

Hydrauli-Matic Electro-Hydraulic Gas Shut-Off Valves

Models MV/6, MVD/6 & MVDLE/6



FILE #MH16727



APPROVED



FILE #1596-SSV-8683



Warning

- Do not drop or jar the valve. Rough handling may damage the valve's internal components and cause unsafe operation.
- Do not take the valve apart. If you do, you will void all approvals, listings, and warranties. You may also damage the valve and cause unsafe operation, resulting in a fire or explosion. Return the valve to Eclipse-Dungs for replacement.

1.0 Specifications

Temperature Limits (Ambient)	-20° to +120°F	
Maximum Working Pressure	MV/6 & MVD/6 Series: 200"w.c. (7 PSI) MVDLE/6 Series: 80"w.c. (3 PSI)	
Gases	UL approved for natural gas, propane, butane, other non-corrosive gases and air. For other gases, contact Eclipse-Dungs.	
Opening Time	MV/6 & MVD/6 Series: Less than one second MVDLE/6 Series: Factory set for 15 to 20 seconds at 68°F; field adjustment of initial lift will vary that opening time.	
Closing Time	Less than 1 second	
Electrical	Voltage	120 VAC (+10%/-15%)/60Hz; 24VAC/60Hz available in some sizes
	Opening Current	See Table 1
	Holding Current	See Table 1
	Switching frequency	MV/6 & MVD/6 Series: 1000 per hour MVDLE/6 Series: up to 200 per hour, depending on opening time
Approvals	UL listed, CGA certified (except MVD 530/6) & FM approved	
Main Flow Adjustment	Manual for MVD and MVDLE	

Table 1—Opening & Holding Currents

All models are 120 VAC; those marked with an asterisk (*) are also available in 24 VAC models with the same current ratings.

MV Model Number	Req. VA	Opening & Holding Currents (Amps)	MVD Model Number	Req. VA	Opening & Holding Currents (Amps)	MVDLE Model Number	Req. VA	Opening & Holding Currents (Amps)
505/6	15	.13	505/6*	15	.13	205/6*	15	.13
507/6	25	.20	507/6*	25	.20	207/6*	25	.20
510/6	25	.20	510/6*	25	.20	210/6*	25	.20
512/6	60	.50	512/6	60	.50	212/6	60	.50
515/6	60	.50	515/6	60	.50	215/6	60	.50
520/6	100	.83	520/6	100	.83	220/6	60	.83
525/6	80	.66	525/6	80	.66	225/6	100	.66
530/6	100	.83	530/6	100	.83	230/6	80	.83

2.0 Installation

Warning

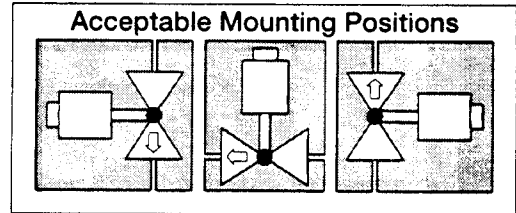
- Installation must be done with the supervision of a licensed burner technician. The system must meet all applicable codes. Improper installation may cause explosions, property damage and injuries.
- Direct contact between hardening masonry, concrete walls, floors and the solenoid valve is not permissible.
- **DO NOT** use the visual indicator on 1/2" size valves!

Valve Environment

Do not install the valve in anything but an indoor environment.

Mounting Positions

Do not loosen any color-coded screws on the valve body. Disassembling the valve will void all approvals and warranties, and may damage the valve, causing unsafe operation.



Do not mount the valve in any position other than those shown in the figure at right. Mounting the valve improperly may cause unsafe operation.

On valve sizes of 3/4" and larger, mount the valve so the position indicator on the bottom is clearly visible (refer to the I-515/525 Supplement which accompanies the indicator on proper installation).

Pipe Cleaning

Before installing the valve, remove pipe scale and other foreign matter that may have accumulated within the connecting pipes.

Piping Support

Do not use the valve to support adjacent piping.

Flow Direction

Gas flow through the valve must be in the direction indicated by the arrow on the valve body.

Piping Installation

Use the appropriate tools to secure the valve and apply counterpressure when threading pipe into the valve housing. Do not overtighten; refer to Table 2 for the maximum torque.

