

CROMARTIE KILNS LIMITED

...at the centre of ceramics

Simple Instructions For Use and Operation of Kilns Fitted With AutoSitter Controllers

This Document should be read carefully before using your new Cromartie Controller.

Simple Operating Instructions

These instructions are a quick reference to the basic procedure for firing your kiln, for detailed instructions you must read:-

- A The AutoSitter Instructions.
- B Kiln Sitter Operating Manual.
- C Detailed Instructions.

The 2 main parts used to fire the kiln are as follows:-

Parts:- A) Kiln Sitter B) Ramp Knob

- A The kiln sitter shuts off the kiln when required temperature is reached.
- B The ramp knob controls the rate of increase of heat of the first part of the firing.

CAUTION

Before firing:-

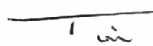
refer to the cautions section (Wiring / Technical Description) also refer to placement of kiln for safe operation.

Any firing should only be done after you have made all the setting up adjustments to the Kiln Sitter Limit Timer as explained in the Kiln Sitter manual on page 3.

9 STEPS TO FIRE YOUR KILN:-

- 1 Turn all kiln switches to off.
- 2 Raise weight up against guide plate.
- 3 Press claw down lightly until it engages trigger.
- 4 Insert minibar.
- 5 Close kiln lid and engage interlock.
- 6 Switch on power.
- 7 Set ramp knob to required position.
- 8 Set Limit Timer knob for estimated firing time.
- 9 Press in plunger through hole in weight.

We wish you many years of succesful firings with your new Cromartie kiln.


TIM BOSSON
Managing director

Explanation of Graphical Symbols:



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of non insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



WARNING

To prevent fire or electrical shock hazard, Do not expose this unit to rain or moisture.

PLEASE...



Familiarise yourself:

Scan the contents list and look through the manual, note sections of interest.

ALL CROMARTIE KILNS ARE MANUFACTURED
IN THE UK AND ARE CE MARKED



Simple instructions for use and operation of The AutoSitter

The AutoSitter controls the rate of heating, (ramp), it holds down the rate of increase of heat of the first part of the firing avoiding damage to ware and enabling the kiln to be fired automatically. The ramp function gradually increases the power input during the period of the ramp, rising to full power at the end of the time chosen. This gives a smooth increase in heat without any sudden changes in temperature. When the ramp ends the kiln will continue firing at full power until shut off when the minibar bends or (Limit Timer, times out).

You will need to experiment to establish the best settings for your work but the following settings can be used as guide-lines. These guide-lines can be used regardless of the top temperature.

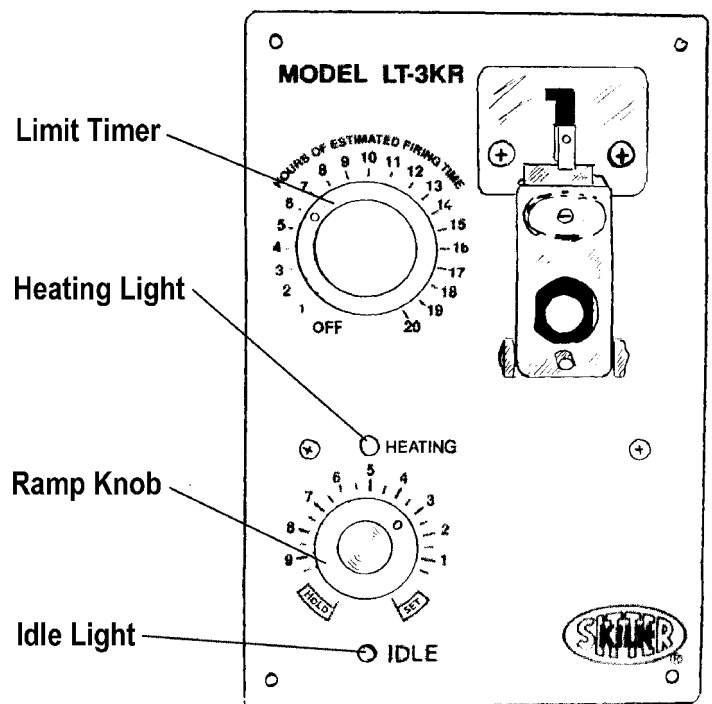
Biscuit firings

	Ramp Setting Time
a. Slip cast ware	2 or 3 hours
b. Light wheel thrown ware	3 to 5 hours
c. Heavy thrown and hand built ware	5 to 8 hours

