

## CERAMIC KILNS – KM614

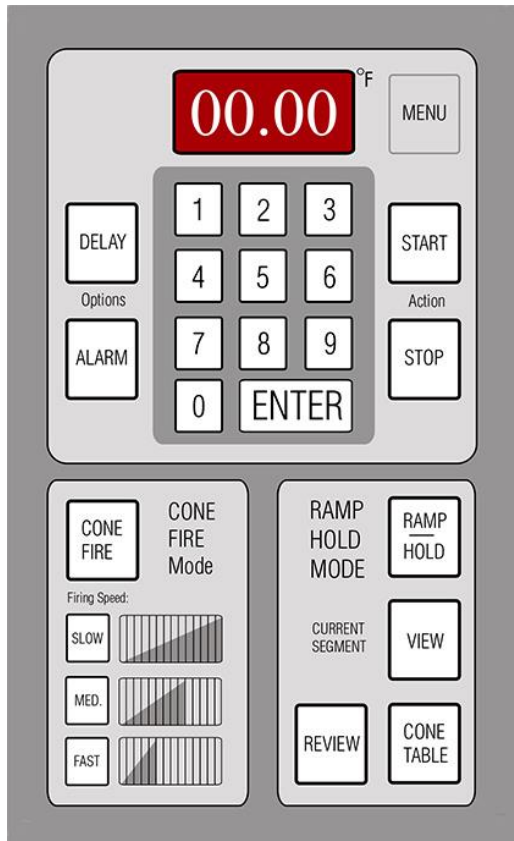
### IT JUST FITS

Fits most small studios. Easy to load for those who are vertically challenged. Has all the bells and whistles of the larger kilns in a more compact size.

### FEATURES

#### Sophisticated, Yet Easy to Use

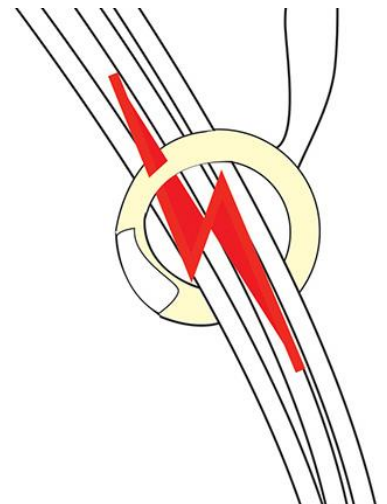
- Write your own firing programs with up to 32 Segments using **Ramp and Hold**. Now you can store up to 12 programs.
- ... or use the tried and true factory set programs in **ConeFire Mode**



- **Built in Diagnostics** give you or our technicians the ability to diagnose kiln problems with just a few button presses.
- New **Safety Features** help prevent accidental starts and overfires.
- New software keeps track of your **Firing Costs** and the **Number of Firings**
- **Fuse Glass, Slow cool Cone 6 Glazes, Grow Crystals...** whatever you want to program this controller can handle.
- ...and **so much more.**

#### Current Sensing Technology

Skutt is one of the few brands that installs a **Current Sensor in every KilnMaster Kiln**. This allows you to read the **Amperage** of each section of the kiln as well as the **Voltage** and **Voltage Under Load**.



Now with the touch of a few buttons you can give those readings over the phone to your kiln repair technician so they can troubleshoot the problem and make sure they have the correct parts when they come out for the repair.

