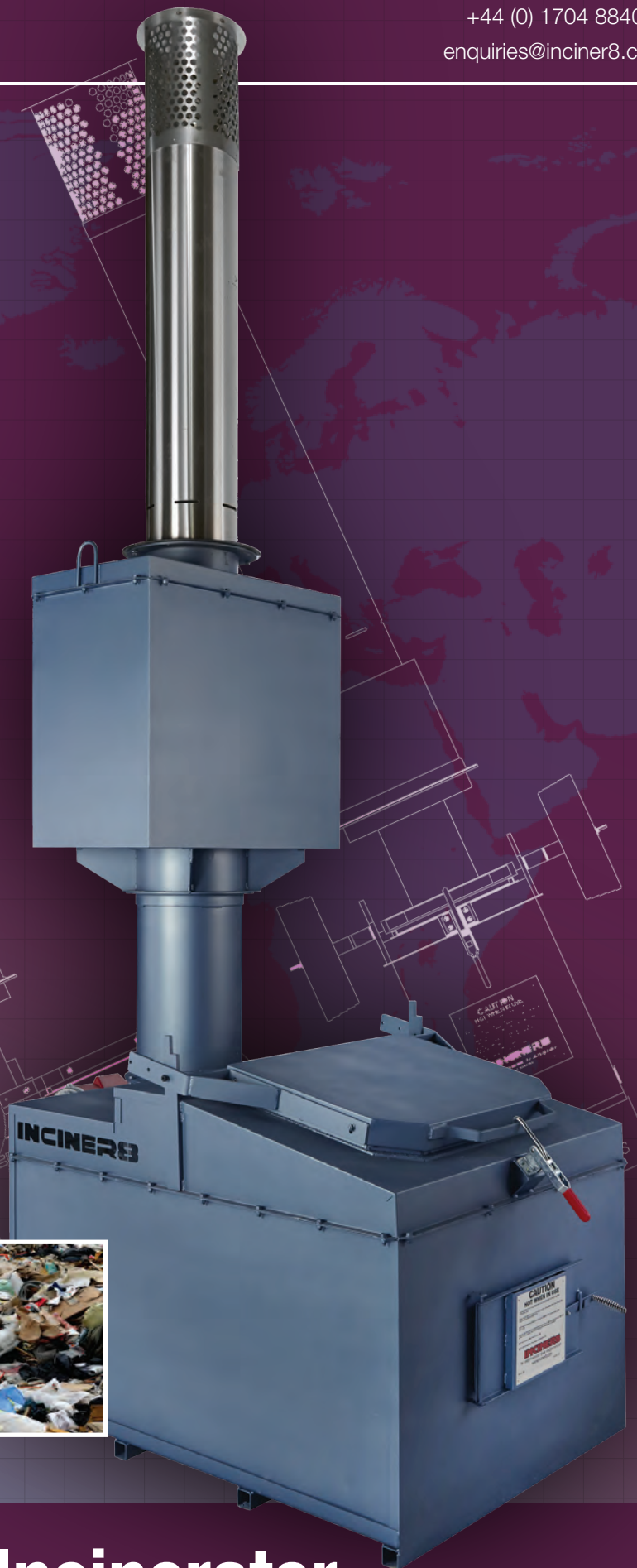


INCINER8

Leading Provider of Thermal Treatment Solutions

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enquiries@inciner8.com



i8-75a Incinerator

Installation & Operation Manual

General Responsibility

PLEASE READ THIS INFORMATION:

We don't accept responsibility for any damages or injuries caused by neglecting these instructions.

Purchased equipment is in compliance with existing regulations for safety measures. Treatment and Handling of equipment is end-user's responsibility.

Our incinerators are made from existing technology and regulations of safety measures. Nevertheless, because of improper usage and handling some serious injuries for user or other person, as well as physical damage to equipment or other goods may occur.

These incinerators are intended for incineration of waste products and for energy recycling from exhaust heat. (This is optional equipment). Any usage of incinerator beside mentioned is considered as improper, and end-user takes full responsibility for possible damages and injuries.

Proper usage of incinerator also considers installation, maintenance and service of equipment as described in this manual.

Installation and calibration of incinerator, as well as service and maintenance procedures can be done only by approved professionals.

Read and Understand this Manual

WARRANTY

INCINER8's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by INCINER8. INCINER8 MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. INCINER8 DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

INCINER8 SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of INCINER8 for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL INCINER8 BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS INCINER8'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR

Safety

PLEASE ADHERE TO THESE GUIDELINES

Use appropriate lifting equipment when installing incinerator. Failure to do so may cause injury or damage the machinery

Use appropriately qualified personnel for the fuel and electrical connections.

Ensure the incinerator is cured prior to first use. Failure to do so will void the warranty.

Do not modify the incinerator or any of its parts in any way. Doing so will void the warranty.

Wear suitable Personal Protection Equipment (PPE) when operating the incinerator to prevent injury during loading of waste into chamber. Please check the PPE requisites for your country.

Ensure ash has cooled down before removal to avoid injury.

Do not overfill the incinerator.

Ensure the loading door is closed and locked during operation to prevent un-authorised entry to the chamber whilst burn cycle is in process.

In case of loss of electricity, shut down the burner immediately to prevent damage to the burner by heat transferring back for the main chamber.

Ensure installation and layout is compliant with local building regulations.

Regularly check the condition of your incinerator to ensure it is in good condition. Service every 1 year/1000 hours (whichever comes first).

Do not use cleaning agents containing chlorine, acid or other aggressive materials on your incinerator. This can remove the paint and lead to corrosion.

If any signs of corrosion do appear, treat immediately with high temperature paint to prevent the corrosion spreading.

Ensure the incinerator has constant electrical supply when in use. If power supply is susceptible to failures, consider the use of a generator.

If power does fail during the burn cycle, remove burners immediately to prevent damage to them.

Ensure the incinerator is used in the manner for which it was intended – waste incineration (including following this instruction manual). Using this product in any other way is considered improper, and the end user accepts full responsibility for any possible injuries/damage.

Ensure explosive/flammable materials are not stored in close proximity to the incinerator.

Preface

Thank you for purchasing an i8-75a incinerator.

This manual describes how to use the i8-75a. Read this manual thoroughly and be sure you understand it before attempting to use the Incinerator and use the incinerator correctly according to the information provided. Keep this manual in a safe place for easy reference.

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No patent liability is assumed with respect to the use of the information contained herein. Moreover, because INCINER8 is constantly striving to improve its high-quality products, the information contained in this manual is subject to change without notice. Every precaution has been taken in the preparation of this manual. Nevertheless, INCINER8 assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained in this publication.

