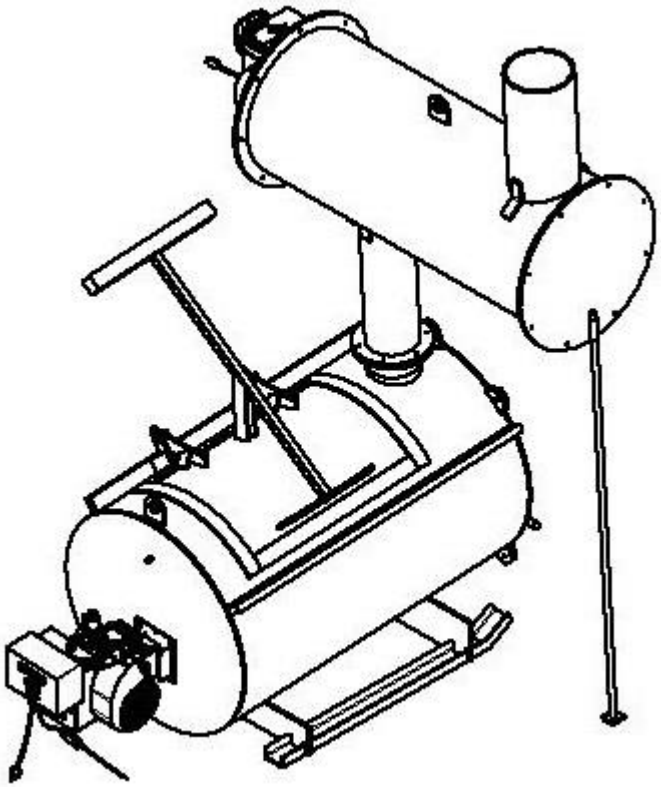
BURN-EASY

R&K Incinerator

LP & Natural Gas Installation & Operating Instructions



Cremator Setup

***Cremator must be installed in accordance to local codes and ordinances. It is the purchaser's responsibility to follow all local, state, and federal rules when operating this equipment.

***Any onsite testing that may be required will be at the expense of the purchaser

***Under no circumstances shall the unit be installed under a roof or in a building without consulting the factory or authorized dealer prior to installation.

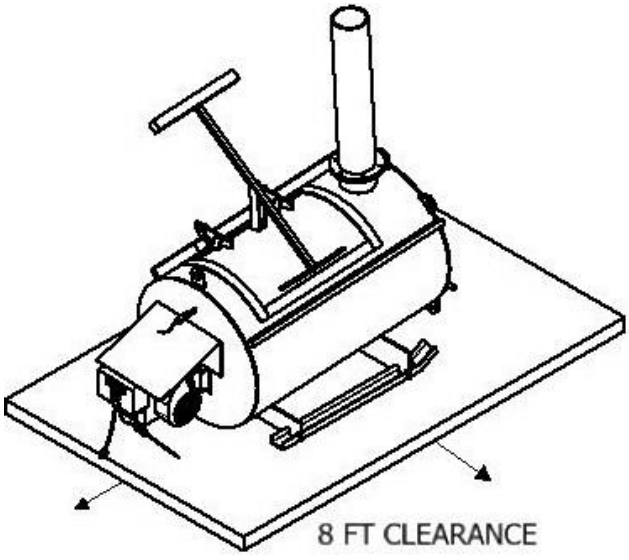
***Adequate fuel and power source will be the purchaser's responsibility. Please review burner setup for details

Please read this entire manual prior to operating. If you have any questions, please call Burn Easy or your supplying dealer!

Do not put any material in the unit prior to testing!

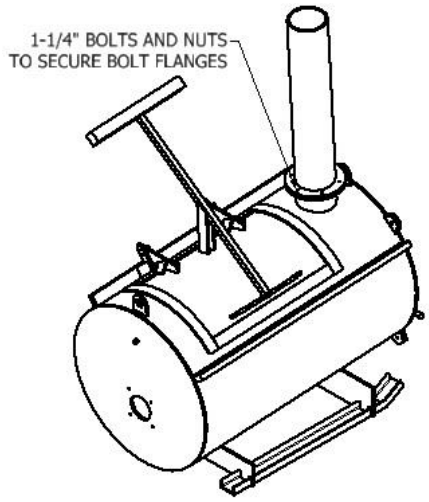
Cremator Placement

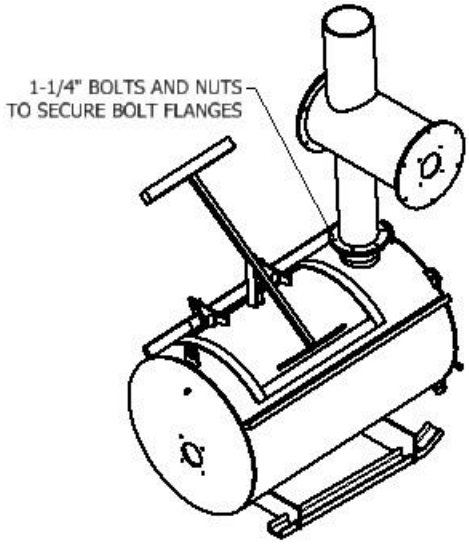
1. Cremator must be installed on a level, firm base. This base can be gravel or concrete but must be firm and level.
2. Site must be kept free of all vegetation and combustibles.
3. Combustibles shall be no closer than 8ft from all sides of the unit.
4. Remove all contents from inside the incinerator.



