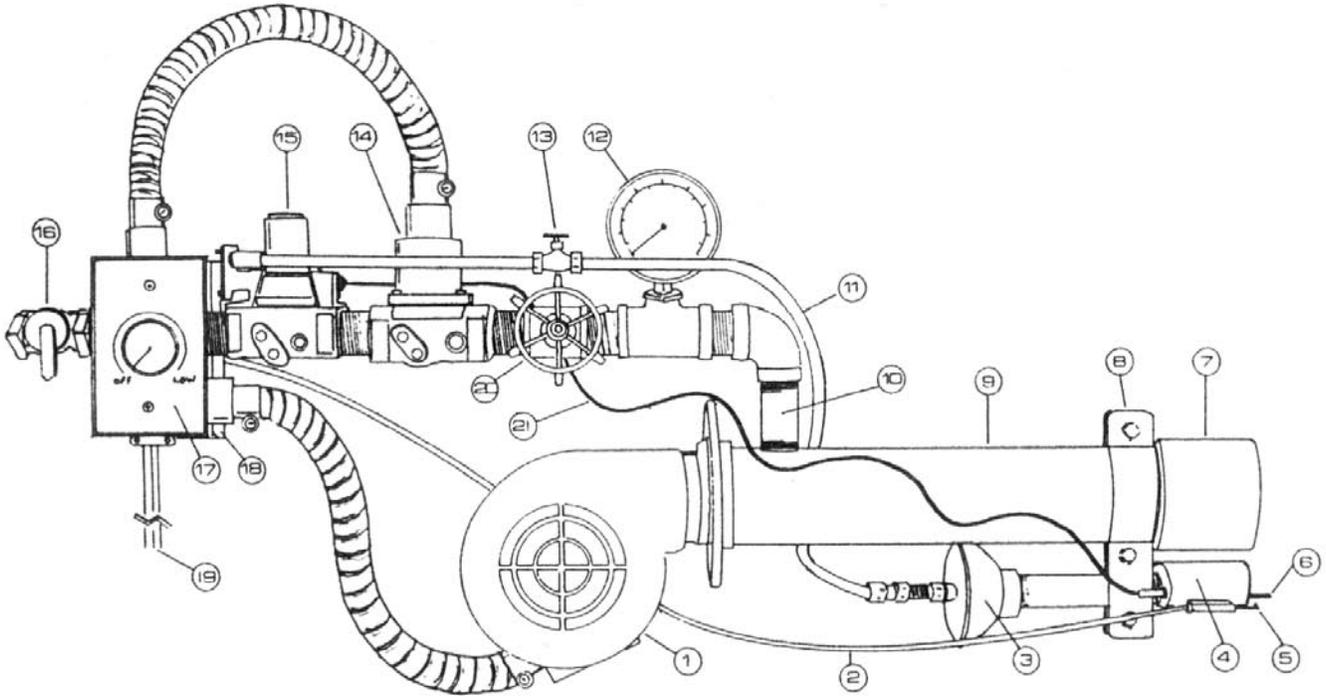
