

2-way flow control valves are flow valves (throttle valves) with integrated pressure balance. The valves control an adjustable volume flow independently of pressure modification in the inlet or outlet line automatically to obtain a constant value. They can be mounted in the inlet or outlet side of the consumer. Due to the screen-like design of the adjusting throttle the value is largely independent of the fluid viscosity.

### FEATURES

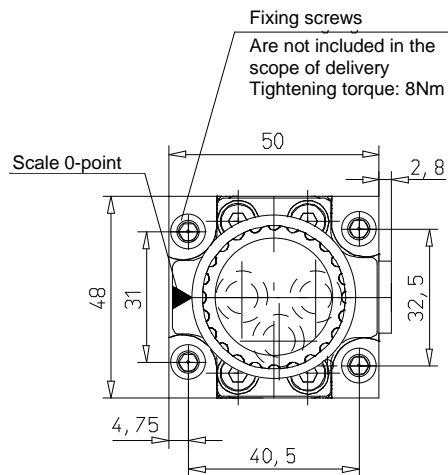
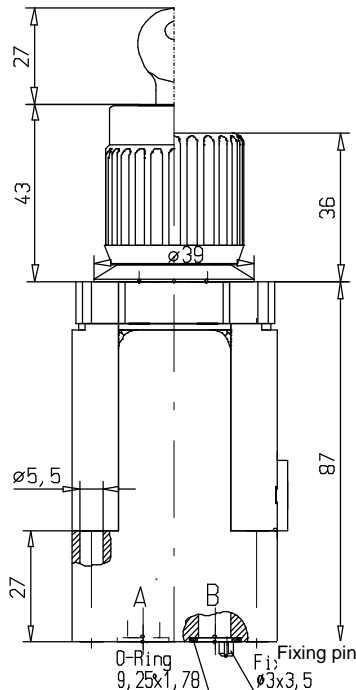
- 7 setting volume flow ranges
- scaled control knob, setting angle 300°
- control knob can be locked optionally - VW locking E 10
- assembly on connection plates with pipe joints, intermediate plates - elements for vertical linkage or control block
- with by-pass check valve
- Standard sealing material Buna N / NBR, other materials are possible



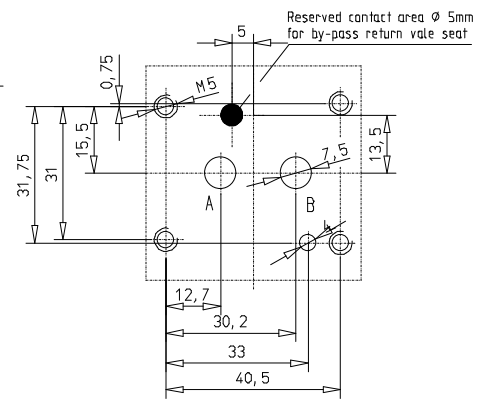
### Characteristics of the special equipment M 153

Valves in the modified execution **M 153** have the primary sided internal control channel disconnected and replaced with an external and controllable control drive. Via this control port (P) the pressure balance can be target in rest position by corresponding circuit. Thus an otherwise possible starting jump can be avoided when connecting the flow control valve during a work routine.

Using this kind of control is possible only if the flow valve is used in advanced control. Further conditions are described in the additional information 9-74-020-0026.



### Mounting surface DIN 24 340-G 6



\*The values of the rated volume flow are referred to the standard volume type. By using this modification the volume flow can be reduced, if flow-losses appear between the control oil connector in front of the control valve and the flow valve. Sometimes it can be better to take a larger rated volume flow. In case of doubt contact Schiedrum, please.

### ORDER INFORMATION

The scope of delivery includes the 0-rings for sealing the connection bores and for the model „S“ one safety key.

**Name** — **2-Way-Flow control valve 20 K S 25 M153**

**Type series**

**Series code letter**

**Actuation:** control knob without lock = **without Code**  
control knob with lock = **S**

**Rated volume flow** in l/min **0.4; 1; 2.5; 6.3; 10; 16; 25 \***

**Supplementary data for special models**

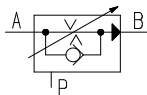
### ACCESSORY

**valve fastening screw set:** Order-No.: 44-020-00928  
4 pcs. Hexagon socketed head cap screws M 5 x 35 DIN 912 – 10.9  
**Connecting plates** see dimension sheet 9-74-030-2002

