

▲ Model 125-27P

The Model 125-27P, primarily designed for use with centrifugal booster pumps, can also be used on well pumps with relatively shallow lifts where the pump design permits starting against a closed valve.

Because of its lift check feature, the 125-27P is ideally suited to those pumping applications where little or no back flow can be tolerated.

## SERIES FEATURES

- ▶ Eliminates surges associated with starting and stopping the pump
- ▶ Pump starts against a closed valve that then gradually opens at a controlled rate
- ▶ Valve gradually closes at a controlled rate while pump continues to run
- ▶ Pump stops when valve is fully closed
- ▶ Dual chamber design allows full opening and minimum pressure loss at any flow rate
- ▶ Use of 3-way solenoid and auxiliary pilots allows higher operating pressures
- ▶ Integral lift check feature closes valve immediately on power failure
- ▶ Separate adjustable opening and closing speeds
- ▶ Can be maintained without removal from the line
- ▶ Factory tested

## OPERATION

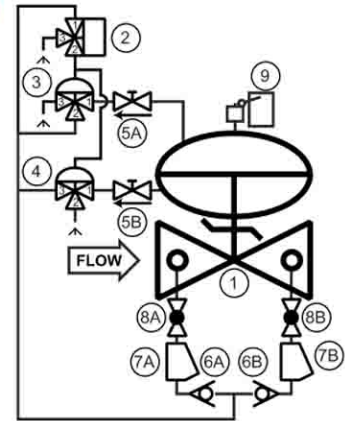
The 125-27P is controlled by an electrical 3-way solenoid, which actuates two 3-way auxiliary pilots. The solenoid is energized at pump start. The auxiliary pilots pressurize the lower diaphragm chamber while simultaneously venting the upper chamber, causing the valve to open at an adjustable controlled rate, smoothly transitioning flow into the system. At shut-down, the solenoid is de-energized and the auxiliary pilots pressurize the upper diaphragm chamber while simultaneously venting the lower chamber. This causes the valve to close at an adjustable controlled rate while the pump (held on by the valve limit switch) continues to run. When the valve is fully closed, the pump is finally shut off.

In the event of power failure while the pump is running, the internal lift check feature will close immediately, thereby minimizing any back flow.

## COMPONENTS

The Model 125-27P consists of the following components, arranged as shown on the schematic diagram:

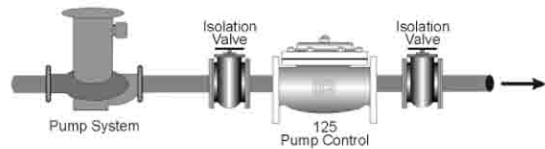
- 1.) Model 66SC Power Actuated Basic Valve with Lift Check
- 2.) Model 452 Three-Way Solenoid Pilot
- 3.) Model 3600S Three-Way Auxiliary Pilot, N.C.
- 4.) Model 3600 Three-Way Auxiliary Pilot, N.C.
- 5.) Model 141-3 Flow Control Valve, Adjustable closing speed control
- 6.) Model 141-1 Check Valve
- 7.) Model 159 Y-Strainer, Protects pilot system from dirt/debris
- 8.) Model 141-4 Isolation Ball Valves
- 8.) Model 31 Limit Switch Assembly



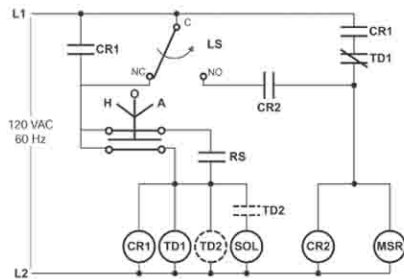
## SCHEMATIC

## RECOMMENDED INSTALLATION

OCV recommends that all Model 125-27P valves are installed horizontally, bonnet "up." The Model 125-27P exhausts its diaphragm chamber to atmosphere, the volume varying according to valve size, as shown below. Provisions should be made drain or otherwise dispose of this water.