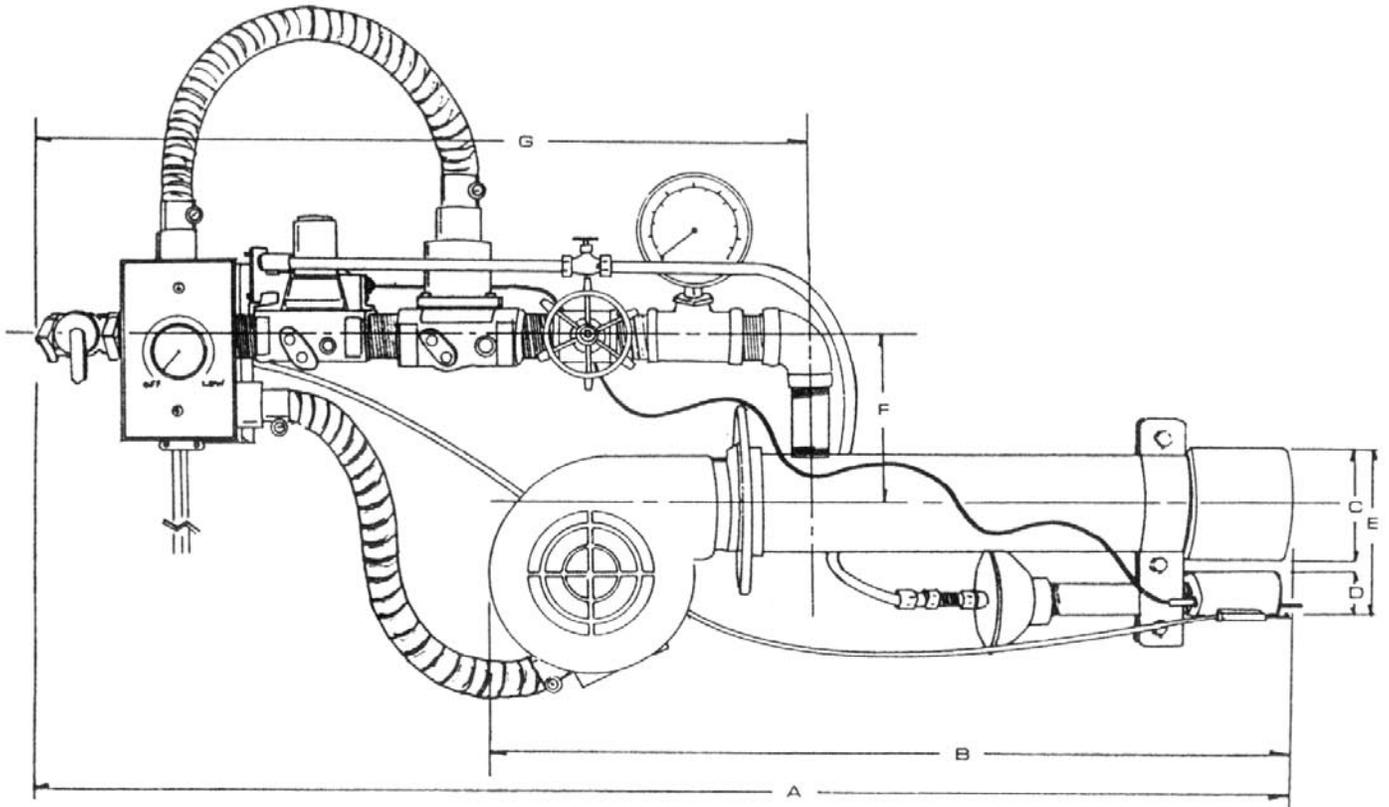


