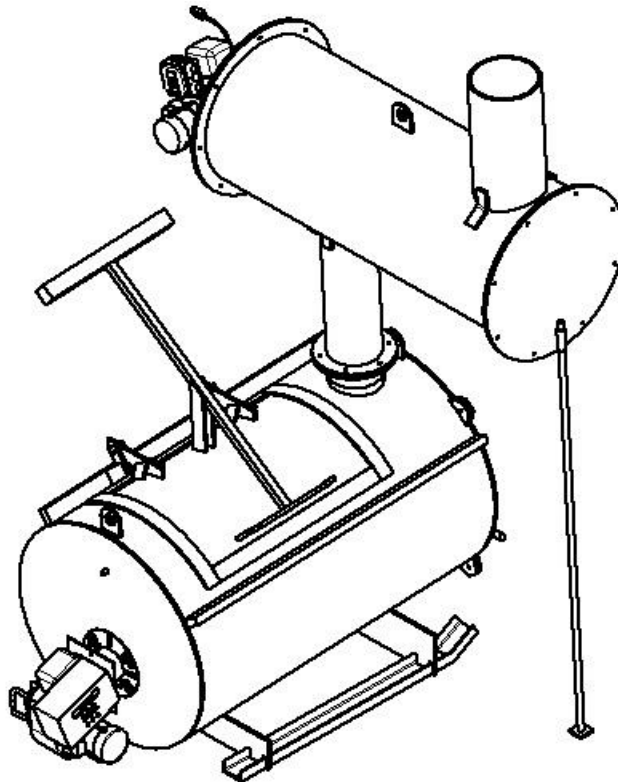




R&K Incinerator

# Fuel Oil Installation and 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.

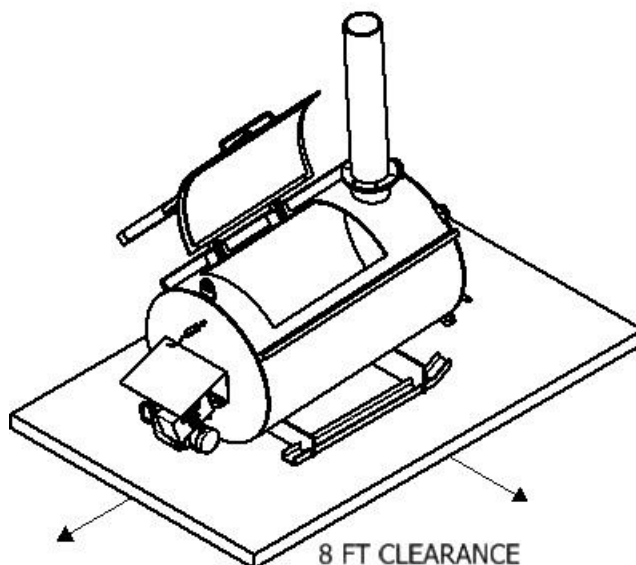
\*\*\*Adequate fuel and power source will be the purchaser's responsibility. Please review burner setup for details

**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!**

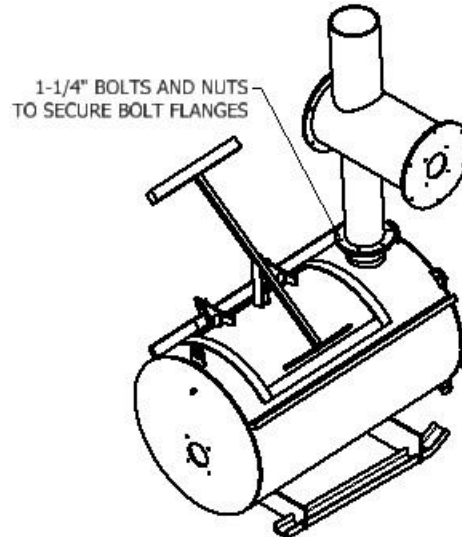
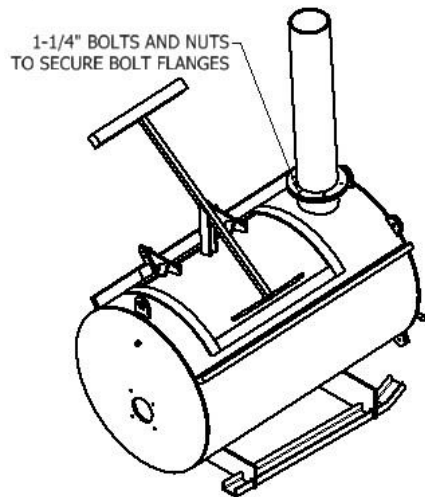
## **Cremator Placement**

