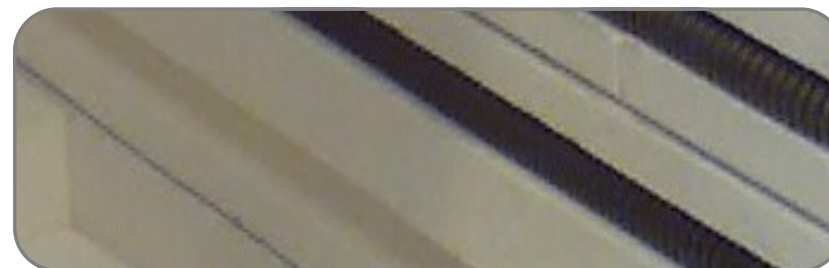


TLA Range  
Instruction manual.

2021

**KILN***care*



TLA Range Instructions

Thank you for choosing to purchase one of the TLA range of kilns for your glass work.

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

The TLA range is very much a tried and tested formula. One that has seen this range of kilns provide reliable service in both educational and studio use for over 2 decades.

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

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### Safety notices

Your TLA is designed and built to meet all European Directives and British Standards.

However, as with all kilns, there are certain measures that you must take to achieve optimum safety.

#### Electricity

The TLA range meets all Electrical Safety Directives, including a door safety interlock switch. However, the kilns are electric and as such certain measures should be taken.

Keep the kiln dry.



## European Declaration of Conformity.

Kilncare Limited, The Kiln Works, 907 Leek New Road, Baddeley Green, Stoke on Trent, Staffordshire, United Kingdom, 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.

TLA range of kilns.

#### Directives.

LVD - Low Voltage Directive 2006/95/EC.

EMC - Electromagnetic Compatibility Directive 2004/108/EC.

#### Harmonized Standards.

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

#### Description.

Glass casting kiln

#### Purpose of use.

For the firing of glass items to the maximum temperature shown..

#### Product serial number.

As per affixed data plate.

#### Manufacture year.

2021.

Technical documentation is held for this product.

Lee Sherwin,  
Director,



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

cooling it may be possible that the external case temperature actually increases.

KEEP PETS AND CHILDREN AWAY FROM THE KILN DURING ITS FULL CYCLE AND UNTIL COOL.

Do not site the kiln outside.

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

After the first couple of firings there is almost no emissions from the kiln but there will always be vapour etc released by whatever you are firing in the kiln, especially stains so room ventilation is always advisable.

The type of room venting required depends on many factors and so it is best to contact a ventilation specialist if in any doubt.

## Electrical connection

TLA kilns will require connection to a suitable electrical supply.

If the kiln is to be used on a 3-phase supply a neutral must also be supplied.

The electrical supply **MUST** have a sound earth connection.

Your TLA range kiln is supplied ready for connection to a 3-phase supply.

If your supply is single phase then use the connection link fixed to the door of your connection panel. The link fits across the 3 fused terminals as shown in diagram 1.4.

Make sure to tighten all 3 screws. We recommend that the centre terminal is then used to make your live connection with the wire sitting under the fork rather than on top of it.

The terminals are for use with cable of a size up to 10mm.

**REMEMBER** that if the kiln is then re-connected to a 3-phase supply then this link **MUST** be removed. The black and green terminals are for Neutral and Protective Earth respectively.

As always we recommend that the connections are done by a qualified electrician.

[illegible]



### **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 advice.

### **Connecting the controller**

The controller supplied with your kiln will be fitted with a connecting plug. It will mate to a matching socket fitted to the kiln, usually mounted at low level at the rear or side of the kiln power panel.

The socket is sided and so will only allow the plug to be inserted in the correct manner.

Once the plug is inserted lock it into place using the securing clamp.

Always ensure the mains power to the kiln is turned off before fitting or removing the plug.

### **Initial firing**

Before using the kiln it is advisable to fire the kiln empty to a temperature of 800 degrees centigrade at a rate of around 100 degrees per hour.

Leave the top bung out of the top vent.

This will dry and "settle" the kiln.

Also if you have purchased the kilns furniture set with the kiln it is advisable to load the furniture into the kiln for drying. The kiln furniture will have been cut with a wet cutter and invariably contains a large amount of water.

Load the kiln furniture using the props supplied to allow air space between the batts.

On the first firings, a slight odour will be emitted, this is the remnants of binding resins in the boards and should stop after two or three firings depending on temperature of the firings.

