



Profile 2024



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Our Company

S.A.S. France is specialized since 29 years in powder metallurgy and makes components for all kind of applications (automotive, home appliances, tools, military, medical, bicycles and motorcycles as well as building). Our company manufactures parts with very complex shapes, very tight tolerances and a high level of finish. Our constant objective is to meet our customer's attempts in terms of service and quality.

Key dates:

1995 : We started productions of sintered parts (Cipelle Industries)

2000: The society changed its name in **S.A.S. France** and is integrated in a European group of production sites.

Its head-office is in Bologna, Italy (**Sas Sinterizzati Srl**)

2010: S.A.S. France becomes an independent company.

S.A.S. France works closely in synergy with its sister company **Sas Sinterizzati Srl**.

So we mix the reactivity and the flexibility of a small company with security of a big society.

Experience

Reactivity

Flexibility

Security



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Main product application

The range of sintered parts that we produce is very large and can be used in many industrial fields.

We can categorise our products into 3 large families:

- Self- lubricating rings and bearings.
- Parts with teeth used by transmission mechanisms.
- Mechanical parts for the industry and the automotive sector.

Typical sizes of production batches range from 5 000 to 300 000 parts.



Self- lubricating rings and bearings

- Material: - Bronze, iron, alloy steel
- Oil impregnation: Mineral, synthetic, wax
- Production volume: 5 M / year
- Weight: 1 to 250 g

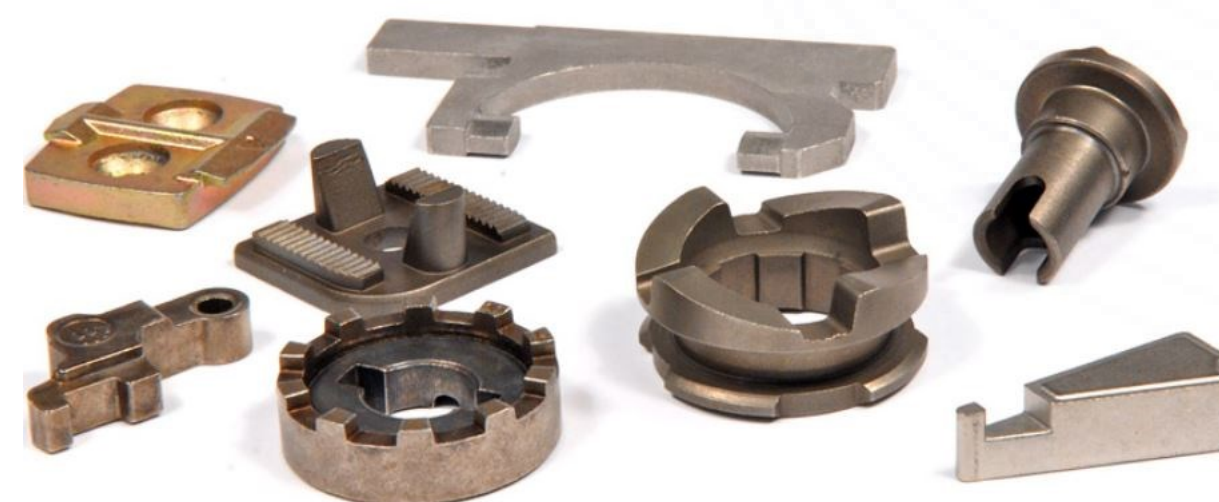
parts for transmissions

- Material: alloy steel, steel with high mechanical specifications
- Production volume: 5 M / year
- Weight: 3 to 450 g



Parts for various applications

- Material: iron, alloy steel, steel with high mechanical specifications - Copper for electric applications - Soft Magnetic Composite for electrical motors
- Production volume: 10 M / year
- Weight: 0,3 to 1000 g



