
**CONFIGURATION**

|               |                      |               |
|---------------|----------------------|---------------|
| <b>H</b>      | Poppet Configuration | Normally Open |
| <b>N</b>      | Seal Material        | Buna-N        |
| <b>(none)</b> | Coil                 | No coil       |

This solenoid-operated 2-way, 2-position cartridge is a direct-acting, balanced spool valve with a soft shift feature. The soft shift feature reduces system shock due to valve actuation. The valve is available in either a normally open or normally closed configuration.

This valve is designed to be used with 740 and 747 Series coils.

**TECHNICAL DATA**

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

|   |                                   |
|---|-----------------------------------|
| Cavity                                    | T-13A                             |
| Series                                    | 1                                 |
| Capacity                                  | 12 gpm                            |
| Maximum Operating Pressure                | 5000 psi                          |
| Maximum Valve Leakage at 110 SUS (24 cSt) | 5 in <sup>3</sup> /min. @3000 psi |
| Manual Override Force Requirement         | 5 lbs/1000 psi @ Port 1           |
| Manual Override Stroke                    | .10 in.                           |
| Response Time - Typical                   | 50 ms                             |
| Switching Frequency                       | 15,000 max. cycles/hr             |
| Solenoid Tube Diameter                    | .63 in.                           |
| Valve Hex Size                            | 7/8 in.                           |
| Valve Installation Torque                 | 30 - 35 lbf ft                    |
| Seal kit - Cartridge                      | Buna: 990413007                   |
| Seal kit - Cartridge                      | Viton: 990413006                  |
| Model Weight                              | 0.53 lb.                          |

**NOTES** Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.

**CONFIGURATION OPTIONS**
**Model Code Example: DLDFSHN**

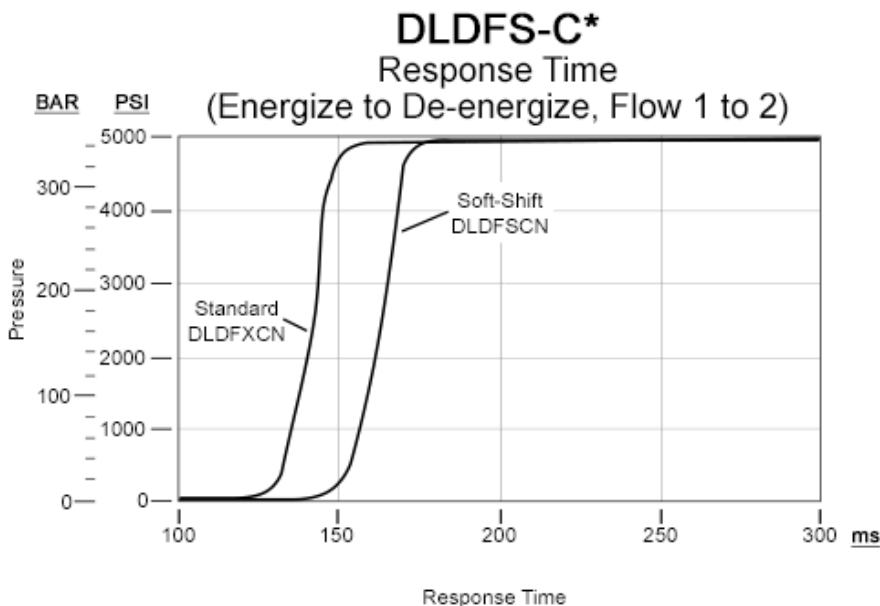
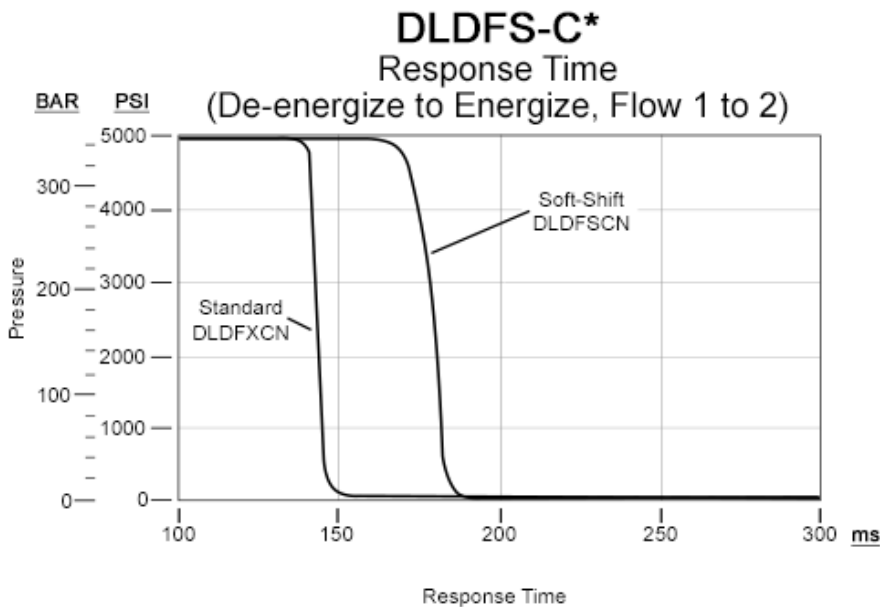
| POPPET CONFIGURATION     | (H) | SEAL MATERIAL   | (N) | COIL *  |
|--------------------------|-----|-----------------|-----|---------|
| <b>H</b> Normally Open   |     | <b>N</b> Buna-N |     | No coil |
| <b>C</b> Normally Closed |     | <b>V</b> Viton  |     |         |

