MANUFACTURING PROCESSES

Powder metallurgy

Powders are mixed and the mixture compacted in a die. The resulting shapes are sintered in a controlled-atmosphere furnace to bond the particles.



PROCESSES

Powder to bonded part, in four stages



01 Powder production

Chemical

Physical



02 Blending

Metal powders and additives



03 Compaction

Cold compaction

Hot, isostatic pressing, rolling, extrusion, injection moulding



04 Sintering

Solid state

Liquid phase

Reactive

OPERATIONS

Primary and secondary

PRIMARY
Cold isostatic pressing
Hot isostatic pressing
Forging

SECONDARY
Machining
Heat treatment
Plating
Impregnation



WHY IT IS USED

Advantages

01 Effective and precise control of product composition.

02 Suited to mass production.

03 Exceptional finish and high dimensional accuracy of manufactured parts.

Applications

01 Refractory metal composites from tungsten and tantalum.

02 Cutting tools.

03 Electrical components, relays and resistance-welding electrodes.

04 Aircraft engine parts including gears, blades, and diffusers.

DESIGN FOR THE PROCESS

The process decides the part. Design for it early.

Send the component and its duty. We will model it, specify the route, and produce the drawings the shop needs.

info@teslamechanicaldesigns.com
www.teslamechanicaldesigns.com

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