

Ultrasonic project



Regione Toscana



The R&D plan *Ultrasonic* consists of designing and realization of an innovative ultrasonic weld system, tuned for packaging needs.

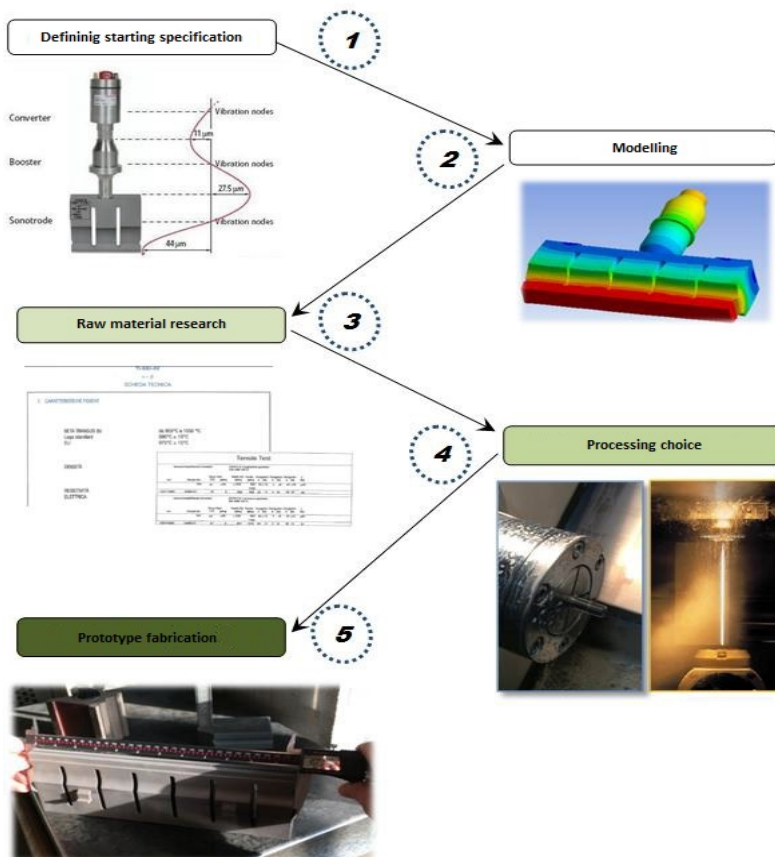
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The ultrasonic welding implementation in flexible packaging field, will allow to obtain a better quality welding of bag sealing, a decrease in raw material needed for the bag and it reduce energy consumption of packaging machine.

TL Tecnomiere S.r.l. cooperated to the research and development plan, starting from first drawings to the construction of prototypes and mechanical parts of ultrasonic source (made of converter, booster, sonotrode and anvil).

Project main steps, portrayed in the picture, are summarized in the following list:

Main steps



1) Definition of specification, both the individual units of new ultrasonic welding, both the devices necessary for validation of the new welding machine itself.

2) Mathematical modeling by the application of virtual prototyping techniques in dynamic-elastic field at high frequencies; in cooperation with the consulting engineering company BarbaLab S.r.l..

3) Raw material research to select the type, shape and thickness suitable to the operating conditions.

4) Choice of processing method, production of technical drawings and process sheet, in cooperation with Next Technology S.r.l. Company.

5) Prototypes realization and evaluation of compliance of fabricated parts with project specifications, in dimensions and physical properties.

This project has greatly increased the skills of the companies involved.

TL Tecnomiere S.r.l., based on experience in metal light carpentry gained in over more than forty years activity, has specialized in titanium high precision machining by metal cutting and EDM, and also in titanium surface treatments, increasing considerably company's know-how.