

V4843/8843B,C,N; V4844/8844B,C,L,N Combination Diaphragm Gas Valves

The solenoid-operated V4843/8843 and V4844/8844B,C,L,N Combination Diaphragm Gas Valves combine the function of safety shut-off and pressure regulation in a single unit. The valves are suitable for use on large boilers, unit heaters, duct furnaces, make-up air and roof top units.



- Models are available for natural and liquid petroleum (LP) gases.
- Line voltage two-wire thermostat or controller is used with a V4843; V8843 is used with 24V thermostat/controller.
- V4844 is used with line voltage dual stage thermostat or controller; V8844 is used with 24V dual stage thermostat/controller.
- Valve models L,N are rapid opening (less than six seconds) and fast closing and are available for LP and natural gases respectively.

- Slow opening B,C valve models are available for natural and LP gases respectively.
- Valve closes on power failure; recommended for final shutoff service.
- Maximum closing time is 1.5 seconds.
- Valves are rated for 0.5 psi (3.4 kPa).

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Specifications

MODELS:

- V4843B/V8843B Combination Valves: Slow-opening single-stage pressure regulation for use with natural gas.
- V8843C Combination Valve: Slow-opening, single-stage pressure regulation for use with LP gas.
- V4843N/V8843N Combination Valves: Rapid opening, single-stage pressure regulation for use with natural gas.
- V4844B/V8844B Combination Valves: Slow-opening, two-stage pressure regulation for use with natural gas.
- V4844C/V8844C Combination Valves: Slow-opening, two-stage pressure regulation for use with LP gas.
- V4844L/V8844L Combination Valves: Rapid opening, two-stage pressure regulation for use with LP gas.

- V4844N/V8844N Combination Valves: Rapid opening, two-stage pressure regulation for use with natural gas.
- TYPE OF GAS:** Refer to Tables 1 and 2.
- VALVE CAPACITY:** Refer to Table 3.
- VALVE PATTERN:** Straight-through, nonoffset.
- VALVE BODY:** Die-cast aluminum.
- PRESSURE TAPPING:** 1/8 inch NPT threads.
- PRESSURE REGULATOR VENT TAPPING:** 5/16-24 UNF threads.
- VALVE OPENING TIME:** Refer to Tables 1 and 2.
- VALVE CLOSING TIME:** On power failure, a maximum of 1.5 seconds.
- MAXIMUM OPERATING PRESSURE:** Refer to Tables 1 and 2.

TABLE 1—V4843/V8843 MODELS AVAILABLE.

Model	Voltage and Frequency	Pipe Size (in.)	Thread Type	Maximum Operating Pressure		Opening Time (sec)	Pressure Regulation	Type of Gas
				psi	kPa			
V4843B	120V, 60 Hz	1, 1-1/4, 1-1/2, 2	NPT	0.5	3.4	3-25	Single stage	Natural ^a
V4843N	120V, 60 Hz	1, 1-1/4, 1-1/2	NPT	0.5	3.4	<6	Single stage	Natural ^a
V8843B	24V, 60 Hz	1, 1-1/4, 1-1/2, 2	NPT	0.5	3.4	3-25	Single stage	Natural ^a
V8843C	24V, 60 Hz	1, 1-1/4	NPT	0.5	3.4	3-25	Single stage	LP
V8843N	24V, 60 Hz	1, 1-1/4, 1-1/2	NPT	0.5	3.4	<6	Single stage	Natural ^a

^a Includes natural gas, mixed air-natural gas, LP gas-air.

Ordering Information

When purchasing replacement and modernization products from your TRADELINE[®] wholesaler or your distributor, refer to the TRADELINE Catalog or price sheet for complete ordering number, or specify—

1. Valve number (if available)
2. Pipe size.
3. Voltage.
4. Natural or LP gas.
5. Valve type; single or two-stage pressure regulation.
6. Rapid or slow opening.
7. Transformer AT72D for V8843, V8844 models.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your Local Honeywell Home and Building Control Sales Office (check white pages of phone directory).
2. Home and Building Control Customer Logistics
 Honeywell Inc., 1885 Douglas Drive North
 Minneapolis, Minnesota 55422-4386 (612) 951-1000

(In Canada—Honeywell Limited/Honeywell Limitée, 740 Ellesmere Road, Scarborough, Ontario M1P 2V9) International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

TABLE 2—V4844/V8844 MODELS AVAILABLE.

Model	Voltage and Frequency	Pipe Size (in.)	Thread Type	Maximum Operating Pressure		Opening Time (sec)	Pressure Regulation	Type of Gas
				psi	kPa			
V4844B	120V, 60 Hz	1, 1-1/4, 1-1/2	NPT	0.5	3.4	3-25	Two stage	Natural ^a
V4844L	120V, 60 Hz	1-1/4	NPT	0.5	3.4	<6	Two stage	LP
V4844N	120V, 60 Hz	1, 1-1/4, 1-1/2, 2	NPT	0.5	3.4	<6	Two stage	Natural ^a
V8844B	24V, 60 Hz	1, 1-1/4, 1-1/2, 2	NPT	0.5	3.4	3-25	Two stage	Natural ^a
V8844C	24V, 60 Hz	1, 1-1/4, 1-1/2	NPT	0.5	3.4	3-25	Two stage	LP
V8844L	24V, 60 Hz	1, 1-1/4	NPT	0.5	3.4	<6	Two stage	LP
V8844N	24V, 60 Hz	1, 1-1/4, 1-1/2, 2	NPT	0.5	3.4	<6	Two stage	Natural ^a

^a Includes natural gas, mixed air-natural gas, LP gas-air.

