



**40 SERIES GAS BURNER  
MODEL 400 NATURAL GAS/PROPANE**

**INSTALLATION INSTRUCTIONS AND OWNER'S HANDBOOK**

**CAUTION:** All gas burners **MUST** be installed by trained and licensed technicians.  
**WARNING:** Installation of this burner must conform with local codes or, in the absence of local codes, with the Standard for the Installation of Domestic Gas Conversion Burners, ANSI Z21.8-1984, and Addendum, Z21.8a-1989, and the National Fuel Gas code, ANSI Z223.1-1984, and CAN/CGA B149.1 & 2. If an external electrical source is utilized, the conversion burner, when installed, must be electrically grounded in accordance with local codes or, in the absence of local codes, with the national Electrical Code, ANSI/NFPA No. 70-1990 and CSA Electrical Code.

Owner is required to retain this manual for future reference.

<b>TECHNICAL SPECIFICATIONS</b>		
<b>FIRING RATE 170,000 TO 400,000 Btu/hr</b>		
	NATURAL	PROPANE
GAS SUPPLY PRESSURES	MIN. 4" w.c. MAX. 10" w.c.	MIN. 8" w.c. MAX. 13" w.c.
MANIFOLD PRESSURES	MIN. 0.90" w.c. MAX. 1.80" w.c.	MIN. 1.04" w.c. MAX. 3.04" w.c.
POWER	120 VOLTS 60 Hz 1 PHASE	
MOTOR	232T 2.2 AMPS 3250 RPM	
CONTROL MODULE	525 SE/A ELECTRONIC	

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

**Do not store or use gasoline or any other flammable vapours or liquid in the vicinity of this or any other appliance.**

- WHAT TO DO IF YOU SMELL GAS:**
- 1) Do not try to light any appliance.**
  - 2) Do not touch electrical switches; Do not use any phone in your building.**
  - 3) Immediately call your gas supplier from a neighbour's phone. Follow the gas supplier's instructions.**
  - 4) If you cannot reach your gas supplier, call the fire department.**

**Installation and service must be performed by a qualified installer, service agency or the gas supplier.**

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*The following pages contain information, descriptions and diagrams for the proper installation and wiring of the burner. Please read carefully before attempting final installation.*

*The responsibility for ensuring that this manual is complete rests with the holder of these instructions.*

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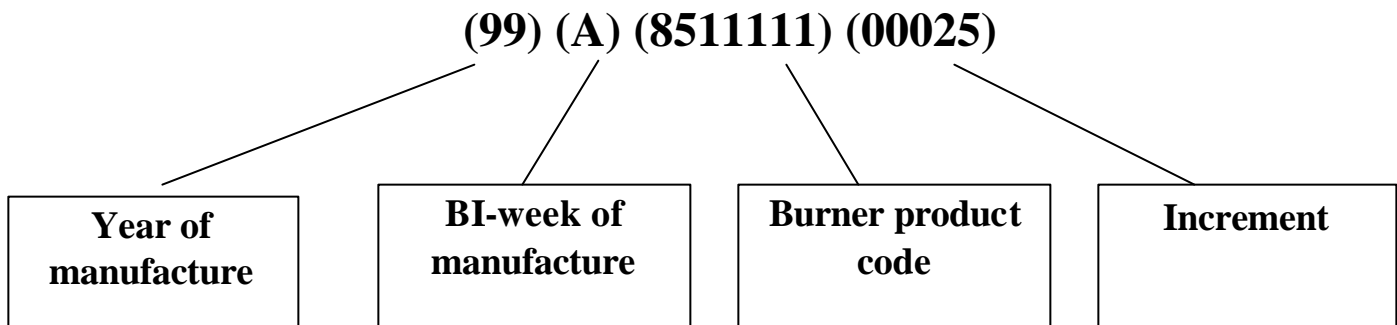
## SERIAL NUMBER IDENTIFICATION

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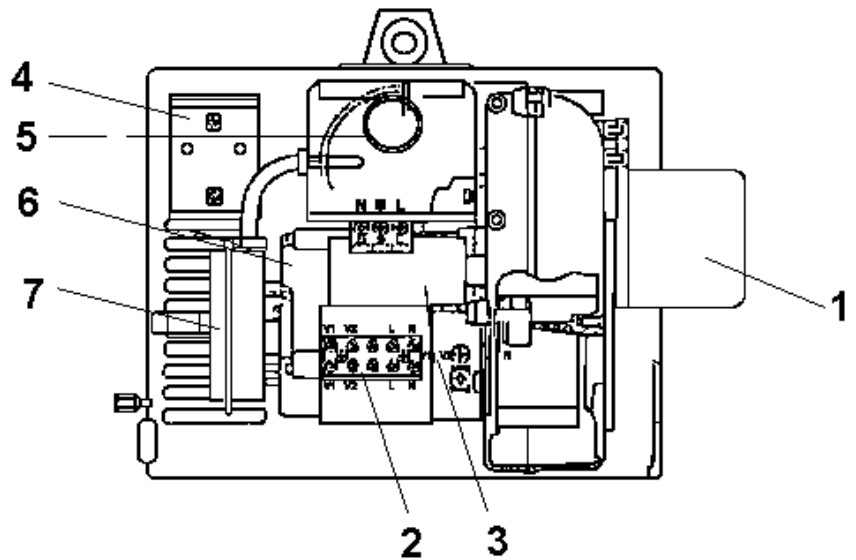
The Riello 15 character serial number, example, **99 A 8511111 00025**, is identified as follows:

**99** = last two digits of the year of manufacture; **A** = BI-week of manufacture; **8511111** = burner product code; **00025** = increment of 1 for each burner produced – specific to product code – reset to zero each January 1<sup>st</sup>.

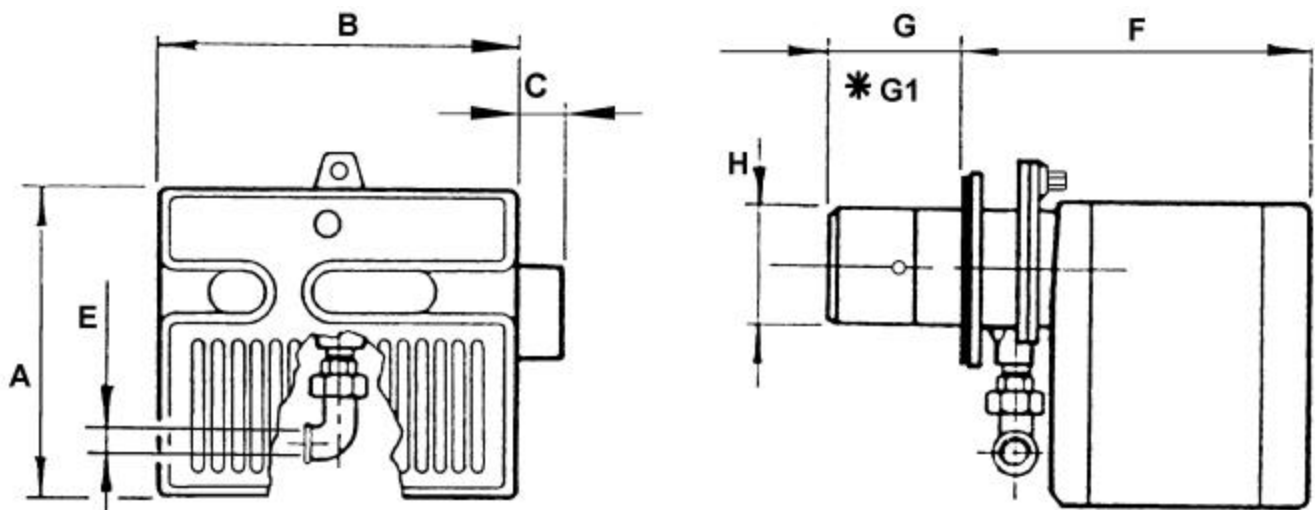


## PRINCIPAL BURNER COMPONENTS

1. Air Damper (Optional Delete)
2. Air Gate Lock-screws
3. Wiring Terminal Block
4. Air Pressure Switch
5. Motor
6. Lockout Lamps and Reset Button
7. Cover Screw
8. Rubber Grommet
9. Capacitor



