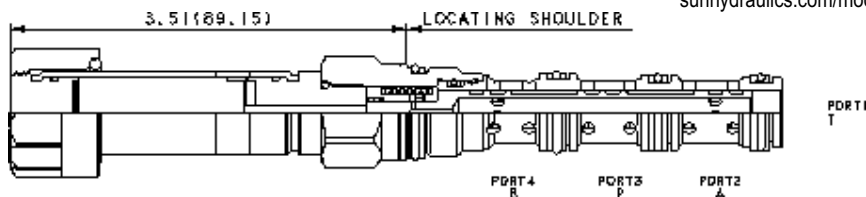


X-Control, N-Spool



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

CONFIGURATION

X	Control	No Manual Override
N	Spool Configuration	Through, Shift to Cross
N	Seal Material	Buna-N
(none)	Coil	No coil

TECHNICAL DATA

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

Cavity	T-31A
Series	1
Capacity	10 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	10 in ³ /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	.75 in.
Valve Hex Size	7/8 in.
Valve Installation Torque	30 - 35 lbf ft
Seal kit - Cartridge	Buna: 990431007
Seal kit - Cartridge	EPDM: 990431014
Seal kit - Cartridge	Viton: 990431006
Seal and nut kit - Coil	Viton: 990770006
Model Weight	0.75 lb.

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

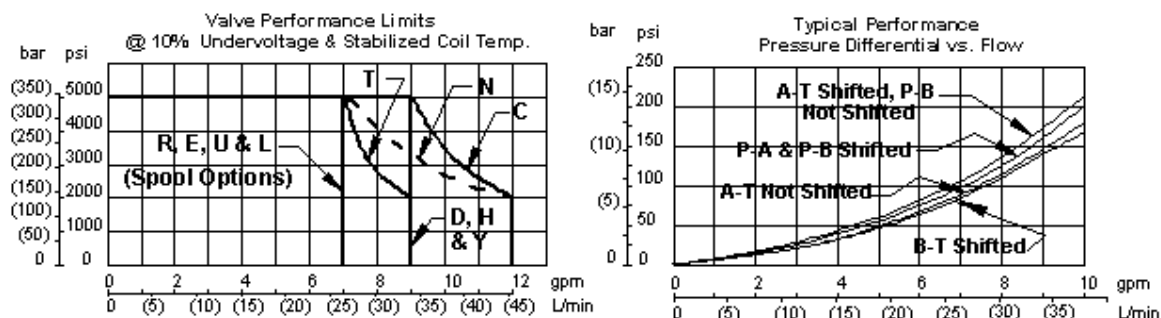
Model Code Example: DNDAXNN

CONTROL	(X) SPOOL CONFIGURATION	(N) SEAL MATERIAL	(N) COIL *
X No Manual Override	N Through, Shift to Cross	N Buna-N	No coil
M Manual Override	C Closed, Shift to Through	E EPDM	212 DIN 43650-Form A, 12 VDC
D Twist/Lock (Dual) Manual Override	D Closed, Shift to Cross	V Viton	224 DIN 43650-Form A, 24 VDC
L Twist/Lock (Detent) Manual Override	E Cross, Shift to Closed		912 Deutsch DT04-2P, 12 VDC
T Twist (Momentary) Manual Override	H Open, Shift to Cross		924 Deutsch DT04-2P, 24 VDC
	J Open, Shift to Through		* Additional coil options are available
	L Cross, Shift to P to A, B and T Blocked		
	R Regen, Shift to Cross		
	S Regen, Shift to Through		
	T Tandem, Shift to Through		
	U Through, Shift to Tandem		
	X Cross, Shift to Through		
	Y Motor, Shift to Cross		
	Z 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.
- 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.
- 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 assemblies have a mechanical life expectancy of approximately 7,000 cycles.
- 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