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 1 & 2 below\*\*\*

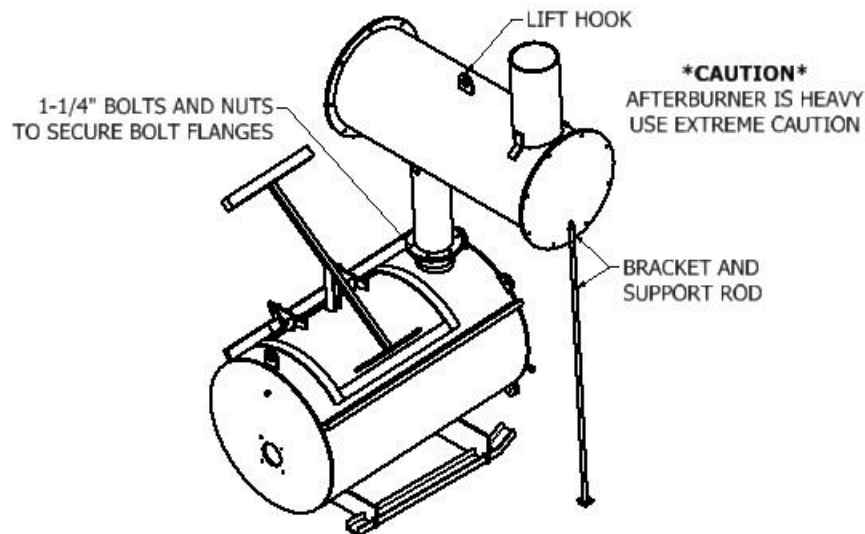


## Model 20 Afterburner

1. Slide the support rod into the bracket before mounting the afterburner onto the main chamber. See figure 3
2. Use the lift hook to pick the afterburner up and secure with the provided bolts and nuts. See figure 3

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

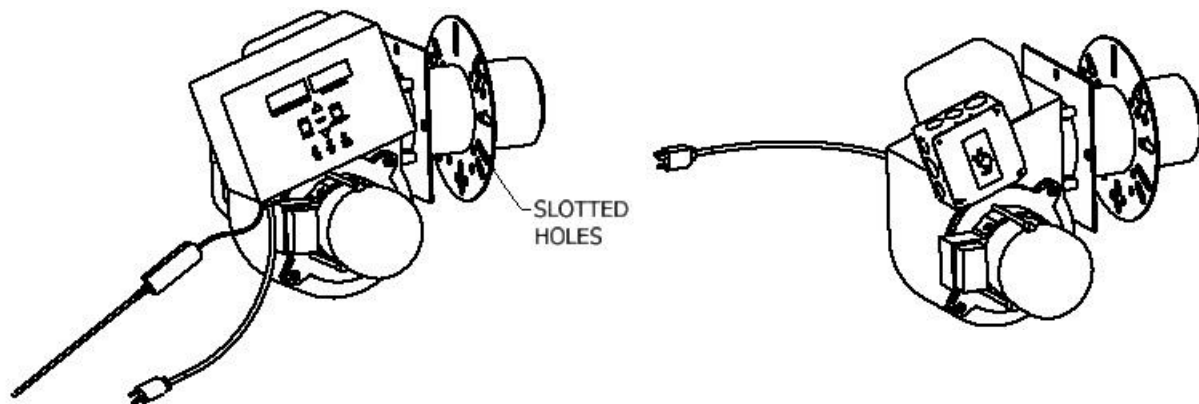
3. Secure flanges with provided hardware. See figure 3



