

**MAXI and Maxine
Instruction manual.**

2022

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MAXI and Maxine Instructions



Thank you for choosing to purchase one of the MAXI family of kilns for your framework.

We hope you will have many years happy use out of your kiln.

This family of kilns underwent a huge amount of research and testing in order to make it, what we believe, the best bead annealing / framework kiln available today.

Please read this manual fully to get to know your kiln before use.

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Safety notices

Your MAXI / Maxine is designed and built to meet all European Directives and British Standards.



European Declaration of Conformity.

Kilncare Limited, The Kiln Works, 907 Leek New Road, Baddeley Green, Stoke on Trent, Staffordshire, England, ST2 7HQ.

We declare that the equipment described below was manufactured ourselves to comply with directives listed.

We do not give any assurance that the equipment is suitable for any purpose other than that listed below and must be operated and maintained in accordance with our operating instructions.

Products.

MAXI.
Maxine.

Directives.

LVD - Low Voltage Directive 2006/95/EC.

EMC - Electromagnetic Compatibility Directive 2004/108/EC#

#The equipment is intended for use only in premises having a service current capacity of 100 A per phase, supplied from a distribution network having a nominal voltage of 400/230 V, The user should determine in consultation with the supply authority, if necessary, that the service current capacity at the interface point is sufficient for the equipment.

Harmonized Standards.

BS EN 1088:1995+A2:2008, BS EN 55014-1:2006, BS EN 55014-2:1997.

Description.

Framework, bead annealing Kiln.

Purpose of use.

For the annealing of glass beads and framework up to the maximum temperature stated on the kiln data plate.

Product serial number.

As per affixed data plate.

Manufacture year.

2022

Technical documentation is held for this product.

Lee Sherwin,
Director,

Portable Appliance Testing

It is possible, depending on the type of establishment that the kiln is to be used in that the kiln may be required to be Portable Appliance Tested along with other electrical items.

It is important that the KCR1 controller is disconnected before testing or there is a risk of the high voltage associated with the test effecting the controller permanently.

On initial testing, the kiln may show a low insulation resistance reading, this is normal and will improve as the kiln dries. Kilns are porous by nature and will absorb moisture from the atmosphere, especially if the kiln is new or has had a period of inactivity.

Periods of testing will be stipulated by the testing body.

Your new arrival

For your records

Date of purchase. _____

Company purchased from _____

First date of use _____

Unpacking your kiln

Once unpacked, please show consideration to the environment when disposing of your kiln packaging.

Contents

Inside the box your kiln comes in there will be:

- 1 x MAXI or Maxine kiln.
- 1 x KCR32C controller.
- 1 x KCR32C bench stand.
- 1 x spare half rack.
- 3 x full racks (in kiln).
- 1 x 1/3 mandrel rest.
- 1 x 2/3 mandrel rest.
- 2 x floor raising boards.
- 1 x instruction manual.

Where to install your kiln

Position the kiln allowing a minimum of 30cm clearance around both sides. The kiln casing will get hot and so any combustible material must be kept at a safe distance. Never leave combustible materials on the kiln lid or touching the kiln during a firing.

Notes

KCR32C shows an ERROR message.

Consult the KCR32C manual and contact Kilncare.

Plug top is getting hot.

The plug top will get slightly warm with use but if it is getting hot consult a qualified electrician to test the condition of the socket outlet.

A crackling noise can be heard when the kiln is firing.

This will be a loose connection and needs to be fixed immediately by a competent person.

Continued use will almost result in the connection failing.

The kiln temperature is fluctuating substantially.

When loading the kiln with beads, remember to always close the doors properly. Be brisk but smooth whilst loading.

Don't keep the doors open any longer than is necessary, merely a few seconds to load the bead.

Back up

We pride ourselves on our back up and after sales service and so in the unlikely event of any problems please do not hesitate to call our staff for friendly help and advise.

Contact us

**Kilncare Ltd,
The Kiln Works, 907 Leek New Road,
Baddeley Green, Stoke on Trent,
Staffordshire, United Kingdom.
ST2 7HQ,
Tel 0+44 1782 535915 / 535338**

**E-mail sales@kilncare.co.uk
Web www.kilncare.co.uk**

Do not site the kiln close to flammable items such as curtains etc.

The floor or bench must be capable of carrying the weight of the kiln.

The MAXI / Maxine does have air clearance under it and so there should be no need to protect the bench top, however, if your firings are to be prolonged then it is advisable to sit the kiln on a heat resistant material.

IMPORTANT.

The doors of the kiln will see high temperatures as will the opening at the bottom of the doors, so careful consideration must be given to siting with regard to the safety of children and pets.

As the kiln is designed to have hot mandrels protruding from the doors this must also be taken into consideration with regard to the above.

Remember, whilst the kiln is cooling it may be possible that the external case temperature actually increases.

Do not site the kiln outside.

It is advised to site the kiln in a room that has ventilation.

