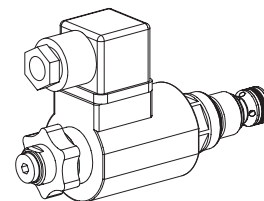


Solenoid poppet valve cartridge 2/2- and 3/2-way version

- Direct operated
- $Q_{max} = 20 \text{ l/min}$
- $p_{max} = 350 \text{ bar}$

M18x1,5
ISO 7789



DESCRIPTION

Direct operated 2/2- and 3/2-way poppet valve in screw-in cartridge with thread M18x1,5 for cavity to ISO 7789, (3/2-way type to Wandfluh standard). The 2/2-way type can be supplied in a „normally closed“ and „normally open“ version. There are two versions of the slip-on coil. The coil type „M“ with steel housing and the more economical type „K“ with plastic moulded coil with the same performance as the steel type. The coil may be exchanged without opening the hydraulic circuit. The outside of the armature tube and the valve body are zinc coated for surface protection.

FUNCTION

The pressure tight switching solenoid and in turn the spring on the opposite side shift the guided poppet into an either open or closed position. Due to the equal-area- and balanced- poppet-design there are no undesired opening or closing forces. Fluid may pass the poppet valve in both directions. The poppet piston is sealed by an o-ring. The seat with metallic seal closes leak free in both directions.

APPLICATION

Wandfluh solenoid operated poppet valves are applied where an absolutely leak free closing of the valve is essential like in load holding, clamping or gripping functions. The solenoid operated screw-in cartridges are mainly used in mobile or stationary integrated blocks. To machine the cavities in steel or aluminium blocks cavity tools may be supplied (hire or purchase). Please refer to the data sheets in register 2.13

CONTENTS

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TYPE CODE

		S D S PM18 -				/				35 #			
Poppet valve													
Direct operated													
Super													
Screw-in cartridge M18x1,5													
2/2-way, „normally closed“		BA											
2/2-way, „normally open“		AB											
3/2-way		FG											
Standard-nominal voltage U_N :		12 VDC		G12		110 VAC		R110					
		24 VDC		G24		115 VAC		R115					
						230 VAC		R230					
Slip-on coil:		Plastic moulded		K		(only for 12 VDC and 24 VDC available)							
		Steel		M									
Connector		ISO 4400 / DIN 43650		D									
socket:		AMP Junior-Timer		J									
Coil types													
Design-Index (Subject to change)													

GENERAL SPECIFICATIONS

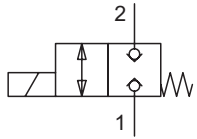
Description	Direct operated 2/2- and 3/2-way solenoid poppet valve
Construction	Screw-in cartridge for cavity to ISO 7789 (3/2-way type to Wandfluh standard)
Operation	Solenoid with exchangeable slip-on coil
Mounting	Screw-in thread M18x1,5
Ambient temperature	-20...+50°C
Mounting position	any
Fastening torque	$M_D = 30 \text{ Nm}$ for cartridge $M_{D_{max}} = 5 \text{ Nm}$ or coil retaining nut
Masse	$m = 0,43 \text{ kg}$ version with plastic coil $m = 0,57 \text{ kg}$ version with steel coil
Volume flow	any (note performance limits)

HYDRAULIC SPECIFICATIONS

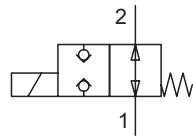
Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, classe 20/18/14 (Required filtration grade $\beta_{10...16} \geq 75$) see data sheet 1.0-50/2
Viscosity range	12 mm ² /s...320 mm ² /s
Fluid temperature	-20...+70° C
Working pressure	$p_{max} = 350 \text{ bar}$
Nominal flow	$Q_N = 15 \text{ l/min}$
Max. volume flow	$Q_{max} = \text{up to } 20 \text{ l/min}$
Pressure drop	$\Delta p = < 16 \text{ bar}$ with 15 l/min

SYMBOLS

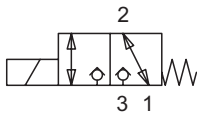
SDSPM18-BA...



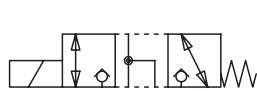
SDSPM18-AB...



