

Replacement Bonnet Assembly for V5055, V5097 Gas Valves

INSTALLATION INSTRUCTIONS

APPLICATION

Models of the Replacement Bonnet Assembly are available for the valves listed in Table 1.

Table 1. Replacement Bonnets for V5055/V5097 Gas Valves.

Replacement Bonnet**	Valve		Valve Size (inches)
133398AA	V5055A	V5097A	3/4, 1, 1-1/4, 1-1/2
133417AA			2, 2-1/2, 3
Not available	(on-off)		4
133398BA	V5055B	V5097B	3/4, 1, 1-1/4, 1-1/2
133417BA			2, 2-1/2, 3
Not available	(Characterized Guide)		4
133398CA	V5055C	V5097C	3/4, 1, 1-1/4, 1-1/2
133417CA			2, 2-1/2, 3
136911CA	(Proof of Closure)		4
Not available	V5055D	V5097D	3/4, 1, 1-1/4, 1-1/2
Not available			2, 2-1/2, 3
136308BA	V5055E	V5097E	3/4, 1, 1-1/4, 1-1/2
Not available			2, 2-1/2, 3

****Each replacement assembly contains the bonnet assembly, two rubber seals and a tube of grease. It must be used only on the type of valve indicated above.**

INSTALLATION

WARNING

Explosion Hazard. Can cause equipment damage, serious injury or death.

1. Only a trained experienced flame safeguard technician should service the V5055 or V5097 Gas Valves.
2. Before beginning installation, turn off the gas supply and disconnect the power supply to the valve actuator.
3. After installation, perform a complete checkout, including a gas leak check.

NOTICE: Per Industry Standards, the actuator is required a conduit seal or a cable type that is sealed be installed in a device that can result in a flammable liquid flow through a conduit or cable to an electrical ignition source in the event of a seal leakage or diaphragm failure.

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause an unsafe condition.
2. Check the ratings given in the instructions and on the products to make sure the products are 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 the instructions.

The bonnet assembly and the valve seals may be replaced without removing the valve body from the gas line. Use the following procedure to replace the bonnet assembly and seals in the gas valve.

1. Turn off the gas supply at the manual shutoff valve.
2. Shut off all electrical to the valve actuator.
3. If a 7616BR Crank Arm Assembly is used with the actuator, remove the crank arm assembly by pulling the clip and loosening the clamp screw.
4. Disengage the arm from the actuator.
5. Remove the actuator from the valve (loosen the two set screws).
6. Remove the valve bonnet (four bolts on the 1- to 1-1/2-inch valves, six bolts on the 2- to 3-inch valves, eight bolts on the 4-inch valves).
7. Discard the old rubber seals.
8. Coat the new rubber seals with the grease provided and position them in the valve body as shown in Fig. 1 or 2. (Small seal on the 4-inch valve is mounted on the bonnet assembly.)

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! WARNING

Explosion Hazard. Can cause equipment damage, serious injury or death.

Position and seat the seals in the valve body properly to avoid a hazardous gas leak.

- Carefully seat the new bonnet assembly on the valve body. Make sure the seals are in the proper position. (On the V5055/V5097 Gas Valves with a spring below the disk, make sure the spring is centered in the indentation on the inside of the valve body.

NOTE: The 4-inch bonnet assembly may be replaced in any position on the valve body.

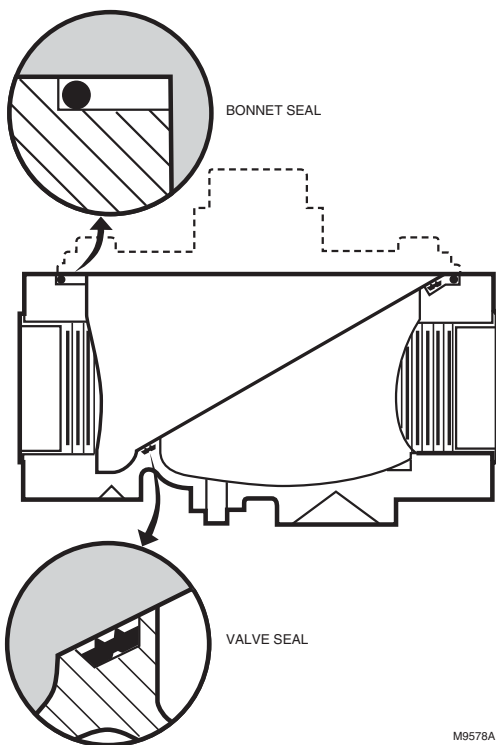


Fig. 1. Placement of valve and bonnet seals.

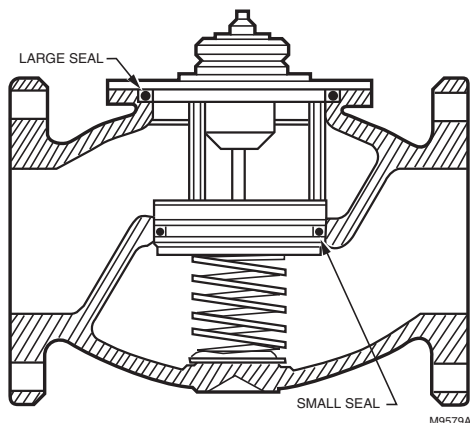


Fig. 2. Placement of valve and bonnet seals in the four-inch valve.