Package Contents

MODEL: i8-75A

- | | |
|--|---|
| <input type="checkbox"/> Main Chamber | <input type="checkbox"/> M8 x 20mm hex bolt x 8 |
| <input type="checkbox"/> Secondary Chamber | <input type="checkbox"/> M10 x 20mm serrated flange bolt x 16 |
| <input type="checkbox"/> Chimney | <input type="checkbox"/> M10 serrated flange nuts x 16 |
| <input type="checkbox"/> Stack Cap | <input type="checkbox"/> 8mm tech screw x 4 |
| <input type="checkbox"/> Control Panel | <input type="checkbox"/> Fire Rope & Mastic |
| <input type="checkbox"/> Locking Handle | <input type="checkbox"/> Primary Burner Max 1 / Azur 60 |



(x8)

M8 x 20mm hex bolt



(x16)

M10 serrated flange nuts



Mastic



Fire Rope



Burners



Locking Handles



(x4)

8mm tec screw



(x16)

M10 serrated flange bolts



Primary Chamber



Secondary Chamber



Chimney



Control Panel



Stack Cap

Please remember

We take great care in ensuring all parts are included for the assembly of your product. Please check the package contents against the list above and contact us immediately should anything be missing.

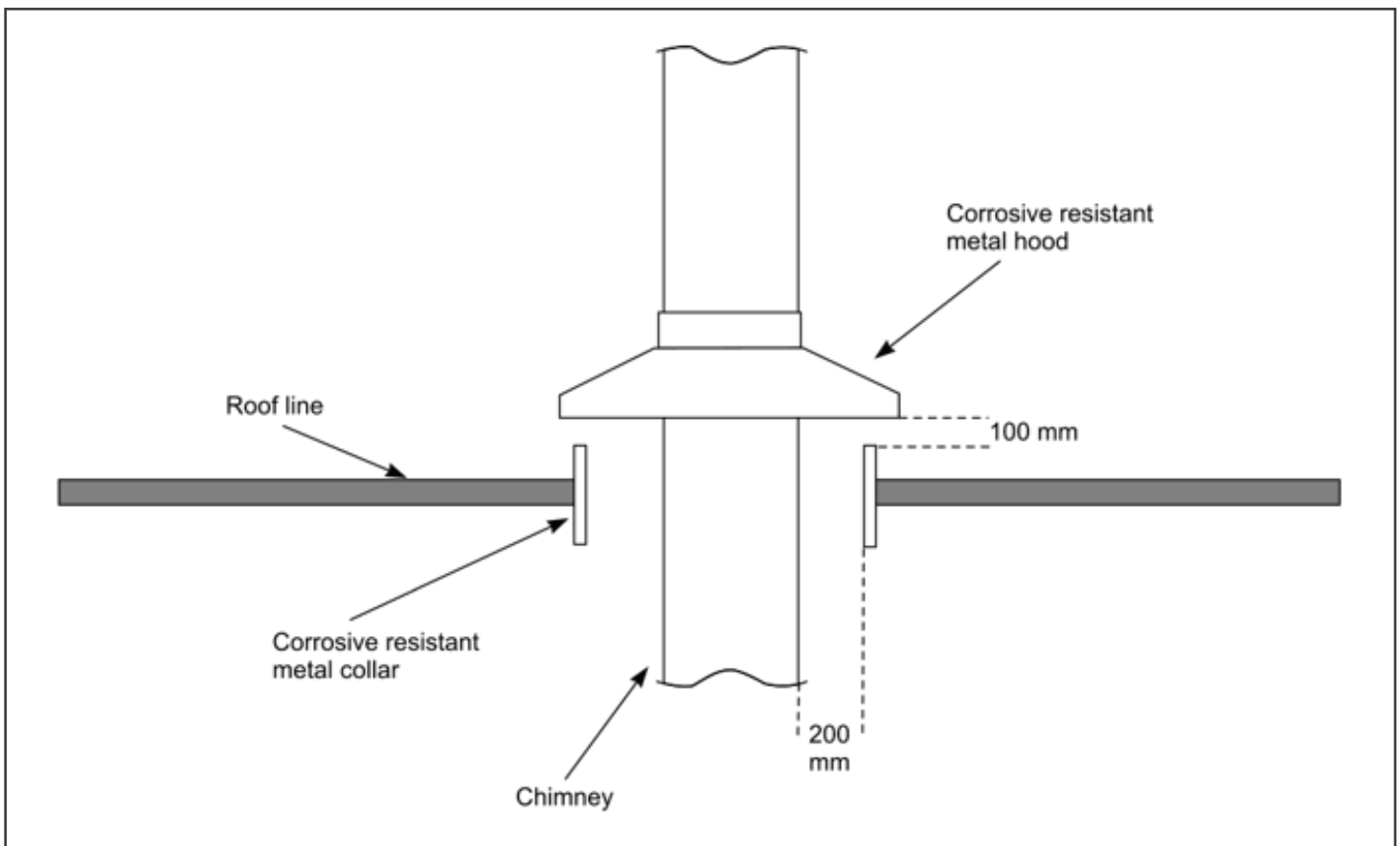
Site Preparation

Summary

We recommend a 4m x 4m concrete slab that is level and flat. Floor must be solid, flat and levelled. The concrete base is a standard reinforced concrete slab 20cm thick. We recommend replacing the material at a depth of at least 50cm (applying gravel and compacting to the compressibility modulus $M = 80.0 \text{ MN/m}^2$).

If being sited in a building/shelter, this to be 4m x 4.2m. Inside installation is acceptable if 15 or more air changes per hour are provided. The room must be positive pressure as well. This prevents internal combustion products from entering the room. The room should be designed not to exceed 120°F (50°C) or damage may occur to electrical components. Local fire and building codes are to be met by the installer.

If the building has a roof, provision will need to be made to allow the chimney to pass through with weather protection as shown on next drawing: (See APPENDIX 1 for more drawings)



All the fuel (gas or oil) supply installations must be done by approved professionals, in accordance to local regulations.

