ACADÉMIE
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SESSION 2022

BACCALAURÉAT PROFESSIONNEL
ÉPREUVE ORALE SPÉCIFIQUE « SECTION EUROPÉENNE »

SPECIALITE TECHNICIEN D'USINAGE

LANGUE : ANGLAIS

SUJET N°1

Durée de l'épreuve : 40 minutes

- Préparation	- 20 minutes
- Présentation de la situation	- 10 minutes
- Entretien sur les activités et travaux effectués dans la discipline non linguistique	- 10 minutes

SITUATION :

In order to improve metal recycling in your company, you want to invest in a new process. Metal printing is an additive machine which avoids metal waste.

You have heard about a 3D printing machine called FX20 that may interest your manager.

Explain how metal printing process machines will revolutionize manufacturing in order to convince your boss to invest in this new means of production.

DOCUMENTS :

- **DOCUMENT 1 : WHAT ARE THE BENEFITS OF ADOPTING METAL PRINTING ? BUSINESS SIDEAND TECHNICAL BENEFITS**

- **DOCUMENT 2 : METAL X™ SYSTEM. AN ACCESSIBLE END-TO-END METAL 3D PRINTING SOLUTION FOR FUNCTIONAL METAL PARTS**

DOCUMENT 1 : WHAT ARE THE BENEFITS OF ADOPTING METAL 3D PRINTING ? BUSINESS SIDE AND TECHNICAL BENEFITS

Business Benefits of Metal 3D Printing

***Reducing manufacturing costs*.**

Metal 3D printing increases flexibility in manufacturing and allows for more time spent producing revenue generating parts.

Technical Benefits of Metal 3D Printing

***Ability to design geometrically complex parts*.**

In metal 3D printing, complexity is free. Unlike conventional manufacturing, additive manufacturing is cost-independent from part complexity. Compared to subtractive CNC machines, it's more adept at curved, natural shapes and intricate geometries. As a result, complex parts are cheaper, easier, and faster to produce with a metal 3D printer.

3D printers can make parts — with complex curves, shapes, or cavities — where conventional subtractive manufacturing processes can't remove material.

***Ability to manufacture parts without tooling*.**

No custom tooling or fixturing setups are needed to run a metal 3D printer, regardless of the parts printed. This reduces overhead costs associated with manufacturing and produces low-volume parts more quickly and affordably.

***Ability to produce parts without detail drawings or CAM*.**

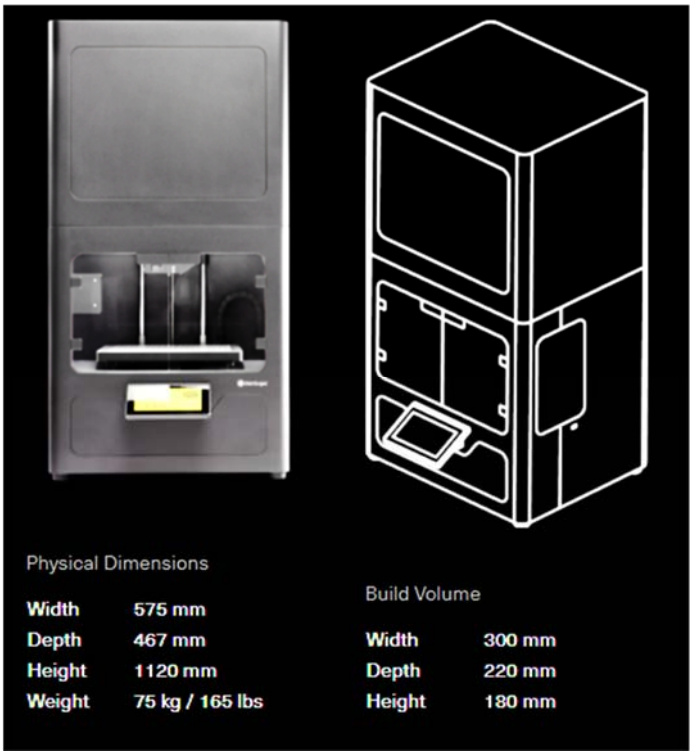
Metal 3D printing software automatically generates and executes the tool paths required to build the part. Complex parts are far more affordable to print than to machine.

Source : https://markforged.com/fr/resources/blog/back-to-basics-benefits-of-metal-3d-printing

DOCUMENT 2 : METAL X™ SYSTEM. AN ACCESSIBLE END-TO-END METAL 3D PRINTING SOLUTION FOR FUNCTIONAL METAL PARTS

Machine specifications and applications

Markforged



With a metal 3D printer, you can make :

Crown gears

Vintage Porsche engine grills

Race car steering wheel handles

Source *:https://markforged.com/3d-printers/metal-x*