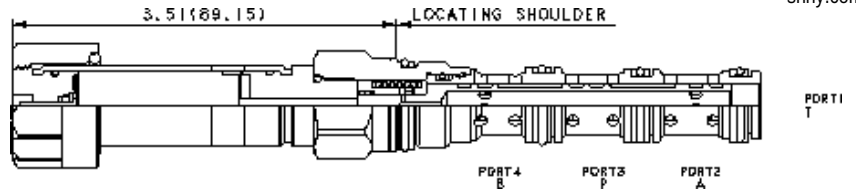


M or S-Control, N-Spool



This solenoid-operated 4-way, 2-position cartridge is a direct-acting, balanced spool directional valve.

**CONFIGURATION**

<b>M</b>	Control	Manual Override
<b>N</b>	Spool Configuration	Through, Shift to Cross
<b>N</b>	Seal Material	Buna-N
<b>(none)</b>	Coil	No coil

**TECHNICAL DATA**

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

Cavity	T-31A
Series	1
Capacity	40 L/min.
Maximum Operating Pressure	350 bar
Response Time - Typical	50 ms
Maximum Valve Leakage at 110 SUS (24 cSt)	160 cc/min.@210 bar
Manual Override Force Requirement	33 N/100 bar @ Port 1
Manual Override Stroke	2,5 mm
Switching Frequency	15000 cycles/hr
Solenoid Tube Diameter	19 mm
Valve Hex Size	22,2 mm
Valve Installation Torque	41 - 47 Nm
Seal kit - Cartridge	Buna: 990431007
Seal kit - Cartridge	EPDM: 990431014
Seal kit - Cartridge	Viton: 990431006
Seal and nut kit - Coil	Viton: 990770006
Model Weight	0.28 kg.

**NOTES**

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

**CONFIGURATION OPTIONS**

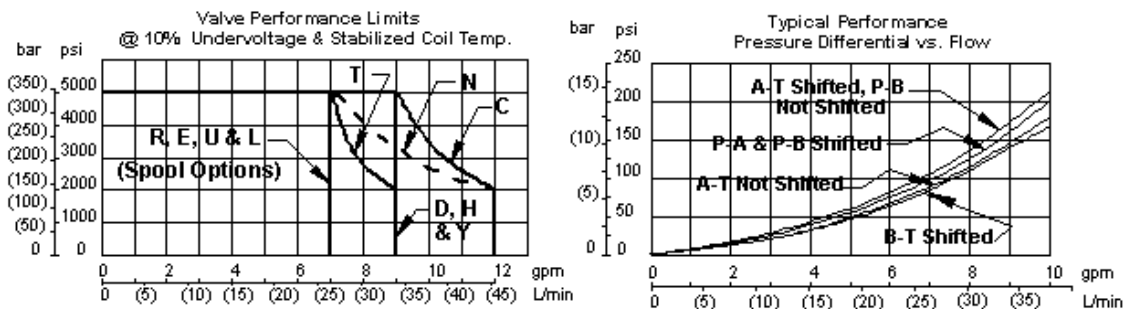
**Model Code Example: DNDAMNN**

<b>CONTROL</b>	<b>(M)</b>	<b>SPOOL CONFIGURATION</b>	<b>(N)</b>	<b>SEAL MATERIAL</b>	<b>(N)</b>	<b>COIL *</b>
<b>M</b> Manual Override		<b>N</b> Through, Shift to Cross		<b>N</b> Buna-N		No coil
<b>X</b> No Manual Override		<b>C</b> Closed, Shift to Through		<b>E</b> EPDM		<b>212</b> DIN 43650-Form A, 12 VDC
<b>D</b> Twist/Lock (Dual) Manual Override		<b>D</b> Closed, Shift to Cross		<b>V</b> Viton		<b>224</b> DIN 43650-Form A, 24 VDC
<b>L</b> Twist/Lock (Detent) Manual Override		<b>E</b> Cross, Shift to Closed				<b>712</b> Twin Lead, 12 VDC
<b>T</b> Twist (Momentary) Manual Override		<b>H</b> Open, Shift to Cross				<b>724</b> Twin Lead, 24 VDC
		<b>J</b> Open, Shift to Through				<b>912</b> Deutsch DT04-2P, 12 VDC
		<b>L</b> Cross, Shift to P to A, B and T Blocked				<b>924</b> Deutsch DT04-2P, 24 VDC
		<b>R</b> Regen, Shift to Cross				* Additional coil options are available
		<b>S</b> Regen, Shift to Through				
		<b>T</b> Tandem, Shift to Through				
		<b>U</b> Through, Shift to Tandem				
		<b>X</b> Cross, Shift to Through				
		<b>Y</b> Motor, Shift to Cross				
		<b>Z</b> Motor, Shift to Through				

## TECHNICAL FEATURES

- 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.
- This cartridge has several manual override choices, including no manual override. See the CONFIGURATION section. Please note: Manual override functionality is not compatible with weatherized coils.
- On models equipped with the D or L control, the detent mechanism in the manual override is meant for temporary actuation. The D, L and T manual control assembly has a mechanical life expectancy of approximately 7,000 cycles.
- Cartridges configured with EPDM seals are for use in systems with phosphate ester fluids. Exposure to petroleum based fluids, greases and lubricants will damage the seals.
- 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 are interchangeable with other Sun Series 1 solenoid products and can be mounted on the tube in either direction.
- Coil connector options offer ratings up to IP69K. See individual coil product pages for details. Additional weatherized coils and kits are available for more complete environmental protection.
- 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



Note: Performance limits are derived with 4-way operation and symmetrical flow.  
For valve applications where either asymmetrical flow or 3-way operation is present, these performance limits may be reduced.

## RELATED MODELS

- [DNDAS](#) 4-way, 2-position, soft shift, solenoid-operated directional spool valve