

**Shafer**

## Remote Two-Way Electric Control

The Shafer remote two-way electric control is designed for remote operation of Shafer valve actuators.

The heart of the control is the compact poppet block which offers simplicity of maintenance, self adjustment, extreme tolerance to vibration, and corrosion resistant materials. Manual operation is provided by removable and lockable handles.

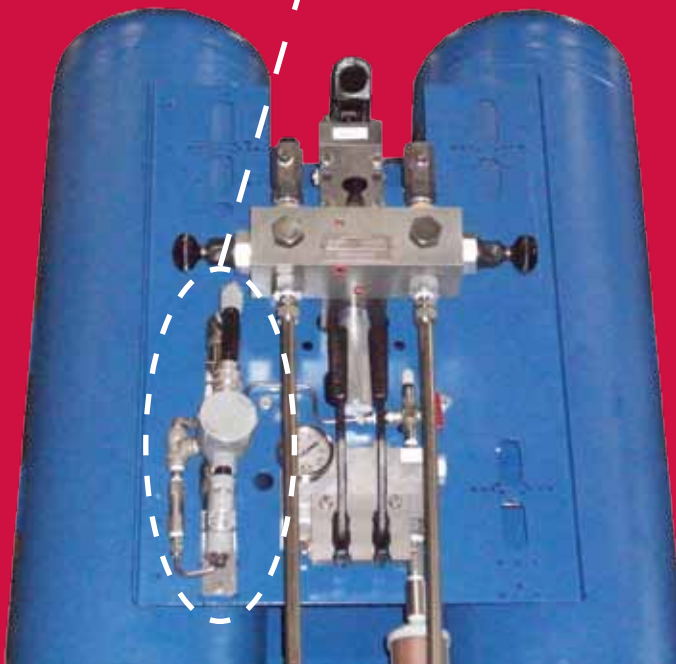
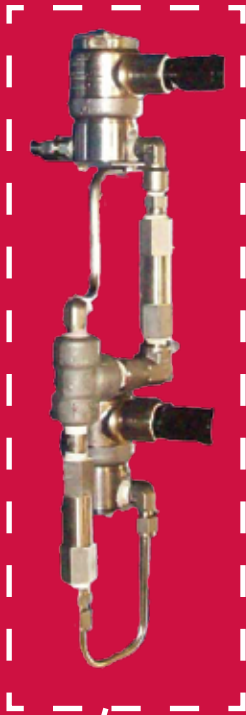
While still using reliable nylon poppets for tight shutoff, the complete control is incorporated into a single compact housing. The poppets and strainers are more readily accessible for quick changeout by removal of the hex retainer plugs. Manual operation is provided by a removable lockable lever handle. Standard high pressure solenoid valves provide reliable electric remote operation.

For remote valve control in compressor stations and mainline applications, Shafer's remote electric two-way controls provide fast, dependable on-off operation.

Explosion-proof high pressure solenoid valves, available with either AC or DC voltage coils, pilot Shafer's reliable poppet block control for positive valve control.

Optional versions include:

1. Constantly energized solenoids for fail-safe operation on loss of power or control signal.
2. Single solenoid versions for single-way operation and local power reset.
3. Optional limit switches mounted on the actuator can provide positive end of stroke de-energization of solenoids for control neutralization, or they can signal remote position indication lights or provide sequencing signals for multiple valve control.
4. Optional circuit for momentary electrical signals.



# TWO-WAY ELECTRIC CONTROL

## SEQUENCE 1 – VALVE OPEN

The valve actuator is shown in neutralized 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. Power gas is also ported through the 25 micron strainer (O) and to the normally closed solenoids (M) and (N).

## SEQUENCE 2 – VALVE CLOSING

To operate the valve actuator, the closing solenoid (N) is energized from the remote control console. Solenoid (N) shifts to the open position and allows pilot pressure to enter the control block and forces the pilot piston (D) against exhaust poppet (F) forcing it into its seat. Simultaneously, the interconnecting poppet pins forces the power poppet (H) 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 vented to atmosphere through the poppet block (A) exhaust check valve.

