

**CROMARTIE KILNS LIMITED**

*...at the centre of ceramics*

**General Operating Instructions**

**FOR 270WH & 450WH TOP LOADING KILNS**

*This Document should be read carefully before using your new Cromartie Kiln*

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## **1. Damage in Transit**

Unpack and inspect as quickly as possible, should you find any damage on unpacking your Cromartie kiln please follow these instructions:

- Save all packing materials.
- Contact the Dealer from whom you purchased the kiln within 24 hours with details of the damage to the kiln.
- Do not assemble or fire the damaged kiln until it has been inspected.

Check that the elements are securely in their grooves. If they have come out in transit replace them taking care not to over-stretch them or damage the brickwork. Note! If you do not correctly insert the elements they will sag and stretch during firing which will reduce their life.

## **2. Loose Fill Insulation**

The base insulation in these kilns is a loose fill insulation material. We supply a small extra quantity which can be used to top up the kiln should it be needed.

**(Ensure that the loose fill does not get into the element grooves).**

## **3. Kiln Lids**

1. Tensioning of Brick Lids is required as a routine maintenance procedure to extend the working life of the brick lid.

- a) Clasp the side of the tensioning clip around the barrel using the pliers.
- b) Rotate the screw clockwise to tighten the clip.
- c) Tighten till the lid band no longer has any slack points, Insulation bricks are extremely soft, over tightening will cause them to crumble and crack.

Note! Failure to clasp the tensioning clip may result in insufficient tensioning to the lid.

During firing the glow of the kiln will be visible between the lid and the kiln body. It should be noted that this light does not equate to heat loss. The expansion of the bricks in firing can open the gap between lid and kiln body but the nature of the brick ensures that heat is reflected into the kiln. Tests demonstrate that heat loss is minimal and does not affect the kilns performance.

### 2. Expansion & Contraction

Due to the extreme variation of temperature occurring during firing hairline cracks may occur in the lining of the kiln. These are quite normal and will not affect the normal operation of the kiln.

### 3. Gas Strut

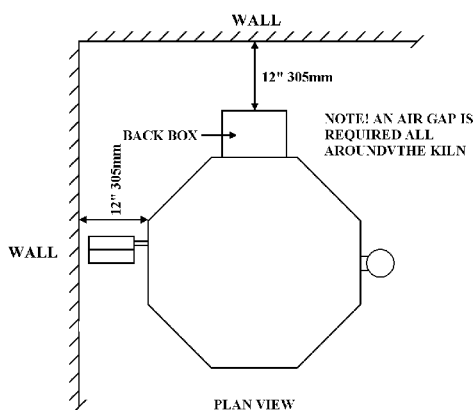
These are fitted to assist the opening of the lid and can be locked in various open positions. This can be achieved by tightening the brass nut at the end of the cylinder with the spanner provided. Caution! Do not overtighten brass nut. (On the 450WH both struts should be tightened. To close the lid the nuts must be loosened.

### **4. Siting the kiln / Positioning Details**

The floor beneath the kiln should be level and of a material that does not present a fire hazard such as; concrete, ceramic tiles, paving slabs or fireproof board.

The kiln should be placed at least 30cm (12") away from any wall to allow free air movement around the kiln. Sufficient space should be allowed for maintenance access to the back of kilns.

Workhorse kilns are fitted with casters for ease of delivery and movement for servicing. Excessive movement would cause insulation to crack. Casters are lockable and the lock must always be applied when firing.



The roof/ceiling should be at least 1m (39") above the kiln, a greater distance may be required if the ceiling is built of combustible materials. A combustible ceiling can be protected with heat-resistant board fixed with a 5cm (2") gap between board and ceiling.

Inflammable materials such as curtains and packing materials must be kept away from the kiln, never leave anything on top of the kiln even when not in use. The power cable must not touch the kiln case.

The kiln room should be well ventilated to allow a continual change of air. A domestic extractor fan can assist areas that have no air flow. Note! An extractor fan will only work efficiently where there is an air inlet to allow air in to replace that which is extracted. Extractor fans should not be placed immediately above a kiln.

Do not use other electrical appliances on the same electrical socket as the kiln.

## 5. Cautions & Safety Details

Safety factors have been designed into all Cromartie kilns, to maintain safe operation of the kiln please observe the following precautions.

- Disconnect power supply before attempting any maintenance, servicing must always be carried out by a qualified electrician.
- Be aware that the surface of your kiln will become very hot when firing, particularly during stoneware firings. Keep children away. The lid has a padlock provision on the front of the lid.
- Do not attempt to fire higher than the stated data plate temperature.
- The kiln should not be opened until it has cooled to a safe temperature.
- Should a glaze spillage occur, remove the affected loose fill and replace damaged batt / shelf.

