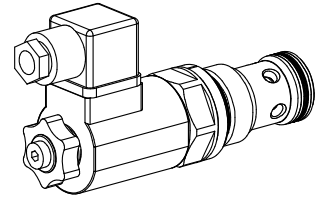


## Solenoid poppet valve cartridge 2/2-way versions

- Pilot operated
- $Q_{\max} = 120 \text{ l/min}$
- $p_{\max} = 350 \text{ bar}$

**M33x2**  
ISO 7789



### DESCRIPTION

Pilot operated 2/2-way poppet valve in screw-in cartridge design with thread M33x2 for cavity acc. to ISO 7789. The valve functions „normally open“ and „normally closed“ are available. 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 coils 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

In case of the version CD, the valve is closed in the flowing condition, in case of the DC in the non-flowing condition. In this, the differential spool is pressed against the seat by means of a spring and the applied pressure, and it closes free of leakage oil from 2 to 1. In the opposite direction of flow, the valve opens after reaching the opening pressure. During the switching of the valve, the volume flow direction from 2 to 1 is enabled.

In case of the version AB, the valve is closed in the flowing condition, in case of the BA in the non-flowing condition. In this, the differential spool is pressed against the seat by means of a spring and the applied pressure, and it closes free of leakage oil in both directions of flow.

### APPLICATION

Wandfluh solenoid operated poppet valves are applied where a 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 and in size NG10 flange and sandwich bodies. 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

### CONTENT

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### TYPE CODE

		S V S PM33 - <input type="checkbox"/> - <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> 35 # <input type="checkbox"/>	
Poppet valve			
Pilot operated			
Super			
Screw-in cartridge M33x2			
Designation see symbols			
Standard-nominal voltage $U_N$ :	12 VDC	<input type="checkbox"/> G12	110 VAC <input type="checkbox"/> R110
	24 VDC	<input type="checkbox"/> G24	115 VAC <input type="checkbox"/> R115
			230 VAC <input type="checkbox"/> R230
Slip-on coil:	Plastic moulded	<input type="checkbox"/> K	(only for 12 VDC and 24 VDC available)
	Steel	<input type="checkbox"/> M	
Connector socket:	ISO 4400/DIN 43650	<input type="checkbox"/> D	
	AMP Junior-Timer	<input type="checkbox"/> J	
Coil types			
Design-Index (Subject to change)			

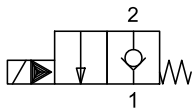
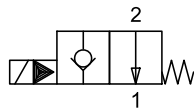
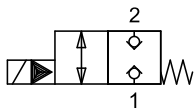
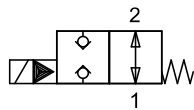
### GENERAL SPECIFICATIONS

Description	Pilot operated 2/2-way solenoid poppet valve
Construction	Screw-in cartridge for cavity acc. to ISO 7789
Operation	Solenoid with exchangeable slip-on coil
Mounting	Screw-in thread M33x2
Ambient temperature	-20...+50 °C
Mounting position	any
Fastening torque:	$M_D = 80 \text{ Nm}$ for cartridge
	$M_{D \max} = 5 \text{ Nm}$ for coil retaining nut
Weight:	$m = 0,72 \text{ kg}$ 2/2-way with plastic coil
	$m = 0,86 \text{ kg}$ 2/2-way with steel coil
Volume flow	see symbols

### HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 20/18/14 (Required filtration grade $\beta_{10...16} \geq 75$ ) (see data sheet 1.0-50/2)
Viscosity range	12 mm <sup>2</sup> /s...320 mm <sup>2</sup> /s
Fluid temperature	-20...+70 °C
Working pressure	$p_{\max} = 350 \text{ bar}$
Nominal volume flow	$Q_N = 100 \text{ l/min}$
Max. volume flow	$Q_{\max} = 120 \text{ l/min}$
Pressure drop	$\Delta p_{\max} < 10 \text{ bar}$ with 100 l/min
Opening pressure:	
Version CD / DC	2 → 1 = 2 bar / 1 → 2 = 1 bar
Version AB / BA	2 → 1 = 6 bar / 1 → 2 = 4 bar

**SYMBOLS**

SVSPM33 - **DC**...

