

TITAL® - NEWS-FLASH

In 2010 TITAL is supplying well known teams of the Formula 1 racing circuit with gearboxes, wheel carriers, engine and chassis components made from precision aluminum and titanium castings. TITAL also supports customers from the ALMS / Le Mans, DTM, GT and Mo-toGP racing series. TITAL is currently investigating the possible expansion of its business into the automotive sector where the company plans to participate in the development of prototypes to build more fuel-efficient and environmentally friendly vehicles.

TITAL® - STATEMENT



Why does titanium gain more and more importance in aircraft construction? Philipp Schack, Managing Director of TITAL:

"The background to this is the growth of the lightweight design philosophy for large aircrafts. CFRP, which is ideal for use with titanium, is being used more frequently in the aerospace field. The disadvantage: CFRP components cause corrosion problems when used with aluminum alloys. With titanium, this physical problem does not exist. Due to its corrosion resistance, titanium is the preferred choice of manufacturers in this area. Therefore, specialists expect that the use of titanium in aircraft design will continue to increase."

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Titanium investment casting supports lightweight aircrafts and saves resources

The use of titanium investment castings in aircraft construction not only saves weight and fuel during flights, but is already very energy efficient, economical and environmentally friendly in the production process. These are the findings of a report by the Federal Environment Ministry which was produced in conjunction with the University of Hannover. Within the scope of the study, an analysis was carried out regarding the resource and energy efficiency of titanium investment cast parts in comparison to titanium parts machined from solid material. According to the study, waste material per kilogram of finished titanium parts in the aviation business is more than 10 kg when the components are manufactured by machine processes. Through the investment casting process waste material can be reduced to just 2 kg per kg. Depending on the complexity of the product be-



Airbus A 380 with titanium components for the engine pylon.

ing manufactured, the energy consumption in the machining process is 1,090 kWh per kg and is approximately four times higher than the energy used in the casting process at 266 kWh per kg. The CO₂ emissions for a machined component are 650 kg per kg and are also four times higher than a component produced by the casting process at 127 kg per kg. The expected production output for the TITAL site in Bestwig, Germany

is 30,000 kg which generates a CO₂ emission reduction of 15,690 tons per year. In 2009, TITAL began production with their newly installed titanium casting furnace which is capable of pouring 1.5 m (60") diameter parts weighing 300 kg (660 lbs). For years TITAL has been successfully promoting the investment casting technology for titanium and aluminum aerospace components.

TITAL is growing in medical technology markets too

The German investment casting specialist TITAL, located in Bestwig (Germany) wants to expand in the field of medical engineering with the production of high quality titanium surgical instruments. Titanium is well proven in the aerospace industry and is very suitable for the production of surgical instruments because it can be completely sterilized using special cleaning and sterilization methods. Titanium also has a low density while at

the same time having high tensile strength and corrosion resistance. Due to the increasingly strict hygiene guidelines, surgical instruments must be sterilized after each use. In this area, titanium definitely has an advantage when compared to other materials. TITAL currently produces ergonomically designed surgical titanium hand grips for surgical saws and hard tissue drilling machines for AESCULAP AG located in

Tuttlingen, Germany. TITAL's other medical customers are producers from the orthopedics sector, including Otto Bock HealthCare, aap Implantate AG and Smith & Nephew Orthopedics AG located in Switzerland. Due to the demands of the medical technology sector TITAL has produced not only surgical instruments but more and more titanium castings for prosthetics and medical implants.