THE BIG PICTURE

Description

Description

COMPUTER AIDED DESIGN

COMPUTER AIDED MANUFACTURE

LASER CUTTER

KEY WORDS

CAD/CAM

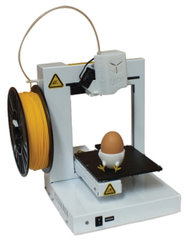
CAD ADVANTAGES

CAM ADVANTAGES

CAD DISADVANTAGES

CAM DISADVANTAGES

3D PRINTER



CNC ROUTER

Name

CAD/CAM

Description

CAD (computer-aided design) software is used by architects, engineers, drafters, artists, and others to create precision drawings or technical illustrations. CAD software can be used to create two-dimensional (2-D) drawings or three-dimensional (3-D) models.

COMPUTER AIDED DESIGN

- Google Sketch-Up
- TechSoft 2D Design
- Adobe Illustrator
- Autodesk Inventor

Description

CAM (computer-aided manufacture) is the use of computer software (CAD) to control machine tools and related machinery in the manufacturing of workpieces.

COMPUTER AIDED MANUFACTURE

- 3D Printer
- Laser cutter
- Vinyl Cutter
- CNC router

LASER CUTTER

1. Place the material on the honeycomb bed.
2. Focus the laser on the material.
3. Ensure that the settings for cutting and engraving are correct.
4. Send file across
5. Ensure extraction unit is on

THE BIG PICTURE

KEY WORDS

- computer numeric control
- manufacture
- design

CAD ADVANTAGES

- more accurate than hand-drawn designs
- you can save and edit ideas quickly
- you can view designs in 360 degrees
- you can add colour and material easily

CAM ADVANTAGES

- results are consistent (always the same)
- speeds up production of low-volume products
- able to work 24/7 with no stopping
- complete dangerous tasks/processes

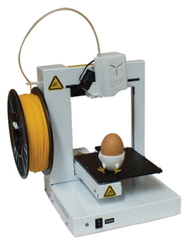
CAD DISADVANTAGES

- software is expensive so initial costs high
- staff need to be trained how to use software

CAM DISADVANTAGES

- can create unemployment
- initial machine costs are very high

3D PRINTER



1. Start with making a virtual design of the object.
2. Convert design file to 3D printing file
3. Final model now sliced into layers.
4. Put glue on printer bed to ensure slices 'stick' to base.
5. Send file to print - 3D printer prints each layer (slice)

CNC ROUTER

1. Setting the datum.
2. Attaching material to bed.
3. Tool paths.
4. Cutting depths - brittle material.
5. Cutting speeds.

Name