

## General Description

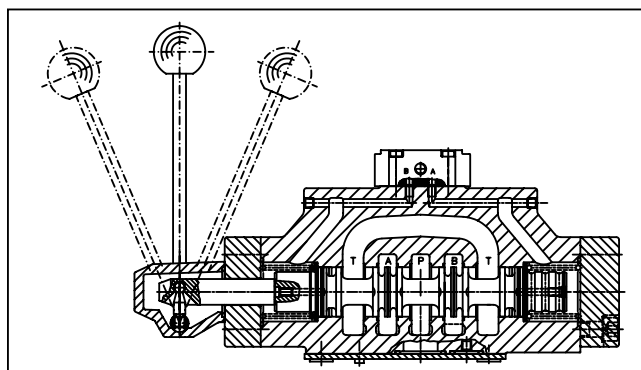
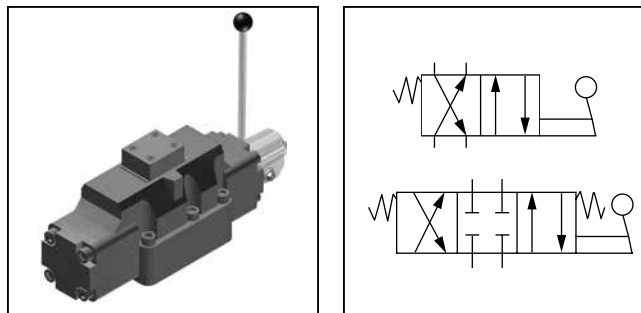
**A**

Series D4L valves are 5 chamber, directional control valves and are available in 2 or 3-position styles. They are operated by a hand lever which is directly connected to the spool.

The hand lever can be located either on the A or B side. Spring offset and detent designs are available.

## Features

- Low force required to shift spool.
- Hardened spools provide long life.
- Low pressure drop design.



## Specifications

| General                            |                 |  |
|------------------------------------|-----------------|--|
| Design                             |                 | Directional spool valve  |
| Actuation                          |                 | Lever  |
| Size                               |                 | NG16   |
| Mounting interface                 |                 | DIN 24340 A16, ISO 4401, NFFA D07, CETOP RP 121-H  |
| Mounting Position                  |                 | Unrestricted, preferably horizontal  |
| Ambient Temperature                | [°C]            | -25...+50; (-13°F...+122°F)  |
| Hydraulic                          |                 |  |
| Maximum Operating Pressure         |                 | External Drain: P, A B, T 350 Bar (5075 PSI); X, Y 10 Bar (145 PSI)<br>Internal Drain: P, A B 350 Bar (5075 PSI); T, X, Y 10 Bar (145 PSI) |
| Fluid                              |                 | Hydraulic oil in accordance with DIN 51524 / 51525   |
| Fluid Temperature                  | [°C]            | -25 ... +70; (-13°F...+158°F)  |
| Viscosity Permitted                | [cSt] / [mm²/s] | 2.8...400 (13...1854 SSU)  |
| Recommended                        | [cSt] / [mm²/s] | 30...80 (139...371 SSU)  |
| Filtration                         |                 | ISO 4406 (1999); 18/16/13 (meet NAS 1638: 7)   |
| Maximum Flow                       |                 | 300 LPM (79.4 GPM)   |
| Leakage at 350 Bar (per flow path) | [ml/min]        | up to 200 (0.05 GPM) (depending on spool)  |

**D**  
 Directional Control Valve

**4**  
 Basic Valve  
 NFPA D07,  
 CETOP 7  
 DIN NG16

Actuator

Spool

Style

Pilot  
 Supply and Drain

Seal

Design Series

NOTE:  
 Not required when ordering.

| Code | Actuation    |
|------|--------------|
| L    | Lever Side B |
| LB   | Lever Side A |

| Code | Description                   |
|------|-------------------------------|
| 2*   | External Pilot External Drain |
| 5**  | External Pilot Internal Drain |

\* Pressure T-port > 10 bar  
 \*\* Pressure T-port < 10 bar

| Code | Description  |
|------|--------------|
| N    | Nitrile      |
| V    | Fluorocarbon |

| 3 Position Spools |            |
|-------------------|------------|
| Code              | Spool Type |
|                   | a 0 b      |
| 1                 |            |
| 2                 |            |
| 3                 |            |
| 4                 |            |
| 6                 |            |
| 7                 |            |
| 9                 |            |
| 11                |            |
| 14                |            |
| 15                |            |

| 2 Position Spools |            |
|-------------------|------------|
| Code              | Spool Type |
|                   | a b        |
| 20                |            |
| 30                |            |