Examples of applications

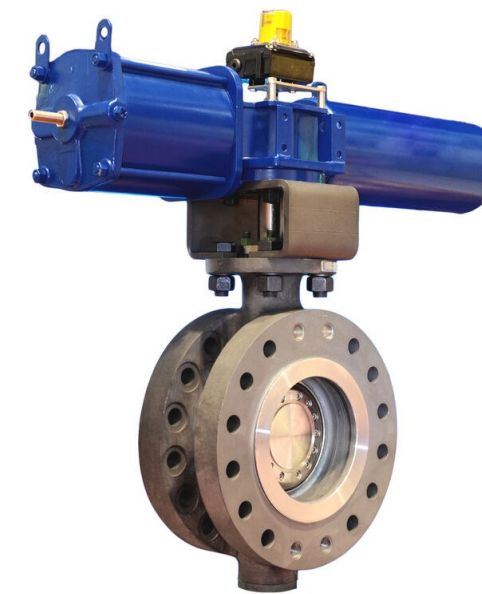
- Automotive accessories.
- Defense components.
- Home appliance.
- Electronic card element.
- Metrology.
- Medical.
- Engine optimization system.



• Electrical tools.



• Cycles.



• Industrial equipments.



• Transmission.



• Measuring system.



• Oil pumps.



• Roller shutters.



• electric motors.

