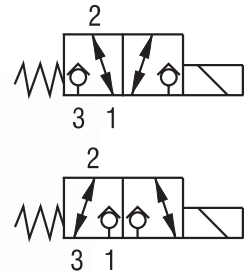
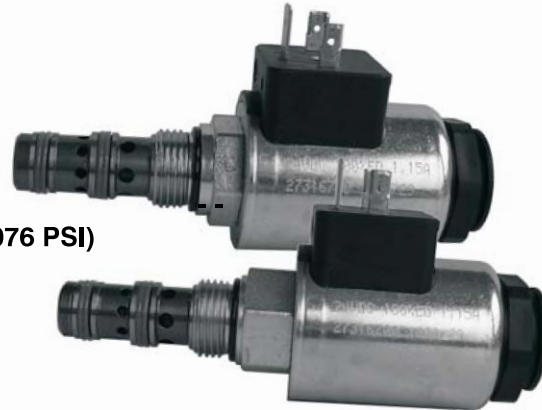


- 3/2 way cartridge poppet valves solenoid operated
- Manual override
- High transmitted power
- Leakfree -
- less than 3 drops/min at 350 bar (5076 PSI)



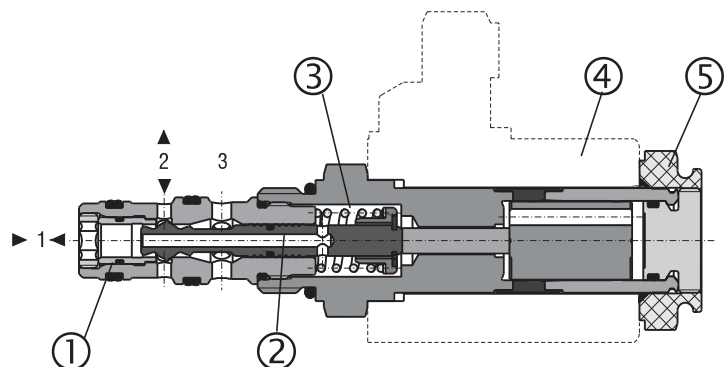
Functional Description

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

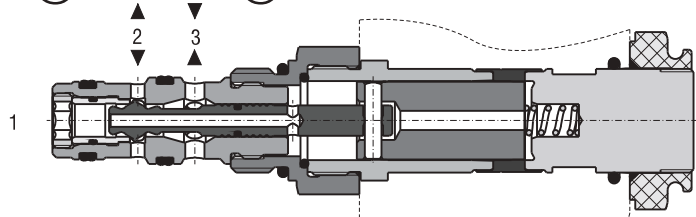
the anchor to the front seat (away from the solenoid) allowing free flow through canal 2 to canal 3 or vice versa. Energizing the solenoid forces the poppet closing the rear seat. Will connect canals 1 and 2. Coils are available for both DC or AC voltage. The solenoid coil can be replaced or adjusted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

Note: The valves are supplied without solenoid coils. 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**

Seals

NBR
FPM (Viton)

No designation
V

High performance

H

Manual override

No designation standard only for 2S7
M2 covered with rubber boot only for 2S7
M5 socket head screw only for 2S7
M9 without manual override

Description

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 |
|-------------|--------|-------------|--------|
| 2S7 | | 2S8 | |

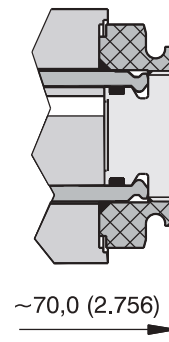
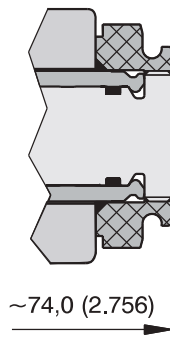
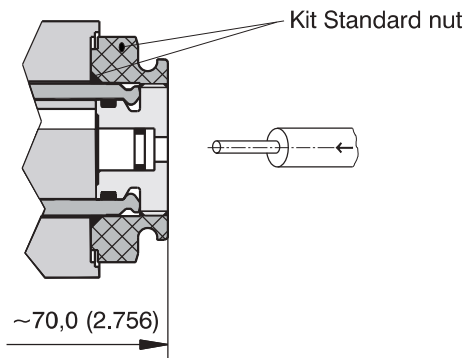
Manual Override

