

# Wurth AutoCode Machine



## Machine & Software Instruction Manual

**Note: Instructions For Assembling The AutoMaster With Duplicator Are On Page 13.**

## The AutoCode/AutoMaster Machine

When unpacking the carton, be sure to locate the following items in addition to the machine itself:

Allen wrenches: 3/32", 1/8", 5/32", 3/16"  
Wurth AutoCode Software Disks, LPC Code Disks  
Or  
Laptop Computer with installed software

**NOTE: The machine and computer should be plugged into some type of surge suppressor. Warranties on the machine and computer are void if surge suppressors are not used!**

### *Machine Controls*

The AutoCode is completely computer-driven; there are only two switches on the machine that control operation.

The switches are located on the front panel of the machine, and are mounted in a vertical position.

The Main switch controls power to the entire machine. If the switch is in the On position, the machine will receive commands from an attached computer, the Spindle switch will have power, and the servo motors will be able to turn.

The Spindle switch controls power to the spindle motor, and therefore, the cutting wheel. It overrides the Main power switch, so that the machine may have power, but the cutter will still not turn. This plays an important role when changing cutters, and also serves as a safety feature.

### *Safety Features*

The AutoCode has two power switches and a spring loaded cutting head. If you ever encounter a problem with the machine while cutting a key, you can exercise any of the following options:

1. Turn off the Spindle switch. This will cause the cutter to stop turning, even though the vise and cutting head will still move.
2. Turn off the Main switch. This will cause all machine operations to cease. You will then need to cycle the Main switch twice to clear the machine's buffer. Next, the motors must be homed. You will also have to exit the program and start it again. See page 2, "Assigning a COM Port and Testing Communications".
3. Push the cutting head of the machine towards the back of the machine. The cutting head is spring-loaded, and will compress back towards the home position, and prevent the cutter from touching the key.

**NOTE:** Please become familiar with the location of the two switches before operating the machine.

### *Using The AutoCode For The First Time*

If you have not installed the software, please see page 3, Program Installation. Once installed, return to this page to set the machine up.

The following instructions should be followed very carefully. Damage to your computer may result if these steps are not strictly adhered to.

1. Make sure your computer is off. If you have a **SUSPEND** function on your computer, start the machine up, and use **SHUT DOWN** instead of **SUSPEND**.
2. Once the computer is turned off, plug in the AutoCode into an outlet with some type of surge suppressor.
3. Make sure the Main switch on the AutoCode is in the OFF position. Plug the 9-pin serial cable into any available COM port on your computer. Use the screws provided in the plug portion of the cable to secure the cable in place.

4. Turn on your computer. If you need to load Windows, do so now.
5. Turn the Main switch of the AutoCode on. The switch should light up.
6. Click on the AutoCode icon to start the program.
7. The main screen of the program should now be on the display, unless you have not registered your program yet. If you need an unlock code, you will need to call Framon for one. Follow the on-screen instructions to contact us & unlock your program. If you have already registered your program, you are ready to check the communications & machine settings...please continue!

#### *Assigning a COM Port and Testing Communications*

**NOTE: If you purchased your machine with a computer, your COM port will already be set. You may skip this section.**

Once you have the main screen up, choose Machine by either clicking on the button with the mouse or holding down the **ALT** key and pressing the **N** key. This will take you into the machine settings screen (you must first log-onto the program).

Once there, select the "Communication" button. The first item to set is the **COM** port. Typically **COM 1** or **COM 2** will be used, and **COM 1** is the default. If your serial cable is plugged into a different communications port, select it from the drop-down menu.

**NOTE:** *Be sure that the "Main" switch on the AutoCode is in the "On" position and is lit up.*

Once this is done, click on the Test Communications button. Pay attention to the red status bar below the directory buttons. If the communications port has been selected properly, you should hear both motors activate. If the red status bar indicates "**THE FRA-2001 IS NOT RESPONDING!**" turn the Main power switch off and back on and click on the Test Communications button again.

If this does not remedy the problem, an incorrect COM port selection is most likely the reason. Use the drop-down menu to change the COM port. If problems communicating persist, double check the connection between the AutoCode and the computer and assure that everything is secure. If this does not take care of the problem, contact Framon Manufacturing Company at (517) 354-5623.

## Program Installation

If you purchased your machine with a laptop computer, your software is already installed. Bypass this section.