Glaze and On-glaze firings

a. Slip cast ware	1 or 2 hours
b. Light wheel thrown ware	2 or 3 hours
c. Heavy thrown and hand built ware	4 or 5 hours

Use the MANUAL mode where very slow heating ramps are required.



minibar for your firing and setting the **LIMIT TIMER**

Automatic Operation

1. Engage the Interlock and turn on the kiln following instructions in the **KILN SITTER** manual using the appropriate minibar for your firing and setting the **LIMIT TIMER** for the estimated total firing time.
2. The knob at the bottom of AutoSitter controls the ramp time, rotate the knob to the desired amount of hours, ($\frac{1}{2}$ hour to $9\frac{1}{2}$ hours).
3. The kiln will now begin to ramp for the selected number of hours. The **HEATING** light above the dial will light up each time power is switched to the elements. The **IDLE** light flashes when heating in relation to the amount of time the ramp is set for, quick flashes for short ramps and slower flashes for long ramps. It stays on solid during hold periods. At the end of the ramp time the kiln will stay on full power until the minibar shuts it off.
4. The kiln can be changed to a different ramping time at any time.

Manual Hold Operation

1. Turn the ramp knob at the bottom of the AutoSitter clockwise to the **SET** position, the **HEATING** light will start blinking slowly, each blink will represent 10% of power: for example 4 blinks will be 40% of the power.
2. When the amount of percentage (blinks) is what you require, rotate the knob anti-clockwise to the **HOLD** position.
3. The kiln will now hold at the desired percentage of heating and the **HEATING** light above the dial will light up each time power is switched to the elements. The kiln will continue to hold at that percentage until the knob is rotated to a setting of hours to complete the ramping.
4. Note that in the manual mode the power input is constant but the temperature will continue to rise until the maximum heat for the power setting has been achieved.
5. You can set the manual feature to a percentage of power and then start ramping from that setting.
6. If the ramp knob is left at the **SET** position, after ten blinks the **IDLE** light will go out and the kiln will be switched to 100% power until shutdown.

CROMARTIE KILNS LIMITED

...at the centre of ceramics

Detailed Instructions For Use and Operation of Kilns Fitted With AutoSitter Controllers

This Document should be read carefully before using your new Cromartie Controller.

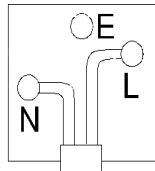
Electrical Requirements

The kiln is wired for use on a properly installed 13 Amp socket on a ring main circuit or dedicated spur. Use on poor or incorrectly installed system may cause firing problems. If in doubt consult an electrician.

- All Cromartie kilns are supplied with wiring diagrams, these should be kept for reference.
- The plug and cable attached must not be changed or altered in any way. Such a move will invalidate any warranty, as will improper electrical installation. If you have any doubts, contact our Technical Department on (01782 313947).
- Note! Under no circumstances do we recommend the use of extension leads with kilns. (This is due to the fact that the kilns performance can be greatly reduced) and an improperly sized extension lead could overheat and catch fire before the circuit breaker reacts and shuts off power.
- Note! The mains plug must be removed from the socket prior to any internal examination. The wires in any U.K single phase cable are coloured in accordance with the following code:

Blue = Neutral
Brown = Live
Yellow / Green = Earth

1.A 13amp plug is used on the Hobbytech model.



- If a new kiln is taking a long period to fire and all its components are working correctly, the voltage the kiln is receiving may not be sufficient. The most likely causes are:-
 - 1) The incoming supply voltage is low, or,
 - 2) the mains cable being used is not a suitable size.
 - 3) the kiln is firing at a peak period when there is excessive drain on the electric power supply in the area.
- If you suspect low voltage, contact your local electricity supply company and request that they check your supply voltage. The voltage in the UK must be 230v + 10% - 6%) 253v - 216v, the power
- To avoid an overload during firing, make sure nothing else on the kiln circuit is turned on.
- We do not recommend the use of external timers (plug timers). Kilns pull a continuous load for several hours, and external timers are not suited for this application. If a timer device is required one can be supplied by us at extra cost.

