INSTALLATION • OPERATION MANUAL
for
COMSTOCK-CASTLE FOOD SERVICE EQUIPMENT

FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

WARNING

Improper installation, adjustment, alteration, service, operation or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing, operating or servicing this equipment.

NOTICE

Instructions must be posted in a prominent location that will provide the user of this equipment with procedures, in the event he/she smells and/or detects gas. This information must be obtained by consulting the local gas utility.

READ CAREFULLY AND KEEP FOR FUTURE REFERENCE!

NOTE: The equipment for which this Installation • Operation Manual is provided may be certified, have certification pending or not be certified under the standards of one or more of the following organizations: Intertek Testing Services (ETL) Please refer to the chart on page 3 for the status of each specific unit.

CONTENTS: **PAGE NO.**

Comstock-Castle Stove Co. suggests that the user read this Installation/Operation Manual in its entirety before installing this equipment.

REMEMBER

Follow the instruction manual steps for installation.

Use a qualified gas technician for installation.

Check the unit every time you move for loose fittings and for being level.

Call the factory if you have any questions about installation or need the name of a qualified service/installation agent.

COMSTOCK-CASTLE STOVE COMPANY
119 WEST WASHINGTON
QUINCY, ILLINOIS 62301
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IN THE EVENT YOU SMELL GAS: Turn off gas supply. Open Windows, Do Not Touch Electrical Switches, Extinguish All Open Flame, and IMMEDIATELY CALL Your Gas Utility.

DEFINITIONS

QUALIFIED AND/OR AUTHORIZED OPERATING PERSONNEL

Qualified or authorized operating personnel are those who have carefully read this manual and are familiar with the functions of the equipment. Those who have had previous experience with the functions and operations of similar equipment should also read this manual to acquaint themselves with the unique characteristics of this equipment.

QUALIFIED INSTALLATION OR SERVICE PERSONNEL

Qualified Installation and/or Service Personnel are defined as those who, either in person or through a representative, are engaged in and are responsible for:

The installation or replacement of gas piping from the outside of the meter, (or service regulator when a meter is not provided), and the connection, installation, repair, or servicing of the equipment. Qualified personnel must be experienced in such work, be familiar with all precautions required, and be able to comply with all requirements of state or local authorities having jurisdiction. Reference: National Fuel Gas Code ANSI Z223.1-latest edition (NFPA Code 54).

SHIPPING DAMAGE CLAIM PROCEDURE

UNPACKING:

Inspect the crating for posible damage. Carefully remove the gas appliance from the crate and inspect the unit for concealed damage. (Preform applicable steps.)

1. Remove top grates and the range griddle plate if applicable.

2. Open oven door, remove rack(s), and oven bottom.

3. All packing material and burner tie down wire, if applicable, must be removed.

4. If stainless steel, remove the protective covering.

5. Properly install the legs or casters on the range.

NOTE: For proper operation and combustion, the legs or casters MUST be installed. 10 series, 11 series, & CFHP FHP1-2-3-4. SUFHP counter units do not have legs.

6. Locate the oven door handle and associated screws. Before mounting handle, clear the insulation around the mounting holes on the oven door. Using the two screws, mount handle to oven door.

Upon receipt and during installation of your new Comstock-Castle equipment, inspect it thoroughly for damage that may have incurred during shipment. If damage is evident, contact the carrier immediately.

FOR YOUR PROTECTION, IF SHIPMENT ARRIVES DAMAGED:

NOTE: FILE CLAIM FOR DAMAGES IMMEDIATELY, regardless of the extent of the damage. Time limits are in effect.

1. VISIBLE LOSS OR DAMAGE - Be certain this is noted on the freight bill or express receipt and signed by the person making the delivery.

2. CONCEALED LOSS OR DAMAGE - If damage is unnoticed until merchandise is unpacked, notify transportation company or carrier immediately, and file a “concealed damage” claim with them. This should be done within 15 days of the date delivery is made to you. Be sure to retain container for inspection.

Comstock-Castle cannot assume responsibility for damage or loss incurred in transit. Comstock-Castle will, however, be glad to assist you and furnish you with any necessary documentation to support your claim.

GENERAL INFORMATION

TO AVOID POSSIBLE INJURY, FIRE, and/or EXPLOSION, the following precautions must be read, understood, and followed explicitly.

