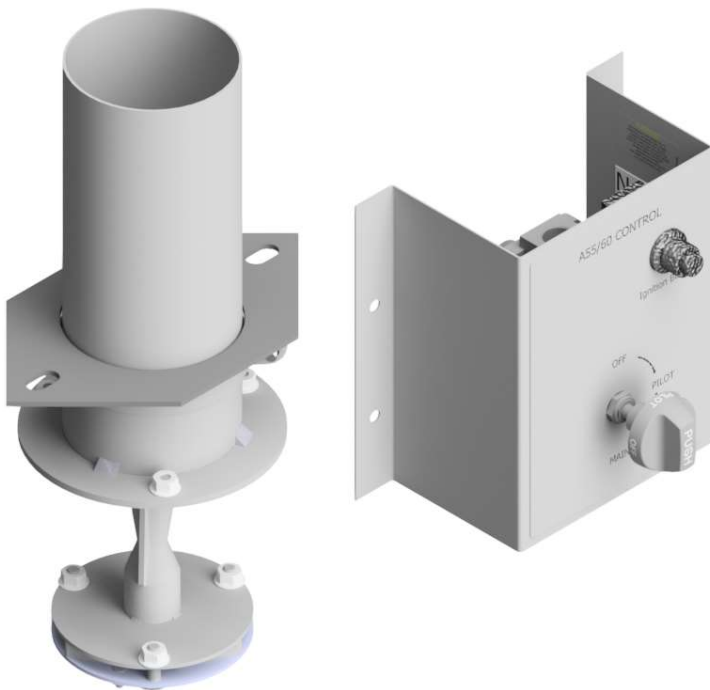


OPERATION AND INSTALLATION MANUAL



A55 / A60
Atmospheric Gas Burner

SPECIFICATIONS

- **Max input (Nat. Gas)** – 55,000 BTU
- **Max Input (LP Gas)** – 60,000 BTU
- **Fuel** – Natural / L.P. Gas

⚠ WARNING

If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

INSTALLATION OF BURNER

Installation of the burner must be done by a qualified installer in accordance with ANSI Z21.8 and ANSI Z223.1 or CAN/CGA-B149, and in complete accordance with all local codes and authorities having jurisdiction.

Incorrect installation, adjustment, or misuse of this burner will void the warranty and could result in death, severe personal injury, or substantial property damage.

A qualified installer is a person who is responsible for the installation and adjustment of the equipment and who is licensed to install gas-burning equipment in accordance with all codes and ordinances.

Burner is shipped at 60,000 BTU and 55,000 BTU for LP gas and natural gas respectively. To change the firing rate follow instructions in the manual.

WAYNE COMBUSTION SYSTEMS reserves the right to update the production and manuals without having to upgrade the production and previous manuals. Customer service will be able to provide, upon request, information about the updates WAYNE COMBUSTION SYSTEMS has made on the burners.