For this initial firing we recommend that the kiln is in a well ventilated area.

We suggest that prior to the initial firing, that you use this instruction manual, and the controller manual to ensure you are familiar with all aspects of the kiln and usage of the controller.

We also recommend that the kiln controller is set to fire the kiln at full power to a low temperature and then end, say 50 degrees, whilst being monitored to ensure that it is switching off the kiln and that no problems have occurred during

This could be either an element failure, a burnt connection a loss of supplied power or a component failure

### **Kiln is not reaching temperature or is slow.**

This could be either an element failure, a burnt connection a loss of supplied power or a component failure.

Get the kiln checked by a competent kiln engineer.

### **Cracks in the kiln brickwork.**

Minor cracking is to be expected, see page 10 of this manual.

### **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 0044 1782 535915, Fax 0044 1782 535338,

### **Notes**

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## Trouble shooting

### Control has no lights

If the “mains on” light is not illuminated on the kiln :-

Check that the socket outlet that the kiln is plugged into is turned on or that the mains isolator is turned on.

Check that the controller is securely plugged into the kiln.

With the kiln unplugged or turned off, check the cable from the kiln to the controller for damage.

If the “mains on” light is illuminated:-

Check that the “on” “off” button on the controller is in the “on” position.

### The control is working correctly, is showing that the kiln is receiving power but the kiln is not heating up.

With the kiln unplugged, check the cable from the kiln to the controller for damage.

Check that the controller is securely plugged into the kiln.

With the mains turned off, a competent person should be used to check the condition of the internal wiring and electrical contact points.

If there is no obvious damage then the kiln will need to be checked over with an electrical meter.

### The control is working correctly, is showing that the kiln is receiving power but the kiln is not heating up.

Check the thermocouple can still be seen to be protruding into the kiln chamber, if there is another ceramic tube protruding, this is the heat fuse. Both should be visible by 25-40mm.

### Controller shows an ERROR message.

Consult the controller manual and contact Kilncare.

### Plug top is getting hot on 3kw models.

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 and the plug top.

### 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 certainly result in the connection failing.

transport.

At such low temperatures the kiln will overshoot the set point temperature by some amount.

This is normal as the controller is set to full and not a controlled rate of climb.

It may also cause the controller to show an Error message or code, again, this is normal as the controller may believe that the overshoot is caused by the kiln having a fault.

This test is to ensure that the controller shuts the kiln power off, whether it be due to the correct temperature being reached or by it going into fault mode.

## Control

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

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

Please read the instructions on control before starting to use your TLA kiln.

## Operation

### The vents

Depending on the kiln model chosen the kiln will have a variety of different venting combinations ranging from 1 in the lid to automatic venting in the lid and multiple vents in the front/sides.

However the vents, regardless of combination, all have the same purpose. To release moisture from the kiln while it is drying wear during a biscuit or mold firing, to release vapours from glazes or colours and to aid in cooling of the kiln.

For a biscuit or mold firing the vents in the lid would normally be left out or open up to a temperature of around 600c in order to allow all moisture from the work to be released from the kiln chamber. The front / side vents need not be opened during this cycle if not required.

After the drying temperature has been reached the vents would then be closed to allow the kiln to reach its final temperature.

For glaze / colour vapour release, the vents will be closed after the glaze / colour has finished releasing.

For cooling the vents can be opened at any point after the final temperature has been reached. At this point it may be of advantage to open the front / side vents also to increase cooling. However, when and how the vents are opened for cooling is very much a preference action.

After removing hot bungs take care use heat resistant clothes and clothing and to sit the hot bungs on a suitable, non combustible surface in an area that is away from children and pets.

### Automatic dampers

If your kiln is fitted with automatic lid vents (dampers) then the operation of these vents is controlled via the controller and is covered in the controller instructions.

### Closing the lid

Once loaded the lid is pulled shut and the clamp / clamps located and closed to.

The lid is gas spring assisted.

Take care to ensure that there are no objects sitting on top of the side walls when closing the lid as seal damage can be difficult to repair.

### The Interlock

On all TLA kilns a captive style interlock is used to protect the user from electric shock.

After the lid is closed and the clamps set, engage the interlock into its slot in the kiln power panel top.

The interlock key is rectangular in will only fit in the correct way.

