
Classic Series

F513-AK (Globe)
F1513-AK (Angle)**Operation**

The Watts ACV Pump Control Valve is designed to minimize the surges associated with the starting and stopping of pumps. The valve slowly opens and closes as required to control pumping related surges. The pump starts and stops against a closed valve.

Pump start up: When the pump is signaled to start, the 3-Way Solenoid is energized and pressurizes the cover chambers of each 3-Way Accelerator Pilot. Accelerator Pilot (2B) directs fluid and pressure into the power chamber (below the diaphragm), and Accelerator Pilot (2A) relieves fluid and pressure from the cover chamber (above the diaphragm). The fluid and pressure relieved from the cover chamber is vented to atmosphere or available floor drain. The valve opens at an adjustable rate, gradually admitting pumping pressure into the distribution system. Rate of valve opening is controlled by the adjustable opening speed control, which restricts the speed at which fluid and pressure evacuate the cover chamber. The valve remains fully open during the pumping cycle.

Pump shutdown: When the pump is signaled to shut-off, the 3-Way Solenoid is de-energized, relieving pressure from the cover chambers of each 3-Way Accelerator Pilot. Accelerator Pilot (2A) directs fluid and pressure into the cover chamber (above the diaphragm), and Accelerator Pilot (2B) relieves fluid and pressure from the power chamber (below the diaphragm). The fluid and pressure relieved from the power chamber is vented to atmosphere or available floor drain. The valve closes at an adjustable rate, gradually reducing pumping pressure. Rate of valve closure is controlled by the adjustable closing speed control, which restricts the speed at which fluid and pressure evacuate the power chamber. When the valve reaches the closed position, the limit switch is actuated, turning the pump off.

Emergency Closure: The valve is equipped with a Mechanical Check Feature, which acts independent of diaphragm position, and provides immediate closure when flow ceases.

Manual Operation: Engaging the Solenoid Manual operator simulates power to the solenoid, manually opening the main valve. Disengaging the Solenoid Manual operator returns the valve to the closed position.

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- Prior to installation, flush line to remove debris.
- Install valve horizontally “in line” (cover facing UP), so flow arrow matches flow through the line. Avoid installing valves 6” and larger vertically. Consult factory **prior** to ordering if installation is other than described.
- Install inlet and outlet isolation valves. **NOTE:** When using butterfly valves, insure disc does not contact control valve. Damage or improper valve seating may occur.
- Provide adequate clearance for valve servicing and maintenance.
- Provide adequate drain for cover chamber and power chamber discharge. Consult “Valve Cover Capacity” chart on appropriate main valve Engineering Bulletin.
- Install pressure gauges to monitor valve inlet and outlet pressure.
- Connect Solenoid and Limit Switch to appropriate pump control panel locations and power source in compliance with local electrical codes.

Other Watts ACV Pump Control Valves

F113-21 / F1113-21	Pump Control Valve
F113-19 / F1113-19	Pump Control Valve with Backpressure Feature
F113-29 / F1113-29	Pump Control Valve with Pressure Reducing Feature
F113-41 / F1113-41	Pump Control Valve with Rate-of-Flow Feature
F513-5 / F1513-5	Pump Control Valve
F513-6 / F1513-6	Deep Well Pump Control Valve
F513-14 / F1513-14	Deep Well Pump Control Valve with Pressure Relief Feature