Dimensions in millimeters (inches)

No designation - only for **2S7**

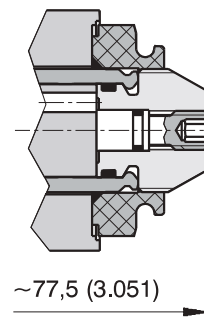
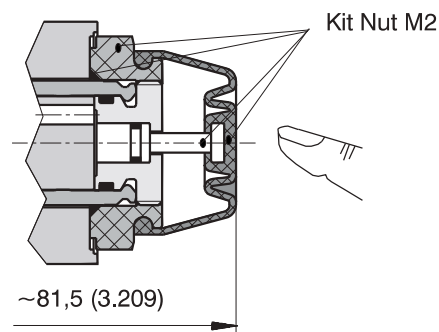
Designation **M9** - only for **2S8**
without manual override

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

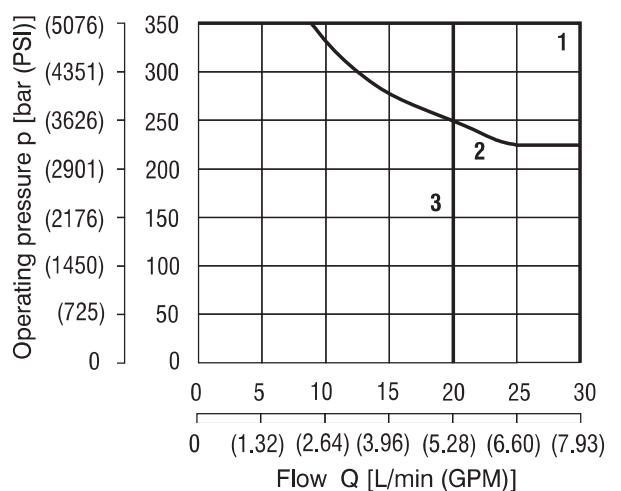
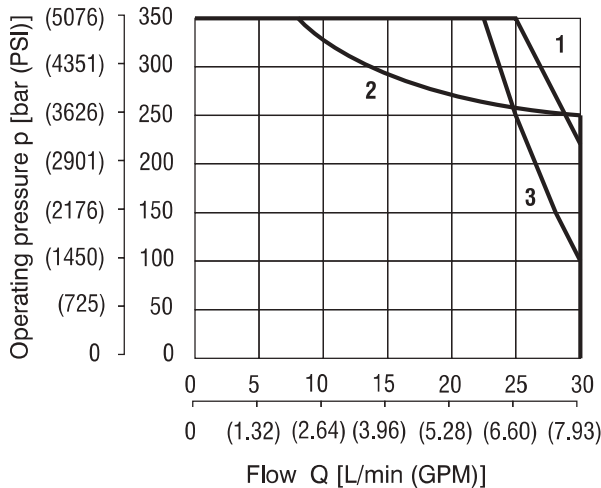
Oil 80 °C(176 °F) / Ambient temperature 50 °C (122 °F)
Voltage Un -10% [V]

