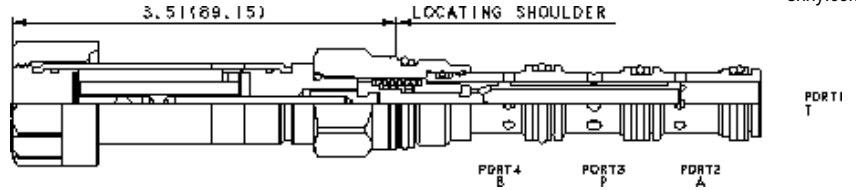


X-Control, X-Spool



This solenoid-operated, 4-way, 2-position cartridge is a direct-acting, balanced spool directional valve. The transition between positions is closed. The closed transition greatly reduces the loss of oil when shifting which can be of particular importance in pilot control circuits.

CONFIGURATION

X	Control	No Manual Override
X	Spool Configuration	Cross, Shift to Through
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	30 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	15,000 max. 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.

CONFIGURATION OPTIONS

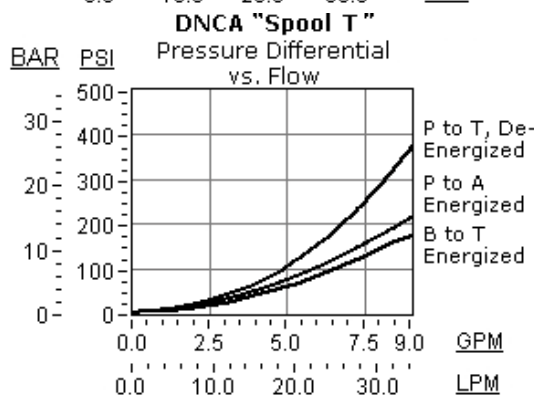
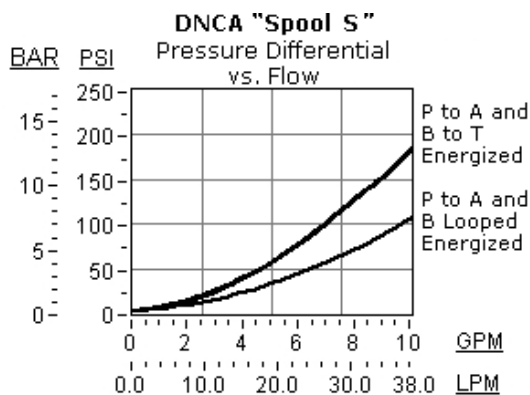
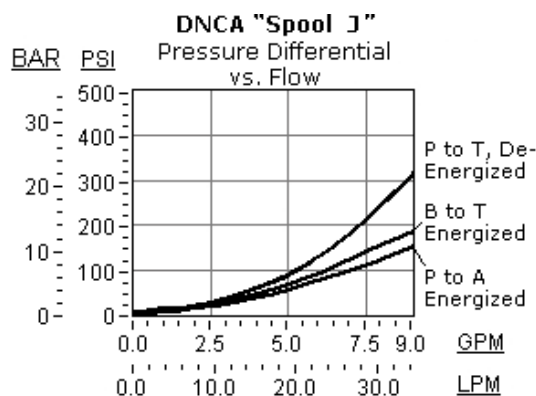
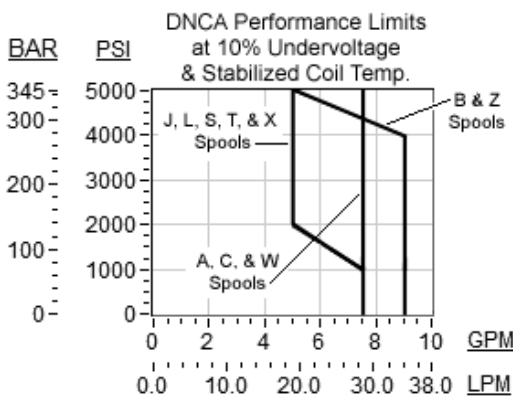
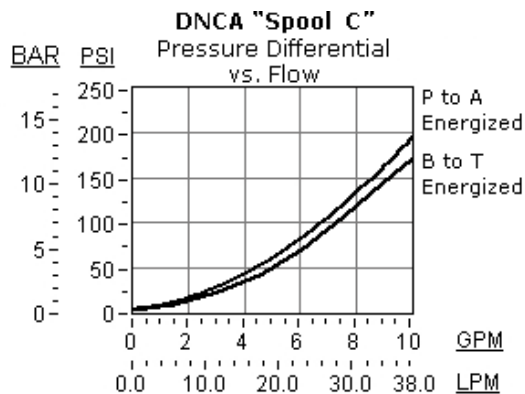
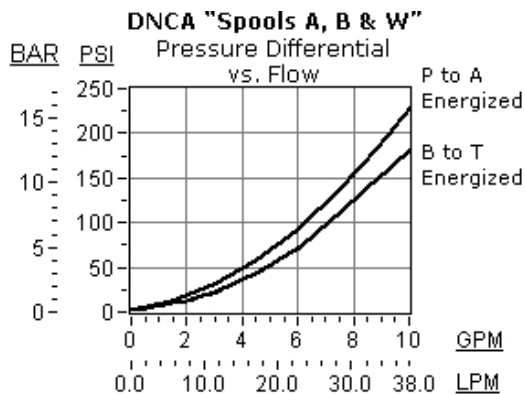
Model Code Example: DNCAXXN