TABLE 3—FLOW CAPACITIES.

Pipe Size (in.)	AGA Certified 1.0 in. pd Natural Gas cfh	Btuh per 1000 cfh Natural Gas	Regulation Capacities 0.64 sp gr Natural Gas	
			Maximum cfh	Minimum cfh
1	1000	1,000,000	1000	300
1-1/4	1600	1,600,000	1600	480
1-1/2	2300	2,300,000	2300	780
2	3000	3,000,000	3000	870

POWER CONSUMPTION (Maximum):

V4843 6W
V8843 6W
V4844 12W
V8844 12W

AMBIENT TEMPERATURE RATING:

V4843B,N: -40°F to 175°F.
V4844B,L,N: -40°F to 175°F.
V8843B,C,N: -40°F to 150°F.
V8844B,C,L,N: -40°F to 150°F.

MAXIMUM FLUID TEMPERATURE:

V4843B,N: 175°F.
V4844B,L,N: 175°F.
V8843B,C,N: 150°F.
V8844B,C,L,N: 150°F.

DIMENSIONS: Refer to Fig. 1.

WEIGHT:

Pipe Size (in.)	lb	kg
1	4.1	1.9
1-1/4	3.9	1.8
1-1/2	4.9	2.3
2	4.5	2.1

MOUNTING POSITION: Standard mounting position is horizontal upright (see Installation section). The following models are a limited horizontal mounting position (see Installation section): V4844B1050, V4844N1087,-1129.

ELECTRICAL TERMINATIONS:

V4843 Models: Conduit cover with two 5/8 inch, 18 AWG, 221°F (105°C) leadwires.

V4844 Models: Conduit cover with three 5/8 inch, 18 AWG, 221°F (105°C) leadwires. V4844B1050, V4844N1087, 1129 have three 7/8 inch, 18 AWG, 221°F (105°C) leadwires.

V8843 Models: Two screw terminals.

V8844 Models: Three screw terminals.

PRESSURE REGULATOR VENT(S): 5/16-24 UNF internal tapping.

REGULATOR ADJUSTMENT RANGES:

Low Pressure Regulator:

V4844/8844B,C,L,N: Low pressure regulator setpoint factory set at 0.8 in. wc natural gas (B,N models) or 1.4 in. wc LP gas (C,L models). Setpoint is field adjustable between 0.8 and 2.0 in wc natural gas or 1.4 to 4.2 in. wc LP gas.

High Pressure Regulator:

V4843/8843B,C,N and V4844/8844B,C,L,N: High pressure regulator setpoint factory set at 3.5 in. wc natural gas (B,N models) or 10.0 in. wc LP gas (C,L models). Setpoint is field adjustable between 3.0 and 4.5 in. wc natural gas or 8.8 and 11.5 in. wc LP gas.

SPECIFICATIONS

NOTE: A 1.2 in. wc minimum differential is required for proper regulation; i.e., 4.7 in. wc inlet pressure for good regulation at 3.5 in. wc outlet setpoint.

APPROVALS:

Underwriters Laboratories Inc:
 V4843B,C,N; V4844 B,C,L,N: UL listed.
 V8843B,C,N; V8844B,C,L,N: UL component recognized. File no. MH1639.
 International Approval Services (IAS) Design Certified:
 AGA report no. LR95329-1. (IAS is a joint venture of CGA and AGA Laboratories.)

ACCESSORIES:

AT72D Transformer (40 VA) for all V8843, V8844 models.
 204480 Regulator Vent Pipe Connector.

GAS VALVE SIZING

1. Check the burner nameplate for the type of gas used, and the gas flow capacity. The capacity will be listed in Btuh (Btu per hour) or in cfh (cubic feet per hour).

2. Contact the local gas utility for information on the specific gravity (sp gr) and on the Btu per cubic foot (Btu/cf) for the type of gas used.

3. Find the capacity in cfh. If the capacity is listed in Btuh, convert to cfh by the following formula:

$$\text{Capacity in cfh} = \frac{\text{Btuh (from burner nameplate)}}{\text{Btu/cf (from gas utility)}}$$

4. For gases with specific gravities other than 0.64, multiply the burner cfh by the proper conversion factor in Table 4.