Mounting Exhaust Stack or Secondary Burner

Standard 3 ft exhaust stacks and model 12 secondary chambers will be secured to unit upon arrival. If these items need mounting, please see figures below



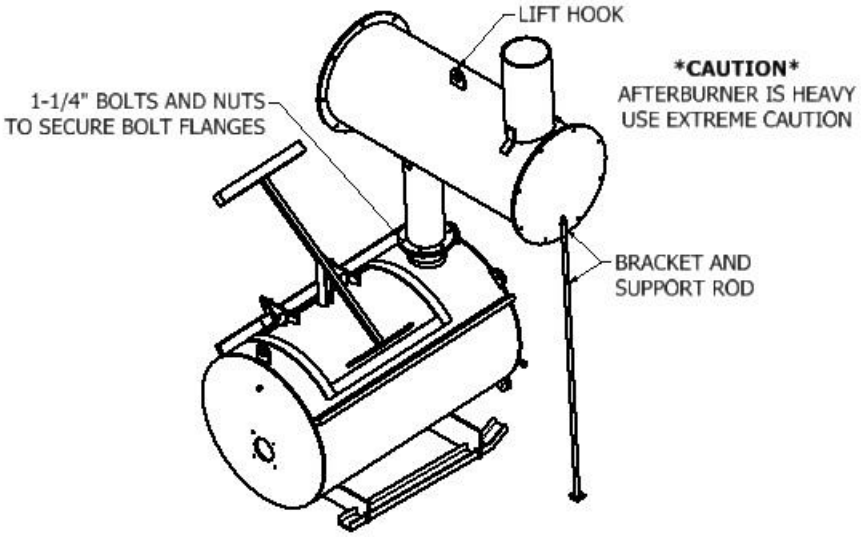


Model 20 Afterburner

1. Slide the support rod into the bracket before mounting the afterburner onto the main chamber.
2. Use the lift hook to pick the afterburner up and secure with the provided bolts and nuts.

***Caution this item is heavy! Keep clear distance and take extreme caution! ***

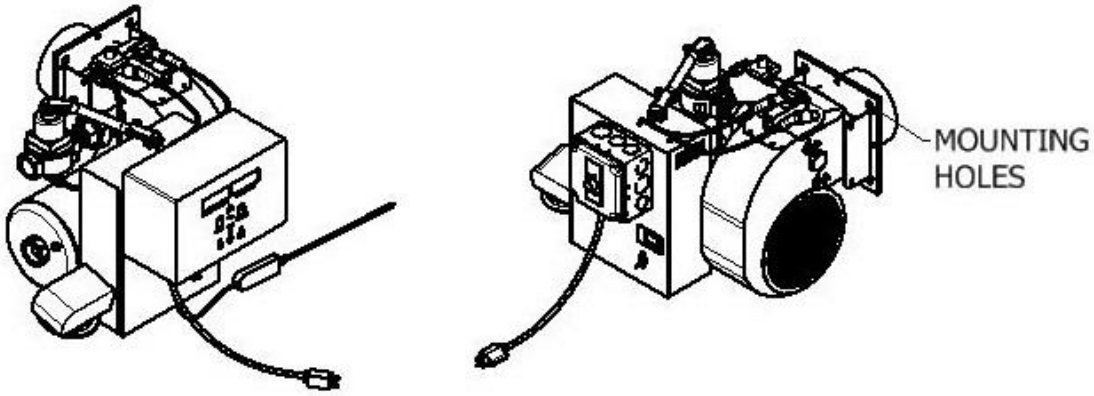
3. Secure flanges with provided hardware.