CERTIFICATION STATUS * MINIMUM CLEARANCE

	Combustible		Non-combustible	
Model	**Back**	**Side**	**Back**	**Side**
OVENS & RANGES				
F3 Series (ETL)	2”	2”	0”	0”
FK4 Series (ETL)	6”	6”	0”	0”
P Series (ETL)	6”	6”	0”	0”
B Series (ETL)	6”	6”	0”	0”
HOT PLATES				
FHP Series (ETL)	5”	4”	0”	0”
SUFHP Series (ETL)	6”	6”	2”	2”
KFHP Series (ETL)	6”	6”	2”	2”
CSP Series (ETL)	6”	6”	4”	0”
SP Series (ETL)	6”	6”	4”	0”
GRIDDLES				
FHP Series (ETL)	5”	4”	0”	0”
10 Series (ETL)	6”	6”	0”	0”
9 Series	6”	6”	0”	0”
BROILERS				
FHP Series (ETL)	5”	4”	0”	0”
9 Series (ETL)	6”	6”	0”	0”
FRYERS				
2932SF (ETL)	6”	6”	6”	2”
J01HG (ETL)	6”	6”	6”	2”
2616HG (ETL)	6”	6”	6”	2”
H Series	6”	6”	6”	2”

All F3 and FK4 Series Ranges of this series are suitable for installation on combustible floors. Counter equipment is for use on non-combustible counters.

NOTE: The Model No. KFHP Series Hot Plates are not ETL Certified Designs.

All FHP Series, STFHP Series, and KFHP Series Hot Plates are for use in combustible and non-combustible locations when installed on a non-combustible counter.

The BTU input rating on all equipment is calibrated for elevations up to 2,000 feet above sea level. All orifice drill sizes are referenced for operation at or below this altitude. For operation at elevations above 2,000 feet, the BTU rating must be reduced 4% for each 1,000 feet of elevation or the orifice drill size must be changed appropriately. For high altitude drill sizes, call your local gas company or **Factory Authorized Service Center.**

All units are equipped with fixed orifices and cannot be adjusted. If converting the gas appliance from natural to propane, or vice versa, all orifices and the regulator must be changed. The correct type of gas, for which the unit is configured, is noted on the name plate. The type of gas specified MUST be used. For proper conversion, contact a qualified service technician or your **Factory Authorized Service Center.**

When installed with casters, adequate means of restraint must be provided to limit the movement of the appliance without depending on the connector and the quick disconnect device or its associated piping to limit the units movement. The restraint should be securely fastened to the back of the unit. If disconnection of the restraint is necessary, the restraint must be reconnected after the appliance has been returned to its original installation position.

For a gas appliance that is equipped with casters, the installation shall be made with a connector that complies with the Standard for Connectors for Moveable Gas Appliances, ANSI Z21.69 -1987, and addenda Z21.69a -1989, and a quick disconnect device the complies with the Standards for Quick Disconnect Devices for Use With Gas Fuel, Z21.69 latest edition and Z21.41 - latest edition.

Provisions shall be made in the design of the kitchen, to ensure an adequate fresh air supply for proper ventilation and combustion.

Do not obstruct the flow of combustion gases or ventilation air.

Never enclose the bottom of the unit with a raised curb and /or any other construction that would obstruct the air flow into unit.

One of the most important considerations in the installation of this unit is ventilation. A commerical gas appliance must be installed so that the products of combustion are efficiently removed. However, the kitchen ventilation system must not produce a draft that would interfere with the proper operation of the burners.

The area around this and any other appliance must always be kept free and clear of combustibles such as: grease, food particles, fuel, solvents, cleaning fluids, gasoline, mops, rags, and etc.

During installation, use thread compound sparingly. Always use a compound that is impervious to chemical reaction with propane gases. NEVER put any of the compound on the first two outer threads. This will minimize the possibility of the compound breaking free and clogging the pilots, burner orifices, and controls.

When a commerical gas appliance is first installed, the gas pressure must be checked with a manometer by a qualified service technician. This will ensure that the existing gas facilities will deliver the BTU's of gas required on the rating plate. WARNING - If the appliance in configured for LP Gas, never connect the equipment directly to the pressure tank. Damage will result to the appliance if the tank pressure is not properly regulated. The regulator supplied with your unit is a low pressure (1/2 PSI max.) appliance regulator. For proper pressure regulation specifications, consult your local **Factory Authorized Service Agency** or an LP Gas Distributor.

INSTALLATION

THIS APPLIANCE IS INTENDED FOR OTHER THAN HOUSEHOLD USE

All Comstock-Castle commerical gas appliances are manufactured by skilled craftsman using the finest quality materials. PROPER installation by qualified personnel is essential for safe, efficient, and trouble-free operation of the unit. Any alteration and/or tampering, without proper knowledge, tools, and test equipment, is DANGEROUS and will void all warranties.

The installation must conform with local codes, or in the absence of locel codes, with the National Fuel Gas Code, ANSIZ223.1 - latest edition.

PRESSURE TESTING:

FAILURE TO INSTALL PRESSURE REGULATOR WILL VOID WARRANTY. (Most units have a convertible regulator.)

The appliance and its indivdual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressure in excess of 1/2 psig (3.45 kPa).

The appliance must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.45 kPa).

NOTICE

The proper installation of this gas appliance is the total responsibility of the end user.

It is the responsibility of the purchaser to determine that the installer is qualified in installation procedures. Conversion, connecting gas lines, calibrating thermostats, burners, lighters, setting gas pressure with manometer, and etc., is all part of normal installation and will not be paid for under warranty. If a warranty technician is called out and finds the unit improperly installed, the end user may be subject to billing.

