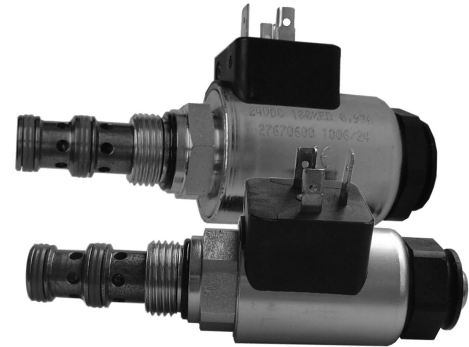
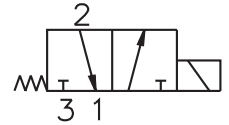


- Hardened and precision working parts
- High flow capacity
- High transmitted hydraulic power
- Wide range of manual overrides available
- All ports may be fully pressurized
- Variety of optional spools connections available
- Coil interchangeability with all series SD*- A* valves



Functional Description

The directly operated 3/2 way solenoid actuated spool valve controls in the first line the start and stop function of the oil flow. The valve consists of the valve body (1), control spool (2), return spring (3), cartridge with actuating system (4) and of the solenoid coil (7) that is mounted on the actuating system. The valve bushing is screwed into the cartridge part (4).

The valve bushing is fixed in the cartridge by a wire ring (5) and sealed with the seal ring (6). Separation of the valve bushing and the cartridge prevent transmitting the stresses, which could be caused by too high tightening torques. The DC solenoid coils can be delivered for 12 V and 24 V supply voltages. For AC applications 120 V/ 60 Hz or 230 V/ 50 Hz,

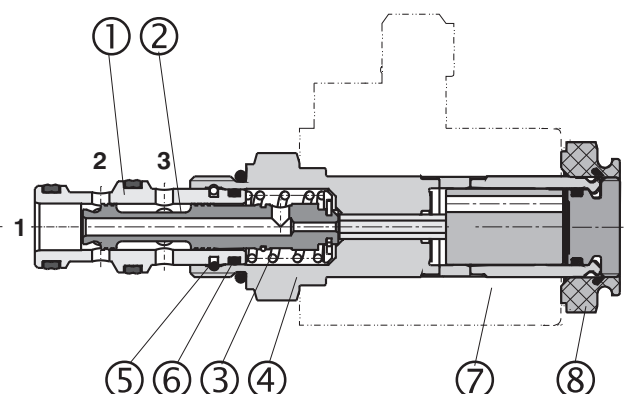
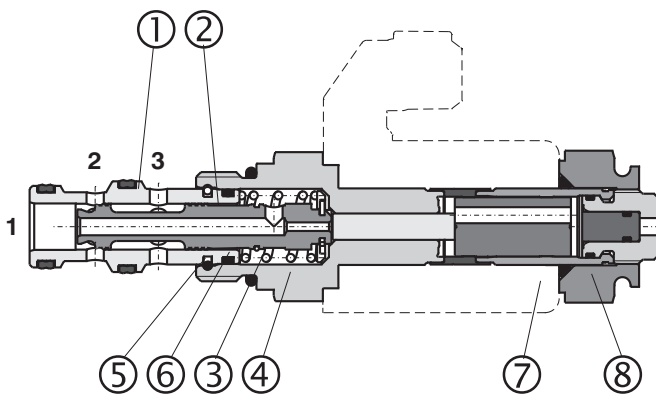
the suitable rectifiers for the Light line solenoid coils are available, with them being mounted in an additional terminal box. With the high power solenoid coils in AC variants, the rectifiers are integrated directly in the connector. By loosening the fixing nut (8), the solenoid coil can be replaced or turned in the range of 360°. The valve body is zinc coated.

Note:

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

Light line

High performance



Ordering Code

SD2E-A3 /

**3/2 Way Solenoid Operated
Directional Control Valve**

Light line
High performance

Description

Refer to the table with functional symbols

L
H

No designation
V

Seals
NBR
FPM (Viton)

No designation
M5
M9

Manual override
standard
socket head screw
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 HA0018.