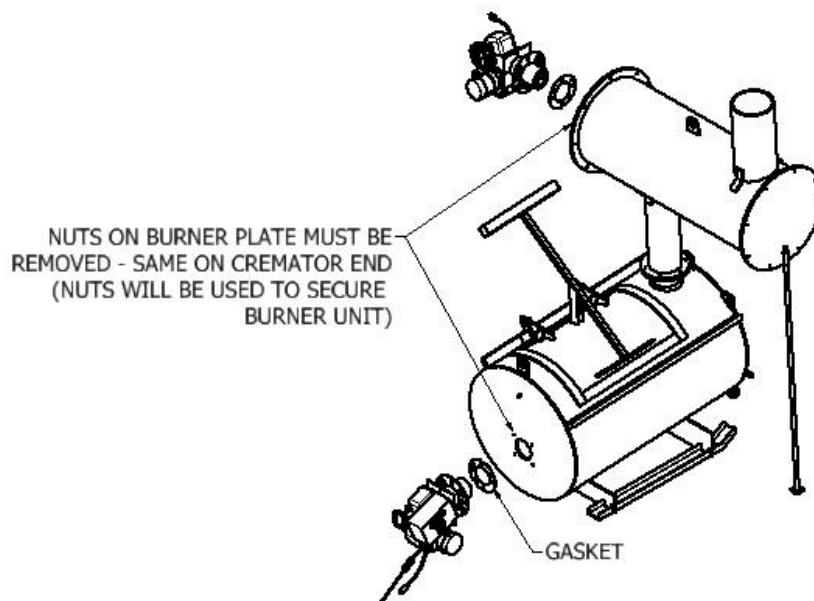
Secondary chambers can be mounted with the burner facing forward or towards the back of the unit. Afterburner must be at a 90 deg angle to the cremator. Figure 3 shows rear facing burner.

## Burner Installation

1. Locate the main burner unit. This will be the burner unit with the digital control and yellow thermocouple wire, Figure 4. If applicable the secondary burner will have a single spring wound timer, Figure 5. \*\*\*Please note the afterburner controls can vary based on optional equipment ordered! \*\*\* Each burner has slotted 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. See figure 6.



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

## **Heat Probe Sensor Installation**

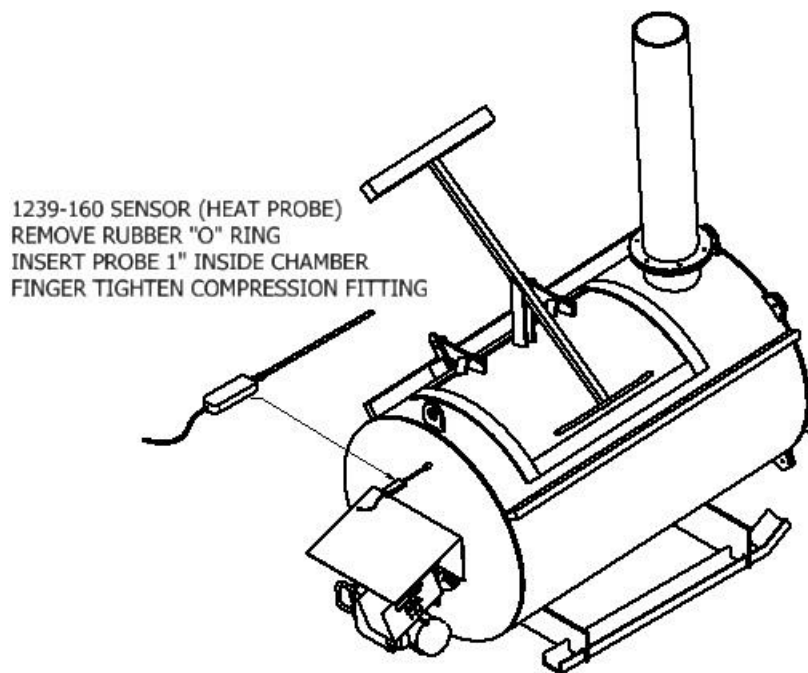
1. Remove rubber "o" ring from the heat probe. Do not remove the brass compression fitting.
2. Slide the heat probe into the threaded pipe coupler located above the burner unit. Temperature probe should be installed 1"-2" inside the main chamber.

Figure 7

\*\*\*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! \*\*\*

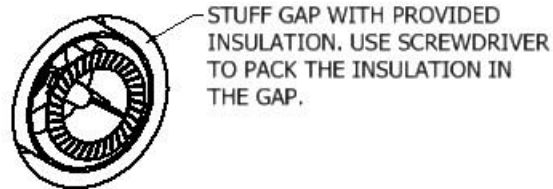


## **Sealing the Burner Assembly**

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. See figure 8

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



## **Fuel Tank Placement**

After your burners are secured to the unit your lines and tank can be installed.