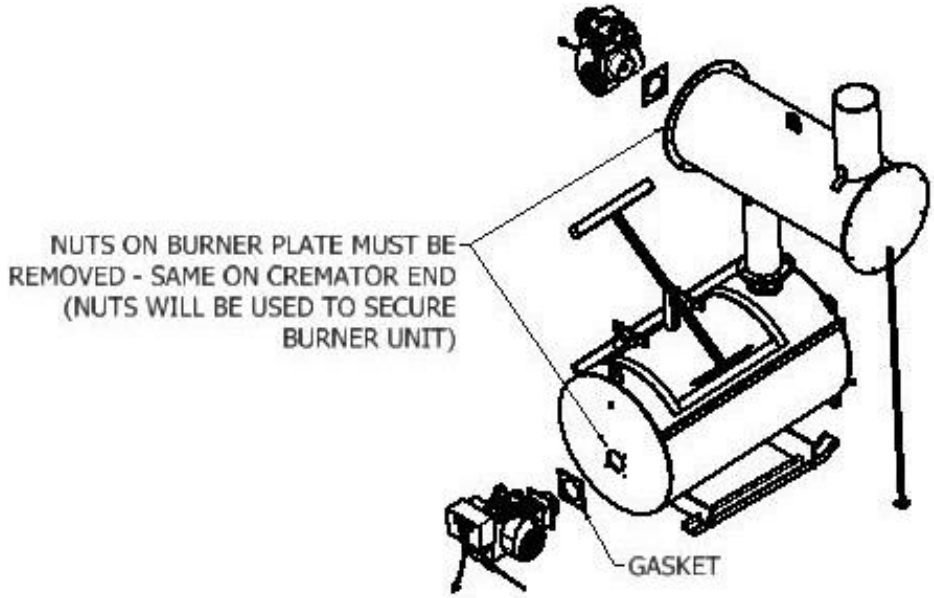
Secondary chambers can be mounted with the burner facing forward or towards the back of the unit. Afterburner must be at a 90 deg angle to the cremator.

Burner Installation

1. Locate the main burner unit. This will be the burner unit with the digital control and yellow thermocouple wire. If applicable the secondary burner will have a single spring wound timer. ***Please note the afterburner controls can vary based on optional equipment ordered! *** Each burner has four holes for mounting.



2. Remove the four 3/8" nuts and washers from the main and secondary chambers. Remove gasket from burner units and place the gasket onto the chamber.



3. Mount the burners onto the chambers using the nut and washer that were removed in step 1. Tighten all bolts securely.

Heat Probe Sensor Installation

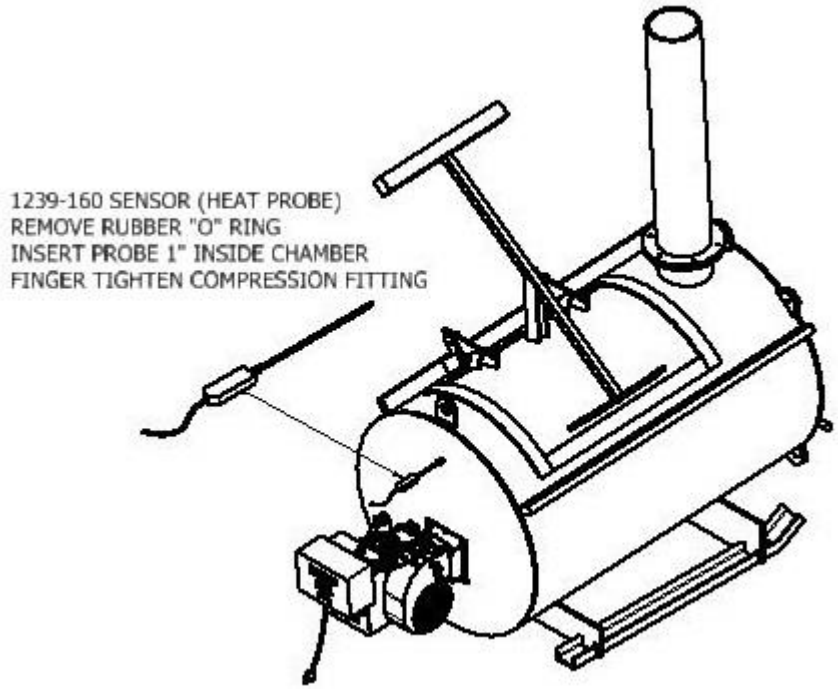
1. Remove rubber "o" ring from the heat probe. Do not remove the brass compression fitting.

2. Slide the heat probe into the threaded pipe coupler located above the burner unit. Temperature probe should be installed 1"-2" inside the main chamber.

Open door on the cremator to verify proper distance inside the chamber

3. Tighten the compression fitting using only your fingers.

***Do not over tighten! ***



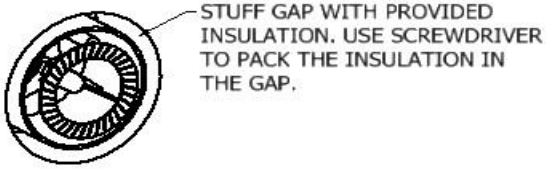
Sealing the Burner Assembly

1. Locate the small square piece of white insulation inside the unit.

2. Open the door of the cremator and locate the head of the burner unit.

3. Tear apart the insulation and fill any gap between the burner head and the refractory plate.

Using a screwdriver to pack the insulation will provide the best results



Gas Line Installation

***Please consult your local dealer or the factory if you have any questions. Proper fuel line hookup is critical to the performance of the incinerator. ***

*** All items related to gas line hookup must be supplied by the customer. Ex. line, fittings, shutoff valve, regulators, etc ***

Please consult your local gas company professionals before installing any gas lines.

You must have a manometer and volt meter to properly install and setup the burners!

1. If using LP the tank must be a minimum of 8ft from the main burner unit.
2. You must meet any and all local codes when installing.
3. Please consult the Midco installation guide for guidelines on piping size.
4. Burners are very susceptible to gas pressure, voltage and ground.
5. Small adjustments can make a huge difference in the performance of the unit.