| | 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 |



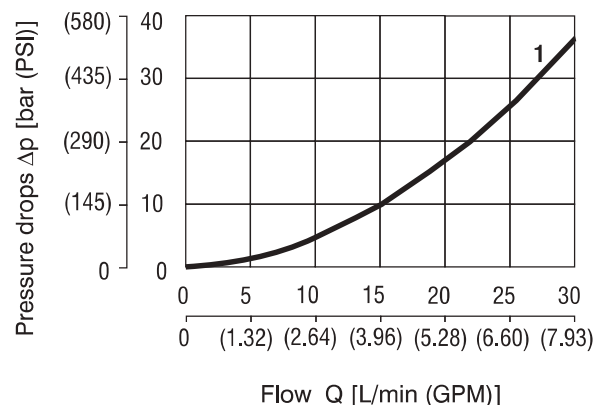
Δp -Q Characteristics

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 |



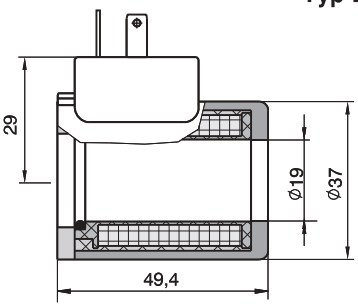
Type of the Solenoid Coils

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.

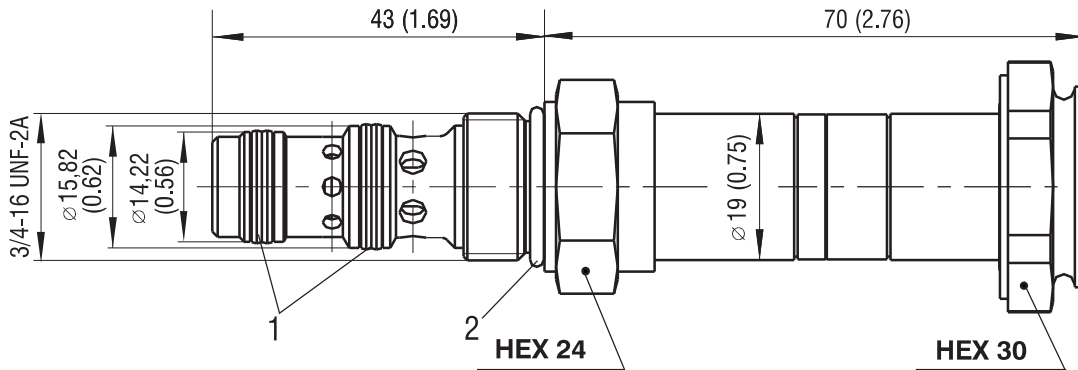
| Coil example | Voltage | Connector | Type code |
|--|----------|---|----------------------|
|  <p>Typ E1</p> | 12 VDC | EN 175301-803-A | C19B-01200E1-6NA |
| | 24 VDC | EN 175301-803-A | C19B-02400E1-25,75NA |
| | 12 VDC | AMP Junior Timer | C19B-01200E3-6NA |
| | 24 VDC | AMP Junior Time | C19B-02400E3-25,75NA |
| | 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!

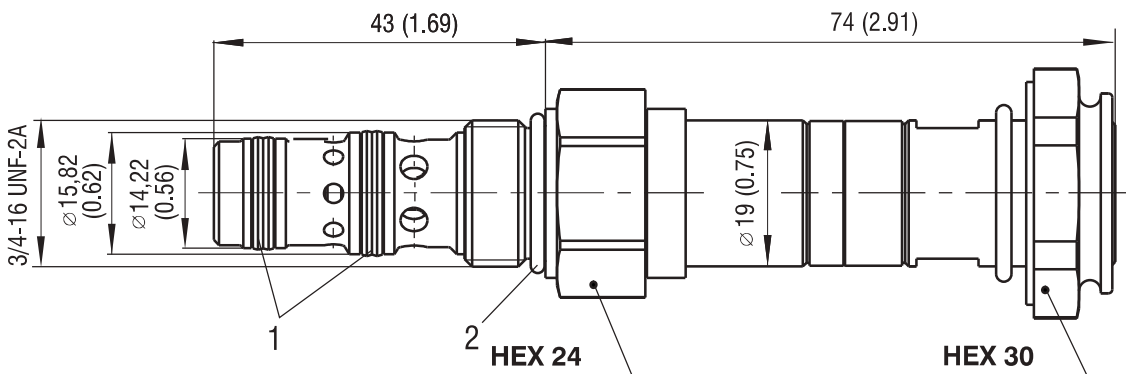
Valve Dimensions

Dimensions in millimeters (inches)