FOR MAINTENANCE, SERVICE, REPAIRS, OR INSTALLATION - Contact your dealer or the factory, for your local **Factory Authorized Service Agency.**

INSTALLING THE BACKSPLASH OR HIGH SHELF:

To install a backsplash or high shelf on a Comstock-Castle Range, proceed as follows:

1. Ensure back of unit is easily accessible.
2. If mounting low back (backsplash), slide into supports on back of unit, and secure with #10 x 5/8" sheet metal screws.
3. If mounting high shelf, mount shelf to high back using #24 x 3/4" machine screws with nut and washer.
4. Slide backsplash into the side-supports on back of unit, and secure with #10 x 5/8" sheet metal screws. (Fig. 1)

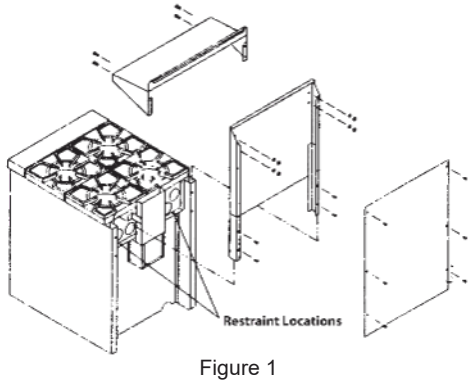


Figure 1

HOOK-UP PROCEDURE FOR COMBINATION UNITS:

Units prefixed with a “2” may be shipped separately. For connection, set the units side by side. Install backsplash. Install hook-up strip in the front center of the two units. Ensure that everything is aligned properly. Install and tighten all screws.

GRIDDLE PLATE INSTALLATION:

Griddle plate front trim must be placed under the plate rest to prevent plate from moving. Rear of plate must be lifted to allow front edge under the plate rest. If unit is equipped with thermostat, sensing bulbs need to be installed under the plate prior to placing front trim under plate rest.

GAS CONNECTION & CONVERSION PROCEDURE

GAS CONNECTION:

The size of the gas line is extremely important. If the line is too small, the gas flow in the manifold will be low. This inadequate flow will cause slow recovery and delayed ignition. If in doubt about the proper size of your service line, consult your local gas utility company.

DO NOT connect appliance before testing the pressure of the gas service supply piping system.

FOR NATURAL GAS - Fixed orifices are set at 4” W.C. (water column). If a pressure regulator is supplied, it must be installed when the unit is connected to the gas supply.

FOR PROPANE GAS - Fixed orifices are set at 10” W.C. (water column). If a pressure regulator is supplied, it must be installed when the unit is connected to the gas supply.

Pressure regulator must be tested in a full condition (all valves “ON”). A condensation/paniculate trap must be provided in the supply line, with a separate shut-off valve upstream of the regulator. These items are customer installation responsibilites.

Your Comstock-Castle appliance is equipped with a 3/4” NPT entrance pipe. Level the appliance under station exhaust hood and connect the gas line from the service gas shut-off valve to the inlet side of the gas pressure regulator using 3/4” pipe. DO NOT use a domestic type gas flexible connector. If a flexible or semi-flexible connector is used, an AGA Certified Flexible Connector with an inside dimension equal to 3/4” must be used. Always aviod sharp bends that could restrict the gas flow to the appliance. All piping must be installed in accordance with local codes, or in the absence of
local codes, with the National Fuel Gas Codes: ANSI Z223.1 latest edition - NFPA No. 54.

IMMEDIATELY CHECK the plumbing with a concentrated soap solution or an approved gas dector. Coat all joints associated with the gas distribution system. Bubbles indicate leaks and the appliance MUST NOT be operated until the leak is corrected. NEVER use an open flame to test for leaks. Be sure to check all gas connections with the main burner “ON” and “OFF”. Check and, if necessary, adjust the manifold pressure.

GAS CONVERSION:

A qualified service technician must be used to safely convert the appliance from natural gas to propane gas, or vice versa. The regulator, burner orifices, pilot orifices, and possibly the pilot lighter bar orifice, if applicable, must be converted. The appliance must be retested for proper alignment, calibration, and gas pressure.

Caution: Never attempt conversion when the unit is hot!
For all manually and thermostatically controlled equipment:

If a regulator has been shipped with the unit, it MUST be installed properly. If not factory installed, connect regulator with arrow pointing in the direction of gas flow. Use thread compound sparingly. **NOTE:** DO NOT APPLY thread compound to the female threads of any part.

Some larger models may have two gas inputs for the manifold system. If this is the case, all gas inputs to the unit MUST have a factory approved regulator.