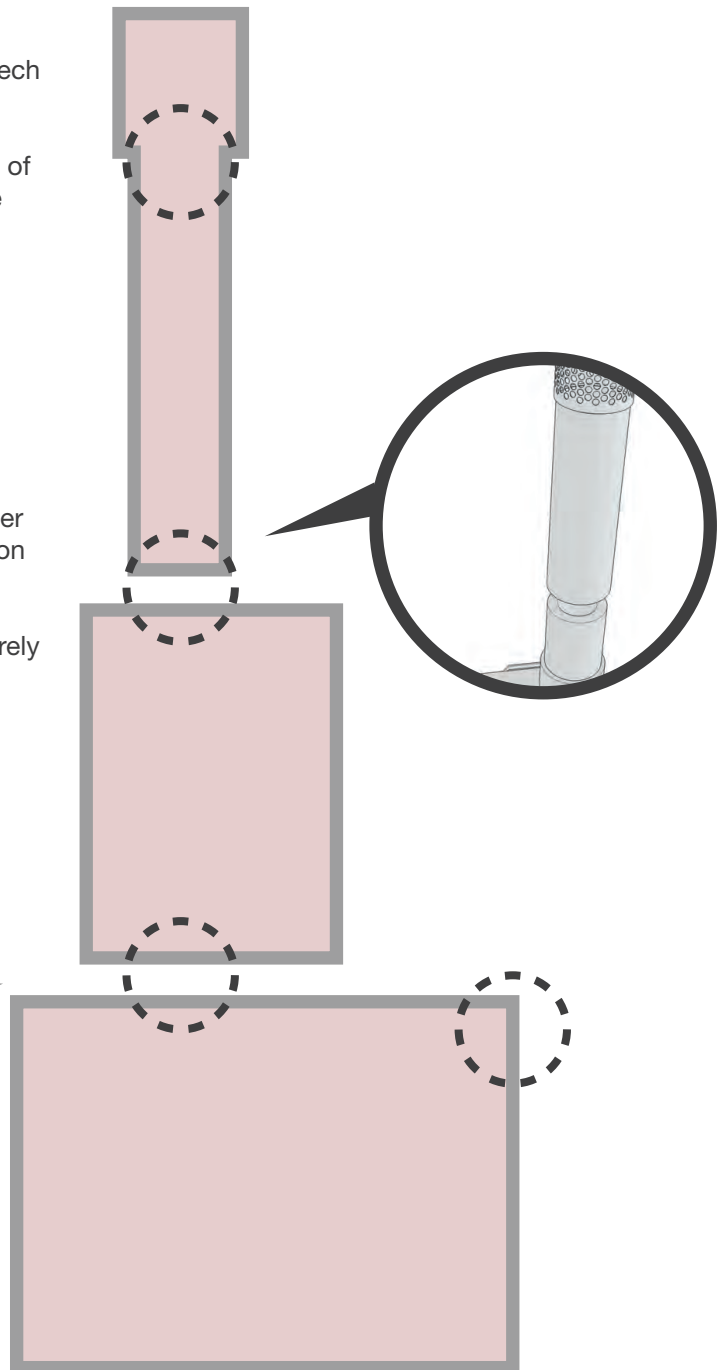
The control panel has a thermocouple attached via a 3m lead. The control panel will need siting in a suitable position based on this 3m length. This is where power needs to go to – 230V 50Hz 10amp (if not ordered with power specifications). It is the client's responsibility to supply power and a qualified electrician to make this connection in line with local regulations.

It is also the clients responsibility to provide suitable lifting equipment and operator to place the primary chamber and lift the secondary chamber into place, either a forklift truck, crane or similar, suitable for 2,000 kgs can be used.

Assembly

STEP 1 - Connection of Main Parts

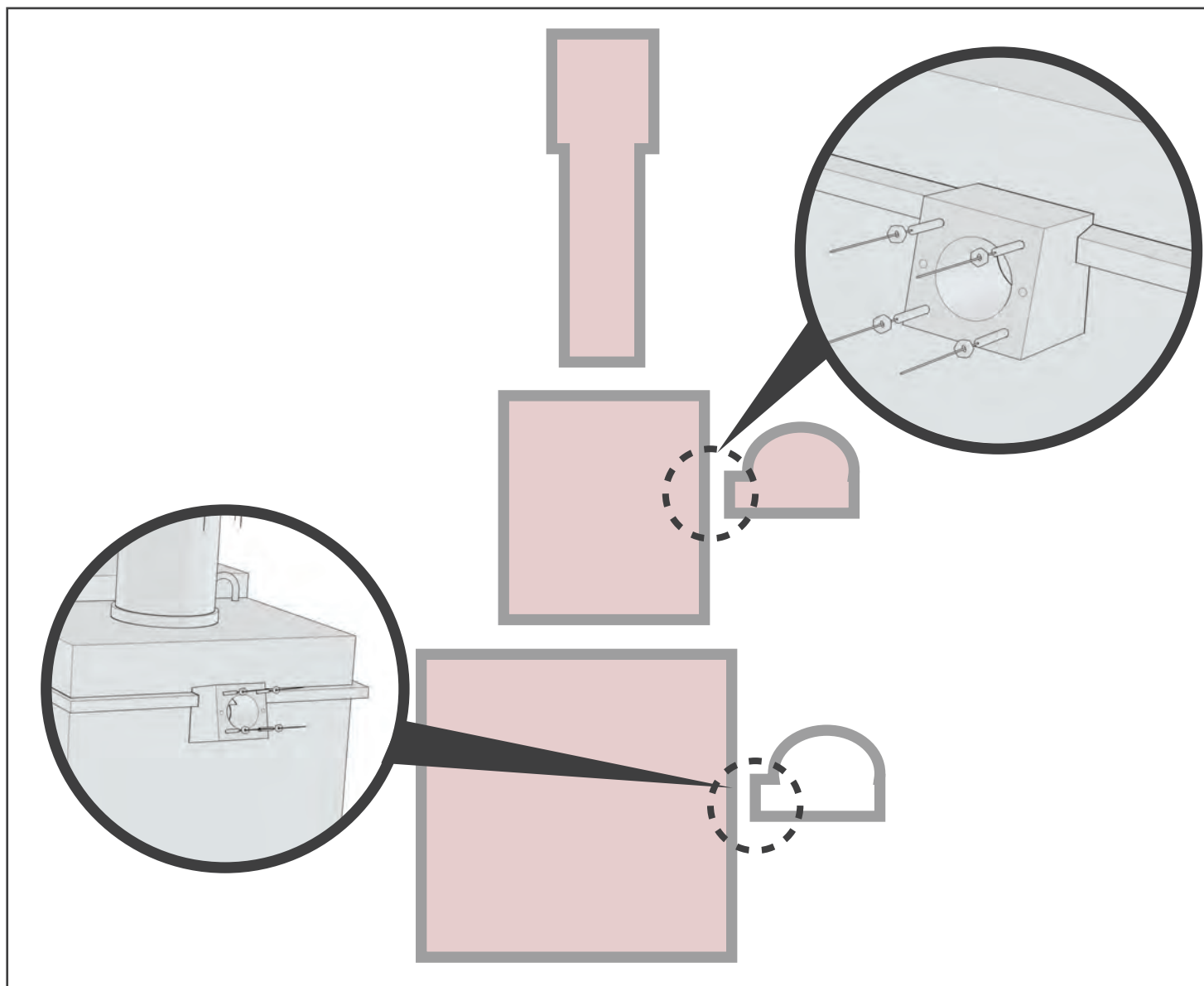
- a). Find suitable location for the primary chamber.
- b). Attach the stack cap to the chimney using the 4 tech screws supplied.
- c). Using the Fire Cement supplied put a thick beads of the gasket sealant around the refractory lining on the outlet of the secondary chamber.
- d). Insert chimney and stack cap on the secondary chamber outlet at securely fasten with 8 M10x20 flanged bolts and nuts.
- e). Using the fire cement put a thick bead of sealant around the outlet of the primary chamber.
- f). Lift the secondary chamber on the primary chamber ensuring the burner mount is facing the same direction as the primary burner mount.
- g). Use the 8 m10x20 flanged bolts and nuts to securely fasten the secondary chamber to the primary.
- h). Attach latch handle with 4 bolts (M8x20)



