

3D Pro User Guide

Please read this User Guide

The 3-D Pro will only operate as instructed.

Please make sure that the correct cutter and jaw combination are in place before cutting the key!!!!



It is recommended that Safety Glasses be worn at all times when operating this machine

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Checking your new 3D Pro

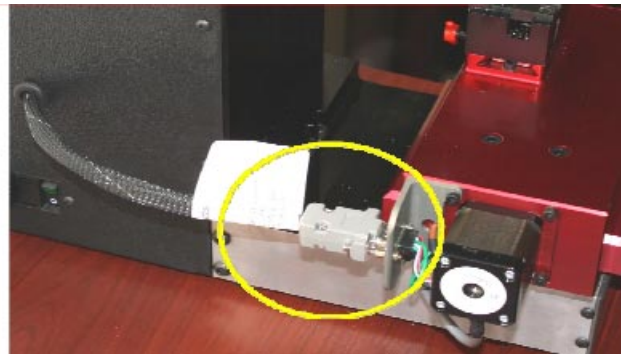
Thank you for purchasing the 3-D Pro Please check for any damages caused during shipping, if any damage is found, please report it immediately. If damage is not reported on the day of arrival, the customer will be responsible for any repair costs.

- Make sure the plastic covers on the 3D Pro are not cracked or broken.
- Check that the tracer swing arm flips up and down properly
- The machine should have no major scratches or markings
- All missing parts should be reported upon day of arrival

Contents	
1 x 3-D Pro Machine	1 x Stylus
1 x Jaw 1 (High security Jaw)	1 x Tip Stop
1 x Jaw 2 (Standard Jaw)	1 x USB Cable
1 x VW Adaptor	1 x AC Power Cord
1 x TR 2.5 Single Ended Cutter	1 x Instruction Manual
1 x TR 62.2 Double Ended Cutter	

Optional Parts: Bolt-Down Kit - Laptop Mount - Tibbe Adapter - Jaw Holder

The 9 pin serial cable exiting the left side of the machine case should only be plugged into the 9 pin serial plug on the left side of the X table. (see pics below) Be sure to tighten down the two small flathead attaching screws. Do not plug the 9 pin serial cable into a computer, this will short out the control board.

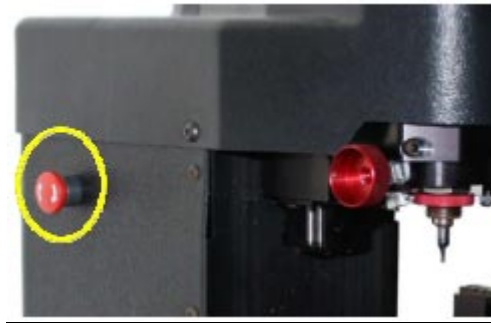


Computer Hardware Requirements

- Windows XP - SP2 or higher, Windows Vista, and Windows 7 with 512Mb of RAM
 - We recommend a 2,000 watt pure sine wave inverter is recommended to extend the life of your 3D Pro and laptop.
 - If using an inverter to power the 3D Pro, make sure the inverter is *properly grounded* to the vehicles chassis otherwise you may incur problems with the operation of the machine.
- 64-Bit Windows is not supported for 3D Pro software V.12 at this time.

The Emergency Stop Button

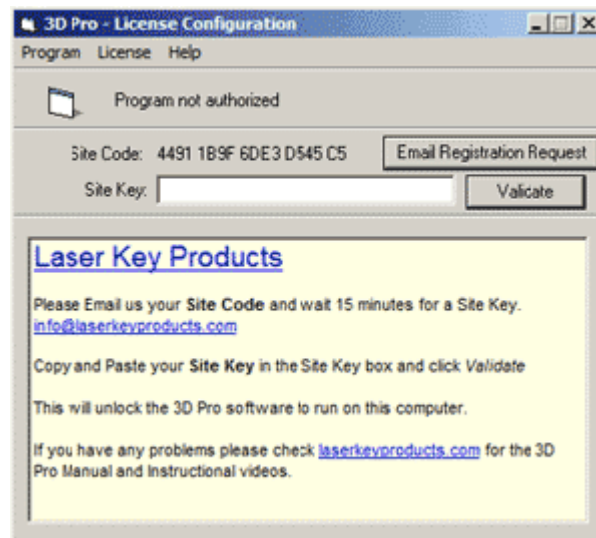
The “Emergency Button” is situated on the left hand side of the machine. In an emergency, hit the button to turn off the machine. On newer 3D Pro’s the Emergency Stop acts as the On/Off Switch. To turn the machine on, twist the button clockwise and it will pop out. To turn the machine off press the button.