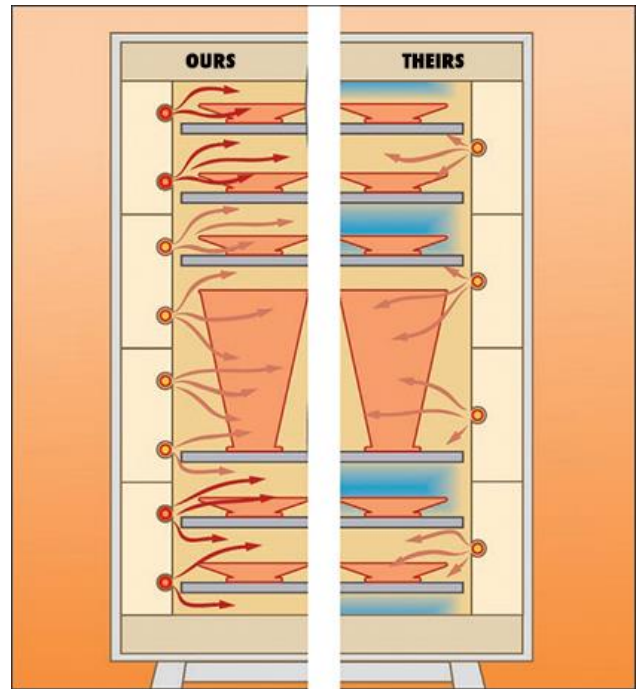
This **Saves Time and Money**.

Prior to the use of these current sensors someone would have to come to your house and test the amperage and voltage inside the control box with live wires exposed. This system is **Much Safer**.

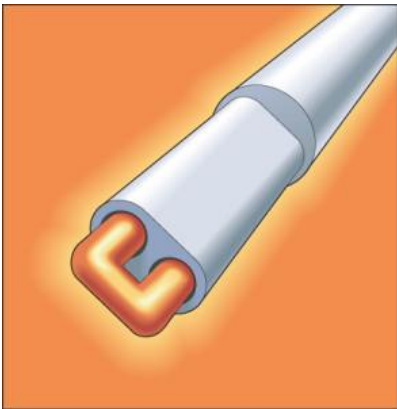
## Balanced Elements

A large amount of the heat you lose in your kiln passes to through the lid and slab of your kiln. To compensate for this, Skutt directs more heat to these areas when they design the elements. The fact that we have twice the element grooves in our kilns gives us more design flexibility than some of our competitors.

It also gives you more loading options since it is always recommended to have at least one element radiating between each layer of shelves. Oh and by the way, twice the grooves means you get twice the amount of element wire, which means each element doesn't have to work as hard, which means longer element life! Whew!



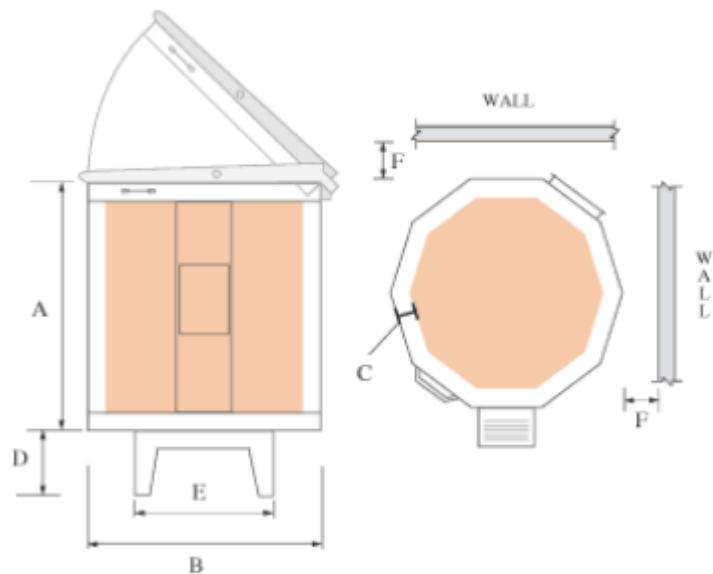
## The Thermocouple



- Exposed Thermocouple equals faster reaction time and higher accuracy.
- Inexpensive, plus we give you an extra one when you buy your kiln.
- Easy and quick to replace.
- Type S (Platinum) Upgrades Available.