## BURNER DIMENSIONS



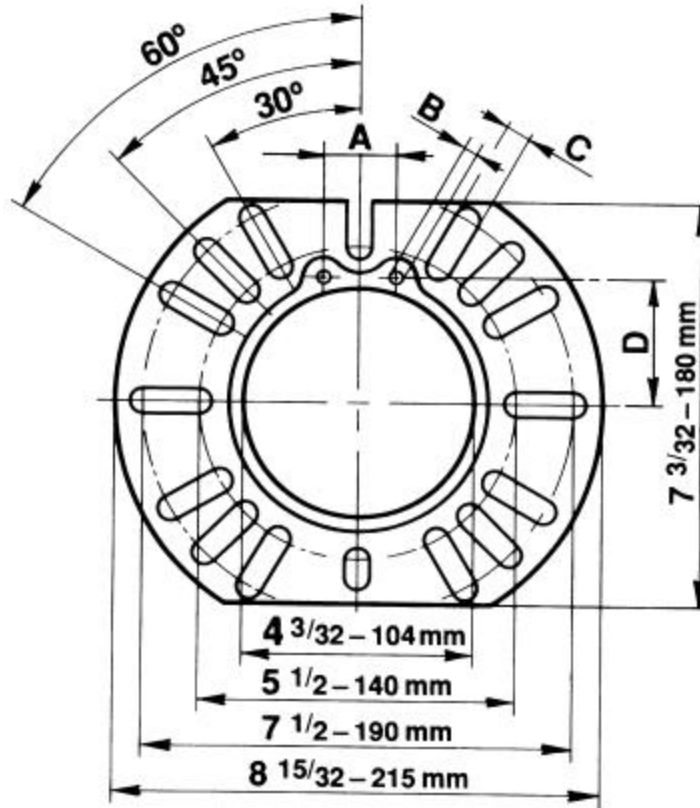
Model 400	A	B	C	F	G	*G1	H
inches	10 5/16	12	1 3/8	13 11/16	3 3/4	10	4 1/8
mm	2262	305	35	347	95	255	61

**\* G1 is for LBT version**  
**Gasket thickness is 4 millimeters**

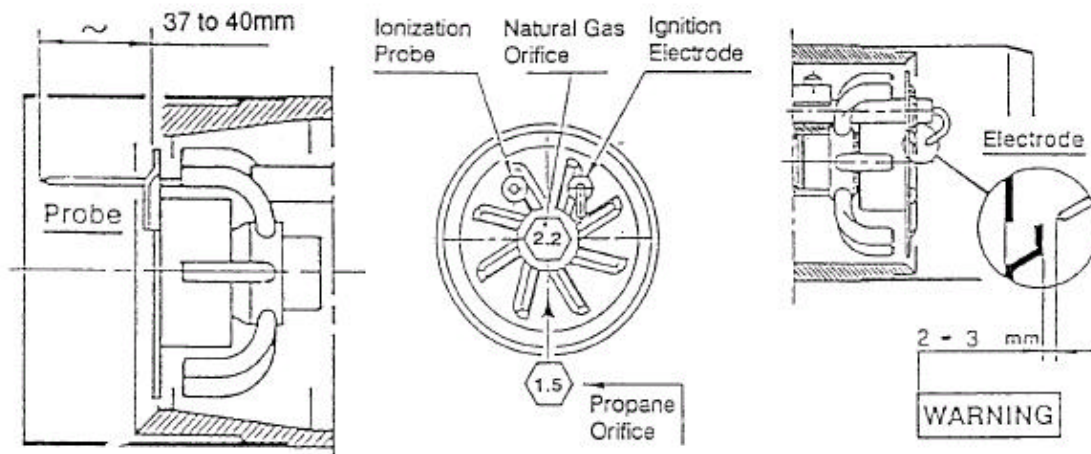
## UNIVERSAL MOUNTING FLANGE

UNIVERSAL MOUNTING FLANGE DIMENSIONS

	A	B	C	D
inches	1 1/4	1/4	7/16	2 3/16
millimeters	32	6	11	56

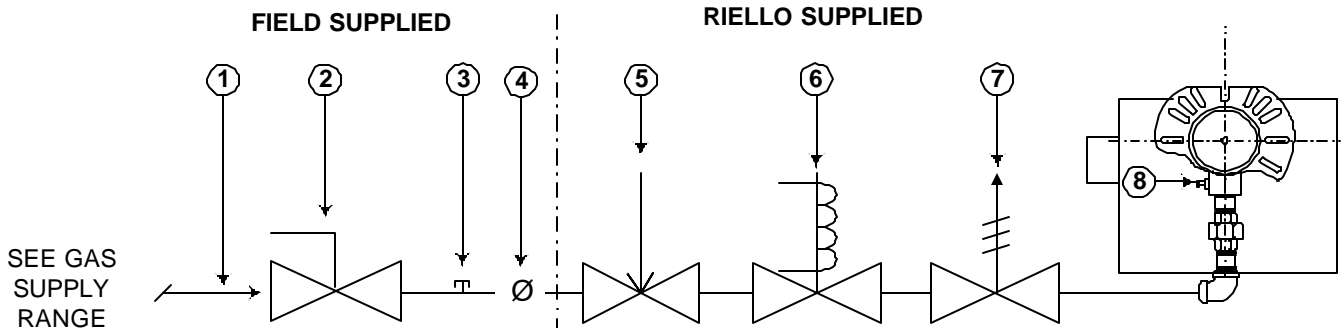


## ELECTRODE AND FLAME PROBE ADJUSTMENTS



**IMPORTANT:** Do not turn the ignition electrode. Leave it as shown in the drawing. If the ignition electrode is put near the ionization probe, the amplifier of the control box may be damaged.

## TYPICAL GAS TRAIN LAYOUT



**NOTE: ITEMS 5,6 & 7 COMBINATION GAS VALVE(S) ASSEMBLIES MAY BE UTILIZED WHERE APPROVED.**

### GAS TRAIN LEGEND

- |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1) GAS SUPPLY &amp; FLOW DIRECTION OF GAS</p> <p>2) GAS SUPPLY MAIN SHUTOFF MANUAL VALVE (FIELD SUPPLIED)</p> <p>3) GAS SUPPLY PRESSURE TEST POINT (FIELD SUPPLIED)</p> <p>4) GAS TRAIN PIPE DIAMETER SIZE(S):<br/>         BURNER G120 1/2" NPT (REDUCED AT COMBUSTION HEAD TO 3/8")<br/>         BURNER(S) G200 &amp; G400 3/4" NPT</p> | <p>5) GAS APPLIANCE PRESSURE REGULATOR</p> <p>6) SAFETY SHUTOFF GAS VALVE (VS) 24V OR 120V OPERATED</p> <p>7) MAIN GAS VALVE (V1) 24V OR 120V OPERATED SINGLE STAGE</p> <p>8) GAS BURNER MANIFOLD TEST POINT</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**GAS SUPPLY PRESSURE RANGES:**

