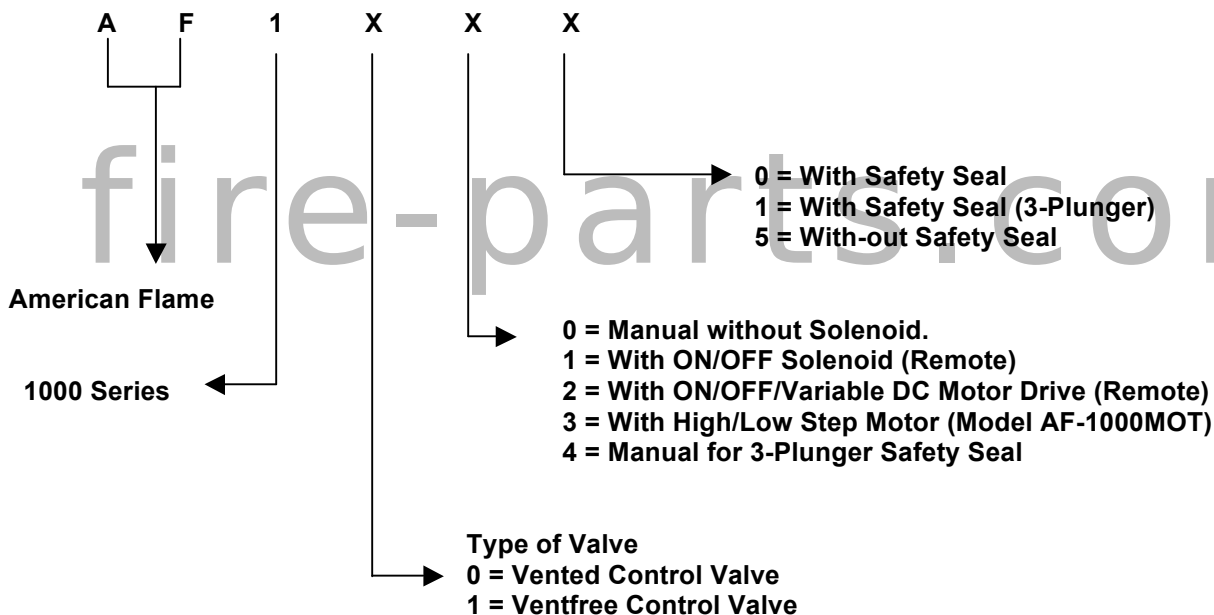


AF-1000 Series Manual Gas Control Valve

APPLICATION

The AF-1000 Manual Gas Control Valve is designed for use in gas in hearth products, wall mount furnaces, and space heating appliances. For use with Propane or natural gas.

AF-1XXX MODEL IDENTIFICATION



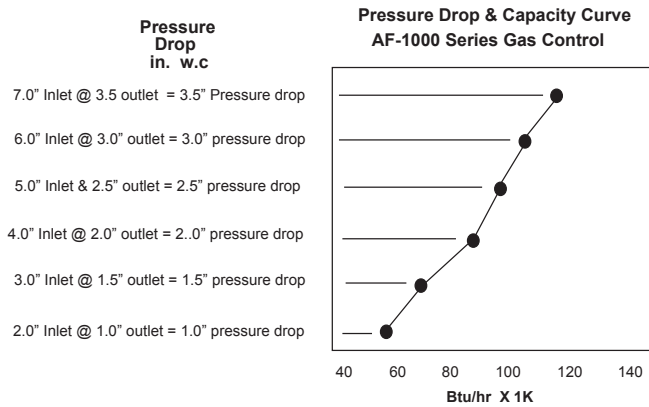
FEATURES

- Multi positional (All Plans) / Versatile Mounting.
- Power unit powered by 30mv thermocouple.
- CSA rated capacity 80,000 BTU/hr at 1" wc pressure drop (All inlet/outlet configurations).
- AF-1000 series available with 0°F to 225°F (-18°C to 107°C) temperature range.
- Multiple outlet connections single inlet connection (All 3/8" NPT).
- Fine mesh screens on inlet.
- Multiple mounting holes (All 10-24 SAE threads)
- Low profile / Compact size.
- Easy pilot adjustment screw (Located on the front of the valve) (Vented Only).
- No conversation from natural to propane gas required.
- White lettering on OFF/ON/PILOT knob.
- Vented / Vent free models available.
- 1" and 2" plastic extension knobs available.

