Temperature Gradient Kilns

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The range of Temperature Gradient Kilns available from E.J.Payne Ltd is manufactured in Stoke-on-Trent and has become an essential part of the Ceramic Laboratory. Traditional kilns have incorporated single chambers with 9 measuring points in a single muffle. However modern demands have led to the introduction of multi-chamber gradient kilns, so that each individual chamber can be independently programmed.

Single chamber (Fixed Gradient) kilns – TG.9F / TG.9FW

On the right is the TG9F. The purpose of this gradient kiln is to obtain a series of temperature readings from samples during a single firing cycle. The style of kiln is ideal for trials of ceramic glazes, colours and clay bodies, insulators and sanitaryware etc.

In this style of kiln a fixed gradient of approximately 20/25°C would be apparent between each of the nine measuring point. Overall there is an approximate gradient of 180°C across the nine thermocouples between the "hot" and "cold" ends.

As standard the TG9F kilns incorporate a TCS2 microprocessor controller, able to store 99 programs with up to 99 segments per programme, offering total flexibility in the firing curve.

A chart recorder can be fitted as an optional extra (as shown)

TG9 F

Kiln Type	Muffle width	Muffle depth	Muffle height	Max. temperature	Power rating
TG9F	65mm	460mm	50mm	1,300°C	3kW
TG9FW	200 mm	460 mm	50 mm	1,300°C	5.5kW

Multi Chamber (Variable Gradient) Kilns – TG.3 / TG.6 / TG.9 Mk.IV & TG.6XL Mk.IV

In keeping with today's technological advances the TG variable gradient kilns add another dimension to ceramic trial firing. These kilns allow each chamber to be programmed to different top temperatures whilst maintaining the pre-programmed firing curve giving total flexibility and outstanding results.

TG.6 Mk.IV

The high grade spiral wound elements are mounted on tubes.

Each chamber has its own dedicated thermocouple and control relay situated in the back of each chamber that is linked back to the TC.S2 / TC.M2 microprocessor control system. This allows a programmable and flexible gradient between successive chambers.

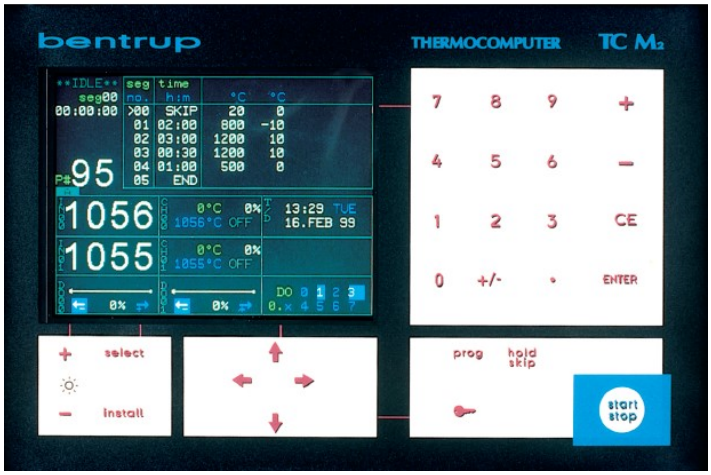
Available as either 1,300°C or 1,400°C maximum temperature models—ideal for trials with high-fire porcelain bodies.

The Mk IV TG kilns can be fitted with either a TC.S2 or TC.M2 controller (TC.M2 only on 9 chamber kiln).

The TC.S2 and TC.M2 Bentrup controllers will allow storage of up to 99 programmes, with up to 99 segments per programme, and can simultaneously display the temperatures in three adjacent chambers.

TCS.2

TCM.2

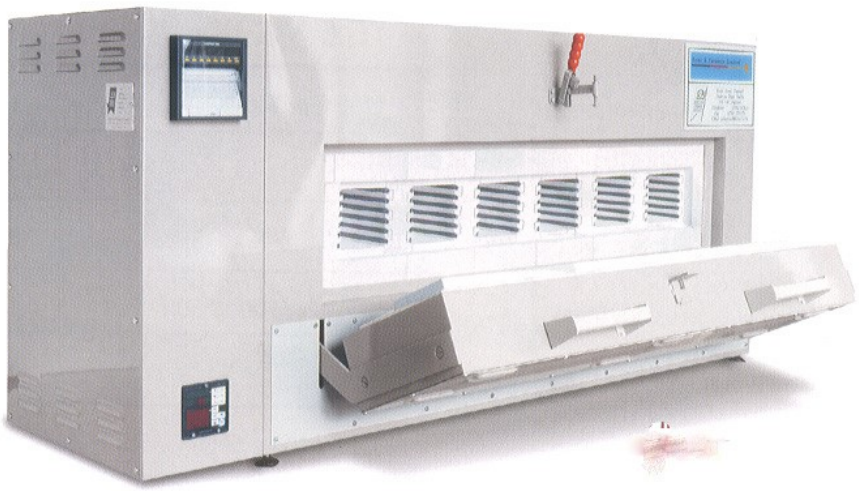


These controllers allow the kilns to be PC controlled, for data logging and data acquisition under a Windows environment.
(This option must be stated at time of order as it requires extra hardware to be built into the kiln)

Kiln Type	Individual chamber width	Individual chamber depth	Individual chamber height	Maximum temperature	Number of chambers	Power (kW)
TG.3 Mk.IV	82mm	125mm	70mm	1300°C or 1400°C	3	4.5
TG.6 Mk.IV	82mm	125mm	70mm	1300°C or 1400°C	6	9
TG.6XL Mk.IV	200mm	200mm	150mm	1300°C or 1400°C	6	18
TG.9 Mk.IV	82mm	125mm	70mm	1300°C or 1400°C	9	12

TG.6 Frit

Specifically designed for **frit trial firing**, the TG.6 Frit is available in two maximum design temperatures, 1300ºC and 1400ºC. Both kilns incorporate the following features essential for frit trials.



6 individual chambers
Individual thermocouple and relay to each chamber
Programmable flexible gradient between individual chambers
Spiral wound kanthal elements
TCM2 microprocessor controller managing the firing process
Thermocouple automatically lowered into crucible containing sample frit on closure of the door

Optional Equipment

Stand
Software/hardware for data logging to PC (Windows XP)
Chart recorder

Kiln Type	Individual chamber width	Individual chamber depth	Individual chamber height	Maximum temperature	Number of chambers	Power (kW)
TG.6 Frit	200mm	200mm	150mm	1300°C or 1400°C	6	18