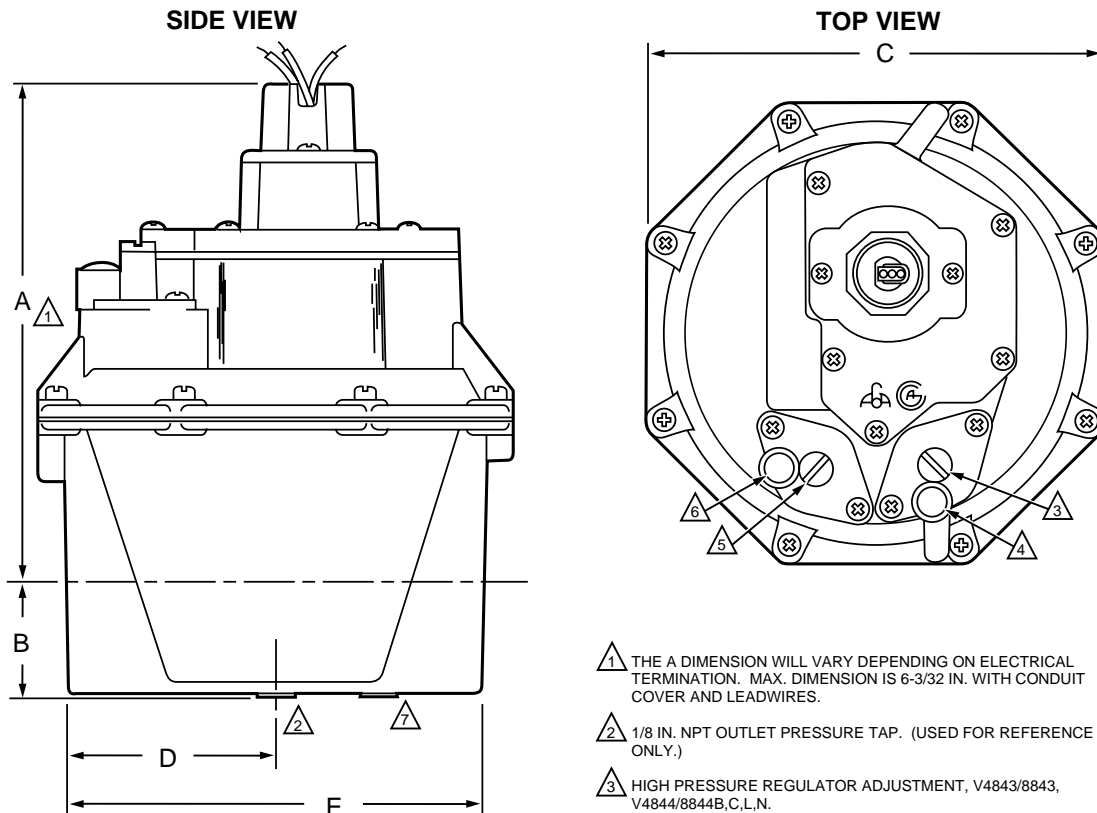
5. Use the correct capacity in cfh when determining the gas valve size from Fig. 2, 3, 4 or 5.

6. Determine the maximum pressure drop across the valve, and draw a vertical line at this pressure on Fig. 2, 3, 4 or 5.

7. At the intersection of the vertical line and the pressure curve, draw a horizontal line to intersect the flow (capacity) scale. The intersection of the horizontal line and the flow scale indicates the capacity for the pressure drop.

8. If the capacity is insufficient, use the next larger size valve capacity vs. pressure drop curve and repeat steps 6 and 7.

Fig. 1—Mounting dimensions of V4843/8843, V4844/8844B,C,L,N Combination Valves in in. (mm).



- △1 THE A DIMENSION WILL VARY DEPENDING ON ELECTRICAL TERMINATION. MAX. DIMENSION IS 6-3/32 IN. WITH CONDUIT COVER AND LEADWIRES.
- △2 1/8 IN. NPT OUTLET PRESSURE TAP. (USED FOR REFERENCE ONLY.)
- △3 HIGH PRESSURE REGULATOR ADJUSTMENT, V4843/8843, V4844/8844B,C,L,N.
- △4 HIGH PRESSURE REGULATOR VENT (5/16-24 UNF TAPPED).
- △5 LOW PRESSURE REGULATOR ADJUSTMENT, V4844/8844B,C,L,N.
- △6 LOW PRESSURE REGULATOR VENT (5/16-24 UNF TAPPED).
- △7 1/8 IN. NPT INLET PRESSURE TAP. (USED FOR REFERENCE ONLY.)

VALVE SIZE (IN)	TYPICAL DIMENSIONS									
	A △1		B		C		D		E	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
1	5-3/32	129	1-1/8	29	6	152	2-19/32	66	5-3/16	132
1-1/4	5-3/32	129	1-1/8	29	6	152	2-19/32	66	5-3/16	132
1-1/2	6-3/32	155	1-1/2	38	6	152	2-5/8	67	5-1/4	133
2	6-3/32	155	1-1/2	38	6	152	2-5/8	67	5-1/4	133

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TABLE 4—CONVERSION FACTORS.

Type of Gas	sp gr (average)	Multiply cfh by
Manufactured	0.60	1.033
Mixed	0.70	0.956
LP-Propane	1.53	0.647
LP—Butane	1.98	0.569

- To size two identical valves piped in series:
1. Find the cfh for the type of gas used.
 2. Consider both valves as one unit. Determine the total pressure drop across the unit.
 3. Find the pressure drop across the first valve by assuming it to be 45 percent of the total pressure drop.
 4. Find the valve size from Fig. 2, 3, 4 or 5.
 5. The second valve will be the same size as the first valve.
 6. See curves in Figs. 2, 3, 4 or 5 for capacities of V4843/8843A and V4843/8843B,N, V4844/8844B,N installed in series.



CAUTION

If the V4843/8843, V4844/8844 Combination Valves are to be used in a redundant diaphragm valve system, it is recommended that the redundant valve be positioned upstream from the combination valve. If the redundant valve is in the downstream position, be careful when setting (within the specified ranges) the combination valve regulator set point(s) to assure opening of the redundant diaphragm valve.