\*\*\*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 equipment related to fuel line hookup must be supplied by the customer. Ex. line, filter, fittings, shutoff valve, tank. \*\*\***

**Diesel fuel must be less than 5% biodiesel! Fuel additive must be added during cold temps. Please consult your fuel supplier for information.**

1. Set the fuel tank a minimum of 8ft from the main burner unit. Maximum distance is 25ft of line.

\*\*\*Remember to calculate the vertical height of the line if drawing fuel from the top of the tank. \*\*\*\*

2. If application calls for a distance greater than 25 ft please consult your dealer or the factory.

3. You must meet any local codes when installing a fuel tank.

4. Fuel tanks with a top and bottom port are ideal but not a necessity.

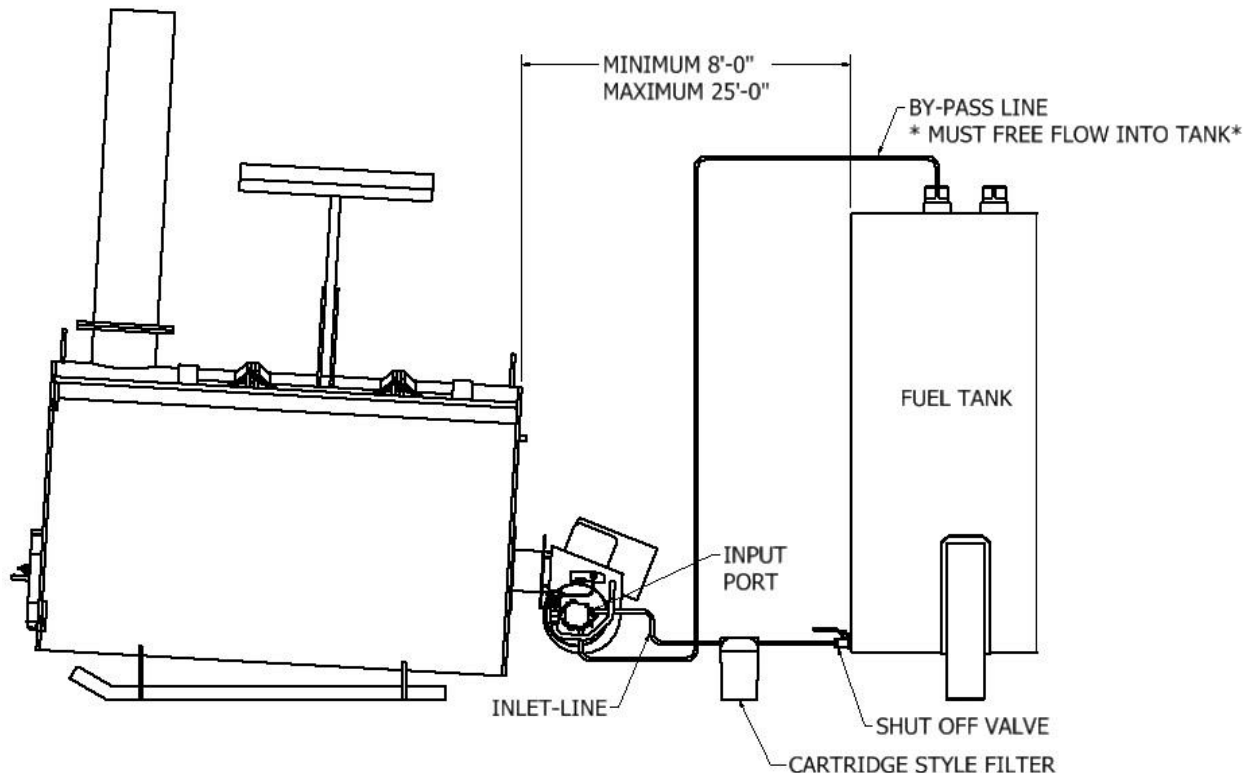
5. Do not use elevated tanks higher than 1 ft from the ground level.

**\*\*\*This burner does not require gravity flow\*\*\***

6. You must install a canister type filter and shutoff valve with a minimum of 3/8" inlet and outlet.

7. 3/8" ID copper line is recommended. **Do not use compression fittings or rubber line!**

Below figure 9 shows an ideal setup. Tank can also be placed behind the unit at a 90 deg angle to the unit.

