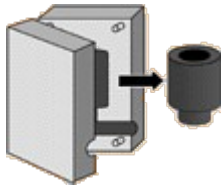


The Basics of the Investment Casting Process



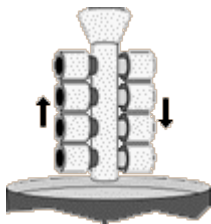
1. WAX INJECTION

Wax design of the desired castings are produced by injection molding. These designs are called patterns.



2. ASSEMBLY

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



3. SHELL BUILDING

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



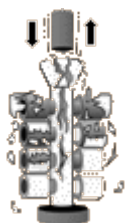
4. DEWAX

Once the ceramic is dry, the wax is melted out, creating a negative impression of the assembly within the shell.



5. CONVENTIONAL 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 one solid casting.



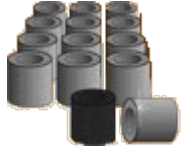
6. KNOCKOUT

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



7. CUT OFF

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



8. FINISHED CASTINGS

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