Designation 2S7



Designation 2S8



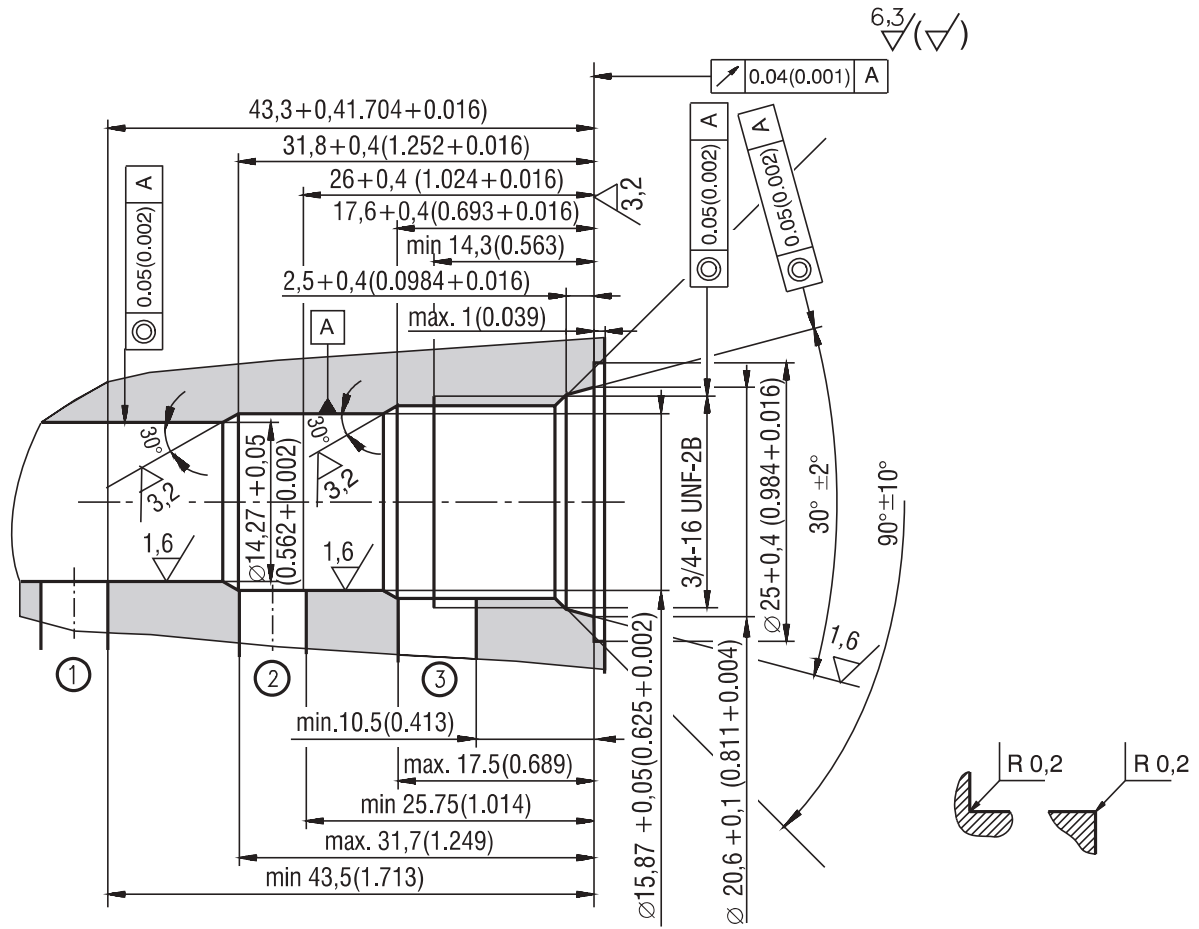
Seal kit - see Spare Parts

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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