

ADVANTAGES OF CNC MACHINING OVER MANUAL MACHINING

[Computer Numerical Control \(CNC\) machining](#) is a process designed to efficiently manufacture parts with the highest precision and accuracy. It uses specialized software customized and programmed with G-code, a language allowing precise control of parameters such as speed, location, coordination, and feed rate. Its ability to eliminate human error makes it an important part of manufacturing components used in critical situations.



ABACORP's Manufacturing Facility in California

Based in California, [ABACORP](#) has a world-class manufacturing facility housing the state-of-the-art CNC machines used to produce top-quality parts essential in the automotive, aerospace, military, telecommunications, medical, and electronics industry, to name a few. Our ever-growing desire for innovation and [high standards for quality](#) enables us to offer our products at competitive rates. Not only do we give the best service to our customers, but we also continue to serve our community by [creating more jobs](#) for families in California.

To learn more about how CNC machining, our business, benefits most industries, here are its advantages over manual machining:

Machine Productivity

CNC machines, being programmed, allow automated execution of complex series of actions, which increase the production output rate. They are more efficient than manual machining because they do not get tired, needing frequent breaks like humans. Furthermore, less time is spent on machine set-ups.

Machines can work and produce huge quantities with a few clicks once the coding of the design parameters and specifications are done.

Cut Versatility

CNC machining can make a wide range of cuts. There are countless shapes, designs, and configurations that can be made with CNC machining. It can create outputs that cannot be replicated by manual machining, even with the help of the most talented engineers. It can also handle a [variety of materials](#) including aluminum, brass, copper, polypropylene, steel, and wood. The ability of the material to withstand the stress and manipulation of the CNC machine serves as the major consideration of the applicability of CNC machining.

Consistent Product Quality

[CNC machining is more precise and accurate than manual machining](#), ensuring consistent quality of products. It eliminates human error, having accuracy within 1/1000th. With the use of a standardized programming language, complex geometries can be repeatedly produced to exact specifications. For example, a CNC mill, which is commonly available in three to six-axis configuration, can cut various materials in the same manner over and over again. The additional axis to the usual three (X, Y, Z) allows easy rotation, enabling the consistent production of more intricate parts.

Better Safety

In manual machining, operators are at risk of injuries from cutting, friction, impact, and puncturing. CNC machining is much safer than manual machining because the operators are working behind a guard or a closed, transparent safety door. After the quick set-up and testing procedures, CNC machines can work independently, safely producing exact multiple copies of the original design.

Cost-Effectiveness Benefits

Manual machining needs one operator per machine and one supervisor for the group, which also requires a lot of training activities and workpieces to prepare the personnel to safely carry out operations. It also makes repeatability nearly impossible. On the other hand, with CNC machining, one trained operator can run multiple autonomous CNC machines simultaneously, and one programmer can load the needed designs. Not only do you significantly reduce training costs, but you also cut down labor costs. You can use the savings from the labor costs to improve other services that would attract more customers, placing you in a more competitive position on the market. Additionally, CNC machines have a higher rate output and lower volume of waste generation, which is more profitable in the long run. We are always looking for customer added value.

To learn more about the [best CNC machined parts and services](#) available on the market, [contact us!](#)

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