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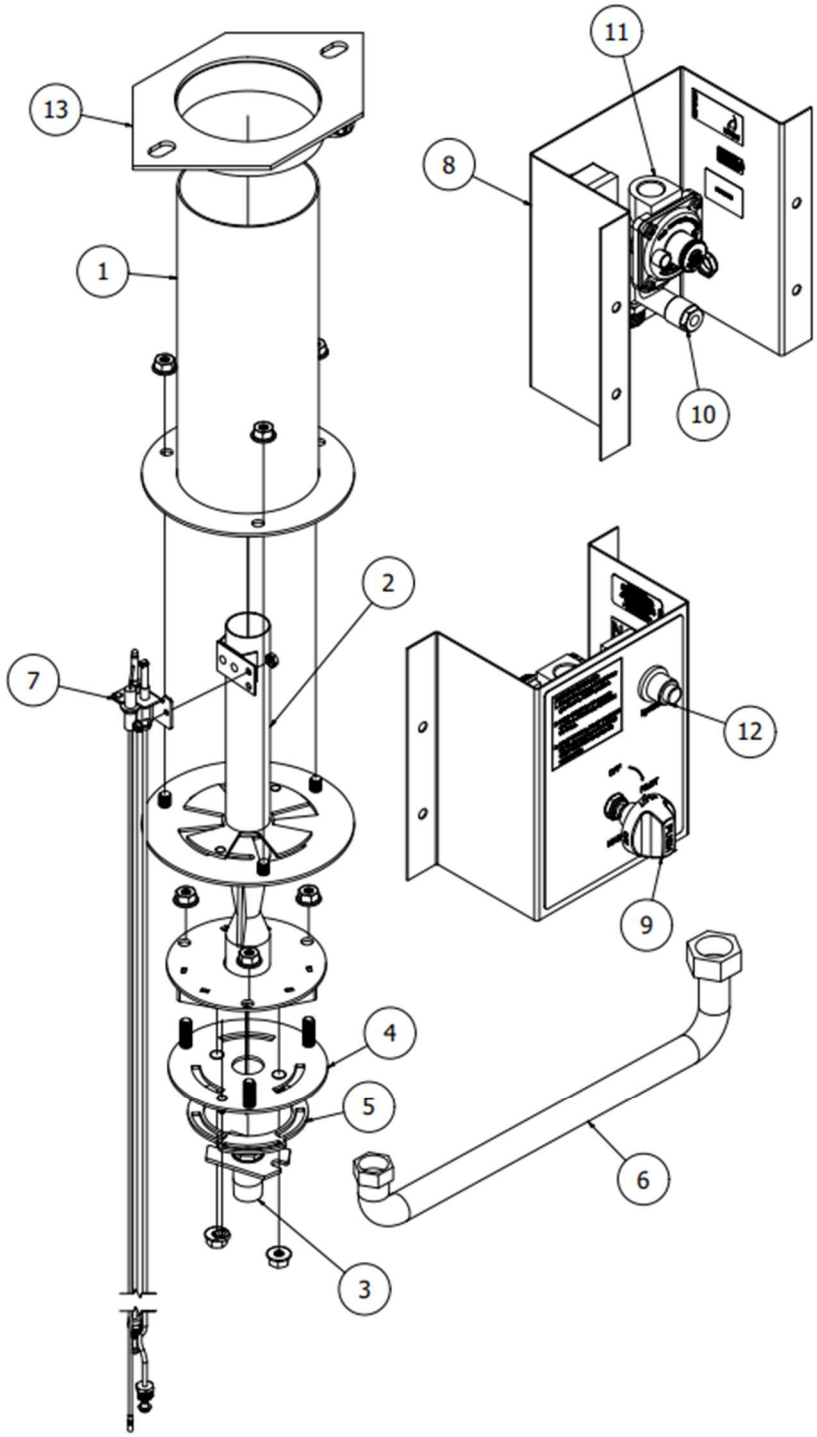
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PART DESCRIPTION

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	600038	TUBE/FLANGE
2	1	600043	VENTURI WELDMENT
3	1	600037	ORIFICE HOLDER
4	1	600010	COVER ASSEMBLY-TOP
5	1	600008	PRIMARY AIR RING
6	1	600023	FLEX TUBE
7	1	600012 600012-002	PILOT ASSEMBLY-NAT PILOT ASSEMBLY-L.P.
8	1	600020	CINTROL MOUNTING BRACKET
9	1	600017	KNOB
10	1	600018	GAS VALVE
11	1	600019-001 600019-002	PRESSURE REGULATOR-NAT PRESSURE REGULATOR-L.P.
12	1	600021	PUSH BUTTON IGNITOR
13	1	63659-002	ADJUSTABLE MOUNTING FLANGE

EXPLODED VIEW



WARNINGS

⚠️ WARNING

FIRE HAZARD

Failure to follow guidelines specified in the operating and installation manual may result in fire, causing property damage and/or bodily injury.

⚠️ WARNING

FIRE HAZARD

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

WHAT TO DO IF YOU SMELL GAS

- Open Windows.
- Do not try to light any appliances.
- Do not touch electrical switches; do not use any phone in your building.
- Extinguish any open flame.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas suppliers' instructions.
- If you cannot reach your gas supplier, call the fire department.

⚠️ WARNING

OVERHEATING HAZARD

- Should overheating occur, shut off the manual gas valve to the appliance.
- In case of gas valve malfunction, turn off the gas to the burner.

