



**Euro-fuser
Instruction Manual**

2022

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Eurofuser Instructions



Thank you for choosing to purchase The Kilncare Eurofuser for your glasswork.

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

The Eurofuser is a direct descendant to the FK range of kilns that has been reliably in service for over a decade.

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

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Safety notices

Your Eurofuser 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 Eurofuser meets all Electrical Safety Directives, including a lid safety 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, 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.

Eurofuser.

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.

Glass fusing and slumping Kiln.

Purpose of use.

Glass fusing, slumping and colouring 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,

The Eurofuser requires 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 Eurofuser kiln is supplied ready for connection to a 3-phase supply. If your supply is single phase then use the connection link bar fixed to the door of your connection panel.

The link bar fits across the 3 fused terminals as shown on the opposite page 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.

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 these links 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.

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 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, especial if the kiln is new or has had a period of inactivity.

Periods of testing will be stipulated by the testing body.

Contact us

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Notes

To replace the gas spring raise the kiln to it's highest position.
On smaller kilns a second person can be used to hold the lid in it's up position whilst one of the springs is removed.
On larger kilns it will be necessary to make other arrangements to hold the lid raised such as block and tackle. NEVER ATTEMPT TO REMOVE A GAS SPRING WHILST THE LID IS IN THE CLOSED POSITION.

Remove the clip that is inserted around and through the knuckle joint at either end of the spring. Keep the clip safe in case you loose one of the new ones. Also remove the clips from the new gas spring and keep it safe.

By applying gentle pressure to the knuckle clip it off the shoulder joint that is bolted to the kiln bed. Do not apply pressure to the spring shaft or main cylinder. A large screw driver works well for getting behind the knuckle then gently prizing off.

Now do the same at the top of the spring and the gas spring will be free.

Offer the new spring to the top knuckle and tap it on, again, only tapping the shoulder joint. The fatter cylinder of the tube always fits at the top.

Refit the knuckle clip to the top.

Offer up the bottom knuckle to the bottom shoulder and repeat the process. If the gas spring is now secured in place then the assistance to hold the lid raised can now be removed.

The gas spring will now need to be pressurised.

Where the top knuckle joins to the top of the main cylinder there is a small Allen key valve.

Using the Allen key provided, release pressure from the valve. It is recommended that this is done in small quarter turns and each turn lasting a second or less before being closed again,
After each couple of releases try to close the lid.

As you get nearer to having a balanced close, shorten the time the valve is released for.

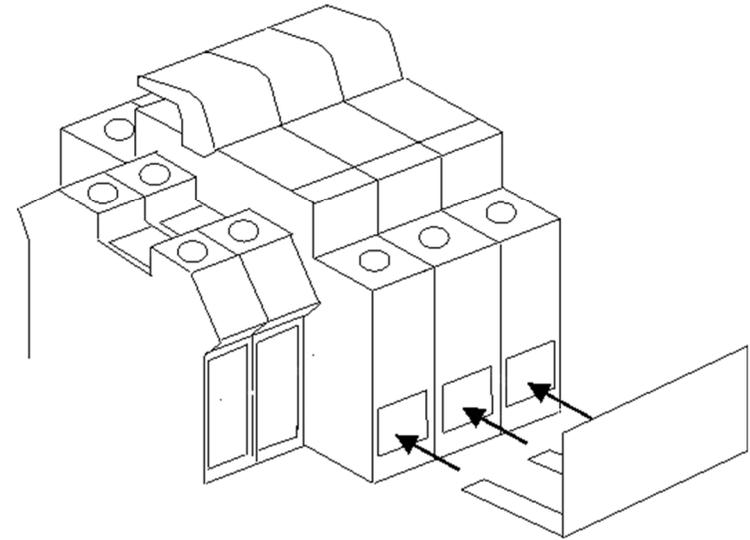
ONCE TOO MUCH PRESSURE IS LET OUT IT CANNOT BE REPLACED.

When you are happy that the gas springs are applying equal pressure ensure that the valve is tightly closed.

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.

Diagram 1.4



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.

Looking after your kiln

A well-built kiln requires very little maintenance. Certain common sense tasks will certainly help its life such as cleanliness and careful use. Keep the area of the door seal clear of any separating material or any other objects as once damaged the seal will need to be repaired or replaced.