**NATURAL GAS PRESSURE:**  
 MIN. = 4.0" WC  
 MAX. 10.5" WC

**L.P. PROPANE GAS PRESSURE:**  
 MIN. = 8.0" WC  
 MAX. 13.0" WC

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## INSTALLING THE BURNER

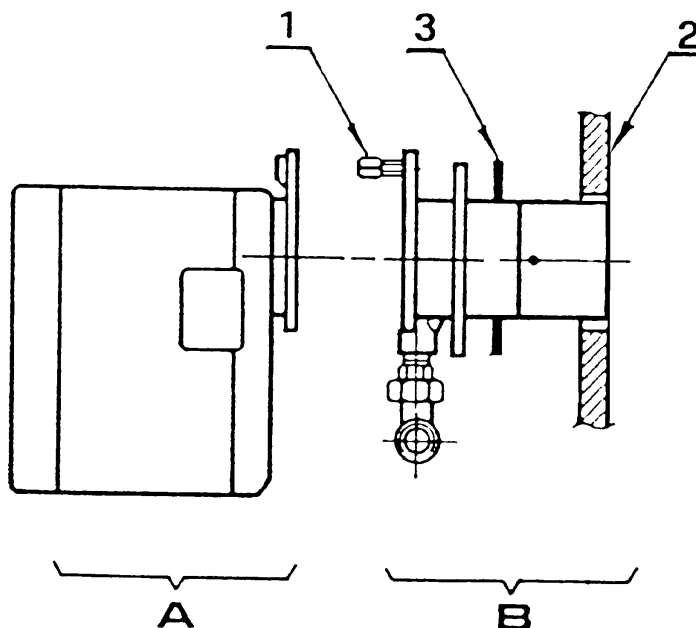
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### Wet Base Illustration

- A) Burner Chassis
- B) Combustion Head Assembly

- 1. Locking Nut
- 2. Appliance Mounting Plate Insulation
- 3. Insulation Gasket



Use this checklist prior to installation:

1) Check the input/output requirements of the appliance. We suggest that the appliance output should be approximately 85% of input (85% efficiency).

2) Check the dimensions of the combustion chamber for correct sizing against the input requirements of the application.

3) Check that there is sufficient air for proper combustion and adequate ventilation. Local codes should be followed. In the absence of local codes, refer to the NFPA Manual No. 31, CAN/CGA B149.1 &.2, ANSI Z223.1-1984 and Addendum 221.8A 1989.

4) Check that you have adequate space for servicing the equipment. The Riello burner requires a minimum of 13 inches clear space behind the red cover. This is required to allow easy removal of the cover for servicing and periodic maintenance.

5) Check that the chimney is of sufficient area to handle the exhaust gases. Make sure the chimney is clear and there are no obstructions.

6) Barometric draft regulators must be of the double acting type, and must be installed in accordance with the draft regulator manufacturer's instructions. Single acting barometric dampers are not permitted. For further clarification, refer to ANSI Z21.8-1984 and Z21.17A-1993.

**NOTE: A vent shutoff system shall be applied to a barometric damper installed in the venting system at the time of conversion of the appliance. This will electrically disconnect the burner should there be a blockage in the vent (chimney).**

### **IMPORTANT:**

The installer must identify the main electrical power switch and manual gas shut off valve, for emergency conditions. The burner cover must be in place and secured before the burner is placed in operation.

### **GENERAL INFORMATION**

Your Riello gas burner comes to you completely assembled and factory wired, ready for installation.

Models equipped with the short combustion head have a fixed flange, which bolts directly to the front of the appliance. When equipped with the long combustion head, the burner comes with a universal flange, which when bolted to the appliance, allows the burner to be adjusted for exact positioning in the combustion zone.

## **STEP-BY-STEP PROCEDURE**

- 1) Remove the burner from the carton, taking care not to lose any of the supplied accessories. Check for signs of physical damage.
- 2) Bolt the combustion head and burner to the appliance. Be sure to install the supplied mounting gasket. Ensure that the burner is level (we suggest using a spirit level) and that the combustion head is centred in the appliance port. Refer to Page 7 for positioning of combustion head relative to the chamber.
- 3) Check that all gas train connections are tight and make your connections to the incoming gas supply.
  - a) A sediment trap must be provided. See pg. 9.
  - b) If not already installed, a manual shutoff valve must be supplied. This valve must be upstream of the burner gas train supply connection.
  - c) A 1/8" NPT plugged tapping must be installed immediately upstream of the burner gas train supply connection and must be accessible for a test gauge.
  - d) If required by local codes, provide gas vent lines at the gas regulators and valve.
  - e) Perform required gas pressure test on incoming gas supply lines.

**NOTE:** Details of sediment trap, manual gas valve, pressure test point, and line pressure test point can be found on Page 9.

- 4) To make electrical connections, refer to field wiring diagram on page 10. A manual disconnect switch must be installed in the incoming lines. Wiring to the low voltage-switching relay, if used, (Honeywell R8038A) must be rigid conduit or flexible approved cable.

**CAUTION:** Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing (Step 5 (e) below).

**CAUTION: The phase (HOT) wire must be connected to the black lead of the 24v relay if used; neutral to the white lead.** Do not reverse the polarity. The burner will not operate with the Phase/Neutral reversed, and the control box may be damaged.

- 5) Check the burner functions as follows:

- a) Make a final check on both the gas and electrical connections.
  - b) Loosen the screw in the manifold gas test point and install an appropriate manometer.
  - c) Set the thermostat at its highest setting.
  - d) Switch on power.
  - e) With the manual gas valve turned off, press the burner reset button (see page 4), and allow the burner to run through a complete cycle to ensure that the sequence of operations is correct, (see page 16). A full starting cycle should take approximately 70 seconds from a no power condition until burner lockout, when equipped with motorized air damper, otherwise refer to the start-up cycle chart found on page 16.
  - f) Once the burner is operational (up and running) a final gas leak check must be completed on the gas train.
- 6) If the burner is installed on a central warm air furnace, affix the mandatory warning labels to the furnace fan cover door (inside and outside).



