

## Dimple Key Generator

The objective of the software was to provide an environment for production of Dimple keys to ensure reduction in design and production cost, lead time, inventory levels as well as increasing productivity, quality.

This Software processes user input and generates the [G-code](#) files which are input for CNC Controller. Using these G-code input files, CNC Controller engraves dimples and cuts the key on a piece of metal.

The scope of the software can be defined as:

- Managing all the data about key properties of millions of key in arranged files.
- Making Text files which contain all information about key properties.
- Making G-code files for all regular Keys, Master key and Grand Master key.
- Generating the Dimple key after executing the G-code files in machine.

### **Dimple Key vs Blade Key**

The key in figure on the right side, have cuts on the blade of the key. The key made by these cuts are not security as the key duplication is very easy.



Whereas Dimple Key (one to the left side) is the one having Dimples on faces and edges instead of cuts. These dimples are engraved with the precision of millimeters by the machine used to generate them. These Keys cannot be duplicated easily (Virtually Impossible) and as the generator is being designed with the principle that each key must be unique i.e. none of two combination of dimples on the key should match.

An ideal System to simulate the software application:



Here, User provides input in the Application which is being processed and then G-Code files are prepared by our System. These G-code files are fed as an input to an interface between CNC Controller and our application. CNC Controller now engraves the dimple and mark cuts into key using its blade. The position and all coordinates of CNC controller are defined in G-Code files.

CNC: Computer Numeric Control