**NOTE! The kiln should not be fired unless the correct amount of loose fill insulation is in the kiln.**

- Do not operate the kiln on a wet surface.
- Covers on electrical control panels must not be off during firing.
- Cromartie Workhorse kilns are fitted with mains operated Captive Key Interlock switches with the key attached to an arm located at the side of the kiln which is lifted over the lid and located in the electrical box on top of the kiln. The Interlock isolates the electric supply from the elements when the kiln is opened, the kiln cannot be fired until the Interlock is inserted into the lock and turned.
- Interlock switches are required to conform to Health and Safety standards and must never be bypassed. Always supervise the first firings of a new kiln and always check at the appropriate time to ensure that the kiln has shut off.

## 6. Electrical Requirements

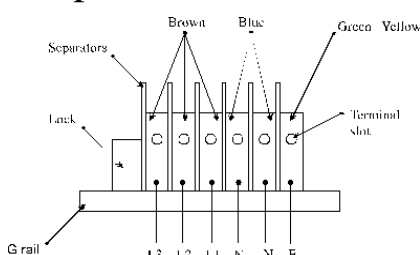
Incorrect installation of a kiln can be dangerous; we strongly suggest a qualified electrician install or check your house or studio wiring.

Your kiln will work properly only if it is connected to a power supply with the correct electrical capacity and voltage. Due to the fact that an incorrect connection can be hazardous, a qualified electrician should always be consulted.

## 7. Mains Connection

To prevent wire ends from burning off, check all mains connections are secure.

Please ensure that glands / grommets are used when passing mains cable through holes in the metal kiln casing when making electrical connection. Only kilns operating from 13 amp are supplied with a cable and plug, all others are supplied without cable.





possibly cause the element to eat into the surrounding brick. Avoid chipping the oxide layer on the outside of elements. Elements become brittle with use so avoid bending or stretching them once fired as this could break them.

***Lid & Kiln Body Tensioners:- Tensioners are provided in the jacket. When the kiln is new these should be checked after each firing, and thereafter checked regularly eg after every 10 firings. Any slackness should be taken up by tightening the screw adjuster in a clockwise direction.***

## **12. Batt Wash**

Batt Wash is used to protect kiln shelves by forming a coating which protects from glaze splashes and helps to prevent ware sticking to the shelf if glaze runs. Mix the powder with sufficient water to form a single cream consistency. Use on kiln shelves only not on kiln walls or floor. Note! only a small quantity of Batt Wash is required to cover a shelf.

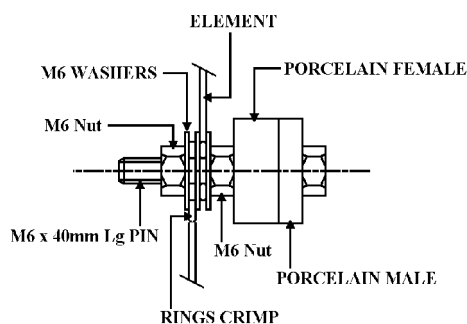
## **13. Replacing elements**

Tools required for changing elements, 2off 10mm spanners, 1off Philips Screwdriver, 1off long nose pliers

First check that the kiln is switched off at the Isolating Switch.

When you receive your new set of Cromartie elements, they will be pre-stretched complete with “hairpins”. They can then be wired into the kiln as detailed below.

- Remove back box cover using a Philips head screwdriver.
- Determine which are the connections to the element.
- Using two 10mm spanners remove the outer nut on these connections.
- Remove washers and other connections noting their sequence
  - Remove old element, by drawing the tails into the chamber.
  - Inspect element grooves, removing any dirt or element deposits from any burnout areas,(a vacuum cleaner is ideal for this)
  - Using long nose pliers ease the stretched elements into their grooves and push them firmly into position.



If an element is too short simply stretch the element evenly. If the element is too long use long nose pliers to nip the coils closer together as evenly as possible. The tails are then fed through the walls into the control box.

- The tails protruding into the back box should now be attached as shown in the above diagram on the previous page. Using a pair of long nose pliers thread the element wire around the pins, any excess wire should be removed from the tails.
- Once the element tails are around the pins and the nuts and washers are in position the connection should then be tightened.
- **Note!** It is most important that a washer is placed between each turn of wire on the connector. The final tightening of the connection should be between the nut holding the porcelain to the bolt, and the nut holding the element and the copper links to the bolt. When the connection is tight it should be possible to rotate the porcelain insulators, thus proving that no tension is put upon them. Remember that sound connections can only be made by using two spanners of the correct size.

Carefully refit back cover and tighten screws.

- Switch on and check for operation.

#### **14. Ordering Spares etc.**

1. Please specify the make & model and year of manufacture of the kiln, this will be shown on the kiln data plate.
2. Please specify the kW loading of the kiln. (see data plate)
3. Please have the operator of the kiln talk to Cromarties spares department to help identify what the problem is with the kiln and what items are required.
4. If ordering spare parts from a school please have an official order number to hand. In the case of private individuals all goods are payment before despatch.

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