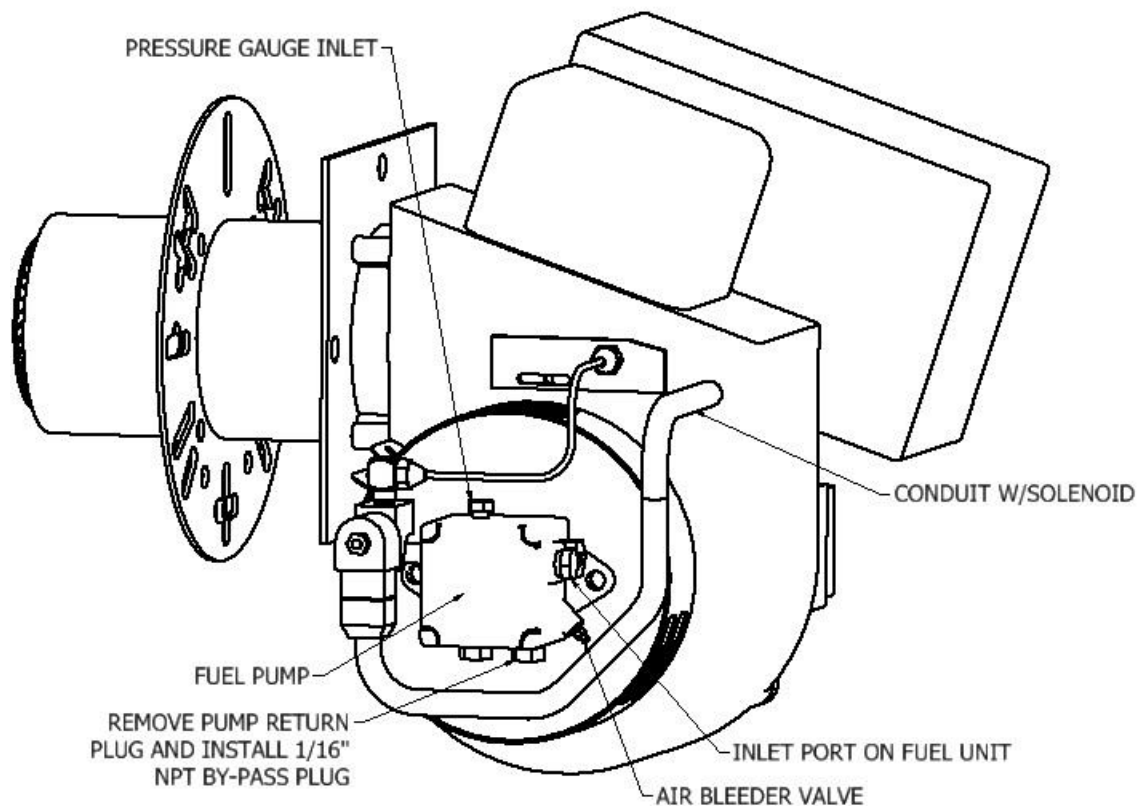


## Oil Burner Plumbing

1. Remove plastic bag that is attached to the burner. This bag contains a small bypass plug.
2. We recommend using a 2-pipe system for the fuel hookup. This consists of an inlet line and a return line. This is used to relieve pressure on the valve and pump while the unit is cycling fuel on and off. **\*\*\* If you are not using a return line please disregard step 3. \*\*\***

3. Remove and discard the plug on the return port of the pump. (See figure 9)  
Using a 5/32" Allen wrench thread the 1/16" by pass plug, (found in the plastic bag) inside the return port of the pump. The plug will go up approx. 1/2", tighten securely. \*\*\***Once the bypass plug is inserted do not restrict the port!**
- Disregard this step if using a one-line system! \*\*\***
4. Securely fasten your flared fitting to the return port.
5. Remove and discard the plug located on the side of the pump marked "inlet".
6. Securely fasten your flared fitting to the inlet port.

