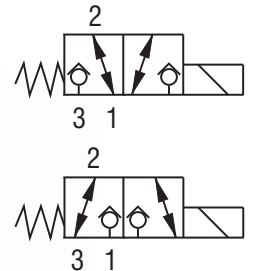
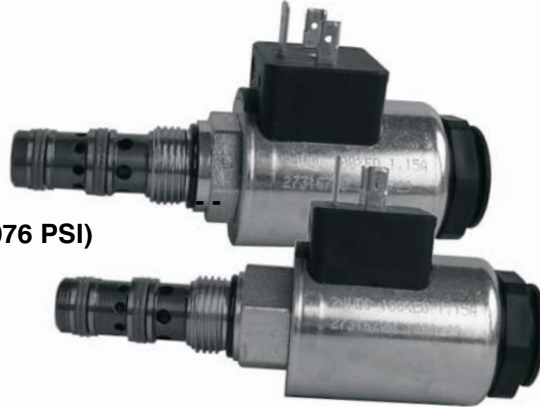


- 3/2 way cartridge poppet valves solenoid operated
- Manual override
- High transmitted power
- Leakfree -
- less than 3 drops/min at 350 bar (5076 PSI)



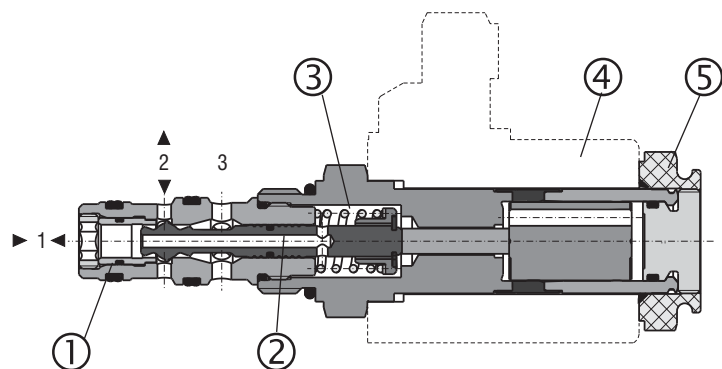
Functional Description

The directly controlled three-way two-position poppet valve is used to open or close the medium flow to the consumer and, simultaneously, from the consumer to discharge. A typical example is control of a single-action cylinder. The control valve consists of the two seat bush (1), poppet (2), return spring (3) and controlling solenoid (4). Design 2S7 -when the coil is without current, the spring forces the poppet into the rear seat (closer to the solenoid) allowing free flow through canal 2 to canal 1 or vice versa. Energizing the solenoid forces the poppet closing the front seat. Will connect canals 1 and 2. Design 2s8 – in de-energized mode, the spring forces the poppet through

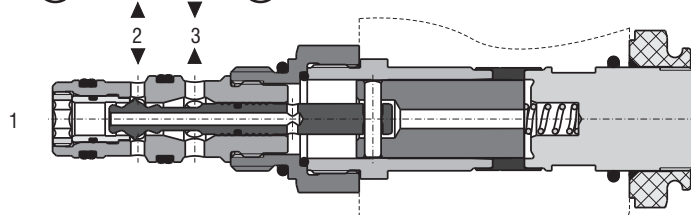
the anchor to the front seat (away from the solenoid) allowing free flow through canal 2 to canal 3 or vice versa. Energizing the solenoid forces the poppet closing the rear seat. Will connect canals 1 and 2. Coils are available for both DC or AC voltage. The solenoid coil can be replaced or adjusted up to 360 ° by loosening the fixing nut (5). The solenoid is zinc coated.

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

Designation **2S7**



Designation **2S8**



Ordering Code

SD1E-A3 /

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

No designation
V

Seals
NBR
FPM (Viton)

High performance

H

Description

Refer to the table with functional symbols

No designation

M2
M5
M9

Manual override
standard only for 2S7
covered with rubber boot only for 2S7
socket head screw only for 2S7
without manual override

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
2S7		2S8	

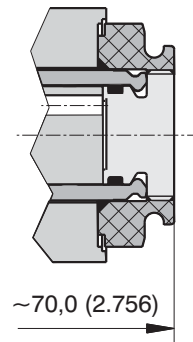
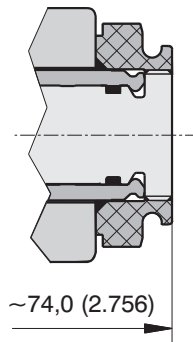
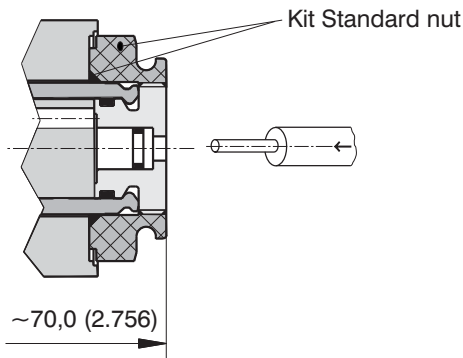
Manual Override

