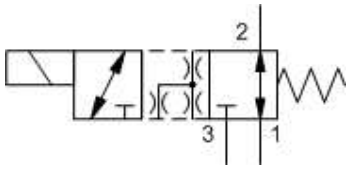
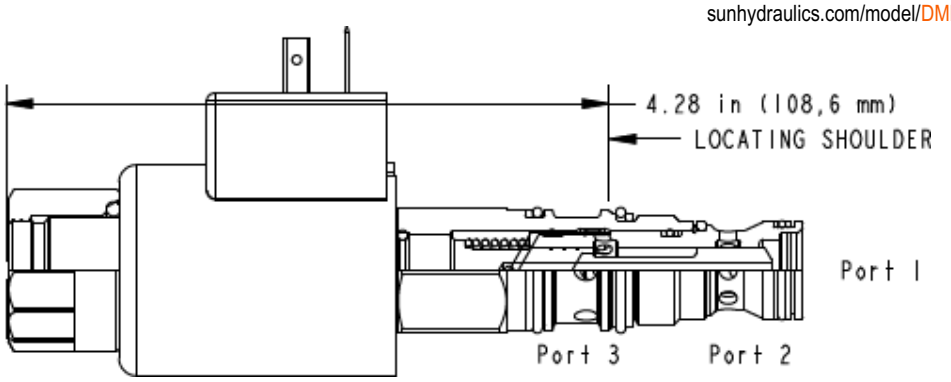
MODEL
DMDA

3-way, solenoid-operated directional spool valve
SERIES 1 / CAPACITY: 45 L/min. / CAVITY: T-11A

sunhydraulics.com/model/DMDA



X-Control, A-Spool



CONFIGURATION

X	Control	No Manual Override
A	Spool Configuration	Normally Open 1 to 2, Closed 2 to 3
N	Seal Material	Buna-N
224	Coil	DIN 43650-Form A, 24 VDC

This solenoid-operated 3-way, 2-position cartridge is a direct-acting, balanced spool directional valve.

TECHNICAL DATA

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

Cavity	T-11A
Series	1
Capacity	45 L/min.
Maximum Operating Pressure	350 bar
Maximum Valve Leakage at 110 SUS (24 cSt)	80 cc/min.@210 bar
Manual Override Force Requirement	33 N/100 bar @ Port 1
Manual Override Stroke	2,5 mm
Response Time - Typical	50 ms
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: 990411007
Seal kit - Cartridge	EPDM: 990411014
Seal kit - Cartridge	Viton: 990411006
Seal and nut kit - Coil	Viton: 990770006
Model Weight	0.72 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: DMDAXAN224

CONTROL (X)

- **X** No Manual Override
- **M** Manual Override
- **D** Twist/Lock (Dual) Manual Override
- **L** Twist/Lock (Detent) Manual Override
- **T** Twist (Momentary) Manual Override

SPOOL CONFIGURATION (A)

- **A** Normally Open 1 to 2, Closed 2 to 3
- **N** Normally Open 2 to 3, Closed 1 to 2
- **B** Normally Open 1 to 2, Closed 2 to 3, Closed Transition
- **P** Normally Open 1 to 3, Closed 1 to 2
- **R** Normally Open 2 to 3, Closed 1 to 2, Closed Transition

SEAL MATERIAL (N)

- **N** Buna-N
- **E** EPDM
- **V** Viton

COIL * (224)

- **224** DIN 43650-Form A, 24 VDC
- No coil
- **212** DIN 43650-Form A, 12 VDC
- **912** Deutsch DT04-2P, 12 VDC
- **924** Deutsch DT04-2P, 24 VDC