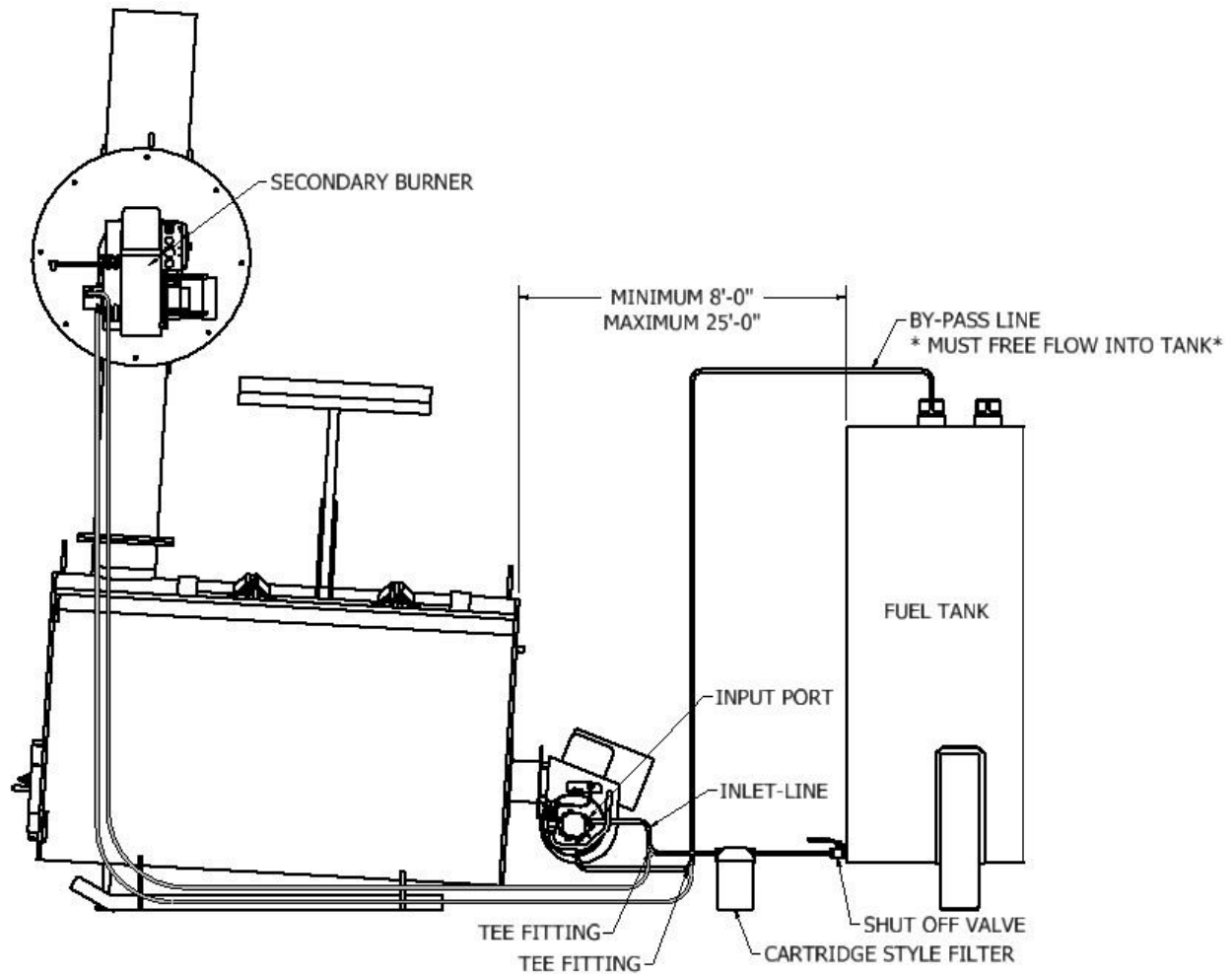
Figure 10





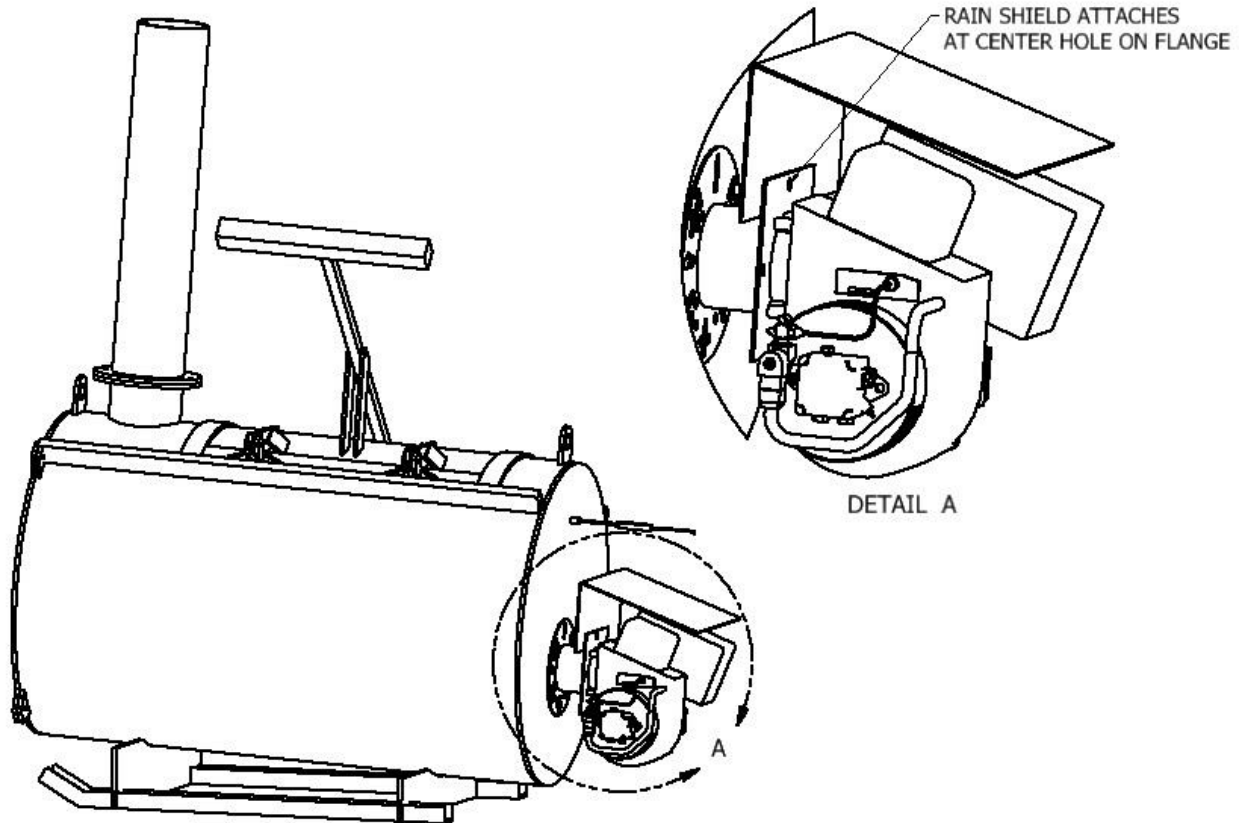
# Afterburner Plumbing

1. the secondary burner will be plumbed the same way as the main burner. Follow directions on page 7&8. See figure 10 on the previous page.
2. Fuel lines for the afterburner should be kept at least 2 ft from the main chamber and stack.
