

Parker Product Datasheet



Parker's 2-way poppet solenoid valves check flow in one direction with very low leakage and free flow opposite; normally-open or normally-closed configurations available. Capable of pressures up to 350 bar (5000 psi) and flows up to 260 lpm (70 gpm).

PART NUMBER: DSH101NRM
FLOW RATE: 15 GAL/MIN, 60 L/MIN
SEAL MATERIAL: D-Ring (Standard)
ACTUATION TYPE: Electrical, Manual
CONFIGURATION: Normally Open
MAXIMUM INLET PRESSURE RATING: 5000 PSI, 350 BAR
WIRE MESH SCREEN INCLUDED: No

PRODUCT OVERVIEW

Parker's 2-way poppet style solenoid valves feature a proven design that ensures very low leakage when flow is blocked in one direction and minimized pressure drop in the free flow position. These valves can operate with hydraulic system flows as high as 260 lpm and pressures up to 350 bar with normally-open or normally closed configurations available. Parker's 2-way poppet solenoid valves are ideal for unloading and load holding applications that require low poppet style leakage within mobile, industrial, or manufacturing markets.

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Markets: _x000D_

- Aerial _x000D_
- Construction _x000D_
- Material Handling _x000D_
- Miscellaneous Industrial _x000D_

- Miscellaneous Manufacturing_x000D_
- Miscellaneous Mobile_x000D_

Features & Benefits:_x000D_

- Replaceable one-piece coils with low amp draw_x000D_
- Fast response available_x000D_
- Manual override options_x000D_
- Low leakage spherical poppet_x000D_
- All external parts zinc plated_x000D_

Applications:_x000D_

- Unloading circuits_x000D_
- Load holding applications_x000D_
- Lift circuits_x000D_

Additional Technical Insight:_x000D_

Parker's 2 way poppet valves are pilot operated, low leakage solenoid actuated valves. Similar to a check valve, these valves will block flow in one direction with very low leakage (5 drops per minute, or less). When actuated, these valves allow flow to pass through the valve. These valves are typically selected due to their low leakage characteristics and their ability to meet higher flow requirements. Poppet valves are often used on single operation actuators or in unloading functions. They are available in normally closed and normally open types with fast response versions available._x000D_

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Parker's two way, two position poppet valves consist of a main poppet, a pilot piston, a spring, and a solenoid coil._x000D_

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The normally closed poppet version of these valves will act as a check valve when the valve is de-energized. This blocks flow in both directions while allowing free flow in the reverse direction. When the coil is energized, the poppet is piloted open (lifts) and allows free flow in the previously checked direction, typically from the side of the cartridge out the nose._x000D_

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The normally open poppet version of these valves, when the coil is de-energized, will allow free flow from the side port of the valve (port 2) out the nose of the valve (port 1). Energizing the coil shifts the poppet to block flow in both directions._x000D_

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Operation: The normally closed poppet valve is held on its seat by a spring, blocking the pilot flow. This will allow pressure at the inlet port (port 2) to hold the poppet on its seat preventing flow through the valve (port 2 to port 1)._x000D_

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If the nose of the cartridge (port 1) is pressurized enough to overcome the spring force, and pushing the poppet off of its seat, flow will be allowed through port 1 to port 2. When the coil is energized, the pilot poppet is lifted off of its seat, venting the pressure inside the poppet to port 1. This creates a pressure imbalance across the main poppet, therefore lifting the poppet and allowing flow from the side to the nose (2 to 1). Because these valves are pilot operated, a minimal amount of pressure differential is necessary (25-50 psi), along with flow between ports 2 and 1 must be present to overcome the spring and lift the poppet.

The normally open valve pilot is held off its seat by spring force. Pilot flow is vented to port 1, creating a pressure imbalance that moves the main poppet. This differential lifts the poppet allowing flow from the side to nose (2 to 1). Since poppet valves are pilot operated, a minimum amount of pressure differential (25-50 psi) between ports 2 overcomes the spring force to drive the valve pilot and main poppet into their seats, thus blocking flow from port 2 to 1. If the nose of the cartridge (port 1) is pressurized, the pressure will overcome the spring force and solenoid force, pushing the poppet off of its seat, allowing restricted flow through the cartridge (1 to 2).

TECH SPECIFICATIONS

MAXIMUM OPERATING TEMPERATURE	+200 °F
MAXIMUM OPERATING TEMPERATURE	+93 °C
DIVISION	Hydraulic Valve Systems Division
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MAXIMUM OPERATING PRESSURE	350 bar
MAXIMUM OPERATING PRESSURE	5000 psi
FLOW RATE	60 L/min
FLOW RATE	15 gal/min
MINIMUM OPERATING TEMPERATURE	-37 °C
MINIMUM OPERATING TEMPERATURE	-35 °F
FOR FLUID TYPE	Mineral-based or synthetic hydraulic fluids

BODY MATERIAL	N/A
SEAL MATERIAL	D-Ring (Standard)
WEIGHT	0.2 kg
WEIGHT	0.41 lb
OPERATING TEMPERATURE	-35 to +200 °F
OPERATING TEMPERATURE	-37 to +93 °C
MAXIMUM FLOW RATE	15 gal/min
MAXIMUM FLOW RATE	60 L/min
MOUNTING TYPE	Screw in cartridge valve
FUNCTION	2-way
ACTUATION TYPE	Electrical, Manual
OPERATION TYPE	Solenoid operated, Manually operated
INPUT VOLTAGE	85% of rated voltage at 72°F (20°C) min
RESPONSE TIME	70 ms
LEAK RATE	5 drops/min
CONFIGURATION	Normally Open
MAXIMUM KINEMATIC VISCOSITY	45-2000 SSU (6 to 420 cSt)
FILTER EFFICIENCY RATING	ISO 4406 18/16/13, SAE Class 4
FLOW DIRECTION	Side to Nose (2-1)
MAXIMUM INLET PRESSURE RATING	350 bar
MAXIMUM INLET PRESSURE RATING	5000 psi
ADJUSTMENT MECHANISM	N/A
VALVE MATERIAL	All parts steel. All operating parts hardened steel
COIL TYPE	5/8' Super Coil
OVERRIDE FUNCTIONALITY	Push Type w/Flush Rod
WIRE MESH SCREEN INCLUDED	No

CAVITY SIZE	C10-2
INSTALLATION TORQUE	51 to 55 lb-ft
INSTALLATION TORQUE	69 to 75 Nm
COIL NUT TIGHTENING TORQUE	7 to 10 Nm
COIL NUT TIGHTENING TORQUE	5 to 7 lb-ft
FREE REVERSE FLOW	Yes