- After positioning the bonnet assembly, replace the bolts removed in step 6.

NOTE: When replacing the bonnet assembly on the 4-inch valve, draw it evenly into the valve body. Fingertighten the eight bolts. Draw the bonnet assembly into the valve by tightening, in order, bolts 1, 5, 7 and 3 (two turns each). See Fig. 3. Repeat until the bonnet assembly is seated. Tighten the remaining bolts. Torque the bolts as follows:

- 3/4 in. (19 mm) to 1-1/2 in. (38 mm) valves: 55 in.-lb.
- 2 in. (51 mm) to 4 in. (102 mm) valves: 75 in.-lb.

- Remount the actuator.
- Securely tighten the set screws (50 to 60 inch-pounds).
- Replace the crank arm assembly if disconnected in step 3.
- With the gas still off, cycle the actuator to check for proper mechanical operation.

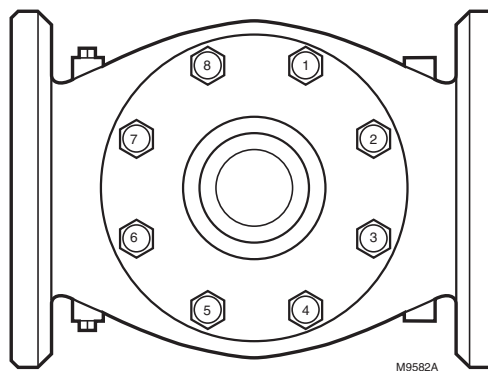


Fig. 3. Replacement 4-inch valve bonnet assembly.

CHECKOUT

IMPORTANT:

Both bonnet seal and seat leak checks must be performed after installation.

Bonnet Seal Check

After the bonnet assembly is reinstalled, turn on the gas at the manual valve and check for gas leakage around the bonnet seal. Paint the seal area with a rich soap and water solution. Bubbles indicate a gas leak. If a leak is detected, check to see that the bonnet screws are tight. If necessary, turn off the gas again and remove the bonnet to make sure the seals are properly seated.

Tightness of Closure Check

Instructions for testing tightness of closure of gas safety shutoff valves on burner startup (by qualified personnel). See Fig. 4.

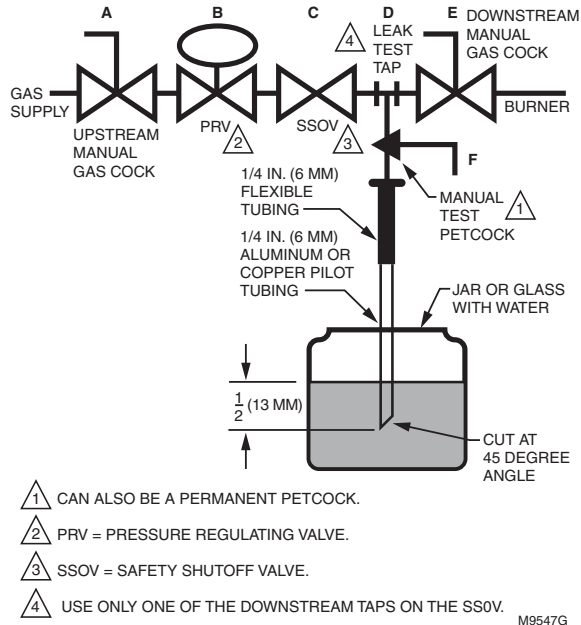


Fig. 4. Valve leak test.

1. De-energize the control system to make sure no power is applied to the safety shutoff valve (C).
2. Close the upstream manual gas cock (A).
3. Make sure the manual test petcock (F) in the leak test tap assembly (D) is closed.
4. Remove the leak test tap plug and connect the test apparatus to the leak test tap (D) as shown in Fig. 4.
5. Close the downstream manual gas cock (E).
6. Open the upstream manual gas cock (A).

7. Program the safety shutoff valve (C) to the fully open position (through the safety system), then immediately de-energize the SSOV to seat the valve operationally.
8. Immerse a 1/4-inch (6 mm) tube vertically 1/2 inch (13 mm) into a jar of water as shown in Fig. 4.
9. Slowly open the test petcock (F).
10. When the rate of the 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 cc/h. To meet U.S.A requirements, leakage must not exceed the values given in Table 2.

Table 2. Allowable leakage (cc/hr).

Valve Size (in.)	Allowable ^a Leakage (cc/hr)	Number of bubbles per 10 seconds.
3/4, 1, 1-1/4, 1-1/2	458	16
2, 2-1/2, 3	752	26
4	1003	35

^a Based on air at standard conditions, test pressures provided by ANSI Z21.21, section 2.4.2, and a maximum of 235 cc/h per inch of sealoff diameter. Sealoff diameter is not to be confused with pipe size.

NOTE: If two safety shutoff valves are used, check each valve for tightness of closure.

11. Shut upstream manual gas cock (A).
12. Close test petcock (F), remove test apparatus, and replace leak test tap plug (D).
13. Open upstream manual gas cock (A).
14. Open downstream manual gas cock (E).
15. Restore system to normal operation, and observe through at least one complete cycle to assure proper operation.

REPLACEMENT BONNET ASSEMBLY FOR V5055, V5097 GAS VALVES

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