3. The inlet line and return line can be connected to the main burner supply and return lines. See figure 11 below.



## **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.

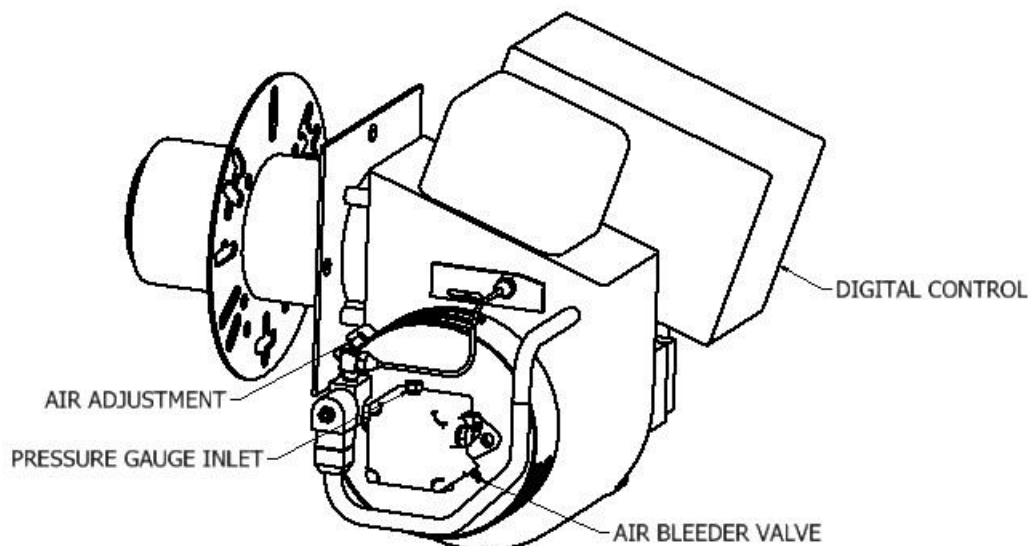
## **Power Connection**

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

## **Fuel Pump Preparation**

It is important to do a test run on the equipment before loading the cremator. This is to ensure all components are functioning properly.