Software Installation

Installing the Software

1. Go to <http://www.laserkeyproducts.com>
2. Look under Downloads > 3D Pro Software and Click “3D Pro V.11 For new installs”
3. Enter the password you received in your “Read First” paper with your 3D Pro
4. Download, extract and Run the downloaded file and follow the on screen instructions
5. Double-click your new desktop icon and the License Configuration appears.



6. Read the instructions and email us your *site code* and wait for a *site key*. Site codes are released Monday through Friday 9am – 5pm Central Standard Time
7. If you are running 64-Bit Windows you will have to copy the “c:\program files (x86)\laser security products” folder to “c:\program files\laser security products” then right click your desktop icon and remove the “ (x86)” from the target.

If you have contacted us and bought integrated Black Hawk Codes then choose “3D Pro V.12 For new installs” at the website and follow the same steps.

Making your computer recognize your 3-D Pro

1. Connect power cord to the left side of the 3D Pro and twist out the Red Emergency Stop.
2. Connect USB cable to the right side of your 3D Pro and to a USB port on your computer.
3. Turn the power switch on or in the up position, you should see a green light indicator. Newer 3D Pro's do not have this as the Emergency Stop acts as the power switch.
4. Your computer should at this point install the driver automatically and if not the Found New Hardware will appear. Click install from specific location and Browse to "c:\program files\laser security products\3d pro windows drivers" and click next and finish.

5. If the driver does not install Click the Start menu then Right-click on "My Computer" or "Computer" and choose "Properties" then Click "Hardware" tab and choose the "Device Manager" button (or just Device Manager on Vista and 7) Right Click "Motion Controller" (you will notice a yellow exclamation mark over the device) and Click "Update Driver" Choose install from specific location and Browse to "c:\program files\laser security products\3d pro windows drivers" and click next then finish.
6. Once the drivers are installed correctly there will be a "COM" number assigned to it on the end of the SimpleStepSSXYZ motion board controller.
7. Proceed once you have determined that the driver for the 3D Pro is installed correctly with no errors. Status should read "The device driver is installed correctly".

Finding the correct COM port

If you get an error when starting your software

1. Click the Start menu
2. Right-click on "My Computer" or "Computer" and choose "Properties"
3. Click "Hardware" tab and choose the "Device Manager" button (or just Device Manager on Vista and 7)
4. Click the arrow next to "ports" and the COM number should be listed on the end of the "Simple Step Motion Controller" This is the port or COM number your computer has assigned the machine.
5. Double-click on the "SSXYZ Motion Controller" and a dialog box will appear.
6. At the top of the box, there will be a tab called "Ports Settings", click it.
7. Click on the "Advanced" button and change the COM number to 2 as this is the default COM number set in our software.
8. The COM number you choose can only be 2 through 9. 2 is recommended.
9. After clicking on ports, a parameter named "Baud Rate" will be shown in the "port setting" tab.
10. Click on the drop down button and a drop-down menu will appear, choose "57600" and click "Ok"
11. Close the Device Manager window

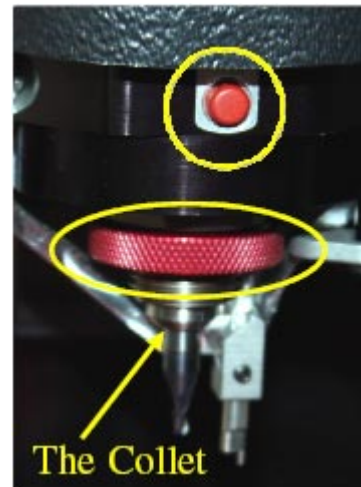
[You can view a video of this CommSetup procedure at laserkeyproducts.com](http://laserkeyproducts.com)

Changing the Cutter or Stylus

“The Collet” Holds the Cutter or Stylus in the spindle. To remove the cutter or stylus, first hold the red knurl knob on the top of the machine sticking up through the lid.

Then press in “spindle stop button” on the front of the head unit. Now turn the knob on top with your hand until you feel the spindle stop button press all the way in. Turn the knob counter clockwise and you will feel the collet loosen. The cutter or stylus can now be removed.

Machines that do not have the “spindle stop button” will have a red “knurl knob” underneath the head unit that you will use together with the top knurl knob to loosen the “Collet” and remove the cutter.

