

## **DESCRIPTION**

The Framon DC-300 is designed to cut automotive keys by code and to also duplicate keys. The machine uses depth cams and space keys to accomplish this type of key cutting.

At time of purchase, in addition to the machine, you should find space keys and depth cams for your particular needs (may be shipped separately), a 3/16", 3/32" and 5/16" allen wrench, and application charts for the particular makes & models of automobiles you will be cutting keys for.

## **CUTTER & SPINDLE**

The spindle on the DC-300 is mounted on precision grade sealed bearings for accuracy and long life. They require no maintenance. The cutting wheel is precision ground of M-3 tool steel. The angle and flat of the cutting wheel will work perfectly for almost any automotive key in use today.

## **YOKE**

The yoke has two vises. The left vise is used for the blank to be cut. The right vise is used to hold the spacing key required when cutting by code and for holding the pattern key when duplicating (see Figures 1 & 2). Each vise is double sided. Always use the narrow side (the side with two white dots on it), unless the blank tips in the vise. In this case, turn BOTH vises to the wide side of the vise.

All spacing keys are used in the right hand (guide side) vise, and keys to be cut by code or duplicated are put in the left hand (cutter side) vise.

insert figures 1 & 2 here

## **KEY BLANK INFORMATION**

Key blanks without bottom shoulders should be inserted into the vise until the tip of the key hits against the tip stop on the vise. Key blanks that have a bottom shoulder must be inserted with the bottom shoulder against the right hand side of the vise (see Figures 3 & 4). The spacing key will always be inserted with the tip of the key against the tip stop in the guide vise.

insert figures 3 & 4 here

## **CAMS AND CAM POST BUTTON**

Depth cams are available for almost any automotive application in use today. Depth increments range from .010 to .040 (see cam chart on pages **X & Y**). The number one depth is common to all cams. Use any #1 depth on any cam when duplicating keys.

To insert a cam into the machine, depress the cam post button to the right of the upright. Slide the cam in from the top or the side, and release the cam post button. The cam will center itself and should rotate freely.

## **CAM POST AND GUIDE**

The key guide in the cam post is spring loaded to allow the guide to enter cuts in either the space key when cutting by code, or the cuts in a pattern key when duplicating. This system is used to allow straight-in cutting.

The adjusting ring on the guide shaft controls the depth of each cut. If keys are cut too high (shallow), rotate the adjusting ring clockwise to change the depth. To rotate the adjusting ring, loosen the set screw in the edge of the ring. This will allow the ring to be rotated. Once the adjustment has been made, tighten the set screw until it is snug (do not overtighten).

## **CUTTING KEYS BY CODE**

NOTE: Keys must be bottomed out against the back of the vise when cutting by code; do not hold keys by

the milling!

To cut a GM six-cut key, code #3V86, with cuts of 133545, the following procedure would be used:

1. Insert the key blank in the left hand vise using the flip-down shoulder stop to align the key.
2. Insert space key #14 in the right hand vise with the tip against the tip stop (see Figure #6).
3. Insert cam #1 into the cam post and rotate cam so that GM #1 cut is aligned with the guide mark the the top of the cam post (see Figure #7).
4. Lift the yoke so that the guide engages the #1 cut on the space key, and continue lifting the yoke until the cutter engages the key and the cut is made.
5. Rotate the cam to the #3 depth and make the next two cuts in position number 2 and 3 on the space key.
6. Rotate the cam to the #5 depth and make cuts in the number 4 and 6 positions on the space key.
7. Rotate the cam to the #4 cut and make a cut in the number 5 position on the space key. Remove the cut key and de-burr using the brush on the left side of the machine. The key is now complete.

## **DUPLICATING KEYS**

To duplicate a key, the following procedure should be used:

1. Insert both pattern key and key blank in the same amnner. Use bottom shoulders, tip stops or top shoulders with key stops.
2. Make sure there is a depth cam inserted into the machine. Rotate the cam to any #1 depth.
3. Move yoke forward until the guide is aligned in the first cut. Push the yoke forward until the cut is made. Do this for each cut on the key.

If the blank and pattern keys have a bottom shoulder, keys should be inserted into the vises with the bottom shoulder against the right hand side of the vise, otherwise use tip stops or top shoulders with the key stops.

## **CALIBRATION**

To calibrate the DC-300, use the following procedure:

1. Insert two identical key blanks into the machine in the same way.
2. Turn the depth cam to the #1 position. Turn the machine on.
3. Bring the yoke forward until the guide is in contact with the key. Depress the spring-loaded guide with hand pressure on the yoke.
4. When the guide is completely depressed, the cutter should just barely touch the key blank in the left vise.
5. Turn the adjustment dial (the calibrated ring on the guide post) clockwise to make the machine cut shallower, couter-clockwise to deepen the cut. Each graduation is .001”.

## **LUBRICATION**

A few drops of teflon spray can be used on the yoke slide rod and the guide shaft. Wipe off any excess.

## **WARRANTY INFORMATION**

The warranty on the DC-300 is in effect for a period of one year from the date of purchase. Framon Manufacturing Company will repair or replace any part of any machine proven to be defective as to material or workmanship. If any machine is returned to us in the first year, Framon Manufacturing will absorb all costs for repairs, including freight both ways. After one year, Framon Manufacturing will charge the customer for parts, a flat labor rate, and freight. Machines will be repaired and re-shipped within two days of receipt. Cutters are not covered by this warranty; our cutters are made of M-2 and M-3 tool steel and should cut thousands of keys before needing resharpener. Due to the fact that we have no control over their use, we do not warranty cutters.

## **WARRANTY CLAIMS PROCEDURE**

The purchaser must inform Framon Manufacturing by phone or letter and obtain permission from Framon before returning any machine. Framon will not accept any machine returned without prior permission.

## **FREQUENT QUESTIONS...**

The items below are frequent questions that arise from new DC-300 users. Before calling for technical assistance, you may want to read over the following to see if your problem is listed here:

### **Key Blanks Tipping In The Vise...**

There are a few key blanks that tend to tip in the vise. If this happens, try one of the following solutions:

1. The vise is double-sided; try using the other side of the vise to hold the key. Make sure you reverse both the pattern key vise and the cutter side vise.
2. A pair of brass shims are included with each machine (small flat pieces of brass). If the key continues to tip after reversing the vises, place the shim either on the top of the key (if the key tips upward) or under the key (if the key tips downward).

### **When Code Cutting, Key Does Not Turn The Lock**

1. Ensure that the correct code number has been looked up, and the cuts are correct that you are cutting the key to.
2. Be sure that the locks for the car have not been changed.
3. Check machine calibration.
4. If the key appears to be cut too deep, it was most likely not inserted all the way to the back of the vise. When code cutting, all keys **MUST** be inserted to the back of the vise, not held by the millings (which can be done when duplicating with no problem).
5. Double check to make sure the proper depth cam and space key are being used.

### **When Duplicating, Key Does Not Turn The Lock**

1. Both keys must be inserted into the vise in the same way.
2. Both vises must be using the same side; make sure both vises are either on the plain side, or the DOT side of the vise.
3. Make sure the depth cam is set to the number one cut position.