TABLE #1

AF-1000 VOLTAGE / CAPACITY RATINGS

Model	Position	Thermocouple	Capacity@ 1" Pressure Drop Side inlet & Back outlet	Capacity@ 1" Pressure Drop Back inlet & outlet
All Models	Multi positional	30 mV	55,000 BTU/hr	55,000 BTU/hr



This information is American Flame lab generated data and is to be used as reference only.

SPECIFICATIONS

Main Gas Connections:

Valve: 3/8 in. NPT thread on all Inlet and Outlet connections.

Pilot Gas connections and flow:

Connection Size: 7/16-24 UNS.

Flow: ~ 5,250 Btu/hr at 7.0 in wc Maximum.

Pilot locations:

Top of valve.

Thermocouple threads:

11/32-32 UNS double lead.

Option: **8mm x1.0** connection. (Ventfree)

Thermocouple location

Back of valve.

Ambient Temperature Range:

0⁰ F to 225⁰ F (-18⁰ C to 107⁰ C)

Voltage:

30 mV Thermocouple

Approvals:

CSA International

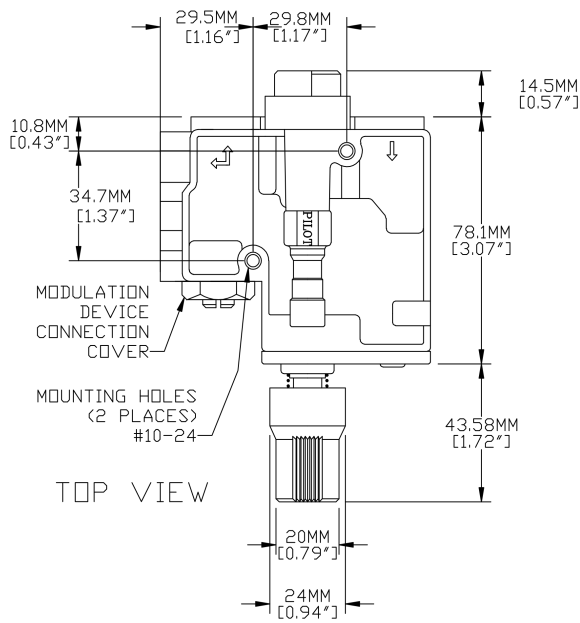
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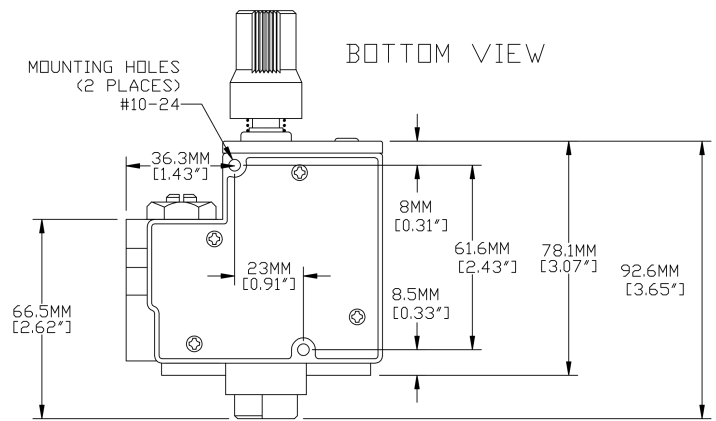
Model / Voltage / Capacity:

Reference Table #1

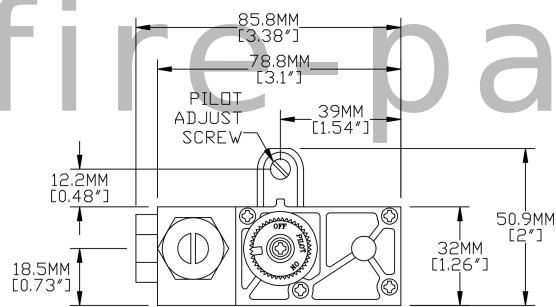
DIMENSIONS



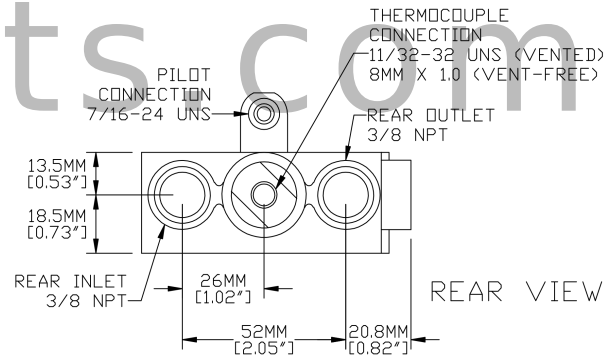
TOP VIEW



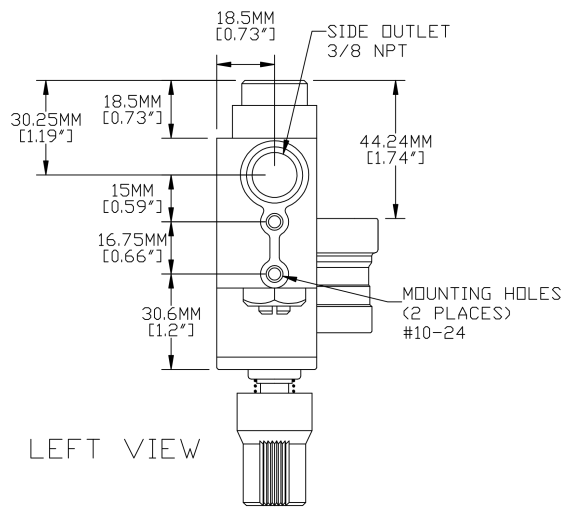
BOTTOM VIEW



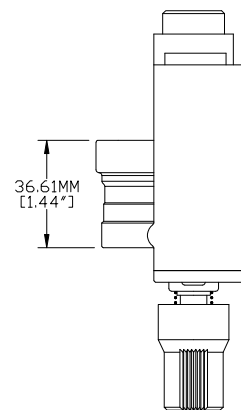
FRONT VIEW



REAR VIEW



LEFT VIEW



RIGHT VIEW

INSTALLATION

When Installing this Product....

- Read these instructions carefully. Failure to follow these instructions completely could damage the product or cause a hazardous condition.
- Check the ratings given in the instructions and on the product to make sure the AF-1000 Gas Control is suitable for your application.
- Installer must be a trained, experienced service technician.
- After installation is complete, check out product operation as provided in these instructions.

WARNING

Oxygen depletion hazard. Can cause injury or death due to asphyxiation.

1. Use only vented gas pilot assemblies on vented appliances.
2. Use only unvented pilot assemblies on unvented appliances.

WARNING

Fire or explosion hazard. Can cause property damage, severe injury or death. Follow these warnings exactly:

1. Disconnect power before wiring to prevent electrical shock or equipment damage.
2. To avoid dangerous accumulation of fuel gas, turn off gas supply at the appliance service valve before starting installation, and perform a Gas Leak Test after installation is complete.
3. Always install the sediment trap in the gas supply line to prevent contamination of the gas control.
4. Do not force the gas control knob. Use only your hand to turn the gas control knob. Never use any tools. If the gas control knob does not operate by hand, a qualified service technician should replace the gas control. Force or any attempt to repair the gas control valve can result in fire or explosion.

Location:

Locate the AF-1000 gas control where it cannot be affected by steam cleaning, high humidity, dripping water, corrosive chemicals, dust or grease accumulation or excessive heat. To assure proper operation, follow these guidelines:

1. Locate gas control in well-ventilated area.
2. Mount gas control high enough to avoid exposure to flooding or splashing water.
3. Assure the ambient temperature does not exceed the ambient temperature ratings for each component.
4. Cover gas control if appliance is cleaned with water, steam, or chemicals or to avoid dust and grease accumulation.
5. Avoid locating gas control where exposure to corrosive chemical fumes or dripping water is likely.

Install Piping to Gas Control

All piping must comply with the local codes and ordinances or with the National Fuel code (ANSI Z223.1 NFPA No. 54) whichever applies.

Tubing installation must comply with approved standards and practices.

1. Use new, properly reamed pipe free from chips. When tubing is used, assure the ends are square, deburred and clean. All tubing bends must be smooth and without deformation.
2. Run pipe or tubing to the control. If tubing is used, obtain a tube-to-pipe coupling to connect the tubing to the control.
3. Install sediment trap in the supply line to the gas control. See Figure #1

CAUTION

Gas Leakage Hazard. Failure to follow precautions can result in a gas-filled work area.

Shut off the main gas supply before removing end cap. Test for gas leakage when installation is complete.

