



SPECIFICATIONS

DMV-D/60202 Two normally closed safety shut off valves in one housing. Fast opening, fast closing. Adjustable max. flow on valve 2.

DMV-DLE/60202 Two normally closed safety shut off valves in one housing. Valve 1 fast opening, fast closing. Valve 2 slow opening, fast closing. Adjustable max. flow and initial lift on valve 2.

Body size	Flange Size
DMV-D(LE) 701/602	1/2" - 1" NPT
DMV-D(LE) 702/602	1" - 2" NPT
DMV-D(LE) 703/602	1" - 2" NPT

Gases
Natural gas, Propane, Other Noncorrosive gases

Maximum Operating Pressure
7 PSI (500 mbar)

Ambient / Fluid Temperature
-40 °F to +150 °F (-40 °C to +65 °C)

Electrical Ratings (Both valves inclusive)
110 to 120 Vac / 50 to 60 Hz
220 to 240 Vac / 50 to 60 Hz
24 Vdc, 24 Vac / 50 to 60 Hz

Power Consumption
DMV-D(LE) 701: 45 VA
DMV-D(LE) 702: 65 VA
DMV-D(LE) 703: 90 VA

Electrical Connection
DIN-Connector with 1/2" NPT conduit adapter

Operating Time
100 % duty cycle

Classification of Valve V1 and V2
Safety Shut Off Valve: UL 429, FM 7400
ANSI Z21.21 • CSA 6.5 C/I Valves

Closing Time (Valve 1 & Valve 2)
< 1 second

Opening Time

DMV-D/602: V1 & V2 < 1 sec.
DMV-DLE/602: V1 < 1 sec.; V2 10 to 20 sec. at 70 °F

Main Flow Setting (DMV-D/602 & DMV-DLE/602)

Adjustable on V2: <10 to 100% of total flow

Initial Lift Adjustment (DMV-DLE/602)

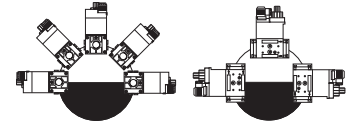
Adjustable on V2: 0 to 70 % of total flow

Materials in contact with Gas

Housing: Aluminum, Steel
Sealings on valve seats: NBR-based rubber

Mounting Position

Solenoid upright vertical
to solenoid horizontal

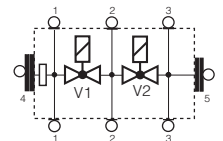


Strainer

23 Mesh, installed in the housing upstream V1

Test Port

G 1/8 ISO 228 taps available on both sides; upstream of V1, between V1 and V2, downstream of V2, and on both flanges



Position Indication (optional)

Visual Indicator
CPI 400 w/ visual indication and electrical switch (SPDT)

Approvals

UL Recognized Component: File No. MH16727
CSA: Certified File No.157406
FM Approved: ReportJ.1.1Z6A0.AF

ATTENTION

- | | |
|--|--|
| <ul style="list-style-type: none"> • Read these instructions carefully. • Failure to follow them and/or improper installation may cause explosion, property damage and injuries. • Installation must be done with the supervision of a licensed burner technician. • The system must meet all applicable national and local code requirements. • Check the ratings in the specifications to make sure that it is suitable for your application. | <ul style="list-style-type: none"> • Never perform work if gas pressure or power is applied, or in the presence of an open flame. • Once installed, perform a complete checkout including leak testing. • Label all wires prior to disconnection when servicing. Wiring errors can cause improper and dangerous operation • Verify proper operation after servicing. |
|--|--|

KARL DUNGS INC.