IMPORTANT NOTICE FOR UNITS WITH CONVERTIBLE PRESSURE REGULATORS

PROPANE GAS CONVERSION INSTRUCTIONS

A griddle is equipped with fixed orifice hoods and shipped from the factory for use on natural gas. To convert to propane gas, install the propane burner orifice hoods supplied as follows:

1. Remove the griddle plate by lifting with two people and set aside.

2. Slide the burners back off of the valve orifice hoods a couple of inches and let it rest.

3. Remove the natural gas orifice hoods with a 1/2” wrench.

4. Apply a very little bit of pipe dope on the threads of the valve. DO NOT APPLY PIPE DOPE INTO ORIFICE HOOD.

5. Attach the supplied propane burner orifice hoods with a 1/2” wrench.

6. Convert the pressure regulator from Natural to Propane gas by inverting the snap-in device beneath the cap on the regulator. This will require a fair amount of pressure. Do not remove the spring. When replacing the cap make sure the snap-in insert goes down on top of the middle of the spring. (Fig. 2)

7. Test for proper pressure; 10” W.C. (water column) using a manometer.

8. Slide burners back onto the orifice hoods.

9. Apply the Propane “Notice” stickert to the front of the unit for futer reference.

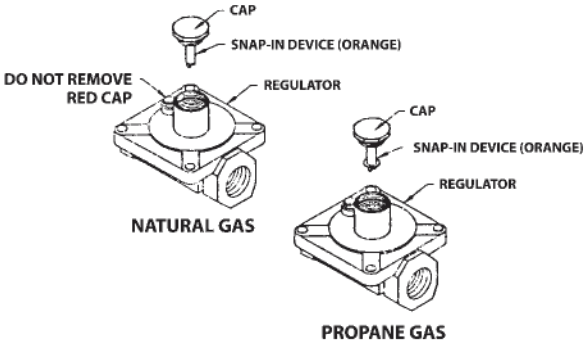


Figure 2

LIGHTING INSTRUCTIONS

NOTE: While lighting a manual pilot system, sufficient time must be allowed for the proper pilot flame to heat the thermocouple that will hold the safety valve open. If lighting for the first time, allow some time for air to be purged from the gas distribution system.

TO LIGHT THE CHINA HAT PILOTS: (OPEN TOP BURNERS)

1. The main gas valve should be “OFF” for at least five minutes to allow any accumulated gas to escape the combustion chamber.

2. Remove spider rings, open top grates, and locate the pilots.

3. Turn supply gas “ON” and hold match close to the pilot head. The pilot should light.

4. Turn the manual gas control to the “ON” position. The main burners should light.

TO TURN THE CHINA HAT PILOTS OFF:

1. Turn the supply gas control to the “OFF” position and ensure all bunrers are off.

NOTE: Pilots cannot be shut off unless the main gas supply to the appliance is shut off.

TO LIGHT THE OVEN PILOT:

Remove the lower kick panel below the oven door. Open oven door and remove the oven rack. Remove oven bottom.

1. The Robertshaw Grayson TS11J safety valve or BASO H15HR-2 should be closed tor at least five minutes to allow any accumlated gas to escape the combustion chamber.

2. Turn the thermostat to the lowest possible setting.

3. Depress and hold down the red button while lighting the pilot. Hold the button down for about 45 seconds.

4. Release the rest button. The pilot should stay lit.

5. Set the thermostat to the desired temperature. The main burners should light.

TO TURN OFF THE OVEN PILOT: (See Fig. 3)

1. Turn the thermostat to the lowest possible setting.

2. Blow out pilot. The safety valve will automatically shut off the gas supply system.

TO LIGHT THE GRIDDLE:
(Thermostatically Controlled Griddles)(0ptional)

For units that are equipped with a thermostatically controlled griddle, proceed as follows:

1. The Robertshaw Grayson TS1U and BASO H43A safety valve should be closed for at least five minutes to allow any accumulated gas to escape the combustion chamber.

2. Turn the thermostat to the lowest possible setting.

3. Depress and hold down the red button while lighting the pilot through the pilot hole. Hold the button down for about 45 seconds.

4. Release the reset button. The pilot should stay lit.

5. Set the thermostat to the desired temperature. The main burners should light.

TO TURN THE GRIDDLE OFF:

1. Turn the thermostat to the lowest possible setting.

2. Blow out pilot. The safety valve will automatically shut off the gas supply system.

TO LIGHT A STANDING PILOT:
(Manually Controlled Griddles)

1. The main gas control valve should be “OFF” for at least five minutes to allow any accumlated gas to escape the combustion chamber.

2. Sight pilot head through the pilot sight hole on front of apron.

3. Turn on the main gas and hold a match close to the pilot head. The pilot should light.

4. Turn the manual gas control to the “ON” position. The main burners should light.

TO TURN THE STANDING PILOT OFF:

1. Turn the manual gas control to the “OFF” position and ensure all burners are off.

NOTE: Pilots cannot be shut off unless the main gas supply to the units is shut off.

CALIBRATION AND ADJUSTMENTS

IMPORTANT: Calibration and adjustments are part of normal installation and are NOT subject to billing under warranty.

TO CHECK AND ADJUST THE MANIFOLD PRESSURE:

All units must be tested for proper manifold pressure at the time of installation.