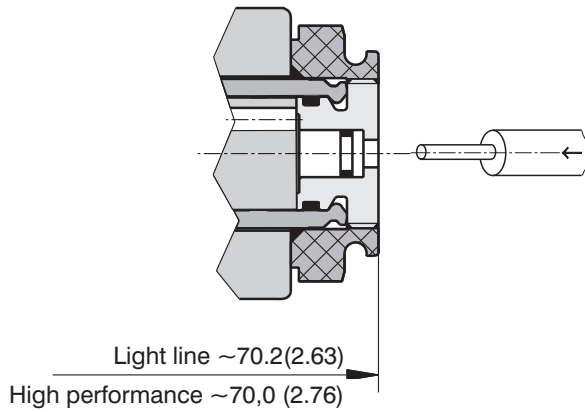
Functional Symbols

| Designation | Symbol | Interposition | Designation | Symbol | Interposition |
|-------------|--------|---------------|-------------|--------|---------------|
| 2D21 | | | 2D26 | | |
| 2D25 | | | 2D31 | | |

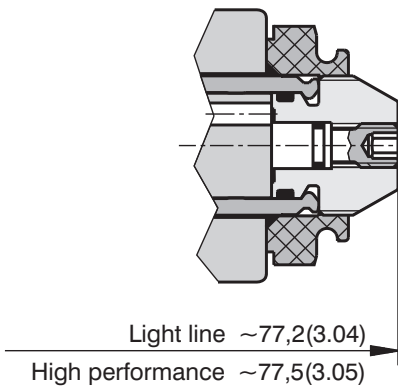
Manual Override

Dimensions in millimeters (inches)

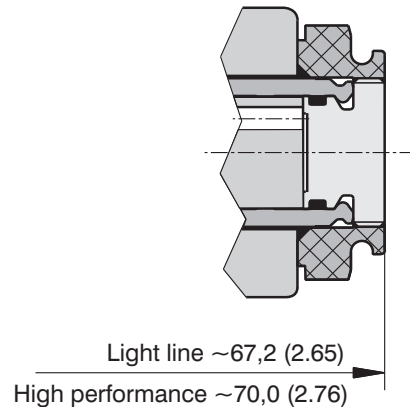
No designation - standard



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



Designation **M9** - without manual override



Technical Data

| | | Light line | High performance |
|--|--------------------------|--|-------------------------|
| Cartridge thread | | 3/4-16 UNF-2B | |
| Maximum flow | L/min (GPM) | 20 (5.3) | 30 (7.9) |
| Max. operating pressure | bar (PSI) | 250 (3626) | 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 ... 60 (-4 ... 140) | -20 ... 80 (-4 ... 176) |
| Ambient temperature, max. | °C (°F) | -20 ... 50 (-4 ... 122) | -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 (2006) | |
| Coil groups ¹⁾ | | C14B | C19B |
| Permissible rated voltage variation | % | AC,DC ±10 | AC,DC ±15 |
| Max. switching frequency | 1/h | 15 000 | |
| Duty cycle | % | 100 | |
| Enclosure type to EN 60529 ¹⁾ | | IP 67 (IP 65) | |
| Service life | cycles | 10 ⁷ | |
| 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) | 3+1 (2.213+0.738) |
| Weight | kg(lbs) | 0,15 (0.33) | 0,20 (0.44) |
| Mounting position | | unrestricted | |

¹⁾ see data sheet coils HA 8007

p-Q Characteristics

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

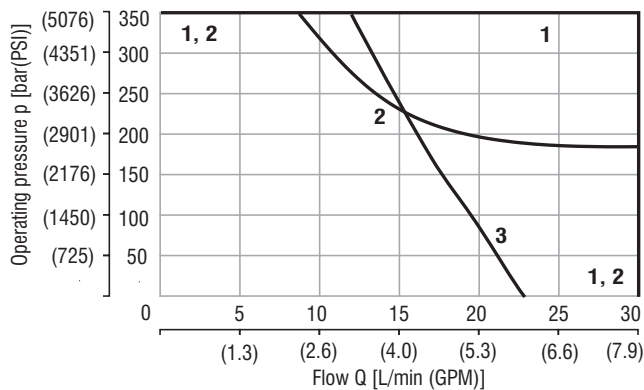
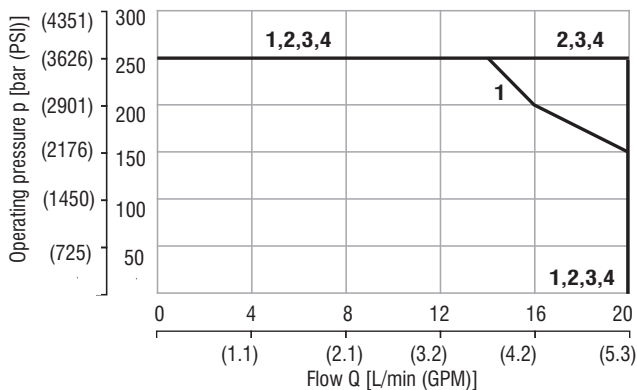
Operating limits for hydraulic power transferred by the directional valve. For respective spool type - see functional symbols.