524 Apollo Drive, Suite 10 Lino Lakes, MN 55014 U.S.A.

Phone: (651) 792-8912 Fax: (651) 792-8919 E-mail: info@karldungusa.com

CAPACITY

Capacity in CFH at pressure drop of 1 inch water column; natural gas, sp.gr.=0.64

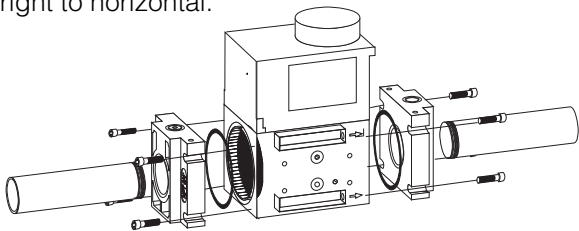
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
DMV-D(LE) 701/602	345	429	457	-	-	-
DMV-D(LE) 702/602	-	-	1065	1277	1368	1430
DMV-D(LE) 703/602	-	-	1230	1532	1698	1795

MOUNTING

- Examine the DMV-D(LE)/60202 for shipping damage.
- The main gas supply must be shut off before starting the installation.
- The inside of the DMV-D(LE)/60202, the flanges, and piping must be clean and free of dirt, remove all dirt and debris before installing the DMV-D(LE)/60202. Failure to remove dirt/debris could result in valve damage or improper performance.

Recommended Procedure to Mount the Flanges

- Unpack the DMV-D(LE) 701 (702/703) and remove the 8 M6 (M8) socket cap head screws using a 5 mm (6 mm) Allen wrench.
- Remove the two white protective plastic covers from the DMV-D(LE) body.
- Make sure the O-rings and the grooves are clean and in good condition.
- Install the DMV-D(LE) with the gas flow matching the direction indicated by the arrows on the casting.
- Mount the DMV-D(LE) only with the solenoid vertical upright to horizontal.



- Clean the mounting surface of the flanges. Make sure they are in good condition.
- Attach the DMV-D(LE) to the flanges using the M6 (M8) socket cap screws supplied.
- Use a 5mm Allen wrench for the DMV-D(LE) 701.
- Use a 6mm Allen wrench for the DMV-D(LE) 702/703.
- Tighten the screws in a crisscross pattern
- Do not overtighten the screws. Follow the maximum torque values below.

Recommended Torque

M6	M8	Screw Size
62	134	[lb-in]

Recommended Piping Procedure

- Use new, properly reamed and threaded pipe free of chips.
- Apply good quality pipe sealant, putting a moderate amount on the male threads only. If pipe sealant lodges on the valve seat, it will prevent proper operation. If using LP gas, use pipe sealant rated for use with LP gas.
- Do not thread pipe too far. Valve distortion and/or mal function may result from excess pipe in the valve body.
- Apply counter pressure only a parallel jaw wrench only to the flats on the flange when screwing the pipe into the flanges.
- Do not overtighten the pipe. Follow the maximum torque values listed below.

Recommended Torque for Piping

1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	NPT pipe
375	560	750	875	940	1190	[lb-in]

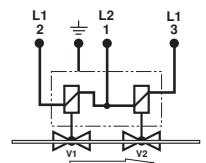
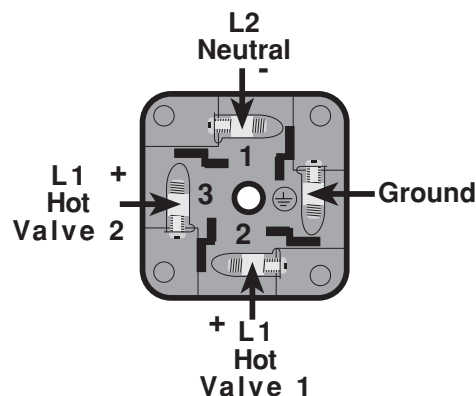
- After installation is complete, perform a leak test.

CAUTION: If the flow is not in the same direction of the arrows the valves will not operate properly.

WIRING

- Disconnect all power to the valves before wiring to prevent electrical shock and equipment damage.
- Do not exceed the electrical ratings given in the specifications and on the valve.
- Attach a flexible 1/2" NPT conduit to the DIN connector.
- Route the wires through the conduit and the DIN connector.
- Use 14 or 16 guage wire for at least 75°C (167°F).
- Connect the wiring to the appropriate screw terminals in the DIN connector. See diagram to the right.
- Plug the DIN connector to the terminals. Fasten the DIN connector with the screw supplied. Torque to 5 lb-in.