\* Additional coil options are available

## TECHNICAL FEATURES

- The soft shift cartridge is interchangeable with the standard cartridge, however, the performance limits are lower.
- The soft shift feature can reduce shock due to valve actuation but should not be counted upon in applications where timing is critical. If you need accurate ramping or timing control, consider Sun's electro-proportional valves.
- The soft shift feature results in an increase in response time over Sun's standard solenoid. Response time is dependent on flow, pressure, coil voltage, oil viscosity and ambient temperature.
- For consistent soft shift performance, port 1 should be at a positive pressure.
- The solenoid tube assembly is fatigue rated for 5000 psi (350 bar) service.
- This valve is direct actuated and requires no minimum hydraulic pressure for operation.
- All configurations of this valve include zinc-nickel plating as standard for 1000-hour salt fog protection.
- Coil connector options offer ratings up to IP69K. See individual coil product pages for details.
- This cartridge utilizes both 740 Series high-power and 747 Series hazardous location coils.
- This valve utilizes a wet armature design. This means that the working fluid surrounds the armature and is exposed to the heat generated by the coil. This can be a factor if the coil is energized for long periods of time. Some fluids, notably water/glycol mixtures, break down at these temperatures over time and form varnishes that will affect the function of the cartridge.
- A wide variety of coil termination and voltage options are available, with and without surge protection. See the CONFIGURATION section.
- The solenoid's unique magnetic design results in a high efficiency solenoid, yielding high spool actuating force per Watt expended, leading to reliable valve shifting.
- Coils can be mounted on the tube in either direction.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

