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Lost Wax Investment Casting Parts

SHENGFA Hardware is one of the largest lost wax investment casting parts suppliers in Ningbo China. By means of the lost wax method, high quality investment castings are produced with complex shapes and high dimensional accuracy. What's more, this investment method offers a great degree of freedom in design and material choice. Your specific requirements and demands can be involved into the castings. By our over 15 years long experience with the lost wax investment casting techniques, we can assure you that our lost wax investment casting parts we provide are the most cost-effective with high quality. Choosing the right manufacturing method for your product order is important. And choosing the right manufacturing business partner is also very important. Contact us to take your first right step.

What Is Investment Casting and its Process?

Investment casting (also known as lost wax investment casting) produces parts with fine detail and an excellent as-cast surface finish. Investment casting produces internal or external features, thin walls, and internal passageways to get to a near-net shape. These features and benefits lead to significant cost savings in material, labor, and machining compared to other metal casting processes. In investment casting, a detailed wax pattern of the finished part is created and mounted onto a wax "tree" that includes the metal delivery system (gates and risers). Then the tree is alternately dipped into a ceramic slurry and sprinkled with stucco material, and then allowed to dry. This process is repeated until a thick shell exists over the wax pattern.

The wax pattern is then melted, leaving a cavity within the stucco material in the shape of the pattern. Molten metal is poured into this cavity. Once the metal solidifies the shell is broken away through a shakeout process and the gating material is removed, leaving the finished parts, which are called lost wax investment casting parts.



Lost Wax Investment Casting Process

- 1 Tooling to create a wax mold is created from CNC cut aluminum or epoxy.
- 2 Product designers create a detailed wax model of the desired end product.
- 3 A model is mounted on a wax system of various risers and gates and covered with alternating layers of ceramic slurry and stucco.
- 4 Once the thick, multi-layered shell dries and hardens, the wax is melted to create a precisely shaped hollow.
- 5 Molten metals or alloys are poured into the mold and left to harden.
- 6 The shell gets broken to remove the precisely cast metal piece.
- 7 Any needed finishing services are performed, though oftentimes they may not be needed.

SHENGFA Hardware is a manufacturer and supplier of lost wax investment casting parts with over 15 years history. These castings are characterized by low surface roughness values and precise tolerances. Lost wax casting is recognized as the highest quality steel casting method available on the market, although it is one of the oldest manufacturing processes in history. There are a wide variety of parts, products, and components produced using lost wax casting or investment casting. The precision and accuracy of the processes have made them an ideal method for producing parts with thin walls, intricate details, and close tolerances. A high percentage of lost wax investment casting parts are general hardware, such as brackets, valves, and pump parts.

When To Use Lost Wax Investment Casting Parts?

- *External shaping and tight tolerances exist
- *Parts are shaped or non-symmetrical with fine detail
- *Multiple and/or intricate internal passageways in design
- *Excellent as-cast surface finish is required



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- *Wall thickness is too thin for sand casting
- *High upfront tooling costs relative to sand casting are acceptable
- *Low volume allows printed patterns to replace upfront tooling
- *Ongoing tool maintenance costs are not desired
- *Machining of internal passageways is not possible

Product Parameters

Material	Carbon steel, alloy steel, stainless steel, copper Alloy
Process	Investment (lost wax) casting + CNC machining
Casting dimension tolerance	CT7
Casting surface roughness	Ra 12.5 um
Casting weight range	0.1-90 kg
Casting Size	Max linear size: 1200 mm, Max diameter size: 600 mm
Machining Precision	Positioning accuracy 0.008 mm, Rep. position. accuracy 0.006 mm
Machining surface roughness	Ra0.8 ~ 6.3 um
Max Travel Of Spindle	1900 mm x 850 mm x 700 mm
Max Turning Diameter	830 mm
Material standard	GB, ASTM, AISI, DIN, BS, JIS, NF, AS, AAR
Surface treatment	KTL (E-coating), Zinc plating, Mirror Polishing, Sand Blasting, Acid pickling, black oxide, Painting, Hot galvanizing, Powder coating, Nickel plating.
Service available	OEM & ODM
Quality control	0 defects, 100% inspection before packing
Application	<ul style="list-style-type: none">● Aerospace and defense● Power generation● Automotive● Oil and gas● Space exploration● Medical/orthopedics● Agriculture● Construction



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- Commercial and consumer products