DIN Connector screw terminal connections



CAUTION: All wiring must comply with local electrical codes, ordinances and regulations. An ultimate electrical enclosure must be provided.

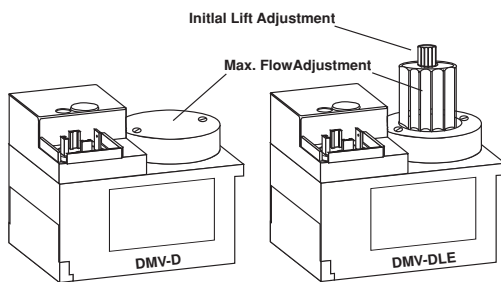
VALVE ADJUSTMENT

Flow Setting

- The valves are factory set with the flow adjustment fully open.
- **CAUTION:** Make sure the flow of gas does not create a hazard.
- Locate the flow adjustment on top of valve 2 on the DMV-D/602 (black knob) DMV-DLE/602 (base of the hydraulic brake). There are two screws, the holding screw is recessed and has a blue sealing compound on it, while the pan head screw protrudes from the cap.
- Loosen the pan head screw until you can freely rotate the flow adjustment.
- Turn clockwise for less gas or counterclockwise for more gas.
- Check the flow at the burner with an orifice or flow meter.
- Tighten the pan head screw on the adjustment cap.



CAUTION: 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.



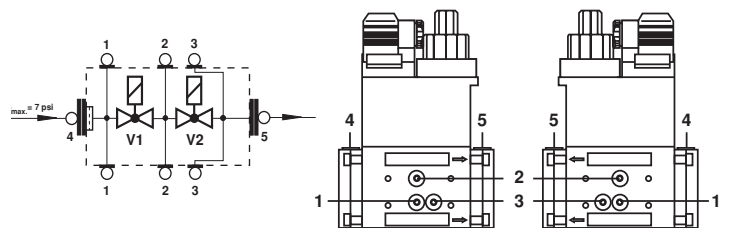
Initial Lift Adjustment (DMV-DLE/602 only)

The initial lift adjustment varies the initial gas flow through the valve as the valve seat begins to open. This adjustment can vary the initial flow between 0 % and 70% of the total gas flow; 0 to 25% of stroke. All DMV-DLE/602 valves are factory set with no initial lift. To adjust the lift proceed as follows:

- Unscrew the small black cap on top of the flow adjustment cap to expose the initial lift adjustment knob.
- The black cap also serves as tool; turn the cap over and insert it on the slot on the adjustment knob.
- Turn the knob clockwise for a min. initial lift or counterclockwise for a max. initial lift.
- Once the desired initial fast lift has been achieved, reinstall the black cap.

Test Ports

The G 1/8 ISO 228 taps are available on both sides upstream V1, between V1 and V2, downstream V2, and on both flanges. The G 1/8 test nipple (# D219 008) can be screwed in any of these pressure tap ports.