**Note: The AutoCode Code Cutting System requires a validation code the first time the program is installed. Install the program as directed below. You will need to contact us for a validation code. At that time, we will register the product in your name for future updates. We will require your address, phone number, and from whom you purchased the product. Our hours are Monday thru Friday, 8:00 am – 4:30 pm Eastern time.**

### Installing The Program From CD

*Windows 95 & 98*

You must know your CD drive letter to perform the installation. For our example, we will use drive D for the installation.

To install the programs, click on Start, and then Run...

In the dialog box, type:

**D:\dbsetup.exe** to install the common database (required for AutoCode program)

**D:\frasetup.exe** to install the AutoCode program. Follow the on-screen prompts.

The code database is located in a directory named **3.3 Codes 9598**. Open this folder and run the **setup.exe** program to install the code database.

We suggest you accept all default directories & drives for easiest installation.

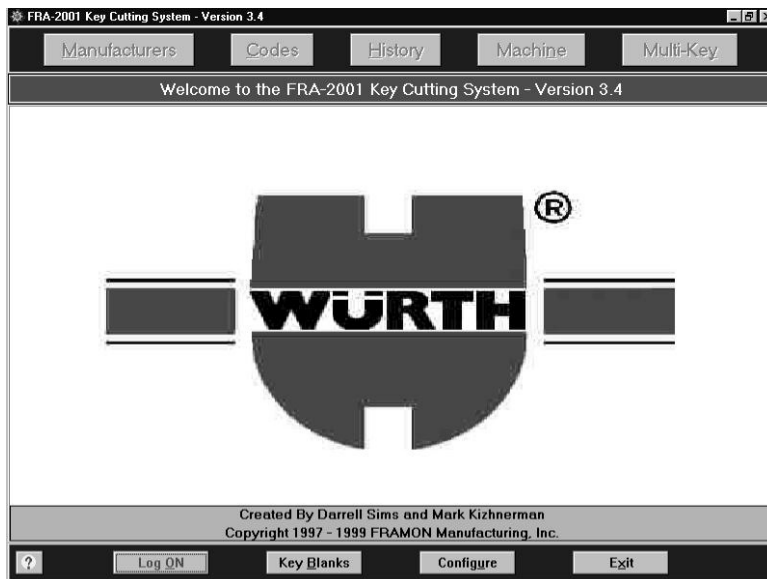
## The AutoCode Software

### Pre-set Passwords / Logging On

The AutoCode Code Cutting System uses passwords for Log-On procedures and configuring the program. To Log-on to either program, simply click on Log-on, be sure that the Counter setting is shown, and click OK. No password is needed to log-on. If you prefer to use the keyboard, simply press the Enter button three times and you will be logged on.

To enter the Configure section of the software, the master password is WURTH (must be in all capital letters). The master password can be changed in the Configure section (see Configure section).

### Opening Screen



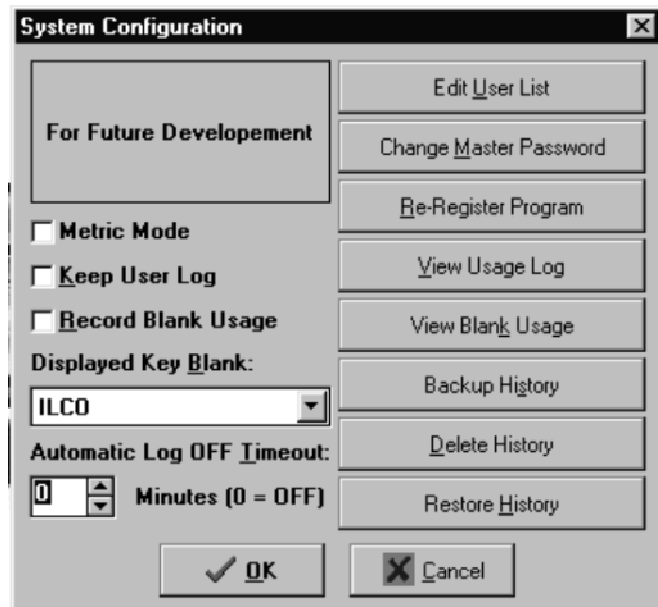
Options available at this screen:

- )= Manufacturers Section\*
- )= Codes Section\*
- )= History\*
- )= Machine\*
- )= Hints On/Off
- )= Log-On/Off
- )= Key Blank X-Ref
- )= Configure
- )= Exit Program

\*-only available when logged on

At the opening screen, you can enter any of the four major sections of the software (Manufacturers, Codes, History, Machine). You can also use the key blank cross-reference, Configure the program, turn Hints on or off, or Exit the Program.