Production Equipments



• Powders storage



• press from 3 to 250T



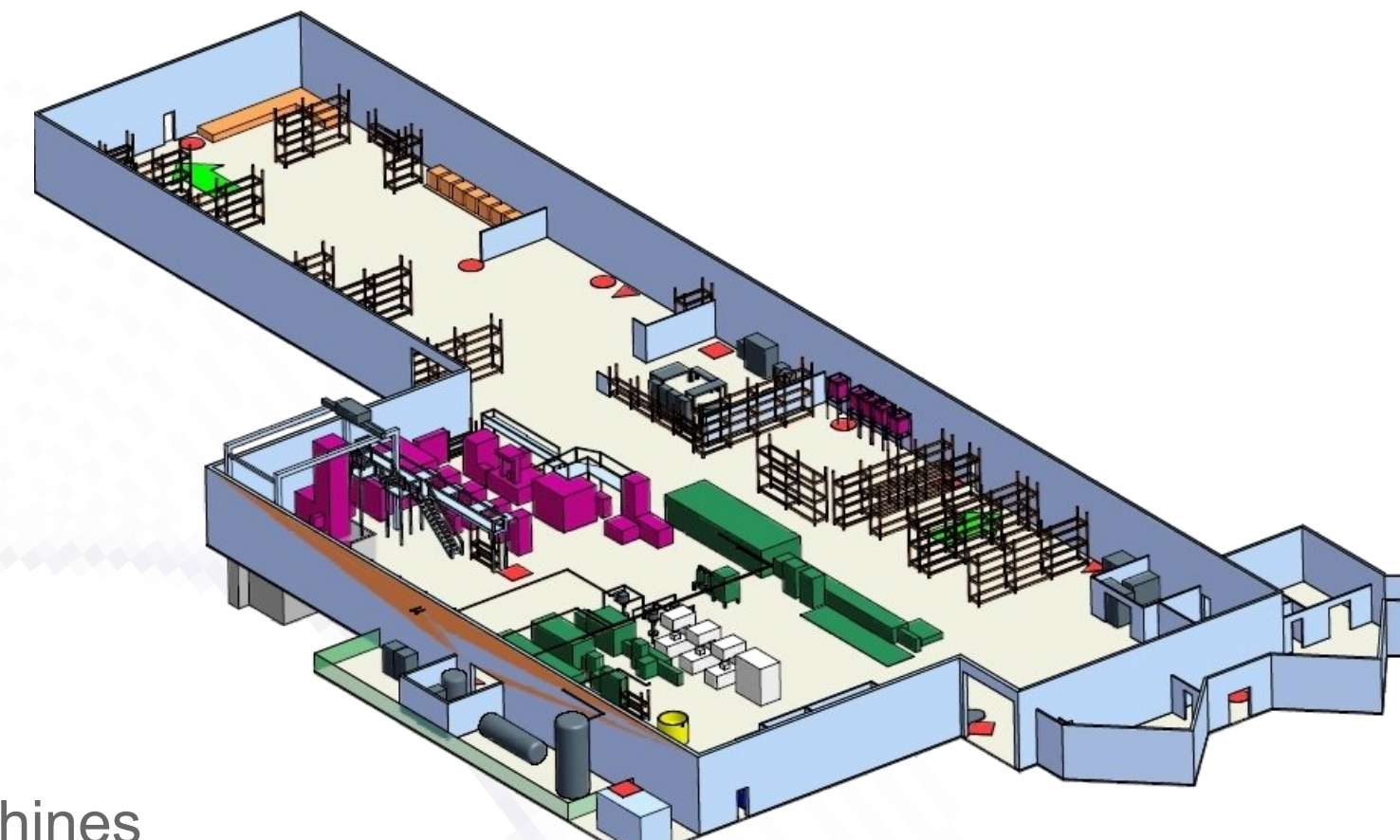
• 4 belt furnaces



• Finishing equipment



• Sizing press from 3 to 60T



• Assembly machines

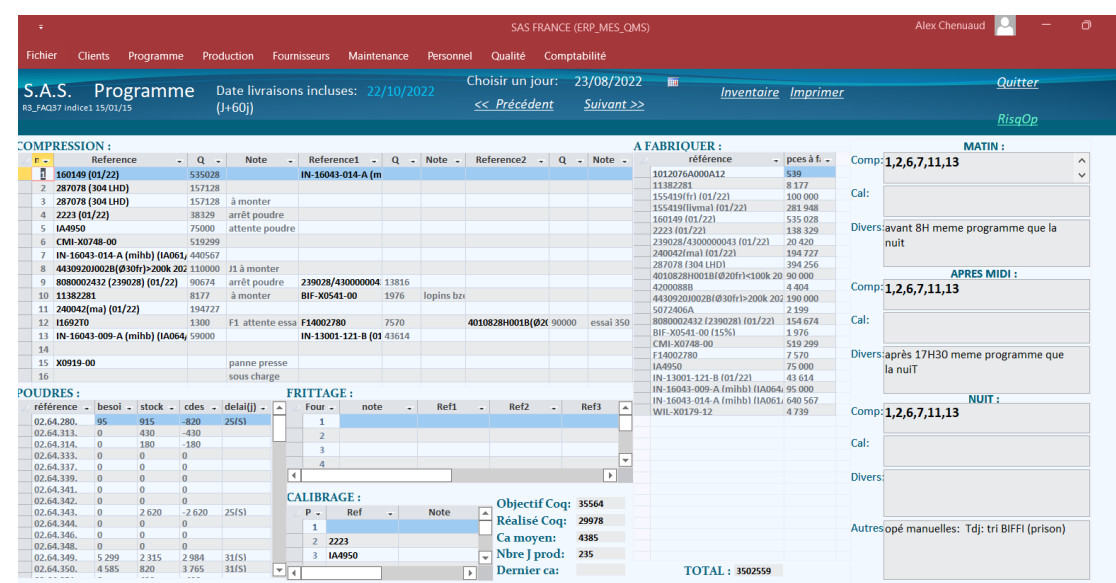


• Oil and wax impregnation



S.A.S. France aims to fully satisfy its customers and has implemented the necessary production and quality equipments to meet this objective.

The production is managed with a full integrated ERP also including QMS.



Control Equipments

In order to be able to check that all the customer's requirements are met, **S.A.S. France** has implemented all the necessary measuring instruments.

- Micrometer
- Slide caliper
- Plug gauge
- Balance
- Spot light profil
- 3D measurement machine (touch and optical)
- Traction/compression machine
- Hardness machines
- Roughness machine
- **Eddy current 100% checking when required**



3D measurement machine



Hardness machines



Eddy current

Quality

S.A.S. France is certified according the standard ISO 9001 since 1997 (Afaq audits did not reveal any nonconformities during this period).