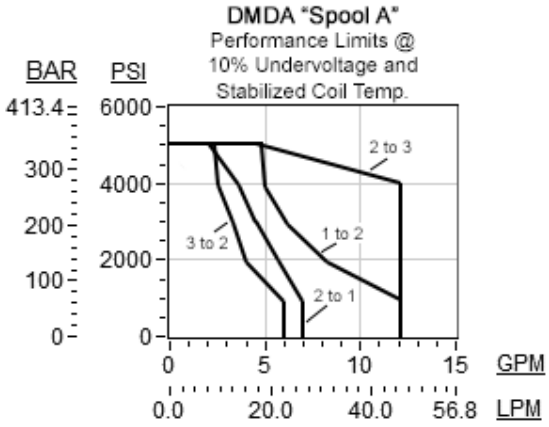
* Additional coil options are available

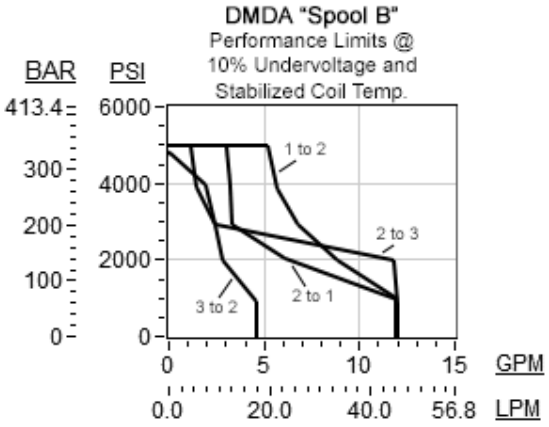
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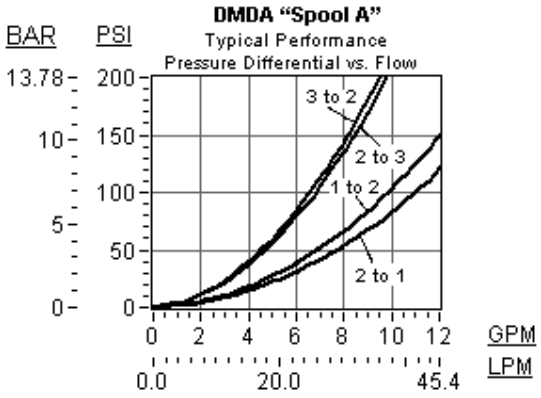
TECHNICAL FEATURES

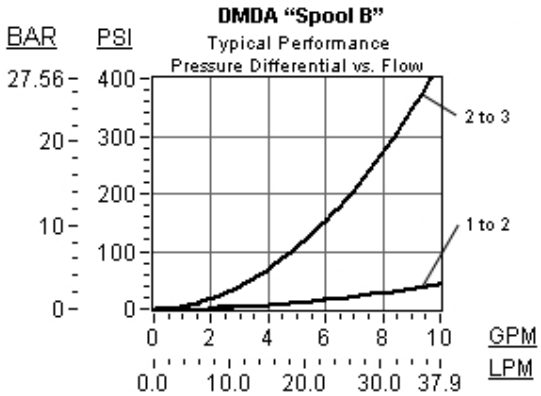
- The solenoid tube assembly is fatigue rated for 5000 psi (350 bar) service.
- Spools B and R are closed in the transition between their two positions. This results in a higher performance limit at the expense of lower capacity. When used as pilot controls, where capacity is not a factor, the closed transition will provide faster and more consistent response times.
- 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.
- 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.
- 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 minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