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## INSTALLATION OF SEDIMENT TRAP AND BURNER SUPPLY

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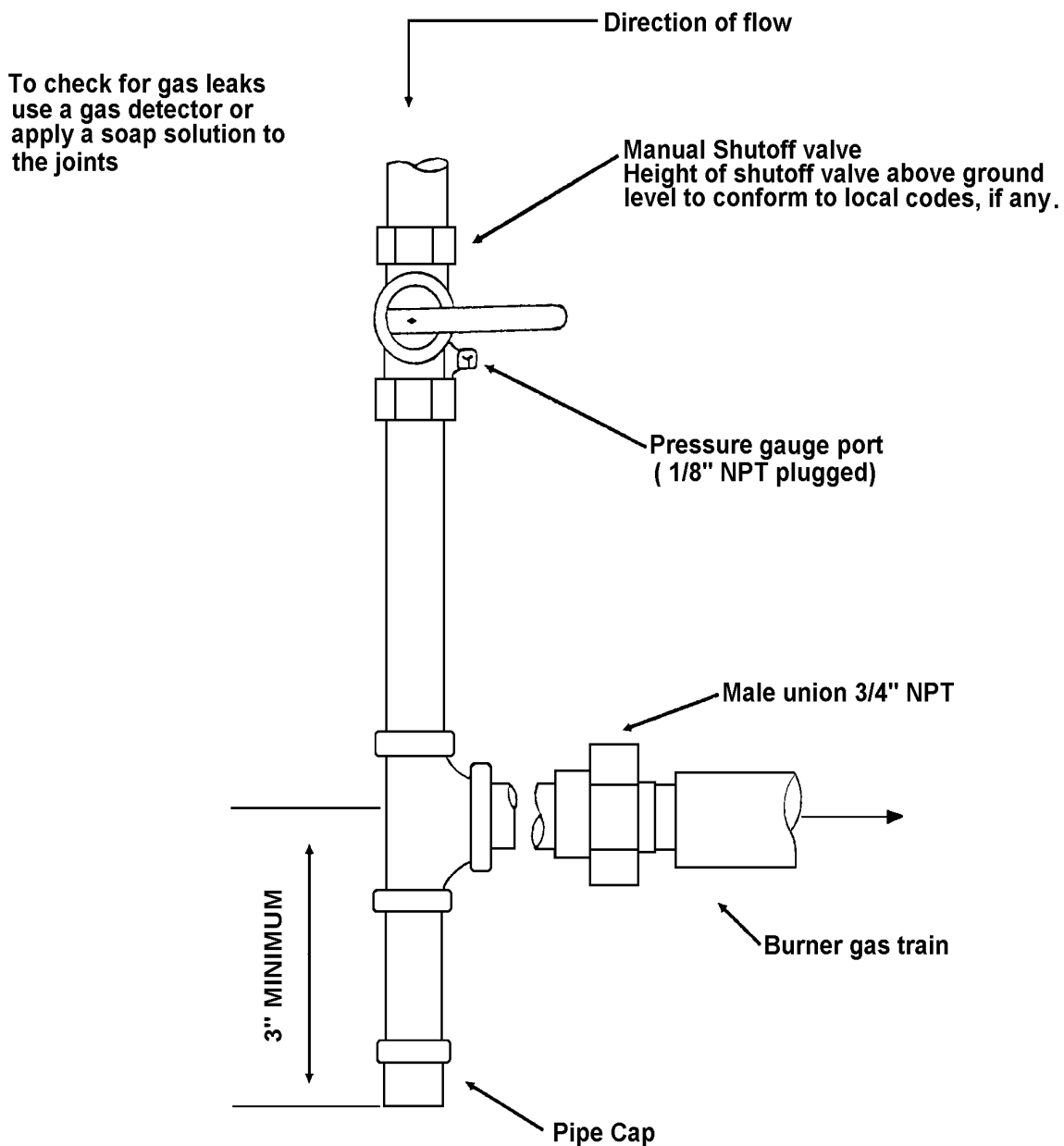
Gas piping to the burner must be  $\frac{1}{2}$  inch minimum. Install only a full ported shutoff valve. The valve must be located outside the appliance jacket, and the pressure gauge port must be accessible.

### **PRESSURE TEST-OVER $\frac{1}{2}$ PSIG.**

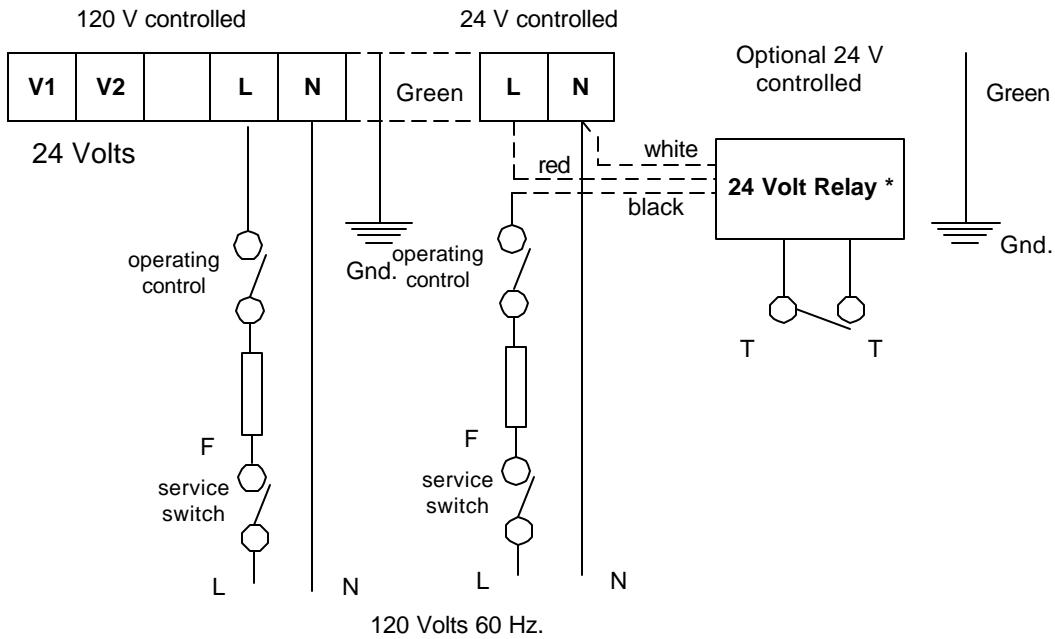
The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of the system at a test pressure in excess of  $\frac{1}{2}$  PSIG.

### **PRESSURE TEST- $\frac{1}{2}$ PSIG OR LESS**

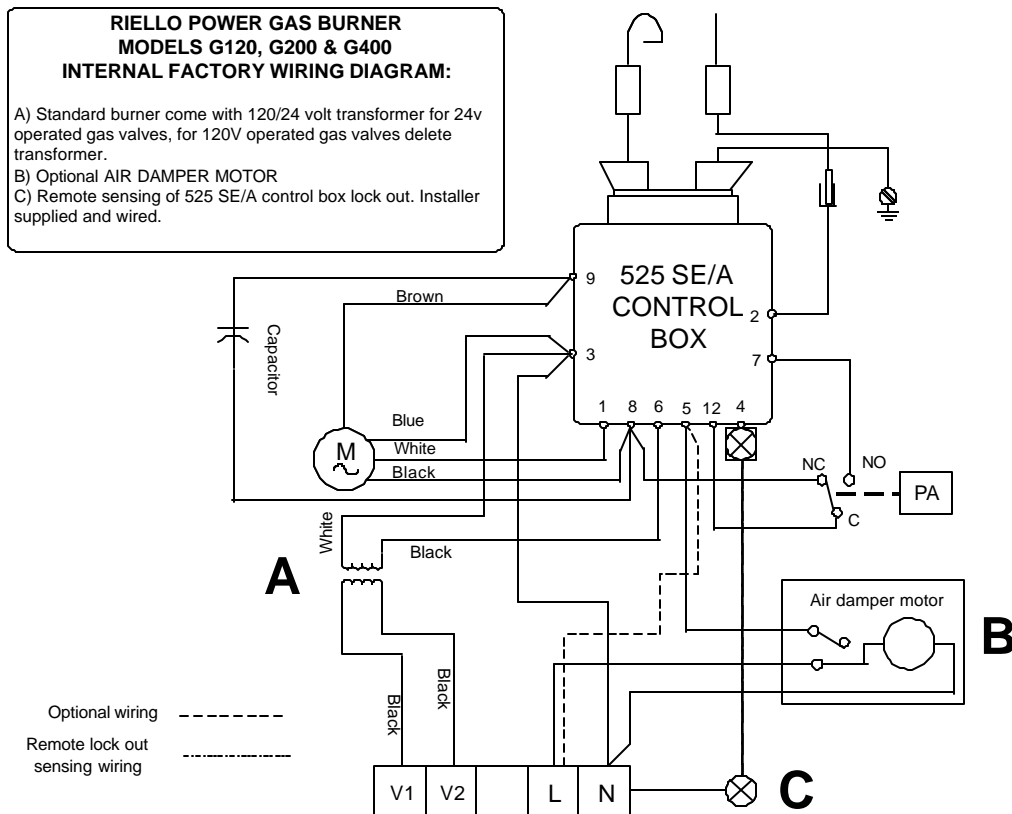
The appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any testing of the gas supply piping system at test pressures equal to or less than  $\frac{1}{2}$  PSIG.