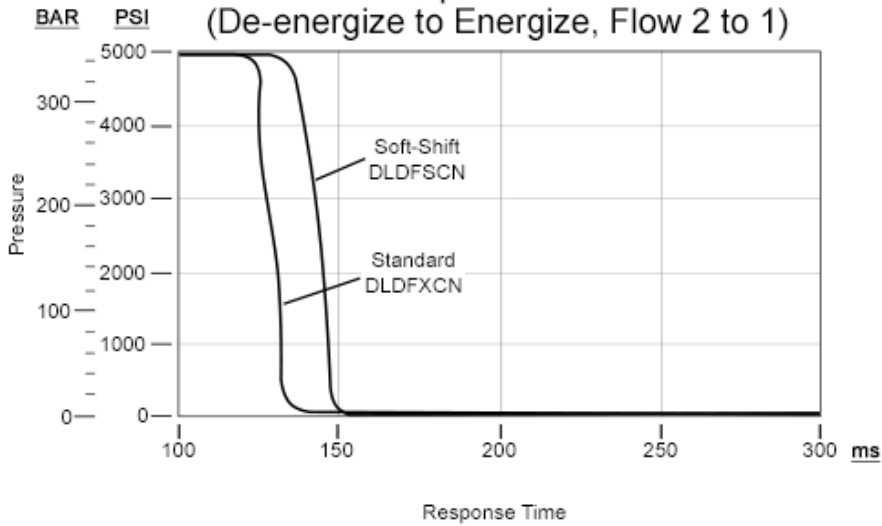
## PERFORMANCE CURVES



### DLDFS-C\*

#### Response Time

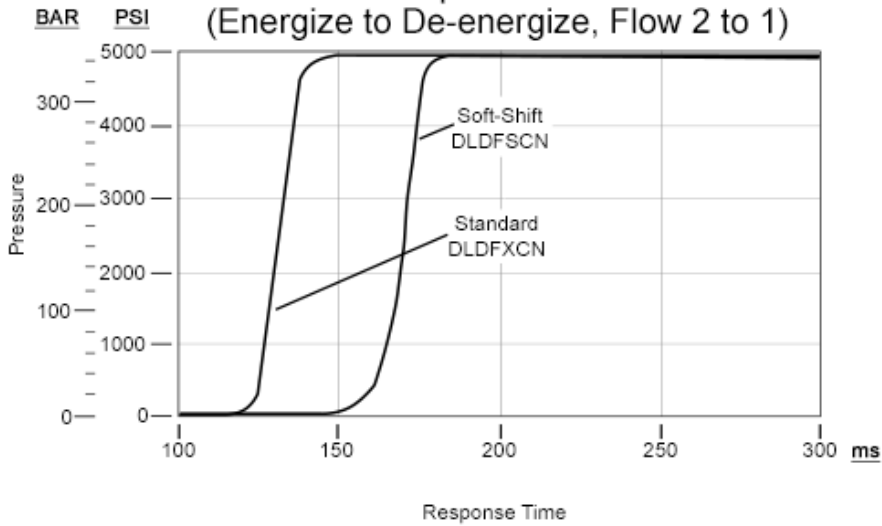
(De-energize to Energize, Flow 2 to 1)



### DLDFS-C\*

#### Response Time

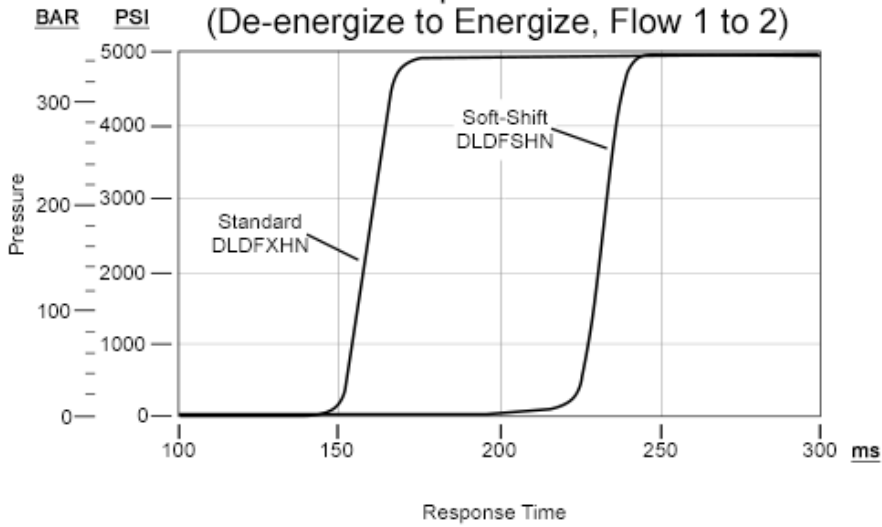
(Energize to De-energize, Flow 2 to 1)



