



▲ Model 125-27

The Model 125-27, 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 125-27 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
- ▶ 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 and can be pre-set to your requirements

## OPERATION

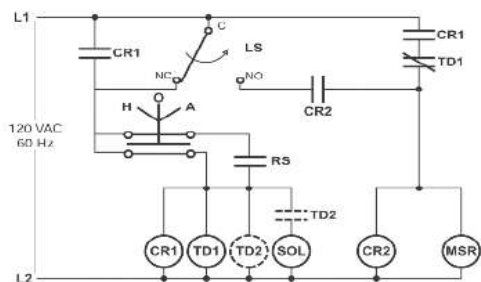
The 125-27 is controlled by an electrical 4-way solenoid which is energized at pump start. This pressurizes the lower diaphragm chamber while simultaneously venting the upper chamber, causing the valve to open at an adjustable controlled rate, smoothly transitioning flow into the system. At shut-down, the solenoid is de-energized, pressurizing the upper diaphragm chamber while simultaneously venting the lower chamber, causing 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 125-27 consists of the following components, arranged as shown on the schematic diagram:

- 1.) Model 66SC Dual Chamber Basic Valve- Lift-check
- 2.) Model 453 Four-way Solenoid Pilot, normally closed
- 3A.) Model 141-3 Flow Control Valve, Adjustable opening speed control
- 3B.) Model 141-3 Flow Control Valve, Adjustable closing speed control
- 4.) Model 141-1 Check Valve
- 5.) Model 159 Y-strainer, Protects pilot system from dirt/debris
- 6.) Model 141-4 Isolation Ball Valves
- 7.) Model 31 Limit Switch Assembly

## TYPICAL WIRING DIAGRAM

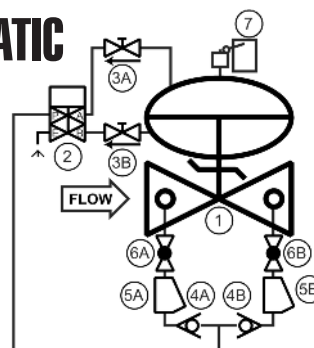


## SIZING

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
VENT VOLUME, GAL	0.02	0.05	0.06	0.10	0.2	0.6	1.0	2.5	4.0	6.5	9.6	28.0

## SCHEMATIC



## RECOMMENDED INSTALLATION

- Install the valve with adequate space above and around the valve to facilitate servicing. Refer to the Dimension table.
- Valve should be installed with the bonnet (cover) at the top, particularly 8" and larger valves, and any valve with a limit switch.
- Shut-off valves should be installed upstream and downstream of the control valve. These are used to isolate the valve during startup and maintenance.
- Wire the valve solenoid and limit switch via conduit appropriate to the application.
- The model 125-27 exhausts its diaphragm chambers to atmosphere during opening and closing. This volume varies according to valve size, as shown below. Provisions should be made to drain or dispose of this water.

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

**TOLL FREE 1.888.628.8258** • phone: (918)627.1942 • fax: (918)622.8916 • 7400 East 42nd Place, Tulsa, Ok 74145  
 email: sales@controlvalves.com • website: www.controlvalves.com

# Model 125-27



## SIZES GLOBE/ANGLE

Screwed Ends - 1 1/4" - 3"  
Grooved Ends - 1 1/2" - 6" (globe); 1-1/2"-4" (angle)  
Flanged Ends - 1 1/4" - 24" (globe); 1 1/4" - 16" (angle)

## FLUID OPERATING TEMPERATURE RANGE

(Valve Elastomers)  
EPDM 32° F - 230°F\*

## MAX. PRESSURE

250 psi (Limited by solenoid - For pressures up to 400 psi, consider Model 125-27P)

## SOLENOID 4-way type\*\*

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

**Body:** Brass

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

## LIMIT SWITCH

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

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

## MATERIALS

Consult factory for others.

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

**Seat Ring:** low-lead Bronze, Stainless steel

**Stem:** Stainless Steel, Monel

**Spring:** Stainless Steel

**Diaphragm:** EPDM\*

**Seat Disc:** EPDM\*

**Pilot:** low-lead Bronze, Stainless Steel

**Other pilot system components:** low-lead Bronze/Brass, All stainless steel

**Tubing & Fittings:** Copper/brass, Stainless steel

\*Others available upon request.

\*\*Consult factory for NSF 372 listed Model 125-27 valves.

# 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 low-lead Bronze. Elastomers (diaphragms, resilient seats and O-rings) shall be EPDM. Control pilots shall be low-lead 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 weatherproof 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 125-27, <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	9 3/8	10 1/2	12	15	17 3/4	25 3/8	29 3/4	34	39	40 3/8	62
	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	63 3/4
C ANGLE	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	5	6 3/8	6 3/8	7 13/16	10 1/2	13 3/16	15 9/16	17 3/4	--	21 5/8	--
D ANGLE	SCREWED	3 1/8	3 7/8	4	4 1/2	--	--	--	--	--	--	--	--
	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	8 1/2	12 1/16	11 3/4	--	16 1/2	--
H	ALL	10	11	11	11	12	13	14	17	18	20	20	28 1/2

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

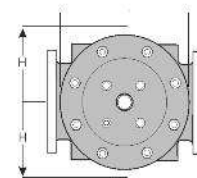
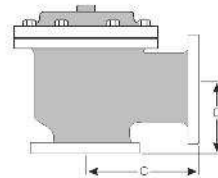
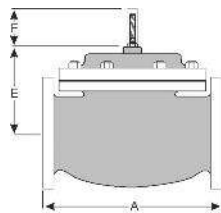
For maximum efficiency, the OCV control valve should be mounted in a piping system so that the valve bonnet (cover) is in the top position. Other positions are acceptable but may not allow the valve to function to its fullest and safest potential. In particular, please consult the factory before installing 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.

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.

## How to order your Model 125-27 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



QUALITY SYSTEM  
REGISTERED TO  
ISO 9001

Represented by:

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