Electrical connection

The MAXI / Maxine is fitted with a plug top. It is designed to work from standard 230v socket outlets.

It is not advisable to use the kiln from an extension lead.

The electrical supply MUST have a sound earth connection.

It is advisable to have your chosen socket outlet tested by a qualified electrician prior to use to ensure its sound condition.

KILNS AND R.C.D. "TRIPS"

Due to the reasons stated above and to insulation material properties, a certain amount of leakage to earth will probably be evident, therefore the fitting of a 30ma R.C.D. in the circuit can create a fault condition at low temperatures if the kiln is damp, at higher temperatures as the kiln insulation heats up, when first fired or used after a long period of inactivity.

This problem is relatively rare but can be solved by the fitting of a 100ma R.C.D.

Consult us or a fully qualified electrician for advise.

Putting it together

Position the kiln where it is to be used taking into consideration the safety notices as described.

At rear of the power box side of the kiln there is a grey socket. This is for the KCR32C and matches the plu on the end of the KCR32c lead.

The plug will only insert one way and once it is fully inserted it is important that the retaining clamp is clipped over it to ensure that the controller always has a good connection to the kiln.

Site the KCR32C in a position that is convenient for your usage but in a position that is away from the immediate heat around the kiln door area.

Never sit the KCR32C on the top of the kiln.

The KCR1 has a stand supplied that allows the controller to be sat on a bench top at an angle. To use this stand, remove the KCR32C from its holster and fix the holster to the KCR32C bench stand using the M4 nuts and pins provided. If the KCR32C is to be wall mounted then the KCR32C holster mounts directly to the wall.

Accessories

MAXI is designed to have various uses and also to enable the user to choose a system that suits them the best. With your MAXI you will also have, 1 x 1/3 mandrel rest, 1 x 2/3 mandrel rest, 2 x half floor boards and 1 x low internal rack.

Here are a few differing ways of using your MAXI.

In standard form with the 3 x full racks inserted the kiln can be used for all applications.

For large Mandrels 1 x full rack can be replaced with the half rack. Simply roll back the fibre blanket in the floor to replace the rack. There is a cut out in the rear left of the fibre to enable access.

If the larger mandrel is long, one of the mandrel rests can be clipped onto the front of the kiln.

It is designed that the 1/3 mandrel rest matches up with the half rack if both are used on the left hand side of the kiln.

Of course, the half rack can be positioned anywhere in the kiln and if need be the 2/3 mandrel rest can also be used.

move.

Also check that the end of the element connections will be clear of the element connection panel lid when it was re-fitted.

Now replace the roof fibre by tilting the front down first and placing it behind the front face seal.

Drop the roof into position.

Re-fit the element support bars and fasten them off above the roof.

Re-fit the kiln top plate.

Reconnect the elements ensuring the connections are tight.

Replace the element connection panel lid.

IMPORTANT. For element replacement is strongly advised that the room is ventilated and that a suitable P2 standard respiratory mask is used.

Kiln trouble shooting

KCR32C has no lights

Check that the isolator that the kiln is plugged into/connected to is turned on.

Check the KCR32C is turned on via its power switch on the top of the KCR32C

With the kiln unplugged/disconnected, check the control plug attached to the KCR32C is correctly inserted into the control socket at the rear of the kiln and that it is secured with the socket clamp.

If the above appear correct contact Kilncare.

KCR32C is working correctly, is showing that the kiln is receiving power but the kiln is not heating up and orange light is not illuminating.

With the kiln unplugged, check the control plug attached to the KCR32C is correctly inserted into the control socket at the rear of the kiln and that it is secured with the socket clamp.

Is the lid safety switch operating correctly? Inside the right hand lid element panel there is a tilt switch which shuts off as the lid opens. The lid has to be in the closed position before the tilt switch will allow the elements to heat.

If the above appear correct contact Kilncare.

Looking after your kiln

Basic good house keeping will ensure you have years of use from your kiln.

Keep the chamber clean and free from excessive debris.

To help with cleaning, the lower front face of the kiln will lift clear and can be removed, they must always be put back with the smaller section on the left. Remember as mentioned earlier, always wear appropriate clothing and dust mask when handling refractory materials.

Your MAXI / Maxine are extremely hardy kiln but as with all kilns, they will benefit from yearly checks on the electrical connections.

Element Replacement.

Firstly, unplug the kiln from the electrical supply then unscrew the side cover plate to the electrical connection box on the right hand side.

Disconnect the element.

Now unscrew and remove the kiln top plate.

There are 2 U-shaped element support bars under the element in the chamber. These bars pass up through the roof. Unclip the bars on the top of the kiln and remove them downwards.

Carefully lift out the roof fibre.

The roof fibre is bound together by a stainless steel frame.

Take care that all the fibre remains in the frame as you remove the roof fibre. Always lift the rear of the roof fibre first so as to allow it to slide backwards as it comes out so as to protect the chamber front face seal.

