

M process

1) MOLDING

The **feedstock** is printed using a special press (similar concept to the **plastic injection**).

The **product of the molding** is a solid structure (mixed metal powder/resin) called **Green Body**, dimensionally increased according to a shrinkage factor variable for each League.



DEBINDING 2)

Printed components (**Green Body**) is placed in the oven to be **catalytic debinding**: the Elimination of the Binder (de-binding) will cause a reduction of the weight of the component.

The weak solid structure composed of aggregates of dust is called **Brown Body**.

At this stage there is no dimensional change but the only weight loss (due to loss of resin component).



3) sintering

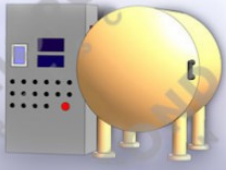
Deletes the resin, the components are placed in a special **sintering furnace**.

Specific thermal cycles in vacuum or controlled atmosphere cause the coalescence of **metal dust particles**.

The piece takes the minimum volume configuration up to total compaction.

The acquisition of the mechanical characteristics and dimensions are measurable by the final density and the dimensional shrinkage (around 20%): **the piece is completely analogous to a derived from fusion**.

3° fase: sinterizzazione

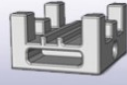


FORNO DI SINTERIZZAZIONE



sezione forno

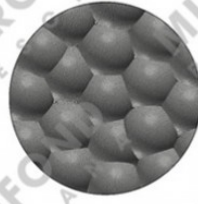
Il pezzo subisce un ritiro dimensionale del 20% circa.
Densità pari a quella di una fusione.



TRATTAMENTO TERMICO IN VUOTO O ATMOSFERA CONTROLLATA

Il ciclo termico determina la coalescenza delle particelle di polvere metallica.
Il pezzo assume la configurazione di minimo volume fino alla totale compattazione.

ingrandimento molecolare



RIDUZIONE DIMENSIONALE DEL 20%