Our work for the automotive industry has gradually brought us closer to the standards applied by this sector and we envisage in a period of 2 years to pass the IATF 16949 certification.

Our quality policy aims to exceed effectiveness

to obtain the best efficiency possible to provide total quality at the best possible prices.



Location

The Company is located in the middle East of France near Dijon and close to major activity areas:

- 2h from Lyon
- 2h30 from Paris
- 3h from Germany
- 8h from **Sas Sinterizzati Srl (Bologna)**

S.A.S. France (plant)

2 impasse Pré Serpillon (GPS: 47°17'24,9"N 4°13'57,1"E)

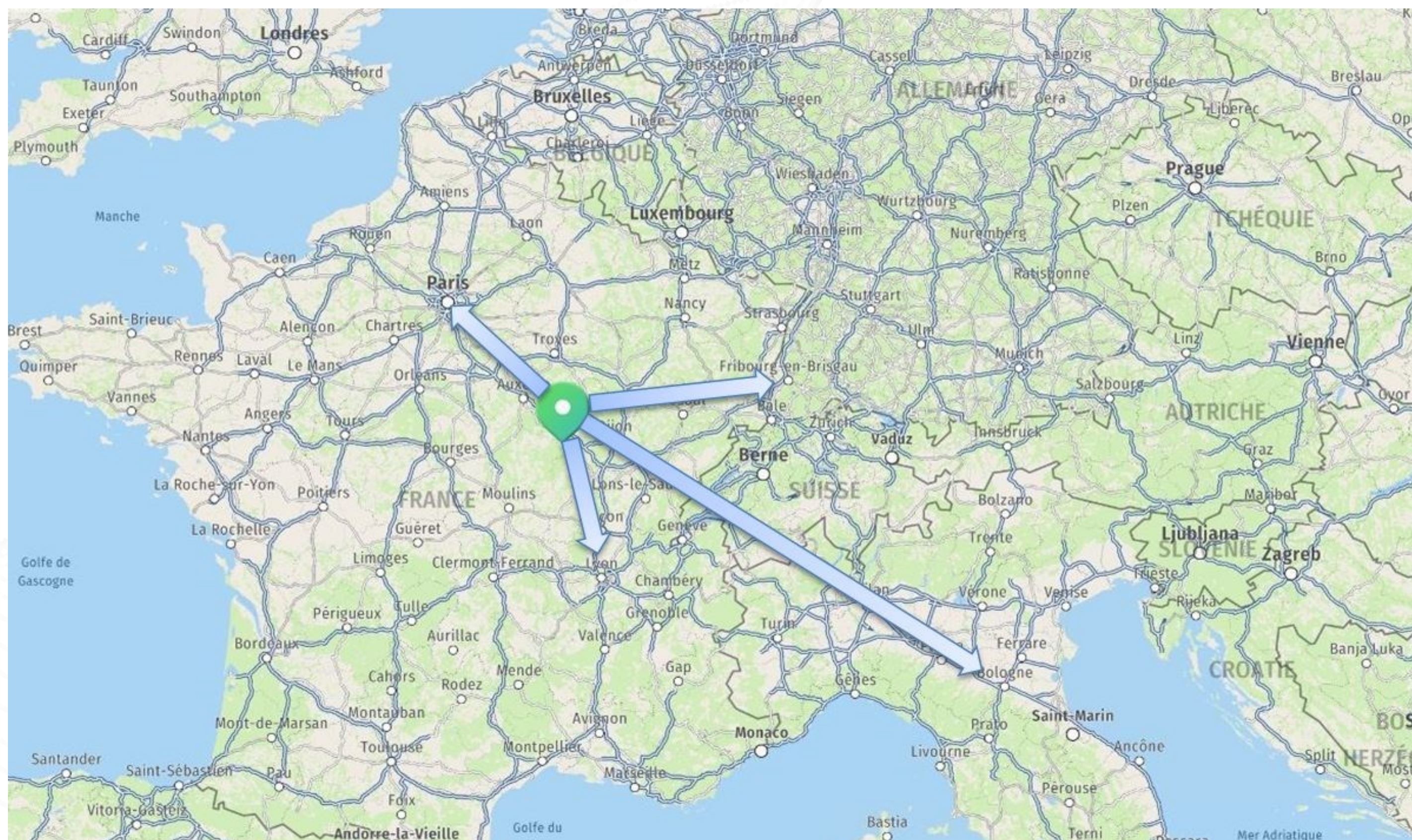
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Web site: <https://www.safrance-sintering.com>



