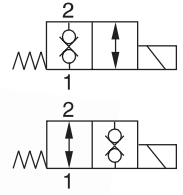


- 2/2 way cartridge poppet valves solenoid operated
- Manual override
- High transmitted power
- Leakfree  
(Less than 3 drops/min at 350 bar ((5076 PSI))



## Functional Description

The directly controlled two-way two-position directional control poppet valve is used to open or close the medium flow to the consumer and, simultaneously, from the consumer to discharge. The typical example is control of a single-action cylinder. The control valve consists of the valve saddle (1), poppet (2), return spring (3) and controlling electromagnet (4). The opening and closing of the valve is ensured by the electromagnet controlled poppet which sits on the seat and guarantees it is in the closed, leak-free position. When

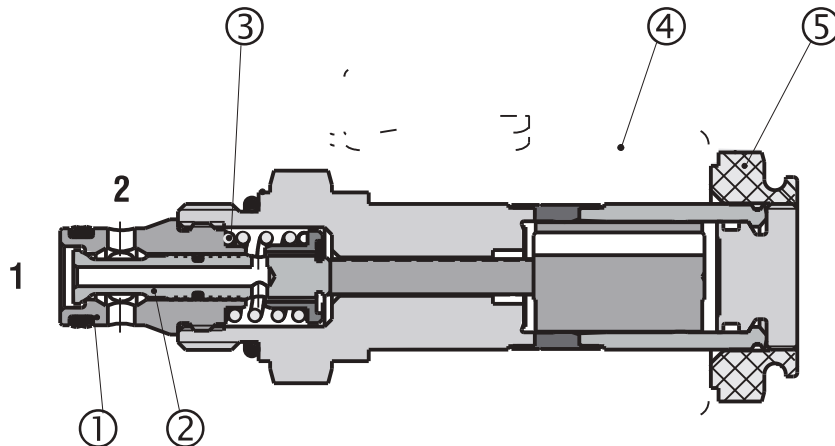
energized, the valve allows free flow in both directions, 1-2 or 2-1.

Coils are available for both DC or AC voltage. The solenoid coil can be replaced or adjusted up to 360° by loosening the fixing nut (5). The solenoid is zinc coated.

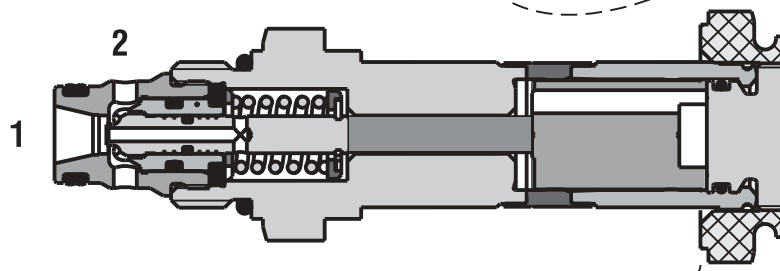
**Note:**

The valves are supplied without solenoid coils. The solenoid coil, the terminal box and the housing body for line mounting have to be ordered separately.

**Designation 2S5**



**Designation 2S6**



# Ordering Code

**SD1E-A2** /

**2/2 Way Solenoid Operated  
Directional Control Poppet Valve  
3/4-16UNF**

No designation  
**V**

**Seals**  
NBR  
FPM (Viton)

High Performance

**H**

No designation  
**M2**  
**M5**  
**M9**

**Manual override**  
standard  
covered with rubber boot  
socket head screw  
without manual override

**Designation**

Refer to the table with functional symbols

Solenoid coil, terminal box and body for line mounting have to be ordered separately. For selection of solenoid coil and terminal box type use catalogue HA 8007. For selection of valve body for in-line mounting use catalogue HA 0018.

# Functional Symbols

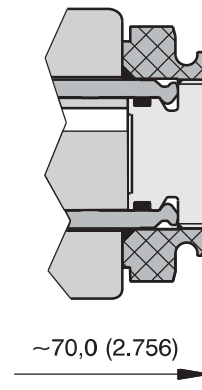
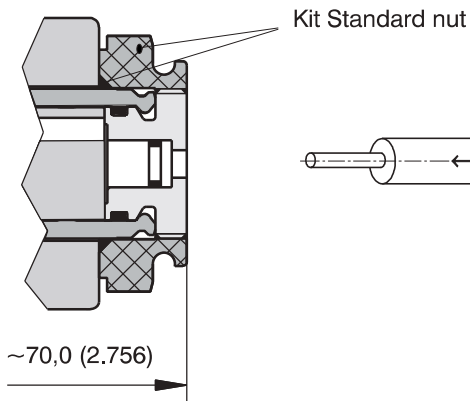
Designation	Symbol	Designation	Symbol
<b>2S5</b>		<b>2S6</b>	

# Manual Override

Dimensions in millimeters (inches)