Proper initial setup is very important to the longevity and performance of the unit. Take the time to fine tune the unit by reading the manual or consulting the factory!

Power Connection

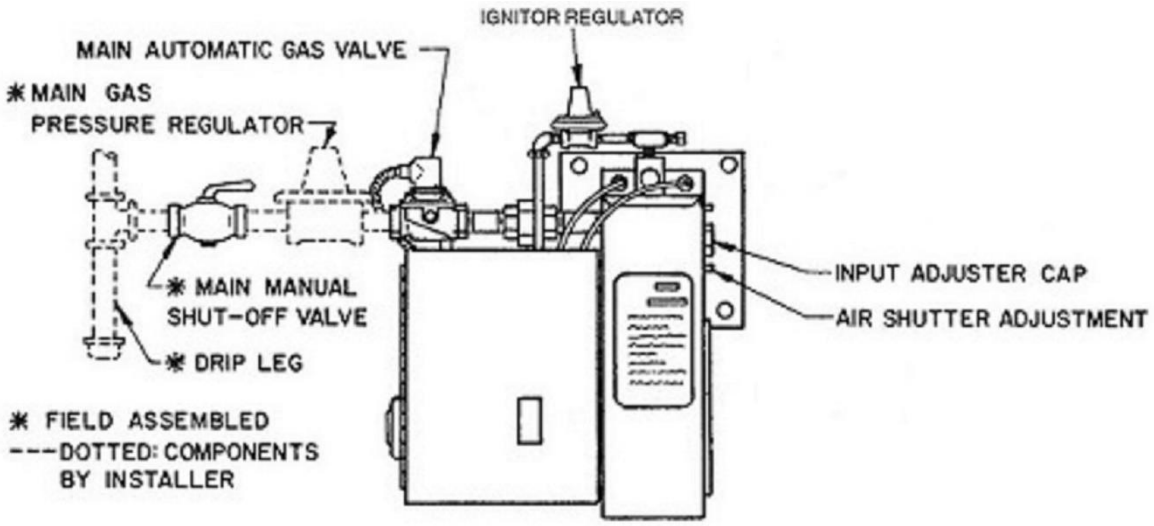
1. Connect burners to your supplied outlets.
2. Power supply is critical to the longevity of the electrical components.
3. The burners will require 120 V while running. Outlets must be wired with a ground wire.
4. R&K does not recommend using extension cords unless absolutely necessary
5. Verify on terminals L1 and L2 inside the main panel of the burner for 120V

BTU Requirements

Below is a list of all models and the required BTU level. Use this guide when determining pipe size. Refer to the Midco installation guide on page 4 for recommended size. Generally 3/4" line is sufficient.

Model	BTU per hour
18	185,000
34	185,000
36 / 30-2W	210,000
37 / 37-2W	215,000
367-1 / 367-2W	275,000
428	315,000
529	350,000
649	375,000
Mdl 12 secondary	160,000
Mdl 20 afterburner	185,000

You will use this setting when determining pipe size and when doing final adjustments to the burner units.



Regulator Pressure

Please consult your local gas company for determining the proper size regulators.

Propane burners

11"-13" W.C. while the burner is firing.

Natural Gas

3.5" - 5.5" W.C while the burner is firing.

1. These pressures must be maintained throughout the burn process.
2. Gas pressure readings should be checked on the main automatic gas valve supplied with the burner.
3. Regulators should be installed within 1-2 ft of the burner unit.
4. Always install a proper drip leg and shut off valve before the regulator.

****Consult Midco manual page 4&5 for detailed regulator instructions****

Caution

The regulated gas pressure must not exceed 14" W.C. or main automatic gas valve and ignitor regulator will be damaged. If excessive gas pressure is prevalent, the regulator must be a tight shut off type to prevent high pressure from developing during stand by.

If gas supply pressure is below its specified range during adjustment, an overfire condition could result when pressure returns to normal, particularly if the regulator adjustment screw is bottomed out. ALWAYS confirm that at least the minimum rates pressure is being supplied during regulator adjustments and never bottom out the regulator screw.

****It may be necessary to use multiple regulators to ensure that gas pressures stay within the specified range.****

Pilot Regulator

The pilot regulator is supplied with the burner unit and is located on top of the burner. See diagram on page 8 for reference. After the main gas pressure is set check the pilot regulator by removing the plug on the brass tee fitting to the right of the regulator.

Pressure for propane and natural gas should be 3.5" W.C.

BTU Input Adjustment

The BTU input will need adjusted based on the size of the cremator and the supplied gas pressure. Refer to the BTU requirements on page 7 of this manual and the chart on page 8 of the Midco manual.

The input adjustment screw is located near the fan intake screen of the burner. Remove the large bolt / cap near the main air adjustment wing nuts. Turn the screw in or clockwise for less BTU. Turn out or counterclockwise for more BTU.

