THE TOOL WHICH CAN FLY

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The main problems associated with conventional tools is vibration and the clamping of the tool. Here the major part is to support the tool. These problems can be overcome by producing a tool which will never require any support. Our project idea is based on a small toy helicopter. In this the tool is made to fly with the help of a jet. The tool uses a laser too. This laser will help the to produce a finished product with a very less power consumption and less vibrations.

This tool will have a compact shape and small size. It will be provided with CNC software so that the tool will be guided automatically. This tool may lead to a revolution for the machines which are used to produce large parts like blades of jet in airplane. This tool will represent a combination of IT and MECHANICAL sector successfully.

This tool is may be used for cutting as well as other operations. Operation of this tool will be simple because we have to type the program only and the tool will perform the required operations automatically. In this case the work piece may be fitted to the magnetic base. The clamping is required only for the work piece. This tool can be carried to any position because of its compact size and hence can be used for the small scale industries too.

If this tool comes into existence it will be a great revolution in manufacturing field. This will also reduce the cost of manufacturing of clamping devices for tool. To analyze the problems associated with vibrations and to propose solutions, only few experts propose their services. Computational software for stability lobes and measurement devices are proposed but, in spite of widespread publicity, they remain relatively rarely used. Lastly, vibration sensors are often integrated into machining centers but they are used mainly for wear diagnosis of the tools or the spindle. New Generation Tool Holders and especially the Hydraulic Expansion Tool Holders minimize the undesirable effects of vibration to a large extent. First of all, the precise control of T.I.R to less than 3 micrometers helps reduce vibrations due to balanced load on cutting edges and the little vibration created thereon is absorbed largely by the oil inside the chambers of the Hydraulic Expansion Tool Holder.

Competition among product manufacturers to lower the unit costs of production continually drives technological development by the tool manufacturers, as long as the costs of R&D and tooling purchase amortization are lower than the amount of money saved by productivity increases (e.g., wage expense reduction).Hence it is necessary to use laser which is cheaper than others.

Flying optics lasers feature a stationary table and a cutting head (with laser beam) that moves over the work piece in both of the horizontal dimensions. Flying optics cutters keep the work piece stationary during processing and often do not require material clamping. The moving mass is constant, so dynamics are not affected by varying size of the work piece. Flying optics machines are the fastest type, which is advantageous when cutting thinner work pieces.

Flying optic machines must use some method to take into account the changing beam length from near field (close to resonator) cutting to far field (far away from resonator) cutting. Common methods for controlling this include collimation, adaptive optics or the use of a constant beam length axis.

This project may be a developing step for "KALI" to become a weapon.