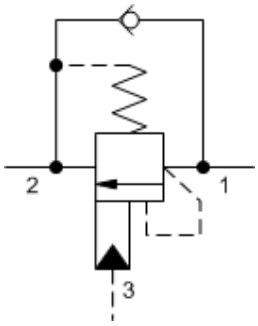
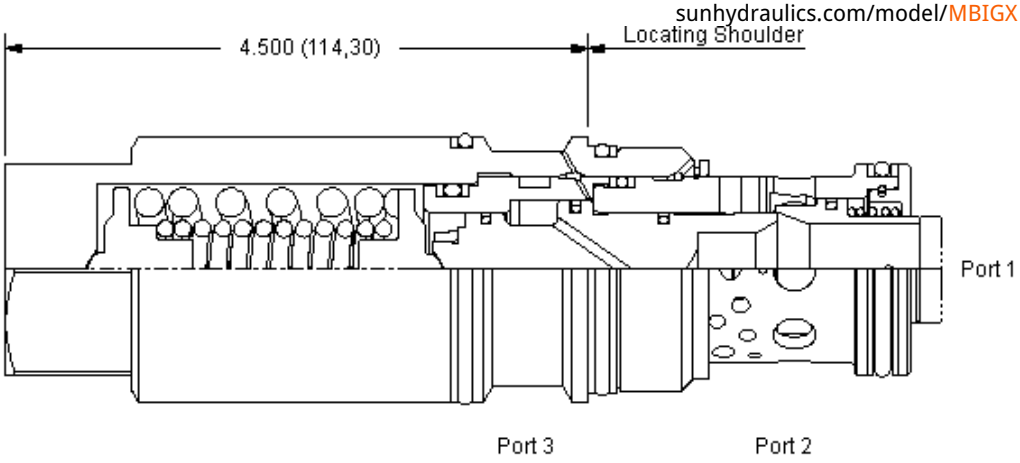
MODEL
MBIGX

Fixed setting, 4.5:1 pilot ratio, load reactive, load control valve
SERIES 4 / CAPACITY: 120 gpm / CAVITY: T-19A

sunhydraulics.com/model/MBIGX



3-Port Non-vented, Fixed Setting



CONFIGURATION

M	Factory Set	5000 psi (350 bar)
N	Seal Material	Buna-N
(none)	Material/Coating	

Fixed setting, load reactive, load control valves with pilot assist combine two valves; a check valve and a relief valve. The check valve allows free flow from the directional valve (port 2) to the load (port 1) while a direct-acting, pilot-assisted relief valve controls flow from port 1 to port 2. Pilot assist at port 3 lowers the effective setting of the relief valve at a rate determined by the pilot ratio.

TECHNICAL DATA

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

Cavity	T-19A
Series	4
Capacity	120 gpm
Maximum Operating Pressure	5000 psi
Pilot Ratio	4.5:1
Maximum Recommended Load Pressure	See Technical Features
Factory Pressure Settings Established at	2 in³/min.
Maximum Valve Leakage at Reseat	5 drops/min.
Check Cracking Pressure	25 psi
Reseat	≥ 77% of setting
Valve Hex Size	1 5/8 in.
Valve Installation Torque	350 - 375 lbf ft
Seal kit - Cartridge	Buna: 990019007
Seal kit - Cartridge	Polyurethane: 990019002
Seal kit - Cartridge	Viton: 990019006
Model Weight	4.25 lb.

CONFIGURATION OPTIONS

Model Code Example: MBIGXArray

FACTORY SET (M)	SEAL MATERIAL (N)	MATERIAL/COATING
M 5000 psi (350 bar)	**N** Buna-N	Standard Material/Coating
K 3000 psi (210 bar)	**V** Viton	**/AP** Stainless Steel, Passivated
L 4000 psi (280 bar)		**/LH** Mild Steel, Zinc-Nickel