# PRODUCT SPECIFICATIONS AND DIMENSIONS

## DIMENSIONS



Model	Phase	Volts	Maximum		Power		Copper Wire Size	NEMA Receptacle	BTU's
			Cone	Temp(F)	Amps	Watts			
KM-614	1	115	6	2250	20	2300	10	5 - 20	5940

O.D. Dimensions					
A	B	C	D	E	F
19.5	17	3	8	17	18

## CHAMBER CAPACITY

Approximately 11 in. x 11 in. opening and 13.5 in. high. 0.8 cubic feet, 0 bowls.

Bowl, 6 inches in diameter and 3 inches high.

Depth	Opening Width	Opening Length	Cubic Ft.	Tea Bowls
13.5in.	11in.	11in.	0.8	0

The picture displays a KM-1027 kiln

## **Controller**

Thermocouple: K

Clock: 60 Mhz

Voltage: 24 DC Relays

Output: 12 Volts DC

Fuse: 0.5 AMP



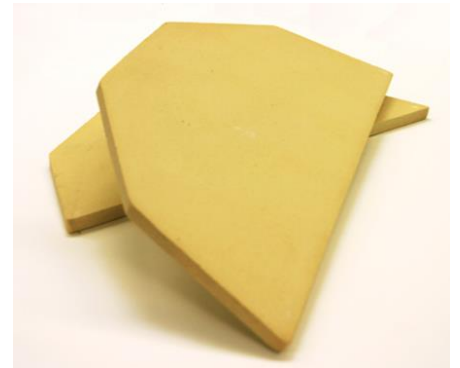
## ACCESSORIES

### **Furniture Kits**



#### **Quality**

We search the world over to find kiln furniture of the quality our customers expect. There are a lot of “cheap” shelves out on the market as well as very expensive shelves that provided little added value for most customers needs. Our primary goal is to maximize value for our customers. This means we are looking for shelves that are reasonably priced, will not warp or crack when fired to the temperatures for which they are designed and are free from major chips and scratches. If you ever receive a defective shelf from Skutt we will replace it for free within the warranty period.



#### **Choosing A Furniture Kit**

A furniture kit is a collection of properly sized shelves coupled with a post assortment that is recommended for your specific model kiln. The shape, quantity and thickness are predetermined and based on the most common practices for that model.



The quantity of the posts in the assortments included with the furniture kit are based on the number of layers of shelves common in that model and include varied height posts to give you flexibility in loading.

If your situation is unique and you have very specific needs you can order all of these items separately to make your own kit. Here are some of the factors you will want to consider:

#### **Shape**

Shelves can be round, multi-sided, square or rectangle. Round and multi-sided shelves are usually available in what is called “half-shelves”. Half shelves are exactly what they sound like, they are half of a full shelf. People like them for several reasons.

#### Pros

- Provide a path for convection in the center of the kiln.
- Half the weight of a full shelf therefore easier on the back to load in the kiln.
- More flexibility in loading your kiln.
- Less likely to warp or crack than full shelves.

#### Cons

- Full Shelves can be more suitable for larger pieces that take up more than half the diameter of the kiln because there is no gap.

## Thickness

The thickness of the shelf can determine whether or not it can withstand high temperatures without warping. This is usually only an issue if you are working with a large kiln such as a 1227. Since the KM1227-3PK is rated to cone 10 we only recommend 1" thick half shelves. For kilns designed more for low fire applications it is ok to use a 5/8" thick shelf which will be lighter.

## Quantity

The quantity you will need will be based on the height of your kiln, the height of the pieces you are putting in your kiln and whether you are using full shelves or half shelves. When you are contemplating how many layers of shelves you want to have on hand, remember, it is always a good idea to have at least 1 element radiating between each layer. If you have a glass kiln with elements radiating down from the lid, you can only fire on one layer because the top shelf will block the radiant heat to the layers below.



## Posts

Posts are the supports that hold the shelves up. Generally, you want to use 3 posts for each shelf you are supporting. Half shelves can share 2 posts on a common layer so you can use 4 posts instead of 6 posts. They come in varying heights from 1" tall all the way to 12" tall. They can also be stacked but are more stable when used alone.