Light line

Oil 60 °C (140 °F) / Ambient temperature 50 °C (122 °F)
Voltage Un -10% [V] 24VDC

High performance

Öl 80 °C (176 °F) / Ambient temperature 50 °C (122 °F)
Voltage Un -10% [V] 24VDC



| | Connection | Direction |
|---|------------|-----------|
| 1 | 2D26 | 3→2 |
| 2 | 2D26 | 2→1 |
| 3 | 2D25 | 3→2, 2→1 |
| 4 | 2D21 | 3→2, 2→1 |

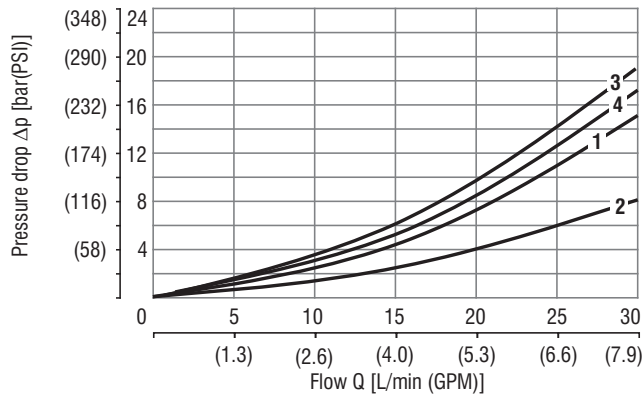
| | Connection | Direction |
|---|------------|-----------|
| 1 | 2D21 | 3→2, 2→1 |
| 1 | 2D25 | 3→2, 2→1 |
| 1 | 2D31 | 3→1 |
| 2 | 2D26 | 3→2, 2→1 |
| 3 | 2D31 | 2→1 |

Δp-Q Characteristics

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

Pressure drops related to flow rate.

Light line + High performance

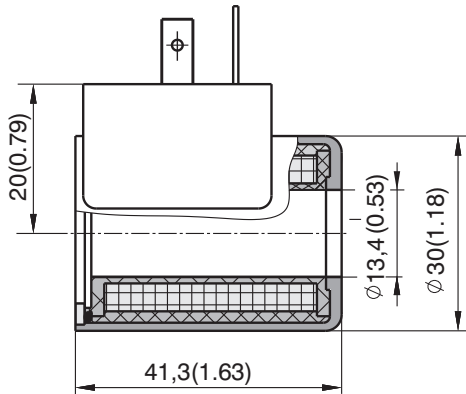


| | Connection | Direction |
|---|------------|-----------|
| 1 | 2D21 | 3→2 |
| 1 | 2D25 | 3→2 |
| 1 | 2D31 | 2→1 |
| 2 | 2D21 | 2→1 |
| 3 | 2D26 | 3→2 |
| 4 | 2D25 | 2→1 |
| 4 | 2D26 | 2→1 |
| 4 | 2D31 | 3→1 |

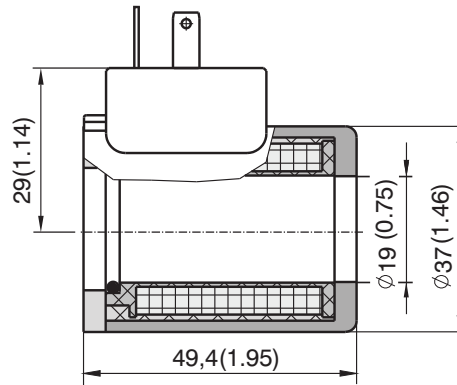
Type of the Solenoid Coils

Dimensions in millimeters (inches)

**Coil for Light line
C14B**



**Coil for High performance
C19B**



Note:

Example of most frequent coil types.

For complete range of SD2E-A3 valve coils with technical informatik about voltage, enclosure type, terminal box please offer to coil data sheet HA 8007.