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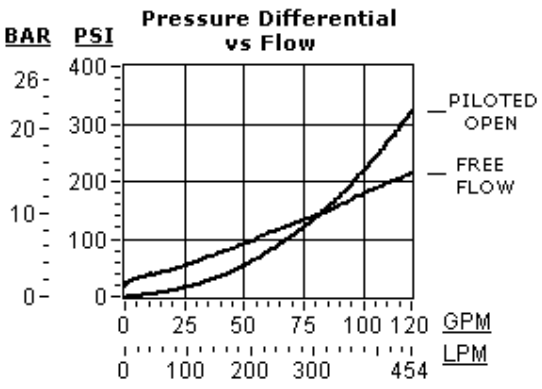
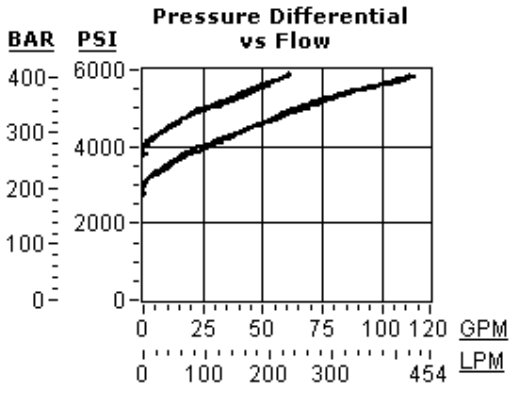
TECHNICAL FEATURES

- The maximum recommended load pressure for the K range is 2310 psi (159 bar). The cracking pressure for the K range will be 2880-3715 psi (199-256 bar).
- The maximum recommended load pressure for the L range is 3080 psi (212 bar). The cracking pressure for the L range will be 3880-4815 psi (268-332 bar).
- The maximum recommended load pressure for the M range is 3850 psi (265 bar). The cracking pressure for the M range will be 4880-5815 psi (336-401 bar).
- Note: The pressures listed under RANGE are approximate, mean values and should not be used for inspection purposes.
- Note: The percentage difference between the cracking and reseat values for the fixed and adjustable versions are identical. However, the cracking point for the adjustable control can be set via the adjustment mechanism to within +/- 15 psi (1 bar) or +/- 2.5% of setting (whichever is greater) of the specified value. In the case of the fixed version, the setting tolerance can only be maintained within a +/- 470-psi (32-bar) range. Thus for the 3000-psi (210-bar) fixed-setting model, with a rising pressure the valve will open below 3715 psi (256 bar) and with a falling pressure will reseat above 2310 psi (159 bar). For the 4000-psi (275-bar) fixed-setting model, with a rising pressure the valve will open below 4815 psi (332 bar) and with a falling pressure will reseat above 3080 psi (212 bar). For the 5000-psi (350-bar) fixed-setting model, with a rising pressure the valve will open below 5815 psi (401 bar) and with a falling pressure will reseat above 3850 psi (265 bar).
- Corrosion resistant cartridge valves are intended for use in corrosive environments and are identified by the model code suffix /AP for external stainless steel components, or /LH for external zinc-nickel plated components. See the CONFIGURATION section for all options. For further details, please see the Materials of Construction page located under TECH RESOURCES.
- Fixed-setting load control valves can be used to protect cylinder seals in outrigger circuits from damage due to thermal expansion, however, they probably should not be applied in circuits in which a matched valve setting may be required such as dual cylinder applications.
- All 3-port counterbalance, load control, and pilot-to-open check cartridges are physically interchangeable (i.e. same flow path, same cavity for a given frame size).
- Backpressure at port 2 adds to the effective relief setting at a ratio of 1 plus the pilot ratio times the backpressure.
- This valve is functionally a 3-port counterbalance valve. It seats as a poppet valve and modulates as a spool valve, offering the best of both valve types.
- These valves are capable of modulating over a broader range of flows than the pure poppet designs. The longer stroke allows us to incorporate a uni-directional damping device that smooths the opening and lets the valve close quickly.
- Fixed-setting load control valves offer a shorter cartridge extension than the adjustable version.
- Sun load control and counterbalance cartridges can be installed directly into a cavity machined in an actuator housing for added protection and improved stiffness in the circuit.
- This valve has positive seals between all ports.
- This valve has full relief capacity.
- 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

- MBIG 4.5:1 pilot ratio, load reactive, load control valve

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