### Configuring the Program



The Configure section allows you to “customize” the program for your own needs. To enter the Configure section, click on the Configure button at the bottom of the screen. You will be prompted to enter a password. The default password is WURTH (all capital letters). Type in the password and press the Enter key or click on OK.

The Configure section gives you many options. From the upper left down, the options are:

**Metric Mode:** Place a checkmark in the box to view key information in millimeters instead of inches.

**Keep User Log:** Check this box if you wish to keep a user log of who has used the machine when (used in conjunction with various users with different passwords).

**Record Blank Usage:** Check this box if you wish to let the software keep track of blanks that have been

cut on the machine.

**Displayed Key Blank:** Use the drop-down list to choose the blank that you use most regularly in your business.

**Automatic Log OFF Timeout:** Set to 0, this will allow you to log-on once in the morning and stay logged on all day long, until the program is shut down. If you will be having multiple users, set it to 1 (one minute) to log a user off after one minute of machine inactivity.

From the upper right down, the other options available here are:

**Edit User List:** detailed below.

**Change Master Password:** If you wish to change the password required to get into the Configure section, you can do so here. After clicking on the button, you will be asked to enter the current password, and enter the new password twice. **NOTE:** If you change the master password and forget it, you will need to contact the manufacturer for a clear disk to reset the password.

**Re-Register Program:** Not used at this time.

**View Usage Log:** If you checked the “Keep User Log” box, this button will allow you to view the usage log on the machine.

**View Blank Usage:** If you checked the “Record Blank Usage” box, this button will allow you to view the blank usage.

**Backup History:** Once you have input many records into the History section of the program, you can backup records in case of computer malfunction. Backup will save this information to floppy disk.

**Delete History:** If you wish to delete the entire History database, you can do so with this button.

**Restore History:** Clicking on this button will allow you to restore information from floppy disk.

#### *Editing The User List*

**User List**

Navigation: [Back] [Forward] [Search]

User Name:

Full Name:

Type Password:

Retype Password:

To complete user setup, press Save, then Close.

Buttons: [Edit] [Save] [Close]

**Access To:**  
Use the SPACEBAR to toggle Access options

- Manufacturers
- Modify Manufacturers Data
- Codes
- History
- Delete old History
- Add to History
- Machine
- Change Cutter
- Adjust Cutting Parameters
- Cut Multi-Keys
- Modify Multi-Keys

You can edit the user list to fit your own needs quickly and easily. The left panel of the screen shows the user information. The right panel details which parts of the program the user will have access to. Most likely, using the Counter setting already in place will be easiest until you become more familiar with the features of the machine. This setting gives you access to

all basic key cutting functions of the program, and keeps the user logged on all day long. For a business with users of different knowledge levels, you can change the settings to prevent inexperienced users from deleting data or changing machine settings.

The top navigation bar allows you to scroll through the users already set up in the system. When you purchase the program, the only user installed is the Counter setting. As you can see in the right panel, all functions are enabled for this setting. In the left panel, you can see that there is no password required for this user. You may wish to adjust these settings to suit your own needs. To do this, click on the Edit button. You can now “uncheck” fields for this user. Listed below is an explanation of each option:

- )= **Manufacturers:** Allows the user to enter the Manufacturers section & cut a key by biting.
- )= **Modify Manufacturers Data:** Allows the user to edit information such as spacings & depths.
- )= **Codes:** Allows the user to enter the Codes section & cut a key by code number.
- )= **History:** Allows the user to enter the History database.

- \= **Delete Old History:** Allows the user to delete records from the History database.
- \= **Add To History:** Allows the user to add a record to the History database.
- \= **Machine:** Allows the user to enter the Machine section, where machine settings are stored.
- \= **Change Cutter:** Allows the user to change the cutting wheel on the machine.
- \= **Adjust Cutting Parameters:** Allows the user to change the depth, spacing, and movement rates of the machine.
- \= **Cut Multi-Keys:** Not used at this time.
- \= **Modify Multi-Keys:** Not used at this time.