## FIELD WIRING DIAGRAM



## FACTORY WIRING DIAGRAM



**NOTE:**

- 1) This burner is approved for use without the motorized air damper. In these instances optional wiring is used
- 2) The SAFETY SWITCH on the 525 SE CONTROL BOX is equipped with a contact allowing remote sensing of burner lockout. The electrical connection is located on the CONTROL BOX terminal 4 as indicated. Should

burner lockout occur, the 525 SE CONTROL BOX will supply a power source of 120 Vac to the connection terminal. The maximum allowable current draw on this terminal is 1 A.

**IMPORTANT**

Terminal 4 is to be used only for the connection of a remote sensing device. If a neutral or ground lead is attached to terminal 4 the control box will be damaged should lockout occur

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**SETTING UP THE BURNER**

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After burner output has been determined, use **TABLE 1** below AS AN INITIAL GUIDE for burner settings.

**Table 1**

<b>Approximate Btu/hr burner output</b>	<b>Head setting</b>	<b>Air gate setting</b>	<b>Manifold pressure</b>
<b>Natural Gas</b>			
170, 000	0.0	1.6	0.90"w.c.
216, 000	1.0	1.8	0.90"w.c.
262,000	2.0	2.2	1.00"w.c.
308,000	3.0	2.5	1.20"w.c.
354,000	4.0	2.8	1.42"w.c.
400,000	5.0	3.4	1.80 w.c.
<b>Propane</b>			
170, 000	0.0	1.6	1.04"w.c.
216, 000	1.0	1.8	1.16"w.c.
262,000	2.0	2.2	1.48"w.c.
308,000	3.0	2.5	1.80"w.c.
354,000	4.0	3.0	2.42"w.c.
400,000	5.0	3.6	3.04"w.c.

All settings in this table were obtained under the following conditions.  
 ?? 0 (zero) draft in the combustion zone.  
 ?? Small DIN test boiler.  
 ?? 7" supply pressure for natural gas.  
 ?? 11" supply pressure for propane.  
 ?? steady state (HOT) operating conditions

**STEP BY STEP PROCEDURE**

- 1) Set air gate. See **AIR GATE ADJUSTMENT** on pg. 13/14.
- 2) Set combustion head. See **COMBUSTION HEAD SETTING** on pg. 13.
- 3) Set the manifold pressure using the following method.
  - a) In order to determine existing manifold pressure, start the burner. At the end of the prepurge cycle (approx. 30s), the gas valve is energized. During the 5 sec. trial for ignition, note the manifold pressure. If the burner lights and continues to run, go to step (d).
  - b) Compare the observed manifold pressure from step (a) to the required value from **TABLE 1**.
  - c) Repeat step (a), making adjustments to the gas valve, until flame is established.
  - d) Once flame has been established, set your manifold pressure to the desired value from **TABLE 1**.
- 4) Check combustion gases using proper combustion analysis equipment to ensure safe levels of CO<sub>2</sub> and CO during appliance heat up. The gas valve should be used to make any necessary adjustments to ensure safe combustion. At this point do not adjust the air or head settings unless absolutely necessary.
- 5) Allow burner to run until normal operating temperatures and conditions have been achieved.
- 6)
  - a) Clock the gas meter to determine actual burner output.
  - b) Set the manifold pressure, by adjusting the gas valve, to achieve desired output.
  - c) Check combustion gases once again to ensure safe operation. **Make sure the burner cover is in place and air gate locking screws are secure for all combustion analysis.** Adjust air gate if necessary (refer to page12). This test must be done by a qualified technician. The maximum recommended CO<sub>2</sub> level for natural gas is 10%; the maximum recommended level for propane gas is 12%. The recommended flue gas temperature is from 350°F to 550°F.
- 7) After completing the adjustments, remove the manometer and tighten the screw inside the manifold test point. Replace the regulator cap on the gas valve.
- 8) Complete the adjustment data tag, described on page18. Explain the burners essential functions (starting and stopping) to the owner. Do not forget to give the dealer or service company's name and address. Please see page17 and 18 for information on burner maintenance procedures.

**NOTE:** Do not assume the heating system is operating at optimum performance.

## **THERE IS NO SUBSTITUTE FOR PROPER COMBUSTION TESTING**

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### **OPERATING FAULTS**

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The integrated control system is self checking. The cycle from start up to flame establishment, takes approximately 70 seconds.

The burner will go into lockout under the following circumstances:

- a) Burner fails to ignite.
- b) The ionization probe is grounded.
- c) Opening of the air pressure switch or the normally open contacts of the air pressure switch not making.

Should overheating of the appliance occur, shut off the manual gas valve to the burner. Do **NOT** shut off the switch to the circulating pump or blower fan.

#### **SHUT DOWN PROCEDURE**

Switch off electrical power to the unit. Close the manual supply gas valve.

#### **START UP PROCEDURE**

See page 8, Item 5

**NOTE:** If an external electrical source is utilized, the conversion burner, when installed, must be electrically grounded in accordance with local codes. In the absence of local codes, refer to the National Electrical Code, ANSI/NFPA 70-1990.

In Canada follow the Canadian Electrical Code Part 1 CSA C22.1.

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### **AIR GATE ADJUSTMENT**

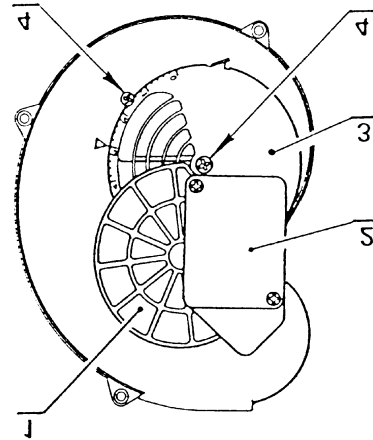
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The mobile air damper (1), operated by the air damper motor (2), assures the complete opening of the air intake. To regulate the combustion air, adjust the manual air gate (3), by loosening the locking screws (4). Once the optimal adjustment is reached, tighten the locking screws(4), to assure free movement of the mobile air damper.

#### **EXAMPLE SETTING (for natural gas)**

To set the air intake for a desired burner output of 308,000 Btu/hr, use TABLE 2 to determine the correct air gate setting. In this case, the setting would be 2.5 for natural gas. Turn the manual air gate (3) until the arrow points to 2.5 on the scale. Tighten locking screws (4).



All settings in table 2 are obtained with zero (0) pressure in the combustion zone and at normal operating temperatures. i.e., steady state hot conditions.

**Please Note:** Burner must be fired ONLY with fuel that is listed on the burner serial label.

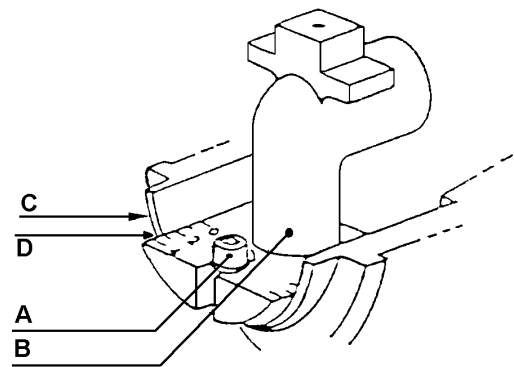
**Table 2**

<b>Riello 40 Model 400 N/P Air Gate Settings</b>		
<b>Burner Output Btu/hr x 1000</b>	<b>Air Gate Setting</b>	
	<b>Natural</b>	<b>Propane</b>
170.0	1.6	1.6
216.0	1.8	1.8
262.0	2.2	2.2
308.0	2.5	2.5
354.0	2.8	3.0
400.0	3.4	3.6

**COMBUSTION HEAD SETTING(Stop Gate)**

Loosen the Allen screw (A). Slide the elbow (B) so that the number on the indicator scale (D) aligns with the back edge of the air tube (C). See **TABLE 3** for set points. Tighten the Allen screw (A).