⚠️ WARNING

CARBON MONOXIDE POISONING HAZARD

**CARBON MONOXIDE IS A COLORLESS, ODORLESS GAS THAT CAN KILL.
FOLLOW THESE RULES TO CONTROL CARBON MONOXIDE.**

- Do not use this burner in an unvented, enclosed area. Carbon monoxide may accumulate.
- Do not adjust the pressure regulator. High pressures produce carbon monoxide.
- Check flue gases for carbon monoxide. This check requires specialized equipment.
- Allow only qualified burner service persons to adjust the burner. Special instruments and training are required.
- Read this manual before using the burner.

INSTALLATION INSTRUCTIONS

⚠️ WARNING

FIRE HAZARD

LP gas is heavier than air and will settle in low-lying areas of the combustion chamber. All connections should be checked for leaks using a soapy solution applied to gas connections.

⚠️ WARNING

FIRE HAZARD

During installation, a distance of at least 3 inches should be maintained between the burner and oven wall.

⚠️ WARNING

FIRE HAZARD

Inlet Gas pressure must not exceed $\frac{1}{2}$ psi.

The appliance and its individual 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 $\frac{1}{2}$ psi.

The appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than $\frac{1}{2}$ psi.

CHANGING ORIFICE

- The appliance pressure regulator is factory set to 4 in H₂O for Natural Gas and 10 in H₂O for Liquid Propane and is **NOT** adjustable.
- When leaving the factory, each burner is sent out firing at 60,000 BTU with LP gas or 55,000 BTU with natural gas.
- To reduce the BTU/hr rating (decrease the heat output) the orifice must be changed to the appropriate size. A blank orifice is provided with the burner and should be drilled out to the correct size. To determine the drill bit size for the required rate, see the Table 1.
- Before changing the orifice, turn OFF the gas supply and remove the AAA battery (customer supplied) from the ignition switch.
- To change the orifice use a 11/16 wrench to remove the two 5/16-18 hex nuts that hold the orifice holder and gas pipe at the back of the burner.
- Use a wrench to unscrew the existing orifice (part number – 62371) from the orifice holder . Screw-in the desired orifice into the orifice holder with a 11/16 wrench.
- Using the studs from the primary air assembly - bottom part, align the orifice holder with the burner assembly and tighten the two 5/16-18 hex nuts with a 11/16 wrench.

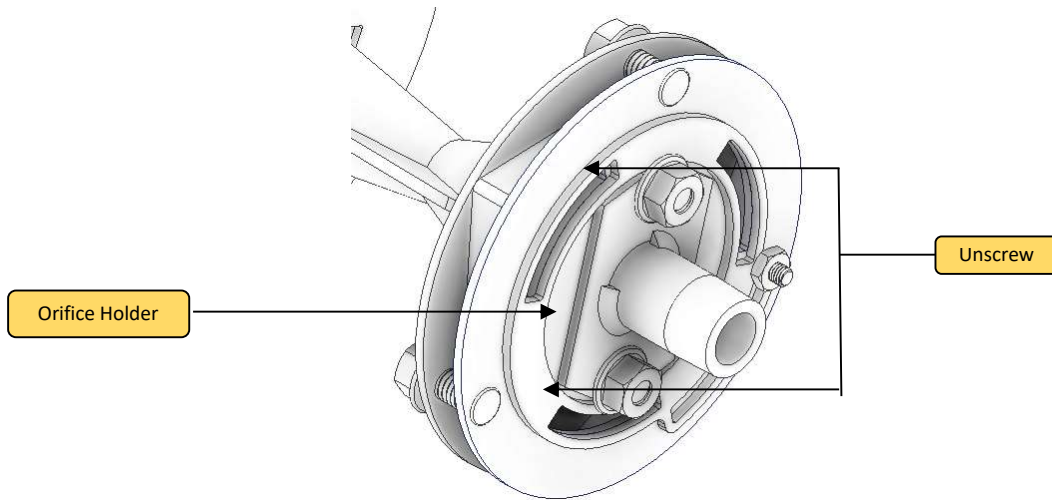


Figure 1: Orifice Installation

BTU/hr Input	Natural Gas : 4" w.c.		LP Gas : 10" w.c.	
	Number/Fraction	Decimal(in)	Number/Fraction	Decimal(in)
35,000	32	0.116	49	0.073
40,000	1/8	0.125	48	0.076
45,000	30	0.129	47	0.0785
50,000	29	0.136	45	0.082
55,000	27	0.144	44	0.086
60,000	N/A	N/A	43	0.089

