

## Features

- **High Pressure/ High Flow:**  
4600 psi (320 bar)/ 80 gpm (300 lpm)
- **Pilot Operation:**  
Main spool controlled by D03 solenoid pilot valve
- **Oil Immersed, Quiet Solenoid Design:**  
Moving core immersed in hydraulic oil provides quiet pilot operation
- **Wiring:**  
Electrical box with indicator lights and terminal strip connection standard. DIN coils available and provided with DIN connector.
- **Maintenance:** Indicator lamps to diagnose connection; Plug-in coils provide easy changing
- **High Reliability:** Valve designed to last 20 million spool shifts under proper use.



## Technical Data

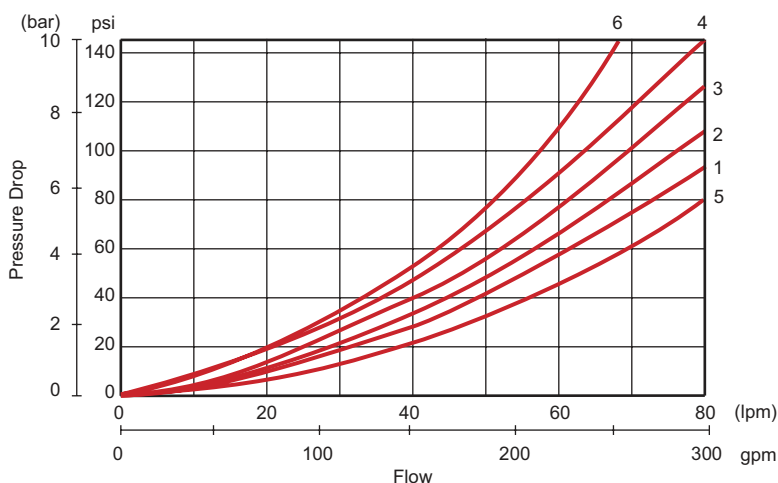
|                                          |                                     |
|------------------------------------------|-------------------------------------|
| Maximum Flow Rate from port P to A, B, T | 80 gpm (300 lpm)                    |
| Maximum Operating Pressure:              |                                     |
| ports P, A, B                            | 4600 psi (320 bar)                  |
| port T                                   | 3000 psi (210 bar)                  |
| port T (external drain version)          | 3600 psi (250 bar)                  |
| Pressure Drop                            | see pressure drop curves            |
| Hydraulic Fluid                          | Petroleum Oils (HM, HL, HLP)        |
| Fluid Temperature Range for NBR seals    | -22 to +176°F (-30 to +80°C)        |
| Fluid Temperature Range for FPM seals    | -4 to + 176°F (-20 to +80°C)        |
| Maximum Ambient Temperature              | up to 122°F (50°C)                  |
| Viscosity Range                          | 98 - 1840 SUS (20 - 400) mm²/s      |
| Maximum Degree of Fluid Contamination    | Class 21/ 18/ 15 to ISO 4406 (1999) |
| Weight:                                  |                                     |
| Single Solenoid                          | 19 lbs (8.5 kg)                     |
| Double Solenoid                          | 20 lbs (9.1 kg)                     |

### Performance Characteristics

| PRESSURE                                  | MINIMUM            | MAXIMUM            |
|-------------------------------------------|--------------------|--------------------|
| Pilot Pressure                            | 72.5 psi (5 bar)   | 3043 psi (210 bar) |
| Pressure on Line T with internal drainage | —                  | 2029 psi (140 bar) |
| Pressure on Line T with external drainage | —                  | 3623 psi (250 bar) |
| MAXIMUM FLOW RATES                        | PRESSURES          |                    |
|                                           | 3045 psi (210 bar) | 4640 psi (320 bar) |
| Spool Type 2C                             | 66 gpm (250 lpm)   | 53 gpm (200 lpm)   |
| All Other Spools                          | 80 gpm (300 lpm)   | 66 gpm (250 lpm)   |