Assembly

STEP 2 - Connecting the Burners

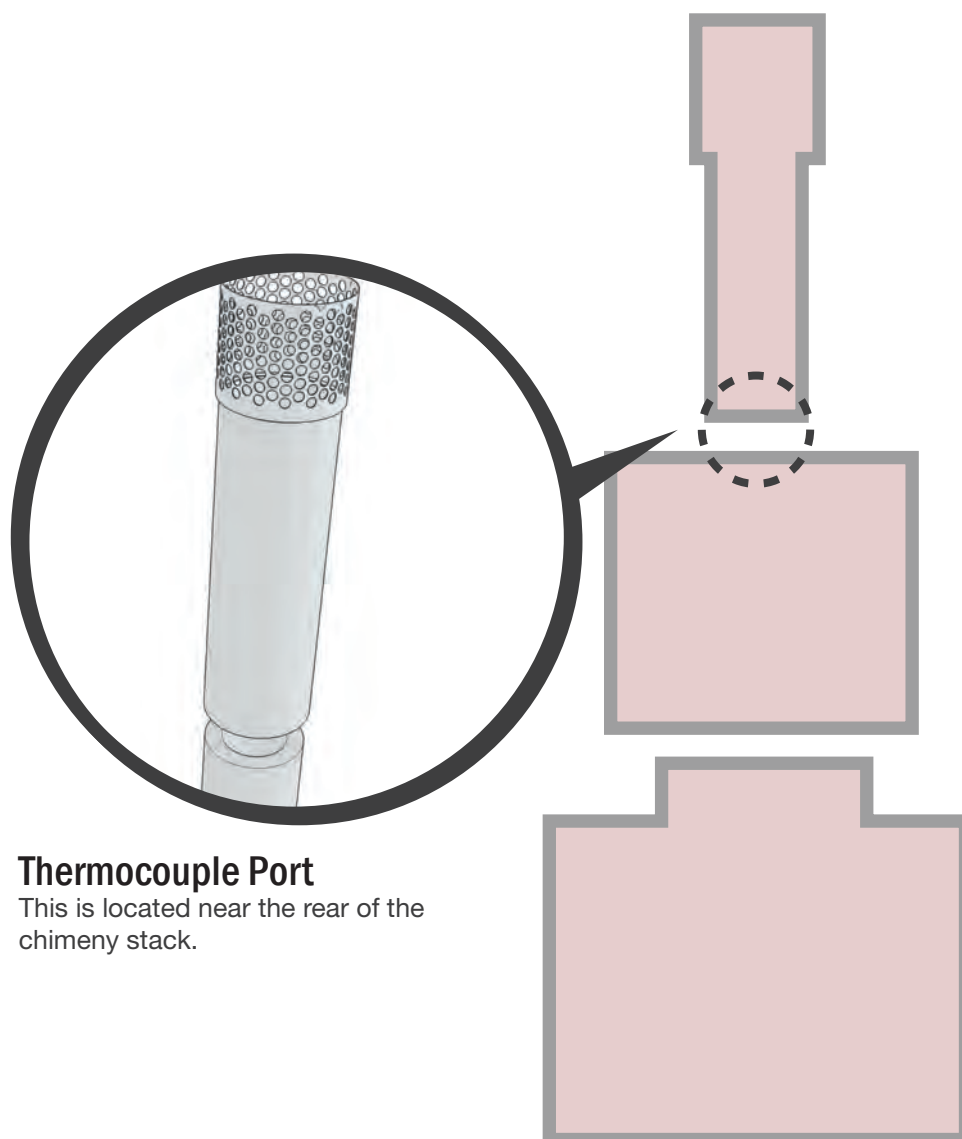
- a). In the primary burner box take out the **4 studs** and insert in the 4 holes in the primary burner mount.
- b). Repeat the above process for the secondary burner.
- c). Remove the mounting plate and gasket from the burner and attach to the studs using the **4 nuts** in the burner box.
- d). Repeat the above process for the secondary burner.
- e). With the burner mount attached the burner can be slotted back on the mount and tighten the retainer nut.
- f). Repeat the above process for the secondary burner.
- g). On both burner pumps remove the bolt **labelled P** and insert the pressure gauges supplied in the burner boxes using sealant tape which is not supplied.
- h). Connect the fuel pipes to both primary and secondary burner following the piping diagram found in the manual.



Assembly

STEP 3 - Connecting the Control Panel & Thermocouple

- Choose location for control panel and **ensure there is enough cable length to reach each burner and the thermocouple** can reach the thermocouple port.
- Attach the cable from the control panel to the burners, the primary cable is labelled **PRIM** and should go to the primary burner and the secondary cable is labelled **SEC** and will go to the secondary burner. Insert and tighten the thermocouple to the thermocouple port.
- Make sure the control panel has a power supply and follow the instructions for the **curing process**.



Thermocouple Port

This is located near the rear of the chimney stack.

Assembly

STEP 3: Control Panel Model: CE2

Choose location for control panel and ensure there is enough cable length to reach each burner and the thermocouple can reach the thermocouple port.

Thermocouple. ■

This is to be screwed into the port located at the top of the secondary chamber just beneath the chimney flange.