Fig. 2—Capacity vs. pressure drop curves for 1 in. valve.

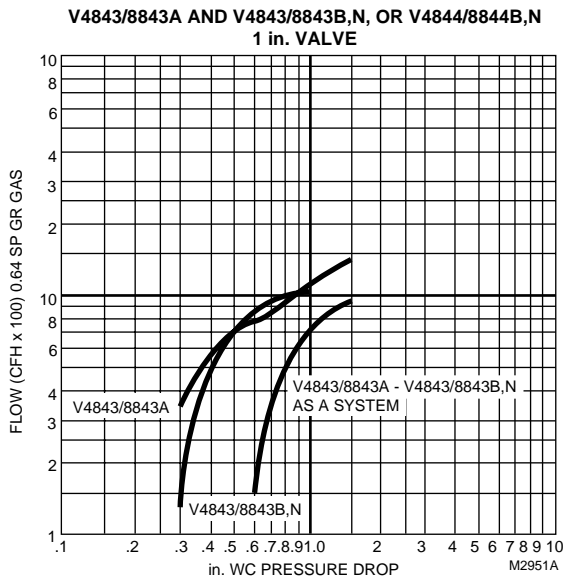


Fig. 3—Capacity vs. pressure drop curves for 1-1/4 in. valve.

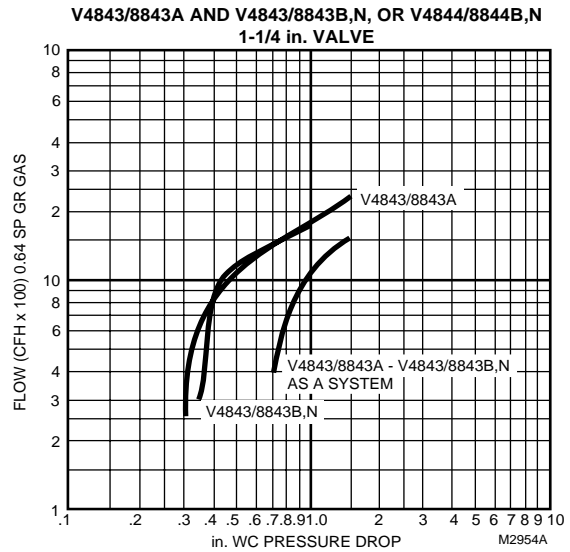


Fig. 4—Capacity vs. pressure drop curves for 1-1/2 in. valve.

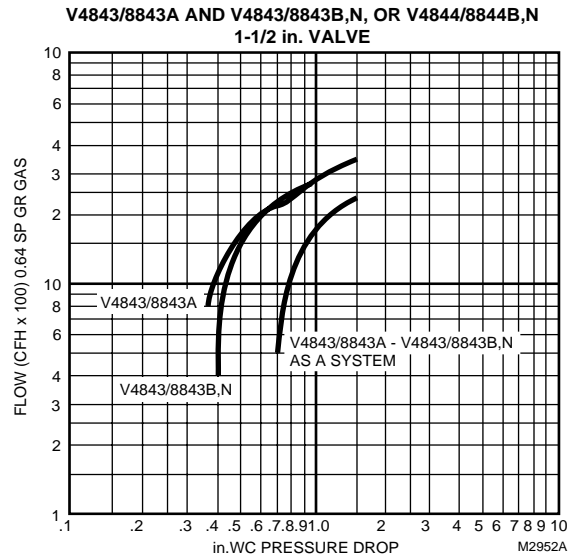
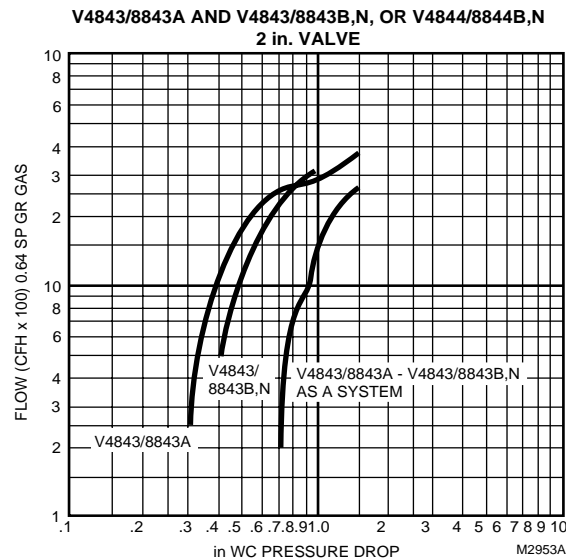


Fig. 5—Capacity vs. pressure drop curves for 2 in. valve.



Installation

WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced, flame safe-guard control technician.
4. After installation is complete, check out product operation as provided in these instructions.



CAUTION

1. Turn off gas supply before starting installation.
2. Disconnect power supply before beginning installation to prevent electrical shock and equipment damage.
3. Do not remove seal over valve inlet or outlet until ready to connect piping.

PREPARE PIPING AND INSTALL VALVE (Fig. 6)

1. Use new, properly reamed pipe free from chips.
2. Do not thread pipe too far. Valve distortion or malfunction may result from excess pipe in valve.
3. Apply pipe dope that is resistant to the action of LP gas, putting a moderate amount on the male threads only. If pipe dope lodges on the valve seat, it will prevent proper closure.
4. Install valve in the pipe line in a horizontal upright position with the gas flow in the direction indicated by the arrow on the casting. The valve must be upright (electrical connection tower in up position) on a horizontal axis with respect to the inlet connection (see Fig. 6).