Proceed as follows:

NOTE: MUST be performed ONLY by qualified service personnel. Contact your **Factory Authorized Service Agency.** Call the factory for the nearest agent.

1. Ensure the gas control and the main gas line is in the “OFF” position.

2. Locate and remove the NPT pressure tap plug.

3. Insert the proper fitting for a gas pressure measuring device into the tap hole and connect the measuring device to the fitting. (Manometer perferred).

4. Turn on gas and light all burners. With all burners operating, monitor the gas pressure reading for the correct pressure. For proper and efficient operation, the pressure reading must be 4” W.C. for natural gas; 10” W.C. for propane gas.

5. If necessary, remove the cap on the regulator and adjust the manifold pressure for the correct pressure as indicated on the pressure measuring device on units with adjustable Reg.

NOTE: Turning the adjustment screw clockwise will increase the output pressure and counterclockwise will decrease the output pressure. Not all units have adjustable Reg.

6. ALWAYS ensure the cap is replaced on the regulator.

7. Turn the gas and the unit “OFF” and reinstall the pressure tap test plug.

8. Ensure the top of the regulator is kept clear of dust and fluids as these will clog the regulator vent port.

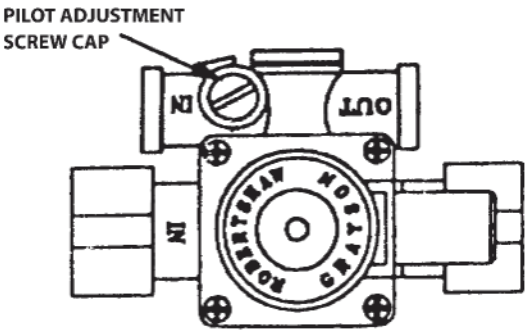


Figure 3
Robertshaw Grayson TS11J Safety Valve

APPLICATION

The H43 valve is designed to provide safe lighting and complete shutoff of pilot and main burner gas. An interlock between the manual valve handle and the reset button allows gas flow only to the pilot during pilot lighting. The control shuts off both main and pilot gas if the pilot flame is extinguished. The manual valve controls both main and pilot gas.

H43 valves are suitable for use with natural gas, Liquefied Petroleum (LP) gas, and LP gas-air mixtures at pressures up to 35 mbar (0.5 psi). Models H43_A with a standard power unit are suitable for operation over a temperature range of 0 to 80°C (32 to 175°F). Models H43_B with a high temperature power unit are suitable for operation over a temperature range of 0 to 120°C (32 to 250°F).

DESCRIPTION

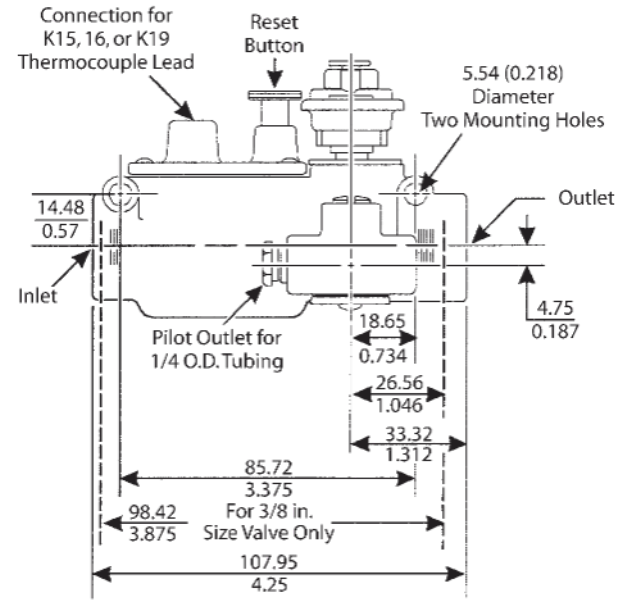
The H43 valve contains a plug valve with multiple drillings, which allows it to serve as both the main burner valve and pilot valve. The valve handle indicates the operating position. Safe lighting is accomplished by a positive interlock between the valve handle and reset button, which allows for resetting the valve to the pilot position only. The handle incorporates a lock button to prevent accidentally turning off the valve. The lock button must be lifted to permit turning the plug valve to the Off position. The main burner may be throttled between the On and Pilot position through the use of the handle.