Table 1: Drill Chart

BEFORE INSTALLATION

- The burner is designed to function in an oven with base dimensions between 32" and 56".
- Supply pressure at the inlet of the pressure regulator (part number – 600028) for natural gas and LP gas should be greater than 4" w.c. and 10" w.c. respectively. **DO NOT EXCEED ½ PSI.**
- A sediment trap must be installed at the inlet of the gas connection.
- The burner should not be installed in an environment with a wind speed greater than 5 mph.
- For efficient combustion, the burner should be installed in a well-ventilated place.
- There should not be any pressure gradient between the combustion chamber and the environment (i.e burner must draw air from the same source as the oven chamber).
- The burner should not be operated/lit before all the required leak checks are performed.

MOUNTING BURNER ASSEMBLY INSIDE THE OVEN

- Follow the oven manufacturer's instruction manual to attach the flange (part number – 600025) to the base of the oven.
- Screw the flex tube (part number – 600023) on the orifice holder (part number – 600007) using wrench.
- Pass the burner air tube through the flange opening and make sure it protrudes 1 inch above the oven floor. Tighten the mounting flange bolts using wrench.

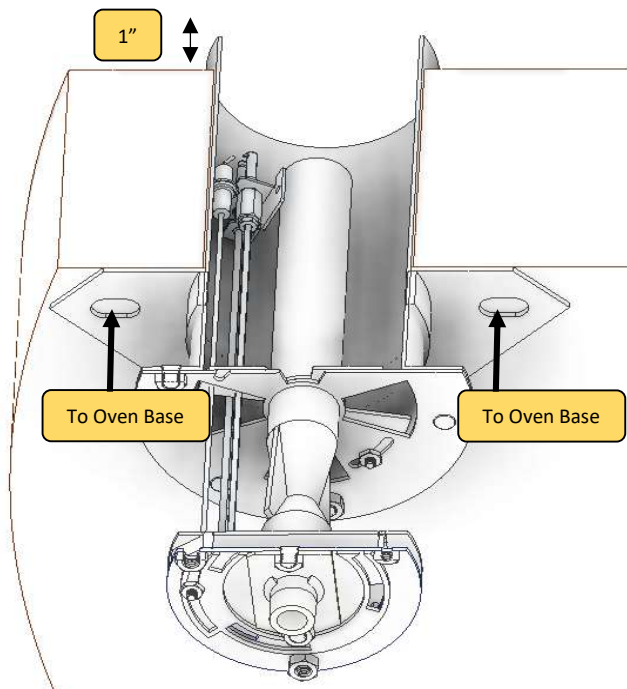


Figure 2: Mounting burner inside oven

CONTROL BOX MOUNTING

- The location of the control box should be chosen such that the flame from the burner will be visible while operating the controls. Install the control box using the appropriate customer supplied fasteners at the desired location.

CONNECTIONS

- After the burner assembly is mounted screw the other end of the flex tube (part number – 600023) to the outlet of the gas valve (part number – 600027) using wrench.
- Attach the thermocouple wire. Make finger tight and turn a quarter turn using 7/16 wrench. **DO NOT OVER-TIGHTEN.**
- Attach the ignition cable to the ignition switch as shown in figure 3.
- Connect the provided ground wire from the ignition switch to ground.
- Attach the pilot tube to the gas valve using 3/8 wrench.
- Attach the main gas line to the inlet of the gas valve as shown in figure 3.
- Install customer-supplied AAA battery in the ignitor button.
- Test fire the burner before initiating its daily operations.