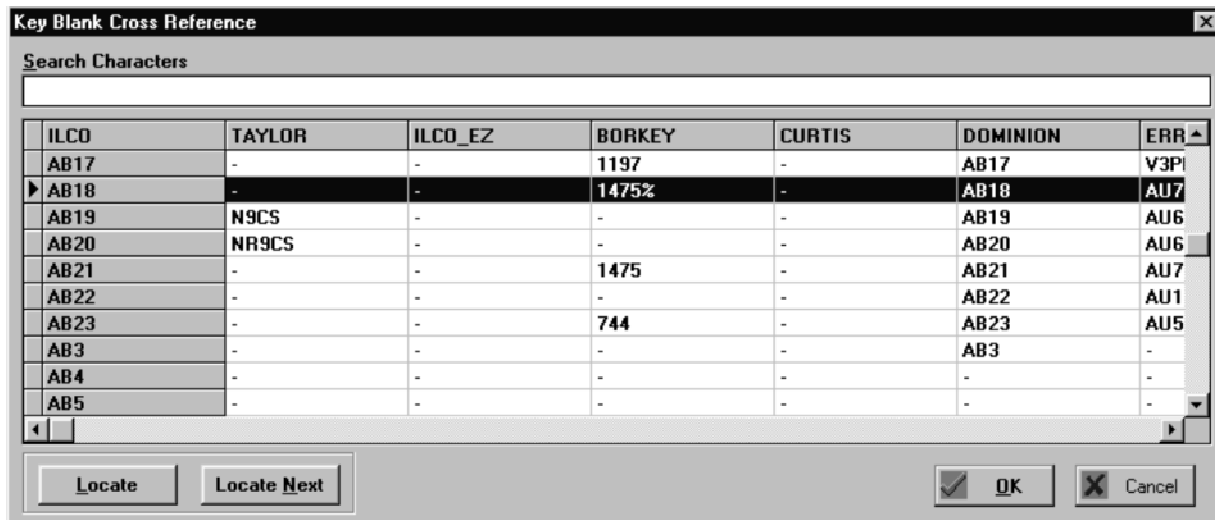
To edit the Counter setting, simply click on the Edit button and “uncheck” the features you do not want the user to have access to. Be sure to click on the Save button before clicking on Close.

To add a new user, click on the plus (+) button at the top of the User List window. Type in the User Name (Bob, Joe, Mary, or whatever you like), press the Tab button, and enter the Full Name (this can be the person’s full name if you wish). To assign them a password to enter the program, type in a password, press the Tab button, and re-type the same password. Next, place checks in the fields you want them to have access to. Some areas may not be accessible until you check other features. When finished, click on the Save button, and then Close. You will have to Exit the program and restart it for the user to become available.

### On Line Hints

The AutoCode software features on-line hints to assist you in learning the features of the program. To turn the Hints on or off, simply click on the icon in the lower left side of the screen. Any time the cursor is held over a button, a yellow caption box will appear, telling you what that button does. Click on the icon again to turn the hints off.

### Using the Key Blank Cross Reference



You can access the key blank cross-reference at any time by clicking on the Key Blanks button at the bottom of the screen. As shown above, the list is indexed by Ilco key blank numbers. If you need to find a cross-reference for an Ilco key blank number, simply begin typing the key blank number into the Search Characters box at the top of the window. You can use the scroll bar at the bottom of the window to see other cross references for different blank manufacturers.

If you need to cross-reference another make of key blank, click on the Locate button at the bottom of the screen. This will bring up a Locate dialog box. At the bottom of the window, in the Fields section, use the drop down list to enter the blank type you want to search for. With the manufacturer selected, enter the blank number in the Field Value box, and click on the First button. The program will search for an Exact or Partial match, based on the radio button you have checked in the window.

You can also double-click on any blank number to enter a hook number that you may use in your shop to identify

the area that the key is located. After double-clicking on the blank number, another window will appear with all cross references known and a Location box. Click the cursor in the Location box, and enter a hook number or area of your keyboard where the blank is located. Click on OK. Whenever you use a series that utilizes this blank number, the Location information will also be displayed.