Ensure the end of the thermocouple is centrally located in the chimney and not touching the concrete.

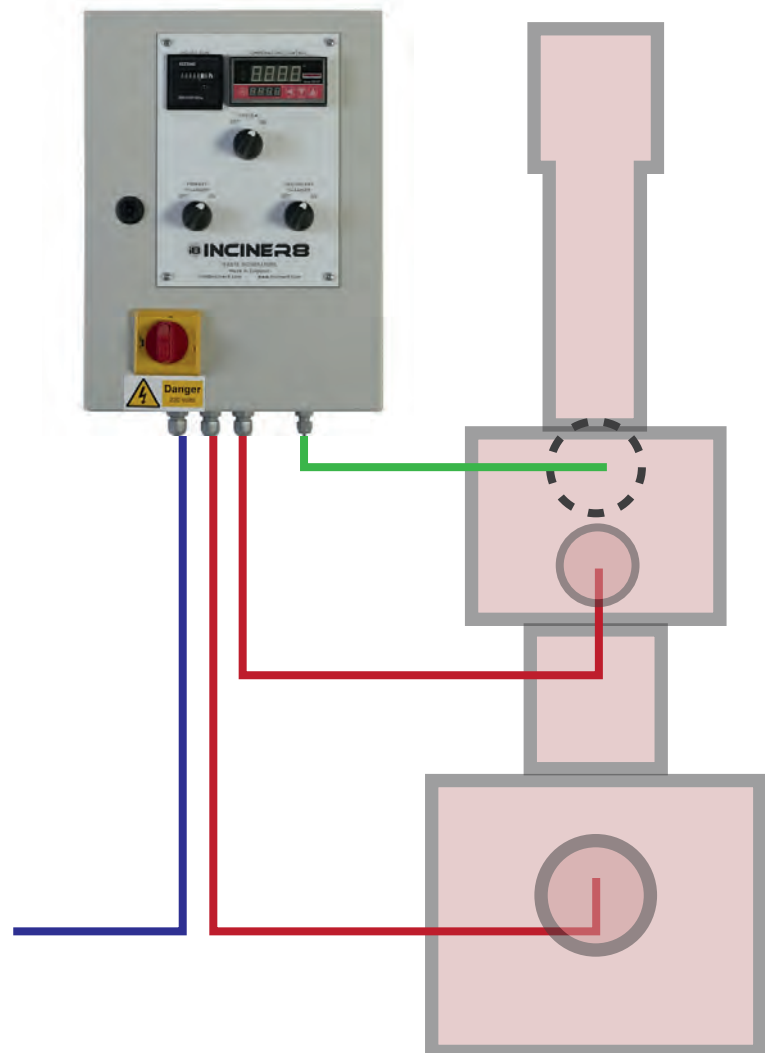
Electrical connection. ■

Single phase 10amp connection required. Connection to be made by a qualified electrical engineer.

Burner connection port. ■

Use appropriate burner plugs from the control panel to connect primary and secondary burner.

Burner plugs are marked as PRIMARY (for primary chamber burner) and SECONDARY (for secondary or afterburner)



Please remember

All our products are designed to operate on 240v mains supply. Please ensure you use the right voltage when operating this equipment.

Make sure the control panel has a power supply and follow the instructions for the refractory curing process.

Assembly

STEP 3 - Gas Connections

Please consult an experienced and qualified gas engineer before attempting any gas installations.

**ONLY A QUALIFIED GAS
ENGINEER CAN CARRY OUT
THIS STEP. DO NOT ATTEMPT
THIS IF YOU ARE
IN-EXPERIENCED**

Please note

You will need to connect these hoses to the fuel supply using 1/4" BSP (British Standard Pipe) male fittings, the supplied hoses have 1/4" BSP female fittings. Ensure fuel supply is sufficient to give fuel pump feeding pressure of 12-15 bar when using light oil.

Assembly

STEP 3 - Oil Connections

Please consult an experienced and qualified engineer before attempting any fuel installations.