**NOTE:** To disassemble remove the combustion head, use the procedure below.  
 1) Remove the Allen screw completely.  
 2) Withdraw the head.  
 3) Pull the head straight out.



**Example (for natural gas):**

For a desired burner output of 308,000 Btu/hr, the combustion head setting would be 3.0

**NOTE:**

This table is designed to ensure a good working pressure for the air proving switch. If a problem is encountered with the air switch proving combustion air flow, we suggest moving the head closer to the zero (0) set point.

For a boiler or furnace with positive pressure in the combustion zone, we suggest moving the head closer to the zero (0) set point.

All settings in table 3 are obtained with zero (0) pressure in the combustion zone and at (1) normal operating temperatures. i.e.; steady state hot conditions.

**Please Note: Burner must be fired ONLY with fuel that is listed on the burner serial label.**

**Table 3**

<b>Riello 40 Model 400 N/P Combustion Head Settings (STOP GATE)</b>		
<b>Burner Output Btu/hr x 1000</b>	<b>Head Setting</b>	
	<b>Natural</b>	<b>Propane</b>
170.0	0.0	0.0
216.0	1.0	1.0
262.0	2.0	2.0
308.0	3.0	3.0
354.0	4.0	4.0
400.0	5.0	5.0

## MANIFOLD PRESSURES

Manifold gas pressure for various firing rates must be set by adjusting the gas regulator of the gas valve. To check manifold gas pressure, attach a manometer to the manifold test point, shown on typical gas train layout on page 6. Approximate manifold pressure settings are indicated in **TABLE 4**.

**Example (for natural gas):**

For a burner to be fired at 308,000 Btu/hr, the manifold pressure would be approximately 1.20" w.c. (inches of water column).

**Table 4**

<b>Riello 40 Model 400 N/P</b>		
<b>Manifold Pressure Inches of w.c.</b>		
<b>Burner Output</b>	<b>Inches of w.c.</b>	
	<b>Natural</b>	<b>Propane</b>
<b>Btu/hr x 1000</b>		
170.0	0.90	1.04
216.0	0.90	1.16
262.0	1.00	1.48
308.0	1.20	1.80
354.0	1.42	2.42
400.0	1.80	3.04

Manifold pressure will have to be adjusted to compensate for varying application conditions.

All settings in table 4 are obtained with zero (0) pressure in the combustion zone and at normal operating temperatures. i.e.; steady state hot conditions.

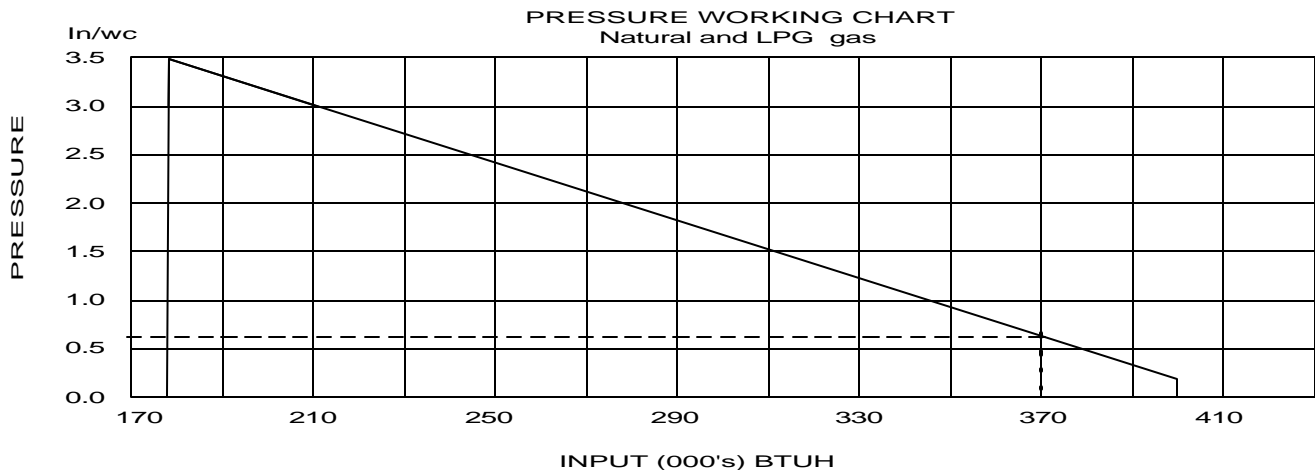
**Please Note:** Burner must be fired **ONLY** with fuel that is listed on the burner serial label.

**HIGH ALTITUDE SETTINGS**

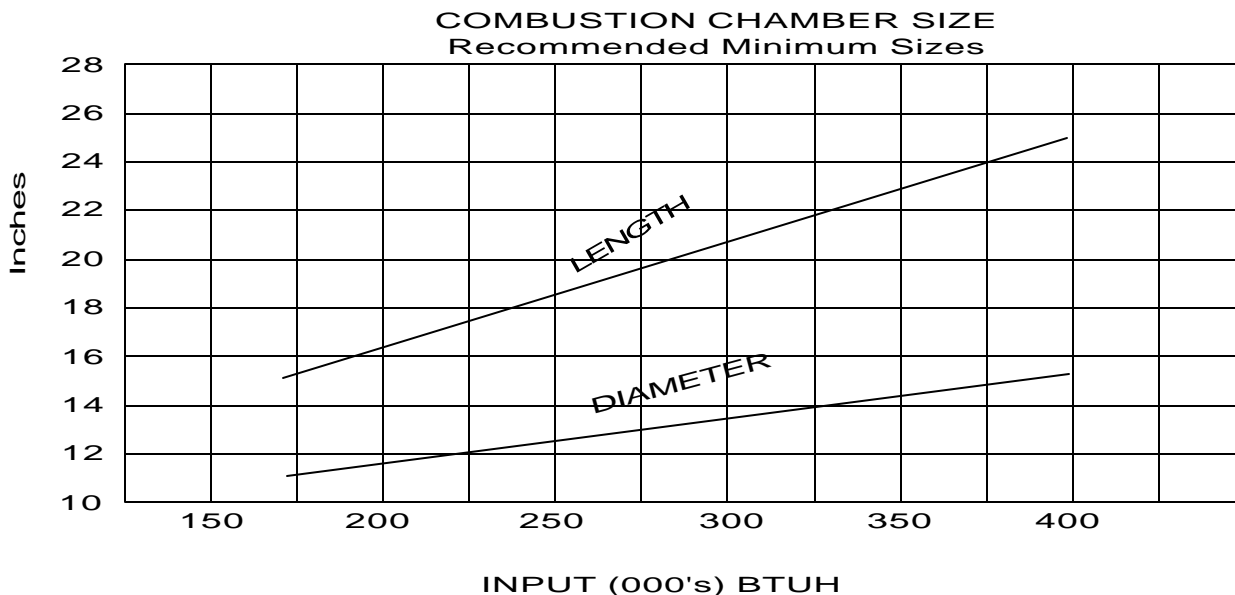
It should be noted that for higher altitudes more air for combustion is required. All settings in this manual have been obtained at approximately sea level. Special attention should be paid to air for combustion at elevations above sea level. If an increase in combustion air is insufficient, the burner must then be derated by approximately 4% for every 1000 feet above sea level.

## PRESSURE WORKING CHART

The chart below shows effects of pressure in the combustion zone on the minimum/maximum burner outputs. In this example, with a maximum operating pressure of 0.6 inches water column in the combustion zone, you will be able to obtain a maximum of 370,000 Btu/hr burner output.



Any change from zero (0) pressure in the combustion zone will affect the Btu output of the burner. To supply the required input to the appliance, manifold pressure will have to be adjusted to compensate for this condition.