SVSPM33 - **CD**...

SVSPM33 - **BA**...

SVSPM33 - **AB**...

**ELECTRICAL CONTROL**

Construction Switching solenoid, wet pin pull- or push

type, pressure tight

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 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:

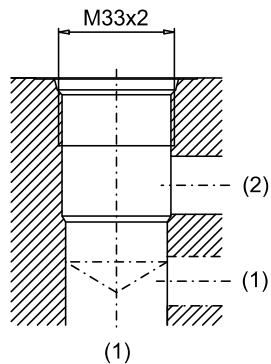
- Steel coil (M.35/16)

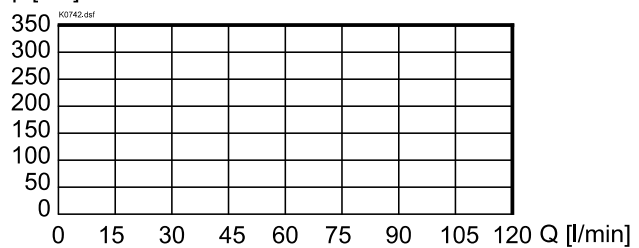
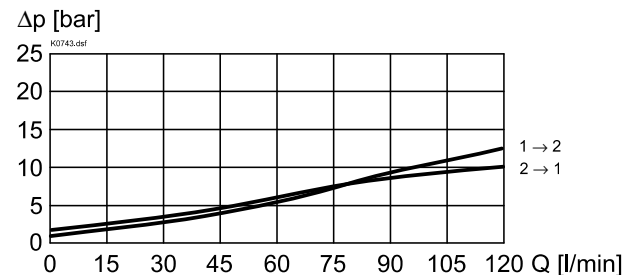
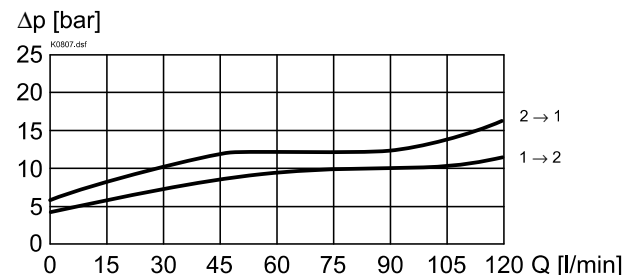
data sheet 1.1-170

- Plastic coil (K.35/16)

