CNC Milling

INTRODUCTION

- **CNC** stands for ***computer numerically controlled.***
- As a milling technique, this means that a design can be specified on a computer using cad tools, and that a computer can handle the milling process.
- The process first became commercially available in the 1960's following the creation of a universal language, called, APT for automatically programmed tools.
- The language is able to specify the movements that the drill and table must make.

THE PROCESS

- During CNC milling the computer translates the design into instructions on how the drill needs to move to create the shape.
- Typically, the drill can move up down, or tilt at an angle, and the table moves the part laterally.
- For complex parts, the part may need to be rotated at some point in the milling process.
- Because a computer runs the process, high resolutions, and greater throughput are possible.

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ADVANTAGES OF CNC MILLING PROCESS:

- **High-speed machining** through precision drive system and high-frequency spindle with up to 60.000 rpm.
- **Economical** in purchasing due to modular adaptation to production tasks.
- **Short production times** and high-quality results due to very fast digital servo control, high-frequency spindle and optimum accessories.
- **Versatile standard software** for electronic CNC production, 3D forms and models, stamps and 3D engraving.
- **High machine utilization** due to proven reliability and fast customer service response.

Products Machined at IntelliCAM …

FRONT PANELS

PLUGS, SCALES, SWITCHES, SOCKETS OUTLINES ETC.,

Material: Material: mostly aluminum, to some extent plastics

Formats: 19”, also special formats

Advantages of CNC milling process

- Large machining areas with small floor space
- Spray cooling system, optimally adapted clamping devices
- Ready-to-use symbol libraries, e.g. (Dsub, Lemosa; Mains plugs, etc.)
- Burr-free maching of every Aluminum quality at high-speed and optimum quality

ENCLOSURES

SOCKETS, VENTILATOR EXCAVATIONS, DISPLAY EXCAVATIONS

Material: plastics and Aluminum

Formats: many special formats, height: up to 0,8 m

Advantages of CNC milling process

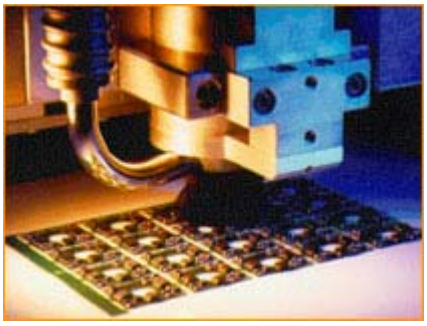
- High quality cutting performance when machining plastics, burr-free.
- Precise machining, also of uneven enclosures due to electronic follow-up measuring system.

PCB BOARDS

DRILLING, CONTOUR MILLING, CRACK ISOLATING

Material: GFK, FR4, Pertinax

Formats: standard formats



Advantages of CNC milling process

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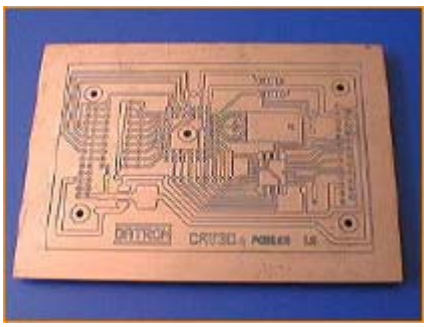
- Conversion of drilling specifications: SM 25, Sieb und Meier, Excellon
- PCB board routing with integrated dust exhaustion
- PCB board prototyping using isolating software



SIGN MAKING

NAME PLATES, SERIAL NUMBERS, SIGNS

Material: Plastics, Aluminum, Brass, Steel

Formats: from small serial plates to very large formats; many special formats up to 1.040 mm x 2.250 mm

Advantages of CNC milling process

- Engraving fnctions directly on machine
- CAD data conversion
- Sign making applications, serial numbers
- Sign making programs with more than 450 fonts and scanner interface
- Electronic Z-compensation for highly precise engraving depths

3D MODELS

DESIGN SAMPLES, ELECRICAL DISCHARGE MOULDS

Material: Plastics, Copper, Graphite

Formats: various formats

Advantages of CNC milling process

- 3D CNC interfaces, CL-Print; DIN 66025, 3D vector format
- Easy conversion of even big data quantities via network-based PC control system