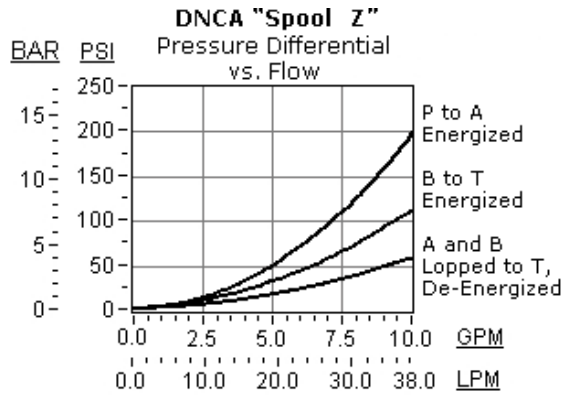
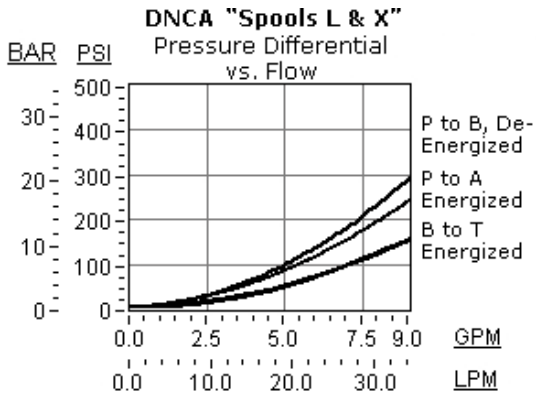
CONTROL	(X) SPOOL CONFIGURATION	(X) SEAL MATERIAL	(N) COIL *
X No Manual Override	X Cross, Shift to Through	N Buna-N	No coil
D Twist/Lock (Dual) Manual Override	C Closed, Shift to Through	E EPDM	212 DIN 43650-Form A, 12 VDC
L Twist/Lock (Detent) Manual Override	A A to T, Shift to Through	V Viton	224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

TECHNICAL FEATURES

- The solenoid tube assembly is fatigue rated for 5000 psi (350 bar) service.
- Valve capacity is based on port 3 as the inlet and port 1 as the tank. Although reverse flow is possible, the same performance cannot be guaranteed and is not recommended.
- This valve is direct actuated and requires no minimum hydraulic pressure for operation.
- 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





RELATED MODELS

- [DNCAZ](#) 4-way, 2-position, solenoid-operated directional spool valve with closed transition and position switch