MB SERIES POWER BURNERS

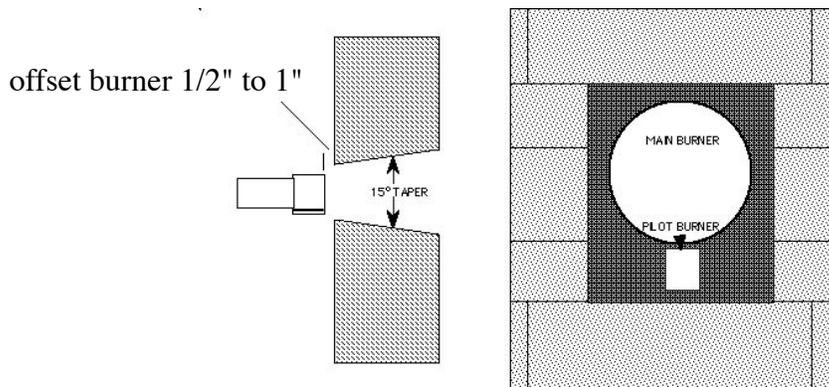


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|-----------------------------|-----------------------------|--------------------------------|
| 1. CONTINUOUS DUTY BLOWER | 8. PILOT BURNER CLAMP | 15. BASO SAFETY VALVE |
| 2. SPARK IGNITION LEAD | 9. MIXING TUBE | 16. GAS COCK |
| 3. PILOT AIR MIXER | 10. GAS FEED | 17. BLOWER SPEED CONTROL |
| 4. VENTURI PILOT BURNER | 11. PILOT BURNER GAS SUPPLY | 18. SPARK IGNITION TRANSFORMER |
| 5. SPARK IGNITION ELECTRODE | 12. PRESSURE GAUGE | 19. 120 VOLT GROUNDED LINE |
| 6. THERMOCOUPLE | 13. PILOT NEEDLE VALVE | 20. FLOW CONTROL GATE VALVE |
| 7. FLAME RETENSION NOZZLE | 14. ELECTRIC SOLENOID VALVE | 21. THERMOCOUPLE LEAD |



| | | | | | | |
|--------|--------|-----------|-----------|-----------|------------|--------|
| A. 34" | B. 20" | C. 3 1/4" | D. 1 1/2" | E. 5 3/8" | F. 5 7/16" | G. 22" |
|--------|--------|-----------|-----------|-----------|------------|--------|

BURNER PLACEMENT



OPERATING INSTRUCTIONS

1. Make sure burner shutoff valve is open and the flow control valve is closed.
2. Open needle valve to pilot burner.
3. Hold down red BASO™ reset button and light the pilot burner while continuing to hold down the reset button for 30-45 seconds. Release. If pilot does not stay lit, see "Troubleshooting" below.
4. Adjust blower to a low setting.
5. Slowly open flow control valve until main ignition occurs.
6. Increases in gas need to be accompanied by increases in air. It is easier to adjust the air, then, adjust the gas to match. Due to the circuitry involved in the speed control, you may experience a lag in the air setting.
7. To turn off burners; Shut flow control valve, turn off blower, close gas cock. Unplug after use.

TROUBLESHOOTING

PILOT WILL NOT LIGHT:

There probably is air in your gas lines if this is your first firing. Bleed off any excess air.

PILOT IGNITES, THEN GOES OUT WHEN RESET BUTTON IS RELEASED:

Bad thermocouple. These can be obtained from a hardware store in an emergency, but will most likely not be of industrial quality. If you are having trouble with repeated thermocouple failure, the burner is positioned incorrectly or you have too much kiln backpressure. See placement diagram.

PILOT BLOWS OUT OR DANCES:

Kilns should be located away from windy areas. Incorrect port size and burner placement can cause pilots to blow out or "dance". See burner placement.

BURNER "PUFFS" AT LOW SETTINGS:

Too much air in the mix. Try using both the manual shutter and the speed controller to adjust the air.

BURNER SHUTS DOWN SUDDENLY:

This is usually caused by a pilot flame that is not stable (dancing). The signal from the thermocouple is too low to keep the BASO valve open. See burner placement.

KILN WILL NOT REACH TEMPERATURE:

Several things can cause this; Improper burner choice, poor kiln design, inadequate gas supply (especially true of large demand natural gas kilns), burners not operated at full BTU output, or LP tank freeze-up.

PROPANE TANK FREEZE-UP:

This happens when you try to remove too much gas from the tank in relation to it's size. Turning up the pressure will not help. If this is a recurring problem you need a larger tank or several similar tanks hooked together.

REDUCTION TIPS

Power Burners offer more control than Venturi burners when it comes to the air / gas ratio. This can cause confusion if you are not used to forced air systems. Venturi burners pull the air they need into themselves. They will not pull more than they need but, can be made to pull less than they need. When you want to reduce with Venturis, you close down the primary air spin plate and push the damper in some.

