

## Plug and Go Kilns

The term “Plug and Go” refers to kilns that can be powered from a UK domestic 13amp ring main through a standard 3 pin plug, they have a maximum power of 3kW. For many potters a “Plug & Go” kiln is a popular choice and, sometimes, it is the only option where access to a higher power source is not available.

### Plug & Go sizes.

As the power available is relatively low so the size of Plug & Go kilns is limited. The ability to reach higher temperatures is reduced as the size increases; the maximum size is usually 60 litres (2.1cubic feet) but at this size the maximum temperature that can be consistently achieved is lower, in the region of 1200°C, (cone 5). The most popular size is 40 litres (1.4cubic feet), large enough to fire quite big pots or around 10 mugs and small enough to be able to consistently achieve stoneware temperatures. Smaller sizes of kilns, around 20 litres (0.7cuft) can comfortably fire to high stoneware temperatures, 1300°C (cone 10), they make excellent test kilns or production kilns for smaller items such as jewellery. Manufacturers of 3kW kilns specify temperatures differently, some quote 1320°C as the top temperature, this is really more of an indication of the rating of the kiln’s insulation and elements than a consistently achievable temperature which is also quoted, for example as 1230°C. It is important to discuss your requirements for top temperatures with Potclays technical team before placing your order.

### Voltage Variation

3kW Kilns running off a 13amp plug use the maximum power that the ring main can provide unlike general household appliances such as kettles or washing machines, even electric heaters rarely exceed 2.5kW. This makes kilns vulnerable to voltage drop. We assume that we have 230 volts, however the UK tolerance is -6% + 10% giving a permitted range of 216 volts to 253volts. If your supply is in the lower end your 3kW kiln will struggle to reach higher temperatures. Kilns running off larger power sources such as 20amp to 50amp “cooker sockets” are rarely affected by voltage drop. Voltage drop can also occur when the kiln is connected to an extension lead, standard garden extension cables are usually 1.5mm<sup>2</sup>; where a kiln is taking 3kW constantly it may cause voltage drop and also potentially overheat the cable. If it is essential to use an extension lead change the cable to 2.5mm<sup>2</sup> or 4mm<sup>2</sup>.

Where the voltage is on the high side you may notice that the plug becomes hot during the later stages of the firing where the kiln is constantly pulling power; it is essential that you use a good quality, fused 13amp plug and that both the plug and socket are correctly wired with tight connections. If a plug overheats severely, it can become blackened and give off a burning smell however it will be momentary as the fuse and the ring main protection will trip turning off the power.

### Ask the Team

**If you would like to discuss Plug & Go kilns in more detail, please call Potclays technical team.**