1. Plug burners into power source.
2. Open fuel shut off valve to supply fuel to burners.
3. Fuel filter should be full of fuel before starting the unit.
4. Remove the pressure gauge inlet bolt on top of the pump. Fill the fuel pumps with a small amount of diesel fuel. After filling the pumps retighten the bolt if not using a pressure gauge.



## Test Firing Burners

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!
4. Using a 3/8" wrench open the bleeder valve at least 2 full turns. Place a small can under the pump to catch fuel from the bleeder valve.
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. After 10 sec the fuel valve should engage.
12. Fuel and air should be coming out of the bleeder valve. When a solid stream of fuel appears close the bleeder valve while the unit is running!
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. You may have to open the bleeder valve again to ensure the lines are fully primed.

## Air Adjustment

1. If using an afterburner turn off the main unit and leave the secondary burner running.
2. Adjust air by loosening the air adjustment tab so the band will slide. Loosen the band slightly. Do not remove the bolt!
3. Adjust the air by sliding the band. Move 1/4" at a time. Wait 30 seconds then readjust if needed.
4. You should adjust for **minimum air** possible with no black smoke.
5. Air must be adjusted based on ambient outside air temp. Colder temps will require less air, warmer summer temps will require more air.
6. Set air on main burner to same setting as secondary burner.

\*\*\*Air will need adjusted periodically throughout the year to ensure optimal performance. \*\*\*

## Loading the Cremator

\*\*\* Load the unit after verifying both burners are firing, and air has been adjusted\*\*\*

- 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.

# **Maintenance**

## **Burners**

- Change nozzles every 1000 Gal of fuel
- Replace circuit board decal if worn or cracked
- Clean brass buss bars on electrodes
- Inspect flame lock for proper placement within air tube assembly
- 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



## **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!

## **Safety First!**

Farmer Boy Ag, Inc.

50 West Stoeever Avenue

Myerstown, PA 17067

800-845-3374 / [www.farmerboyag.com](http://www.farmerboyag.com)

## **Trouble Shooting**

**Caution: Before troubleshooting always  
unplug burner from power source.**

**Electric shock can occur!!**

Symptom	Diagnosis	Solution
<b>Motor won't run</b>	Unit is unplugged	Plug into proper power source
	Inadequate circuit breaker	20 Amp
	Improper incoming voltage	Test for 120V on orange and white motor wires inside control panel
	Controller board is not working properly	Consult dealer or manufacturer
<b>Poor or no fuel spray</b>	Fuel level in tank	Check fuel supply
	Dirty or worn nozzle	Replace nozzle after every 500 gallons of fuel
	Air leaks in fuel lines or fittings	Repair cracked fittings or fuel lines

	Air needs “bled” from lines	Use 3/8” wrench to loosen bleeder valve on pump. Burner must be running. Not required for burners using a return line
	Improper or clogged fuel filter	Use canister type filter. Clean accordingly
	Drive coupler is loose or broken	Tighten motor and fuel pump ends of drive coupler with 5/32” allen wrench
	Failed fuel pump	Remove fuel valve using 9/16” wrench. Start unit. Watch for fuel where valve was removed
	Failed valve	Be sure wiring harness is plugged into solenoid. If pump works and click can be heard but no fuel is seen, valve is bad.
<b>No spark</b>	Worn contact springs	Replace
	Transformer has failed or is weak	Test by using <u>plastic handled screwdriver</u> . Open transformer, start

		unit, place tip of <u>plastic handled screwdriver</u> on one contact spring, lower shaft towards second contact spring. Transformer should “jump” a ¼” spark.
	Electrodes are dirty, cracked, or need adjusted	Clean brass buss bars with sand paper and grease remover. Replace any cracked electrodes. Adjust for 1/8” gap at tips above nozzle.
<b>Cremator smokes</b>	Improper air adjustment	Adjust air band for minimum air and no black smoke.
	Unit is overloaded	Air circulation inside unit is important
<b>Control board reads “probe fail” message</b>	Heat probe sensor is bad	Unplug probe . place jumper wire in female plug attached to yellow wire. Message goes away probe is bad. Replace
	Yellow probe wire cracked or faulty	Open controller cover. Un wire yellow and red wire from heat probe lead. Wire jumper in green plug. Message



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

**Lo POR**        Incoming voltage is less than 120 v

### **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