### DLDFS-H\*

#### Response Time

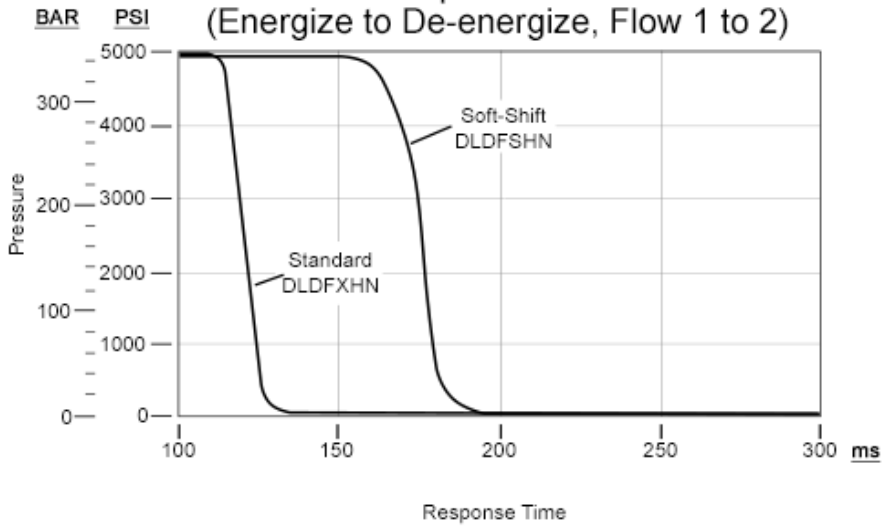
(De-energize to Energize, Flow 1 to 2)



## DLDFS-H\*

### Response Time

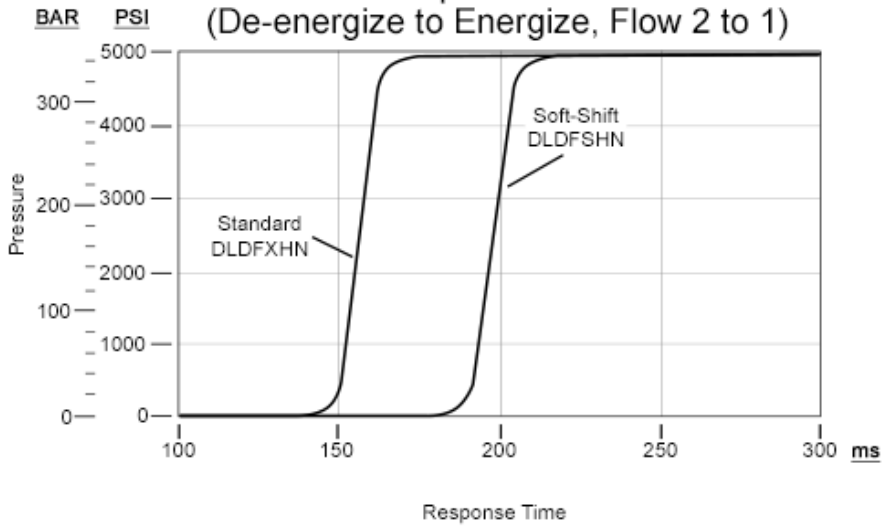
(Energize to De-energize, Flow 1 to 2)



## DLDFS-H\*

### Response Time

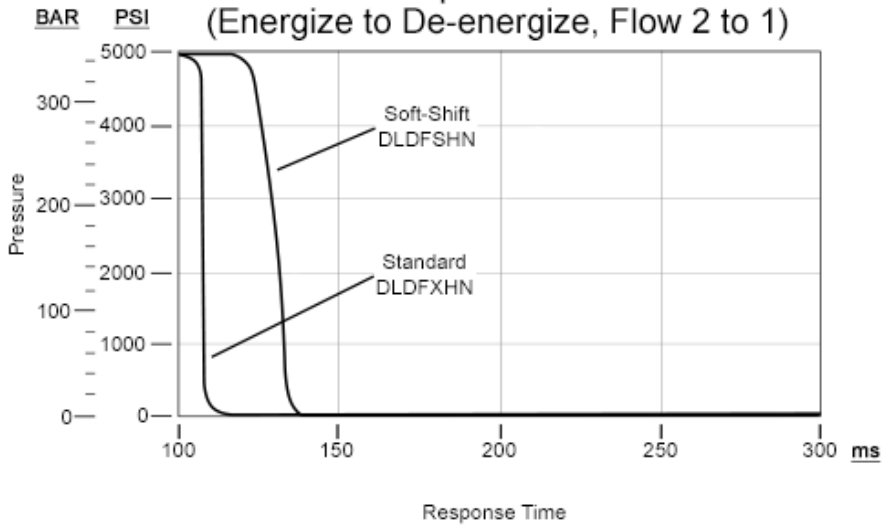
(De-energize to Energize, Flow 2 to 1)



## DLDFS-H\*

### Response Time

(Energize to De-energize, Flow 2 to 1)



## RELATED MODELS

- [DLDF](#) 2-way, solenoid-operated directional spool valve (740 Series)