### Pressure Drop Curves

Measured at  $v = 166 \text{ SUS (35 mm}^2\text{/s)}$  and  $t = 122^\circ\text{F (50}^\circ\text{C)}$



| Valve<br>Spool Type                | Spool<br>Position         | Flow Path |     |                     |                     |                |
|------------------------------------|---------------------------|-----------|-----|---------------------|---------------------|----------------|
|                                    |                           | P→A       | P→B | A→T                 | B→T                 | P→T            |
| <b>1A, 1AY</b><br><b>1AR, 1ARY</b> | De-Energized<br>Energized | 1         | 1   | 2                   | 3                   |                |
| <b>2B</b>                          | Energized                 | 1         | 1   | 2                   | 3                   |                |
| <b>2C</b>                          | De-Energized<br>Energized | 6         | 6   | 3                   | 4                   | 6              |
| <b>2F</b>                          | De-Energized<br>Energized | 1         | 1   | 4 <sup>•</sup><br>1 | 4 <sup>0</sup><br>2 |                |
| <b>2H</b>                          | De-Energized<br>Energized | 5         | 5   | 1                   | 2                   | 6 <sup>*</sup> |
| <b>3A, 3AY</b>                     | Energized                 | 1         | 1   | 2                   | 3                   |                |

\*A-B blocked

•B blocked

°A blocked

### Spool Symbols

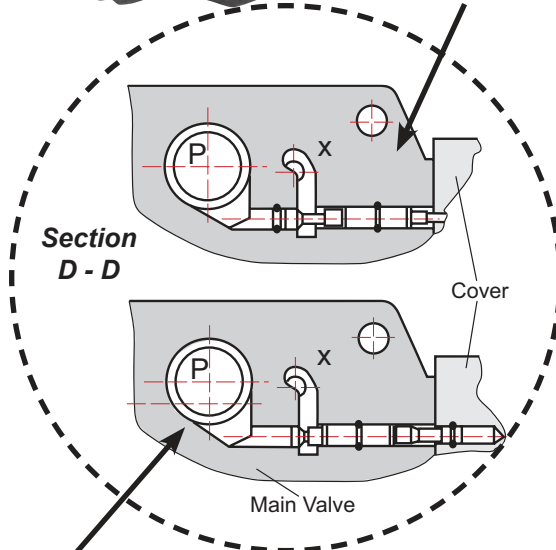
| Two positions with spring return                    |  |
|-----------------------------------------------------|--|
| <b>1A</b>                                           |  |
| <b>1AY</b>                                          |  |
| <b>1AR</b>                                          |  |
| <b>1ARY</b>                                         |  |
| Three positions with spring centered                |  |
| <b>2B</b>                                           |  |
| <b>2C</b>                                           |  |
| <b>2F</b>                                           |  |
| <b>2H</b>                                           |  |
| Two positions with mechanical detent on pilot valve |  |
| <b>3A</b>                                           |  |
| <b>3AY</b>                                          |  |

## Dimensional Data

Units: mm (inches)