Dimensions in millimeters (inches)

No designation - only for **2S7**

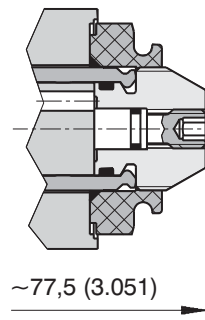
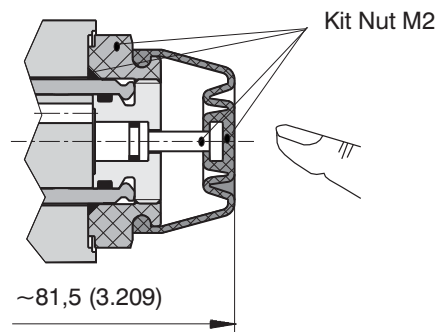
Designation **M9** - only for **2S8**
without manual override

Designation **M9** - only for **2S7**
without manual override



Designation **M2** - only for **2S7**
covered with rubber boot

Designation **M5** - only for **2S7**
with socket head screw 2.5 (0.098)



Technical Data

Valve size	A3	
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 ² /s (SUS)	10 ... 500 (49 ... 2450)
Maximum degree of fluid contamination	Class 21/18/15 according to ISO 4406	
Group coils ¹⁾	C19B	
Permissible rated voltage variation	%	AC, DC \pm 15
Max. switching frequency	1/h	15 000
Duty cycle	%	100
Service life	cycles	10 ⁷
Enclosure type to EN 60529	IP 65; IP 67 see data sheet coils HA 8007	
Valve tightening torque	Nm (lbf.ft)	30+2 (22.13+1.48)
Plastic nut tightening torque	Nm (lbf.ft)	3+1 (2.21+0.74)
Weight	kg(lbs)	2S7 0,205 (0.452) 2S8 0,215 (0.474)
Mounting position	unrestricted	
Valve body (data sheed HA 0018)	SB-A3	

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 2S7

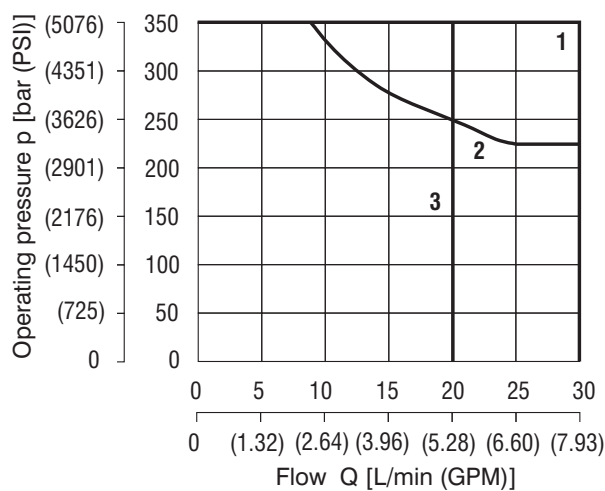
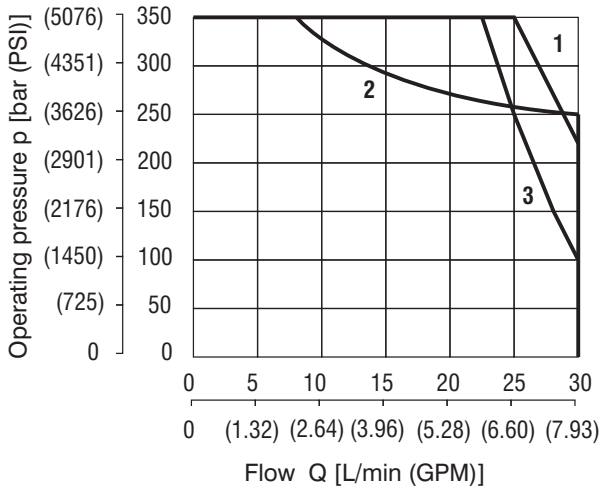
Oil 80 °C(176 °F) / Ambient temperature 50 °C (122 °F)
Voltage Un -10% [V]

	Direction
1	2→1
2	2→3
3	1→2 3→2

Designation 2S8

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

	Direction
1	1→2 3→2
2	2→3
3	2→1



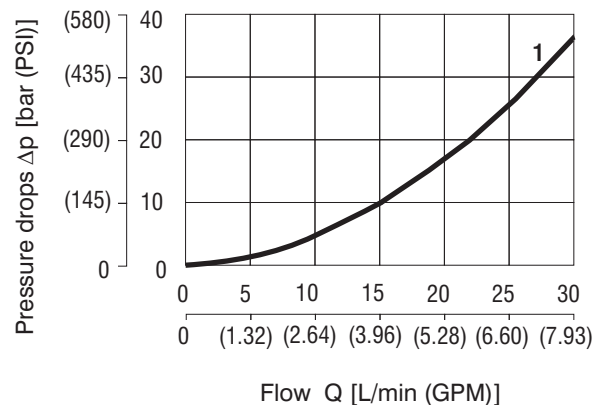
Δp -Q Characteristics

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

Pressure drops related to flow rate.