SAS for *Green*

- When economic needs meet ecological imperatives:

S.A.S. France use production equipments that work continuously (furnaces).

We have therefore set up a very flexible organization able to adapt our sintering capabilities to the needs of our customers (installation choice, team shift to increase opening times, etc.).

Thus we consume only the necessary energy.

- The policy of small steps: heat recovery of the compressor room, electric rolling stock, economic lighting ...
- The project: solar power generation under study.
- Acquisition of a sintering furnace using a neutral sintering atmosphere with regard to carbon emissions (N2 / H2 atmosphere), with the support of the FEDER fund: <https://www.europe-bfc.eu/>
- Acquisition of a new, more energy-efficient electric press.



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Why choose S.A.S. France?

- 29 years of **experience** in sintering technology (Very good knowledge of the different markets).
- Technical proposal task force: we give you the 3D model of the sintered part as close as possible to your original design.
- Very high **reactivity** and speed development (offer delay less than 3 days).
- Great **flexibility** in defining the process to best adapt it to the particular requirements of customers.
- Compliance with automotive standards.
- **Security** with possible productions on the 2 sites (**Sas Sinterizzati Srl**).
- Competitive prices.



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News 2024-2026

Achieving IATF 16949 compliance

To double our human skills in key positions as part of our new organization

New sintering furnace with neutral carbon emissions with the support of the [FEDER](#) fund

New electric press



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Basic questions about sintered part:

- What is sintered part?
- Why sintered part?
- Which powder for which application?
- What design for a sintered part?
- What steps for the development of a new part?

What is sintered part?



- Raw material = powders



- Bring into shape by compacting in a tooling = green part



- Densification by sintering at high temperature under controlled atmosphere = sintered part

- Additional operations (deburring, sizing, machining, oil impregnation, hardening, coating...) = finished sintered part



Why sintered part?

- Complex shapes without machining.
- High dimensional precision: IT9
- Repeatability in large mass production.
- Self-lubrication due to the open porosity
- Weight reduction due to total porosity (5%-25% in less)
- Scrap reduction.

Comparative properties of materials

(source CTIF : <https://metalblog.ctif.com/2021/12/06/proprietes-comparees-des-materiaux/>)

	PROCEDES	CADENCES DE PRODUCTION	COMPLEXITE DES FORMES	INTEGRATION DE FONCTIONS	AMORTISSEMENT DES COUTS DU PROCEDE	USINAGE DE FINITION
FORGE	<i>Estampage</i>	B	C	C	A partir de la grande série	Très importante
	<i>Matricage</i>	B	C	C	A partir de la grande série	Très importante
	<i>Extrusion</i>	A	B*	C	A partir de la très grande série	Limitée
FONDERIE	<i>Moulage sable</i>	A-D	A	A	A partir de la petite série	Limitée
	<i>Moulage coquille gravité</i>	C	B	A	A partir de la moyenne série	Très limitée
	<i>Moulage de précision</i>	C	A	A	A partir de la moyenne série	Très limitée
	<i>Moulage sous pression</i>	A	B	A	A partir de la très grande série	Très limitée
AUTRES	<i>Emboutissage</i>	A	D**	B	A partir de la très grande série	Limitée
	<i>Métallurgie des poudres</i>	A	C	A	A partir de la grande série	Très limitée
	<i>Usinage</i>	B	A	A	A partir de la petite série	