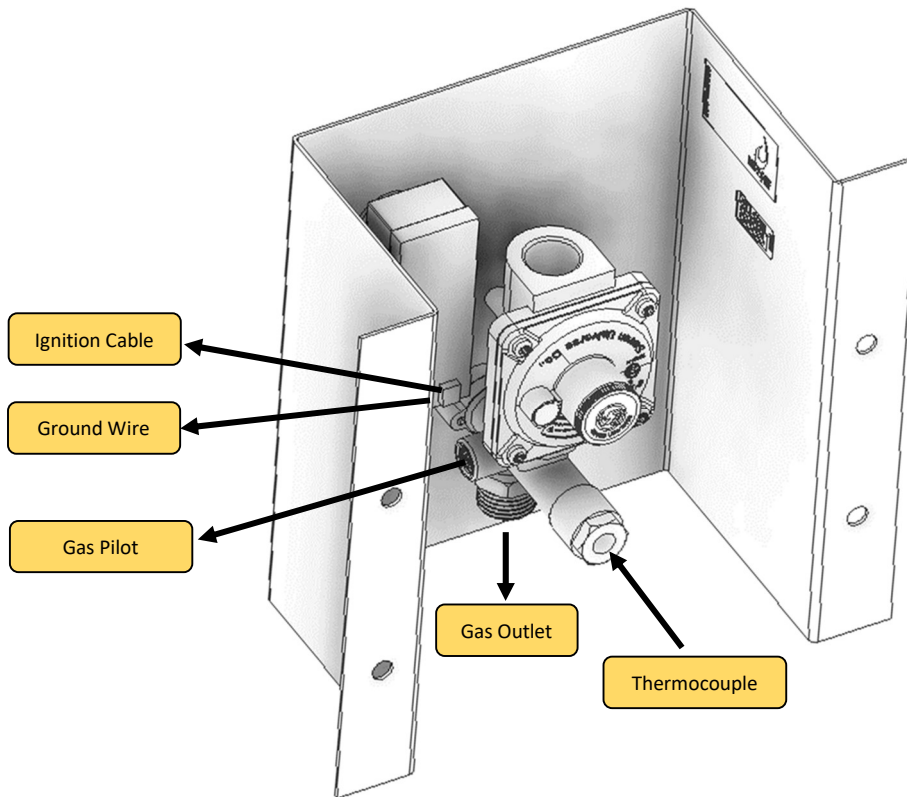


Figure 3: Connections

AIR SHUTTER ADJUSTMENT

- Appropriate combustion numbers can be obtained by adjusting the primary and secondary air to the burner. To determine the correct air shutter adjustment a combustion analyzer capable of measuring CO₂ (or O₂) and CO must be used.
- Increasing air supply to the burner usually reduces CO₂ and CO readings.
- For safe operation, CO should be minimized with a goal of 100 ppm or less at both high fire and low fire states and initial testing should be performed with flue gas temperatures of at least 400 degrees Fahrenheit or the maximum rated temperature of the oven if less than 400 degrees.
- **UNDER NO CIRCUMSTANCE SHOULD CO BE ABOVE 400 PPM.**
- To adjust the primary air, loosen the single hex nut holding the primary air ring with 3/8 wrench as shown in figure 4. Rotate the primary air ring in clockwise direction to increase the primary air flow to the burner. Retighten the hex nuts after adjustment.
- To adjust the secondary air, loosen the two hex nut holding the secondary air ring with 3/8 wrench as shown in figure 4. Rotate the secondary air ring in clockwise direction to increase the secondary air flow to the burner. Retighten the hex nuts after adjustment.