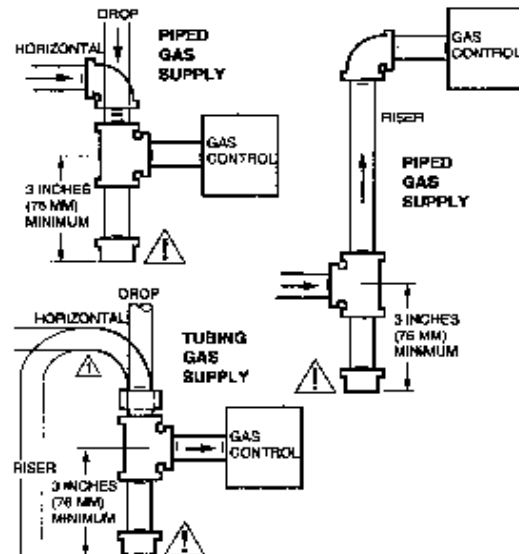


Figure #1

Install Control

1. Mount control 0 to 90 degrees in any direction, from the upright position of the gas control knob, including vertically.
2. Mount the control so gas flow is in the direction of the arrow on the side or back of the control.
3. Thread pipe 5/16 in. into the control. Do not inset deeper than 3/8 in. Valve distortion or malfunction can result if the pipe is inserted too deeply.
4. Apply a moderate amount of good quality pipe compound (do not use Teflon tape) to pipe only, leaving two (2) end threads bare. On LP installations, use compound resistant to LP gas. See Figure #2
5. Remove plastic dust seals over the control Inlet and Outlet if necessary.
6. Connect pipe to control Inlet and Outlet. Use wrench on either side of the pipe outlet. See Figure #3

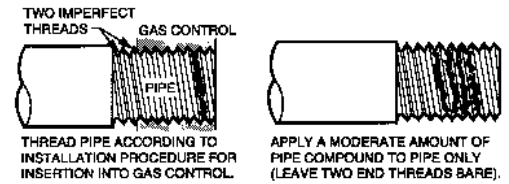


Figure #2

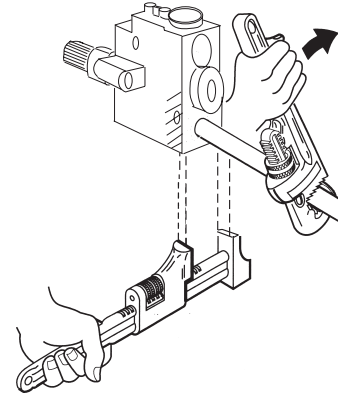


Figure #3

Gas Control Knob Settings

Gas control knob settings are as follows:

1. OFF: Prevents main gas flow through the valve.
2. ON: Permits main burner and pilot flow. Gas control and remote control of main burner gas flow.
3. PILOT: Opens pilot valve and allows gas flow to pilot burner.

NOTE: When remote controls and wired DC operated hearth/wall switches are used, the gas control knob must be in the ON position. Note Valve front (Face) views in Figures #4 & #5 & #6