****See page 11 for diagram****

****2 - 3 turns out from fully closed for propane and 3-4 turns out for natural gas is a good starting point****

Important

When operating a fully loaded cremator the unit should be to 1400 deg no faster than 30 min. If the unit gets to temp quicker than 30 min adjust the screw for less BTU. If it takes longer than 30 min adjust for more BTU's. Never adjust more than 1/2 turn at a time.

Do not adjust the gas pressure on the regulator to compensate for initial heat up time!!!

Air Adjustments

Main Air

Adjust the main air by loosening the wing nuts located above the fan intake screen.

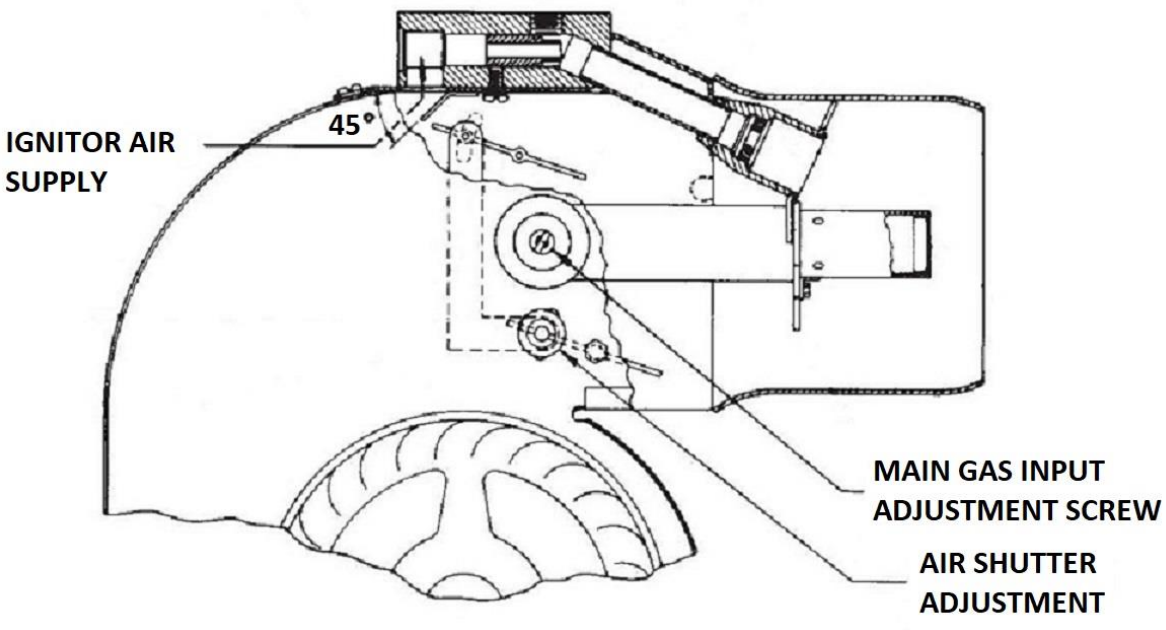
1. Slide the bolt and nut up for less air and down for more air.
2. Warmer outside air temp will require more input air for the burner. Cooler winter temps will require less air.