### Logging On / Logging Off

To Log-onto the program, click on the Log On button at the bottom of the screen. The Log On Dialog window will appear. Select the username you wish to log on as, press the Tab key, and enter the password. Click on OK and you will have access to those areas that were checked in the Configure section.

**NOTE:** When the program is first started, if you have not made any changes to the User List, you can simply press the Enter button three times to log-on. You can verify that you are logged-on by looking at the buttons at the top of the screen – when logged off, they will be grayed out. When you log on, the buttons at the top of the screen will have black writing on a gray background. Also, the Log On button will change to Log Off.

### Exiting the Program

To exit the program, simply click on the Exit button.

### The Manufacturers Section

To cut a key by biting (you know the lock manufacturer & the cuts on the key), click on the Manufacturers button.



Options available at this screen:

- )= Choose a Manufacturer
- )= Add a new chart
- )= Edit an existing chart
- )= Delete a chart
- )= Search by Manufacturer
- )= Search by Series
- )= Search by Blank Number

After clicking on the Manufacturers button, you can locate a chart that you wish to cut a key for. At this screen you can also edit, delete, or add information to this section.

### Looking up a Lock Manufacturer

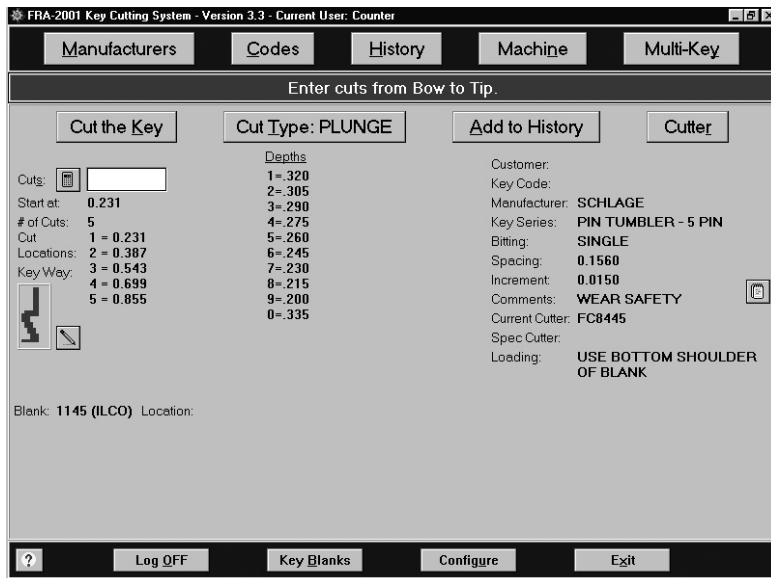
When you click on the Manufacturers button, the screen above will be shown. The cursor will be in the Search For: box. Begin typing in the lock manufacturers name with the keyboard. If you wanted to cut a key for Chevrolet, begin typing CHE. The program will direct you down the list to the closest match. You can also use the arrow keys or the mouse to locate the manufacturer. Once found, either double-click the mouse or press the Enter button to go to the key cutting screen.

You can also search by blank number or by key series. Simply click the mouse on the appropriate radio button in the Search By box, and begin typing the series or blank you want to cut a key for.

Note that at any time, you can switch to Codes, History, Machine, or Multi-Key. You do not have to back up from a screen to move to a different section of the program.



## The Key Cutting Screen



Shown at the left is the key cutting screen. Once you have selected the manufacturer you wish to cut a key for, this screen will appear. The cursor will be in the Cuts box, waiting for you to input cuts for the key.

You can click on the calculator icon next to the Cuts box to have the program randomly generate the cuts for you (handy when keying new locks), or enter your own cuts. Use the keyboard to enter the cuts for your key. Once entered, press the Tab key, which will highlight the Cut The Key button. Press the Enter key to cut the key.

### Laser & Plunge Cutting

You can also switch between Plunge and Laser cut modes. Click on the Cut Type:

button to toggle plunge & laser modes. Most automotive keys should be cut using the Laser setting, while most residential keys are cut using the Plunge setting.

### The Key Profile and Graphic

Directly below the spacings listed for the key is the keyway profile and a pencil icon. Click on the pencil icon to see a graphic of how the key will look when cut. The graphic will change depending on if you have the cut type set to Plunge or Laser cut.

