

## Solenoid operated, 2-position, 3-way poppet, Directional valve

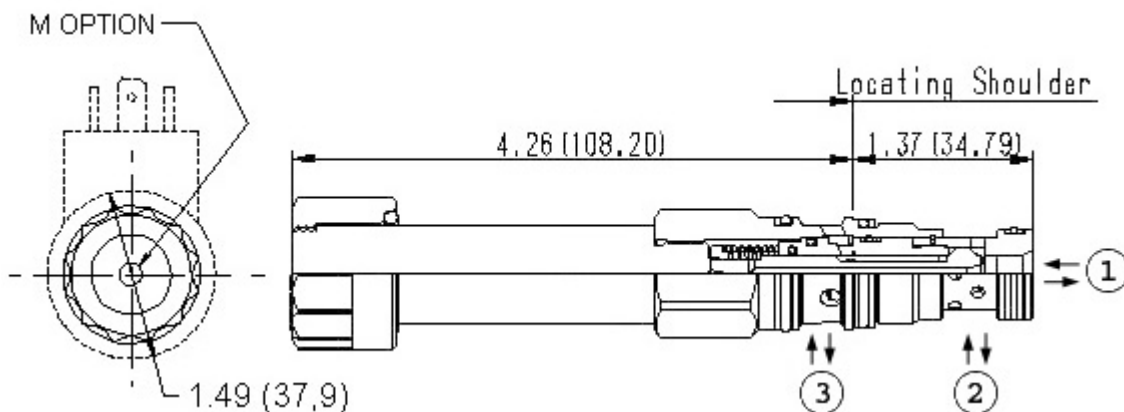
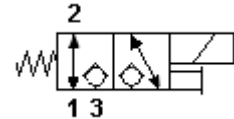
Capacity:  
7.5  
gpm (30 L/min.)

Functional Group:  
Products : Cartridges : Directional : 3 Way : Poppet, solenoid operated

Model:  
DWDA

### Product Description

This solenoid-operated, 2-position, 3-way cartridge is a direct-acting, poppet valve used to control the direction of flow in a hydraulic circuit. The valve is normally open between port 1 and port 2 with port 3 blocked. Energizing the valve connects port 2 to 3 and blocks port 1. All flow paths are bidirectional and blocked paths are blocked in both directions. The poppet style construction makes it well suited for load holding or load blocking applications.



### Related Information

[Coil Technical Information](#)

[Twist/Lock Manual Override](#)

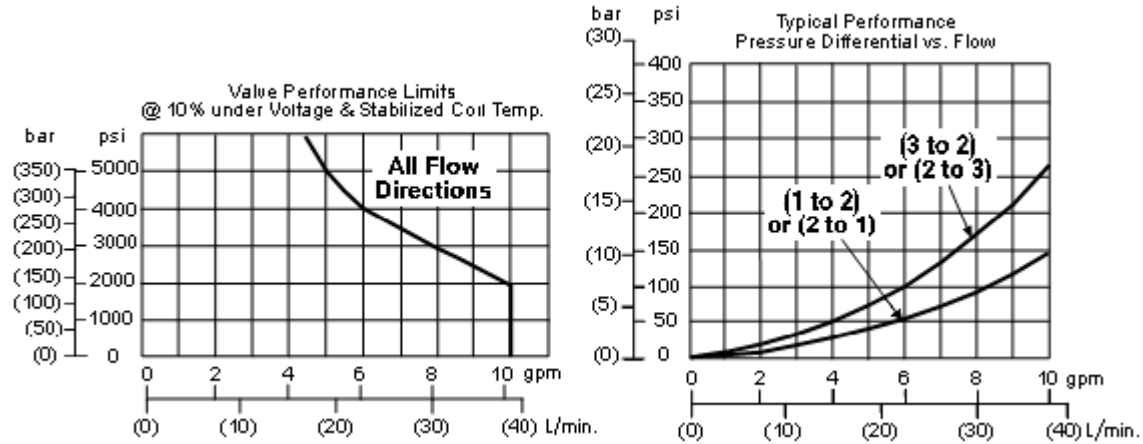
### Technical Features

- | This valve is direct actuated and requires no minimum hydraulic pressure for operation.
- | Maximum pressure at port 3 should be limited to 3000 psi (210 bar). This is due to fatigue strength limits not hydraulic operating limits.
- | This cartridge is not equipped with a manual override; a manual override plus additional override options are available.
- | Valves exhibit extremely low leakage rates; less than 10 drops/min. @ 5000 psi (350 bar).
- | Suitable for load holding applications.
- | 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.
- | Coils are interchangeable with other Sun Series 1 solenoid products and can be mounted on the tube in either direction.
- | Incorporates the Sun floating style construction to eliminate the effects of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.
- | 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.
- | Depending on the connector, coils are rated up to IP69 thereby eliminating the need for an additional weatherization kit. See "Coil Technical Information" for more details.

Technical Data

	US Units	Metric Units
<b>Cavity</b>	T-11A	
<b>Manual Override Force Requirement</b>	22 lb@5000 psi	10 kg@350 bar
<b>Maximum Operating Pressure</b>	5000 psi	350 bar
<b>Maximum Valve Leakage at 110 SUS (24 cSt)</b>	10 drops/min.@5000 psi	10 drops/min.@350 bar
<b>Response Time - Typical</b>	50 ms	50 ms
<b>Series</b>	1	
<b>Switching Frequency</b>	15000 cycles/hr	15000 cycles/hr
<b>Viscosity Range</b>	60 - 2500 SUS	10 - 600 cSt
<b>Valve Hex Size</b>	7/8 in.	22,2 mm
<b>Valve Installation Torque</b>	30 - 35 lbf ft	45 - 50 Nm
<b>Seal Kits</b>	Buna: 990-011-007	
<b>Seal Kits</b>	Viton: 990-011-006	



Option Selection

DWDA-X A N-\*\*\*



## Preferred Options

### Control

- M Manual Override (Standard)
- X No Manual Override

### Spool Configuration

- A Normally Open 1 to 2, Closed 2 to 3

### Seal

- N Buna-N

## Standard Options

- D Twist/Lock (Dual) Manual Override
- L Twist/Lock (Detent) Manual Override
- T Twist/Lock (Momentary) Manual Override

- V Viton

## Coil Options

*** {No coil}	612	12 VDC AMP Junior Timer	848	48 VDC Metri-Pack
211 115 VAC ISO/DIN	624	24 VDC AMP Junior Timer	912	12 VDC Deutsch
212 12 VDC ISO/DIN			924	24 VDC Deutsch
223 230 VAC ISO/DIN	712	12 VDC Twin Lead	948	48 VDC Deutsch
224 24 VDC ISO/DIN	724	24 VDC Twin Lead		
248 48 VDC ISO/DIN	72419	24 VDC Weather-Pack		
524 24 VDC SAE J858	812	12 VDC Metri-Pack		
	824	24 VDC Metri-Pack		

## Additional Coil Options

The following options are not widely used and may be application specific. Please contact your Sun distributor for application information.

512 12 VDC SAE J858	648 48 VDC AMP Junior Timer
548 48 VDC SAE J858	748 48 VDC Twin Lead