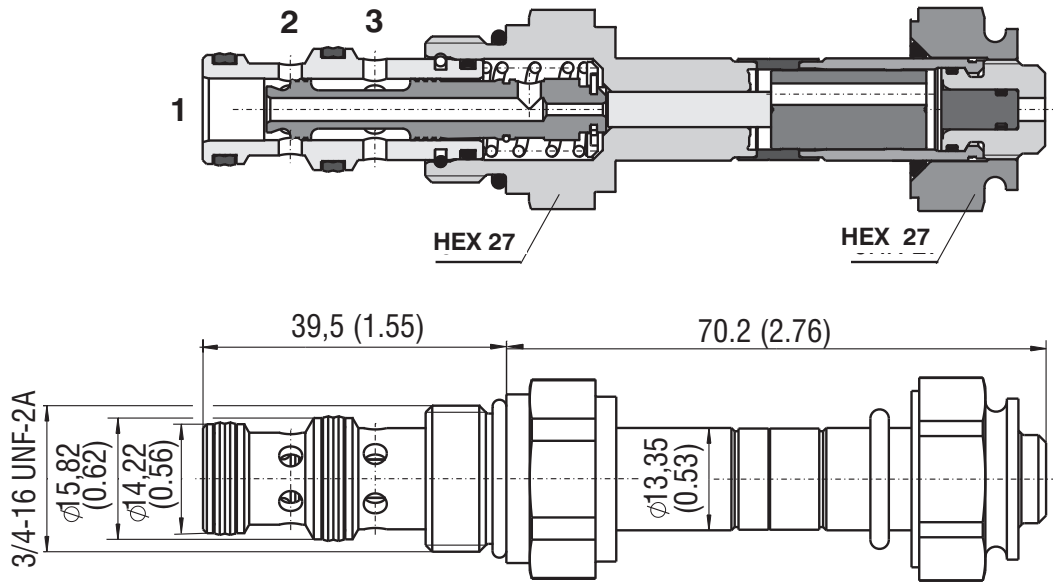
| Solenoid | Connector | Light line | High performance |
|----------|---|----------------------|---------------------|
| | | SD2E-A3 / L... | SD2E-A3 / H... |
| | | Type code | Type code |
| 12 VDC | EN 175301-803-A | C14B-01200E1-6,55NA | C19B-01200E1-7,1NA |
| 24 VDC | EN 175301-803-A | C14B-02400E1-26,2NA | C19B-02400E1-28,8NA |
| 12 VDC | AMP-Junior-Timer | C14B-01200E3A-6,55NA | C19B-01200E3-7,1NA |
| 24 VDC | AMP-Junior-Timer | C14B-02400E3A-26,2NA | C19B-02400E3-28,8NA |
| 120 VAC | EN 175301-803-A with integrated rectifier | - | C19B-12060E5-527NA |
| 230 VAC | EN 175301-803-A with integrated rectifier | - | C19B-23050E5-2065NA |
| 120 VAC* | EN 175301-803-A (with rectifier) | C14B-10600E1-536NA | C19B-10600E1-527NA |
| 230 VAC* | EN 175301-803-A (with rectifier) | C14B-20500E1-2476NA | C19B-20500E1-2065NA |

*Use the terminal box with rectifier!