### Adding a key to History

At this screen, you can also add the key to the History database. You must first type in the cuts for the key. Once done, click on the Add to History button to bring up the History panel. Three fields will be shown: Last Name, First Name, and Security. The database is sorted alphabetically using the Last Name field. You can enter three lines of information to identify the key. In the Last Name field, you can enter up to 40 characters. The First Name field will hold up to 30 characters, and Security can hold up to 10 characters. Once the information is entered, click on Save and the record will be stored in the History database.

### Changing the Cutter

If you are ready to cut a key and decide that you need to change the cutter, click on the Cutter button. Changing the cutter is detailed in the Machine section on page 12.

### Information Shown in the Key Cutting Screen

All key cutting information is shown on the key cutting screen pertaining to alignment of the key, depths & spaces, and any other information needed to cut the key. Underneath the Cuts box is the starting cut position, number of cuts, and spaces for each cut. To the right of the Cuts box are the depths. In the right panel, the current cutter installed on the machine is shown, as well as the recommended cutter for that particular manufacturer.

**NOTE:** The AutoCode will automatically widen cuts if the specified cutter has a wider flat than the current cutter installed on the machine. If the specified cutter has a wider flat than the cutter on the machine currently, you will not be able to use the Laser cut mode.

To determine how to load the key in the vise, look at the field next to Loading. In the example above, you would use the bottom shoulder of the blank.

To the right of the Comments field is a small notepad icon. This is a text box where you can add your own information for any key series (Manufacturers section only!).

### The Red Status Bar

Directly below the Manufacturers, Codes, History, Machine and Multi-Key buttons is the red status bar. This is an information area telling you what the machine is waiting for you to do. In the example above, the machine is waiting for the cuts for the key to be entered from bow to tip. Depending on the lock type, you may need to input the cuts from tip to bow.

### Adding, Editing, or Deleting a Chart

To add a new chart to the Manufacturers section, click on the Add button in the Manufacturers section. The screen to the left will appear. Here you can enter information for a new key series. There are three different screens to the Add Chart section. The first is the Depths screen.

To add a chart, enter information into all of the boxes shown. First, type a Manufacturers name to identify the chart with. Use the Tab key to switch between fields. Next, input the Key Series (code series, or information to identify this series from others by the same manufacturer. Entering a blank is done using the key blank database, detailed on page 4. The Lock Type drop-down menu allows you to enter what type of lock this series is for.

Recommended Cutter links a cutter angle and flat to the cutting procedure (if in doubt, use the FC9040 standard cutter).

Next, enter a label for each cut and the depth setting (for GM 10 Cut, a label would be “1” and the depth would be “.340”, no quotation marks

### The Spacings Screen

Once all of the depth information is entered, click on the Spacings button on the screen. The screen at the left will be shown.

All of the information from the previous screen will be retained; you must now enter information in the Bitting section. The bitting is how the key is cut – single sided, double with same cuts on both sides, double with staggered cuts, or double with different cuts on each side.

Next, enter the number of cuts on the key. If you selected double/staggered, there will be two “# of Cuts” boxes shown.

“Cuts Start” is the distance from the shoulder to the first cut on the key.

“Spacing” is the distance between cuts,

and “Increment” is the drop between the depths. Once this information is entered, click on the “Calc Locations” button and the program will calculate all of the spacings for you. **NOTE:** All numerical information must be entered in thousandths of an inch – Cuts Start for GM 10-Cut would be entered “.216” (no quotes).

### The Comments Section

There are only three fields in the Comments section – Short Comments, Loading, and Additional Notes. Short Comments allows you to enter a short line of comments (approximately 10 characters). This will appear on the key cutting screen next to Comments:. Loading describes how you are to load the key into the vise. Additional Comments is the field linked to the Notepad icon on the key cutting screen.

Once all information is entered, click on the Save button to save the record, or Cancel to discard the information. If you have not entered the information in the proper manner, a message will appear in the red status bar.

### Editing a Key Series

To edit the information stored in a particular record, highlight the record in the Manufacturers section and click on the Edit button. You can change any information in the record that you wish, or add additional comments.

### Deleting a Key Series

To delete a particular key series, highlight it in blue and click on the Delete button – be careful, once information is deleted, you will have to reinstall the program to retrieve it or use the Add feature to manually input the information.