Models V4844B1050, V4844N1087, V48844N1129 may be mounted in the limited horizontal position (any position from upright to 90 degrees from upright on a horizontal axis with respect to the inlet connection).

5. The gas flow *must* be in the same direction as the arrow on the bottom of the valve body.



WARNING

If flow is not in the direction of the arrow, the valve may not shut off.

6. Apply a parallel jaw wrench only to the flat next to the pipe being inserted. A wrench applied to the valve body itself or to the end farthest from the pipe being inserted may distort the casting, causing a malfunction.

7. Make electrical connections as illustrated in the appropriate wiring diagram (see Figs. 8, 9, 10, 11, 12).

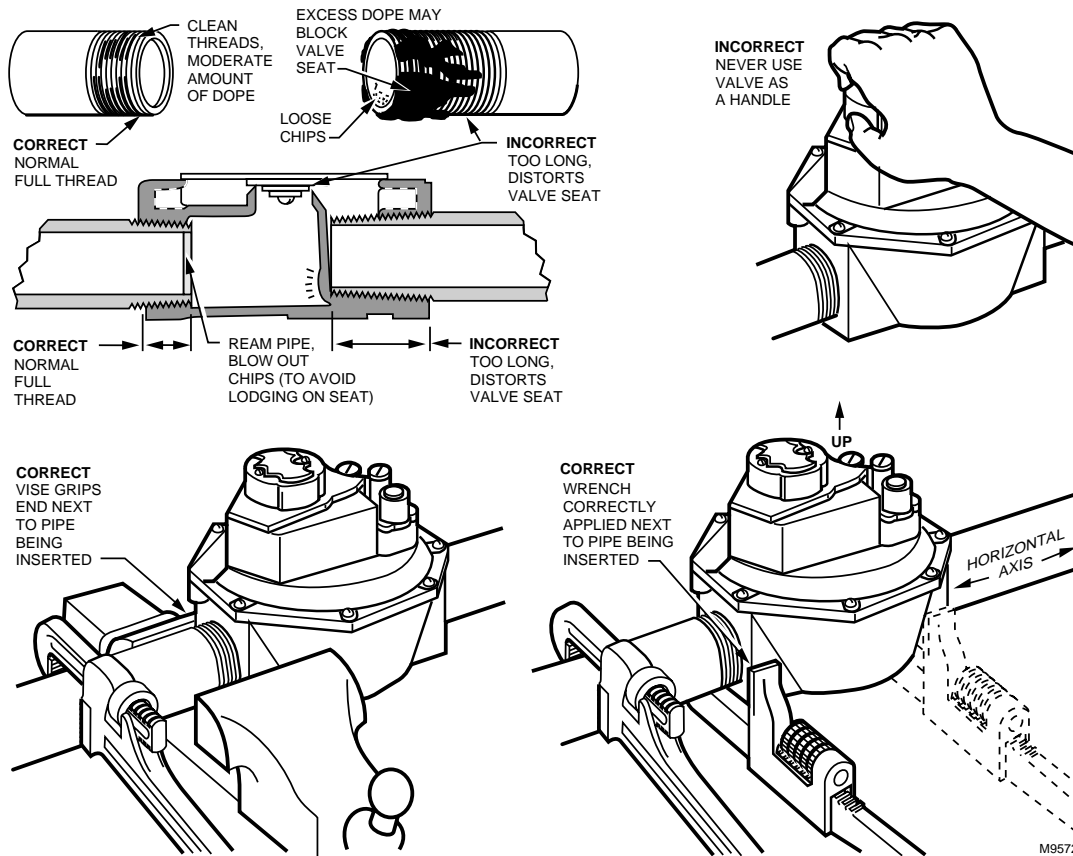
8. Turn on main gas and check valve installation for leaks with a soap solution.

9. The V4843/V8843, V4844/V8844 combination valve pressure regulating sections are provided with integral vent limiters and threaded connections for vent piping (integral 5/16 - 24 UNF). If piping to the outdoors is required, use 204480 vent tapping .

10. Perform the valve leak test (see Fig. 7).

This test checks the tightness closure of a gas safety shutoff valve. It should be performed by a qualified technician during the initial startup of a burner system, or whenever the valve is replaced (see Service Information section). It is recommended that this test also be included in scheduled inspection and maintenance procedures. For a periodic inspection test, follow steps 1, 3, 4, 5, 8, 9, 10, 12, 13 16 and 17.

Fig. 6—Preparing the piping and installing the valve.



1. De-energize the control system to assure that there is no power to the safety shutoff valve (C) shown in Fig. 7.
2. Close the upstream manual gas cock (A).
3. Make sure the manual test petcock (F) is closed in the leak test tap assembly (D).
4. Remove the leak test tap plug (valve outlet pressure tap may be used as test tap) and connect the test apparatus to the leak test tap (D).
5. Close the downstream manual gas cock (E).
6. Open the upstream manual gas cock (A).
7. Run the safety shutoff valve (C) to its fully open position (through the safety system); then immediately de-energize the system to close the valve.
8. Immerse a 1/4 in. tube vertically 1/2 in. (12.7 mm) into a jar of water.
9. Slowly open the test petcock (F).
10. When the rate of bubbles coming through the water stabilizes, count the number of bubbles appearing during a ten second period. Each bubble appearing during a ten second period represents a flow rate of approximately 0.001 cfh.