Regular inspections of the gas springs that assist with the lifting of the Chamber is essential.

Check that the fixing points are still tight and are sitting level,

Check that the heads of the gas springs are still in line and are also tight.

Check that there is not an excessive amount of oil around the shaft/rod of the spring. A small amount of lubricating oil on the shaft is usual.

The gas spring inspections should be carried out weekly. If there are any doubts over the condition of the gas springs then do not use the kiln and immediately contact Kilncare.

Keep the kiln dry and away from sources of water. REMEMBER, the kiln is for fusing and slumping and will also fire stained glass colours. IT IS NOT A MOULD DRYER. Moulds used for slumping contain a huge amount of water, it is recommended that the mould is thoroughly dried prior to insertion in the kiln. The kiln will operate with a wet mould in it but the kiln was not designed to expel large quantities of water vapour from its chamber even though the top and sides have moisture removing features. Continued use of wet moulds in the kiln chamber could result in premature deterioration of the kiln structure.

Care must be taken not to load the kiln to a height that will result in the elements being closed on to the load. This invariably results in broken element tubes. The same applies to the thermocouple and heat fuse that stick through the back wall and right side wall into the chamber. When shutting the kiln lid, gently operation will also prevent accidents, even though the lid operation is dampened by the gas dampers.

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.

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.

Damaged seal.

The seal of on the Eurofuser can be replaced if it is damaged to the extent that it starts to cause firing errors.

To replace the seal,

Lower the kiln and close the lid clamp.

Now undo the tec screws around the lower section of the chamber that hold the stainless seal retaining frame on. The tec screws can be removed with a drill and a special attachment which is available from most tool shops or a spanner can be used.

Raise the lid and carefully remove the stainless retaining frame.

The seal comprises of non-ceramic fibre strips. Remove the damaged strip. The strips are not fixed into place by any adhesive but are simply compressed into position by the retaining frame. The seal strip will remove easily.

Offer the new strip to its position and tuck the ends behind the insulation boards, use the remaining strips as a guide.

The retaining frame can now be refitted either by offering it up to the open lid or by lying the frame on the bed and carefully lowering the lid down onto it.

Uneven heating

Check that all the elements are working, there are no power failures, the main fuses, the lid safety switch, the condition of the cabling and mains isolator.

9 times out of 10 an uneven kiln is caused by a kiln power failure leading to a section of the elements not running correctly.

The above checks will need to be made by a competent kiln engineer.

Check the condition of the lid seal.

Check that the lid is sitting evenly to the bed and that the clamp is still working effectively.

Kiln lid sits high on one side or the lid is now heavy to lift.

Check around the lower sections of the gas spring lifters on each side of the kiln for oil.

It is normal to have a small amount of lubrication around the bottom, thinner shaft of the gas springs. If there is a problem it will very often start to drip oil onto the floor directly below the gas spring.

If this is the case the gas spring will need replacing.

The faulty gas spring will be on the side that is lowest when the kiln lid is shut.

Gas spring replacement

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

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

Check the mains fuses.

Check the condition of the mains cabling and the mains isolator/socket.

If the "mains on" light is illuminated:-

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 two glass 1 amp fuses in the rear power box at low level at the rear of the kiln. Access to these fuses is by using the door key provided.

If the above appear correct contact Kilncare.

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.

Controller shows an ERROR message.

Consult the controller manual and contact Kilncare.

The Safety Contactor is double or treble clicking.

This should not be deemed a fault but is caused by the swinging pendulum lid safety switch. However this should only happen whilst the kiln lid is in motion.

Once the lid is fully raised or closed the contactor should revert to normal operation.

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.

Initial firing

Before using the kiln it is advisable to fire the kiln empty to a temperature of 600 degrees centigrade at a rate of around 200 degrees per hour.

Leave the top bung out of the top vent.

This will dry and "settle" the kiln.

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 read this instruction manual, and the controller manual to ensure you are familiar with all aspects of the kiln and usage of the kiln 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 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 provided with the kiln will be the controller that the kiln was test fired with at our factory and so has already done a successful firing before you receive the kiln.

The controller plugs into the kiln at a socket at the rear of the kiln on the underside of the main electrics box.

The plug and socket are sided and so will only fit one way.

Only plug in the controller when the mains is turned off.