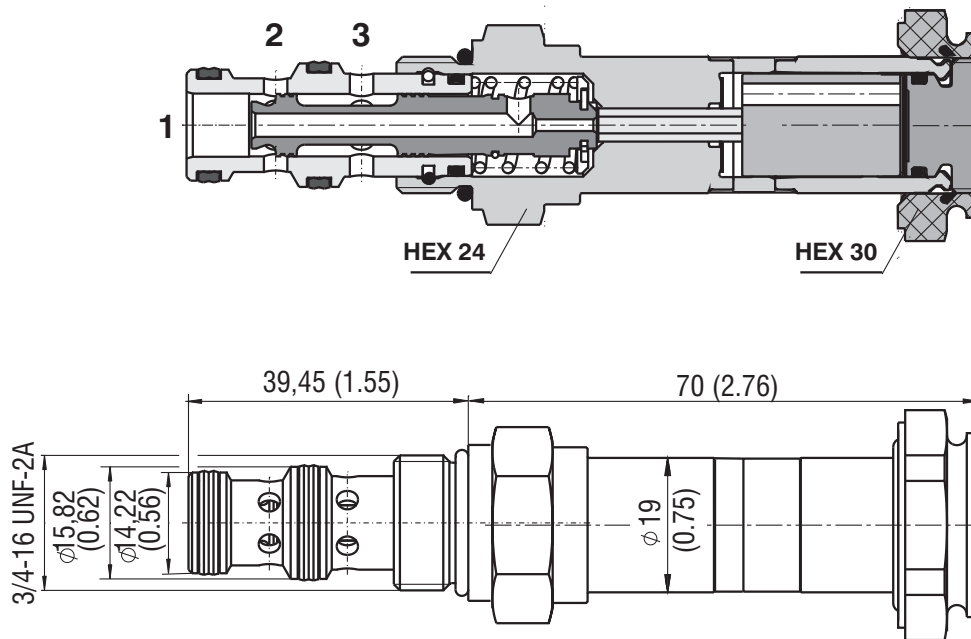
Valve Dimensions

Dimensions in millimeters (inches)

Light line

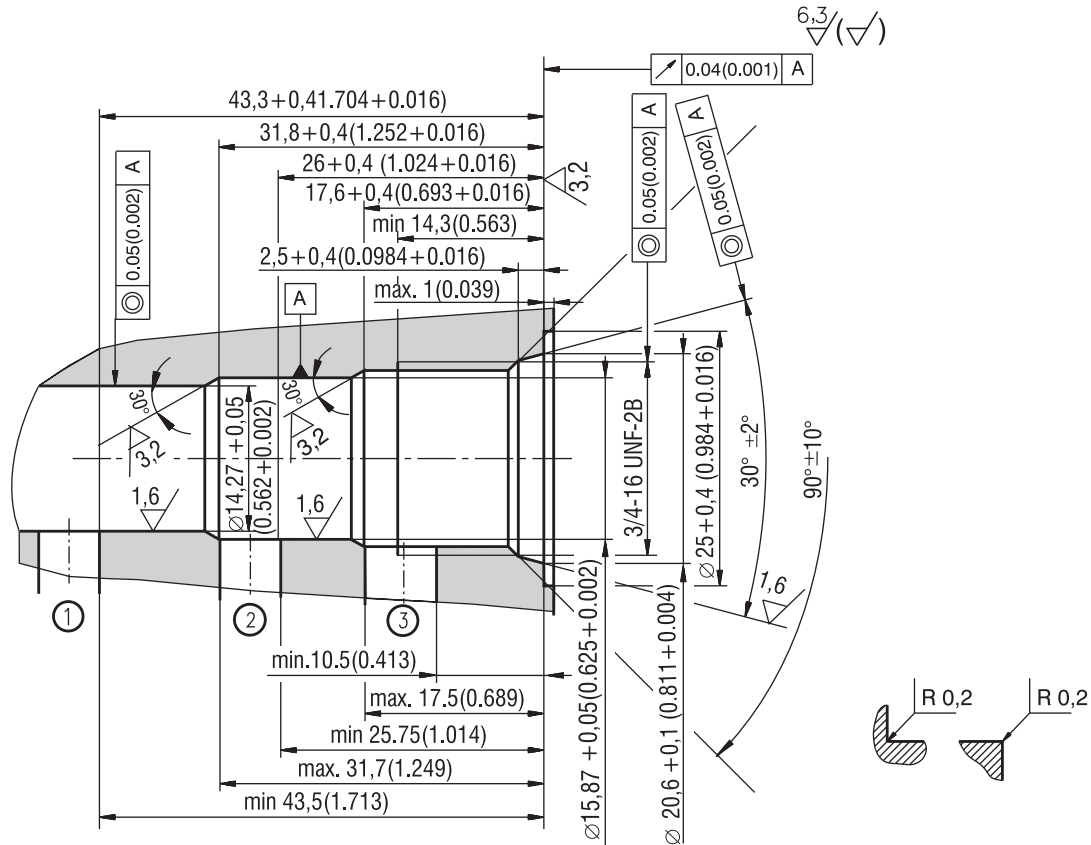


High performance



Cavity

Dimensions in millimeters (inches)



Spare Parts

Dimensions in millimeters

Light line and High performance

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

Solenoid retaining nut with seal for Light line

| Type of nut | O-ring - Viton | Ordering number |
|--------------|-------------------|-----------------|
| Standard nut | 12,3 x 2,4 (1pc.) | 20776900 |

Solenoid retaining nut with seal for High performance

| Type of nut | O-ring - Viton | Ordering number |
|--------------|-----------------|-----------------|
| Standard nut | 18 x 1,5 (1pc.) | 20777000 |

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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