VALVE LEAKAGE TEST

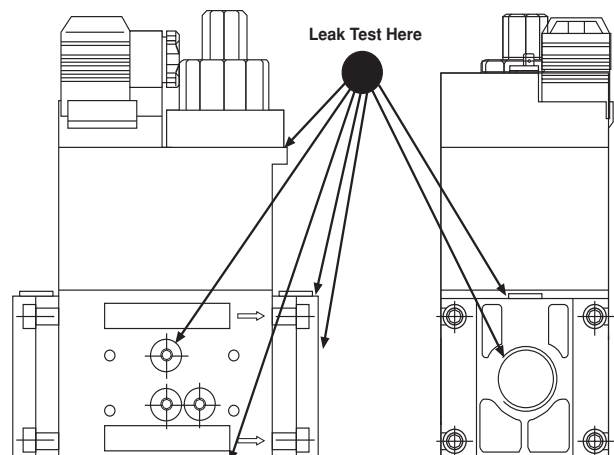
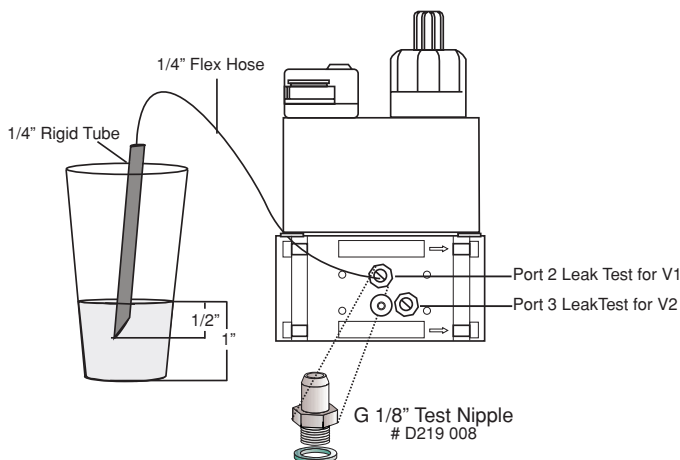
This test checks the sealing capabilities of the DMV-D(LE)/60202 automatic shutoff valves. This test requires test nipples installed in the downstream accessory port of both automatic shutoff valves to make the required hose connection. (Port 2 and 3)

Only qualified personnel should perform this test at the initial burner system startup, and annually or more depending on the application, environmental parameters, and the requirements of the authority having jurisdiction.

It is recommended that this test be included in scheduled inspection and maintenance procedures.

Use the illustration below as a reference.

- 1) Externally leak test the valve. DUNGS recommends using an all purpose liquid leak detector solution (Snoop™ or a soapy water solution). Apply the liquid leak detector solution to the areas indicated below. The presence of bubbles indicate a leak. Be sure to test any accessories mounted to the Valve. (Continued on page 4)



- 2) De-energize valve # 1 and #2.
- 3) Close the upstream manual ball valve, and close the downstream manual ball valve.
- 4) Be sure that both test nipples are properly installed in port 2 and 3 and are leak tight.
- 5) Fill a glass of water at least 1 inch from the bottom, Connect a 1/4" flexible hose to a rigid tube. The rigid tube shall be 1/4 in. diameter and have a 45° cut at the end that is not connected to the flexible hose. The rigid tube can be made from either aluminum, copper or plastic.
- 6) Using a screwdriver, slowly open the V1 test nipple (port 2) by turning it counter clockwise to depressurize the volume between the two valves.
- 7) Connect the 1/4" flexible hose to test nipple.
- 8) Open the upstream manual ball valve.
- 9) Immerse the 1/4 in. tube vertically 1/2 in. (12.7 mm) into the glass of water.
- 10) If bubbles emerge from the rigid tube, let the rate stabilize and count the number of bubbles appearing during a 10 second period. (See chart below for leakage rates.)

- 11) Repeat the same procedure for valve V2 (port 3), except that valve #1 needs to be opened at step 7 above. (Energize only terminal 2 on the DIN connector).

After completing the above tests:

- 12) Close the upstream and downstream manual ball valves. De-energize the safety shutoff valves.
- 13) Remove the flexible hose, and close the test nipples.
- 14) Open the upstream manual ball valve, and energize both valves.
- 15) Use soapy water to leak test all test nipples to ensure that there are no leaks.
- 16) De-energize the safety shutoff valves.
- 17) Open the downstream manual ball valve.



WARNING: If leakage values are exceeded, replace valve immediately.

Model	Allowable Leakage*	# of Bubbles in 10 sec		
		AIR	Natural Gas	LP
DMV D(LE) 701/602 (507/11)	264 cc/hr	5	6	4
DMV D(LE) 702/602 (512/11)	494 cc/hr	9	11	7
DMV D(LE) 703/602 (520/11)	494 cc/hr	9	11	7

*Based on air, and test conditions per UL 429 Section 29. (Air or inert gas at a pressure of 1/4 psig and also at a pressure of one and one-half times maximum operating pressure differential, but not less than 1/2 psig. This test shall be applied with the valve installed in its intended position.) Volume of bubble defined in Table 2 of FCI 70-2-1998.

FLOW CURVE