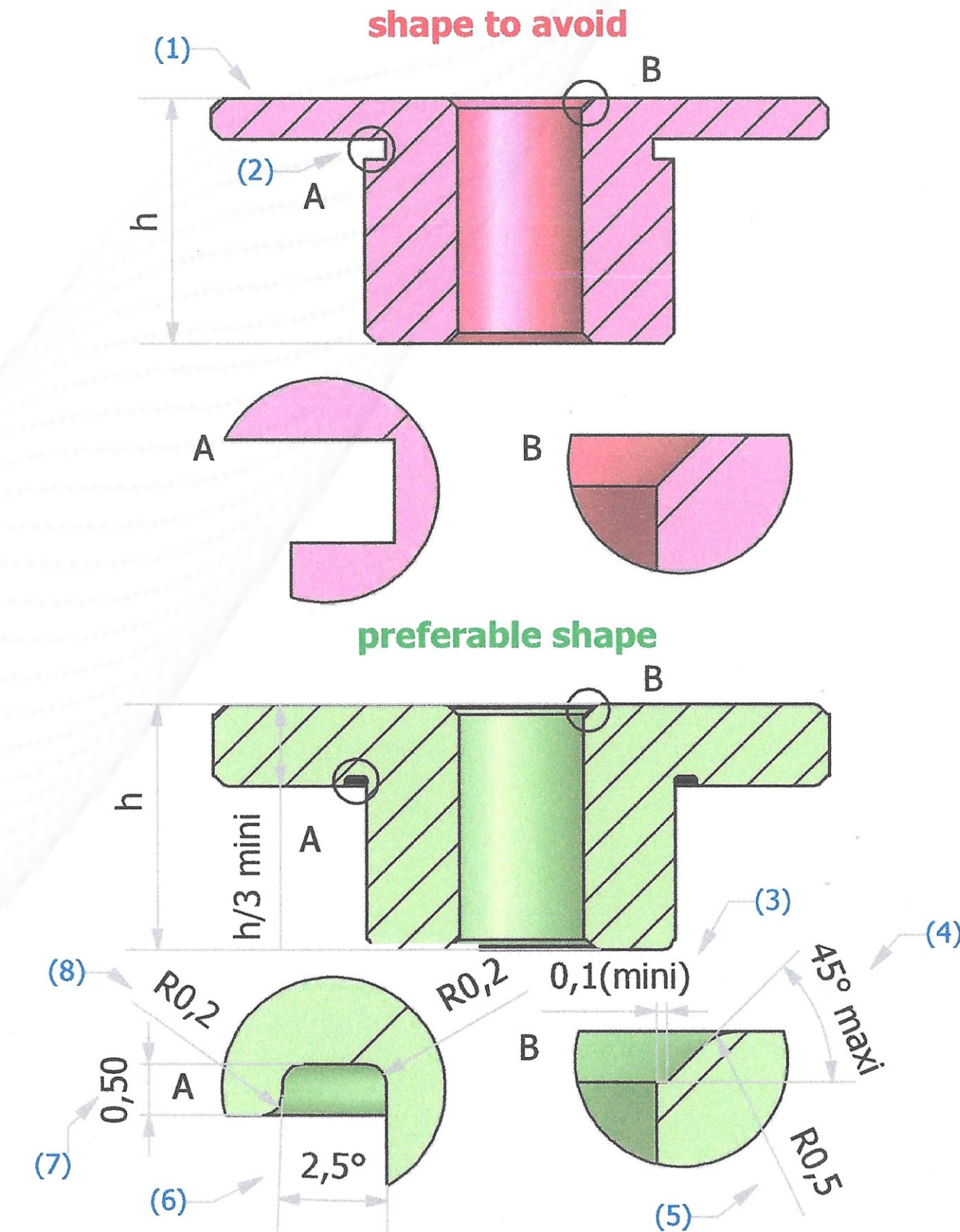
Which powder for which application?

