



EnvisionTEC 3D printers support spincasting

EnvisionTEC produces superior and precise 3D printers for many different industry sectors and a wide range of applications. One such application is to produce highly detailed models with a smooth surface finish in a high temperature resistant material, that can be used as a master pattern to produce vulcanized silicone rubber moulds for metal spin casting.



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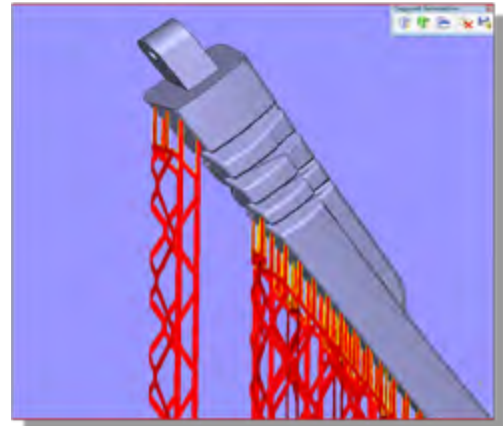
www.envisiontec.com

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Firstly the parts were designed in 3CAD and supports are added automatically in Magics. This ensures the parts have the optimum surface finish with little or no finishing required.



Parts are then sent to any of EnvisionTEC printers running HTM140, this is a high strength high temperature resistant material that's ideal for hot vulcanized rubber mould manufacture.

Perfactory® Ultra

Perfactory® Mini



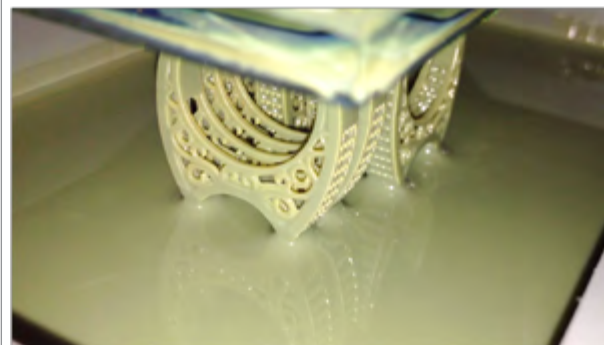
Perfactory® micro



Perfactory® Aureus



The parts are printed in a matter of hours and once finished they can be cleaned and dried in a matter of minutes.



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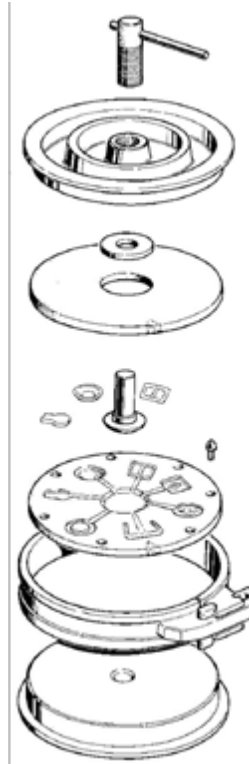


Mold Production

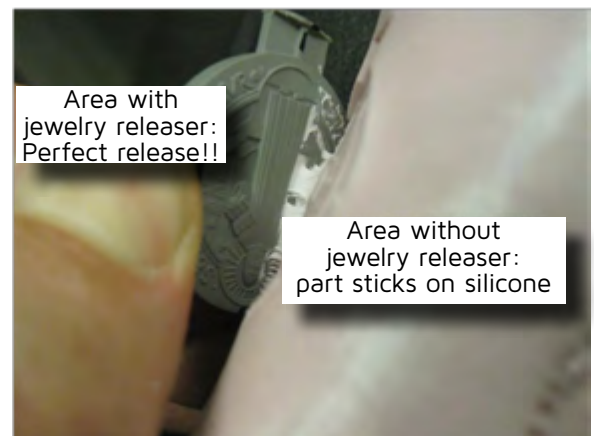
First select an appropriate silicone rubber, for the purpose of our trial we used Nicem SB5099 which is available in various precut sizes to suit their mold frames



Then dust the inside of the mold frame with Nicem Talc to allow release of the rubber from its frame after vulcanization. Place first half of Silicone rubber mould into frame.



Coat HTM140 parts with Nicem release agent (this is very important as parts will stick to the rubber without it)!!!



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Press into the rubber mold into a position in the mould that allows the material to flow evenly during the casting process.



Coat surfaces of the lower silicone rubber mold in talc again and place upper silicone rubber onto this and master patterns, coat upper silicone surface and assemble mould frame.



Place mold frame into the Vulcanizer and heat to 90C for 1 ½ hours.



Once vulcanized the mold can be open and models removed.



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The mold is reassembled and placed in centrifugal casting machine. The metal is heated to its melting temperature in furnace and poured into the mold as it is spinning.

Once cooled the mold is taken out of the casting machine and the parts are removed.



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And for use of Nicem's products please contact nicem@nicem.it