

Tin figurine manufacturer Artig relies on the latest technologies such as 3D printing from EnvisionTEC to bring their customers' models to life.



Case Study



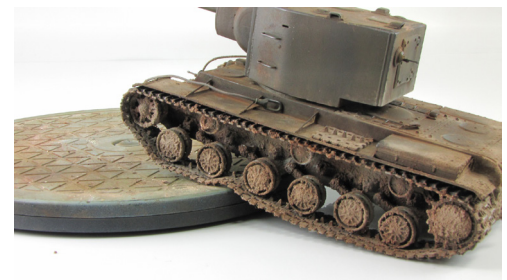
KV2 Tank Replica | Perfactory® Mini ML

For over 20 years, Artig has been manufacturing tin figurines and miniatures. They provide full tin figurine-on-demand manufacturing services such as modeling, printing, molding, casting, assembly and painting for their customers as well as producing their own high detail product line. Artig employs the latest 3D technologies such as 3D scanning, 3D modeling, and 3D printing, in order to provide the best possible reproductions.

One of their customers is Mini-Koleso, who wished to produce a limited series of scale models of the World War tank KV-2 in 1:35 scale. The finished product was to be cast in tin alloy. Minikoleso began by providing reference materials such as real life photos and technical documentation from archives and from other sources. Artig was able to use this information to create the 3D computer model with all of the components separately modeled using Blender.

Artig chooses to use 3D print using EnvisionTEC's Perfactory® 3 Mini Multi Lens 3D Printer for several

reasons. First of all, they are able to produce the best possible surface finish so that there is no need for post-processing except for the removal of supports. All of their efforts can be concentrated on recreating the finest details, like bolts and welding seams without any fear of these details not building or of them being sanded away during growth lines removal as was necessary with other technologies.



Also of great importance is EnvisionTEC's selection of materials - Artig uses the parts they build directly in their molding process as masters. Some of the parts built were photo etched, not because their EnvisionTEC 3D Printer was not capable of building the small details, but because the casting technology was not able to cast these extremely thin-walled parts.

Artig employs spin-casting as their main production technology, and one to which EnvisionTEC's materials are very well suited. All of the parts are molded into silicone discs using hot vulcanization processes at 90°C. Most of the casting pieces are organic shaped models, which are more for-



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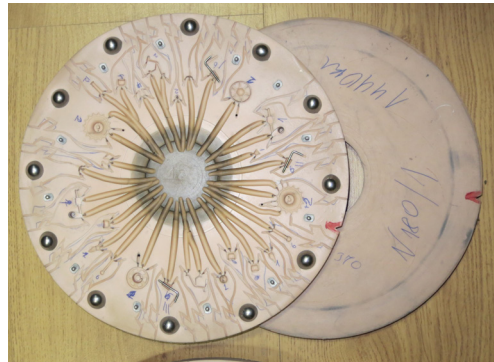


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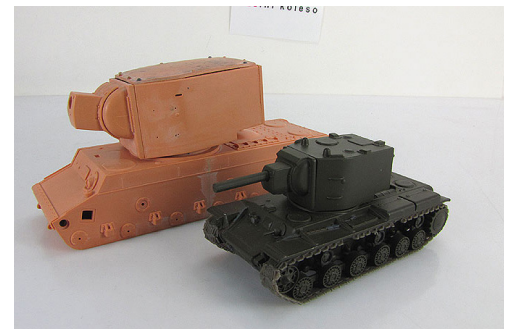
giving to fitting precision, but with vehicles such as the KV2 tanks, all parts must be as precise as possible to the master's dimensions.

step was to select the correct alloys and casting parameters to complete the production pieces.

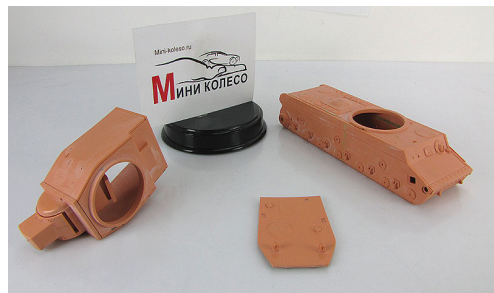
Mini-Koleso's limited edition series was limited to 50 scale models manufactured for their Rare Models category for the serious collector.



After all the parts were built and the supports removed, the next phase began - master assembly. Because of the superb accuracy achieved on their Perfactory® Mini Multi Lens, most of the parts fitted excellently with the very first prototype assembled. A few parts were then modified to improve the assembly process, which was very easy to do because of the convenience of the process of 3D modeling and printing. Once the final design was decided upon, the next



Artig is known world-wide for their excellence in producing high-class tin soldiers, and continuously expanding the range of historical miniatures. Their models of military miniatures follow the most reliable sources which indicate the true appearance of the figures and many are located in museum collections. The quality of their work is enhanced by the high quality results they achieve by using an EnvisionTEC Perfactory® Mini Multi Lens 3D Printer, which is why many other model makers and miniaturists such as Mini-Koleso turn to them for special projects such as the KV2 Tank Replica.



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