## Kiln Wash

You will need to order kiln wash to coat your shelves. Kiln wash is a material that comes in a powdered form that you mix with water to a cream consistency and paint on your shelves. The coating protects the shelves from clay and glaze sticking to them.

## Easy View



### Why You May Want An Easy View

An Easy View is a simple wedge shaped piece of powder coated sheet metal that simply angles the touch pad out so it is easy to see and program. It is especially helpful to people who own older Skutt models that had the touch pad located near the bottom of the control box. It is very easy to install without have to disconnect any wires. One size fits all full size KilnMaster or GlassMaster control box.

They are inexpensive and can make programming much easier. you can also order it with a LinkBoard to upgrade your kiln with KilnLink or to plug in an EnviroLink.



# CERAMIC KILN UPGRADES

## KilnLink Service (Available in One Year & Five Year Packages)

### What is KilnLink

KilnLink is a cloud based Kiln Monitoring System that allows you to check the current status, view firing history, and see the diagnostic data of your kiln from anywhere you have access to the internet. It will even send you text messages if an event occurs such as, your kiln has cooled to a temperature where it is safe to unload or your kiln has been started.

KilnLink is extremely helpful when you have multiple kilns to manage with multiple people firing them such as school districts. Think of it as a kiln management system. From a single location you can check the health of every kiln in your district, monitor that kilns are being fired within school guidelines, and so much more.



KilnLink App



Mobile Web App

With the new WIFI equipped Touchscreen Controllers there is also a free scaled down version of KilnLink that allows you to view just the current status of your kiln through a free APP.

On the full version of KilnLink you can still monitor your kiln on your smartphone but you do so through a Mobile Web Application. It looks just like a regular App but is accessed by logging into your MySkutt Account through your web browser. Also, with the New Touchscreen Controllers, access to the Full Version of KilnLink just got easier and more affordable. Because it has built in WIFI, you no longer need additional hardware to connect your kiln to the cloud.

For more information on the differences between the Free App and the Mobile Premium Version of KilnLink observe the comparison below.

FEATURES	KM/GM	KMT/GMT
<b>Free Account</b>		
Monitor Status of Kiln		✓
Multiple Kilns on 1 Account		✓
Has an App		✓
Allows Sharing Status With Others		✓
<b>Premium Paid Account</b>		
Text or Email Alerts	✓	✓
Automatic Data Logging	✓	✓
Logs All Diagnostic Data	✓	✓
Allows Input of Firing Notes	✓	✓
Allows Input of Maintenance Notes	✓	✓
Allows Multiple Users on One Account	✓	✓
Website Access At MySkutt.com	✓	✓
Full Mobile Version of MySkutt.com (Not App)	✓	✓

## How Does It Work

KilnLink connects your kiln to the internet and feeds information from each firing in real time to the KilnLink Database. Authorized users just log on to their account using a computer or smart phone connected to the internet. You can even set it up to send you Email or Text alerts.



## What Type Of Information Can I Obtain

The easy to navigate screens will allow you to find the following information:

### Current Status

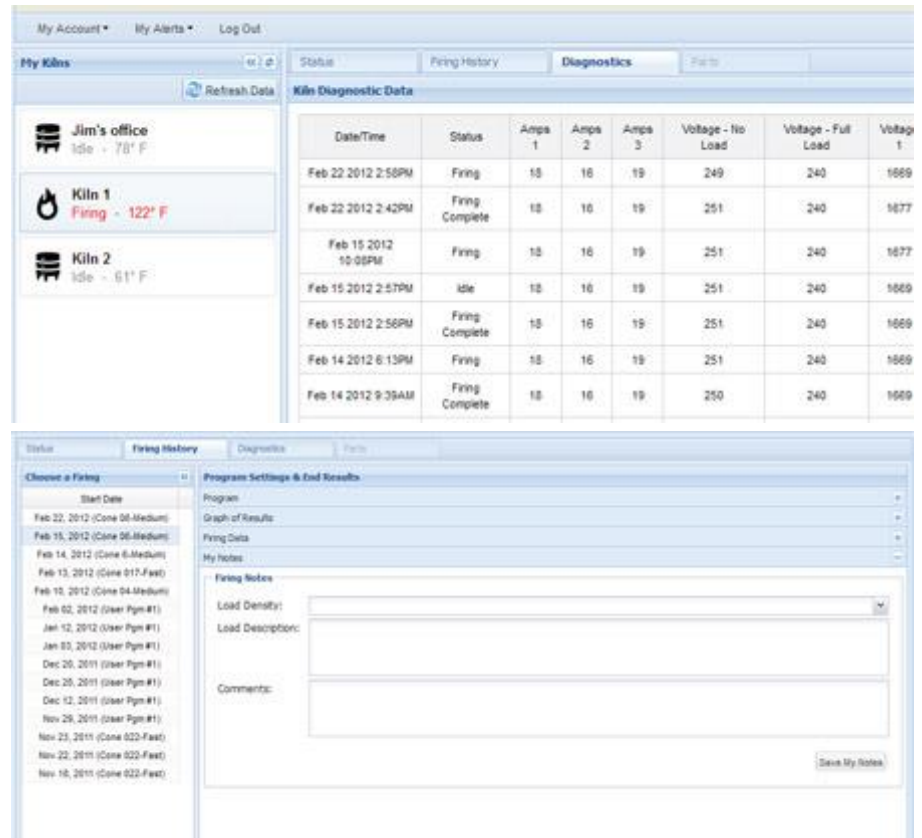
- Current Temperature
- Graph of Firing
- Current Program
- Graphs of Every Firing
- Programs Run
- Start and End Times

Know what your kiln is doing at all hours of the day no matter where you are. You can check the current temperature, view a graph of the firing, even check multiple kilns. The peace of mind you will gain from knowing your kiln is safely off is invaluable.

### Firing History

- Graphs of Every Firing
- Programs Run
- Start and End Times
- Firing Costs
- Firing Notes
- Performance

All of your firings are logged on the server so you can go back and check your notes to see what has worked in the past. You can also monitor the costs of your electrical use for budgeting purposes.



## Diagnostics

- Amperage Readings by Section
- Voltage Readings

Checking the amperage and voltage of your kiln is necessary at times in order to diagnose problems and anticipate maintenance. This can be expensive to hire a professional. With KilnLink all of that data is logged without even having to open the control box.



## Why Should My School Buy KilnLink

### Save Time And Gain Freedom

It seems everyday our schedules get tighter and tighter. Most teachers are required to monitor their kilns. KilnLink gives teachers the freedom to know what is going on with their kiln without having to go to the kiln room. That means more time with the students and more freedom for the teacher. Often times it is not realistic to keep a teacher at school for the entire length of a kiln firing. KilnLink can keep Ceramics a viable option for schools. Art Coordinators can even be authorized to view all the kilns in their district.

### Save Money And Down Time

Kiln Maintenance can be expensive and unpredictable. With KilnLink Skutt technicians can pull up all the data they need to diagnose your kiln and avoid multiple trips from your kiln repair contractor.

Your contractor can also be authorized so they can evaluate each kiln for future maintenance and handle problems before they happen.



## KilnMaster Touchscreen Controller Upgrade

The New KMT Controller Upgrade Kit (*Not Compatible With KilnSitter Kilns*) The KMT Upgrade Kit allows you to upgrade your existing KM "Touchpad" with the new KMT Controller giving you a Touchscreen Interface that is much like your Smartphone. It has **built in WiFi** which allows you to upgrade the firm ware whenever we come out with a new feature (or heaven forbid have to fix a bug). So, in essence you have a new controller for the life of your kiln. It also comes with a **free App** that allows you to monitor your kiln from wherever you are.

Checkout some of the features and how to install it using the videos on our website.