To turn the interlock on, turn 90 degrees clockwise, to disengage turn 90 degrees anti-clockwise. This movement is spring assisted and requires only slight effort. Once it starts to turn it will engage fully with the help of its internal spring,

**DO NOT FORCE THE INTERLOCK ONCE ITS FINAL POSITION IS REACHED.** The interlock will not be “any more on” but you may damage the internal mechanism.

### Loading

Before loading the kiln it is advisable to turn the kiln off at the mains supply, event though your safety is ensured by the door interlock switch.

You may have purchased the kiln with a kiln furniture set or you may be using your existing furniture.

The primary consideration when stacking kiln furniture is stability.

How you load the shelves is very much a matter of preference.

How and where you place your ware will also be very much a matter of preference.

If the kiln is supplied with half batts, i.e. two shelves per layer, you may find that 3 props will be suffice or you may be happier using a prop in each corner.

There is not fixed way of loading kiln furniture, the important thing is that the batt has adequate support.

When loading the kiln furniture be careful, remember, the batts are harder than the brick wall of the kiln and in our experience a large proportion of kiln wall damage is caused by careless kiln furniture loading.

For obvious reasons, care must always be taken when loading larger objects

### To pause a program

Press and hold the “Function” key then press the “Pause” key.

The top display will alternate between the current temperature and “- - “. This temperature will be held indefinitely or until the pause key is pressed again. A warning reminder will be sounded every 10 seconds during the pause. When the pause is stopped the kiln will continue through the program from where it was paused.

### To forward a program

At any time the controller can be made to skip to the next segment. To do this, hold the “Function” key and press “advance”. This can be useful if the pause button is used.

### To view entered program data

This can be done whether the kiln is firing or not. Press the step key, each press will forward the display to the next section. Once viewed, press the “start” key once to return the control display to kiln temperature.

### To alter program data while the kiln is firing

Press the “step” key until the desired value is displayed. Alter it using the “up” or “down” keys. Press the “start” key once and the new value will be stored and the kiln will continue to fire.

### Example program

If you require the kiln to start a 7am, fire as fast as it can to 800c with the dampers open, then hold for 10 hours with the dampers closed. It would be programmed like so.

We will presume that it is being programmed at 5pm the evening before. We will make this program 4.

Press “step”. Use “up” or “down” to select 4 in the top display.

Press “step” Use “up” or “down” keys to select a delay time of “14.00” hours.

Press “step”. Use “up” or “down” keys to enter “FULL” for ramp rate.

Press “fn” and “step” to select damper closed, green light illuminated.

Press “step”. Use “up” or “down” keys to enter “800” for temperature.

Press “step”. Use “up” or “down” keys to select a dwell time of “10.00” hours.

Press “fn” and “step” to select damper closed, green light extinguished.

Press “start” twice. Top display will flash program number then “14.00” with a flashing dot. The bottom window will show “- -” and the delay triangle will flash.



This temperature is in Celsius. This temperature is your first temperature. Use the “up” or “down” keys to select the desired temperature. Press “step”. The top display will show a time, for instance “0.30” or “PASS”. The bottom display, again will show “1” and the triangle above dwell will illuminate. Dwell is the time in hours and minutes that you require the kiln to hold the first temperature.

Again, choose by holding the Function Key and pressing the Event key whether your roof vents will be open or closed during this soak period.

Press “step”. Top display will show a time, for instance “85”, “FULL” or “END”. The bottom display will show 2, this is segment 2. . This segment is how fast you would like the kiln to reach its second temperature.

Again, choose by holding the Function Key and pressing the Event key whether your roof vents will be open or closed during this ramp period.

At this point, if the kiln is required to finish, press the “down” key until “END” is shown in the top display. End is below 00.

All the above is segment 1, the controller has 32 segments and so for more complicated firings carry on as above by setting the next time, temperature and dwell. When you have programmed all you require, select “END” at the start of the following segment.

Press “start” and the controller will display kiln temperature again.

### **To run a program**

Press “step” bottom display will show “Pn” and the top display will show the program number. Use the “up” or “down” keys to select the program number required.

Press “start” the top display will show kiln temperature and the bottom display will go blank.

Press “start” again and the top display will briefly display the Program number then it will begin the program. Depending on the program contents the delay triangle or the ramp triangle will flash and the segment number will be displayed in the bottom display.

If a delay has been set the delay triangle will flash and the top display will act as a count down timer showing the hours and minutes remaining before the kiln starts to fire.