data sheet 1.1-172

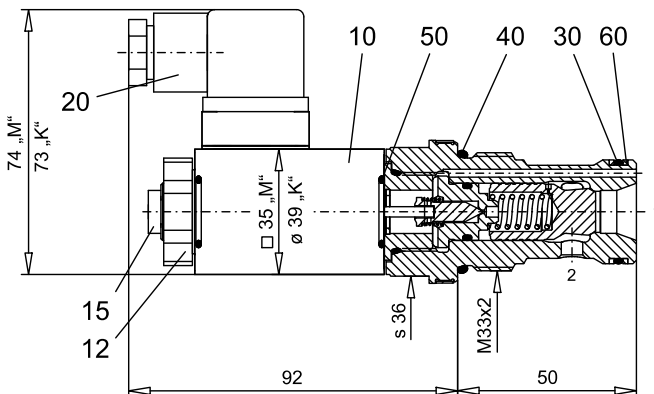
**CAVITY**

Cavity drawing to  
ISO 7789-33-01-0-98

For detailed cavity drawing and  
cavity tools see data sheet 2.13-1005

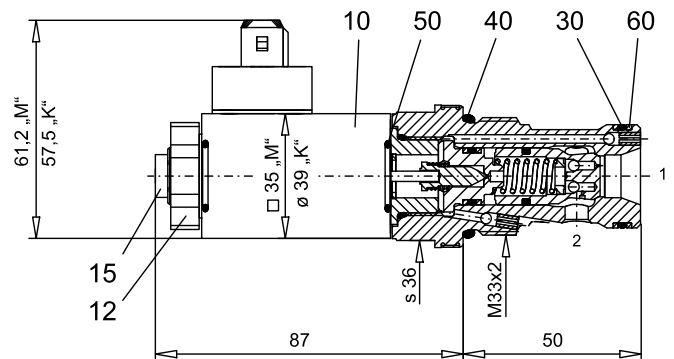
**CHARACTERISTICS** Oil viscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 
 $p = f(Q)$  Performance limits at 10% under voltage and  
max. ambient temperature

 $\Delta p = f(Q)$  Pressure volume flow characteristics [DC / CD]

 $\Delta p = f(Q)$  Pressure volume flow characteristics [BA / AB]


# **DIMENSIONS/SECTIONAL DRAWING**

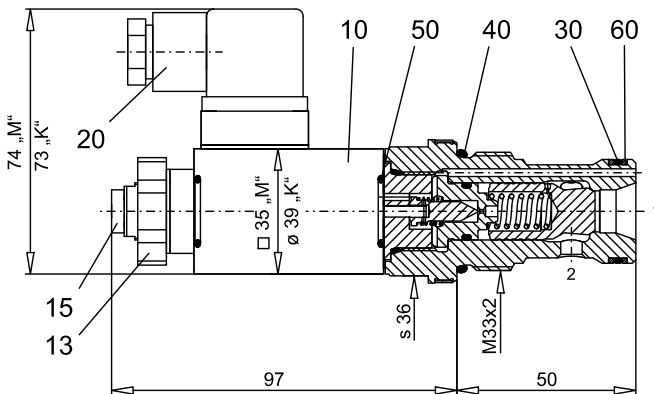
2/2-way version, „normally closed“ [DC]  
with DIN connector socket



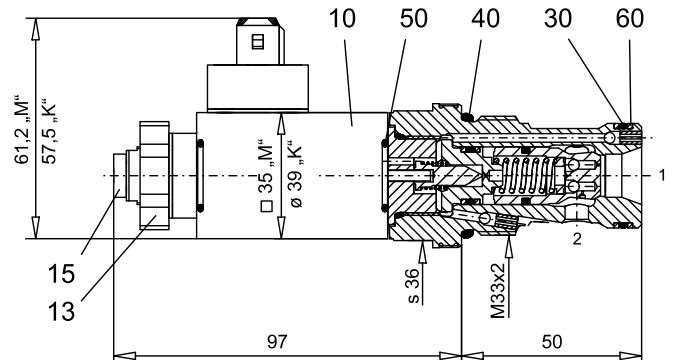
2/2-way version, „normally closed“ [BA]  
with Junior-Timer connector socket



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



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



## **PARTS LIST**

Position	Article	Description
10	260.4...	Coil complete MD35/16-...
	260.4...	Coil complete MJ35/16-...
	206.23..	Coil complete KD35/16-...
	206.23..	Coil complete KJ35/16-...
12	154.2600	Knurled nut M16x1x9
13	154.2601	Knurled nut M16x1x18
15	239.2033	Plug HB0 (incl. seal)
20	219.2002	Plug
30	160.2252	O-ring ID 25,12x1,78
40	160.2298	O-ring ID 29,82x2,62
50	160.6156	O-ring viton ID 15,60x1,78
60	049.3296	Back-up ring RD 26,1x29x1,4

## **ACCESSORIES**

Cartridge built-in flange- or sandwich body:

Flange valve

register 1.11

Sandwich valve

register 1.11

Technical explanation see data sheet

1.0-100E