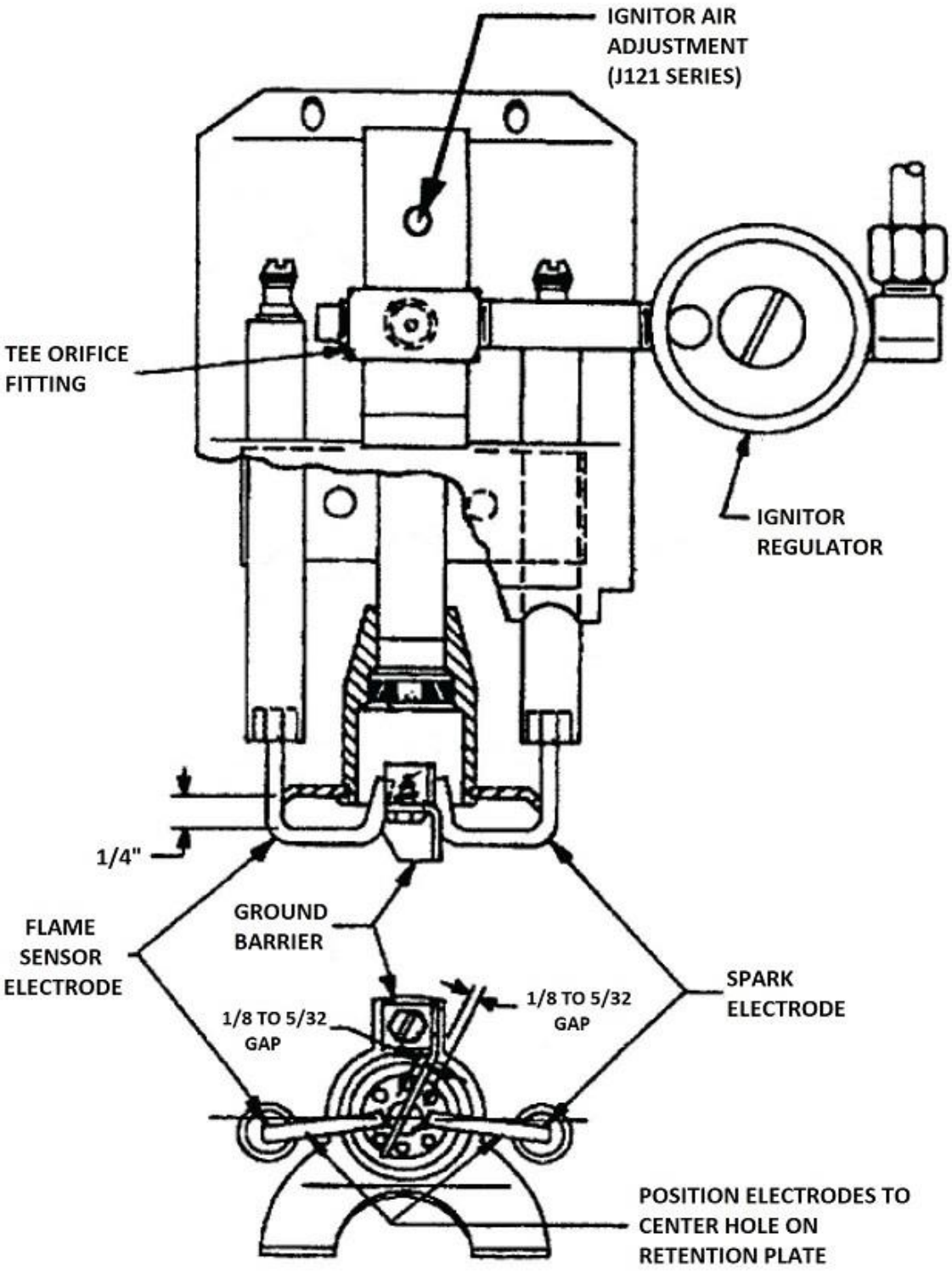
Pilot Air

The pilot air adjustment is located on top of the ignitor assembly between the two orange wires.

1. Remove the shiny cap with a small flat screwdriver.
2. Adjust the allen screw clockwise for less air and counter clockwise for more air.
3. Higher main air will require less pilot air.
4. Generally 3-5 turns out will provide the best results.
5. Do not adjust pilot air if good light offs are being obtained.

****See page 5 of the Midco manual for detailed instructions****




IGNITOR AIR
ADJUSTMENT
(J121 SERIES)
TEE ORIFICE
FITTING
IGNITOR
REGULATOR
1/4"
GROUND
BARRIER
FLAME
SENSOR
ELECTRODE
1/8 TO 5/32
GAP
1/8 TO 5/32
GAP
SPARK
ELECTRODE
POSITION ELECTRODES TO
CENTER HOLE ON
RETENTION PLATE

Afterburner Plumbing

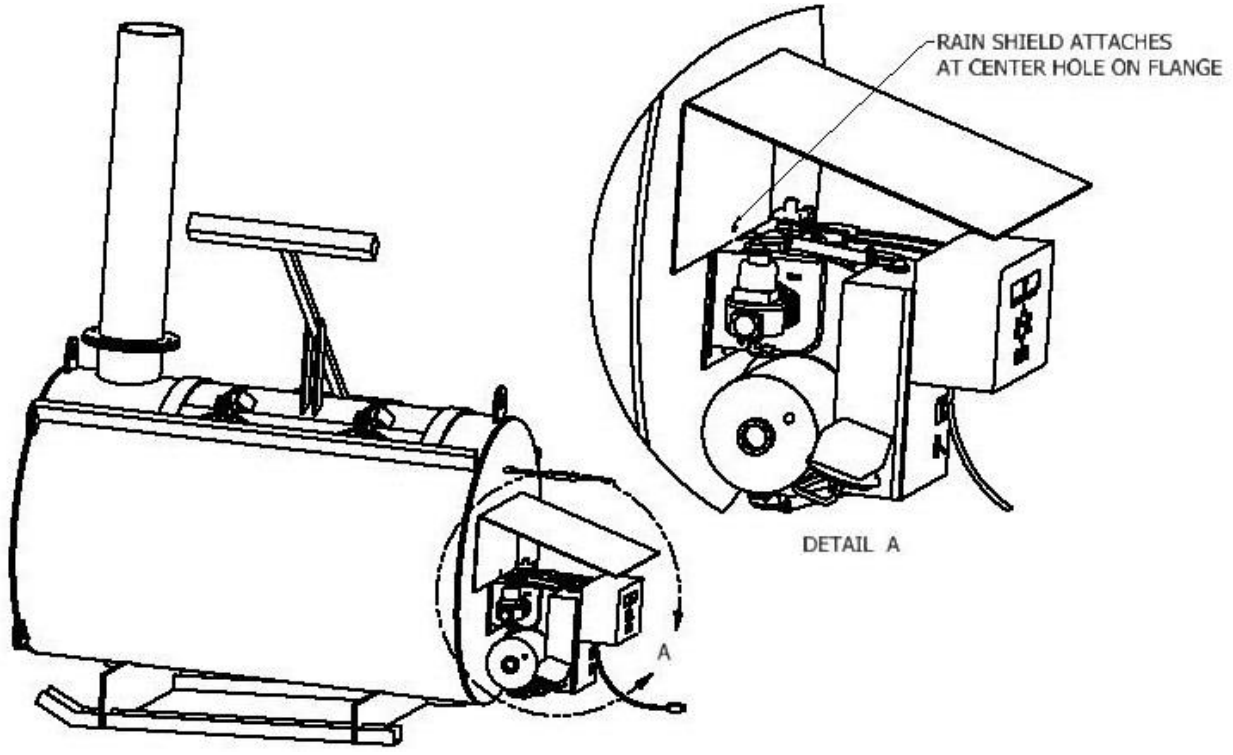
The secondary burner will be plumbed the same way as the main burner.