To meet U.S. requirements, leakage must not exceed the following values:

V48/V88 Pipe Size (in.)	Allowable ^a Leakage	Number of Bubbles per 10 sec
1, 1-1/4	353	13
1-1/2, 2	453	16

^a Based on air at standard conditions, test pressures in accordance with ANSI Z21.21, Section 2.4.2 and a maximum of 235 cc/h per inch of seal-off diameter. Seal-off diameter is not to be confused with pipe size.

11. Close the upstream manual gas cock (A).
12. Close the test petcock (F), remove the test apparatus, and replace the leak test tap plug (D).
13. Open the upstream manual gas cock (A) and energize the safety shutoff valve (C).
14. Test with soap bubbles to assure that there is no leak at the test tap (D).
15. De-energize the safety shutoff valve (C).
16. Open the downstream manual gas cock (E).
17. Restore the system to normal operation.

11. After the installation is complete, cycle the valve several times with the manual fuel shutoff cock closed. Make sure the valve and actuator function properly.

12. If the installation is gas tight and functioning properly, proceed to the Checkout section.

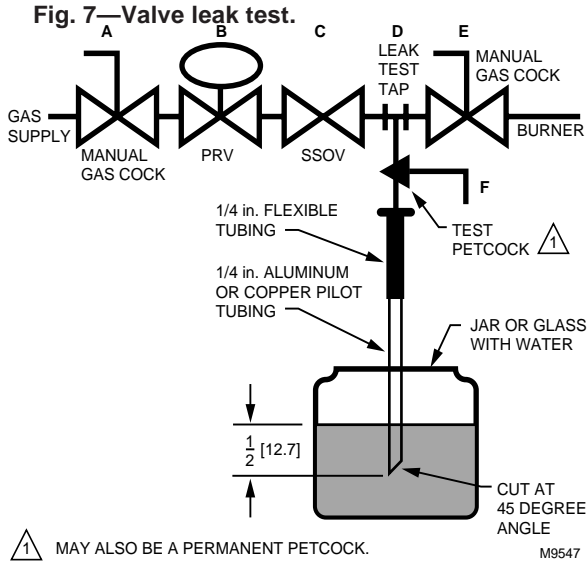
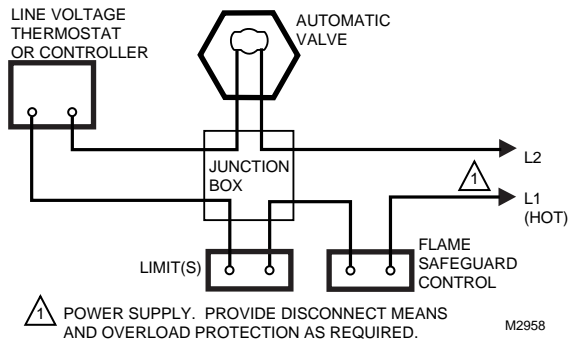


Fig. 8—Typical wiring diagram for V4843B,C,N.



WIRING

! CAUTION

Disconnect power supply before making connections to prevent electrical shock and equipment damage.

1. All wiring must comply with applicable electrical codes, ordinances and regulations. Use NEC Class 1 (line voltage) wiring.
2. For normal installations, use moisture-resistant No. 14 wire suitable for at least 167°F (75°C) if using a flame safeguard primary control, or for at least 194°F (90°C) if using a flame safeguard programming control.

3. For high temperature installations, use moisture-resistant No. 14 wire selected for a temperature rating above the maximum operating temperature.

4. Check the power supply circuit. The voltage and frequency must match those of the valve.

5. Refer to Figs. 8, 9, 10, 11 and 12 for typical field wiring connections. Follow the burner manufacturer wiring diagram if provided.

6. Make wiring connections at the electrical terminations provided at the top of the valve.

! CAUTION

Label all wires prior to disconnection when servicing valves. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

Fig. 9—Typical wiring diagram for V8843B,C,N.

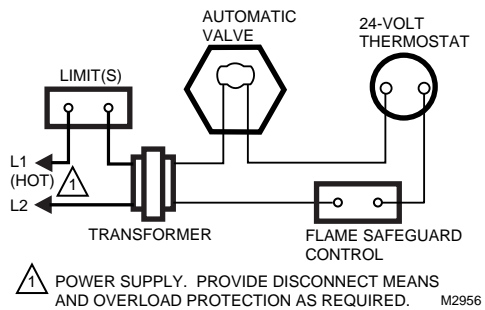
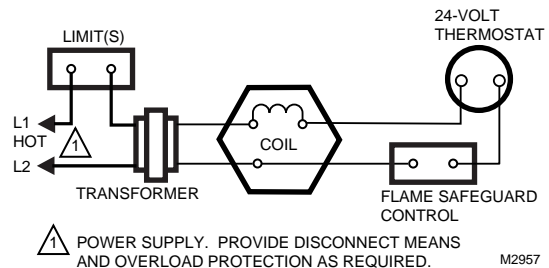


Fig. 10—Typical wiring diagram V8843B,C with three-screw electrical termination.