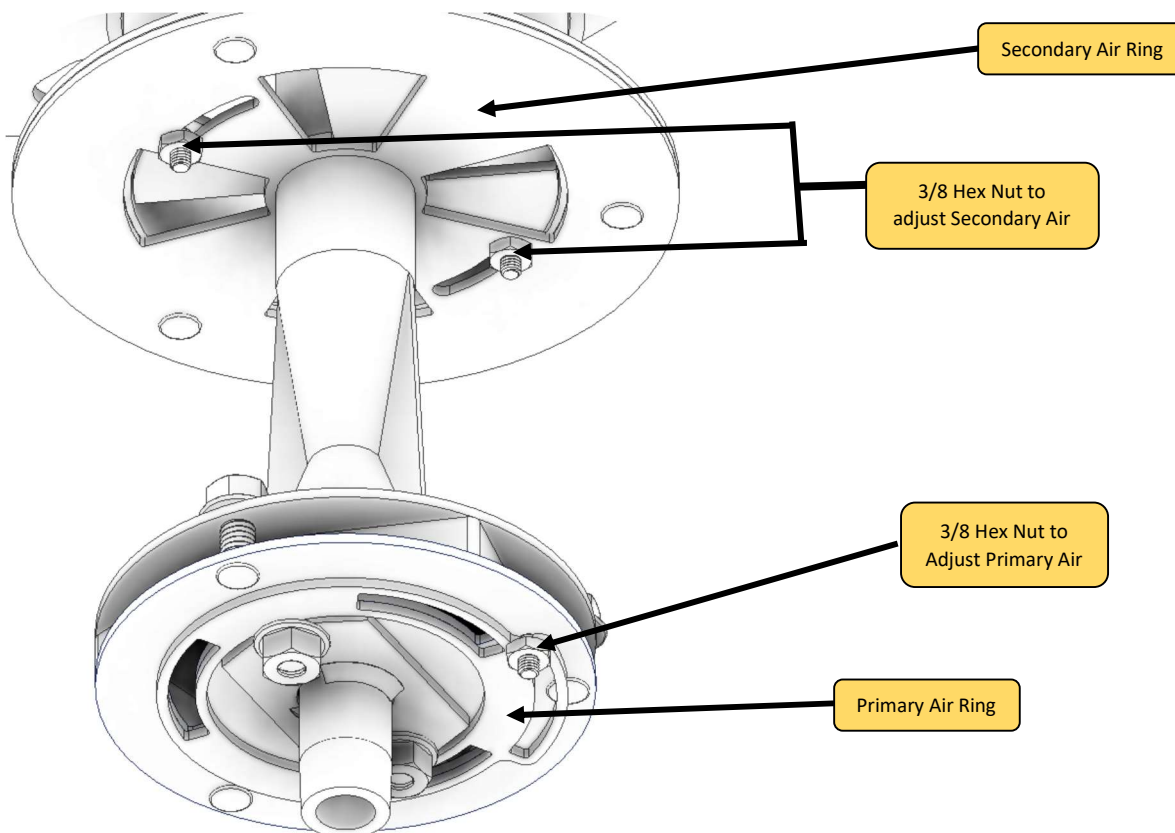


Figure 4: Air Shutter Adjustment

OPERATING INSTRUCTIONS

WARNING

FIRE HAZARD

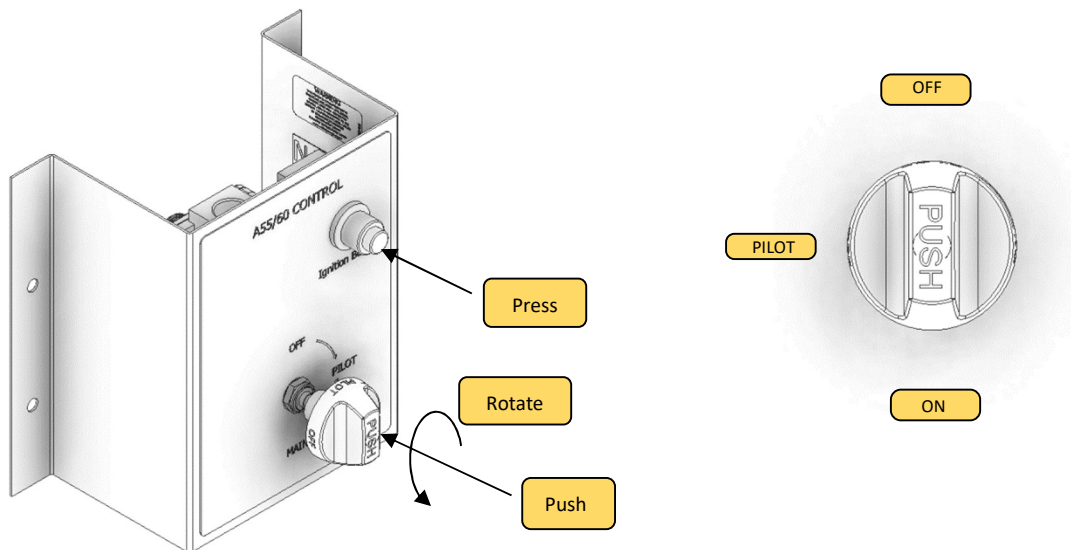
The burner must be operated with the gas specified on the datasheet. Conversion of the burner from natural gas to L. P. or vice versa should be done following the proper instruction set.