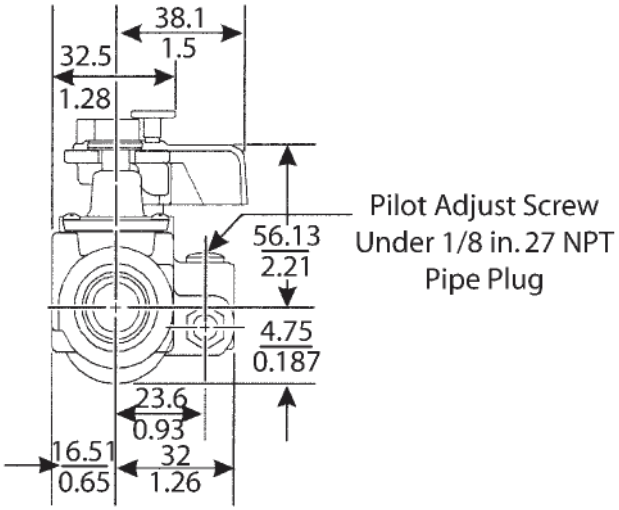
In the event of pilot flame outage, gas is shut off both to the main burner and pilot burner. The handle must be turned to the Pilot position to reset the valve and light the pilot burner. The pilot outlet is located on the right-hand side of the valve casting, when looking into the inlet of the control with the reset button up. The pilot connection is 1/4 cc. It flows toward the inlet of the control and is regulated with a pilot adjustment screw. The pilot connection is also available with the flow toward the outlet of the control. (Contact BASO Gas Products.)

MOUNTING

H43 valves may be mounted in any convenient position with the reset button and manual valve handle accessible.

DIMENSIONS





Dimensions, mm (in.)

PILOT ADJUSTMENT:

SAFETY PILOT ADJUSTMENT PROCEDURE: (Fig. 4)

NOTE: All Comstock-Castle appliances that are designed with safety valves, are equipped with a pilot adjustment key.

For use with ovens and thermostatically controlled griddles:

1. Remove knobs, control panel, oven rack(s), and the oven bottom.

2. Locate the pilot adjustment screw cap on the safety valve and remove the cap.

3. Turn the slotted pilot key to provide the proper size pilot. (See Fig. 3, TS11J Safety Valve or BASO H43A).

4. Replace the pilot adjustment cap.

5. If equipped with BASO H15HR-2 the pilot adjustment is made with a fitting in the Back-out Pipe.

STANDING & CHINA HAT PILOT ADJUSTMENT
PROCEDURE: (Fig. 5)

NOTE: Caution must be exercised during the initial installation and/or conversion of standing or china hat pilots to ensure that the pilot valves are not wide open.

1. The main gas valve should be “OFF” for at least five minutes to allow any accumlated gas to escape the combustion chamber.

2. Gently remove the control knobs and the front apron panel to the unit.

3. Remove spider rings, open top grates, and locate the pilots.

4. Follow the pilot feed tube back to the manifold and locate the pilot adjustment valve.

5. With a small flat-tipped screwdriver adjust the valve to its minimum position, (maximum clockwise)

6. Ensure that the thermostat or manually operated controls are in the “OFF” position.

7. Turn on the gas. While holding a match close to the pilot head, slowly open the pilot valve (counter-clockwise) until the pilot head lights.

8. Properly adjust pilot flame for the correct height.
(See Fig. 5)

NOTE: A properly adjusted pilot will NOT cause pilot/burner infringement, flame lift, or excessive carbon.

9. Properly adjust all the pilot valves. Ensure all pilots will easily ignite each burner.

10. Replace the front apron panel and knobs.

11. Replace top grates, spider rings, and proceed with “BURNER ADJUSTMENT”.

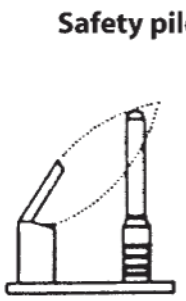


Figure 4
(Robertshaw 2C-1

Figure 5
(Pilot)

BURNER ADJUSTMENT:
(For oven, griddle, and open top burners)

NOTE: All Comstock-Castle appliances are equipped with fixed orifices and the burners cannot be adjusted for gas flow. The only adjustment necessary is the primary air adjustment. A blue flame is necessary for proper combustion and maximum efficiency. Check for proper operation after cleaning the unit. It is recommended this adjustment be done at least once or twice a year.

1. Ensure the unit is shut off and cooled down.

2. Remove all knobs and the front apron panel from the unit.

3. Loosen screw on the air mixer which is located on the venturi section of the burner.

4. Light the burner and set control for maximum “ON”.
Allow the burner to burn at least five minutes.

5. Open air mixer until flame starts to float fromt the main burner ports.

6. Slowly close air mixer until the flame settles softly on the burner ports. The flame should now be a well-defined blue with no yellow tips.

7. Carefully tighten the screw and ensure the flame has not changed.

8. Replace apron and knobs, proceed to “THERMOSTAT CALIBRATION”.

THERMOSTAT CALIBRATION

NOTE: When Comstock-Castle griddles are equipped with a Robertshaw thermostat, they are carefully calibrated at the factory. If calibration is needed, it is recommended that ONLY a qualified service techincian perform the adjustment.

BY-PASS ADJUSTMENT: (minimum burner flame)

When the cooking area reaches the temperature to which the thermostat dial is set, the control will cut down the flow of gas that is needed to keep is at the selected temperature. The control must always by-pass enough gas to keep the entire burner lit. The by-pass must always be carefully and accurately adjusted to maintain the minimum flame.

NOTE: If the by-pass is in need of adjustment, it is recommended the ONLY a qualified service technician perform the adjustment.