## APM Elements



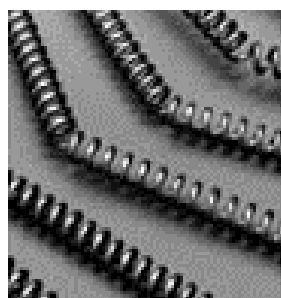
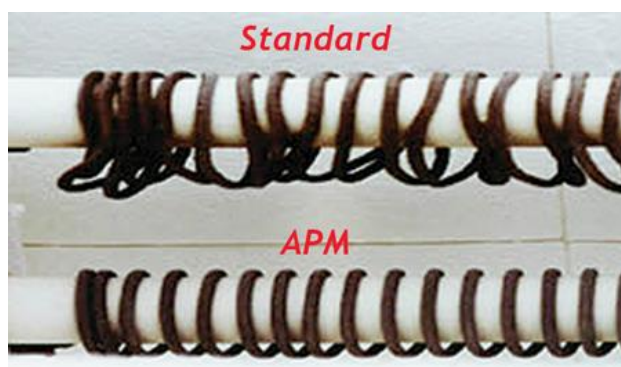
### Why You May Want APM Elements

Let's start first by saying that APM ELEMENTS ARE NOT FOR EVERYONE. APM Elements are made of almost exactly the same material as our regular elements, the difference is how they are made. With APM elements they grind up the extruded material and then re-melt it and extrude it again. What this does is give it more dimensional stability (it doesn't sag or creep as easily) at high temperatures.

Elements are more likely to sag and creep when you are firing to, and holding at high temperatures. This can significantly reduce their effective life. So, if you are working with Crystal glazes or are consistently firing to Cone 10 you will be very pleased with the added life of the elements. If you are mostly low firing (Cone 04) you will not experience any benefit.

### Order The Correct APM Elements For Your Kiln Ordering APM Elements With A New Kiln

If you are ordering a new kiln with APM Elements just let your distributor know and we will make sure we install them in the factory. For pricing please consult your distributor.



### Ordering Replacement APM Elements

For pricing on individual replacement elements please consult your Skutt Distributor for accurate up-to-date pricing. Remember, most Skutt Kiln models have balanced elements so there are several types of elements in each kiln designed to place in specific positions.

## Zone Control

### How Does Zone Control Work



Zone Control kilns have a thermocouple in each section of the kiln and cycle the power to each section on and off semi-independently as if it were an individual kiln. For example, lets say you have a 3 section kiln and the bottom section is firing a little cooler than the middle and top section. With zone control turned on, the controller will turn off power to the middle and top sections until the bottom section has caught up and then turn the power to all 3 sections back on. This ensures that the temperature difference between the sections never gets to great.

Zone Control cannot easily be added later since it requires the changing of several internal components therefore it is suggested that you add it when you order your kiln. It is not available as an upgrade on all models. The reason for this is that the kiln needs to have a minimum power rating known as the loss to watt ratio in order for the kiln to keep up with the program when sections are turned off to balance the temperature. Consult your distributor to find out if zone control is available for your desired model. You may also use the Build A Kiln web tool to find out if it is available.

## Pros And Cons

Zone control is not recommended for all applications. Like many things in life, there are pros and cons to zone control. We computer balance all of our elements. Kilns lose most of there heat through the lid and the slab. This is why we use hotter elements in the top and bottom of the kiln and cooler elements in the center. This makes most of our kilns fire extremely even without the need for zone control. There are times however when you need the exact control Zone Control can offer.

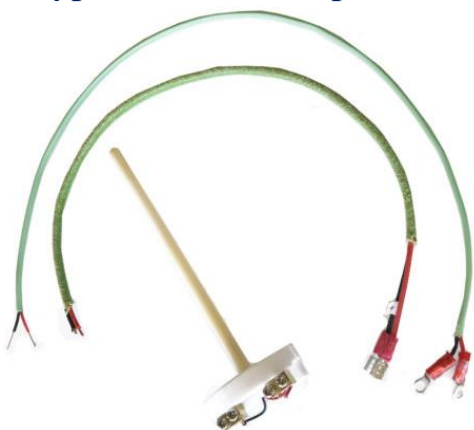
### Pros

- **More Even Firing Top To Bottom** – Often necessary when firing very tall pots or working with extremely sensitive material like thick glass projects.
- **Your Friends Will Think You Are Really Cool** – Do not discount this. Your cool factor will go up like 10 fold.