**NOTES:**

- 1) Sizes shown above are for cylindrical or wet base boilers, or air cooled heat exchangers.
- 2) To size the chamber in applications other than wet base boilers, you must calculate area in square inches of the combustion zone required to give you a grate area or floor area to match the BTU inputs according to the local authority. Refer to CAN/CGA B149.1 & .2 ANSI Z21.8-1984, and ANSI Z223.1-1984.
- 3) Fire brick or cerafelt chamber materials should have a continuous run temperature rating of 2400 degrees Fahrenheit and a melting point of 3000 degrees Fahrenheit.

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**COMBUSTION CHECKS**

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**CO<sub>2</sub>**

It is advisable not to exceed a measured reading of 10% CO<sub>2</sub> for Natural Gas or 12% CO<sub>2</sub> for Propane Gas.

**CO**

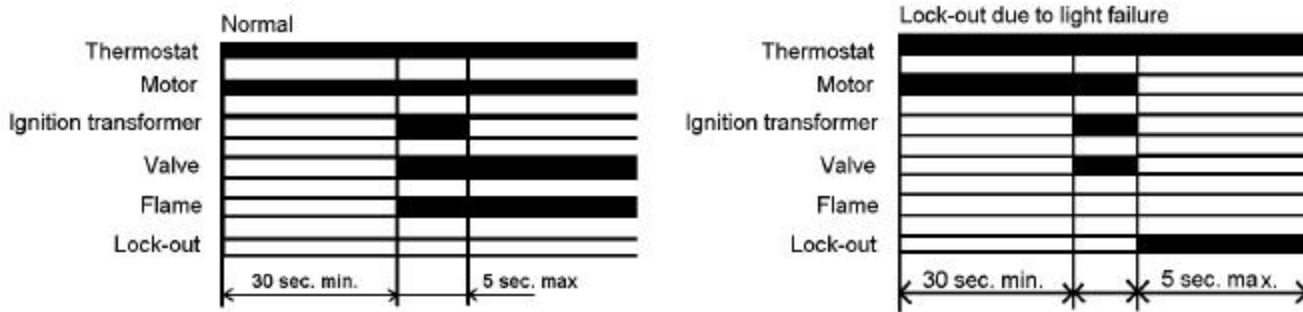
For safety reasons, the value of .02% (200ppm) free air sample must not be exceeded.

**IONIZATION CURRENT**

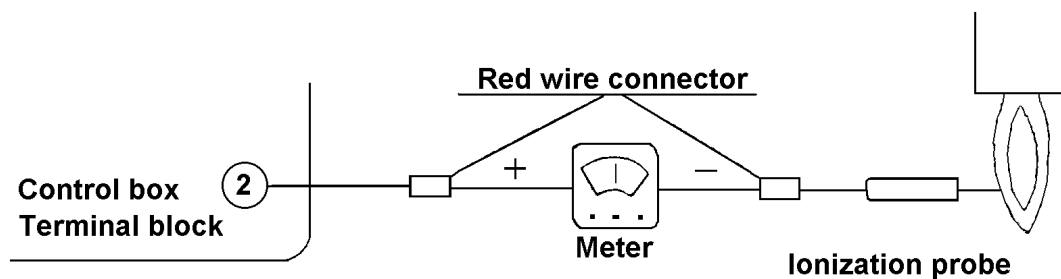
The minimum amount of current necessary for the control box to operate properly is 5 microamps DC.

To measure the ionization current, disconnect the red wire connector and insert a DC micro ampmeter in series with control box terminal 2 and the ionization probe which senses the flame. Refer to the diagram below.

## Burner Start-up Cycle



## Ionization Current Check



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## **PROBLEM SOLVING GUIDE**

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### **Burner starting difficulties and their causes:**

- 1) The burner goes through the prepurge period normally. The flame ignites, but the burner goes to lockout within five seconds.
  - a) The phase/neutral lines are reversed.
  - b) The wiring to ground is absent or ineffective.
  - c) The ionization probe is grounded, or not in contact with the flame, or the circuit to the control box is broken.
  - d) The spark interferes with the flame signal due to incorrect setting of the electrode.
- 2) The burner goes to lockout after the prepurge period because the flame does not ignite.
  - a) Air has not been fully bled from the gas lines.
  - b) The gas valve is passing too little gas.
  - c) The spark is irregular or not present.



- 3) The burner does not start when the thermostat calls for heat.
- a) The gas pressure switch (if supplied) does not close contact due to low gas pressure.
  - b) The 24 volt switching relay is defective.
  - c) The line switch is off.
  - d) There is a blown fuse in the panel.
  - e) Terminals on the control module are bent or loose
  - f) The motor is defective.
  - g) The capacitor is defective.
  - h) The end switch on the air damper is defective.
  - i) The control box is defective.
  - j) The air pressure switch is not in the normally closed position
- 4) The burner continues to repeat the starting cycle without going into lockout.

This is a very specific situation caused when gas pressure in the gas main lines is *very close* to the value at which the gas pressure switch has been set. This can be corrected by resetting the gas pressure switch to a lower level. The gas pressure switch, if required, may be supplied, or may have to be field installed.

- 5) The burner does not go through prepurge, and the control module goes to lockout. The air pressure switch does not change over from normally closed to normally open contacts.

This condition exists because there is insufficient air pressure in the combustion head.

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## OWNER INFORMATION AND ROUTINE MAINTENANCE

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### SAFETY LOCKOUT

This burner is equipped with multiple interlocking safety devices. In the event of a failure in the flame, or any blockage of the combustion air supply, the burner will "lock out" in a safety condition. In such an event, an illuminated red button will show on the centre front of the red cover. To restart the burner, press the button once only. Should the burner return to the lock out condition, call a qualified service technician or your gas company for assistance.

**NOTE:** Keep the area around the burner free and clear of all combustible materials, gasoline and other flammable vapours and liquids. Do not allow any obstructions which may prevent the free flow of air to the burner.

### MAINTENANCE

Like all precision equipment, your burner will require periodic maintenance. At an interval of 2 months, you should:

- 1) Visually check the flame if your heating appliance has an observation port.
- 2) Check and clean the air intake louver to remove any build up of fluff, dust, pet hair etc.
- 3) The motor is permanently lubricated and does not need oiling.

For any maintenance or repairs over and above those listed, contact your service technician or gas company. **THERE ARE NO OWNER SERVICEABLE PARTS INSIDE THE BURNER COVER.**

Once a year, you should have the burner serviced as indicated below. This service should be performed by your local authorized dealer.

- 1) Check burner distributor head and mixing plates. Clean if necessary.
- 2) Check ignition electrode. Clean, adjust, or replace as necessary.

- 3) Check the flame sensor rod (ionization rod) for dirt or carbon build up. Clean, adjust, or replace as necessary.
- 4) Check manifold gas pressure.
- 5) Check all burner adjustments.
- 6) Generally clean all exposed parts and components.
- 7) Do a complete combustion test with the burner cover in place and the air gate locking screws secure.

Your Riello 40 gas burner is only part of your heating system. Once every year you should have your heating appliance serviced by a qualified service technician. You should also have the chimney checked, and cleaned if necessary.

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## INSTALLATION DATA

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**Note:** This label is supplied in the package with the burner and should be filled out and affixed to the appliance when the conversion burner is installed.