1. Light and adjust the pilot. Check and, if necessary, adjust the manifold pressure.

2. Turn the dial completely “ON”, to light the burner.

3. Wait five minutes, turn and set the dial to a point slightly below the first mark on the dial.

4. Carefully remove the dial and the bezel.

5. Locate the by-pass adjustment screw and monitor the burner flame height. With a screwdriver, turn the by pass adjustment screw counter-clockwise to increase the height of the flame and clockwise to decrease the height of the flame. The adjustment must maintain a minimum flame over the entire burner. The minimum flame should be approximately 1/8” in height.

6. Replace the bezel and the dial, rotate the thermostat dial uniti it locks in the “OFF” position.

THERMOSTAT CALIBRATION: (See Fig. 6)

NOTE: Once the appliance is properly installed, all thermostats associated with the equipment must be checked for proper calibration. The thermostat is a precision instrument and is carefully calibrated at the factory. Field calibration is seldom needed and should not be attempted unless a considerable amount of experience proves that the control is not maintaining the dial set temperature. If calibration is needed, it is recommended that ONLY a qualified service technician perform the adjustment.

NOTE: Always ensure the by-pass flame is properly adjusted prior to any attempt to recalibrate.

To check for proper temperature during test or recalibration, always use an accurate test instrument with the proper sensing device. This will ensure the correct temperature is being recorded. On all griddle plates, use a disc probe and drop a few drops of oil on the plate. Place the disc probe into the oil flat against the griddles surface.

When placing the sensing probe in the oven, always ensure the oven probe hangs freely approximately at the center of the oven. Do not permit the probe to touch the sides or the racks of the oven.

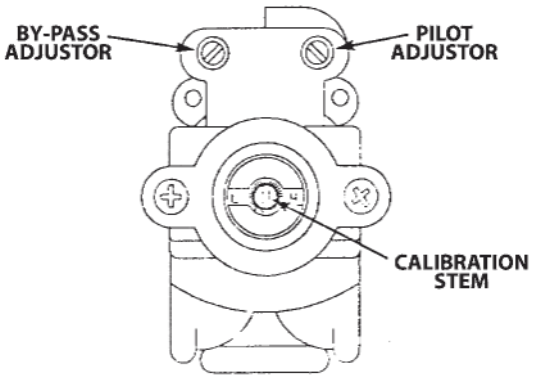


Figure 6
Robertshaw BJWA Thermostat

CALIBRATION STEPS:

1. Remove the thermostat dial and pull out the metal insert.

2. Replace the thermostat dial and set the dial to the 350 degree mark. Light unit.

3. Light oven and allow a sufficient amount of time for the temperature to stablize (approximately 15 minutes).
4. Check temperature at five minute intervals uniti two successive temperature readings are within 5 degrees of each other.

NOTE: If the control does not read within 10 degress of the dial setting (350 degrees), the control should be recalibrated. For recalibration proceed as follows:

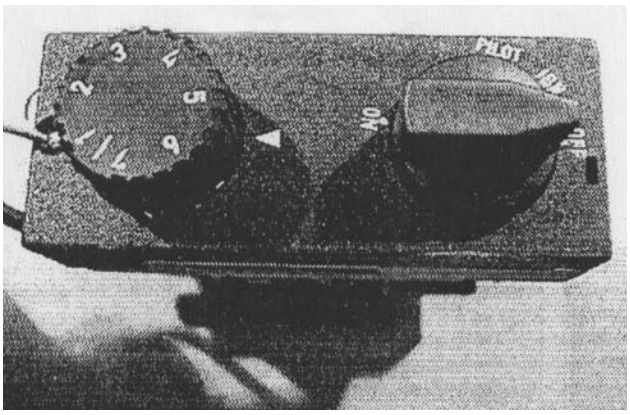
5. Hold thermostat dial firmly, insert a screwdriver through the center of the dial and push on the calibration stem. CAUTION: DO NOT turn the stem.

6. While firmly holding the calibration stem in, turn the dial to the actual temperature shown on the test instrument. Release the pressure on the calibration stem and remove the screwdriver. Replace the dial insert.

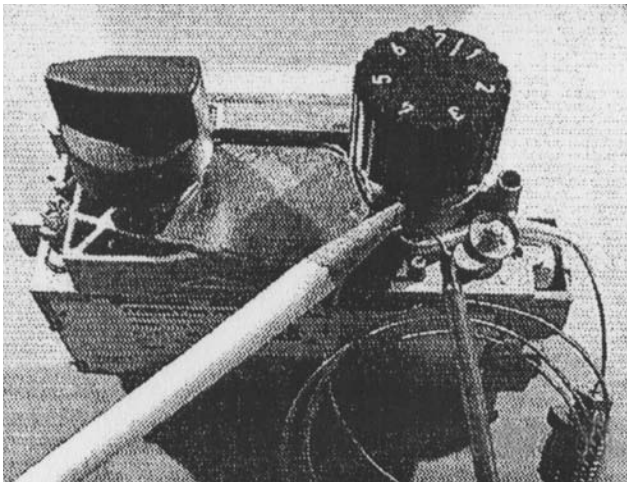
7. Set the temperature control dial to 400 degress. Once again, check the temperature as instructed in steps 3 & 4. If the temperature is not within 10 degress with a dial setting of 400 degress, then the sensing element is inoperative and the control should be replaced.

