

Titanium rod and titanium alloy polishing method

1. Fine grinding

That is, the surface of [titanium and titanium-containing alloy](#) castings is ground using conventional diamond-like rubber wheels. The problem to be noticed during grinding is still not to cause the casting to generate heat, to cause abrasive damage on the surface of the casting, and to make the entire surface smooth and smooth.

2. Barrel grinding method

The so-called barrel grinding method is to put the processed castings, abrasives, water and additives into the barrel grinding tank. The grinding barrel generates rotation and vibration, which causes friction between the mixture of the abrasive and the processed casting to [smooth the surface](#). It is characterized by no dust pollution, low labor intensity, and no heat generation during conventional grinding. At present, there are commercially available barrel grinders and are used in [the polishing of abrasives](#) for titanium and titanium alloy castings, other metal castings and plastics. Tests have confirmed that the pk series of abrasives have the highest grinding efficiency, but [the surface roughness](#) is also the highest. Although the grinding efficiency of SA and B series abrasives is not as good as PK, the surface smoothness of the titanium casting after grinding is the highest. At present, the Fourth Military Medical University has successfully developed the first dental barrel grinder in China.

3. Mechanical polishing method

Use a soft cloth wheel or black brush of different specifications, and polish the surface of [titanium and titanium alloy](#) with titanium and titanium alloy-specific polishing paste. When [polishing titanium](#) castings, it is necessary to fully understand the surface contamination layer of the casting and the absence of a new abrasive hardening layer, which will not achieve the desired polishing effect. [High speed and light pressure](#) are still used during polishing. The authors have also tried to polish [titanium and titanium-containing alloy](#) castings using a green polishing paste to achieve an ideal polishing effect. The polished titanium and titanium-containing alloy castings cannot be immediately washed into the water. It must be washed after the surface oxide film is completely formed, otherwise the surface will be darkened.