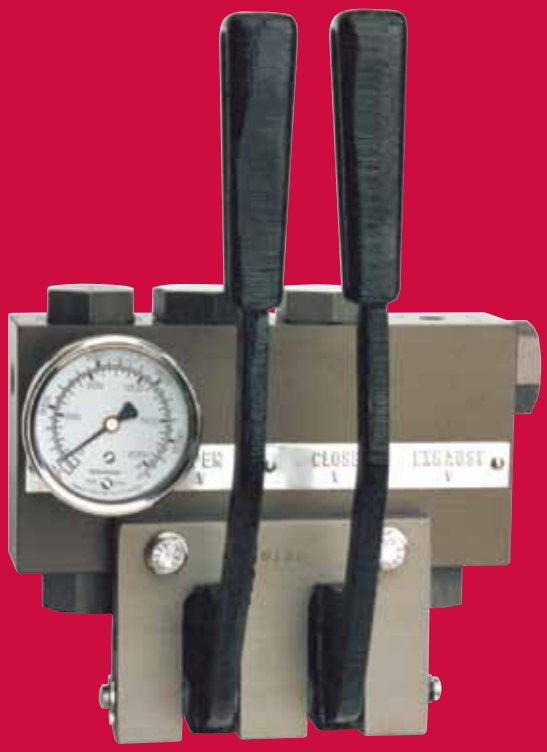
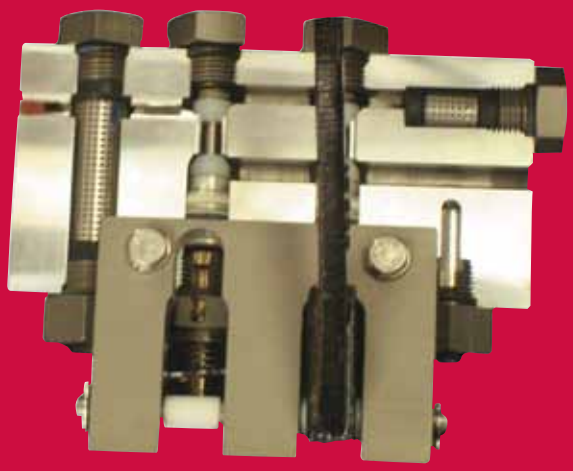




SHAFER™
Poppet Block Control

The poppet block is the heart of most Shafer Valve Operating Systems. This double three-way control valve is designed to provide selective directional operation of Shafer valve actuators. The poppet block control may direct power gas to a set of gas hydraulic tanks generating hydraulic pressure for powering the actuator, or it may direct central hydraulic system pressure directly into the actuator. The poppet control is designed to handle working pressures to 3000 psi. Manual operation may be provided with a removable and lockable handle.

In automatic or remote control versions, the control is actuated by pressurizing a piston located directly under the poppets. This is done by using a variety of valving as described in the following pages.

The poppet block is designed to provide reliable and durable operation. It contains two sets of inexpensive, easily replaced nylon poppets which provide tight sealing, while retaining a considerable toleration of contaminants which may find their way into the power source.

Power gas or oil is filtered through a 140 micron strainer built into the control. On controls where pilot gas for valving is required, the gas is further filtered through a 25 micron strainer.

Oil flow capacities for the Shafer Poppet Control are:

Size	Flow @ 1000 PSI (50 F.P.S.)	Flow @ 2000 PSI (70 F.P.S.)	Test/Rate
1/4"	17 G.P.M.	24 G.P.M.	4500/3000 PSI
1/2"	35 G.P.M.	- - -	2160/1440 PSI

(Abbreviations used : F.P.S. - Feet Per Second, G.P.M. - Gallons Per Minute, PSI - Pounds Per Square Inch)

Special Shafer Poppet Controls are available with high pressure/high flow characteristics as follows:

Size	Flow @ 1000 PSI (50 F.P.S.)	Flow @ 2000 PSI (70 F.P.S)	Test/Rate
1/2"	47 G.P.M.	65 G.P.M.	4500/3000 PSI
3/4"	82 G.P.M.	115 G.P.M.	3375/2250 PSI
1"	134 G.P.M.	189 G.P.M.	3375/2250 PSI
1-1/4"	230 G.P.M.	- - -	2160/1440 PSI
1-1/2"	315 G.P.M.	- - -	2160/1440 PSI

