



# PUMP SUCTION PRESSURE SUSTAINING ELECTRIC CHECK VALVES

## With Normal, Emergency and Manual Controls

### This Valve Will:

1. Check to prevent reverse flow back through pump
2. Provide adjustable opening and closing speed to minimize pump start-up and normal shutdown surges
3. Provide adjustable emergency closing speed control to prevent excessive pump backspin on power outage
4. Throttle as needed to sustain minimum NPSH at pump inlet

### Function:

The pump suction pressure sustaining valve shall function to minimize surges associated with the starting and normal shutdown of a pump. The valve operation is solenoid controlled and actuated by water pressure obtained from the inlet and outlet side of the valve.

The valve will open at a controlled rate of speed when the NSP and ESP are energized and the pump NPSH is sufficient to satisfy the setting of the sustaining pilot. Once open the valve will throttle at whatever position necessary to maintain the minimum NPSH as set on the sustaining pilot. The valve will open fully if the NPSH exceeds the pilot setting and close if the NPSH falls below the pilot setting.

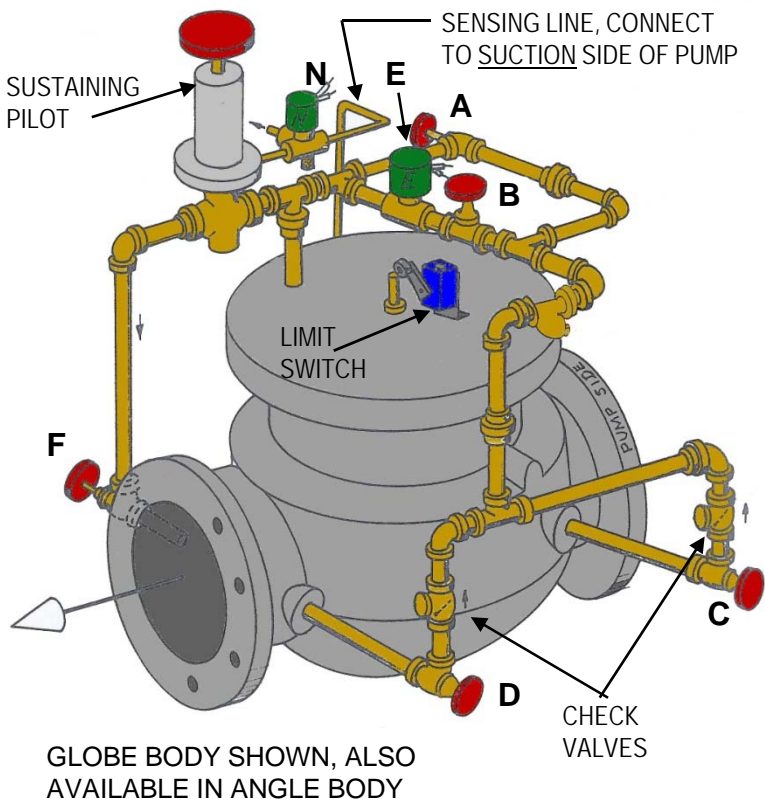
De-energizing the NSP shall initiate a normal controlled valve closure. At a point near the seated position the indicator rod actuates the limit switch and disengages the pump motor and the emergency solenoid pilot.

In the event of an electrical power outage the emergency solenoid de-energizes and initiates a more rapid valve, but controlled, closure to minimize pump backspin.

A manual operator on the normal solenoid pilot allows valve/pump operation if the solenoid coil is burned out.

### When to use:

- On the discharge of a pump to prevent cavitation due to insufficient net positive suction head (NPSH)
- To permit pumping at reduced rate during periods of low suction head
- To prevent pump/motor damage from inefficient operation



- A – Normal Closing Speed Control
- B – Emergency Closing Speed Control
- C – Stop Valve (Normally Open)
- D – Stop Valve (Normally Open)
- E – Emergency Solenoid Pilot (ESP)
- F – Stop Valve (Normally Open)
- N – Normal Solenoid Pilot (NSP) with Manual Operator