Designation 2S7, Designation 2S8

	Direction
1	1→2 2→1 2→3 3→2



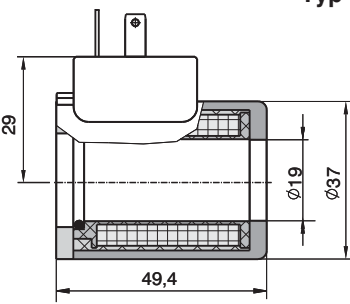
Type of the Solenoid Coils

Dimensions in millimeters (inches)

Note:

Example of most frequent coil types.

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

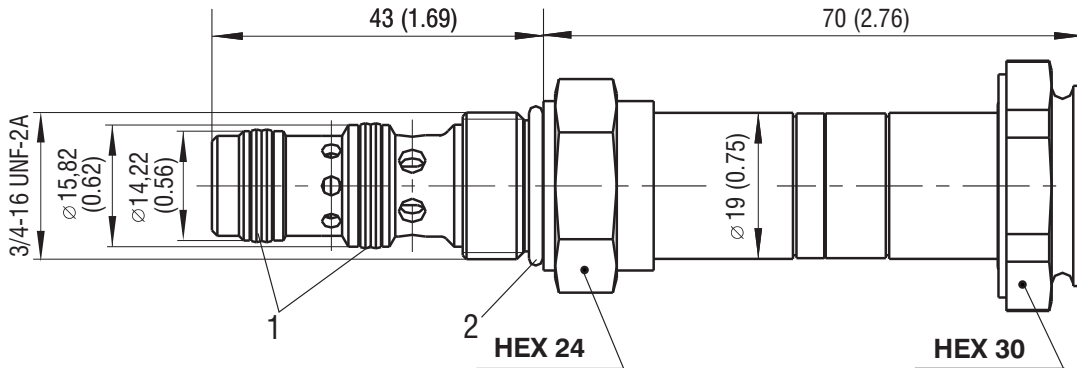
Coil example	Voltage	Connector	Type code
 <p>Typ E1</p>	12 VDC	EN 175301-803-A	C19B-01200E1-6NA
	24 VDC	EN 175301-803-A	C19B-02400E1-25,75NA
	12 VDC	AMP Junior Timer	C19B-01200E3-6NA
	24 VDC	AMP Junior Time	C19B-02400E3-25,75NA
	120 VAC	EN 175301-803-A with integrated rectifier	C19B-12060E5-494NA
	230 VAC	EN 175301-803-A with integrated rectifier	C19B-23050E5-1653NA
	120 VAC*	EN 175301-803-A	C19B-10600E1-494NA
	230 VAC*	EN 175301-803-A	C19B-20500E1-1653NA

*Use the connector plug with rectifier!

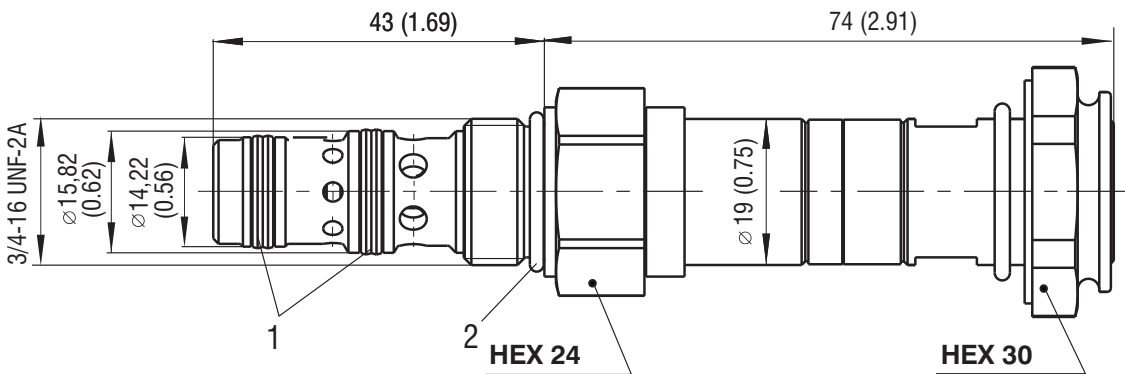
Valve Dimensions

Dimensions in millimeters (inches)