Fryer Thermostat Calibration

1. Remove front cover of valve with Phillips screwdriver.



2. Remove knob by using flat screwdriver.



3. To increase temperature, turn brass knob counterclockwise. Turn knob slowly until burner kicks on and wait for it to shut off, check temperature, adjust until temperature reaches approx. 395 at #7.

MANUAL PILOT SYSTEM

When heat is applied to the thermocouple, a voltage is produced that will energize the magnetic head in the safety valve. When the pilot flame is extinguished, the voltage produced by the thermocouple will decrease. Thus, both the pilot and the main gas will be shut off at the safety valve.

TROUBLESHOOTING THE MANUAL PILOT SYSTEM
PROBLEM: (Pilot will not stay lit.)

1. Check for drafts that could blow out the pilots.

2. Ensure the pilot has a sharp blue flame. If not, clean pilot orifice. CAUTION: Be careful not to enlarge or distort the pilot orifice when cleaning.

3. Make sure thermocouple is properly seated in the safety valve (finger tight plus 1/4" turn with a wrench).

NOTE: DO NOT over-tighten, damage could result to the safety valve.

4. Check pilot adjustment, adjust if necessary.

5. Have a qualified service technician properly test pilot system to determine and correct the problem.

TO REMOVE AND REPLACE THE THERMOCOUPLE:

1. Remove all items needed to gain easy access to the pilot head assembly.

2. Unscrew thermocouple lead in pilot head.

3. Unscrew thermocouple lead from safety valve and remove the thermocouple.

4. To replace the thermocouple - reverse the above procedure and test.

THERMOCOUPLE VOLTAGE RANGE: Comstock-Castle equipment may be configured with the following. In the event of a failure, replace with an identical component only!

Robertshaw thermocouple part #T46. Manufacturer suggested operational voltage range, 18 to 24 milivolts.

NOTE: DO NOT over-tighten (finger tight plus 1/4" turn with a wrench).

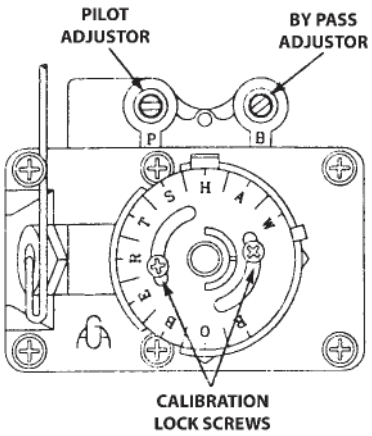


Figure 7
Robertshaw FD Thermostat

TO CALIBRATE THE ROBERTSHAW FDH, FDL, & FDO OVEN THERMOSTAT FOR FRYERS, PIZZA AND BAKE OVENS:

1. Place the sensing probe of the test instrument in the middle of the oven.

2. Light main burner and set the temperature dial to 400 degrees. Allow the oven to heat until the burner flame cuts down to by-pass. Check temperature on the test instrument. If temperature does not read within 10 degrees of the dial setting, recalibrate as follows:

3. Without turning, pull dial straight off.

4. Hold the calibration plate and loosen the calibration lock screws until the plate can move independently of the control.

5. Turn the calibration plate so that the reading on the test instrument is in line with the indicator mark. Hold plate firmly and tighten screws.

Safety Warning Instructions

FOR MERTIK MAXITROL GV30 SERIES GAS COMBINATION CONTROLS

⚠ SPECIAL WARNINGS

IF YOU DO NOT FOLLOW THESE INSTRUCTIONS EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE. NO UNTRAINED PERSON SHOULD ATTEMPT TO INSTALL, MAINTAIN OR SERVICE GAS PRESSURE CONTROLS.

To minimize the possibility of FIRE, EXPLOSION, and OTHER HAZARDS.

1. All products, including gas pressure controls, used with combustible instructions of the manufacturer, with government codes and regulations, and plumbing codes and practices.

2. Do not use a gas combination control if it appears to have been subjected to high temperatures, damaged in any way, or to have been taken apart or tampered with. Any of these may be signs of possible potentially dangerous combustion problems.

3. <u>Installation</u>

   a. Turn off gas supply before starting installation.
   b. Install the control properly so gas will flow as indicated by the arrow on the casting.
   c. Make sure markings or wording on control are not painted over or obliterated.

   <u>Mounting positions (see diagrams below)</u>
   d. The gas control can be mounted horizontally 0 to 90 degrees in any direction from the upright position, i.e. from the position when the knobs are on top. It can also be mounted in a vertical position.