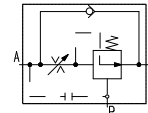
# CHARACTERISTICS

## 1. General

Symbol



simplified



detailed

design

Adjustment throttle: flat rotary valve with triangular notch, orifice-like differential pressure valve (pressure balance) switched in series with the adjustment throttle  
return valve: spring loaded ball valve  
valve: 1.2 kg

Weight

Mounting position

Direction of volume flow

Ambient temperature range

any  
A to B controlled, B to A unthrottled return flow  
-25°C to +80°C

## 2. Hydraulic Characteristics

Rated pressure / max. pressure

Hydraulic fluid

Hydraulic fluid temperature range

Viscosity range

Rated volume flow range

min. controllable volume flow

max. permitted volume flow via check valve

Contamination level / filtering

315 bar for all connections

Hydraulic oil according to DIN 51 524 (1,2)

-20°C to +70°C

5 – 350 mm<sup>2</sup>/sec

**0.4; 1.0; 2.5; 6.3; 10; 16; 25** l/min

approx. 15 cm<sup>3</sup>/min

40 l/min

General permit table class 18/15 according to ISO 4406 or 9 according to NAS 1638 (recommended filter: minimum retaining rate  $\beta_{10-15} \geq 75$ )

## 3. Type of actuation

manual via control knob

Controlling torque

Setting angle

approx. 60 Ncm

300°

## CHARACTERISTICS

### Q-S characteristic; $Q=f$ (scale setting)

Fig. 1 shows a typical dependency of the volume flow as a function of the valve setting angle or the control knob scaling (the scale is linear).

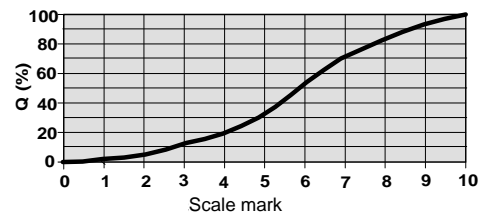


fig. 1

### Q- $\Delta p$ characteristic; $Q=f(\Delta p)$

Fig. 2 shows the control behaviour of the valve for the volume flow direction A to B for the various rated flow volume ranges as well as the minimum pressure difference required for the function.

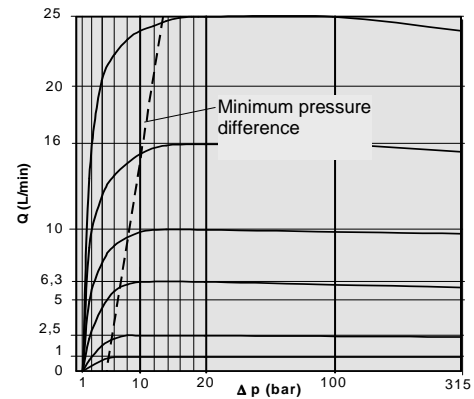


fig. 2

For applications in excess of the given specification, please contact Schiedrum.

All specified parameters are partially based on long user's experience and partly on measurements made in laboratories. The data are typical of the valve and can deviate in series. All measurements were carried out on a test stand with an oil viscosity of 36mm<sup>2</sup>/sec and a filter mesh of < 10  $\mu$ m. All data given here should be used as description of the product only and they are not to understand as warranty in the sense of law.

### $\Delta p$ -Q characteristic; $\Delta p=f(Q)$

Fig. 3 shows the pressure loss of the valve for the volume flow direction B to A through the by-pass return with the setting screen closed.

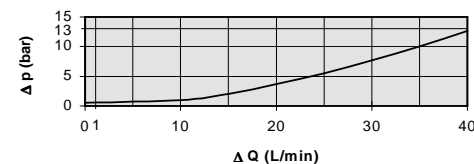


fig. 3

### Q-t characteristic; $Q = f(t, p = \text{constant})$

Fig. 4 shows the volume flow change depending on the oil temperature at a constant pressure difference of 100 bar for 3 different setting values. Measured using hydraulic oil HLP 46 (ISO-VG 46)=46mm<sup>2</sup>/sec. at 40°C. For longer volume flows, the temperature influence becomes smaller. For smaller flow, low viscosity oils result in smaller volume flow deviations.

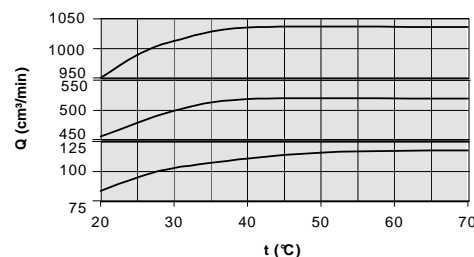


fig. 4