



greenmacs

**SMART ITALIAN
INNOVATIVE
STARTUP**

[Case Study]

1°

Rapid Protocasting with disposable mold for the Medical sector

From the 3D project of the customer is realized a sand mold which is cast the aluminum alloy desired



Benefits for the research and development department

- Quickly evaluate metal part design
- Saving time and money
- Produce metal prototypes in almost any metal material
- Allow testing of the part in the actual production materials
- Produce metal parts without expensive tooling
- Reduce sampling time
- Reduce lead time

Protocasting Process

- Analysis of 3D mathematical model (feasibility study, construction drafts casting systems and simulation)
- Modeling of tool with parametric 3D CAD
- Printing samples with 3D printing machine (high-speed complex shapes are obtained, even in the undercut, made in sand employed in the foundry)
- Casting, deburring and sandblasting
- Any subsequent machining

Time

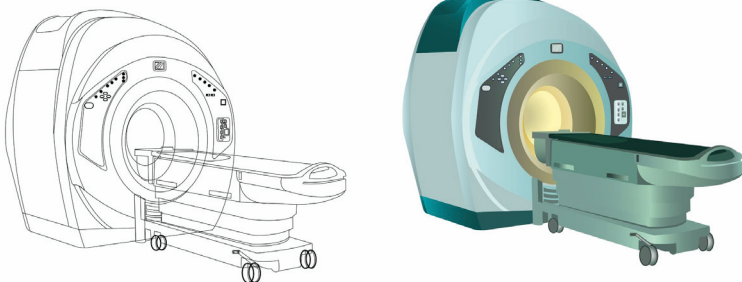
This technique ensures fast implementation ranging from 7 to 14 days, depending on the complexity of the project

Material

The same aluminum that will be used for series production

Treatment

You can also do mechanical tooling on the prototype as well as leak testing and other pre-processing, verifying the quality of the project.



2°

Trolley for Medical devices

A light alloy trolley was designed and made, going beyond the techniques used until now and reaching in such a way the required standards of lightness, payload, and reliability. All this at a competitive price and in a very short time.



Customer Requirements

- Reduce the risk on the initial investment
- Quickly exhibiting in fairs
- Using the sample for thermal tests on the product
- Cheap initial investment
- Reduce the times of production

Solution

- Customer-supplier co-design appointed to a die-casting series production
- Aluminium billet casting samples, final painting inclusive in 2 weeks
- Mechanical and technical tests
- Molds realization, low-cost initial investment to test the market, and prospective chance of changing technology without variation of price

TIME SAVED

2 months as regards design

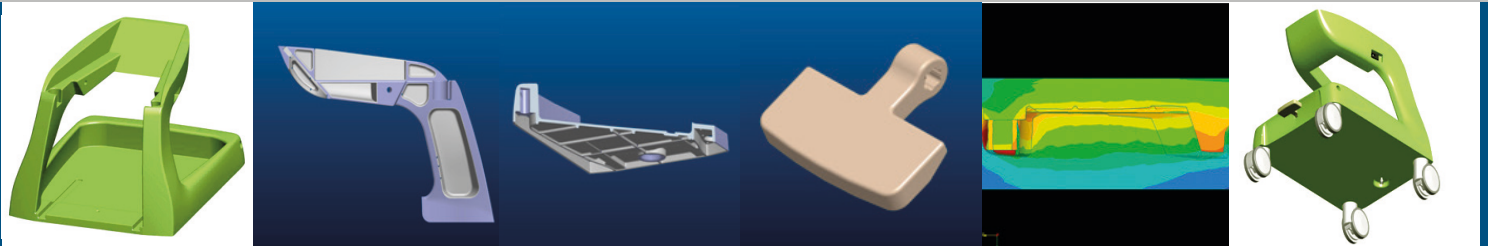
MONEY SAVED

20% on the total cost of the project

Benefits for the customer

- Significant reduction of the time required to develop a new design
- A better service is offered
- Quick increase in knowledge
- A new proposal to the market and advanced design
- Products made of a light, pliant, and resistant alloy
- Protective anti-corrosive treatments
- Recyclable material
- A backward step: this is the end of disposable items
- An eternal product!

Project timeline





[About us]

Greenmacs is an **Italian Innovative Start-Up** that works to **support foundries specializing in light aluminum alloy castings, providing development and engineering services** for innovative products and digital solutions applied on a small scale and in small markets. **Greenmacs** includes strong skills in **IT and engineering solution development and R&D**; these interdisciplinary skills enable us to manage our clients' innovation processes from requirements analysis to implementation of innovative processes with testing and validation. The company also participates in **several research projects** co-funded by the European Community and Regions.

Other key activities

The development of innovative products and services for the Energy and Environmental sectors, with the aim of improving people's quality of life by reducing Co2 emissions into the atmosphere;

The development of innovative products and services for the Biorobotics sector with preferential use of recycled and/or biologically derived materials to contribute to the realization of a circular economy, with the goal of improving people's quality of life by reducing the impact of small or large physical and functional limitations resulting from accidents and diseases, through the functional integration into the human body of advanced sensor or robotic applications.

Contact us

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