As the kiln fires the top display will show the kiln temperature and the bottom display will show the segment number. If the kiln is climbing the upward facing ramp triangle will flash. When the kiln is holding temperature the dwell light will flash.

### **To stop a program**

Press “start”.

into deeper kilns to avoid back strain.

### **What to expect on the initial firing**

Once the interlock has been engaged and the power turned on, a click will be heard in the power panel, this is the safety contactor, the red “mains on” light on the kiln should illuminate and the controller should illuminate.

If there is no display on the controller at this point check that the on-off button on the controller is in the “on” position (where fitted).

Once the controller has been programmed and started a second click will be heard and the orange “heat on” light will illuminate. This click and the orange light will simultaneously go on and off as the controller operates the kiln.

The kiln is now firing, ensure that the door clamps are fully closed and that the vent plugs are in or out as required. (or lid dampers in the required position).

As mentioned earlier there may be odours from the kiln.

### **Kiln brickwork cracking.**

After the initial firing small or hairline cracks may appear at various points in the kiln brickwork and possibly again at the first higher stoneware temperatures.

This is normal and is due to expansion and contraction of the kiln bricks. After only a few firings the cracking will stop. Please don’t hesitate to call of if you have any concerns about this.

### **Looking after your kiln**

A large contributing factor to element failure is often that debris from general kiln use starts to clog up the grooves that the elements sit in causing them to overheat.

Periodically clean out these grooves and remove the dust and debris.

This can be done by brushing gently with a suitable brush or by using a filtered vacuum cleaner.

REMEMBER. After the first few firing the elements become less supple and so when cleaning the grooves be gentle with the elements and try not to disturb them too much.

As always when working with refractory materials, wear protective clothing and use a suitable dust mask.

If an element starts to “curl” out of the groove it can be saved but the earlier you try the better the result.

Heat around the area that is starting to curl out with a gas gun and, once the element is orange, ease it back into position with a heat resistant tool.

This repair can result in burns if care is not taken and so if in doubt, contact a recognised kiln engineer.

Depending on use it advisable to check all electrical connections are tight every 6 months or so and that no cables are discolouring due to heat.

It is advisable to have the kiln periodically checked by a qualified person to ensure all electrical components are in a healthy condition.

#### Safety contactor circuit

All kilns are fitted with a safety contactor and heat fuse as secondary back up against any failure or incorrect setting of the controller.  
FK kilns use an internal protection circuit inside the controller to determine over temperature conditions and so safely shut the kiln power off.  
Such protection will protect the kiln, it will not protect the medium being fired from the effects of reaching the pre-set protection temperature.

#### Kiln control instructions

The power switch for the KCR32C is located on the under side of the controller.

On power up controller will go into test mode then after a few seconds will settle down and show kiln temperature in the top display.

Before starting, make sure that only the top display is illuminated, if any other lights are lit press the “start” key to extinguish them.

#### Buttons index

Start / stop 

Step 

Back 

Up 

Down 

Function **Fn**

Advance **Fn** and 

Pause **Fn** and 

Event **Fn** and 

Information **Fn** and *i*

#### To set a program

If whilst in programming mode no buttons are pressed for a few seconds the controller will time out and go back to kiln display.

The KCR32c has 32 settable programs. Each program has 32 segments.

Press the step key. The top display shows the program number, for instance 1. The bottom display shows “Pn”. Use the up or the down keys to select the program required.

Press “step” again and the top display will show a time, for instance “0.10” or “PASS”. The bottom display will show “- -” and the delay triangle will light. Delay is the time in hours and minutes before the kiln will actually start. Set the desired time using the “up” and the “down” keys. If no delay is required hold the down key until the display shows “PASS”. Pass is below 0.00.

Press “step”. Top display will show a ramp rate, for instance “85”, “FULL” or “END”. The bottom display will show 1, this is segment 1. This segment is how fast you would like the kiln to reach its first temperature in degrees per hour. A slow firing might require the first temperature to be reached “50” degrees per hour. Whilst a fast firing would be set to reach temperature as quickly as possible so the rate required would be “FULL”.

If the roof vents are required to be closed during this first ramp, hold the Function key and press the Event key. The event light should illuminate to show the roof vents will be closed. When the event light is not illuminated the dampers will remain open.

Press “step” and the top display will show a temperature for instance “600”. The bottom display will still show 1 and a light will illuminate above temperature.