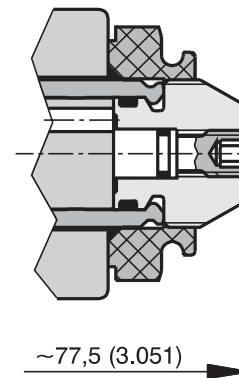
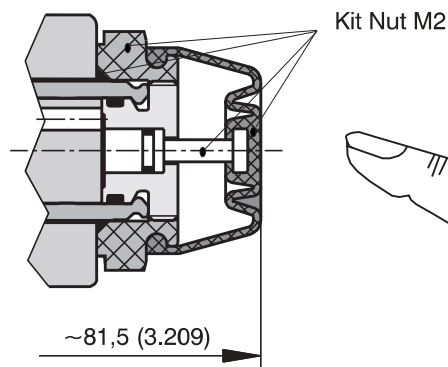
No designation - standard

Designation **M9** - without manual override



Designation **M2** - covered with rubber boot

Designation **M5** - with socket head screw 2.5 (0.098)



# Technical Data

Valve size	A2	
Cartridge cavity	3/4-16 UNF-2A	
Maximum flow	L/min (GPM)	30 (7.9)
Max. operating pressure	bar (PSI)	350 (5076)
Pressure drop	bar (PSI)	see Δp-Q characteristics
Hydraulic fluid	Hydraulic oils of power classes (HL, HLP) to DIN 51524	
Fluid temperature range	°C (°F)	-20 ... 80 (-4 ... 176)
Ambient temperature, max.	°C (°F)	-20 ... 80 (-4 ... 176)
Viscosity range	mm <sup>2</sup> /s (SUS)	10 ... 500 (49 ... 2450)
Maximum degree of fluid contamination	Class 21/18/15 according to ISO 4406	
Group coils <sup>1)</sup>	C19B	
Permissible rated voltage variation	%	±15% AC,DC
Max. switching frequency	1/h	15 000
Duty cycle	%	100
Enclosure type to EN 60529	IP 65; IP 67 <sup>1)</sup>	
Service life	cycles	10 <sup>7</sup>
Valve tightening torque	Nm ( lbf.ft)	30+2 (22.127+1.475)
Plastic nut tightening torque	Nm ( lbf.ft)	3+1 (2.213+0.738)
Weight	kg(lbs)	0,19 (0.42)
Mounting position	unrestricted	
Valve body ( data sheed HA 0018)	SB-A2	

<sup>1)</sup> see data sheet coils HA 8007

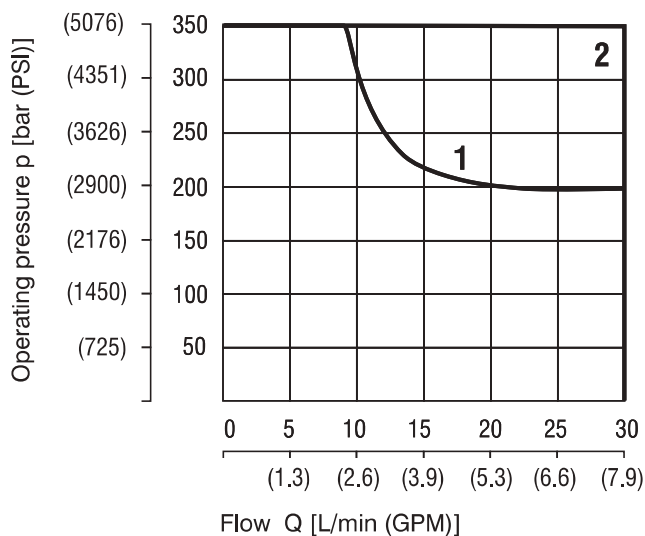
## p-Q Characteristics

Measured at  $v = 32 \text{ mm}^2/\text{s}$  (156 SUS)

Operating limits for hydraulic power transferred by the directional valve. For respective spool type - see functional symbols.

### Designation 2S5

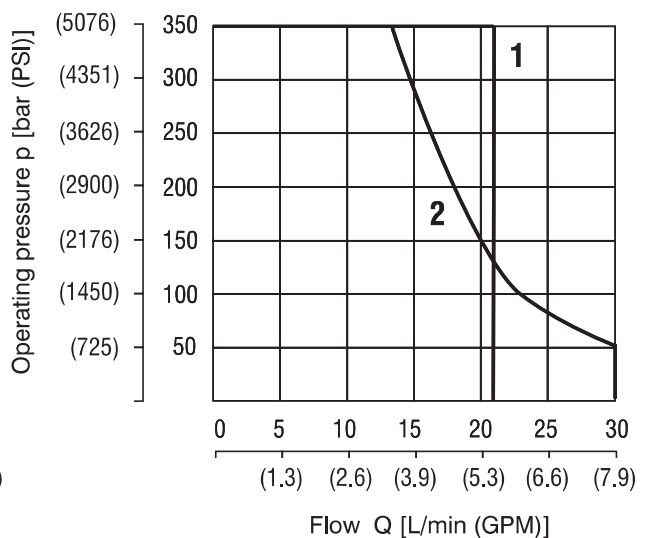
Oil 80 °C (176 °F) / Ambient temperature 50 °C (122 °F)  
Voltage Un -10% [ V ]



