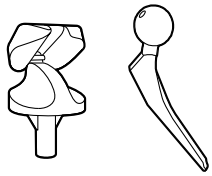
MEDICAL ALLOYS
ENDOPROSTHETICS

CERTIFIED ACCORDING TO ISO 9001



DATA SHEET ENDOPROSTHETICS

Great progress has been made in medical devices for endoprosthetic applications in recent decades. Today medical technology is in a position to replace every joint in the human body.
Innovative joint prostheses require modern materials for the load-bearing part, such as the hip stem and the acetabular cup without cup inlay (high load-bearing capability and bending strength) and the sliding apparatus, e.g. femoral head and cup inlay (as low friction and wear as possible).
Along with high corrosion-resistance and wear-resistance, the respective material also has to show exhibit excellent biocompatibility (allergies), mechanical strength and resistance to compression and bending loads.
In general, very few grades can satisfy this requirement profile. Included in this selected group of materials are, for example, special titanium/titanium alloys, CoCrMo alloys and implant steels along with plastics and ceramics.
Titanium materials are particularly biocompatible and enhance osseointegration. Their modulus of elasticity is the closest of any metal implant material to that of human bone. In combination with their high fatigue strength, this translates into an unrivaled high level of biocompatibility. Their tribological properties, however, are limited.
Depending on the application, parts of the prostheses are used with suitable surface finishes and coatings.

ZAPP EXPERTISE

We offer the option to manufacture titanium/titanium alloys, CoCrMo alloys and implant steels made according to your specifications. You can also select semi-finished products from our warehouse range according to European and American standards. As an independent company, we work together with different mills in Europe, the USA, Japan and Russia, which enables us to offer the optimal product for each application.
For your research, prototypes and special production runs, there is a finely graduated, comprehensive selection of dimensions in the product forms of wire, bar, profile, sheet as well as blanks.
Choose the right semi-finished product for your application with the applicable chemical composition, mechanical properties and surface/microstructure.
Take advantage of our logistics services.

PRODUCT EXAMPLES

Joint replacement:
_ Knee
_ Hip
_ Shoulder
_ Foot
_ Finger
_ Elbow etc.

TYPICAL GRADES

Grades	
Pure titanium grade 1	3.7025 MG
Pure titanium grade 2	3.7035 MG
Pure titanium grade 3	3.7055 MG
Pure titanium grade 4	3.7065 MG
Alloy Ti6AL4V (ELI)	3.7165 MG
Alloy TiMo15	9.9150 MG
Alloy Ti6AlNb7	9.9367 MG
18Cr14Ni2.5Mo	1.4441
Alloy 734, Rex 734™ *	1.4472 * Rex 734™ is a product and trademark of ATI Allvac
Nickel free	9.9007 CN
Co-Ni-Cr-Alloy, MP35N®**	9.9035 HG ** MP35N® is a product and registered trademark of SPS Technologies, LLC in the EU, U.S.A
Co-Cr-Mo Forging Alloy CoCr28Mo, Alloy 1	9.9135 HL
Co-Cr-W-Ni-Alloy, L605®*** Haynes® 25 Alloy****	2.4964 HL *** L605® is a product and registered trademark of SPS Technologies, LLC in the EU **** is a registered trademark of our contracted manufacturer HAYNES International, Inc., Kokomo, Indiana, U.S.A.

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Further information regarding our products and locations are available in our image brochure and under www.zapp.com

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