**ONLY A EXPERIENCED
ENGINEER CAN CARRY OUT
THIS STEP. DO NOT
ATTEMPT THIS IF YOU
ARE IN-EXPERIENCED**

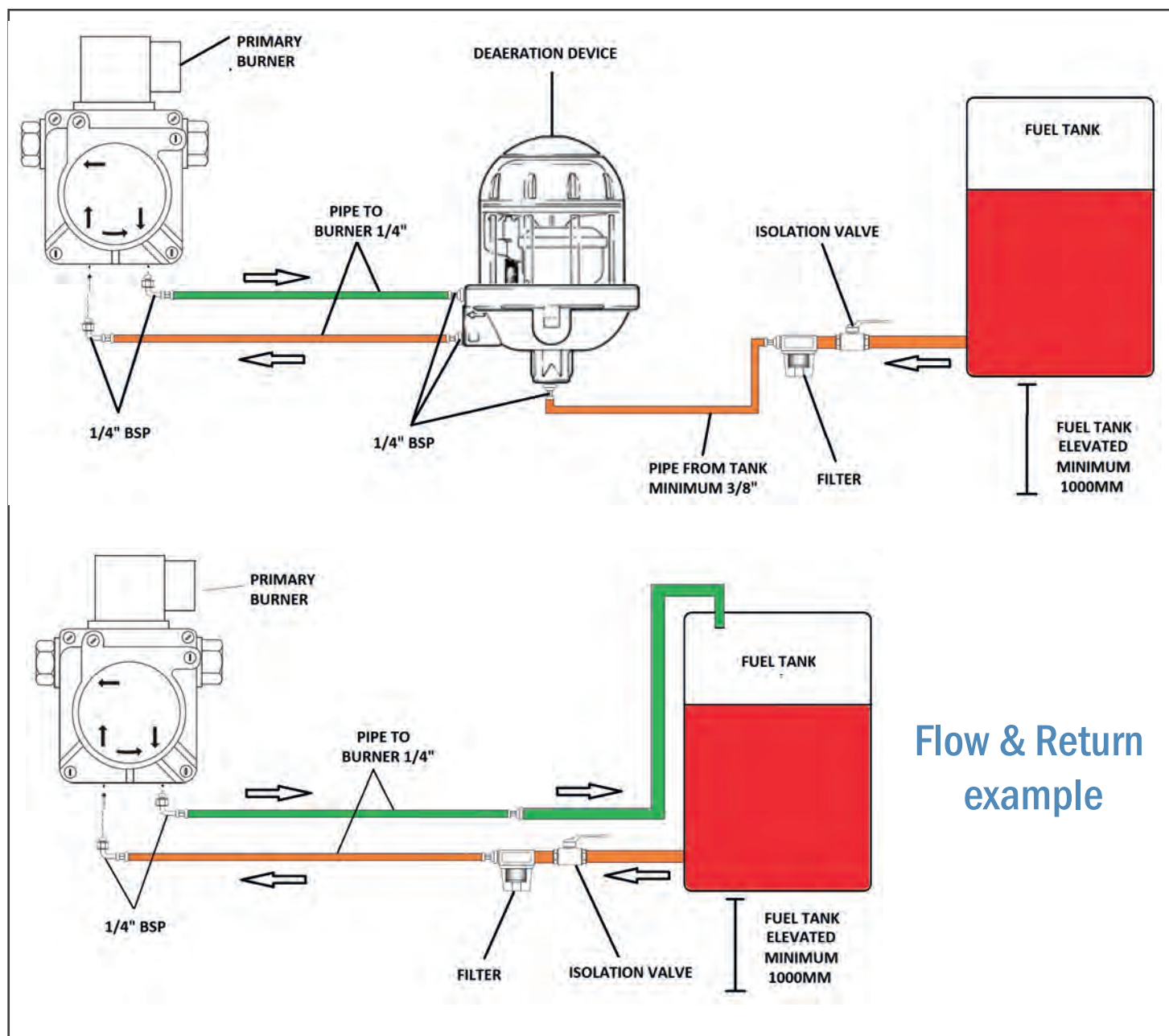
Please note

You will need to connect these hoses to the fuel supply using 1/4" BSP (British Standard Pipe) male fittings, the supplied hoses have 1/4" BSP female fittings. Ensure fuel supply is sufficient to give fuel pump feeding pressure of 12-15 bar when using light oil.

Assembly

STEP 4 - Fuel Connections

Connect the 2 – Flexible PTFE fuel hoses (within the burner box), 1 for flow, 1 for return. Light oil flow return setup - Two pipe system example for 2 burners



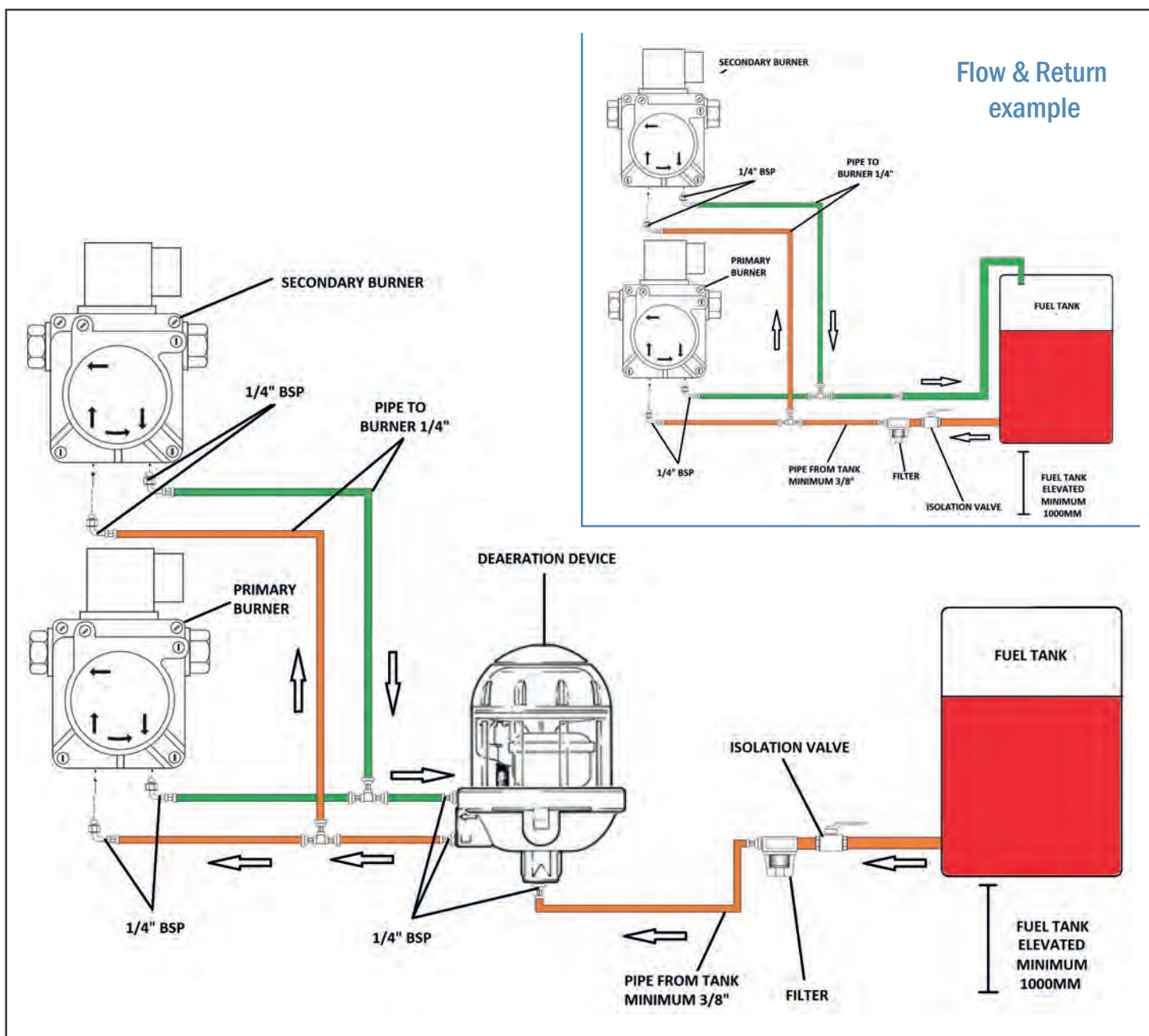
Please note

You will need to connect these hoses to the fuel supply using 1/4" BSP (British Standard Pipe) male fittings, the supplied hoses have 1/4" BSP female fittings. Ensure fuel supply is sufficient to give fuel pump feeding pressure of 12-15 bar when using light oil.

Assembly

STEP 4 - Fuel Connections

Connect the 2 – Flexible PTFE fuel hoses (within the burner box), 1 for flow, 1 for return. Light oil flow return setup - Single pipe system example for 2 burners



Please note

You will need to connect these hoses to the fuel supply using 1/4" BSP (British Standard Pipe) male fittings, the supplied hoses have 1/4" BSP female fittings. Ensure fuel supply is sufficient to give fuel pump feeding pressure of 12-15 bar when using light oil.