SDSPM18-FG...



Transitional function „FG“



ELECTRICAL CONTROL

Construction solenoid, wet pin, push type, pressure tight with exchangeable slip-on coil

Standard nominal voltage: $U_N = 12 \text{ VDC}, 24 \text{ VDC}$

$U_N = 110 \text{ VAC}^*, 115 \text{ VAC}^*, 230 \text{ VAC}^*$
AC = 50 up to 60 Hz

– * Rectifier integrated in connector socket

– Other nominal voltages and wattages on request

Voltage tolerance $\pm 10\%$ of nominal voltage

Protection class IP 65 acc. to EN 60 529

(if correctly mounted)

Relative duty cycle 100% DF (see data sheet 1.1-430)

Switching cycles 5'000/h

Operating life 10^7 (number of switching cycles, theoretically)

Connections/Power supply Versions see type code

Solenoid type:

– Steel coil (M.35/16)

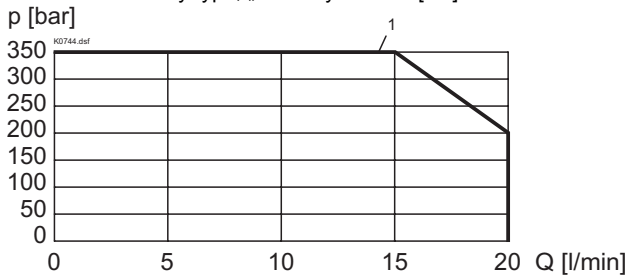
data sheet 1.1-170

– Plastic coil (K.35/16)

data sheet 1.1-172

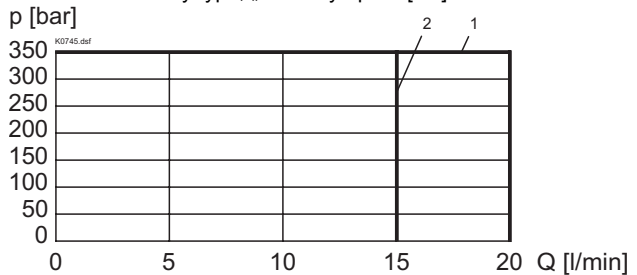
CHARACTERISTICS oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$

$p = f(Q)$ Performance limits at 10% under voltage and max. ambient temperature
2/2-way type, „normally closed“ [BA]



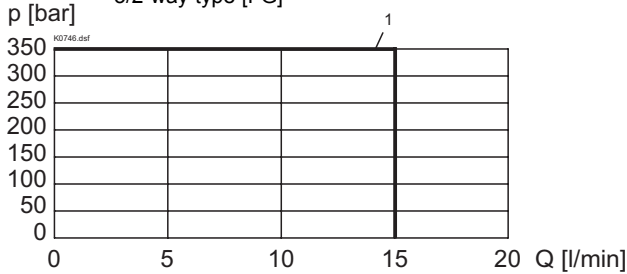
Version	Flow direction	
	1 → 2	2 → 1
SDSPM18-BA-.../„M“	1	1
SDSPM18-BA-.../„K“	1	1

$p = f(Q)$ Performance limits at 10% under voltage and max. ambient temperature
2/2-way type, „normally open“ [AB]



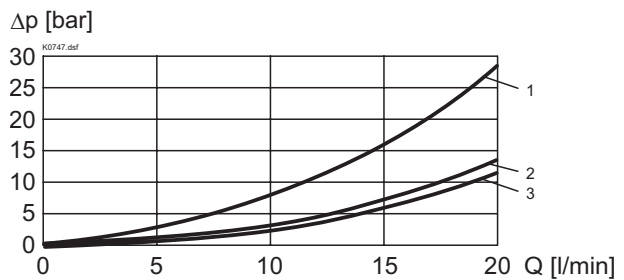
Version	Flow direction	
	1 → 2	2 → 1
SDSPM18-AB-.../„M“	2	1
SDSPM18-AB-.../„K“	2	1

$p = f(Q)$ Performance limits at 10% under voltage and max. ambient temperature
3/2-way type [FG]



Version	Flow direction	
	3 → 2	2 → 1
SDSPM18-FG-.../„M“	1	1
SDSPM18-FG-.../„K“	1	1