Designation 2S7



Designation 2S8

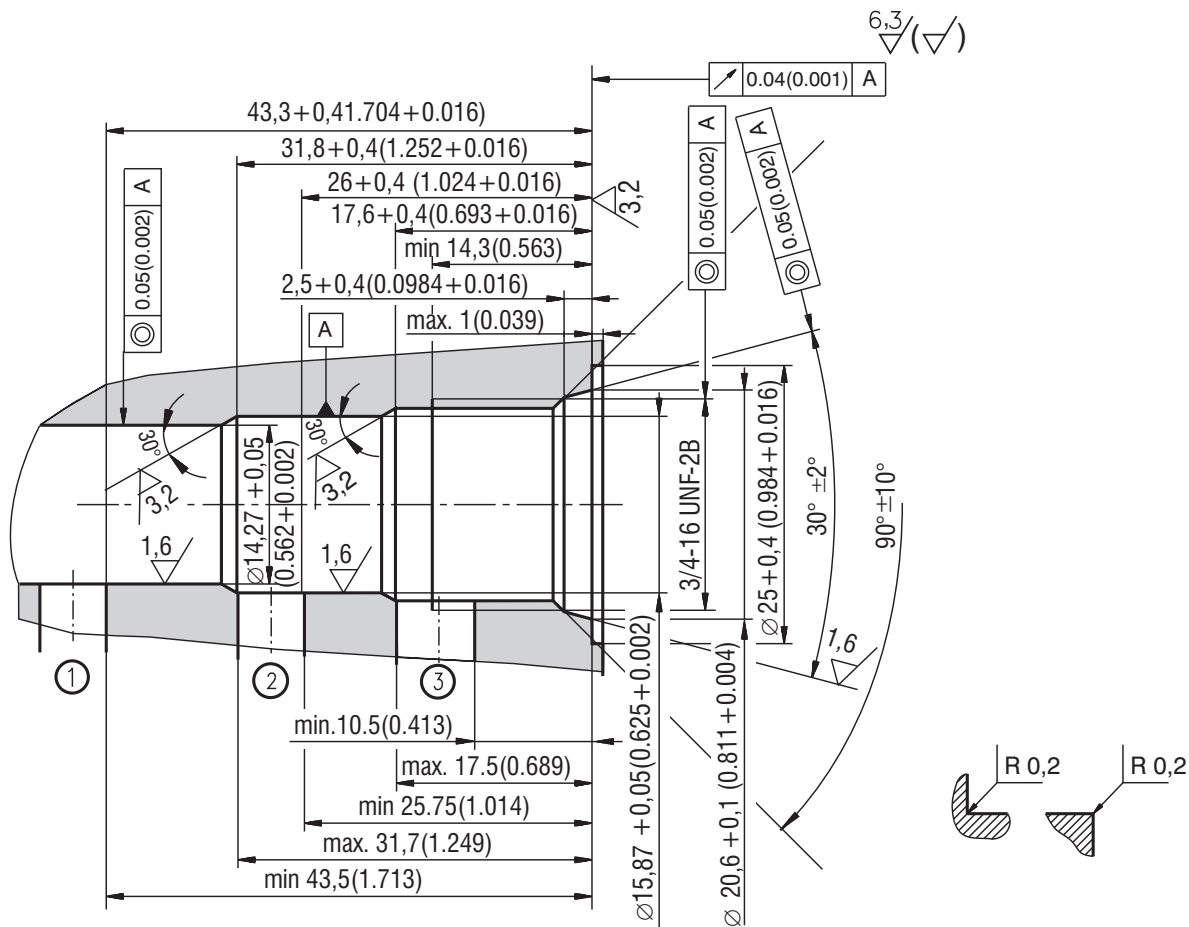


Seal kit - see Spare Parts

- 1. Dualseal - PU
- 2. O-ring

Cavity

Dimensions in millimeters (inches)



Spare Parts

Dimensions in millimeters (inches)

Seal kit

Dualseal - PU	O-ring - NBR	O-ring - Viton	Ordering number
11,87 x 14,27 x 3,1 (1ks)	17 x 1,8 (1 ks)	-	15661700
13,4 x 15,87 x 3,1 (1ks)			
11,87 x 14,27 x 3,1 (1ks)	-	17,17 x 1,78 (1 ks)	20777200
13,4 x 15,87 x 3,1 (1ks)			

Type of nut

Kit Standard nut	Nut +O-ring	20777000
Kit Nut M2	Nut +O-ring + Rubber cap + Pin	20777600

Caution!

- The packing foil is recyclable.
- 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.

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