BEFORE IGNITION

- Ensure that there is no obstruction blocking the flow of air to the burner or the appliance ventilation.
- Check all the gas flow valves are in the open position and purge air from the gas line if necessary.
- Make sure that all the electric connections are as per the instruction manual.

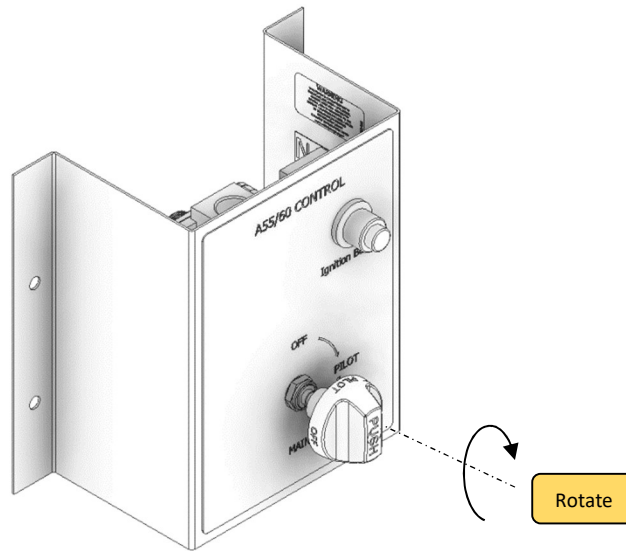
IGNITION PROCEDURE

- Press down the knob and rotate it in a counterclockwise direction to the pilot position.
- Hold the knob in pilot position for 10 sec and then press the ignition button for 2 sec.
- After ignition, keep holding the knob in the pilot position for about 20 sec to heat up the thermocouple.
- After 20 seconds, rotate the knob counterclockwise to the minimum power position.
- Keep rotating the knob to increase BTU input to the desired level.



SHUTDOWN PROCEDURE

- Rotate the knob in a clockwise direction to reduce the power to the main burner.
- Further rotate the knob to the pilot position to turn off the main burner and just keep the pilot engaged.
- Press and rotate the knob to the 'OFF' position to completely turn off the burner.



TROUBLESHOOTING

1. **IGNITION FAILURE –**

- Replace the customer provided AAA battery in the ignition module.
- Make sure primary and secondary air inlets have no blockages.
- The burner pilot/ignitor arm may be covered by external material from the environment. Act under the following instructions to clean the burner pilot/ignitor arm –
 - Turn Off the gas supply to the burner through the main gas line.
 - Disconnect the burner by unscrewing the flex tube from the nozzle holder.
 - Loosen the bolts to disengage the burner from the mounting flange sleeve. Make sure to take utmost care to not damage any burner component while taking down the burner assembly.
 - Use compressed air to clean any and all external material blocking the pilot/ignitor arm.
 - Follow the instruction manual to reinstall the burner with utmost safety.
 - Contact WAYNE COMBUSTION SYSTEM's customer service representative if the problem persists.
- Contact a certified gas technician to check the supply inlet gas pressure is greater than 4" w.c for natural gas and 10" w.c. for L.P gas.

2. **BURNER FLAME IS NOT YELLOW –**

- Decrease the primary and secondary air gap until acceptable combustion numbers are achieved as described in installation instructions.
- Keep the ratio of primary and secondary air the same.

3. **BURNER FLAME IS TOO YELLOW –**

- Verify there is no blockage in the path of the primary and secondary air inlets.
- Increase the primary and secondary air gap until acceptable combustion numbers are achieved as described in installation instructions.
- Keep the ratio of primary and secondary air the same.

4. **BURNER FLAME INTENSITY LOWER/GREATER THAN USUAL –**

- Verify correct nozzle size is used for the application through table 1 on page number 7.
- Contact a certified gas technician to check the supply inlet gas pressure is greater than 4" w.c for natural gas and 10" w.c. for L.P gas.
- Make sure that there are no gas leaks.