### Using the Codes Section

Manufacturer	Key Series	ILCO
Century/Regal<DT>	0B00 - 7B99	S1105
Century/Regal<VATS>	0B00 - 7B99	-
Corvette<M>TRSP'97+	0B00 - 7B99	-
Cutlass/Malibu<M>'97+	0B00 - 7B99	P1111
EUR. AUTO<09846>	0A0000 - 9Z9999	NE18
GM Trucks '95+	0B00 - 7B99	P1106
GM<V>'71 '79 '85	0B00 - 9B99	P1098A
GM<V>'94+	0B00 - 7B99	P1106
Grand Prix<M>'97+	0B00 - 7B99	P1109
Grand Prix<V>'97+	0B00 - 7B99	1109V
GrandAm/Alero<M>'99+	0B00 - 7B99	P1111
Intrigue<M>'98+	0B00 - 7B99	P1112
ISUZU Hombre '96+	0B00 - 7B99	P1106
Elkay/SL IV/An'99+	0B00 - 7B99	

To access the codes section, click on the Codes button at the top of the screen.

Codes can be accessed in three different manners: by code number, by blank, or by entering partial cuts. Key blank & Partial Cuts search are not used at this time.

The default setting is Key Code. To lookup a code, and type in a key code (2B22 entered in the example at the left). Press the Enter key and all matching possibilities will be shown. Scroll down the screen with the arrow keys or use the mouse to select the series you wish to cut a key for. Once selected, the key cutting screen will be shown, with the cuts already entered and the machine ready to cut the key.

### Using the History Database

To access the history database, click on the History button. All records previously saved will be displayed. Use the Search For: box to locate the record you wish to cut a key for. Double click on the record to return to the key cutting screen. The program will be ready to cut a key for the saved customer.

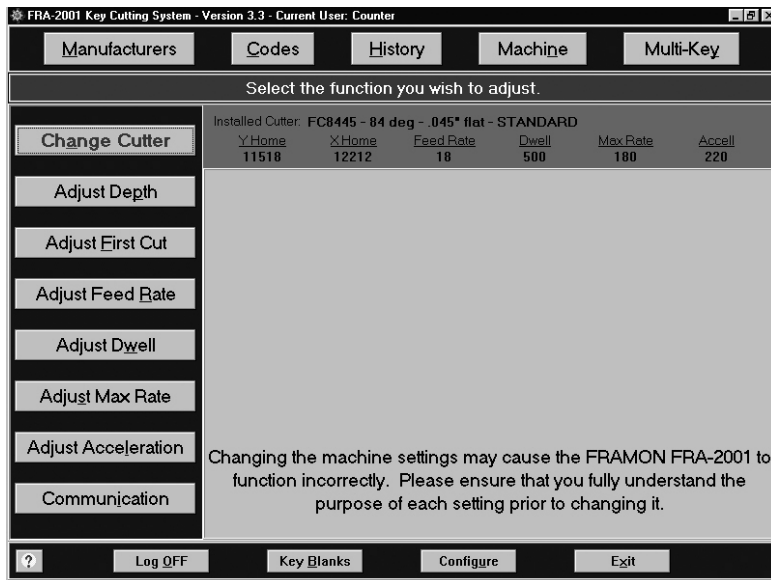
### Using the Machine Section

All machine adjustments are made through the Machine section. Your machine has been preset with the following settings:

Y HOME: \_\_\_\_\_

X HOME: \_\_\_\_\_

FEED RATE: 30



DWELL: 500

MAX RATE: 180

ACCELL: 220

These settings should be shown in the green status bar near the middle-top of the screen. When you loaded your software, these numbers settings were written to your computer system. You may change them at your discretion, but we have found these numbers to provide best overall performance and cutter life.

#### *Changing the Cutter*

To change the cutter, click on the “Change Cutter” button. A second screen will appear. Follow the on-screen

instructions to advance the spindle and turn off the spindle switch. Use the provided allen wrench to remove the cutter and install the desired cutter. Retract the spindle and turn the spindle switch back on.

#### *Adjusting Depth & First Cut*

If you ever need to adjust the machine with regards to depth or spacing, click on the “Adjust Depth” or “Adjust First Cut” buttons. The right panel will switch to a counter with up & down arrows. Click the up arrow on Adjust Depth to cut deeper or on Adjust First Cut to cut more towards the bow of the key. Use the down arrow to cut shallower or more towards the tip. Each click of the mouse adjusts the machine .001”. All changes are instant – you do not need to save the changes to set the machine.