Powders	Chemistry	manufacturing process	main characteristics	Applications
Bronze	(Cu+Sn)	Atomised		Self-lubricating bearings
iron powders	(Fe+C+Cu)	Sponge	Low to medium density parts	Self-lubricating bearings
				Shock absorber parts
	(Fe+C+Cu)	Atomised	Medium to high density parts	Soft magnetic applications
Low alloyed steel				Clutch and pulleys
	(Fe+Mo+Cr)	atomised prealloyed	Medium to high strength parts as sintered	Gears, synchronizing and oil pump parts
			High strength and wear resistant when hardened	
	(Fe+Mo+Ni+Cu)	diffusion alloyed powder	High strength applications	Parts where good dimensional control is critical
Stainless steel			High strength and wear resistance when hardened	Gears, synchronizing and oil pump parts
	(Fe+P)	premixed	Medium strength parts when C is added	Lock and safety parts
			High ductility parts	Soft magnetic applications
	304L	Austenitic	high corrosion resistance	lock parts, small gears, cams and connectors.
	409LE	ferritic	lower corrosion resistance	exhaust flanges and hot exhaust gas oxygen
	434L	Ferritic / martensitic	lower corrosion resistance	exhaust flanges and hot exhaust gas oxygen
Electrolytic copper	(Cu)	Electrolysis	High conductivity	Electric and electronic industry
Soft Magnetic Composite	(Fe)	coated powders	isotropic, high resistive	full magnetic core component

What design for a sintered part?

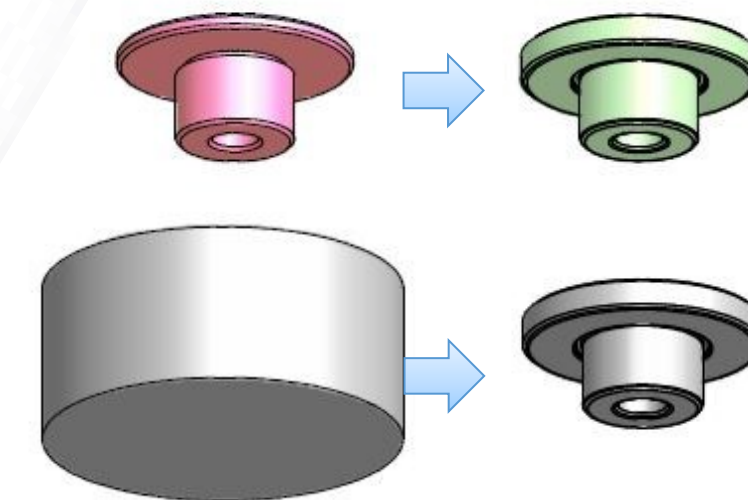
(Attention: this simple shape example takes into account the majority of the necessary adaptations to the sintering technology, without being exhaustive; every time we have to do a particular study.)

- (1) avoid huge height differences to propely eject the part from the tool.
- (2) have a common axe to make ejection.
- (3) special design for chamfer with short plan (mini 0,1).
- (4) max angle for chamfer =45°.
- (5) add radius as often as possible.
- (6) add draft angles when possible.
- (7) limit relative height on the same level to make the part stronger (0,5 instead of 1).
- (8) add radius to make ejection easier.



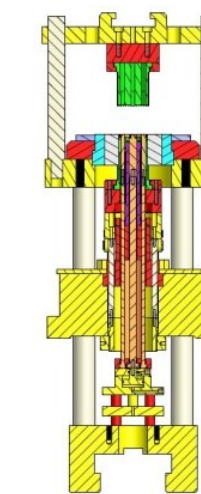
What steps for the development of a new part?

- We adjust the design of the part to the sintering technology (we give you the 3D model of the sintered part as close as possible to your original design).
- In case of doubt, we can propose to realize samples machined in blanks made with the chosen raw material.
- When the final design is confirmed, we start the Advanced Product Quality Planing (including risk analysis).
- The customer chooses the level of the Part Production Approval Process.
- We make the tool definition.
- Production of the first parts.



APQP

PPAP



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