## SEQUENCE 3 – VALVE FULLY CLOSED

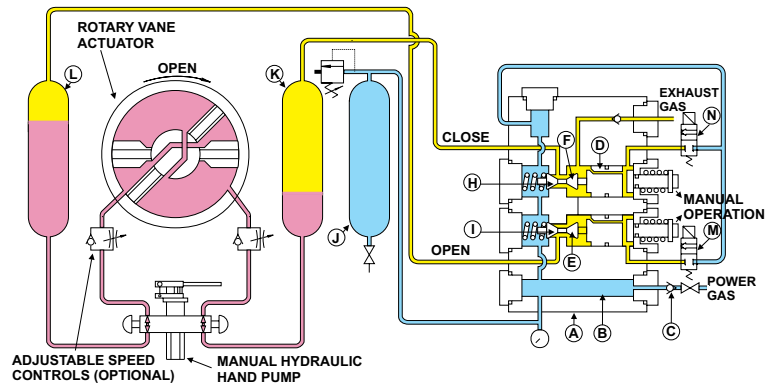
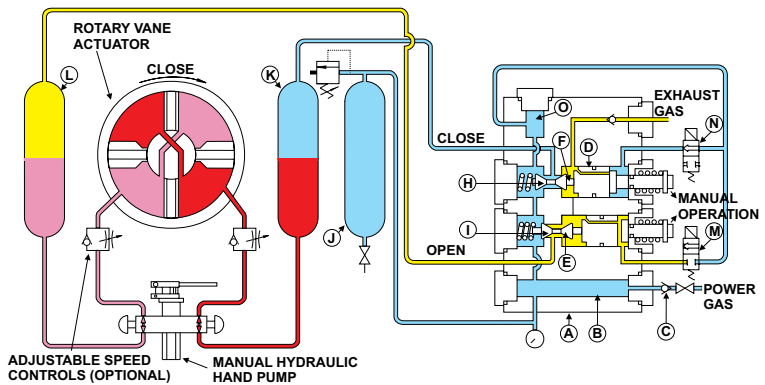
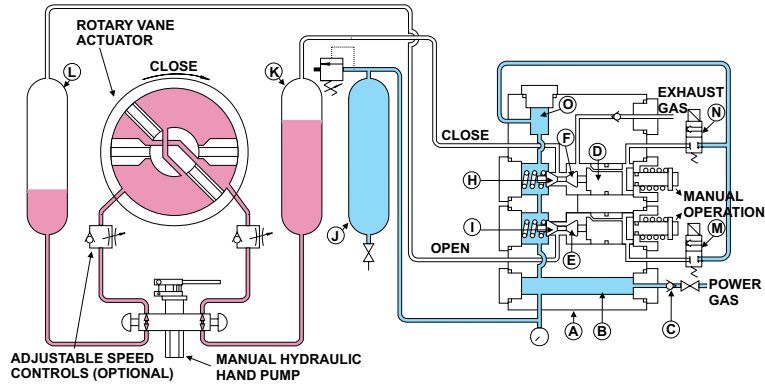
When the valve actuator reaches the fully closed position, the closing solenoid (N) is de-energized. Normally de-energization of solenoids is accomplished by breaking the electrical circuit through end of stroke mounted limit switches.

When closing solenoid (N) is de-energized, it returns to the normally closed position. The pilot pressure behind pilot piston (D) bleeds to exhaust through the orifice in the piston. Power pressure and spring tension reseats power poppet (H) and simultaneously unseats the exhaust poppet (F) allowing the gas hydraulic tank (K) and actuator to neutralize.

To reopen the valve actuator, the opening solenoid (M) is energized and the sequence is reversed.

The removable manual pump handle can be used to actuate the power gas to stroke the valve actuator in either direction.

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



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