*****The afterburner must have its own regulator and shut off valve separate from the main burner*****

The gas line can be spliced from the main burner.

Heat Shield Installation

1. Each burner will have a galvanized heat shield.
2. Please see the diagram below for instructions. Use these instructions for both the main and secondary burners.



Installing Grates

1. If using steel grates install at this time.
2. Grates should sit directly below the head of the burner.
3. Use caution when installing. Grates can be very heavy. Do not drop grates on refractory.
4. Depending on your specific application you may not need all of the sections. Please consult our factory or your purchasing dealer.
5. Grates must be rotated and flipped periodically to ensure maximum life expectancy. Do not let ash level build up to the grates. Hot ash will decrease the life of the grates.

Test Firing Burners

****Check incoming voltage and make all necessary gas pressure and air adjustments before firing.****

1. Only start one burner at a time if using an afterburner. Do not start the second burner until the first burner is working properly.

2. Start the main burner first for testing purpose only!

3. Open the loading door!

5. Locate the black control box on the main burner. Make sure the control is plugged into your power source.

6. Upon initial power up screen will display **Burn Easy** for 2 seconds then go blank

7. Press the power/step 1 button to display **Burn Easy** again.

8. Press power/step 1 button a second time to display **Set Time** on the screen.

9. Do not adjust time setting for testing purpose.

10. Press start/stop step 2 button to start the burner.

11. Fan should be running.

12. Fuel LED should start flashing. You will hear a buzzing sound when the electrode starts sparking and the gas valve opens.

13. After the burner unit has fired, shut it off by pressing the start/stop step 2 button.

14. Repeat this process for the afterburner.

***Note the afterburner may be equipped with a turn knob timer only. ***

15. After the secondary unit has fired restart the main unit. Both burners should be firing. Double check the gas pressure with both burners firing.

Loading the Cremator

*** Load the unit after verifying both burners are firing ***

-Do not overfill

-Material should be 12" from the head of the burner

-Do not fill above the angle iron on front and back of the loading door

-Make sure heat can escape through the stack

-Material should not be touching the fiber blanket on the door.

-Be careful not to damage the blanket when loading material in the unit!

-Never load a hot unit. Verify temp on controller before opening the door.

Secondary Burner Operation

-Afterburner must be firing before starting the main burner.

-Afterburner should run for 30 min prior to starting the main unit.

-Afterburner should run 30 min after the timer expires on the main burner.

Main Burner Operation

Always verify ignition and raising temperature before leaving the unit

Upon initial power up screen will display Burn Easy for 2 sec then go blank

1. Press power/step 1 button to display Burn Easy

2. Press power/step1 button again to display set time on screen

3. Use the arrow keys to adjust time in 30 min. increments.

Set timer for 1 hour per hundred pounds plus an additional 30 min

*****This is only a recommendation for on farm use. Specialty material may require a different time setting*****

4. Press start/stop step 2 button to begin burn process.

-Upon start up FAN ON LED will illuminate. Fan should be running

-After 10 sec FUEL ON LED will illuminate. Burner should be firing

-Unit will continue firing until temp is achieved (default 1400)

-FUEL ON LED will go off and temp will drop until low limit is achieved (default 1325)

-This cycle will continue during burn process

-If unit reaches 1500F FAN ON and FUEL ON LED's will turn off and HIGH LIMIT LED will appear

-When timer reaches 00:00 FAN ON LED will remain on until temp reaches 350F

-Burn Done along with the Current Temp/ Cool will be displayed on the screen

-When 350F is achieved screens will go blank and burn will be finished.

*****Do not over burn! It takes as much fuel to burn the last 20% of the load as it does first 80%. *****

Fill the unit full before burning weather permitting. The fuller you fill the unit the more efficient it will burn. Do not let carcasses start to decompose inside unit. Burn for a short period of time if unit cannot be filled each day.

Please consult your dealer or the factory if you have any questions on fuel efficiency or time setting.

Cleanout

Take something out every time you put something in.

Do not let ash level build up inside unit.