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

Operation

The vents

There are vents on the front of your kiln.

The vents are opened and closed manually via a vent flap. These flaps are filled with a non-dust dropping high temperature insulation pads, they remove the hazard of dust dropping whilst ceramic are inserted into the vents.

The vents are spring loaded.

The vents can be used in any combination of ways and at any kiln temperature.

The stainless steel body of the vent flap will get very hot so only open and close the vents by holding the thermoplastic handles.

Loading

Load the kiln with the glass items that are to be fired. Stay within the width of the bed walls.

Remember glass will stick to the bricks so a separating medium must be used. This can take many forms including fibre paper or a refractory batt (shelf) or bats covered with batt wash. Loose medium such as plaster etc can be used in the floor of the kiln. We do recommend that a fibre paper is used to line the floor first as loose medium can find its way between the bricks as they expand and contract resulting in the floor becoming uneven.

It is not necessary that a kiln shelf is used and the work can be placed straight on the kiln floor if a separator is used, such as fibre paper etc to keep the glass from sticking to the kiln floor bricks when hot.

If a kiln shelf is to be used, it does not need to be raised from the kiln floor and the batt does not need to have a separator between itself and the kiln floor bricks.

Some users however do prefer to raise the shelves from the floor to allow a circulation of heat to the under side of the shelf.

The glass will need a separator between itself and the batt for the same reasons as it needs to be separated from the brick.

The kiln bricks do not need to be painted with battwash, just protect the area where the glass can touch the bricks with a separator.

Once the kiln has been loaded with the glass to be fired, lower the lid and clamp shut the clasp/s to ensure the lid seal remains tight throughout the firing. Turn on the electrical supply. A click will be heard from the rear of the kiln, this is the safety circuit contactor and is normal.

If no display is illuminated on the controller then the controller may be fitted

Prog No.	Program Description	Seg 1 Ramp Rate C/Hr	Seg 1 Soak Temp C	Seg 1 Soak Time Hr. mins	Seg 1 Ramp Rate C/Hr	Seg 1 Soak Temp C	Seg 1 Soak Time Hr. mins	Seg 2 Ramp Rate C/Hr	Seg 2 Soak Temp C	Seg 2 Soak Time Hr. mins	Seg 2 Ramp Rate C/Hr	Seg 2 Soak Temp C	Seg 2 Soak Time Hr. mins	Seg 3 Ramp Rate C/Hr	Seg 3 Soak Temp C	Seg 3 Soak Time Hr. mins	Seg 3 Ramp Rate C/Hr	Seg 4 Ramp Rate C/Hr	Seg 4 Soak Temp C	Seg 4 Soak Time Hr. mins	Seg 4 Ramp Rate C/Hr	Seg 5 Ramp Rate C/Hr	
1	4-6mm Float Glass Fuse	150	538	00:10	FULL	840	00:20	FULL	00:20	00:20	FULL	538	00:45	182	427	00:15	182	427	00:00	182	427	00:01	END
2	4-6mm Float Glass Slump	150	538	00:00	200	700	00:20	333	795	00:10	FULL	538	00:15	182	427	00:00	83	371	00:01	150	510	00:20	END
3	6mm Bullseye Fuse	222	677	00:30	FULL	482	01:00	56	371	00:01	FULL	540	00:40	26	371	00:10	70	400	00:00	100	300	00:30	END
4	6mm Bullseye Slump	167	640	00:10	FULL	804	00:12	FULL	540	00:30	FULL	510	00:10	100	300	00:00	100	300	00:00	100	300	00:00	END
5	6mm System 96 Fuse	200	500	00:20	FULL	804	00:12	FULL	540	00:30	FULL	510	00:10	100	300	00:00	100	300	00:00	100	300	00:00	END
6	6mm System 96 Slump	155	704	00:00	FULL	540	00:30	FULL	510	00:10	FULL	510	00:10	100	300	00:00	100	300	00:00	100	300	00:00	END
7	Bottle Firing Cycle	170	510	00:00	250	780	00:10	FULL	516	00:30	FULL	550	00:20	100	300	00:00	100	300	00:00	100	300	00:00	END
8	Low Stain	200	570	00:10	FULL	516	00:30	FULL	550	00:20	FULL	550	00:20	100	300	00:00	100	300	00:00	100	300	00:00	END
9	High Stain	200	665	00:10	FULL	550	00:20	FULL	550	00:20	FULL	550	00:20	100	300	00:00	100	300	00:00	100	300	00:00	END

To stop a program

Press “start/stop”.