## TYPICAL WIRING DIAGRAM



## MAX. PRESSURE

END CONNECTIONS	DUCTILE IRON	STEEL/STN STL	BRONZE
Threaded	400 psi	400 psi	400 psi
Grooved	300 psi	300 psi	300 psi
150# Flanged	250 psi	285 psi	225 psi
300# Flanged	400 psi	400 psi	400 psi

1 1/4" - 1 1/2"	0.02 gallons	8"	1.0 gallon
2"	0.05 gallons	10"	2.5 gallons
2 1/2"	0.06 gallons	12"	4.0 gallons
3"	0.1 gallons	14"	6.5 gallons
4"	0.2 gallons	16"	9.6 gallons
6"	0.6 gallons	24"	28.0 gallons

## SIZING

Booster pump control valves are typically the same size as the pump discharge; however, flow rate should not exceed a velocity of 20 ft/sec, as shown below. For a more definitive sizing procedure, refer to our ValveMaster software program or the Performance Charts in the OCV Catalog Engineering Section.

SIZE	1 1/4"-1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	24"
FLOW @ 20FT/SEC GPM	85-120	210	300	460	800	1800	3100	4900	7000	8450	11000	25000

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 email: sales@controlvalves.com • website: www.controlvalves.com

## SIZES

GLOBE/ANGLE

Screwed Ends: 1 1/4" - 3"

Grooved Ends: 1 1/2" - 4"

Flanged Ends: 1 1/4" - 24" (globe); 1 1/4" - 16" (angle)

**TEMPERATURE RANGE** (Valve Elastomers)

Buna-N -40° F - 180°F

Viton 0° F - 400°F

EPDM 0° F - 300°F

**MATERIALS** - Consult factory for others.

**Body/Bonnet:** Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, B61 Bronze, Others available (consult factory)

**Seat Ring:** Bronze B61, Stainless Steel

**Stem:** Stainless Steel, Monel

**Spring:** Stainless Steel

**Diaphragm:** Nylon Reinforced, Buna-N, Viton, EPDM

**Seat Disc:** Buna-N, Viton, EPDM

**Pilot:** Bronze, Stainless Steel

*Other pilot system components:* Bronze/Brass, All Stainless Steel

**Tubeing & Fittings:** Copper/Brass, Stainless Steel

**Solenoid:** 3-way type

Enclosure: *Weatherproof NEMA 4X; Explosion Proof NEMA 4X, 6P, 7, 9*

*Body:* Brass, Stainless Steel

*Voltages:* 24, 120, 240, 480 VAC; 12, 24 VDC

Note: Working pressures of solenoids vary greatly, consult factory on application of OCV Model 125 valves.

**Limit Switch:**

Enclosure: *Weatherproof NEMA 4; Explosion Proof NEMA 7, 9*

*Contacts:* SPDT (std) / DPDT (opt)

## SPECIFICATIONS (Typical Water Application)

The pump control valve shall function to eliminate the surges from starting and stopping the pump. The valve shall be closed when the pump is started. It shall then open slowly, gradually introducing flow into the line. When the pump is signaled to stop, the pump control valve shall slowly close while the pump continues to run. As the valve approaches the full closed position, the valve stem shall trip a limit switch mounted on the valve. The limit switch shall then shut down the pump. Opening and closing speeds shall be independently adjustable. In the event of a power failure while the pump is running, the valve shall close quickly by means of its lift check feature to prevent back flow.

### DESIGN

The valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot controlled, dual chambered globe valve, and shall contain an internal lift check feature. The valve shall seal by means of a corrosion-resistant seat and a resilient, rectangular seat disc. These, and other parts, shall be replaceable without removing the valve from the line. The stem of the main valve shall be guided top and bottom by integral bushings. Alignment of the body, bonnet and diaphragm assembly shall be by precision dowel pins. The diaphragm shall not be used as a seating surface, nor shall pistons be used as an operating means. The pilot system shall be furnished complete and installed on the main valve. It shall include separate opening and closing speed controls, a Y-strainer and isolation ball valves. The valve shall be operationally and hydrostatically tested prior to shipment.