**Table 2
Max. Torque**

Pipe Size, "N.P.T.	Torque, In./Lbs.
1/2	375
3/4	560
1	750
1-1/4	875
1-1/2	940
2	1190
2-1/2	1310
3	1310

3.0 Wiring

Wiring Diagram

Remove the wiring box cover to expose the three terminals located inside, as illustrated in Figure 1.

Electrical Service

Be sure to check the nameplate on the valve to make certain electrical ratings correspond with the electrical service being used.

Electrical Code

Make all wiring connections to the valve in accordance with local or regional electrical codes.

Wire Ratings

Use 14 or 16 gauge wire rated for at least 75°C.

Wiring Box Accessibility

The wiring box can be rotated to accommodate piping. Loosen the protective caps (see Figures 3 or 4) and rotate the wiring box. Once the box is in a more suitable location, tighten the protective cap.

Conduit Piping Installation

Use only one of the two available conduit connections. After determining which one will be used, support the wiring box housing on the opposite side, as shown in Figure 2. It is then safe to remove the knockout with a screwdriver.

Use the appropriate tools to secure the wiring box and apply counterpressure when installing flexible conduit into the housing. Do not tighten the piping beyond 200 in./lbs. of torque.

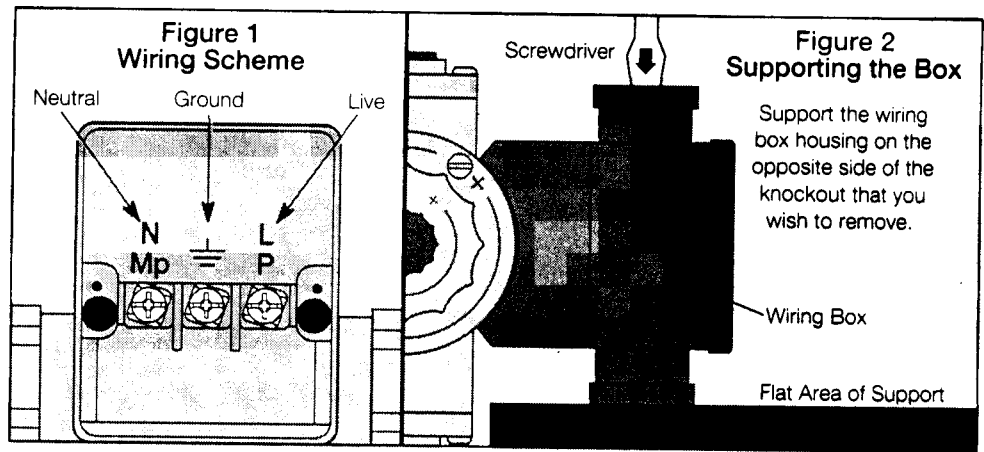
4.0 Maintenance

Warning

- Do not adjust or remove any screws or bolts which are sealed with a red or blue-colored compound. Doing so will void all approvals and warranties.

Test Procedure

This valve is a protective device. Check it at least once a month for proper operation. Simulate a system interlock failure by cutting off electrical power to the valve. If the valve does



4.0 Maintenance (continued)

not close within one second, immediately shut the system down, remove the valve, and return it to the factory for repair or replacement.

Main Flow Adjustment

MV Series: MV valves are fast opening and fast closing; there is no adjustment for them.

MVD Series: MVD valves are supplied with the main flow adjustment fully open. To adjust the gas flow, refer to Figure 3 while performing the following steps:

- 1) Located on top of the MVD valve is a flow adjustment cap. There are two screws in the cap; the holding screw is recessed and has blue sealing compound on it, while the pan head screw protrudes from the cap. Loosen the pan head screw until you can manually rotate the flow adjustment cap for 1-1/2 to 2 turns.
- 2) Following the illustration on top of the cap, turn the cap clockwise for gas flow reduction (-) and counterclockwise for gas flow increase (+).
- 3) Check the flame at the gas burner with an orifice or flow meter until you have achieved the desired flow.
- 4) Tighten the pan head screw on the flow adjustment cap.