ADJUSTMENT DATA TAG ANSI Z21-17b-1994		
INPUT C.F.H.		
MANIFOLD PRES.		
AIR DAMPER		
AIR/GAS RATIO No.		
FLUE GAS TEMP.		
O2 LEVEL %		
CO2 LEVEL %		
CO LEVEL P.P.M		
DATE :		
COMPLETED BY		
INSTALLATION CONTRACTOR		

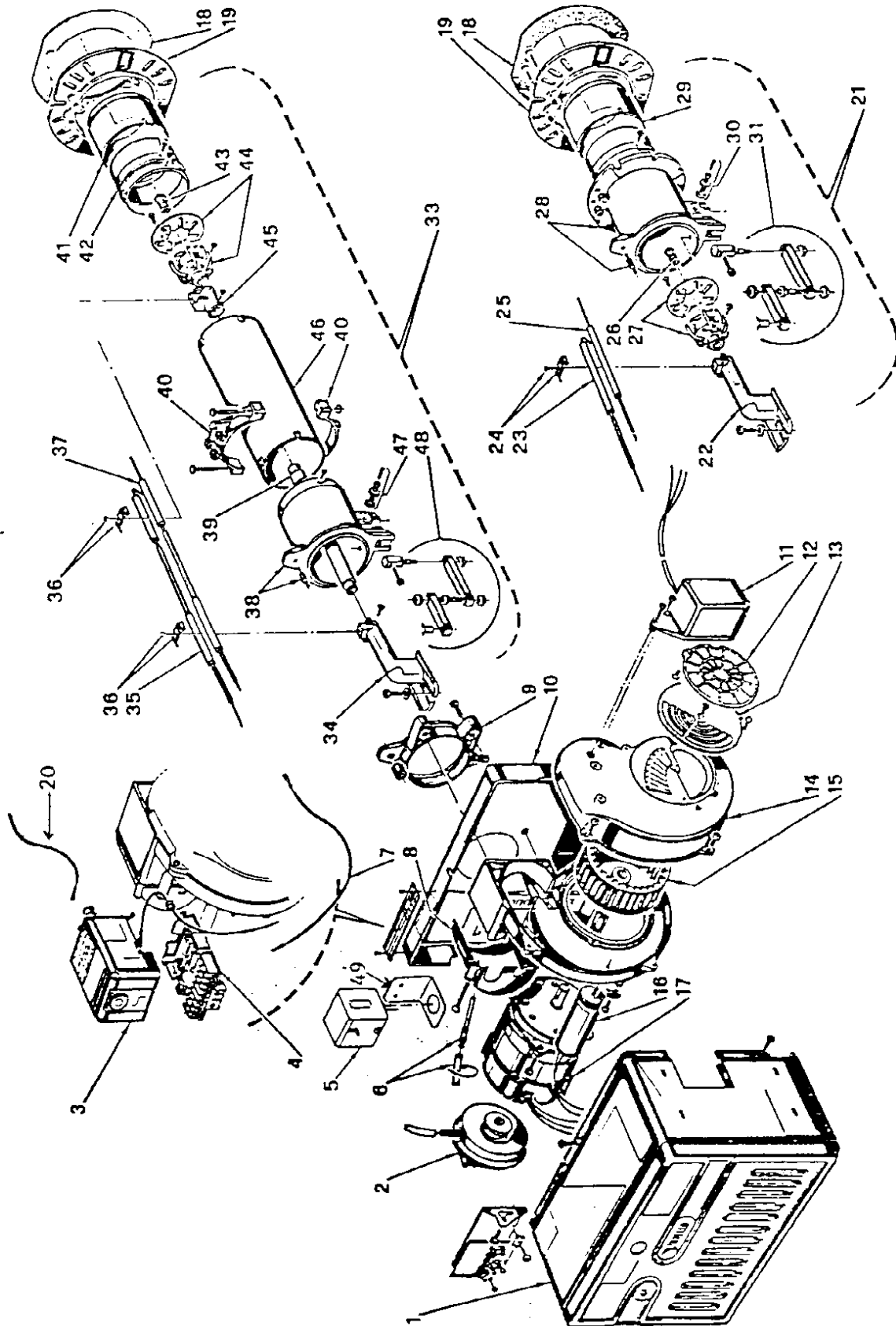
SPARE PARTS		GAS BURNER SYSTEM RIELLO 40 N400		REVISED: 10/01	
No.	SPARE PARTS CODE	DESCRIPTION	No.	SPARE PARTS CODE	DESCRIPTION
1	3007238	Burner back cover	21	3950371	Short combustion head (279T1)
2	C7020008	Air switch	22	3006696	Drawer assembly elbow
3	3001162	Primary control box 525 SE/A	23	3007275	Electrode assembly
4	3002307	Primary control sub-base	24	3007265	Electrode and ionization clamp
5	C7020006	120/24 volt transformer	25	3006708	Ionization assembly
6	3007288	Air switch tube and connector	26	3006702	Natural gas orifice
7	3007310	Ionization lead	27	3006699	Distributor head and mixing plate
8	3007293	Air tube cover plate	28	3007299	Manifold
9	3006688	Chassis mounting collar	29	3006693	End cone
10	3007223	Chassis front plate	30	3005447	Gas test point
11	3007279	Air damper motor	31	3000870	Hinge assembly
12	3006930	Motorized air damper			
13	3007205	Manual air shutter(air gate)	33	3950372	Long combustion head (279T2)
14	3007209	Air intake housing	34	3006696	Drawer assembly elbow
15	3005788	Fan	35	3007276	Electrode assembly
16	3005834	Capacitor 10?F	36	3007265	Electrode & ionization clamp
17	3005843	Burner motor	37	3007277	Ionization assembly
18	3005856	Mounting gasket	38	3007300	Manifold
19	3006356	Universal mounting flange	39	3007290	Natural gas tube
20	3007448	Ground lead and connector	40	3005854	Semi flange 2 required
			41	3006693	End cone
			42	3007282	End cone adapter
49	C7010003	Mounting bracket-Transformer	43	3006702	Natural gas orifice
			44	3006699	Distributor head and mixing plate
		<b>ACCESSORIES</b>	45	3007303	Electrode support
	C7020004	Honeywell R8038A 24 v switching relay	46	3007285	Air tube -long
			47	3005447	Gas test point
			48	3000870	Hinge assembly

# GAS BURNER SYSTEMS RIELLO 40 N400

SPARE PARTS

Sheet  
2

Revised  
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35 Pond Park Rd.  
Hingham, MA 02043  
Phone: 781-749-8292  
Toll Free: 800-992-7637  
Fax: 781-740-2069



2165 Meadowpine Blvd.  
Mississauga, On L5H 3R2  
Phone: 905-542-0303  
Toll Free: 800-387-3898  
Fax: 905-542-1525

## BURNER START- UP FORM \*

Burner S/N. or Model:	_____	Appliance:	_____
Installer name:	_____		
Company:	_____	Installation date:	_____
Address:	_____		
Phone:	_____	Fax:	_____
Owner Name:	_____		
Address:	_____		
Phone:	_____	E-mail:	_____

### Burner Start-up Info (OIL)

Nozzle Info:	_____		
Pump Pressure:	_____		
Air Setting:	Turbulator setting:	_____	
Draft Overfire:	Draft breech:	_____	
CO <sub>2</sub> :	CO:	O <sub>2</sub> :	_____
Smoke density:	_____ (Bacharach)		
Single Line:	<input type="checkbox"/>	Two Lines:	<input type="checkbox"/>

### Burner Start-up Info (GAS)

Gas Supply Pressure:	_____		
Pump pressure:	_____		
Air Setting:	Head Setting:	_____	
Draft Overfire:	Draft breech:	_____	
CO <sub>2</sub> :	CO:	O <sub>2</sub> :	_____
Manifold pressure:	_____		
Ionization Reading $\mu$ Adc:	Input BTU/Hr:	_____	

\* This form was designed and provided in the installation manual for reference and also for providing technical information which can be faxed or mailed to our technical hot-line coordinator when technical assistance is required. Please complete this form, fax it or mail it at the address/fax above, or send an e-mail with the information listed below to: techservices@riellocanada.com



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Technical Support Hotline  
1-800-4-RIELLO  
1-800-474-3556