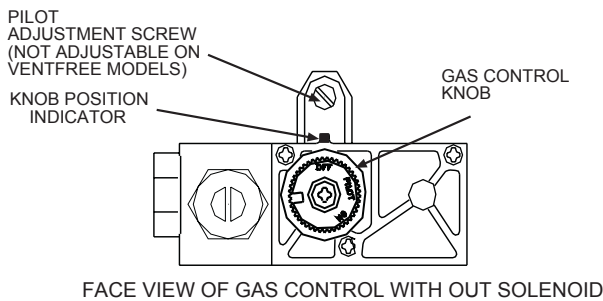


Figure #4

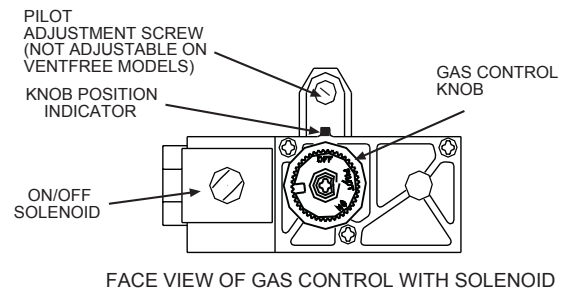


Figure #5

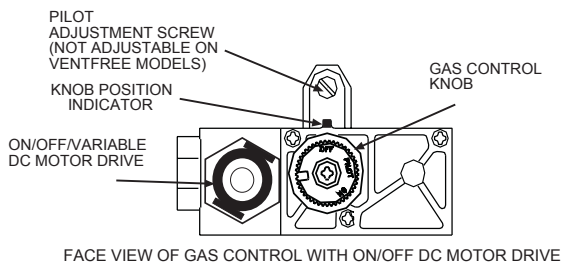


Figure #6

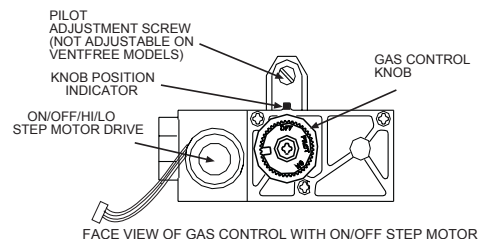




Figure #6-A


Pilot Gas and Lighting Procedure

- Turn the gas control knob counterclockwise  to the PILOT position, push the gas control knob IN and HOLD in position. This will open the pilot valve and allows gas to flow to the pilot burner.
- Light the pilot burner while holding the gas control knob in until a strong pilot flame is present. (Approximately 60 seconds)
- Release the gas control knob. The gas control knob will hold in and engages the valve power unit.
- Turn the gas control knob counter clockwise  to the ON position, the main burner valve will open and the main burner will ignite.

NOTE: Gas controls with model number AF-1000 for vented to decrease the pilot flame turn the pilot adjustment screw clockwise. To increase the pilot flame turn the pilot adjustment counter clockwise.

NOTE: Gas controls with model number AF-1100 for vent free applications have NO pilot adjustment, per test standard.

Shut off Procedure

1. To shut OFF the system, turn the gas control knob clockwise  to the OFF position. This action will close the main gas valve and disengages the safety pilot valve. However the power unit must drop out before the lighting sequence can begin again. This may take as much as 3 minutes.
2. To relight the pilot, follow the steps in the Pilot Gas and Lighting Procedure section.

Pilot Burner Connections

This gas control uses a pilot burner with a thermocouple, the connections are as follows:

1. Connect the pilot tubing fitting into the gas control connection and tighten. (Use caution on brass connectors) Note: Figure #7 & #8
2. Connect thermocouple into power unit at the back of the gas control. Note: Figure #8

NOTE: A standard thermocouple or quick drop out thermocouple with 11/32-32 UNS threads and Ventfree ODS thermocouple with 8mm x 1.0 thread can be used. Note: Figure #8

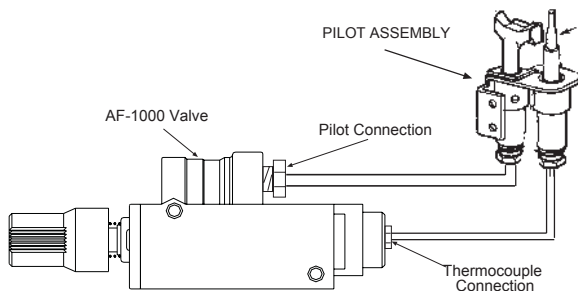


Figure #7

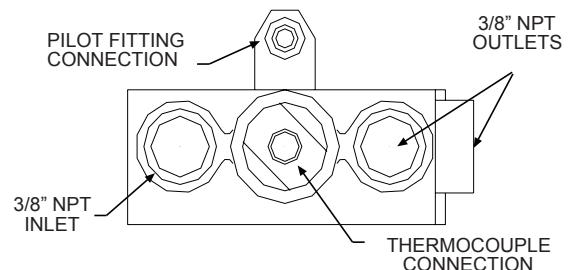


Figure #8

DC powered feature of the AF1000

The AF-1000 has a non-leak safety feature that allows the installation of an ON/OFF solenoid. Note: Figure #9
With the use of this DC powered latching ON/OFF solenoid allows the use of a DC powered switch or remote control (Model CON 1001)

NOTE: The AF-1025 and AF-1125 (**ONLY**) do not have a non-leak safety feature. This model comes from the factory with the ON/OFF DC motor Drive per installed Note: Figure #10
With the use of this DC powered ON/OFF Motor Drive the valve will operate ON/OFF (**ONLY**) with the use of a remote control (Model RCAF 1005)

Note: If the Hi/Lo Step Motor used on the AF-1035 and AF-1135 valve the (Motel AF-4000MOT) model must be used. If the Hi/Lo Step Motor used on the AF-1030 and AF-1130 valve the (Motel AF-1000MOT) model must be used. Each model requires a unique operating control transmitter and receiver specifically set-up for the desired Hi/Lo increments required by the burner installed in the appliance that the AF-1000 valve system is used on.

