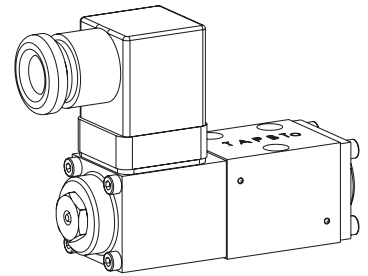


## Proportional spool valve

### Flange construction

- ◆  $Q_{max} = 10 \text{ l/min}$
- ◆ 3 volume flow levels
- ◆  $Q_{Nmax} = 5 \text{ l/min}$
- ◆  $p_{max} = 350 \text{ bar}$

### NG3-Mini Wandfluh standard



## DESCRIPTION

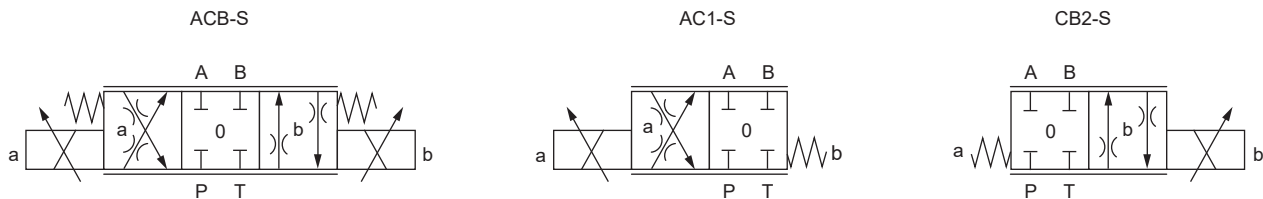
Direct operated proportional spool valve with 4 connections in 5-chamber system. Precise spool fit, low leakage, long service life time. The volume flow adjustment takes place by a Wandfluh proportional solenoid. Proportional to the solenoid current, the spool stroke, the spool opening and the valve volume flow increase. For the control, Wandfluh proportional amplifiers are available (see register 1.13).

## APPLICATION

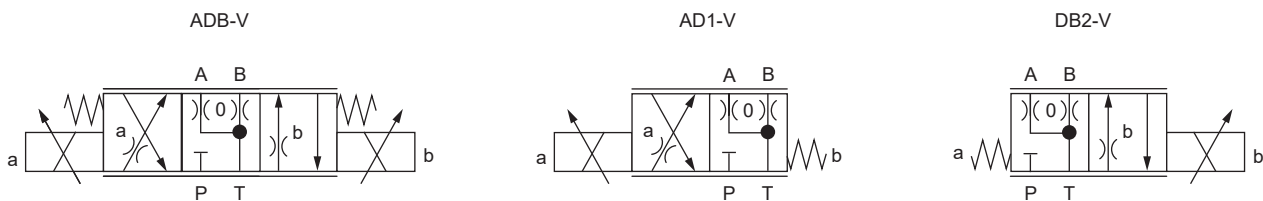
Proportional spool valves are perfectly suitable for demanding tasks due to the high resolution, large volume flow and low hysteresis. The applications are in the industry as well as in the mobile hydraulics for the smooth control of hydraulic actuators. Some examples: rotor blades control of wind generators, forestry and earth moving machines, machine tools and paper production machines with simple position control, robotics and fan control. Miniature values are used where both, reduced dimensions and weight are important.

## SYMBOL

Symmetrical control



Meter-in control



## TYPE CODE

Spool valve, directly operated, proportional			WDP F A03 -	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	# 2
Flange construction													
Mounting interface acc. to Wandfluh standard, NG3-Mini													
Designation of symbols acc. to table													
Nominal volume flow rate $Q_N$	1 l/min	<input type="checkbox"/>											
	2 l/min	<input type="checkbox"/>											
	5 l/min	<input type="checkbox"/>											
Nominal voltage $U_N$	12 VDC	<input type="checkbox"/>											
	24 VDC	<input type="checkbox"/>											
Sealing material	NBR	<input type="checkbox"/>											
	FKM (Viton)	<input type="checkbox"/>											
Design index (subject to change)													