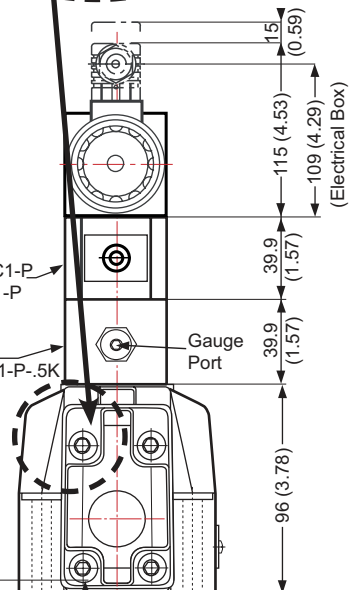
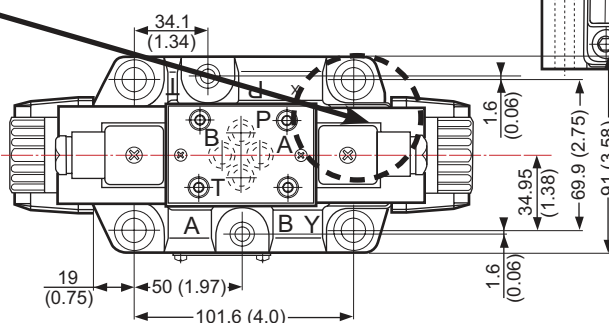
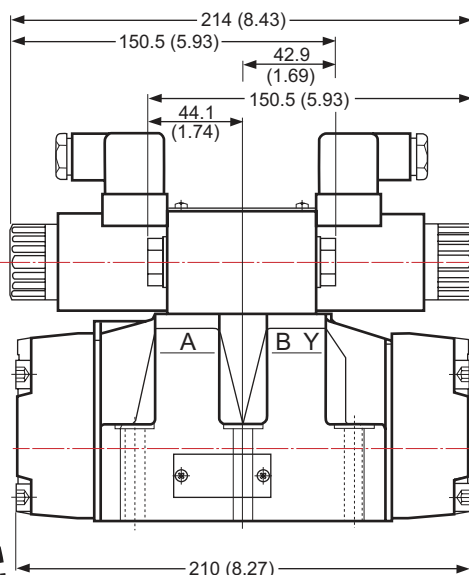
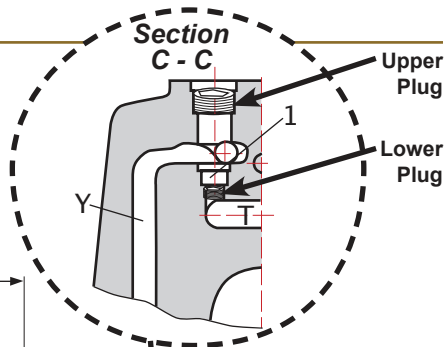
## External Pilot



**Internal Pilot**

### Remove Access Plug to Add or Remove Lower External Drain Plug

Plug = External Drain  
No Plug = Internal Drain



## Installation Dimensions

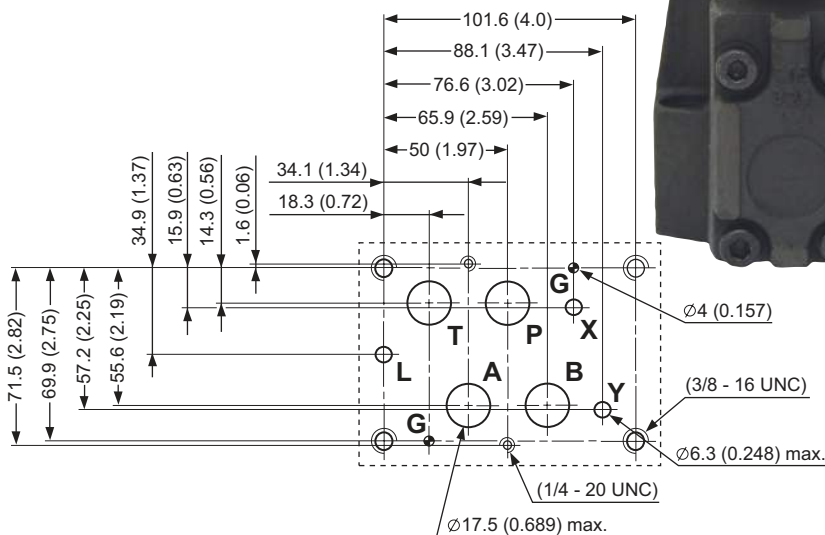
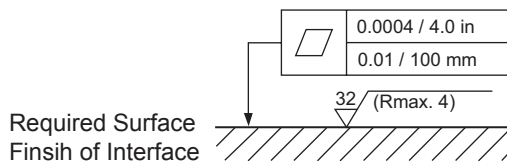
### Single Valve Fastening:

