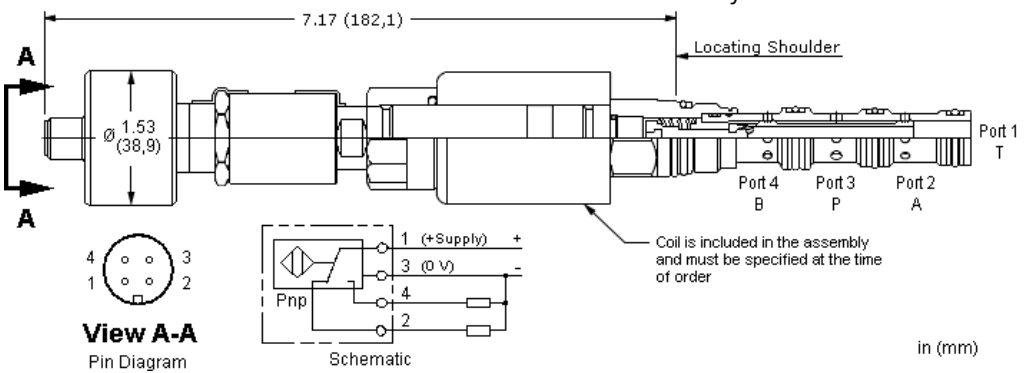


Z-Control, X-Spool

CONFIGURATION

X	Spool Configuration	Cross, Shift to Through
N	Seal Material	Buna-N
224	Coil	DIN 43650-Form A, 24 VDC



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.

The position switch provides confirmation that the valve is in the spring biased position [Click Here for the position sensor pin diagram](#)

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

Cavity	T-31A
Series	1
Capacity	8 gpm
Maximum Operating Pressure	5000 psi
Maximum Valve Leakage at 110 SUS (24 cSt)	10 in ³ /min.@3000 psi
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	Viton: 990431006
Model Weight	2.14 lb.

SWITCH SPECIFICATIONS

Supply Voltage	20-30 VDC
Operating Temperature Range	-25 to 80 °C
Vibration	≥ 50g, 0-500 impulses/sec
Shock	>50 g, 1ms
Reverse Polarity Protection	Yes
Maximum Output Load	≤ 400 mA, Duty Ratio 100%
Short Circuit Protection	Yes, Load Short Unlimited
Turn On Time	≤ 25 ms
Hysteresis	≤ .002 in.
Thermal Shift - 0 to 80 °C ≤ ±	.004 in.
EMC	DIN EN 61000-6-1/2/3/4
Connector	M12 X 1 (4) Pin
Connector Environment Rating	IP65