$\Delta p = f(Q)$ Pressure volume flow characteristics



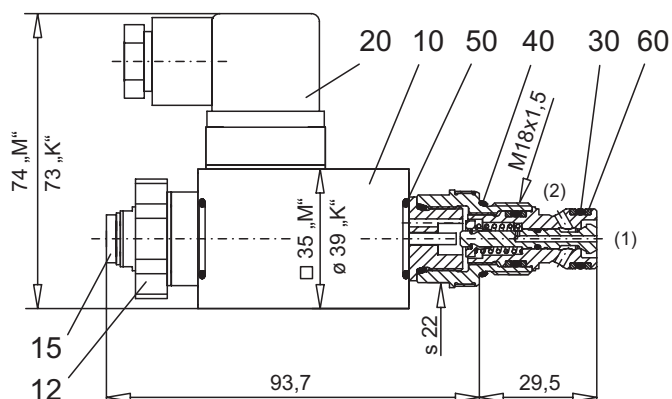
Version	Flow direction		
	1 → 2	2 → 1	3 → 2
SDSPM18-BA-...	2	2	-
SDSPM18-AB-...	2	2	-
SDSPM18-FG-...	-	3	1

REMARK!

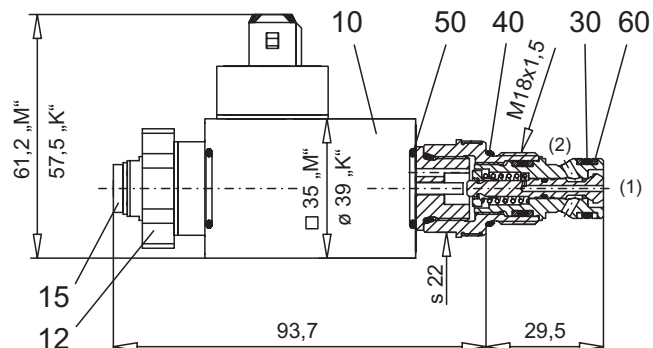
Depending on application the volume flow may be increased but during shifting the total volume flow (3 → 2 and 2 → 1) must not be higher than $Q = 20 \text{ l/min}$

DIMENSIONS/SECTIONAL DRAWING

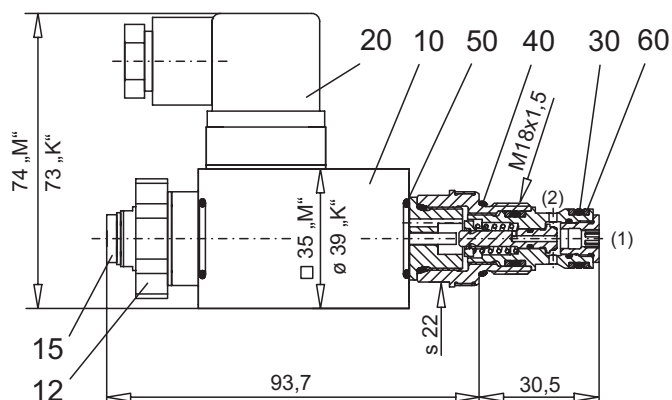
2/2-way version, „normally closed“ [BA]
with DIN connector socket



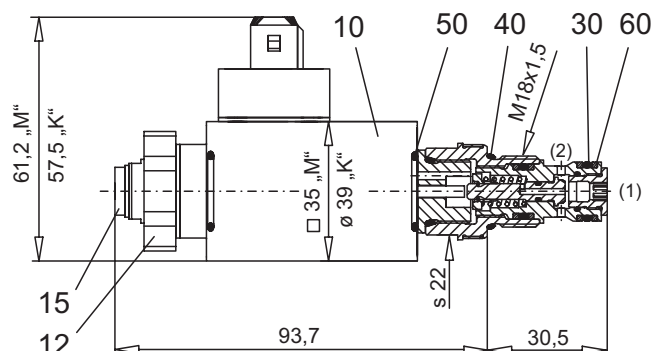
2/2-way version, „normally closed“ [BA]
with Junior-Timer connector socket



