



## Titanium instruments care and use

beating  
surgical  
instruments heart  
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<http://www.beating-heart.com/titaniuminstcare.pdf>

Beating Heart titanium instruments are made from grade 5 titanium. It is not only non-magnetic but is 50% lighter than stainless steel and has an ultimate strength, which is 30% greater than that of stainless steel. Titanium is also one of the most corrosion resistant materials available. These qualities of strength and excellent corrosion resistance make titanium ideally suited for medical applications.

Titanium is one of the most corrosion resistant materials available, exhibiting a resistance to corrosive attack comparable to glass and platinum. It simply will not corrode and no special care needs to be observed when sterilising. You may use any cleaning and sterilising agent you prefer. Ultrasonic cleaning is recommended prior to sterilisation.

In time, with repeated sterilising, the colour of titanium will vary. The colour is not a coating but is a result of the refraction of light through the thin titanium oxide layer. The colours are called interference colours. There are no pigments or dyes involved. This film is transparent and has the strong refraction ratio. The "fading" of the colour is the oxide layer becoming thicker (more protective) with each sterilisation.

Scratches caused by use will not harm the titanium instruments in any way. Titanium will form a protective oxide layer instantaneously.

Titanium instruments are stronger than most stainless instruments but titanium is not a hard material. The property of hardness differs from that of strength (ie. glass is harder than steel but not as strong). That is why all Beating Heart needle holders are tungsten carbide hard faced. Tungsten carbide is applied to the inside of the needle holder jaw in a process called electro-spark deposition. This gives the needle holder a hard wearing jaw.

Fine surgical instruments should not be put into trays that have perforations on the sides. It is inevitable that tips will be caught in these holes and damaged when pulled out of the trays. If all you have are trays with perforations on the sides, then it is recommended that silicone mats be used to prevent instruments from sliding around in the trays during transport. Silicone mats are recommended as a way to prevent damage to any fine surgical instrument.