Damage In Transit

Unpacking & Inspecting Your Cromartie Kiln

Should you find any damage to your kiln upon delivery please follow the instructions listed below :-

- Save all packaging materials.
- Contact the dealer from whom you purchased the kiln within 24Hrs.
- Detail the damage to the kiln.
- Call the haulier and ask for an inspection.
- Do not assemble or fire the damaged kiln until it has been inspected.

Items Included With Your Kiln:-

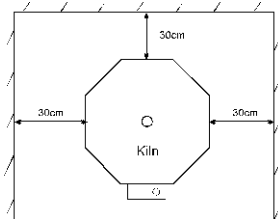
1. Kiln manual.
2. Kiln Sitter Manual.
3. Wiring Diagram.
4. Vent Plug.
5. Kiln Furniture. optional on CTLn Models
6. Batt wash sample bag.

Assembly Details

- Carefully unpack and inspect all parts of your kiln.
- Remove both the instructions and Kiln Sitter manuals. Keep them in a safe place for reference once read.
- Open lid and check that the elements are securely in their grooves. If they are not replace them carefully, ensuring not to overstretch them or damage the brickwork. Note! If you do not correctly insert the elements they will sag / stretch during firing which may reduced element life.
- Once the kiln is located apply castor brakes.

Placement Of Your Kiln For Safe Operation

- The floor beneath the kiln should be of a material that does not present a fire hazard such as the following :- concrete, ceramic tiles, a paving slab or fire proof board.
- The kiln should be placed approximately 1 foot (30cm) away from any walls to allow free air movement around the kiln.



- The ceiling or roof should be at least 30 in. (76cm) above the kiln but these dimensions would need to be increased if either the walls or ceiling are of combustible materials. With combustible ceilings, these can be protected by a heat-resistant board fixed with a 2 in. (5cm) air gap between the board and the ceiling in the area immediately above the kiln.
- The kiln should be kept away from all inflammable materials such as curtains, shredded paper etc
- Route the power cable so that it does not touch the kiln case.
- The kiln should be kept in a well ventilated area, (should you feel more ventilation is required, a standard domestic extractor fan would be quite adequate). Under no circumstances should the vent/extractor be placed directly above the kiln.
- Do not use other electrical appliances on the same electrical socket as the kiln.
- Do not lean over or place anything on top of the kiln lid.
- When the kiln is not in operation, keep all switches in the 'OFF' or '0' position.
- When firing any new kiln and controller for the first time we recommend this is done during the day under supervision to prevent any damage to the kiln, should a mistake be made.

Kiln Sitter Limit Timer.

Before firing your kiln you will need to carry out the adjustments as described on page 3 of the kiln sitter limit timer manual.

The Kiln Sitter is a mechanical control that fires your kiln both by TIME and TEMPERATURE method of heat treatment using a minibar. The minibar after being exposed to the proper time and temperature, softens and bends to a pre-determined angle, shutting off the kiln. Your choice of minibar, proper Kiln Sitter adjustment and tube position determine when the kiln will shut off. Different value Minibars can be purchased to bend at the various firing temperatures required from decal firings to stoneware.

Other Precautions

Ensure that kilns are checked at the appropriate time to see that they have correctly shut-off and afterwards manually turn all switches to off.

Do not use the kiln for any reason other than its intended purpose. Unless specifically designed for it, do not use it for raku or salt firings.

Have the kiln regularly serviced.

Keep a properly rated fire extinguisher in the kiln room to use in case of emergency.

Cautions

Cromartie have designed kilns with safety in mind. However, good common sense is required during the operation of your kiln. Please observe the following precautions at all times.