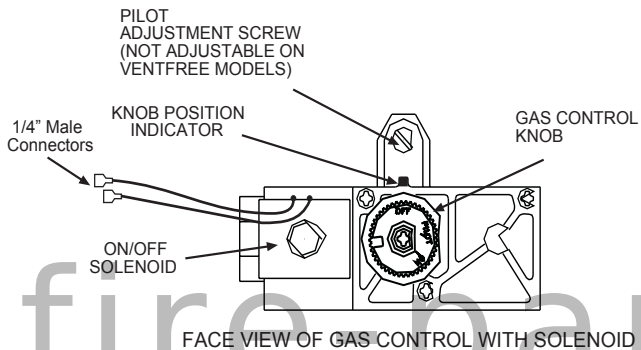


Figure #9

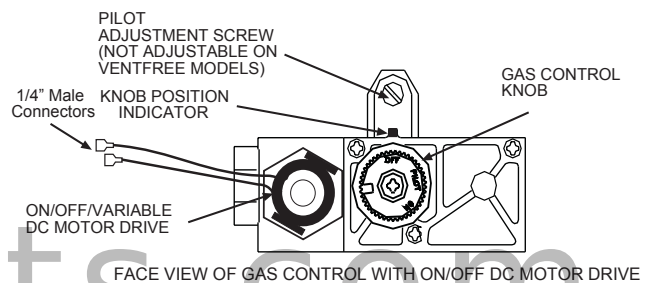


Figure #10

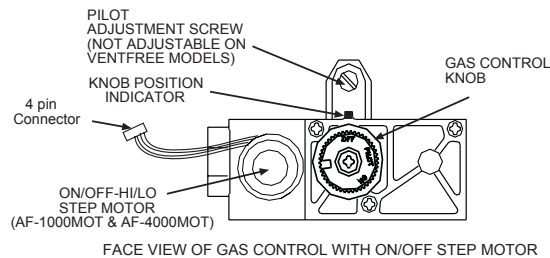


Figure #11

WARNING

Fire or explosion hazard. Can cause property damage, severe injury or death.

1. Stand away from the main burner while lighting, Hidden gas leaks can cause flashbacks in the appliance.
2. Check for gas leaks with rich soap and water solution any time work is done on a gas system.

Gas Leak Test

1. Paint the pipe connectors upstream of the gas control with rich soap and water solution, Bubbles indicate a gas leak.
2. If a leak is detected, tighten the pipe connections.
3. Light the main burner.
4. With the main burner in operation, paint the pipe joints (including adapters) with rich soap and water solution.
5. If another leak is detected, tighten the adapter screws, joints, and pipe connections.
6. Replace part if leak cannot be stopped.

CAUTION

Equipment Danger Hazard. Improper adjustment of gas input and burner can cause carboning and/or unnecessary shutdown of the system.

1. Do not exceed the input rating stamped on the appliance nameplate, or manufacture recommended burner orifice pressure for size orifice(s) used. Be sure primary air supply to the main burner is properly adjusted for complete combustion. Follow the instructions of the appliance manufacturer.
2. IF CHECKING GAS INPUT BY CLOCKING GAS METER: Be sure there is no gas flow through the meter other than to the appliance being checked. Other appliances must remain off with the pilots extinguished (or the consumption must be deducted from the meter reading). Convert the flow rate to Btuh as described in the GAS Controls Handbook, from 70-2602, and compare to the Btuh input rating on the appliance nameplate.

Check Safety Shutdown Performance

WARNING

Fire or explosion hazard. Can cause property damage, severe injury or death.

1. Perform the safety shutdown test any time work is done on a gas system. Place the gas control knob in the PILOT position. Main burner should go off and the pilot should remain lit.
2. Extinguish the pilot flame. The AF-1000 pilot gas flow should stop within three (3) minutes when using a standard thermocouple. When using a quick drop out thermocouple, the pilot gas flow should stop within thirty (30) seconds. Safety shutoff of the pilot gas proves complete shutdown because safety shutoff valve prohibits main burner and pilot gas flow.
3. Relight pilot burner and operate the system through one (1) complete cycle to ensure all controls operate properly.