Refractory Curing

YOU MUST FOLLOW THIS PROCESS

It is imperative that the refractory concrete within the unit is cured prior to use. Failure to do so will void the warranty and may damage the machine. Please ensure that the air/fuel flow settings on the burner are set correctly (the flame should be clean without any black smoke) and fuel pipework is free from leaks. During this process, it is normal to have steam/water coming out of the incinerator.

Burners can be turned on/off from control panel. To start curing process, set primary airflow to 3.5 and secondary airflow to 1. Please note that only primary burner should be turned on and secondary burner must be permanently off during this exercise.

Curing is carried out using the following temperature set points as ordered in the procedures below;

Set Temperature 100°C ▶	Primary Burner ON 5 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 100°C ▶	Primary Burner ON 5 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 200°C ▶	Primary Burner ON 15 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 200°C ▶	Primary Burner ON 15 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 300°C ▶	Primary Burner ON 30 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 300°C ▶	Primary Burner ON 30 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 400°C ▶	Primary Burner ON 60 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 400°C ▶	Primary Burner ON 60 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 400°C ▶	Primary Burner ON 120 Minutes ▶	Primary Burner OFF 15 Minutes	<input type="checkbox"/>
Set Temperature 450°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>
Set Temperature 500°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>
Set Temperature 550°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>
Set Temperature 600°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>
Set Temperature 650°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>
Set Temperature 700°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>
Set Temperature 750°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>
Set Temperature 800°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>
Set Temperature 850°C ▶	Primary Burner ON 60 Minutes ▶		<input type="checkbox"/>

Congratulations, your incinerator is now cured.

Advice

Following the curing process, you will see hairline cracks and minor scaling in the concrete which is completely normal. Cracks wider than 2 mm should be treated using High Temp Black Mastic.

Fault Finding

Please check before contacting us about any issues

PROBLEM	CAUSE	SOLUTION
Black scorch marks on the incinerator body	Leakage from damaged fire rope or misaligned door	Replace fire rope or realign door
Thermocouple failure	Excessive temperature or corrosion from waste gases or fluids	Replace thermocouple
Steam from the incinerator during the curing process	Water within the refractory concrete	This is completely normal
Small cracks within the refractory concrete	Expansion/contraction whilst heating/cooling	This is completely normal
Large cracks	Wear & tear	Repair with high temperature cement or mastic
Burner flame appears to turn up the chimney	Too much draw from chimney	If chimney has been extended, this is too high
Flames from the chimney	Too much flammable waste in the main chamber	Reduce waste batch size
"Booming" noise from the incinerator during operation	Main chamber overfilled or air setting too high	Reduce waste batch size or lower air setting
Smooth appears from the joint of the incinerator body and top	Mastic sealing joint is damaged	Reseal the joint with high temperature mastic
Control Panel displays "0000"	Thermocouple failure resulting from loose connection	Check wiring or replace thermocouple
Grey/white smoke	Temperature is too low	Increase temperature or ensure unit is pre-heated
Black smoke	Insufficient oxygen in main chamber	Reduce waste batch size. It is sometimes better to burn smaller batches more regularly
Burner issues		Please refer to fault finding section in enclosed burner manual

General Operation

Incineration

Like in every combustion process in incineration it is all about providing optimal conditions for clean combustion. Most important factors you can control are:

Air

Black smoke normally indicates lack of the oxygen in combustion process, so there is a lot of unburned carbon in the smoke, and this is what makes it black.

Increasing air settings on the air dumper on the side of the burner will provide better air / fuel ratio, which will also increase burn rate, but this will only help providing there is not too much waste loaded in the chamber.

Fuel (both diesel oil and waste)

You are supplying fuel to a process through burners (pumping diesel oil), and also through waste loaded into a chamber. It is very important to have primary burner on, only for a short time, to ignite waste. Once waste starts to burn itself, turn primary burner off. This will help you to obtain better combustion conditions, and also to save fuel.

Temperature

In case of very flammable waste, lower preheating temperature is suggested, as this will prevent all the waste material to flash instantly, and too much energy to be released in a very short time.

Burn procedure

Please follow these instructions to define optimal batch size, air settings etc:

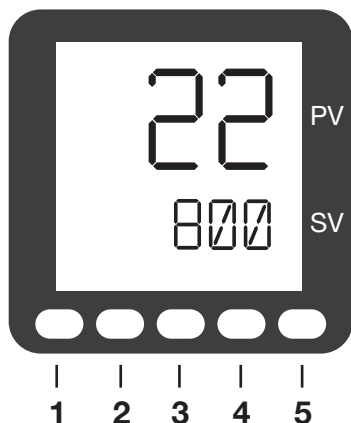
- 1 Preheat incinerator using both burners with lower air settings during the preheating (main burner air dumper on 3 – 3,5) to 500 – 850 deg C. For highly flammable waste use lower preheating temperature (I.E. 350 - 400 deg C)
- 2 Stop primary burner and load small quantity of waste for a start (i.e. 5-15 kg – depends on waste type)
- 3 Start primary burner only for a short period of time (i.e 1 minute), but only if waste hasn't ignited itself - in most cases you will not need primary burner at all after preheating (if burning flammable waste), and increase air settings positioning air dumper on main burner to between 6 and 8 (depends on waste type).
- 4 Turn main burner off, and If needed, add more air (increase air dumper setting on main burner).
- 5 Once waste is ignited, temperature will increase to a certain pick (depending on waste amount and calorific value) and then, it will start decreasing (indication that it has been mostly burned).
- 6 You can now load another batch of waste (a bit more waste than in first batch) etc ...

Repeat steps 2 - 6 above gradually increasing batch size, in order to define maximum batch size, temperature and air settings for a clean combustion for each waste type you are dealing with.

Most important is to have main burner on for as short time as possible (only for preheating, and waste ignition - if needed).