### Cons

- **Longer Firing Times** – Because the elements need to cycle off more to retain uniformity, your firing times will be extended.
- **Shorter Relay Life** – Standard relays (Not Mercury relays which are standard on all PK kilns) will cycle more often and therefore have a shorter life.
- **More Thermocouple Maintenance** – Well, there are 3 so you do the math. It is really important to use cones in every firing to monitor the accuracy of the thermocouples. If one starts to go before the others it can actually make Zone Control fire your kiln UNEVEN.
- **Shorter Element Life** – At high temperatures it can be difficult for the elements to keep up with the program when they start to wear. Therefore you will most likely get an error message that shuts down the firing sooner in the life of the elements then if you did not have Zone Control. You can turn Zone Control off and milk a little more life out of them.
- **More Difficult to Diagnose Problems** – Since more is going on during the firing often times it makes troubleshooting more difficult but not impossible.

## Type S Thermocouple



Most all of the kilns that leave are factory are equipped with a Type K thermocouple. Type K thermocouples are accurate and inexpensive. The down side to Type K thermocouples is that they wear out and they wear out faster when exposed to extreme conditions. Type S thermocouples can virtually last forever. The reason for this is that they are made of platinum which does not degrade under most atmospheres and has an extremely high melting point. This leads us to one of their downsides, they are expensive...**BECAUSE THEY ARE MADE OF PLATINUM!!!**

They are mostly in scientific settings and when they are constantly exposed to harsh environments like those that Crystal Glaze Artists expose them to. I know what you are thinking “If I go ahead and upgrade now, it should pay for itself over the life of the kiln from not having to replace thermocouples”. That may be true...if you don’t break it. Because it is made of very expensive Platinum, the wire used to construct the thermocouple is very, very thin. On top of this, it is housed in a fragile high alumina cover. If you hit it with a shelf, it’s game over. If you do make the upgrade, you may become the full time kiln loader if you are not already.

## How To Upgrade

When you change from a Type K thermocouple you need to do several things:

- Change ALL of the thermocouple wire to Type S thermocouple Wire. Their should be two pairs of positive and negative wires; one going from the thermocouple block to the kiln side of the terminal strip and the other going from the backside of the terminal strip to the controller.
- Change the setting on your controller to the type S position. If you cannot reconfigure your controller you may need to invest in a new one. All Skutt controllers are configurable but depending on the age, the process can be different.

If you fail to do either of these two things your kiln could severely over fire.

## 3 Inch Brick

### Why You May Want To Upgrade Your Kiln With 3 Inch Brick



At Skutt, we use two different brick thicknesses to construct our kilns, 2.5" and 3". Some of our models come standard with 3" brick (All 1227 and 1627 models) because we need the added insulation for optimum performance given the chamber size, the power available, and the element design. Other models (not all) have 3" brick available as an optional upgrade.

On some models, like the KM1027 208V 1PH, upgrading to 3" brick will raise the Cone rating from Cone 6 to Cone 10. On other models, like the KM1027 240V 1PH, the power supply

available (240V) already makes it a strong Cone 10 kiln. What you are gaining with the upgrade is energy efficiency and sometimes element life. With the added insulation the kiln does not have to work as hard to achieve peak temperatures so the elements are happier and the power meter spins a little less.

It is hard to say exactly how much you would save on your energy bill since it depends on your particular firing habits but on average of 15% is a reasonable estimate.

There are a few downsides. The first is, you lose one inch of shelf space on the interior of your kiln since the brick is thicker.