MAINTENANCE

WARNING

Fire or explosion hazard. Can cause property damage, severe injury or death.

Do not attempt to take apart the gas control or to clean it. Improper assembly and cleaning can cause unreliable operation. Regular preventive maintenance is important in applications that place a heavy load on the system such as those used in commercial cooking, agricultural, and industrial application because:

- In many such applications, particularly commercial cooking, the equipment operates 100,000 to 200,000 cycles per year. Such heavy cycling can wear out the gas control in one to two years.
 - Exposure to water, dirt, chemicals, and heat can damage the gas control and shut down the control system.
- The maintenance program should include regular checkout of the system as outlined in the Checkout section, and checkout of the system as described in the appliance manufacturers literature.

Maintenance frequency must be determined individually for each application. Some considerations are:

- Cycling frequency. Appliances that may cycle 20,000 times annually should be checked monthly.
- Intermittent use. Appliances that are used seasonally should be checked before shutdown and again before the next use.
- Consequence of unexpected shutdown. Where the cost of an unexpected shutdown would be high, the system should be checked more often.
- Dusty, wet, or corrosive environment. Because these environments can cause the gas control to deteriorate more rapidly, the system should be checked more often.

Any control should be replaced if it does not perform properly on checkout or service. In addition, replace any module if it is wet or looks like it has been wet.

WARNING

Fire or explosion hazard. Can cause property damage, severe injury or death.

Do not disassemble the gas control; it contains non replaceable components. Attempted disassembly or repair can damage the control.

WARNING

Fire or explosion hazard. Can cause property damage, severe injury or death.

Exactly follow the warnings and the lighting instructions.

1. Before lighting, smell around the appliance area for gas. If the appliance uses LP (bottled) gas, be sure to smell next to the floor because LP gas is heavier than air. If you smell gas, immediately shut off the manual valve in the gas piping to the appliance or, on LP at the tank. Do not try to light any appliance. Do not touch any electrical switch or use the phone. Leave the building and call your gas supplier. If your gas supplier cannot be reached, call the fire department.
2. Do not force the gas control knob on the appliance. Use only your hand to turn the gas control knob. Never use any tools. If the knob does not operate by hand, have a qualified service technician replace the control. Force or any attempted repair can result in fire or explosion.
3. The gas control must be replaced if it has been flooded with water. Call a qualified service technician.
4. The gas control is a safety device. It must be replaced in case of any physical damage such as bent terminals, missing parts, stripped threads, or evidence of exposure to heat.

IMPORTANT:

Follow the operating instructions provided by the manufacturer of your heating appliance.

TROUBLESHOOTING

IMPORTANT:

Troubleshooting procedures should only be performed by an experienced qualified service technician.

If the pilot will not stay lit:

1. Confirm that the thermocouple is making tight proper connection to the valves power unit
2. With the pilot burning and the gas control knob turned to the PILOT position, the voltage should be 18 mV for a new thermocouple. You must press and hold the gas control knob in the PILOT position to maintain the gas flow to the pilot. If the output does not meet the minimum voltage, replace the thermocouple. The power unit will hold in down to 3 mV. If the output of the thermocouple is below 3 mV, replace the thermocouple.

If main burner does not come ON when the remote control is turned ON or the DC powered wall switch is turned ON or if the DC motor drive on models AF-1025 or AF-1125 will not run and turn the burner ON when the button on the remote transmitter is pressed:

1. Confirm that the pilot is lit.
2. Confirm that the gas control knob is in the ON position.
3. If a DC powered switch or remote control is used to turn the valve ON/OFF confirm that the switch or remote is in the ON position.
4. Check the connections on the RED and BLACK wires from the remote receiver.
5. Check the DC power supply of the remote receiver or the wall switch.

Limited Warranty

American Flame, Inc. warrants the AF-1000 Valve series for 12 months from the date of purchase or installation to the original purchaser to be free from defects in materials and workmanship. Damage to the AF-1000 Valve caused by accident, misuse, abuse, or installation error, whether performed by a contractor, service company, or owner, is not covered by this warranty. American Flame will not be responsible for labor charges and/or damage incurred in installation, repair, replacement, or for incidental or consequential damage. Some states, provinces, and nations do not allow exclusion or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply. This warranty gives you specific legal rights. You may also have other rights that vary by state, province, or nation.

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