Operation

GENERAL

The V4843/8843B,C,N and V4844/8844B,C,L,N Valves are solenoid-operated diaphragm valves, which incorporate adjustable servo regulator(s) and provide the valves with the capability to function as a combination shutoff valve and pressure regulator. The V4843/8843B,C,N models provide single-stage pressure regulation (one solenoid, one servo regulator). The V4844/8844B,C,L,N models have two-stages of pressure regulation (two solenoids, two servo regulators).

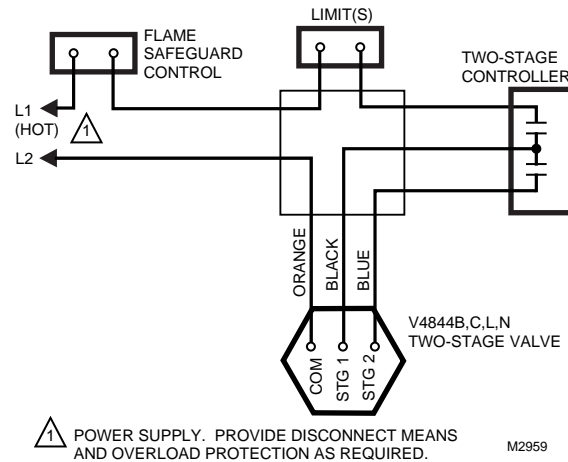
In a redundant valve (two valves in series) system, it is recommended that the V4843/8843B,C,N and V4844/8844B,C,L,N Valves be positioned downstream from the redundant valve for proper operation of the pressure regulator(s). The V4843/8843N and V4844/8844L,N models have a 0.022 in. bleed orifice in the bleed line (the valves bleed internally to the outlet side) and are rapid opening valves (maximum opening time is six seconds). The V4843/8843B,C and V4844/8844B,C models have bleed orifices varying in diameter from 0.014 to 0.018 in. to control the opening time.

The pressure regulation range is controlled by the servo regulator spring rate. Ranges for both natural gas and LP gas are available.

V4843/8843N

These valves are rapid opening combination diaphragm gas valves with a single stage of pressure regulation. They have one solenoid and one servo regulator. Upon energizing the solenoid, the quick-close orifice valve (upstream) closes and the servo regulator valve opens. The gas pressure above the main diaphragm decreases by bleeding to the outlet side of the valve and the inlet gas pressure raises the main diaphragm off the valve seat. The gas being bled from above the diaphragm passes through a 0.022 in. orifice (rapid opening), then through a normally open poppet valve that is connected to the regulator diaphragm. The gas bleeds through a pressure sensing/bleed tube in the outlet side of the V4843/8843N. The tube acts as a bleed tube when the V4843/8843N opens and then as a static pressure sensor as flow is established. Pressure feedback from the pressure sensing tube is transmitted to the regulator diaphragm where the pressure tends to close the normally open poppet valve. Pressure feedback continues until a force balance is established with the regulator spring acting on the regulator diaphragm.

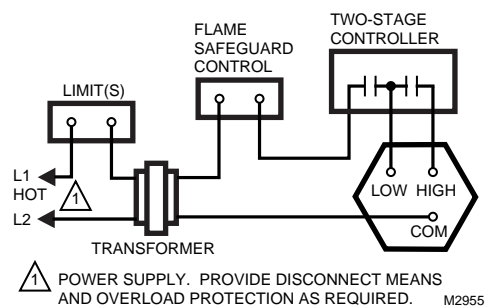
Fig. 11—Typical wiring diagram for V4844B,C,L,N with three leadwire electrical termination.



Simultaneously with flow establishment as described above, a small amount of gas is being admitted into the chamber above the main diaphragm through a small orifice in the closed quick-close orifice valve. The system becomes balanced (downstream pressure stabilized) when the small amount of gas being admitted through the small orifice in the quick-close orifice valve equals the outflow through the servo valve opening.

When the solenoid is de-energized, the servo valve closes and the quick-close orifice valve opens. The resulting increase in pressure above the main diaphragm forces the diaphragm downward against the valve seat and the V4843/8843N closes. The diaphragm is held against the valve seat by inlet gas pressure and a spring loaded diaphragm plate.

Fig. 12—Typical wiring diagram for V8844B,C,L,N with three screw electrical termination.



V4843/8843B,C

The V4843/8843B,C Valves incorporate a smaller bleed orifice to slow the opening of the valve. Except for the slow opening feature, the operation of the V4843/8843B,C is identical to the V4843/8843N.

V4844/8844B,C,L,N

These models use two pressure regulators and two solenoids to provide two distinct stages of pressure regulation. The first stage pressure regulator solenoid activates the same quick-close orifice valve and servo valve as in the V4843/8843 models. Thus, the first-stage pressure regulator of the V4844/8844 models operates in the same manner as the single-stage V4843/8843 models. When the second-stage solenoid operator of the V4844/8844 models is ener-

gized, the gas is shunted past the first stage pressure regulator through a bleed orifice. The V4844/8844L,N models use a 0.022 inch bleed orifice, which provides an opening time from low-fire to high-fire of less than six seconds. The V4844/8844B,C models use bleed orifices 0.014 through 0.018 inch to provide slower opening times. When the pressure at the sensing/bleed tube reaches the setpoint of the high pressure regulator, the system stabilizes at the high-fire pressure. The high pressure setpoint cannot be achieved without the first-stage solenoid operator being energized. The V4844/8844 closing operation is identical to that of the V4843/8843.

