Centricast

Centrifugal casting was developed in the 1950's as an alternative to the very expensive die casting process used in the modelling industry.

Molten metal is poured through the centre of a spinning mould enclosure which, ensures that the molten metal is evenly spread all over the mould surface.
This improves overall casting quality and reduces the risk of occlusions.

Centricast has been available from Alec Tiranti since the 1970's, the machine was originally designed for 160 mm mould plates, but in the 1990's a larger Centricast unit was introduced with the larger 250 mm diameter plates and a 300 mm square enclosure.
This unit became standardised in 2010 and we now supply a choice of 160 or 250 mm diameter mould plates to suit the larger Centricast 300 unit - https://tiranti.co.uk/product-category/casting/centricast/c300-centricast-machine .

The Centricast system uses a simple steel enclosure with an integral motor driving a spider onto which a pair of plates can be mounted.
The plates sandwich a pair of rubber moulds, the metal or resin is poured through a hole in the top of the steel container and the top most spinning plate, the motor spinning the moulds ensures that the metal or resin is passed equally around the mould using centripetal force.
The system suits white metals in particular, but can also be used for resins too.

This simple system has proved very popular with model makers and model engineers all over the world because it is compact and cost effective.
The moulds can be poured using Tiranti RTV 101 high temperature silicone - https://tiranti.co.uk/product-category/mouldmaking/silicone-rubber/rtv-101-silicone-rubber/ - these moulds are easy to manufacture and ideal for making small to medium sized components.

Centricast allows repeated casting of small to medium sized components to a high quality with minimal waste – the centrifugal operation evenly distributes the molten metal throughout the mould, making it ideal for production of small model components, model figures in particular.

Tiranti also supply a very helpful booklet covering Silicone, mouldmaking and the use of the Centricast unit - https://tiranti.co.uk/products/silicone-rubber-booklet/

Tiranti RTV 101 is a free flowing silicone rubber with a heat inhibitor to suit temperatures upto around 300 degrees centigrade. It is possible to gain good quality moulds with a high degree of definition even at very small scale, ideally suited to railways modelling at 0, 00 and even N gauges. Centricast is widely used for white metals modelling of cars and military figures and is ideal for casting thin panel components too.

We would recommend that you also purchase one of our specialist metals melting pot to use in conjunction with the Centricast - https://tiranti.co.uk/products/te5-metal-melting-pot/
The melting pots have an accurate thermal controller which allows you to setup and melt different metals to the optimum temperature for pouring.

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Alternatively you could opt for the Solder Melting Pot - https://tiranti.co.uk/products/solder-melting-pot/ - this is a cost effective alternative but it doesn't have a temperature controller.
So it is recommended that you have a metal thermometer, to accurately monitor the temperature of the molten material and control the temperature.

Tiranti also supply a C-178 cast iron ladle for white metals pouring, this ladle can be placed in the melting pot along with the white metal and will heat up and sustain temperature to pour the white metal under full control.

Setting up a Centricast unit is really simple, plus the unit comes with full operating instructions for both the machine itself ad also on mouldmaking – this combined with the Silicone Rubber Booklet mentioned previously gives the operator enough information.

Often the initial cast into a mould can be less successful than an immediate second pour – this is because the moulds are now warmed through.
This can be avoided be simply heating the moulds prior to casting – you can do this either by immersing the moulds in hot water (dry them thoroughly afterwards), blowing over them with a hair drier, or simply placing them in an oven at around 100 degrees C.
You will find that the heated moulds take the molten metal much better than cold moulds.

Moulds should be cleaned regularly and then dusted with talc – talc works as a brilliant release agent for white metals, prolongs mould life and doesn't tend to clump into mould detail (if dusted lightly).

The most important thing with a Centricast machine is cleanliness – always try to keep the machine as clean as possible.
Clean the machine after each use, remove any flashing or spoil and add it back into the melting pot after casting.
You can clean the machine using WD 40 on a soft cloth.

The melting pots too should be cleaned out regularly – do not mix metals together out of routine (unless this is intentional of course) – different white metals tend to mix together quite well as long as you remove any spoil.
Always skim the top of a molten pot before taking metal from the pot for casting – the scum and detritus can cause the resulting casting to be of poor quality.
Molten white metal should be shiny and even finished, any discolouration is normally associated with overheating or separation of the metal alloy.

Once set up a Centricast and Melting Pot will give years of service with minimal care and servicing, Alec Tiranti can also carry our repairs and service work too from our base in Thatcham.

We offer a couple of useful booklets covering the Centricast, Silicones, White Metals and resin casting for a range of model making and prototyping applications.

Our staff at Thatcham and Warren St can offer help and advice as well – we are always happy to assist with any casting applications.