The second, which some people do not view as a negative, is that the kiln takes longer to cool. Artists working with high fire glazes like this because often times they slow cool their glazes anyhow.

Unfortunately, the kiln still cools very fast during this range so in order to achieve the rich micro-crystal affect they like in their glazes, they will still have to program a slow cooling ramp. The only advantage is that the kiln may not need to cycle on as much to slow the cooling. Where the kiln cooling is really slowed down in its cooling is between 1000F and room temperature.

Again due to individual firing habits it is hard to give an accurate estimate of how much longer it will take but if you are in production it could be the difference between being able to turn a kiln load in a day and not being able to.



## How To Upgrade

Upgrading an existing kiln is obviously not practical so if you want 3 inch brick you need to order it when you order your kiln. If a model has the option of being upgraded to 3 inch brick you will want to choose the model name with the “-3” at the end of the name (Example “KM1027-3”). use the chart to determine if upgrading is an option for your desired model.

Ceramic Kiln Models	Upgrade Options	Glass Kiln Models	Upgrade Options
16F	Standard	FireBox 14	Standard
14F	Standard	FireBox 8	N/A
1627	Standard	818-3CR	Standard
1231	Standard	1414	N/A
1227	Standard	1214	N/A
1222	Standard	1014	N/A
1218	Standard	814	N/A
1027	Optional	22CS	Standard
1022	Optional	HotStart	N/A
1018	Optional	706	N/A
822	Optional	10F	N/A
818	Optional	Mini Scarab	N/A
818P	Optional	Scarab	N/A
714	N/A	Scarab XL	N/A
614	Standard		
609	NA		
GlazeTech	Standard		



## Why You May Want To Upgrade Your Kiln With PK Power



- Maximum Cone 10 Power on Large Kilns Which Will Never Struggle to Get to Temperature
- Mercury Relays Which Won't Fail
- Ultra Heavy Duty Wiring and Connectors to Handle the Power
- Micro Balanced Elements for Even Firing Top to Bottom

The PK stands for "Production Kiln" and that is exactly what these things are designed for. We originally designed them to provide a Cone 10 option for our 1227 kilns but soon found out that the Ceramic Production companies were buying them like hot cakes. Even if they were low firing, these companies appreciated the **low maintenance, fast turn around times, and minimal downtime** associated with these units.

### How To Upgrade

We currently offer 3 PK Models, KM1227-3"PK, KM1231-3"PK, and the KM1627-3"PK. Make sure the model you choose ends with a "PK" in the model name. Since these kilns are so powerful they draw a lot of amperage and therefore require a very large breaker and expensive heavy gauge wiring. Be sure that you have the power available at your location to run this kiln before you order it. They are direct wire kilns only.

The KM1627-3"PK requires a breaker that is extremely large, so for this unit we offer a Lower Fire (Cone 1) version.

<b>1627-3"pk*</b>	1	240
<i>Cone 1 (LF Model)</i>	1	208
<i>available at same price.</i>	3	240
<i>ZC not an option.</i>	3	208
<b>1231-3"pk**</b>	1	240
	1	208
	3	240
	3	208
<b>1227-3"pk**</b>	1	240
	1	208
	3	240
	3	208
<b>1227-3"</b>	1	240
	1	208
	3	240
	3	208
+ Blank Ring		

### WARRANTY



- Unlike most warranties, ours covers **Parts AND Labor**.
- Never Pro-Rated.
- Serviced by the most extensive, knowledgeable and talented distributor network in the industry.
- Backed by a company whose mission statement is "We help you make great things". When your kiln is down, you can't make great things.

## SHIPPING

Weight listed is only an approximation. Actual weight will vary due to humidity levels and varying brick density.

Weight(lbs): 88

Skutt Kilns should arrive fully assembled.

Packed with the kiln you will find the following items:

- Kiln Stand
- Instructional Video
- Stand Feet
- Extra Thermocouple (unless Type S)
- Peep Plugs – attached to the kiln stand, enough to fill each peephole on your particular model.