EMERSON™

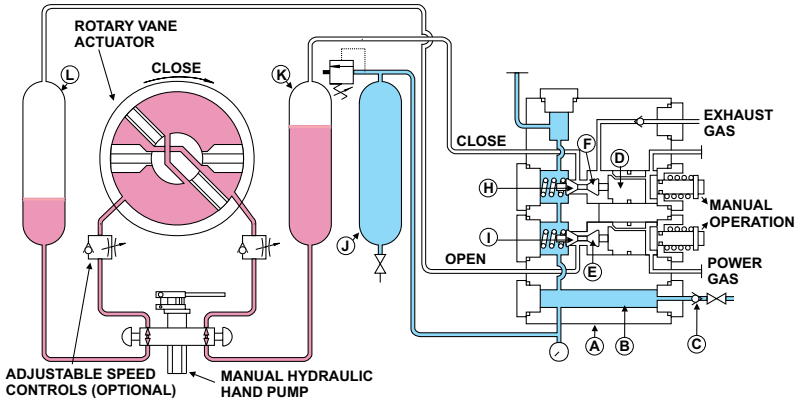
POPPET BLOCK CONTROL

The Shafer Manual Poppet Block Control is designed for local operation of Shafer valve actuators using power gas or oil to stroke the actuator. The basic operation is as follows.

Non-Pressurized Hydraulic Fluid
High Pressure Gas
Exhaust Gas
Pressurized Hydraulic Fluid

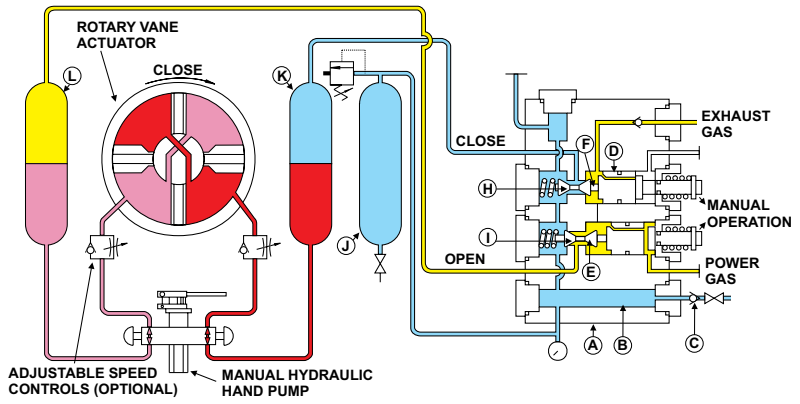
SEQUENCE 1 - VALVE OPEN

The valve actuator is shown in open position. Power gas connected to the poppet block (A), flows past power storage tank check valve (C), through the 140 micron power gas strainer (B) and fills the optional power storage tank (J). Power gas also flows into the back side of the poppet block (A) forcing the power poppets (H) and (I) onto their seats. Simultaneously, the interconnecting poppet pins force the exhaust poppets (E) and (F) off their seats. The cylinder ports are open to exhaust, venting any tank or actuator pressure through the exhaust check valve.



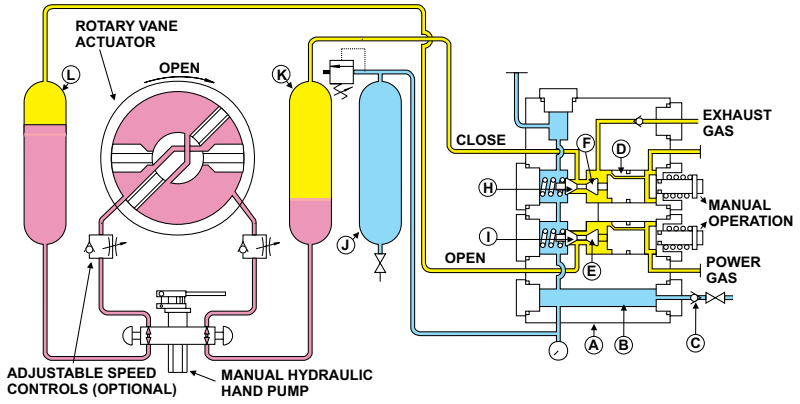
SEQUENCE 2 - VALVE CLOSING

By pulling on the control handle marked “close,” the push pin contacts the pilot piston (D) and forces the exhaust poppet (F) onto its seat. Simultaneously, via the interconnecting poppet pin, the power poppet (H) is forced off its seat allowing power gas to pressurize the closing gas hydraulic tank (K), forcing the pressurized fluid into the actuator and causing the actuator to close. The fluid displaced from the actuator flows into the opening gas hydraulic tank (L) which is open to atmosphere through the exhaust check valve in the poppet block (A).



SEQUENCE 3 - VALVE FULLY CLOSED

When the valve reaches the closed position and the manual control handle is released, the force of the power gas and spring compression reseats power poppet (H) and unseats exhaust poppet (F) allowing gas hydraulic tank pressure to vent to atmosphere through the exhaust check valve. To re-open the valve, the control handle marked “open” is pulled and poppets (I) and (E) are actuated, which pressurizes the opening tank (L) and causes the operator to open.



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