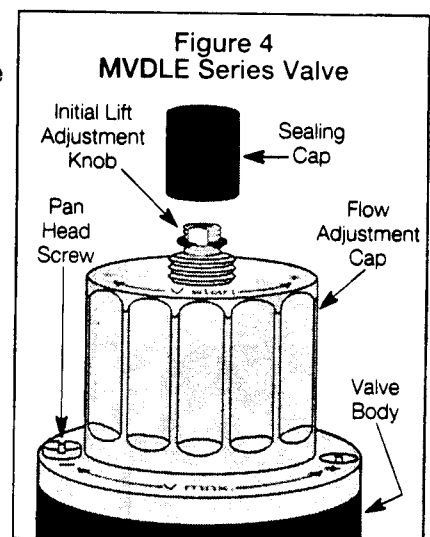
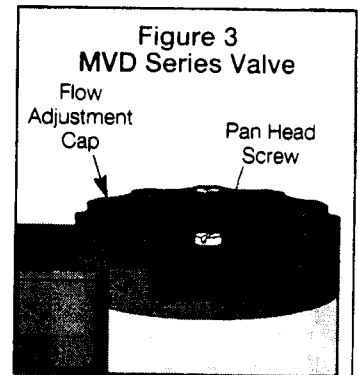
MVDLE Series: MVDLE valves are also supplied with the main flow adjustment fully open. To adjust the gas flow, refer to Figure 4 while performing the following steps:

- 1) Loosen the pan head screw until you can manually rotate the flow adjustment cap for 1-1/2 to 2 turns.
- 2) While holding the valve body, turn the flow adjustment cap clockwise for less gas (-) or counterclockwise for more gas (+), referring to the "V max." diagram on top of the flow adjustment cap base.
- 3) Check the flame at the gas burner with an orifice or flow meter until you have achieved the desired flow.
- 4) Tighten the pan head screw on the flow adjustment cap.

Initial lift is only a feature found on the MVDLE

Series valves. Initial lift adjustment allows the user to vary the initial gas flow and pressure through the valve as the valve seat begins to open. This adjustment can vary the initial gas flow between 0 and 70% of the total gas flow through the valve. Adjusting the initial lift only affects the volume of initial gas flow and has little appreciable effect on the valve's total opening time.

(Initial lift adjustment instructions continue onto the next page)



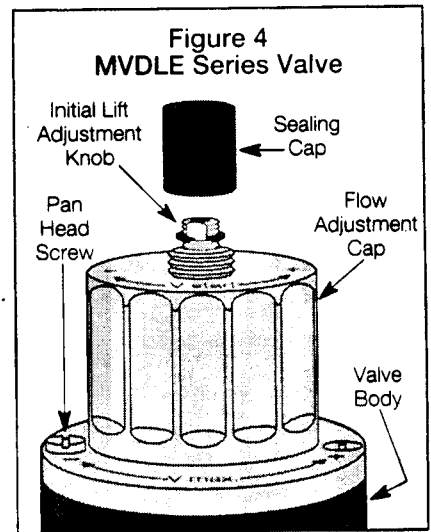
Initial Lift Adjustment

4.0 Maintenance (continued)

Initial Lift Adjustment (cont'd)

All MVDLE valves are shipped from the factory with no initial lift (0%). To adjust the stroke, refer to Figure 4 while performing the following steps:

- 1) Unscrew the sealing cap to expose the initial lift adjustment knob.
- 2) On 3/4" through 2" valve sizes, the sealing cap also serves as a tool. Turn the cap over and insert into the corresponding slot on the top of the adjustment knob. On 2-1/2" and 3" valve sizes, a wrench must be used on the adjustment knob. Turn the knob clockwise (-) for a shorter rapid stroke or counterclockwise for a longer rapid stroke (+), referring to the "V start" diagram on top of the flow adjustment cap.
- 3) Once the desired initial lift has been achieved, turn the sealing cap back over and reinstall.



Valve Repair or Replacement

Return the valve to Eclipse-Dungs for replacement. Do not try to repair the valve yourself, or you may interfere with the valve's normal operation and cause a fire or explosion.

If you disassemble this valve, you will void its FM approval, CGA certification, UL listing, and the factory warranty and exchange policies.

5.0 Flow Measurement

Figure 5 relates the pressure drop to natural gas flow through the valve.

For greatest accuracy, a straight, uninterrupted run of pipe should extend ten pipe diameters upstream and downstream of the valve.

Figure 5—Flow vs. Pressure Drop

NOTE: These flow rates apply only to valves in the fully open position.