| 3 Position Spools |                                   |  |
|-------------------|-----------------------------------|--|
| Code              | All 3 Position Spools             |  |
| C                 |                                   | 3 positions.<br>Spring offset in position "0".<br>Operated in position "a" or "b". |
|                   | <b>Standard</b>                   | <b>Spool Type 9</b>  |
| E                 | <br>Operated in position "a".     | <br>Operated in position "b".  |
| F                 | <br>Operated in position "0".     | <br>Operated in position "0".  |
| K                 | <br>Operated in position "b".     | <br>Operated in position "a".  |
| M                 | <br>Operated in position "0".     | <br>Operated in position "0".  |
| N                 | <br>No center in offset position. | <br>No center in offset position.  |
| R                 | <br>No center in offset position. | <br>No center in offset position.  |
| S                 | <br>No center in offset position. | <br>No center in offset position.  |

| 2 Position Spools |                |   |
|-------------------|----------------|---|
| Code              | Spool Position |   |
| B                 |                | Spring offset in position "b".<br>Operated in position "a".               |
| D                 |                | Detent, operated in position "a" or "b".<br>No center or offset position. |
| H                 |                | Spring offset in position "a".<br>Operated in position "b".               |

Weight: 9.0 kg (19.8 lbs.)

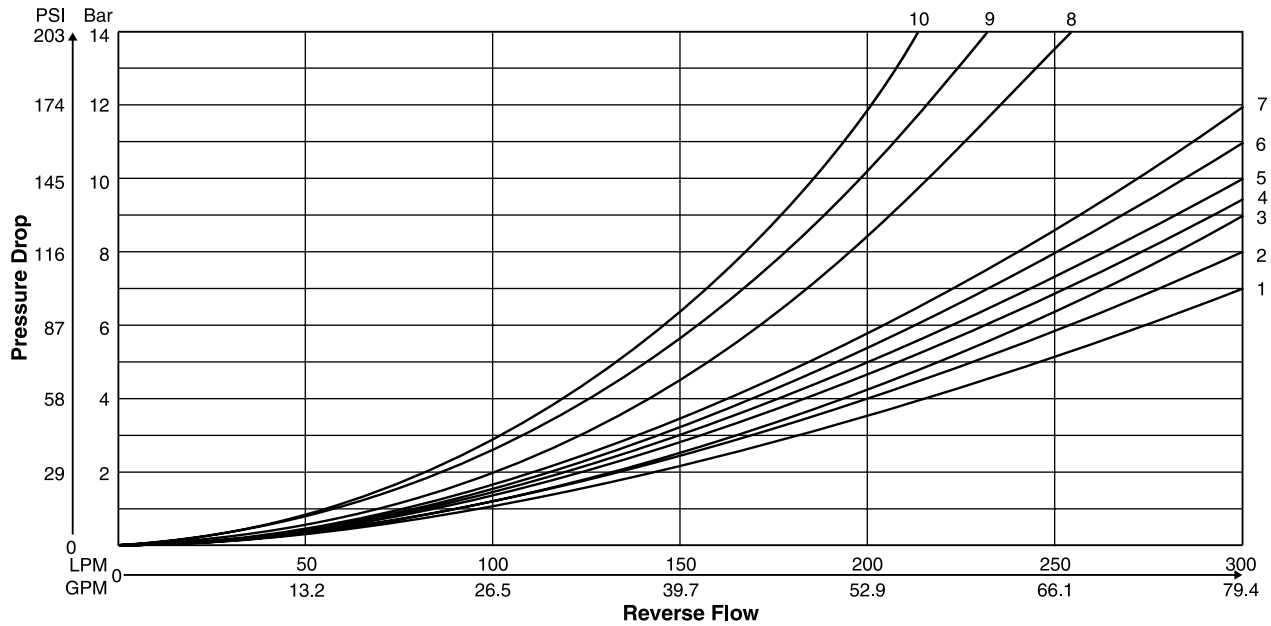
Further spool types on request.

The flow curve diagram shows the flow versus pressure drop curves for all spool types. The relevant curve number for each spool type, operating position and flow direction is given in the table below.