4 Bolts (3/8-16 UNC x 2-1/4")  
29.5 ft-lbs / GR 8 SHCS

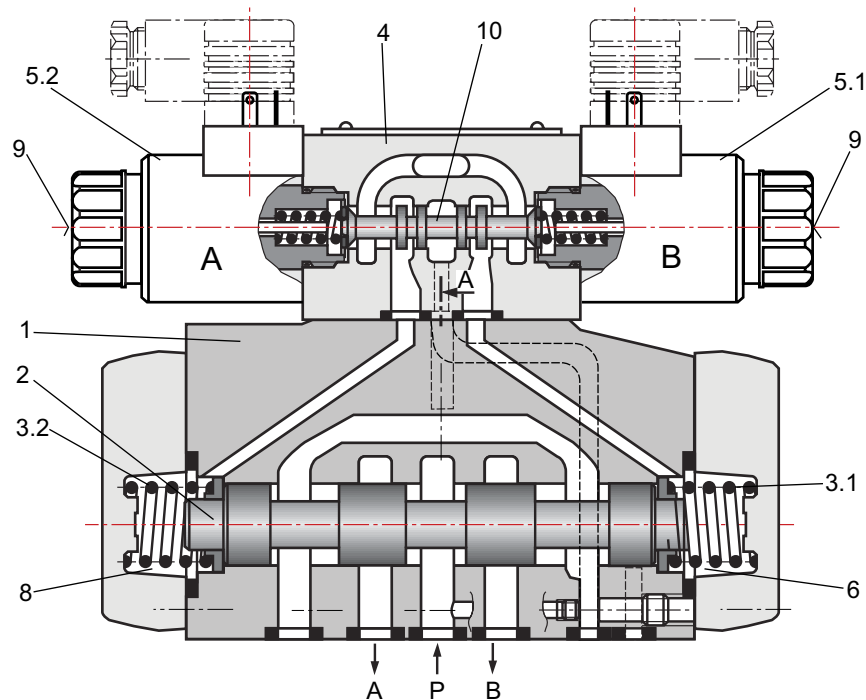
2 Bolts (1/4-20 UNC x 2-1/4")  
5.9 ft-lbs / GR 8 SHCS

### O Rings: (metric)

4 O-rings type 22.22 x 2.62  
2 O-rings type 10.82 x 1.78



### Cross Section



|                           |                   |                  |                   |
|---------------------------|-------------------|------------------|-------------------|
| 1-Main Valve with Housing | 3.2-Return Spring | 5.2-Solenoid     | 9-Manual Override |
| 2-Main Control Spool      | 4-Pilot Valve     | 6-Spring Chamber | 9-Manual Override |
| 3.1-Return Spring         | 5.1-Solenoid      | 8-Spring Chamber | 10-Pilot Spool    |

### Ordering Information

#### D07 S - 2 B - 115 A - Options - 35

| Size | Code | Actuator                            | Code | Configuration                                     | Code | Spool Function        | Voltage | Current/<br>Connector |
|------|------|-------------------------------------|------|---------------------------------------------------|------|-----------------------|---------|-----------------------|
| D07  | S    | Solenoid                            | 1    | Single Solenoid • 2 position, spring offset       | A    | P to A, B to T        | 12      | A AC                  |
|      | SD   | Solenoid w/ Din Coil                | 2    | Double Solenoid • 3 position, spring centered     | B    | All Ports Blocked     | 24      | D DC                  |
|      | SC   | Solenoid w/ *Pilot Choke            | 3    | Double Solenoid • 2 position, no center, detented | C    | P to T, A & B Blocked | 115     |                       |
|      | SDC  | Solenoid w/ Din Coil & *Pilot Choke |      |                                                   | H    | All Ports Open        | 230     |                       |

\*Pilot choke valve, (D03FC1-AB-MO- meter out flow control), provides softer shifting.

Also consider additionally using D03PR1-P-.5K pressure reducing valve if system pressure is above 1,000 psi. (See dimensional data)

#### Options:

“EP” suffix for External Pilot (x-port connection)    “ED” suffix for External Drain (y-port connection)

At least one of these options must be used on C & H spools unless Internal Pre Load Check (standard) is used.