To pause a program

Press and hold the “down” button. The top display will alternate between the current temperature and “ Paused “. As the program pauses two confirmation beeps will be heard. This temperature will be held indefinitely or until the pause button is pressed again. When the pause is stopped the kiln will continue through the program from where it was paused. Again a confirmation beep will be heard.

To forward a program

At any time the controller can be made to skip to the next segment. To do this, press and hold the “up” key for 4 seconds. This can be useful if the pause button has been used. It may be that at the end of the manual pause you do not require the kiln to finish the rest of that section and so the program can be moved on to the next section or end using this key.

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.

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.

Example program

If you require the kiln to start a 7am, fire as fast as it can to 800c then hold for 10 hours. 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 “Pr 4” in the main display.

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

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

Main display will show “14.00” with a flashing dot as the time counts down.

After 14 hours the kiln will start.

For more detailed KCR16 instructions consult the KCR16 manual supplied Separately.

Trouble shooting

Control has no lights

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

with its own power on/off switch, consult your controller manual and turn the control on.

Enter the firing cycle and start the controller.

Safety contactor circuit

Eurofuser kilns are fitted with a safety contactor and heat fuse as secondary back up against any failure or incorrect setting of the controller.

Eurofuser 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.

The Safety Contactor Circuit is used by the lid safety switch which is ensured power to the elements is removed as the lid opens.

This switch is a pendulum style switch located in the element connection panel of the kiln. Under certain circumstances the safety contactor may click quickly a number of times when the lid is opened with the elements firing. This is normal.

Also, jolts to the kiln may cause the safety contactor to click a number of times. This is just the pendulum moving and should settle after a second or so.

Obviously it is unlikely that the kiln will receive any jolts once the glass is firing but we need to point it out.

What to expect on the initial firing

Once the controller has been stated and it begins to power the kiln a clicking will be heard from the rear of the kiln as the heat is regulated. This click can sound more like a small thud on larger kilns as the contactor size increases.

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

KCR32C instructions

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



Pause
onds. Hold for 4 seconds. To un-pause hold again for 4 seconds.



Energy used and when not in programming mode.



To set a program
The KCR32C has 16 settable programs. Each program has 32 segments.



Press the number, for instance “Pr 1”. The segment display shows “1”. Use the “up” or “down” keys to select the program required.



Press “step”. The main display will show a ramp rate, for instance “85”, “FULL” or “END”. The segment display will show “1”, this is segment 1. The ramp light will illuminate above the main display. This segment is how fast you would like the kiln to reach its first temperature in degrees centigrade 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”. “FULL” is above “1000” on the display. Press “step”. The main display will show a temperature for instance “600”. The segment display will still show “1” and the temperature light will illuminate

above the main display. This temperature is in Celsius. This temperature is your first temperature. Use the “up” or “down” keys to select.

Press “step”. The main display will show a time, for instance “0.30” or “PASS”. The segment display will show “1” and the time light above the main display will illuminate. Dwell is the time in hours and minutes that you require the kiln to hold the first temperature.

Press “step”. The main display will show a temperature, for instance “85”, “FULL” or “END”. The segment display will now show “2”, this is segment 2. The ramp light will illuminate above the main display. This segment is how fast you would like the kiln to reach its second temperature.

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 0000 on the main display.

All the above is segment 1 and the start of segment 2, the controller has 9 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.

After a few seconds the display will time out and show the kiln temperature.

To run a program

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

Press “start” and the main display will show a time, for instance “00.10” or “PASS”. The segment display will show “ 1 ” and the time light above the main display will illuminate. 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. The kiln starts automatically after a few seconds if no time is entered.

If a delay has been set the main display will act as a count down timer showing the hours and minutes remaining before the kiln starts to fire. A flashing dot in the main display will indicate the timer is running. As the kiln fires the main display will show the kiln temperature and the segment display will show the segment number. If the kiln is climbing, the upward facing ramp triangle will illuminate, the downward facing triangle will illuminate on a cooling ramp and when the kiln is holding temperature both will illuminate.