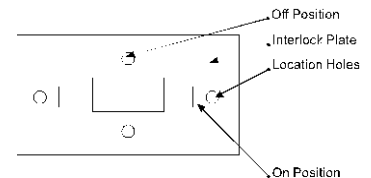
- Disconnect all power before attempting any servicing (This should only be carried out by a competent person)
- The surface of your kiln will be very hot when firing particularly at high fire temperatures such as stoneware & porcelain. Keep children away. (A safety cage can be supplied by us at extra cost)
- Be careful when handling vent plugs. Use a glove or mitt Also be wary that lid handles can become extremely hot.
- Do not fire higher than the stated data plate temperature.
- The kiln should not be opened until the kiln has cooled.
- **Always place a batt with the square spacers underneath on the floor** of the kiln. Never use props under this shelf. (Having a batt on the floor protects the kiln from glaze splashes and the spacers prevent the batt from cracking as easily if the floor is unlevel)
- Do keep a kiln log to record firings.
- Do not operate or open the kiln on or near a wet surface.
- Covers on electrical control panels must not be OFF during kiln operation.
- Do not use extension leads with your kiln.

Interlock Key Switch

The kiln is fitted with a captive key mains operated interlock switch with the key fastened to the lid.

The kiln cannot be 'fired' until the lid is closed and the key inserted into the lock and turned. To insert the key into the lock, make sure the lid is fully closed. When the key switch is in the 'off' position, power will be prevented from reaching the elements. This switch is only for safety and should not be used as a mains isolating switch.

To aid kiln venting during cooling the interlock can be positioned with the aid of the pin underneath to give a gap of approximately 1/2" between the lid and kiln body.



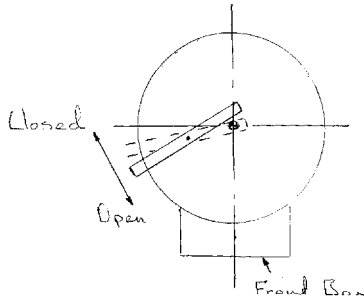
An interlock switch is required by Health & Safety, under no circumstances should it be bypassed.



Cromartie Through Floor Venting

All the CTL Range of top loading kilns have Through Floor Venting which provides even ventilation of the kiln to

enable moisture and fumes to be cleared from the kiln in the first heating ramp. The vent system also enables the kiln to be cooled more quickly and evenly. The vent consists of a small hole in the centre of the kiln base which can be opened or closed by the lever on the side of the kiln. Pull the lever towards the front of the kiln to open the vent push back to close, (see diagram).



Three spacers 1½ins square by 3/8 ins thick are provided with the kiln, these should be placed on the kiln floor raising up the first bat to create a gap for air circulation. Props for the rest of the kiln stack should always be placed immediately above the spacers so the weight is correctly supported.

The through floor vent should be used only during the first heating ramp, usually up to 600°C and for cooling when the firing has finished. If the vent is left open throughout the firing it could cause some unevenness of temperature in the kiln chamber and will cause some heat to be reflected below the kiln. Customers are reminded that all kilns should be sited on solid non-combustible surfaces, for instance a concrete paving slab will provide a suitable surface over a wooden floor.

Through Floor Venting operates from the top to the bottom of the kiln enabling movement of air throughout the whole chamber which reduces the possibility of thermal shock and efficient evacuation of fumes and moisture.

Vent Hole (Lid)

Permits the continuous escape of moisture and gases from the kiln chamber during the firing process.

Ideally this should be left out until the kiln has reached 500°C-600°C or glows a cherry red colour inside, then the plug should be inserted for the remainder of the firing cycle.

Stainless Steel Jacket

The stainless steel jacket may discolour from both heat and gases released from the pieces being 'fired'. Use stainless steel cleaner or glass polish to keep your kiln shiny and new looking.

Batt Wash

1. Mix a portion of the contents of Batt Wash packed, with water to a single cream consistency. (50/50)
2. Applying with a brush a coat of kiln wash to any batts being used. This will prevent glaze from sticking if a piece falls on the batts (Never apply batt wash to the kiln walls, sides or undersides of shelves, or underside of lid). For kilns with sitters you can apply a thin coat of batt wash to the cone supports and the bottom of the sensing rod, (Do not apply batt wash to the cone or to the end of the porcelain tube of the kiln sitter. Beware of a thick wash application on the kiln sitter parts, as this could cause the kiln to over-fire). Let batt wash dry thoroughly before loading the kiln.