Checkout and Troubleshooting



WARNING

Do not allow fuel to accumulate in the combustion chamber. If fuel is allowed to enter the chamber without igniting, an explosive mixture could result.



CAUTION

1. Do not put the system into service until you have satisfactorily completed all applicable tests described in the Checkout section of the Instructions for the primary safety control, and any other tests required by the burner manufacturer.
2. Close *all* manual fuel shutoff valves as soon as trouble occurs.

CHECKOUT

1. Valve outlet pressure measurements are made at a point approximately five pipe diameters downstream from the valve outlet. Consider pressure measurements made at the outlet pressure tap as reference measurements only because turbulence and dynamic gas flow effects may result in erratic pressure readings.

2. Shut off gas supply to valve and make sure valve is closed when setting up pressure measuring equipment.

3. Set up the pressure measuring equipment.



4. Make sure the valve is closed. Turn on the supply gas to the valve.

5. Set the thermostat or controller to energize the valve and check the final outlet pressure. See step 1. Allow enough time for system pressure to stabilize.

6. Note the following low pressure regulator setpoint

adjustments: V4844/8844B,N Valve low pressure regulator setpoint is field adjustable between 0.8 and 2.0 in. wc natural gas; V4844/8844C,L Valve low pressure regulator setpoints are field adjustable between 1.4 and 4.2 in. wc LP gas; The low pressure regulator setpoints are factory set at 0.8 in. wc natural gas (V4844/8844B,N) and 1.4 in. wc LP gas (V4844/8844C,L).

7. The low pressure regulator (V4844/8844B,C,L,N) and high pressure (V4843/8843B,C,N and V4844/8844B,C,L,N) adjustment screws are located under the slotted aluminum screw cap(s) of the adjustment screw housings (see Fig. 1). To adjust the pressure setting:

- a. Temporarily remove the slotted aluminum screw cap and gasket from the housing, which contains the regulator adjustment setscrew for the regulator that requires adjustment (see Fig. 1).
- b. Turn the adjustment setscrew clockwise  to increase the pressure setting or counterclockwise  to decrease the pressure setting. Allow adequate time (30 to 60 seconds) for the pressure to reach equilibrium between pressure adjustments. A mechanical range stop in the low pressure regulator adjustment of the V4844/8844B,C,L,N models controls the minimum setting to which the low pressure regulator can be adjusted. *Do not turn the adjusting setscrew counterclockwise beyond the point at which it is stopped by the mechanical range limit.*
- c. After the regulator(s) have been properly adjusted, replace the gasket and slotted aluminum screw cap on the adjustment screw housing.

8. Start the system and observe its operation through at least one complete cycle to be sure the valve functions properly.

TROUBLESHOOTING**CAUTION**

Be extremely careful during troubleshooting. Line voltage is present at the electrical terminations for the V4843B,C,N and V4844B,C,L,N models and is present in all controller circuits for all V4843/8843 and V4844/8844 Valves.

IMPORTANT: *Do not assume that the valve must be replaced until all other sources of trouble are eliminated.*

A. IF THE VALVE WILL NOT OPEN WHEN THE THERMOSTAT OR CONTROLLER IS CALLING FOR HEAT:

1. Check that there is voltage at the proper electrical terminations. The V4844/8844 models cannot achieve the high pressure set point without the first-stage solenoid being energized. *Be careful—there should be line voltage at the electrical terminations of the V4843 and V4844 models.*

2. *If there is no voltage at the electrical terminations, first make sure line voltage power is connected to the master*

switch, the master switch is closed and the overload protection (circuit breaker, fuse or similar device) has not opened the power line.

3. For V8843 and V8844 models only: If line voltage is correct, check the transformer. Replace if necessary.

4. If there is still no voltage at the proper electrical terminations, make sure all the appropriate contacts in the thermostat or controller, limit(s) and flame safeguard control are closed. If one or more is open, determine the cause(s) and correct the conditions(s) before proceeding.

5. If there is proper voltage at the electrical terminations but the valve still does not open, check that the gas pressure at the valve inlet is normal.

6. If the valve still does not open, replace the valve.

B. IF THE VALVE WILL NOT CLOSE WHEN ONE OR MORE OF THE APPROPRIATE CONTACTS IN THE THERMOSTAT (OR CONTROLLER) LIMIT(S) OR PRIMARY SAFETY CONTROL IS OPEN:

1. Make sure the gas flow is in the direction of the arrow on the bottom of the valve body.

2. Make sure the valve is wired in the correct circuit. Open the master switch to remove power from the valve. If the valve closes, the valve may not be wired properly.

3. Look for a short in the electrical circuit.

Service Information

**CAUTION**

1. Only qualified flame safeguard service technicians should attempt to service or repair controls and burner systems.

2. Line voltage is present in the electrical circuits to the valve. Open the master switch before replacing the valve.

SCHEDULED INSPECTION AND MAINTENANCE

Set up a schedule and follow it to assure periodic inspection and maintenance for the burner, for all other controls, and for the valve(s). For more information, refer to the instructions for the flame safeguard control.

**CAUTION**

Label all wires prior to disconnecting when servicing valves. Wiring errors can cause improper and dangerous operation.

Verify proper operation after servicing.

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