

Basic CNC Q+A

➡ Answers to questions:

1. CNC - **Computerized Numerical Control** - is a technology used to operate various machine tools by the means of a part program - a specifically coded instructions
2. Machining centers (vertical and horizontal), turning centers (various lathe designs), wire EDM machines, routers for woodworking, fabricating machines, including punches, breaks, shears, etc., flame and laser cutters, waterjet machines, and several others.
3. Setup time reduction, Lead time reduction, Accuracy and repeatability, Contouring of complex shapes, Simplified tooling and work holding, Consistent cutting time, General productivity increase
4. John Parsons and MIT (Massachusetts Institute of Technology) in Cambridge, MA, USA
5. Hard-wired controls depended only on electrical signals and fixed logic circuitry
... Program changes at the machine are not possible

Soft-wired controls are based on an internal micro processor (computer)
... Program changes at the machine are possible
6. Evaluate drawing
Select the machining method
Select setup / work holding
Select cutting tools
Establish cutting conditions
Machine the part
7. Milling machines (even the CNC types) have a limited number of features, and some operations cannot be done on them at all, for example, not all CNC milling machines allow tapping. Several setups are often required to complete the part.

CNC machining centers are multitool multi operational machines that can handle a large variety of operations in a single setup.
8. Typically, the job descriptions are CNC PROGRAMMER and CNC OPERATOR.
Some machine shops have a person combining these two functions, often called CNC PROGRAMMER/OPERATOR.
9. Even a simple part that is complex can be justified for a CNC application. The accuracy of the CNC machine is the main reason. Also, the program can be tested first, which is not possible for manual operations.
10. The first rule of safety is the traditional poster heading:

THE FIRST RULE OF SAFETY - FOLLOW ALL SAFETY RULES