Leave unburned items in the unit to be burned with the next load. Ideally you want 20% of the load still in the unit.

Do not let ash build up to the bottom of the grates. Use the cleanout door to scrape under the grates.

Do not scrape or hit the refractory with metal objects such as hoes, rakes, or shovels.

Cleanout procedures for pet cremation or specialty products may vary.

Maintenance

Burners

-Air deflector under ignitor assembly should be at 45 deg angle

-Keep electrodes, nozzle, and ground barrier plate free from dirt.

-Electrode should be properly gapped

-Replace circuit board decal if worn or cracked

-Insert heat probe 1” inside unit

-Remove secondary burner once per year to inspect air tube & secondary chamber

Main chamber

-Repair tile before they break

-Replace broken tile ASAP. Do not delay replacement

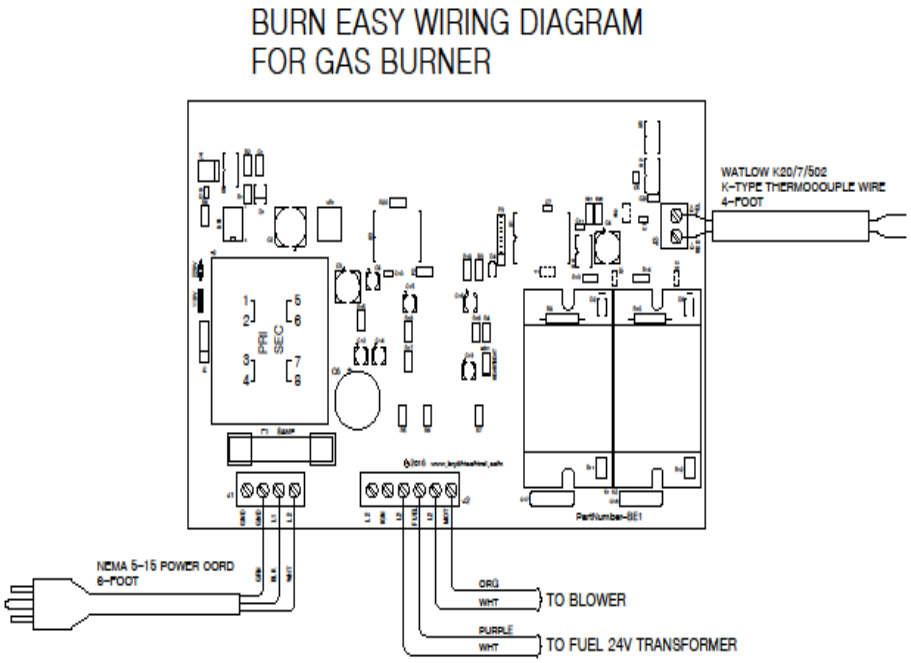
Door

-Replace Insulation when bare spots appear

Secondary Chamber

Watch for any hot spot forming on the outside of the chamber

Inspect refractory yearly when removing the burner



Controller Troubleshooting

Screen is Blank

-Check fuse on circuit board. Replace with 8 amp or 10 amp slow blow fuse

Prob FAIL Temperature probe, yellow wire, or circuit board is faulty

Burn Fail Burner did not ignite or raise in temp 10 deg in 30 sec

Lo POR Incoming voltage is less than 120 v

Safety

Never open a hot unit. Always check temp before opening door

Never load a hot unit. Flash fire can occur

Always fully open door before loading

Never get inside of the unit without supervision

Never perform maintenance on the inside of a unit above air temperature

Make sure unit is burning before leaving it unattended

Check cable, clamp and winch for wear if applicable

Open door when igniting unit

Disconnect all power sources before servicing burners

Never touch any part of the unit while it is burning. Serious burns can occur!

If ignition failure occurs fully open door to allow excess gas to escape

Consult gas company if you smell or detect a leak.

Safety First!

Farmer Boy Ag, Inc.

50 West Stoever Avenue

Myerstown, PA 17067

800-845-3374 / www.farmerboyag.com

R&K Limited Warranty Policy

R&K will warranty for 1 year from the date of purchase all materials and workmanship used in the construction of our incinerators, including all electrical parts such as burners, fans, timers, and controllers.

If these parts fail under normal operating conditions, R&K Incinerator will replace or repair the part at R&K Incinerator sole option.

R&K Incinerator is not responsible for any labor cost, and or mileage for the inspection, testing, removal and replacement of said parts or components.

All part should be returned freight prepaid, to R&K Incinerator, 6125 W 100 S, Decatur, IN 46733 for warranty evaluation. Defective parts must be returned to the factory.

A unit or part that has been repaired will carry the Limited Warranty equal to the unexpired portion of the original warranty.

If inspection by R&K Incinerator does not disclose any defect covered by this Limited Warranty,

The part will be replaced or repaired at the expense of the customer and R&K repair charges will apply.

This Limited Warranty does NOT cover products which have been damaged as a result of act of nature, accident, abuse, misuse, neglect, improper installation, improper maintenance or failure to operate in accordance with R&K written instruction