1.10-66

## GENERAL SPECIFICATIONS

Designation	Proportional spool valve
Construction	Direct operated
Mounting	Flange construction
Nominal size	NG3-Mini according to Wandfluh standard
Actuation	Proportional solenoid
Ambient temperature	-25...+70 °C if >50 °C, I <sub>G</sub> is only conditionally achievable
Weight	0,5 kg (1 solenoid) 0,65 kg (2 solenoids)
MTTFd	150 years

## ELECTRICAL SPECIFICATIONS

Protection class	IP65
Relative duty factor	100 % DF
Standard nominal power	12 VDC, 24 VDC
Limiting current at 50 °C	I <sub>G</sub> = 540 mA (U <sub>N</sub> = 24VDC) I <sub>G</sub> = 1'080 mA (U <sub>N</sub> = 12VDC)

## STANDARDS

Mounting interface	Wandfluh standard
Solenoids	DIN VDE 0580
Connection execution D	EN 175301 – 803
Protection class	EN 60 529
Contamination efficiency	ISO 4406

## SURFACE TREATMENT

- ◆ The valve body is painted with a two component paint
- ◆ The solenoid and the cover are re zinc-nickel coated
- ◆ The socket head screws are zinc coated

## ACTUATION

Actuation	Proportional solenoid, wet pin push type, pressure tight
Execution	P29V (Data sheet 1.1-90)
Connection	Connector socket EN 175301 – 803

## HYDRAULIC SPECIFICATIONS

Working pressure	p <sub>max</sub> = 350 bar (p <sub>T</sub> < 20 bar) p <sub>max</sub> = 315 bar (p <sub>T</sub> > 20 bar)
Tank pressure	p <sub>T</sub> max = 100 bar
Maximum volume flow	Q <sub>max</sub> = 10 l/min, see characteristics
Nominal volume flow	Q <sub>N</sub> = 1 l/min, 2 l/min, 5 l/min
Leakage oil	See characteristics
Hysteresis	≤ 5 % at optimal dither signal
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm <sup>2</sup> /s...320 mm <sup>2</sup> /s
Temperature range fluid	-25...+70 °C (NBR) -20...+70 °C (FKM)
Contamination efficiency	Class 18 / 16 / 13
Filtration	Required filtration grade β 6...10 ≥ 75, see data sheet 1.0-50

## SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

## INSTALLATION NOTES

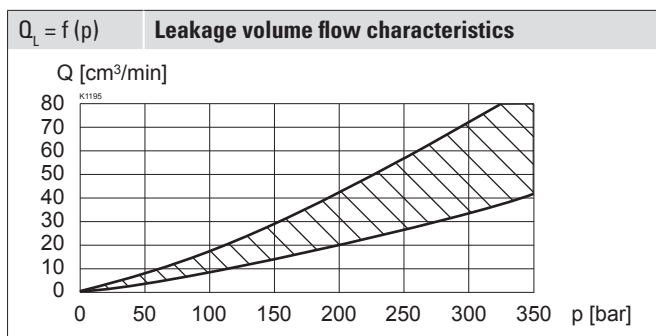
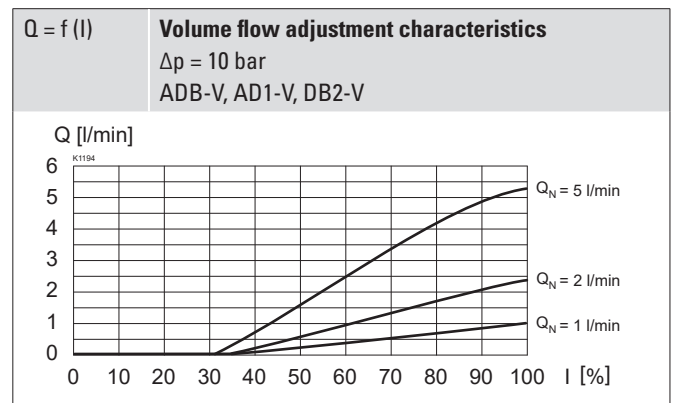
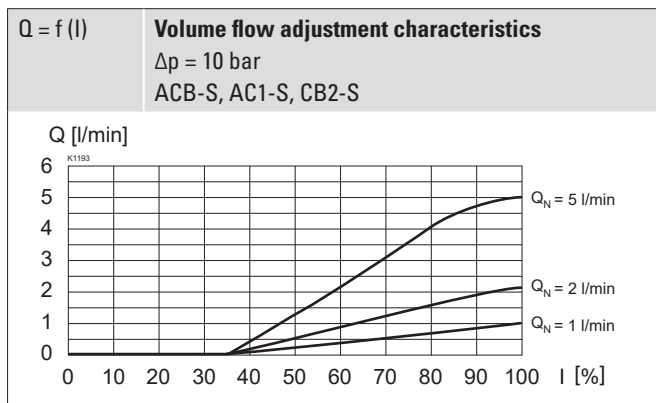
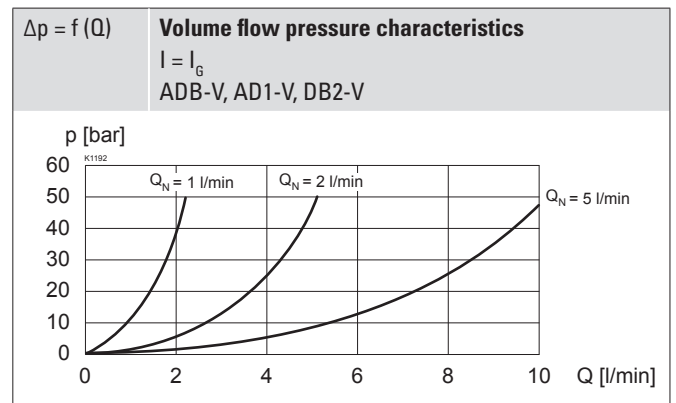
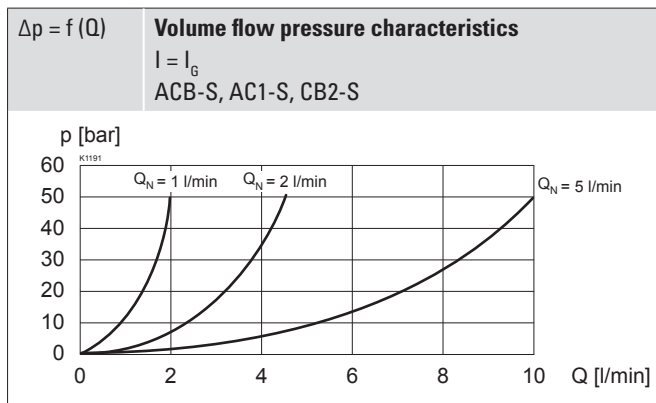
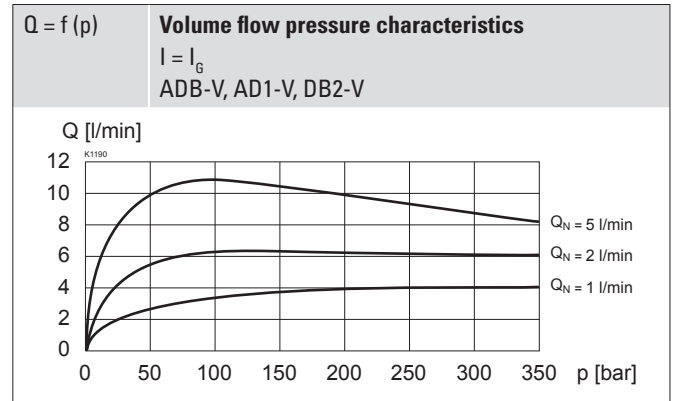
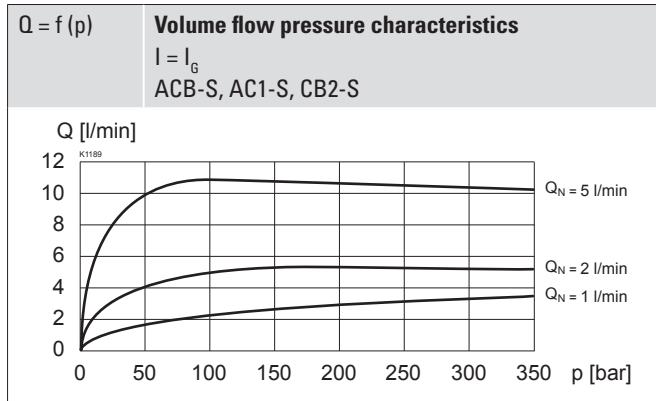
Mounting type	Flange mounting 3 fixing holes for socket head screws M4 x 30
Mounting position	Any, preferably horizontal
Tightening torque	M <sub>D</sub> = 2,6 Nm (quality 8.8) Fixing screws