#### *Adjusting the Feed Rate*

Click on the Adjust Feed Rate button to change the speed at which the cutter feeds into the key. You will notice in cutting a key that the cutter head moves out and momentarily stops, switches speeds, and begins making the cut. The speed at which it makes the cut is the feed rate. Changing the feed rate is similar to adjusting the depth & first cut. Click on the Adjust Feed Rate button and use the up & down arrows on the screen to change the speed.

#### *Adjusting the Dwell*

Dwell is the amount of time the cutter stays at the root of the cut before moving to the next cut. We suggest that you leave the dwell at the pre-set number in your program.

#### *Adjusting the Max Rate*

Max Rate is the fastest speed that the machine travels to and from the cutting position. Again, we suggest leaving the max rate at the original setting.

#### *Adjusting the Acceleration*

Acceleration is the speed at which the machine goes from dead zero to the max rate. Since the travel of the machine is so short (only about four inches), no appreciable difference will be noted in changing the acceleration.

#### *The Communication Section*

The Communication section is rarely used once the machine is in place and operating. Communication is a diagnostic tool to determine if the machine is “talking” to the computer. To check communications, click on the Communication button, select the COM port you are using on your computer, and click on the “Test Communications” button. The red status bar will tell you if the machine is making contact with the computer. If it is not, cycle the machine’s Main power switch twice and retry the “Test Communications” button. If the machine will not respond, it is typically an incorrect COM port selection.

## Other Important Information Regarding Your AutoCode

### *Updated Software*

With your AutoCode purchase, you are entitled to one free software upgrade. Contact your salesperson when you need upgraded software information.

Contact your Wurth representative for future update information and pricing.

### *The AutoCode Key Vise*

The AutoCode has a reversible vise for cutting different types of keys. You will notice that one side of the vise has a pair of “dots” on the top. This is referred to in the program as the DOT side of the vise. The program will prompt you to use it when very deep cuts are to be made on the key. To reverse the vise, loosen the T-knob and lift the vise straight up. Rotate the entire vise (both top & bottom) 180° until the vise snaps into place.

### *Machine Maintenance*

The only maintenance needed for the machine is a good cleaning, and an occasional “chip removal”. You will notice that chips may enter the machine underneath the cutter head. A chip tray is built into the machine to catch the chips and machine vibration should allow the chips to make their way out the back of the machine. You may wish to help the chips make their exit more quickly by tipping the machine up from the front, and let gravity take over and pull them out the port in the back. If you ever notice that the machine is cutting sporadically with regards to depth, chances are that a large chip accumulation is in the way of the cutter head travel. Remove the four allen screws from one side of the machine and push the chips towards the back of the machine, down the chip tray.

### *Aligning The Key*

The AutoCode has two different types of key stops. There are built-in tip stops at the left side of the vise and a flip-down shoulder stop on the right side of the vise. The rule of thumb in stopping the key is that you should use the flip-down shoulder stop if the key has a shoulder, and the tip stop if the key does not have a shoulder. There are keys that have a shoulder that use the tip stops instead of the shoulder stop. They are easy to recognize because the tip of the key will contact the tip stop before the shoulder of the key touches the flip-down stops. All keys are loaded with the tip of the key to the left.

Replacement part numbers for the stops are:

CNCMS14	Tip Stop
F2MS551	Shoulder Stop

If your cutter ever needs to be replaced, the part number for the cutter is FC9040.

## Instructions For Adding The MD-1 Duplicator & Side Assembly To The AutoCode/AutoMaster

To add the side assembly to the AutoCode, you will need to remove the right side panel from the AutoCode. Remove the four Allen screws (the allen wrench was provided in the original AutoCode package) and remove the right panel.

Attach the three connecting rods to the right side panel and fasten them with the ¼-28 x 1” cap screws. Place a washer under each screw (screws attach from the inside of the panel).

Re-attach the right guard to the AutoCode with the four button head screws that were removed earlier.

Place the side guard over the connecting rods. Remove the protective film layer from the side guard.

Fasten the right side panel supplied with the duplicator to the connecting rods with the furnished button head screws. The guard should fit into the slot in the right panel. Slide the MD-1 Duplicator underneath the guard.