LOW TEMPERATURE CASTING SYSTEM - LT1

Operating Instructions

PLEASE READ COMPLETELY BEFORE USING THE SYSTEM

After unpacking the unit please take a few moments to familiarise yourself with the various components.

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WARNING:- Never attempt to operate the Pouring Lever before the metal in the pot is molten.

Never leave the crucible pot more than 50% full when switching off the unit.

Always ensure that the crucible pot is empty before using a different alloy. NEVER MIX PEWTER AND MCP ALLOY.

1. Starting The Unit

Place the separate tray on a level surface near to a 230V outlet socket.

Place the Low Temperature Casting System (LT1) in the tray so that the front opening flap opens within the tray.

Plug the unit in to the 230V power supply.

On first use the unit may generate a very small amount of fumes as any protective oil films are vapourised.

No extraction is required in regular use as the unit does not generate fumes.

2. Loading The Unit

Open the swivel lid marked Hot Area on the top of the unit.

Select the metal you wish to use for making moulded items. The unit works with either pewter with a melting point of 245ºC or with MCP alloy with a melting point of 137ºC. Both of these products are free of any Lead content.

The unit as initially supplied by Flamefast is complete with approximately 1Kg. of Pewter.

The availability of the MCP product is designed to allow the use of moulds made from materials such as soap that may not stand up to the higher temperature of molten pewter.

Do not mix Pewter and MCP in the melting pot as the resultant mixture will have an intermediate melting point. This will result in the need to use the higher temperature setting (see below) to melt the metal, which might damage more delicate mould materials.

Place the selected metal in the pot. The pot, when full, will hold just over 2Kg of metal although you will not be able to put this weight of cold metal in initially. In the case of Pewter, just stand the sticks of Pewter in the bottom of the pot. As the bottom of the sticks melt, they will shrink down into the pot. If you require more molten metal than is provided by the initial number of sticks, just add more sticks.

3. Turning The Unit On

Turn on the Power On switch on the side of the unit. The centre of the switch will illuminate and the fan and internal light will come on.

Switch on the Heater On switch on the side of the unit. The centre of the switch will illuminate and the heater will switch on.

Select High or Low on the selector switch on the side of the unit. Select High when using Pewter and Low when using MCP. The centre of the switch will illuminate. This light will go out when the correct operating temperature is reached. The heater is thermostatically controlled and the light in the centre of the selector switch will come on and go off as the heater cycles on and off.

4. Using The Unit

From cold, and depending on the amount of metal in the pot, the unit will take 10-15 minutes to heat up and melt the metal in the pot.

During this time, the mould(s) to be used can be prepared for use.

One mould is supplied with the unit. Alternatively, other moulds can be purchased from us or can be made using CNC techniques, by making a model and preparing a clay mould, etc. (separate details are available). When making your own moulds, please ensure that the external dimensions are approximately 100mm Long x 100mm High x 25mm Thick

For standard sized moulds, place the mould in the moulding trough. To ensure a tight fit so that the two halves of the mould are held firmly together, use the spring adjuster and press it in between the mould and the wall of the moulding trough.

Slide the assembled mould trough along the top of the front opening flap into the open front of the unit. Place the mould hole under the pouring spout beneath the melting pot.

When the metal is molten, the surface of the metal will shimmer in the pot. Pouring can now commence

5. Pouring Metal

With the “approach hole” under the pouring spout, gently lift the Pouring Lever and let metal run into the mould until the “approach hole” is full of metal. Release the Pouring Lever.

The pouring trough can now be withdrawn from the unit.

CAUTION – At this stage the metal in the mould will be very hot and must not be touched.

When the metal in the “approach hole” has visibly set, the mould can be removed from the pouring trough.

After about two minutes the mould can be separated but care must still be exercised as the metal will still be quite hot to touch.

The mould can then be re-inserted in the pouring trough and another item can be cast. (If a faster rate of production than about one pour every 2-3 minutes is required, then it is recommended that additional moulds are purchased or manufactured).

6. Shutting The Unit Down

When pouring has been completed it is not necessary to remove any remaining metal from the melting pot unless the pot is more than 50% full. In this case run off the excess metal into a suitable receptacle. The surplus metal can be re-used next time (but see Section 7).

Always ensure that the crucible pot is empty before using a different alloy. NEVER MIX METALS

Turn off the Heater On switch. The light in the centre of the switch will go out.

CAUTION – Do not move the unit until the metal in the pot has solidified. This may up to about 20 minutes depending on the amount of metal left in the pot. If the Power On is left on the cooling fan will continue to run and the cooling process will be faster. However, it is not necessary to leave the power on to the unit as long as the unit is not moved until the metal has solidified.

Unplug the unit from the 230V socket.

7. Regular Maintenance and Operating Tips

- Familiarise yourself and your students with the sensitivity of the pouring arm control.

- Do not over use the metals. Do not re-melt the same metal more than 5 times. This is due to impurities being added to the metal from external sources which can hinder the pour or start to block the nozzle, which may lead to leaks. Spare metal from the "approach hole" of moulds or spills can be re-used by returning it to the melting pot. However, this re-use can introduce impurities which can reduce the number of times a charge of metal can be re-melted. Impurities can come from sources such as mould materials and grease on hands.

- Periodically use the scraping spoon supplied to remove the "scum" on the top of the molten metal in the pot.

- Periodically, it is good practice to empty the pot completely allowing the removal of any unwanted impurities. The pot should be completely emptied when the same charge of metal has been re-melted 5 times. To reduce wastage of metal, it is recommended that moulds should be made during the final melt so that only a small amount of metal remains to be discarded.

- When the pot is empty but still warm, pass a piece of small gauge wire into the pouring spout to aid cleaning. Remove the wire before starting to use the unit again.

- Occasionally the unit may drip molten metal from the pouring spout. This is due to small flecks of solid material settling on the mating surfaces of the pouring spout. Using a small screwdriver to turn the screw slot on the top of the lifting lever cures the problem. **This can only be done when the metal is molten.** Turn the screwdriver several times in each direction until the dripping stops.