Now slacken the element glands and remove the gland nuts.

Underneath the element gland nuts there is an olive that grips the element outer sheath. Remove this olive.

The element can now be slide out of the glands and removed from the kiln.

Slide the new element into the glands as the old element was removed. Replace the olives or fit new ones.

Re-fit the gland nuts. Ensure that there is at least 5mm of element sheath protruding from the cable gland before it is tightened. Make sure the gland nuts are tight enough to ensure that the olives will grip the element sheath so it cannot

For long mandrels the 1/3 and 2/3 mandrel rests can be used to give stability. For larger flamework, the 2 x floor boards can be inserted to give a flat opening for easy placement of the work.

It is recommended that both boards be inserted together to avoid uneven chamber temperatures.

The racks do not need to be removed to insert the boards.

For general usage the MAXI can be used in many combinations.

If preferred, the full or half racks can be removed then inserted onto the top layer of fibre blanket rather than below it.

The internal racks can be removed altogether.

Any number of the racks can be used at any one time in any combination.

The mandrel rests can be used in any combination or not at all.

NOTE. When handling insulation product it is always advisable to wear appropriate protective clothing and dust mask.

Initial firing

Door catches

Both doors have a door catch that secure the doors in the closed position.

The catches are designed to be single handed, semi automatic operation.

With the door in the closed position the catch should be engaged over the door handle holding the door closed.

To open the door, lift the catch with the thumb of the hand you are using to hold the door handle, the catch only need to be flicked open as far as is necessary to allow the door handle to pass under it.

As the door clears the catch let it drop back to its closed position.

Place you bead or piece.

Close the door in a normal manner, as the door reaches the catch it will automatically lift it and then drop over the back of the handle to secure the door closed. There should be no need to touch the catch when closing the door.

Note.

When the door is closed, the door will not seal tightly to the chamber brick, there will always be a gap to allow for expansion.

First heat up.

Before using the kiln it is advisable to fire the kiln empty, up to working temperature of 520 degrees centigrade at a rate of around 400 degrees per hour. **This is pre-programmed into the KCR32C as Program 23.**

This will dry and “settle” the kiln and also start the door seal softening process. On the first firings, a slight odour will be emitted, this is the remnants of binding resins in the insulation and should stop after two or three firings depending on temperature of the firings.

Control

The KCR32C controller supplied with this kiln has already been set and the characteristics of the kiln have been entered into it.

The kiln and the KCR32C will have already been put through a test firing at the factory.

Please read the instructions on control before starting to use your MAXI / Maxine.

What to expect of the initial firing

Once the KCR32C has been stated and after a slight delay a red dot will appear on the controller display and a quiet click will be heard from the side of the kiln This is the internal relays preparing the kiln to fire and starting to heat up if needed.

This click will be heard to click on and off at various points through the cycle as the KCR32C regulates the kiln temperature.

As mentioned on previous pages, a slight odour will be released and the insulation binders burn out.

Operation

Loading

For batch annealing the kiln will be loaded prior to heat up.

The beads can be loaded into the kiln in any manner that suits as the bead surface will not be reaching sufficient temperatures to cause it to go sticky.

When garaging note.

The door design of the MAXI is such that it will take a 10mm mandrel with clearance and fully close. This clearance will vary depending on the angle of the mandrels when placed in the kiln.

The doors must always be closed to the “CATCH ON” position. Failing to do this will result in the kiln not running at optimum economy and, depending on how far the kiln door is open, may result in the KCR32C controller showing an ERROR 1 message and shutting the kiln down. This is due to the kiln losing heat through the large door opening quicker than it can replace it. To clear ERROR 1 turn the controller off at the wall, leave for 30 seconds then turn the kiln back on. It may now be necessary to restart the program then forward it to the segment it was at before.

When loading beads the kiln will remain smoother the shorter the amount of time that the door is opened.

If the door is left open for more than a few seconds the kiln will lose heat and need to recover rapidly, this can cause momentary fluctuations in the kiln temperature.

For large framework the floor raising boards may be used.

When loading large framework common sense are the only governing factors to loading the kiln.

KCR32C

Your KCR32C programmer has already got a bead “garaging” annealing cycle at program 24 and a “batch” annealing cycle at program 25. They are as follows.

Prog 24

Segment 1. Full power to 520c, hold for 13 hours.

Segment 2. Hold 520c for 1 hour 30 minutes.

Segment 3. Cool at 50 degrees per hour to 250 then turn off.

When you have finished loading the MAXI with beads, if the 13 hour hold is not finished, press and hold the up arrow for approx 4 seconds until a beep is heard. This will forward the KCR32C to the 1:30 hour final hold (segment 2) before annealing begins.

Prog 25

Segment 1. 150 degrees per hour to 520c, hold for 1 hour and 30 minutes.

Segment 2. Cool at 50 degrees per hour to 250 then turn off.

Easy start instructions are in the KCR32C booklet.