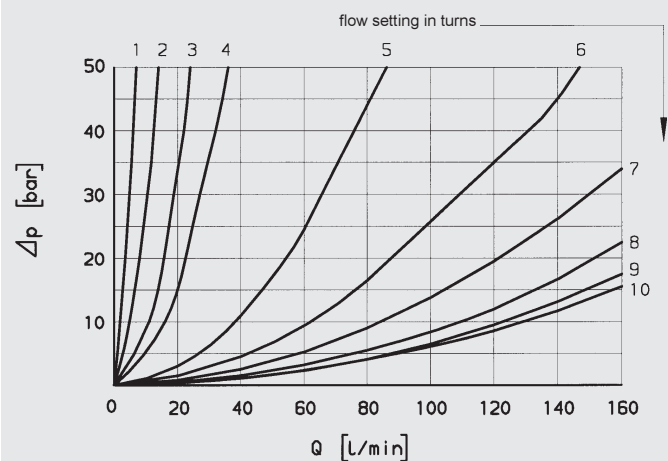
DVE-08-01.X



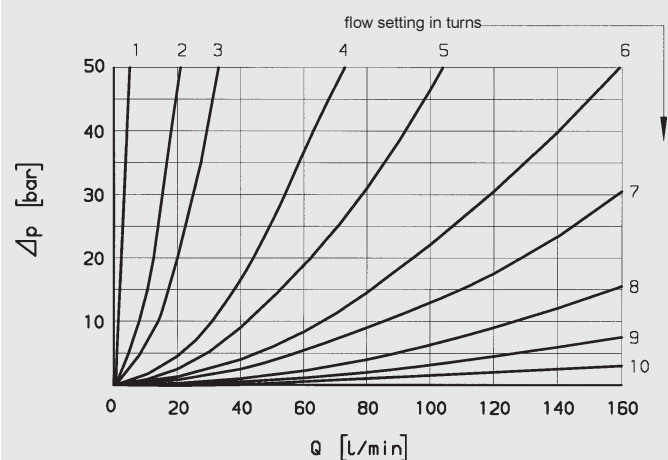
DVE-10-01.X



DVE-12-01.X



DVE-16-01.X



### 2.2.9 Accessories

Metal control knobs, zinc-plated

The metal control knobs with Flutec label are pre-assembled.

Size	Stock no.
08	550 023
10	550 066
12	550 066
16	550 066

When ordered, the accessories are supplied loose with the standard valve.

Please quote the stock number when ordering.

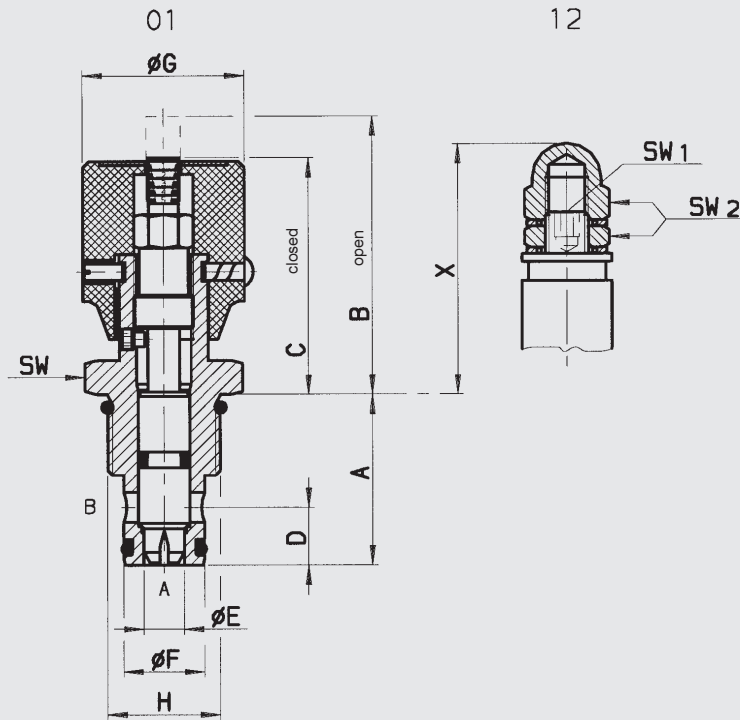
### 2.2.10 Seal kits

Stock no.	Type
555090	Seal kit size NG08 DV/P DRV/P DVE RVP SRVR/P
555091	Seal kit size NG10 DV/P DRV/P DVE RVP SRVR/P
555092	Seal kit size NG12 DV/P DRV/P DVE RVP SRVR/P
555093	Seal kit size NG16 DV/P DRV/P DVE RVP SRVR/P

### 3. DIMENSIONS

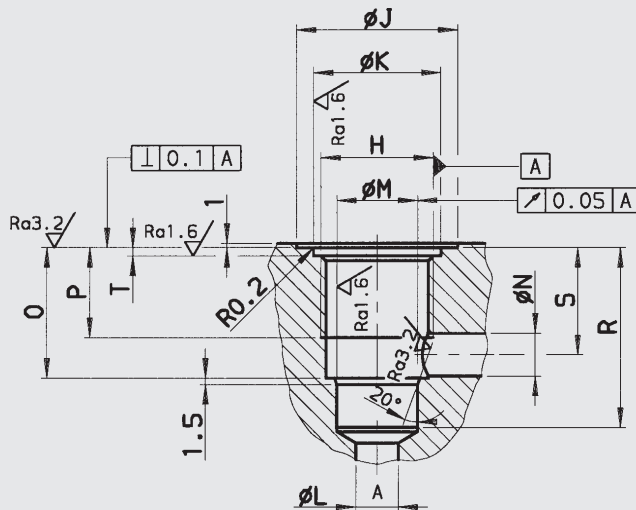
DVE

Type:



A	B	C	D	E	F	G	H	SW	SW1	SW2	X	Torque rating
26	47	40	12	5	14	29	G 1/2 A	27	4	13	44	30 + 5
30	64	54	12.5	8	16	38	G 1/2 A	27	5	17	58	40 + 5
40	65	54	13.5	9.5	19	38	G 3/4 A	32	6	19	64	50 + 5
43.5	65	55	17.5	11	27	38	G 1 A	41	6	19	64.5	75 + 5

### INSTALLATION DIMENSIONS



Installation dimensions	Tool stock numbers				
	Counter-sink	Forming tool	Reamer	Tap	Plug gauge
08920	170854	169169	1014205	1002667	173839
10920	170863	169169	1000772	1002667	173840
12920	170862	170844	1000778	1002663	173841
16920	170861	170843	1014208	1002661	173842

Size	Installation dimensions	H	J	K+0.1	Lmax	MH8	Nmax	0	Pmin	R+1	S	T+0.1
08	08920	G 1/2	32	24	14	14	5	17.5	14	26	14	1.9
10	10920	G 1/2	32	24	16	16	8	20.5	14	30	16.5	1.9
12	12920	G 3/4	38	30	19	19	10	29	21	40	24	1.9
16	16920	G 1	48	36	27	27	12	30	21	44	24.5	2.4

### 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.