### Note!



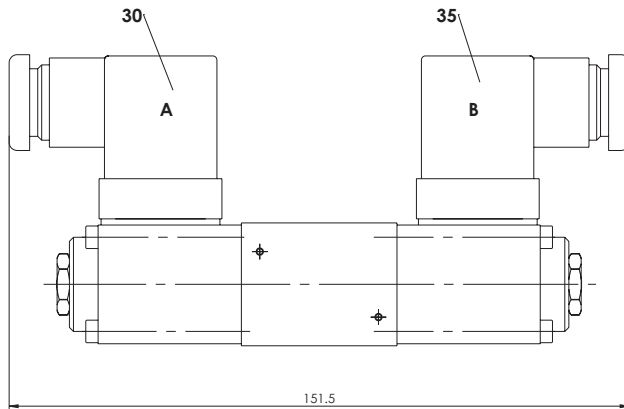
The length of the fixing screw depends on the base material of the connection element.

**PERFORMANCE SPECIFICATIONS**

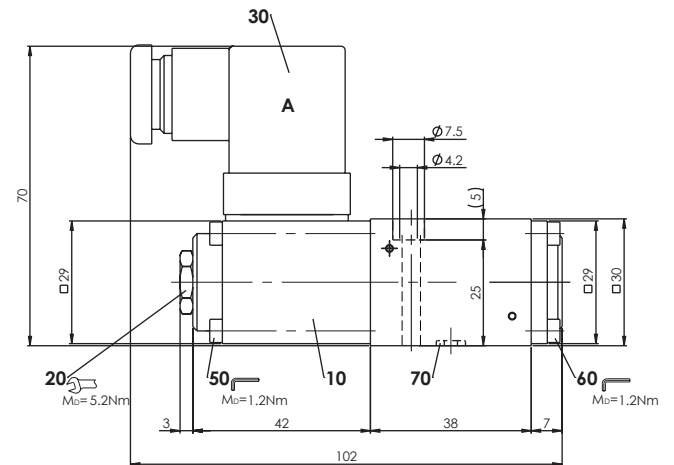
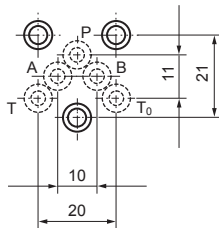
 Oil viscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 


**DIMENSIONS**

4/3-way spool valve (spring centred)



4/2-way spool valve


**HYDRAULIC CONNECTION**

**MANUAL OVERRIDE**

Screw plug with integrated manual override (HB4,5). Actuation by pressing the push button

**PARTS LIST**

Position	Article	Description
10	256.2453	Proportional solenoid PI29V-G24
	256.2418	Proportional solenoid PI29V-G12
20	253.8000	Screw plug with integrated manual override HB4.5 (Data sheet 1.1-300)
30	219.2001	Electric plug A (grey)
35	219.2002	Electric plug B (black)
50	246.0141	Socket head screw M3 x 40 DIN 912
60	246.0109	Socket head screw M3 x 8 DIN 912
70	160.2045	O-ring ID 4,50 x 1,50 (NBR)

**ACCESSORIES**

Proportional amplifier	Register 1.13
Threaded subplates	Data sheet 2.9-05
Multi-station subplates	Data sheet 2.9-45
Module type manifold blocks	Data sheet 2.9-85
Technical explanations	Data sheet 1.0-100
Filtration	Data sheet 1.0-50
Relative duty factor	Data sheet 1.1-430