### MATERIALS OF CONSTRUCTION

The main valve body and bonnet shall be ductile iron per ASTM A536, Grade 65-45-12. All ferrous surfaces shall be coated with 4 mils of epoxy. The main valve seat ring shall be bronze per ASTM B61. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. Control pilots shall be ASTM B61 bronze. The speed controls and isolation ball valves shall be brass and control line tubing shall be copper. The solenoid coil shall be suitable for operation on 110-120 volts AC, 50-60 Hz. The limit switch shall be equipped with SPDT contacts rated at 15 amps at 125-480 VAC. Limit switch and solenoid enclosures shall be weather-proof per NEMA 4.

### OPERATING CONDITIONS

The pump control valve shall be suitable for a flow of <X> gpm and a maximum pump shutoff pressure of <X> psig.

### ACCEPTABLE PRODUCTS

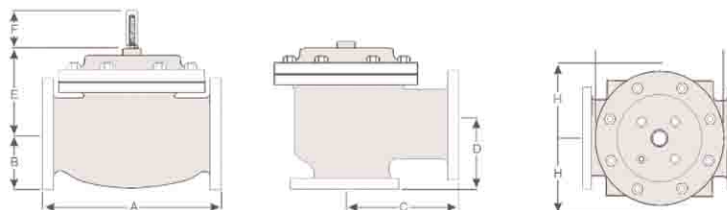
The pump control valve shall be a <size> Model 125-27P, <globe pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.

U.S. DIMENSIONS - INCHES

DIM	END CONN.	1 1/4-1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	24
A	SCREWED	8 3/4	9 7/8	10 1/2	13	--	--	--	--	--	--	--	--
	GROOVED	8 3/4	9 7/8	10 1/2	13	15 1/4	20	--	--	--	--	--	--
	150# FLGD	8 1/2	8 3/8	10 1/2	12	15	17 3/4	25 3/8	29 3/4	34	30	40 3/8	60
	300# FLGD	8 3/4	9 7/8	11 1/8	12 3/4	15 5/8	18 5/8	26 3/8	31 1/8	35 1/2	40 1/2	42	60 3/4
C	SCREWED	4 3/8	4 3/4	6	6 1/2	--	--	--	--	--	--	--	--
	GROOVED	4 3/8	4 3/4	6	6 1/2	7 5/8	--	--	--	--	--	--	--
	150# FLGD	4 1/4	4 3/4	6	6	7 1/2	10	12 11/16	14 7/8	17	--	20 13/16	--
	300# FLGD	4 3/8	6	6 3/8	6 3/8	7 13/16	10 1/2	13 3/16	15 9/16	17 3/4	--	21 5/8	--
	SCREWED	3 1/8	3 7/8	4	4 1/2	--	--	--	--	--	--	--	--
D	GROOVED	3 1/8	3 7/8	4	4 1/2	5 5/8	--	--	--	--	--	--	--
	150# FLGD	3	3 7/8	4	4	5 1/2	6	8	11 3/8	11	--	15 11/16	--
	300# FLGD	3 1/8	4 1/8	4 3/8	4 3/8	5 13/16	6 1/2	6 1/2	12 1/16	11 3/4	--	16 1/2	--
E	ALL	6	6	7	6 1/2	8	10	11 7/8	15 3/8	17	18	19	27
F	ALL	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	6 3/8	6 3/8	6 3/8	6 3/8	6 3/8	8
H	ALL	10	11	11	11	12	13	14	17	18	20	20	28 1/2

\*GROOVED END NOT AVAILABLE IN 1 1/4"

For maximum efficiency, the OCV control valve should be mounted in a piping system so that the valve bonnet (cover) is in the top position. Other positions are acceptable but may not allow the valve to function to its fullest and safest potential. In particular, please consult the factory before installing 8" and larger valves, or any valves with a limit switch, in positions other than described. Space should be taken into consideration when mounting valves and their pilot systems.



QUALITY SYSTEM REGISTERED TO ISO 9001

A routine inspection & maintenance program should be established and conducted yearly by a qualified technician. Consult our factory @ 1-888-628-8258 for parts and service.

Represented by:

### How to order your Model 125-27P valve

When Ordering please provide:

Fluid to be controlled -Model Number -Size -Globe or Angle -End Connection -Body Material -Trim Material -Solenoid Voltage -Solenoid enclosure Weatherproof or Explosion Proof -Special Requirements / Installation Requirements

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