

INNER STRENGTH

MEDICAL IMPLANTS

The stress on a hip or knee joint when a person jumps off a chair is equal to around 100 tonnes per square inch. Our bones, effectively composites, absorb such stresses regularly and effectively for much of our lifetime. When joints fail, they are often replaced with metal alloy implants. These implants must be incredibly strong, biocompatible, and able to last the lifetime of the patient. A combination of heat treatment, hot isostatic pressing and coating makes this possible.



Cobalt chromium alloy billets are investment cast to form implant shape.



The implants are then HIPed to eliminate porosity, improve fatigue life and enhance the bonding of the biocompatible coating.



The castings are thermally sprayed with a biomedical coating to allow a bond to form between the implant and body tissue, promoting bone growth.



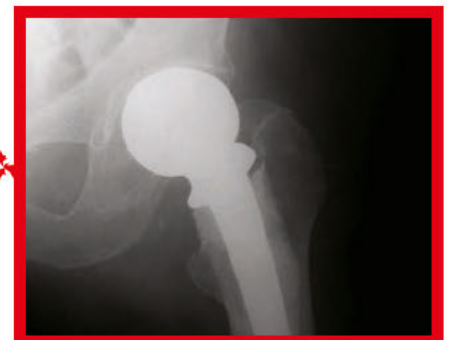
Solution and ageing heat treatment is used to strengthen the implant.

BODYCOTE COMPONENT JOURNEYS

This is just one example of how Bodycote brings together the huge wealth of knowledge and expertise from across the Group to provide the vital engineering services our customers need.

For more component journeys visit www.bodycote.com

B The Bodycote 'B' next to a component journey stage shows where Bodycote's vital services have been applied.



End application – joint replacement.