	Direction
1	1→2
2	2→1

### Designation 2S6

Oil 80 °C (176 °F) / Ambient temperature 50 °C (122 °F)  
Voltage Un -10% [ V ]



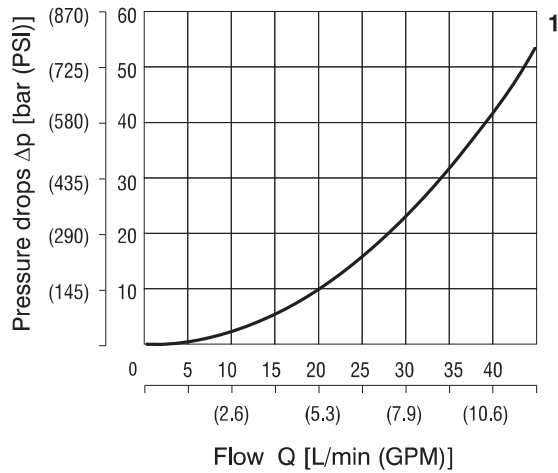
	Direction
1	2→1
2	1→2

# Δp-Q Characteristics

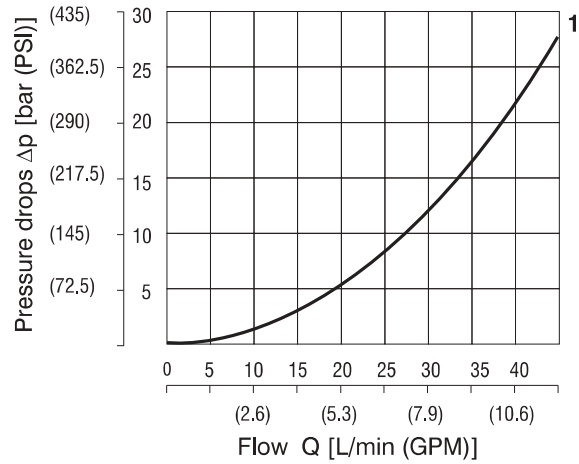
Measured at  $v = 32 \text{ mm}^2/\text{s}$  (156 SUS)

Pressure drops related to flow rate.

**Designation 2S5**



**Designation 2S6**



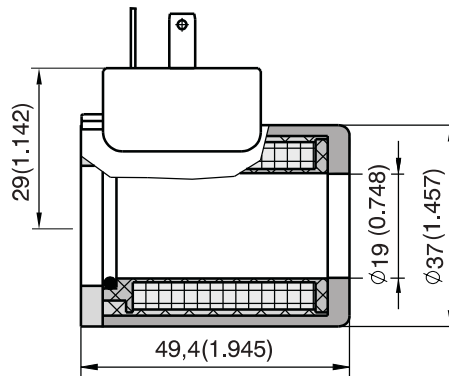
	Direction
1	1→2
1	2→1

	Direction
1	1→2
1	2→1

## Type of the Solenoid Coils

Dimensions in millimeters (inches)

**Coil C19B**  
with connector **E1 (E2)**



**Note:**

Example of most frequent coil types.

For complete range of SD1E-A2 valve coils with technical information about voltage, enclosure type, terminal box please refer to coil data sheet HA 8007.

Voltage	Connector	High performance
		SD1E-A2 / H... Type code
12 VDC	EN 175301-803-A	C19B-01200E1-6NA
24 VDC	EN 175301-803-A	C19B-02400E1-25,75NA
12 VDC	AMP Junior Timer	C19B-01200E3-6NA
24 VDC	AMP Junior Timer	C19B-02400E3-25,75NA
120 VAC	EN 175301-803-A with integrated rectifier	C19B-12060E5-494NA
230 VAC	EN 175301-803-A with integrated rectifier	C19B-23050E5-1653NA
120 VAC	EN 175301-803-A Use the connector plug with rectifier!	C19B-10600E1-494NA
230 VAC	EN 175301-803-A Use the connector plug with rectifier!	C19B-20500E1-1653NA



<b>Spare Parts</b>		Dimensions in millimeters (inches)	
<b>Seal kit</b>			
Dualseal - PU	O-ring - NBR	O-ring - Viton	Ordering number
10,3 x 12,7 x 3,1 (1pc.)	17 x 1,8 (1pc.)	-	20776700
10,3 x 12,7 x 3,1 (1pc.)	-	17,17 x 1,78 (1pc.)	17014300
<b>Type of nut</b>			
Kit Standard nut	Nut +O-ring		20777000
Kit Nut M2	Nut +O-ring + Rubber cap + Pin		20777600
<b>Caution!</b>			
<ul style="list-style-type: none"> <li>• The packing foil is recyclable.</li> <li>• The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.</li> </ul>			
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