CONFIGURATION OPTIONS

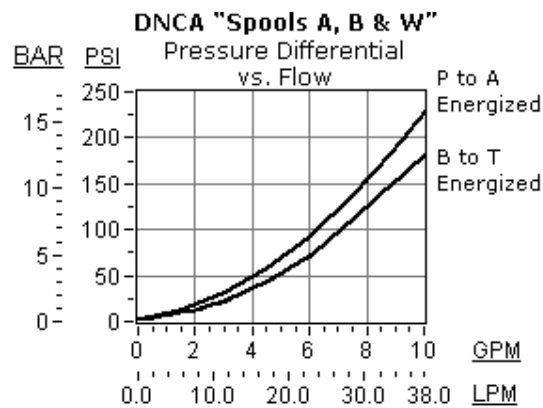
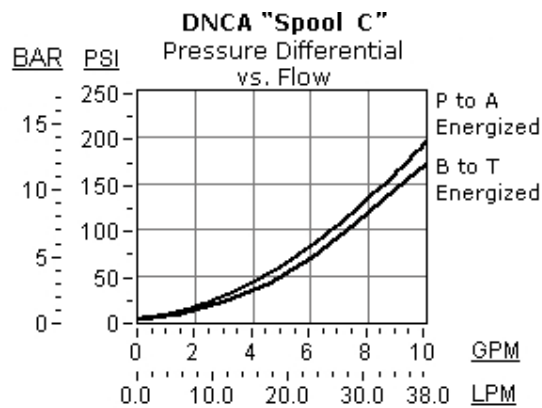
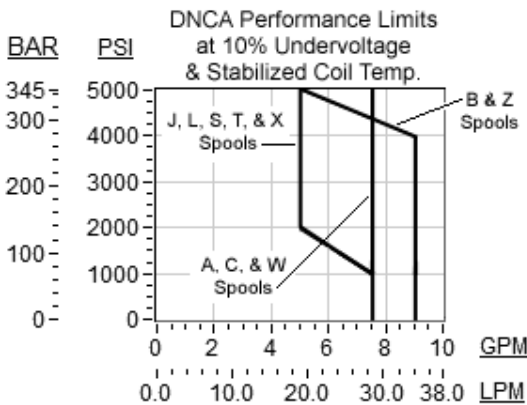
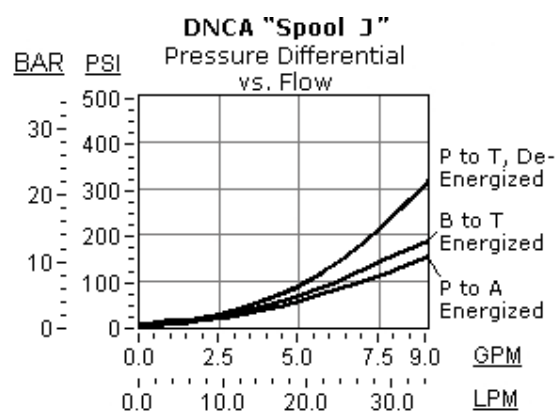
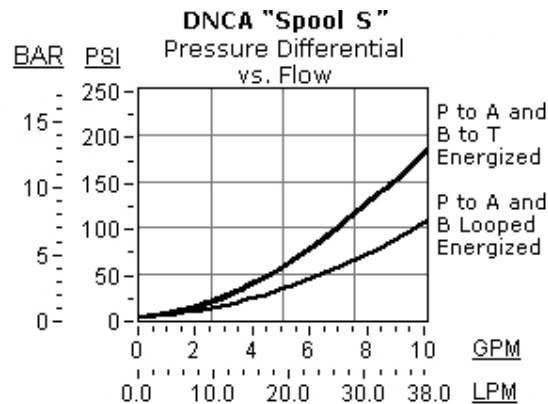
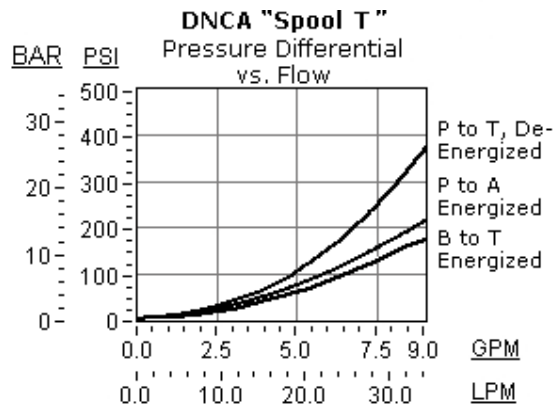
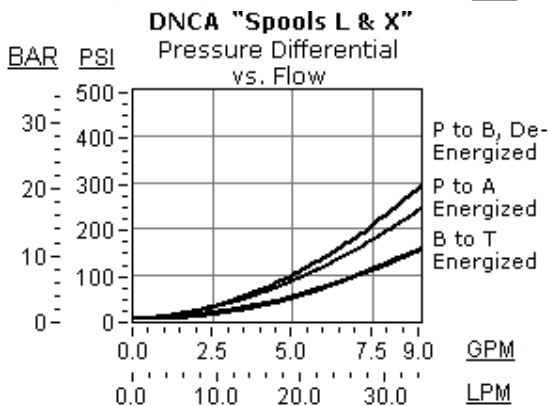
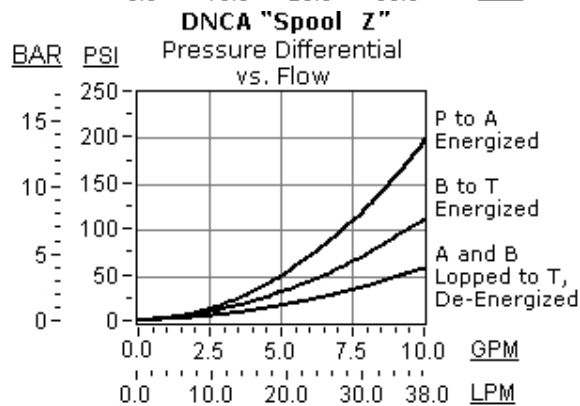
Model Code Example: DNCAZXN224

SPOOL CONFIGURATION	(X)	SEAL MATERIAL	(N)	COIL *	(224)
X Cross, Shift to Through		N Buna-N		224 DIN 43650-Form A, 24 VDC	
C Closed, Shift to Through		V Viton		212 DIN 43650-Form A, 12 VDC	
A A to T, Shift to Through				912 Deutsch DT04-2P, 12 VDC	
B B to T, Shift to Through				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					
S Regen, Shift to Through					
T Tandem, Shift to Through					
W A and B Bleed to T, Shift to Through					
Z Motor, Shift to Through					

TECHNICAL FEATURES

- A coil must be ordered with this cartridge. This cartridge is supplied as a sealed, factory set unit and is not field serviceable. If the assembly requires changes or service it needs to be returned to the factory. Any tampering will violate the product warranty.
- Position switch is CE approved.
- When torquing this cartridge into its cavity, a crow's foot wrench or similar will be required since the position switch precludes the use of a deep socket wrench.
- 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.
- 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 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.
- 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

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