Since you have more control over the air with Power Burners, you can reduce as well as spill excess air into the kiln. Excess air cools the flame and can be as wasteful as overreduction. Also spilling excess air can reoxidize the ware by providing extra oxygen that would not otherwise be present. The tightest small blue flame you can produce is most likely a cool, excess air flame. To get a good air / gas ratio flame, look for the earliest signs of reduction such as a "swirly" atmosphere, then clean up the flame by increasing the air or decreasing the gas. When the flame first starts to clean up by becoming tighter and a little louder, your ratio is becoming correct.

To reduce with your Power Burners you can; increase the gas while leaving the air constant or decrease the air and leave the gas constant. Increasing the gas will tend to keep the kiln from stalling as much as if you decreased the air. If you want your reduction climb to go slowly, you may want to decrease the air. You are going to be looking for normal reduction indicators: Swirly atmosphere, short flames from top and middle spy holes. Long spy hole flames and flame going up the chimney are signs of overreduction and a waste of gas. Your burner and it's settings control reduction while the damper controls kiln pressure. You want to have positive pressure in the kiln at the top and middle and neutral pressure at the bottom spy hole. Remember, any new kiln or burner system takes some experimentation to understand the nuances.

SPARK IGNITION

1. Flip the toggle switch to the on position and depress the red BASO™ button, follow remaining operating instructions. Turn off when firing is complete.

Any sparking device depends upon proper adjustment of the spark gap, the distance from the electrode tip to the pilot burner. During shipment this gap can easily be misaligned. You will get the best and hottest spark with a gap of 1/4" to 3/16". Make sure the electrode is in the pilot flame. If it is not, it will continue to spark once the pilot flame is established. Too small a gap will produce a cooler weak spark that may not ignite the gas. Too large a gap and the sparking may be at irregular intervals. This gap is set before it leaves us, but can easily be upset during shipping.

For spark ignition to work, your power cord must be plugged into a properly grounded 120 volt outlet.

STANDARDS & APPROVALS

AGA American Gas Association
ANS American National Standards
CGA Canadian Gas Association
CSA Canadian Standards Association
UL Underwriters Laboratory

Listed below is a component breakdown of the operating parts of the MB Series Power Burners and their respective approvals. Virtually all burners are, themselves, not approved by the above agencies because they become part of systems which are field approved by local agencies. If you have problems with compliance to local codes, feel free to contact us or have inspectors contact us. We use the finest approved parts available.

DAYTON SHADED POLE BLOWERS: MODEL 4C440, 4C442, & 4C443:

CSA & UL (under the motor component recognition program) File E47479 for thermal protection, File E37403 for impedance protection and File E40077.

VARI-SPEED MOTOR SPEED CONTROL, MODEL: KBWC-13K; UL Approved

JOHNSON CONTROLS SERIES H15 BASO™ VALVE:

AGA, CSA, ANS tested Z21.20 Auto Ignition systems and Z21.21 Auto Valves.

JOHNSON CONTROLS SERIES H91 BASOTROL ELECTRIC SOLENOID VALVE:

AGA, CSA, ANS Z21.21 Auto Valves.

HONEYWELL PILOT BURNER MODEL Q314A: AGA, ANS Approved

JOHNSON CONTROLS PENN BASO™ THERMOCOUPLE MODEL: K16BT:

AGA, ANS Approved.

CAMSTAT PILOT REIGNITOR MODEL PR-120: UL Listed

JOMAR SHUTOFF/FLOW CONTROL FULL PORT BALL VALVE: MODEL 100:

UL, AGA, CSA Approved. 150WSP & 600 WOG

GIACOMINI GAS COCK VALVE; MODEL: R602 AGA, CSA, UL Approved.

CAROL GROUNDED 16/3 CORD SET: JACKET TYPE: SJT, UL, CSA Approved

WARRANTY

All burners and their components are warranted against defects in parts for one full year of purchase date. Warranty covers normal use and safeguards. We will not warrant blowers without the presence of electrical solenoid valves to prevent burnback in the event of power failure.

We will not be liable for any loss or damage that may arise in connection with the use or performance of any item, including, without limitation, any indirect or consequential damages.

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