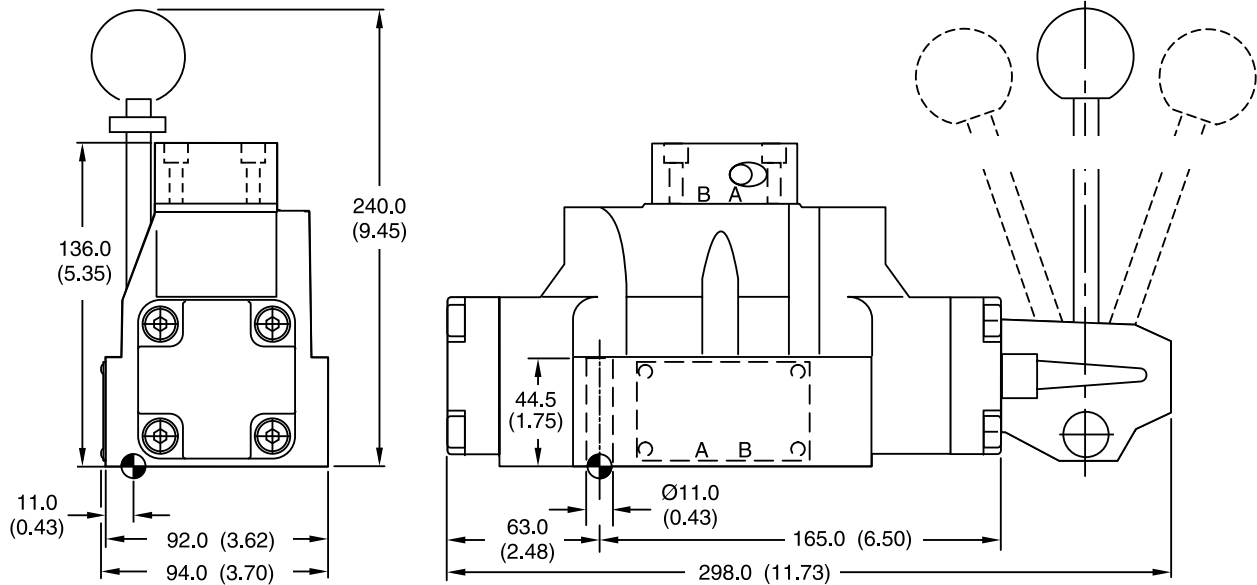
| Spool Code | Curve Number |     |     |     |     |
|------------|--------------|-----|-----|-----|-----|
|            | P-A          | P-B | P-T | A-T | B-T |
| 1          | 1            | 1   | –   | 4   | 5   |
| 2          | 1            | 2   | 6   | 4   | 6   |
| 3          | 1            | 2   | –   | 5   | 6   |
| 4          | 1            | 1   | –   | 5   | 5   |
| 6          | 1            | 2   | –   | 3   | 6   |
| 7          | 1            | 1   | 6   | 4   | 5   |
| 9          | 2            | 9   | 8   | 7   | 10  |
| 11         | 1            | 1   | –   | 4   | 5   |
| 14         | 1            | 1   | 6   | 5   | 4   |
| 15         | 2            | 1   | –   | 6   | 5   |
| 20         | 3            | 5   | –   | 3   | 5   |
| 30         | 2            | 3   | –   | 6   | 7   |

All characteristic curves measured with HLP46 at 50°C.

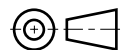
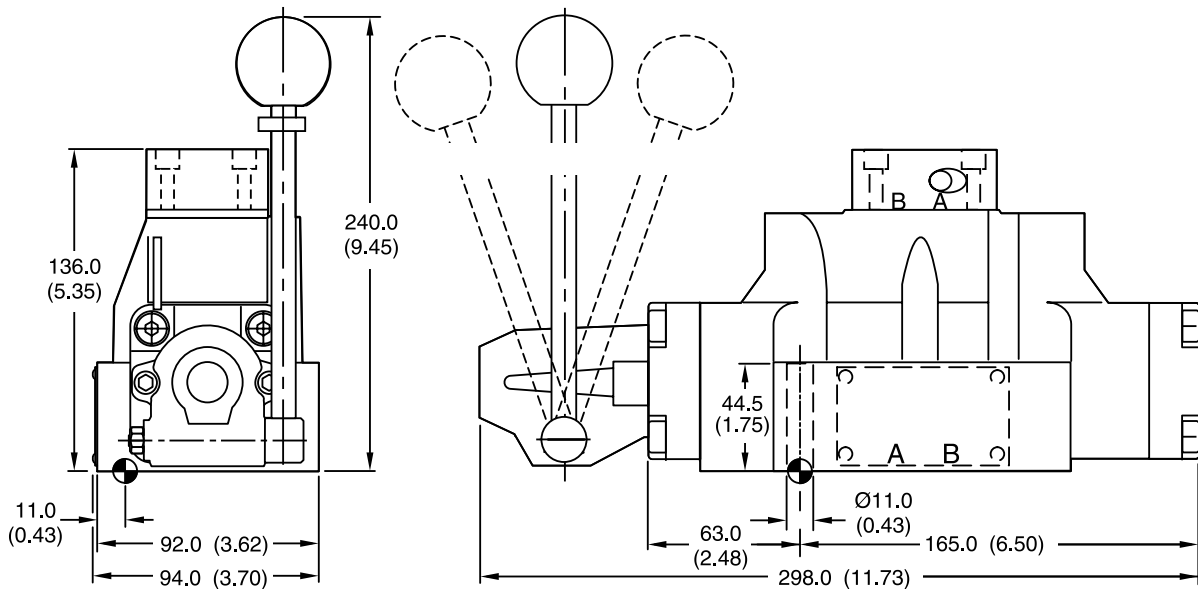


Inch equivalents for millimeter dimensions are shown in (\*\*)

**D4L**



**D4LB**



| Surface Finish                          | Kit   |                                       |   | Seal Kit                                      |
|---|-------|---------------------------------------|---|---|
| $\sqrt{R_{max} 6.3}$ $\square 0.01/100$ | BK320 | 4x M10x60<br>2x M6x55<br>DIN 912 12.9 | 63 Nm (46.5 lb.-ft.)<br>13.2 Nm (9.7 lb.-ft.)<br>±15% | Nitrile: SK-D4LN60<br>Fluorocarbon: SK-D4LV60 |