

What is Precision Casting?

Precision casting is a [lost wax casting](#) process. It is also called investment casting which is widely used for producing ferrous and nonferrous metal casting. The lost wax method of Precision casting is suitable for producing castings with complex shapes and high dimensional accuracy. Precision casting has excellent surface finish and dimensional accuracy. Its product has net shape or near net shape. And it can be suitable for low quantity request order. Additionally, in both design and material choice of castings, Precision castings has a huge freedom. It allows many types of steel or alloy steel for investment. So on casting market, Precision casting is the highest quality castings .

We are a China precision casting foundry located in Shandong. With precision casting process, we can cast nearly 300 alloys. Our metals include stainless steel, tool steel, carbon steel and ductile iron, aluminum, copper, brass, and other alloy steels. Precision casting is suitable for complex and detailed part designs, such as impeller. Because it uses lost wax ceramic shells. Its patterns were injection molded in advance. After pouring, it can be finished. If more perfect request, it can be made by machining and post treatment.

Precision casting also faces a cost of molding and time. For each casting producing, it requires a mold and one wax pattern. It will take more time and separated cost. So it is not good economic for low quantity products.

Precision casting has many process steps, so it will take more time for each casting. Next, it is the Precision casting process introduction.

Precision Casting Process

Step 1. MOLD DESIGNING



As per the drawing, our engineer will finish mold design. The mold is purchased from mold factory.

Step 2. WAX INJECTION



The wax is injected by machine. Wax design of the desired castings are produced by injection molding. This process is called patterns.

Step 3 . ASSEMBLY TREE



The patterns are attached to a central wax stick, called a sprue, to form a casting cluster or assembly tree.

Step 4. SHELL MAKING



The shell is built by immersing the assembly in a liquid ceramic slurry and then into a bed of extremely fine sand. Up to SIX layers may be applied in this manner. The shell will be dry in each layer making.

Step 5. DEWAX



Once the ceramic is dry, then heating. The wax will be melted out. The melted wax will be flow out from the shell.

Step 6. CASTING



In the conventional process, the shell is filled with molten metal by gravity pouring. As the metal cools, the parts and gates, sprue and pouring cup become solid casting.

Step 7. KNOCKOUT



When the metal has cooled and solidified, the ceramic shell will be broken off by vibration or knock-out machine.

Step 8. CUT OFF



The parts are cut away from the central spruce using a high speed friction saw.

Step 9. GRINDING



After the casting was cut off. The casting pouring part will be ground carefully.

Step 10. Inspection and Post Treatment.



The casting will be inspected by inspector as per drawing and quality request. If there is unqualified parts. It will be repaired and inspected again.

Step 11. FINISHED CASTINGS



After surface finishing operations, the metal castings becomes identical to the original wax patterns and are ready for shipment to the customer.

People like Precision casting, what advantages does it have? Why people choose Precision casting?

Perfect Surface Finish	The investment casting process provides far superior surface finish as compared to forgings and sand castings. Sometimes this is important and can avoid machining or other finishing operations.
Closer to finished part designs	Investment Castings provide near net shapes for manufactured parts, thus eliminating or reducing machining costs. Holes, undercuts, slots and other difficult detail that cannot be had with other processes can often be provided. An added benefit of near net shape is the savings on material,

	especially with expensive alloys such as nickel and cobalt alloys.
Tighter Tolerances	Due to the nature of the process, Investment Castings can be held to much tighter tolerances than sand castings or forgings.
Competitive Tooling Costs	Initial charges for the investment casting tooling are often less expensive than those for sand castings.
Thin wall castings	The investment casting process is capable of more reliable castings with much thinner walls than sand castings. Advantages include substantially less scrap rates and castings that weigh less due to the thinner wall capability.
Less casting defects	Being a cleaner process than sand molds, investment castings in general, provide a much higher percentage of defect free-castings.

China Precision Casting Foundry

With 23 years history, we have make a range of high grade investment castings. Our foundry is your [reliable supplier](#) for your precision cast parts. Precision castings from our investment casting foundry will be the highest quality castings.

Our business core is to provide quality precision castings with high working performance. Our lost wax casting process provides a large freedom in both design and material choice. Importantly, our engineering department will give you a complete casting proposal about product design, material choice, machining details, ect for your reference.