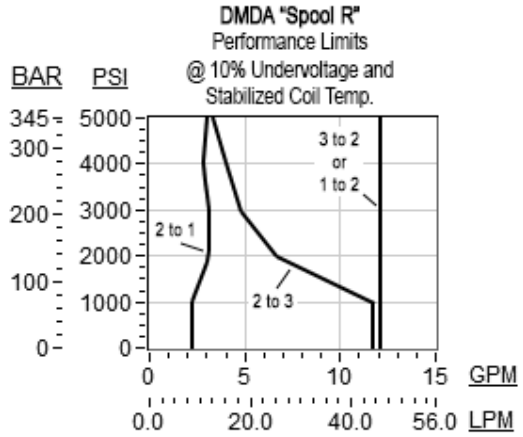
PERFORMANCE CURVES

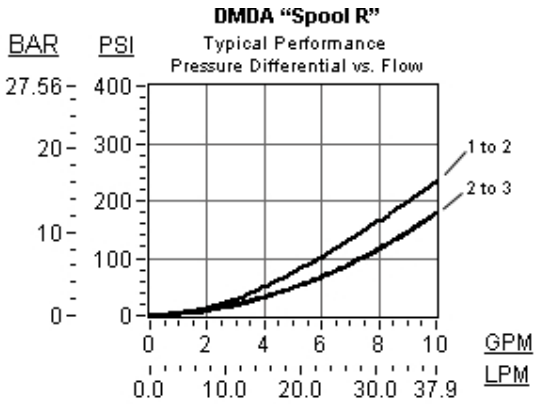


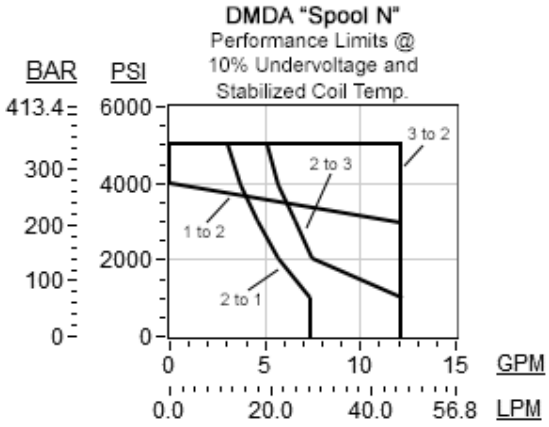


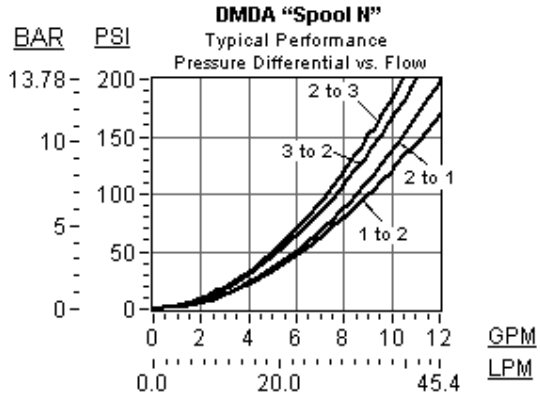


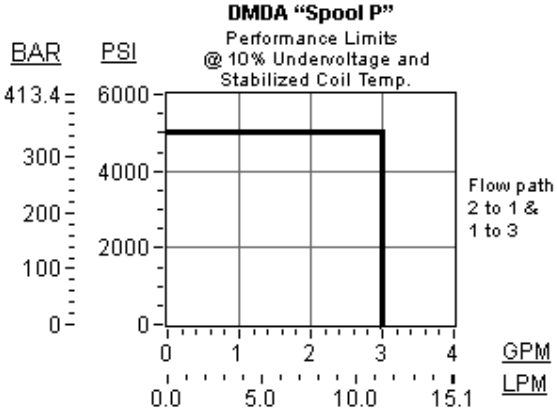


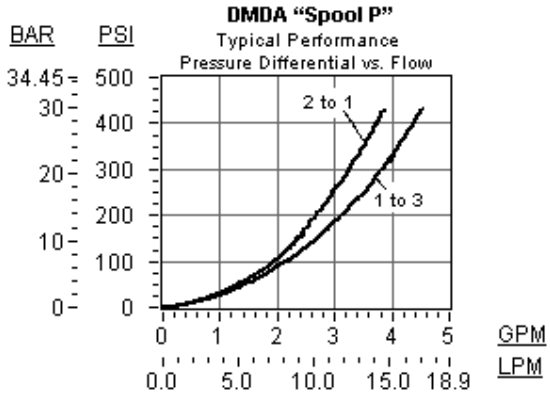








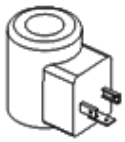




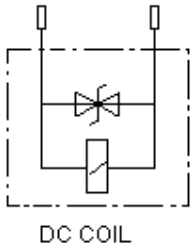
RELATED MODELS

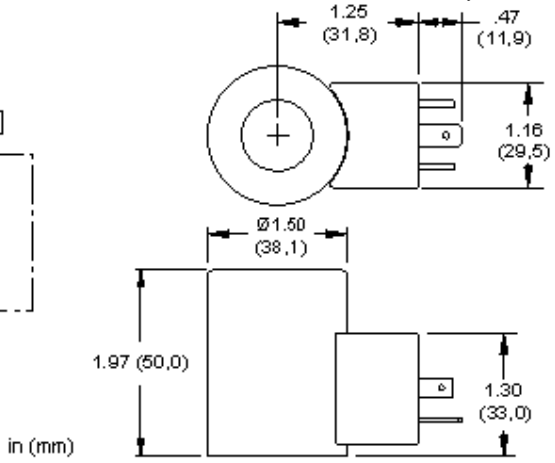
- DMDAS 3-way, soft shift, solenoid-operated directional spool valve
- DMDAZ 3-way, solenoid-operated directional spool valve with position switch

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CONFIGURATION





TECHNICAL DATA

Maximum Coil Temperature at 68ºF (20ºC) Ambient	218ºF (105ºC)
Arc Suppression (TVS)	Included
Power Consumption (cold) - at rated voltage	22 watts
Maximum Ambient Temperature	50 °C
Voltage/Frequency	24 VDC
Operating Voltage Range	+/- 10% nominal
Duty Cycle Rating	100 %
Connector	ISO4400 - EN/DIN175301-803, Form A (ISO/DIN 43650) 3-pin
Connector Environment Rating	IP65/IP67
Solenoid Tube Diameter	19 mm
Coil Nut Torque	0,5 Nm
Model Weight	0.23 kg.

PROPORTIONAL PERFORMANCE DATA

Maximum Current	590 mA
Nominal Coil Resistance at 122ºF (50ºC) Stabilized	37.2 ±5% ohms
Nominal Coil Resistance at 68ºF (20ºC) Cold	26.2 ±5% ohms

USED WITH

DMDA DMDAS DNCA DNDA DNDAS DNDC DNDY DNDYS FMDA FMDB
FPCC FPCH FPFK FPHK HDDA PRDM PRDN PSDL PSDP RBAN
RBAP

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TECHNICAL FEATURES

- Coil windings utilize Class N, (392° F [200 °C] rated) magnet wire.
- A TVS surge suppression diode is built into DC coils. Nominal breakdown voltage: 68V. Model code 1.5 KE68CA Steady state power dissipation @ 75°C is 6.5 W and peak pulse dissipation is 1500 W for 1 ms, nonrepetitive.
- Power cable with mating connector is required and is not included with product.
- The coil is magnetically symmetrical and can be mounted in either direction on the solenoid tube without affecting performance.
- For optimum proportional performance, an amplifier with current sensing and adjustable dither should be used. Dither should be adjustable between 100 - 250 Hz.
- This coil is CE compliant. It meets the requirements of the Low Voltage Directive (2006/95/EC) and EN 60204-1:2006.
- IP rating is dependent on the coil connector and the mating connector used.
- RoHS compliant. Restricted materials less than 0.1% total by weight.
- The external steel shell is plated with clear zinc trivalent.

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