Care of Elements

Here are a few common sense tips that can help you get the maximum use out of your elements.

- Do not allow any other substance to come into contact with elements, i.e. dust in grooves, kiln cement, glaze, clay etc..
- Regularly clean out grooves.
- Check for localised weaknesses which can cause hot spots and burn out.
- Avoid disturbing elements as once they have been 'fired' they become brittle.
- Elements do "weaken" with time. This first shows itself in extended firing times for the elements.
- Occasionally an element will pop out of a groove because of expansion and contraction. If it should do this put it back into place by using long nosed pliers. If this persists, clips can be supplied by us to hold the elements into place.

Ordering Elements

When you require new elements could you please give the following information as shown on the kiln data plate.

- Kiln model number.
- Kiln Kw details.
- Year of manufacture and serial number.



Troubleshooting Guide

Before requesting service for your kiln, please check the chart below for a possible cause of the problem you are experiencing. Some simple checks or minor adjustment on your part may eliminate the problem and restore proper operation. If you are in any doubt about any of the check points, or the remedies indicated in the chart do not solve the problem then please contact our technical department.

Fault	Probable Cause(s)	Suggested Action
Hot plug or wall socket -	1. Socket has loose connection or worn out socket.	1. Have an electrician check socket.
Kiln does not heat up -	1. Interlock not switched on. 2. Kiln sitter plunger not pushed in. 3. Defective or broken elements. 4. Fuse in plug has melted.	1. Engage Interlock. 2. Push in plunger. 3. Replace the elements. 4. Replace fuse.
Excessive time to complete firing or maximum temperature not reached.	1. Elements are wearing out. 2. Loose connection in kiln wiring, wall socket or service wiring. 3. Energy regulator not on full power. 4. Kiln firing on extension lead. 5. Low voltage.	1. Replace the elements. 2. Have all of the connections checked and tightened. 3. Turn regulator on to full power. 4. Remove extension lead. 5. Check voltage & contact electric company.
Red glow between Brick lid and kiln body.	1. This is normal with high temperature kilns.	1. If the gap gets larger, consult our technical department.
Fuse melts immediately after kiln is switched on.	1. Short circuit in kiln. 2. Overloaded circuit.	1. Have the wiring checked. 2. Disconnect any other appliances from the circuit.
Kiln shuts off before firing cone has matured.	1. Safety timer may have shut kiln off. 2. Kiln sitter out of adjustment.	1. Reset timer and push plunger. 2. Make adjustments to kiln sitter.
New element has burnt out	1. Glaze on element 2. Batt wash on element 3. Debris from old element	1. New element required 2. “ “ “ 3. Clean grove before fitting.
New element burnt out in back box.	1. Pins not tight enough in back box.	1. Replace element. 2. Tighten Pins.
Wires keeps burning out in back box.	1. Wires touching element strips.	1. Repin away from strips.or replace.
Kiln will not shut off. (Kiln sitter)	1. Tube has got an obstruction in it.	1. Clean out tube or replace.
Ware keeps breaking / blowing up in kiln	1. Heating ramp to quick or cooling ramp to quick.	1. Adjust speed accordingly on regulator.
Kiln overfires	1. Kiln sitter not adjusted	1. Set adjustment to kiln sitter.
1 of 2 elements don't work.	1. Terminal wire burnt off. 2. Element broken	1. Replace terminal 2. replace element
Kiln gives of nasty smell.	1. The ware burning off impurities. 2. New elements burning off protective coating.	1. This will dissipate.



CROMARTIE KILNS LIMITED

...at the centre of ceramics

Park Hall Road,
Longton,
Stoke-on-Trent,
Staffordshire,
ST3 5AY.

Tel 01782 313947
Fax 01782 599723
E-mail enquires @ cromartie.co.uk
Web site - www.cromartie.co.uk

Agent