2/2-way version „normally open“ [AB]
with DIN connector socket

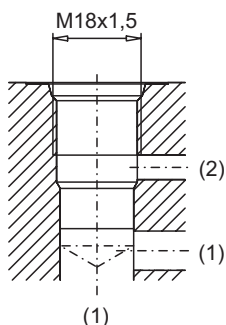


2/2-way version „normally open“ [AB]
with Junior-Timer connector socket



CAVITY

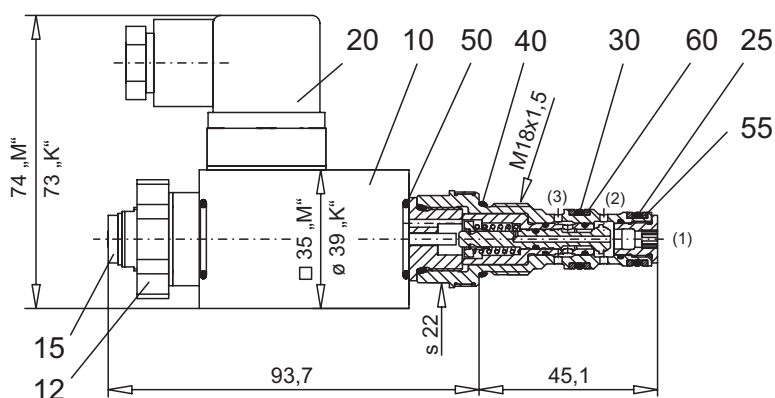
Cavity drawing for 2/2-way version
to ISO 7789-18-01-0-98



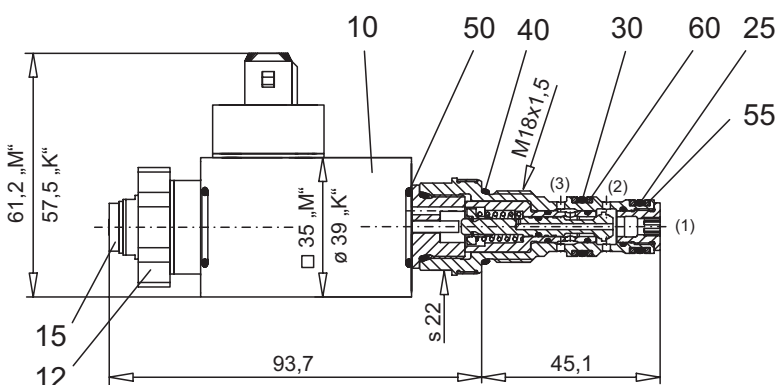
For detailed cavity drawing and cavity tools
see data sheet 2.13-1002

DIMENSIONS/SECTIONAL DRAWING

3/2-way version
with DIN connector socket

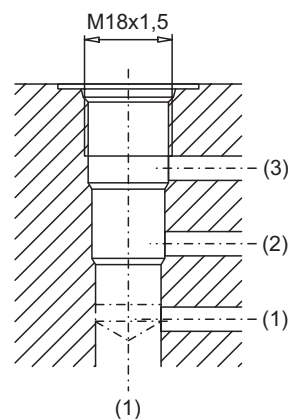


3/2-way version
with Junior-Timer connector socket



CAVITY

Cavity drawing for 3/2-way version
to Wandfluh standard



For detailed cavity drawing and cavity tools
see data sheet 2.13-1020

PARTS LIST

Position	Article	Description
10	260.4... 260.4... 206.23... 206.23...	Coil complete MD35/16-... Coil complete MJ35/16-... Coil complete KD35/16-... Coil complete KJ35/16-...
12	154.2601	Knurled nut M16x1x18
15	239.2033	Plug HB0 (incl. seal)
20	219.2002	Plug
25	160.2093	O-ring ID 9,25x1,78
30	160.2111	O-ring ID 11,11x1,78
40	160.2156	O-ring ID 15,60x1,78
50	160.6156	O-ring viton ID 15,60x1,78
55	049.3137	Back-up ring RD 10,6x13,5x1,4
60	049.3156	Back-up ring RD 12,1x15x1,4

ACCESSORIES

Cartridge built-in flange- or sandwich body

Flange valve

Sandwich valve

on request

on request

Technical explanation see data sheet 1.0-100E