General Operation

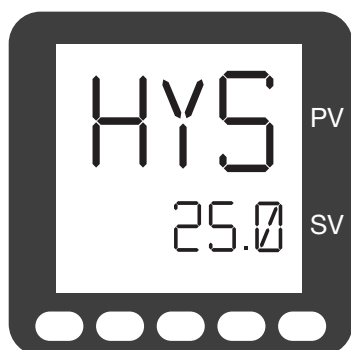
The Controller: Omron E5CC



PV = Present temperature value from the thermocouple
SV = set point value for desired burn temperature

To change set point value

Press up (5) or down (4) arrows as required, left arrow (3) moves digit position
Digit being changed will flash, after 3 seconds change is made



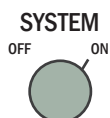
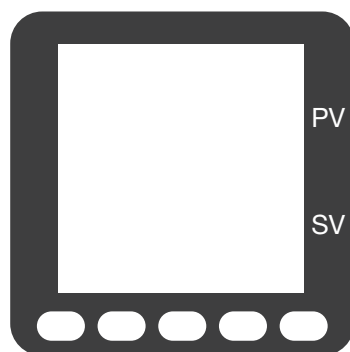
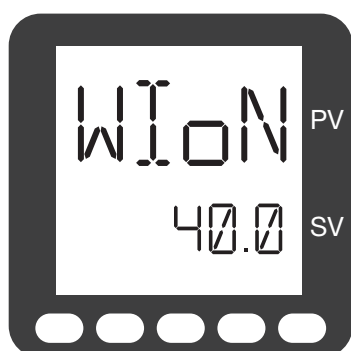
To Change Hysteresis

Hysteresis is the the variable allowance that the burn will burn or stop

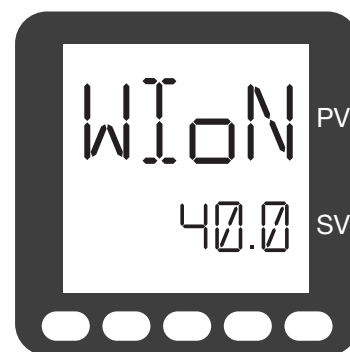
Press button 1
Adjust hysteresis value as required.
Preset value is 25°C

To return to home page, press button 1

To Change Burn Time



Once the flashing stops the control panel needs to be reset for the new time to start. Turn SYSTEM to OFF and then ON, the new time will now start.



When heater output is activated, "OUT1" is displayed in yellow.
When burn time is complete, "STOP" is displayed in yellow.

Maintenance

Pre-start checks

- Ensure fire rope, loading door and ash removal door seals are in good condition.
- Check the condition of the refractory concrete lining. Repair any large cracks/holes.
- Check fuel supply is clear and not restricted. Electrical connections are safe and secure.
- Check exterior metal work. Treat any corroded sections immediately.
- Check the thermocouple is working correctly.

Monthly checks

To keep your unit in good working condition, please carry out the following checks each month:

- Damage to the fire rope under the lid
- Visible damage to the chimney
- Visible damages to the outside body of the incinerator (corrosion of metal parts, discolorations, leaks)
- Condition of temperature probe
- Condition of fuel and electrical installation

Service procedures (every 1 year or 1000 working hours)

Your unit must be routinely serviced to stay in good working condition. Servicing should take place once a year (or after 1000 hours usage, whichever comes first). The following checks and maintenance should be carried out:

- Replace fire rope under the lid
- Do parallel measurement of temperature probe (if regulated by law)
- The burner should be serviced by an approved professional
- Check sealing between each individual part of chimney (including secondary chamber)
- Clean metal parts of incinerator, and re-spray if needed
- All burners should also be routinely serviced by an approved professional

Please remember

You (the customer) must keep logs of all service procedures carried out, with detailed comments where applicable.

Installation Log

Must be completed and returned to validate your warranty

Incinerator Model:

Serial Number:

Installed by (Name & Signature):

Date:

Company Name:

Notes:

Installation Log

Must be completed and returned to validate your warranty

Incinerator Model:

Serial Number:

Installed by (Name & Signature):

Date:

Company Name:

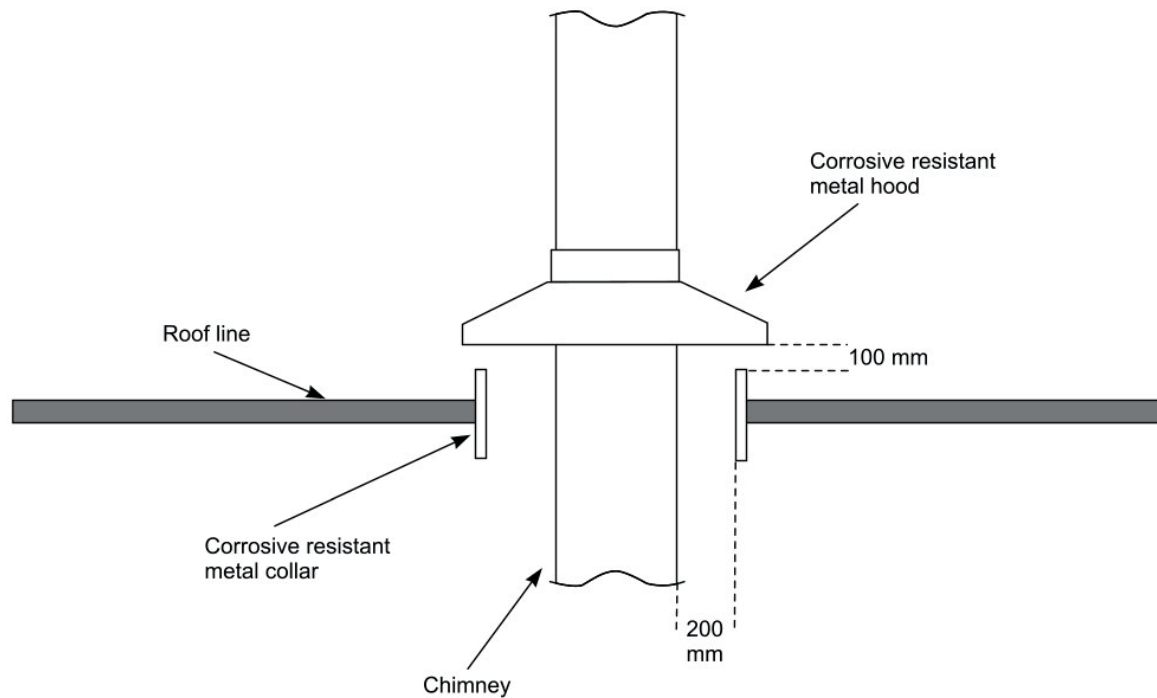
Notes:

Enter the world of:
www.inciner8.com

APPENDIX 1

Roof Solution Drawing

Most of our models can be covered or containerised. A typical roof solution is detailed below.



CE Certificate

Summary

I8-1000 model is our largest incinerator. This model is a controlled air incinerator, providing optimal combustion conditions for different waste types. Top loading design provides liquid retention making this incinerator ideal for incineration of many different waste streams.