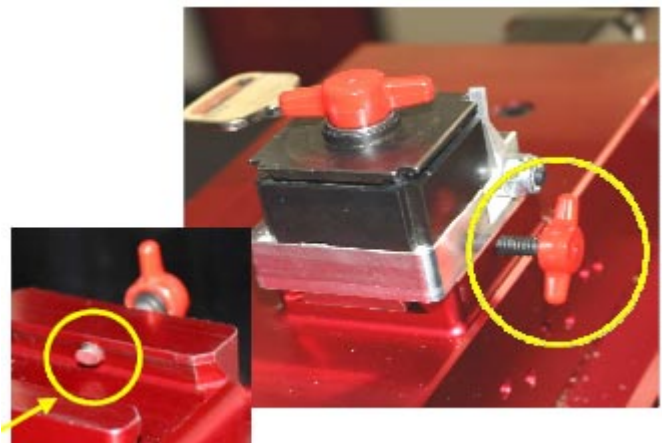


When replacing the cutter or stylus, insert it into the collet and slide it up until it stops. Press the spindle stop button in until it catches so you can tighten the collet back up on the cutter, it does not have to be extremely tight, hand tight should be sufficient. If one of the ends of your TR62.2 double ended Jaw 2 cutter is broken, you will notice that it inserts further into the collet than normal. This is fine but if it had just broke be sure to click on “Enter” before clicking on the “Start” button so it will compensate for the new length. Pressing the “Enter” button causes the machine to recalculate the cutting path.

Changing Jaws

The black Jaw 1 is for High Security keys and the silver Jaw 2 is for standard security keys. When changing a jaw, look behind where the jaw is attached, you will notice a red “T knob” Turn the “T knob” counter clockwise to release the lock pin, the jaw can be now be removed from the table by sliding it off to the right.

Replacing the jaw is the same operation in reverse order, if the jaw will not slide into place, make sure the angle of the lock pin matches the angle of the dovetail, and lock pin is not protruding (like the one in the pic)



USING JAW 1

Clamping High Security Keys in Jaw 1

Using the “Tip Stop”

When you select a High Security key, the software will tell you which slot to place the “Tip Stop”

After you have selected the high security key, look under the “Main” column on the home screen, you will find the tip stop number next to the box labeled “Stop”.

It will read “Tip 1”, “Tip 2”, or “Tip 3”

Now place the tip stop in the correct slot, lay the key flat in the jaw and slide the key forward until it touches the tip stop then tighten the jaw.

Warning: Do not forget to remove the tip stop before tracing or cutting a key.

Main	
DSD	3 <input type="button" value="Search"/>
Manufacturer	HONDA/ACURA ▾
Spaces	6
Depths	6
Stop	Tip 2 ▾
Track	Four ▾
Cut	External ▾
Key Blank	H001-P
Step	1
Jaw	Jaw 1 ▾
Jaw Clamp	N/A



Clamping High Security Keys in Jaw 1 Using the “Shoulder Stop”

When selecting a key that calls for a “Shoulder” stop, place the key in the jaw and slide it forward until the shoulder of the key is touching the front of the jaw. No tip stop is used for this type of key. Tighten the red knob to lock the key in place.



“Jaw1” is always used for ALL high security (laser style keys)

The Cutter used with Jaw1 is always the TR2.5 single ended cutter

This is the “Tip Stop”



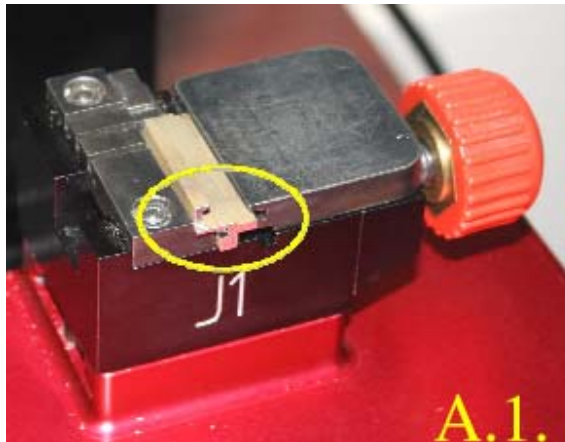
Clamping High Security Keys that require “Adapters”

“VW” Adaptor

When a VAG (HU66) key is selected, it requires the “VW” Adapter to be used.

Open Jaw 1 wider than you normally would to allow the adaptor to be inserted; it should slide in easily and fit on the left side of the jaw. Slide it forward until the adapter stops and will push forward no further, see fig A.1

Now insert the key into the adapter and slide the key forward until the shoulder of the key stops on the adapter. The key will be on the right side of this adapter once clamped in the jaw, see fig A.2



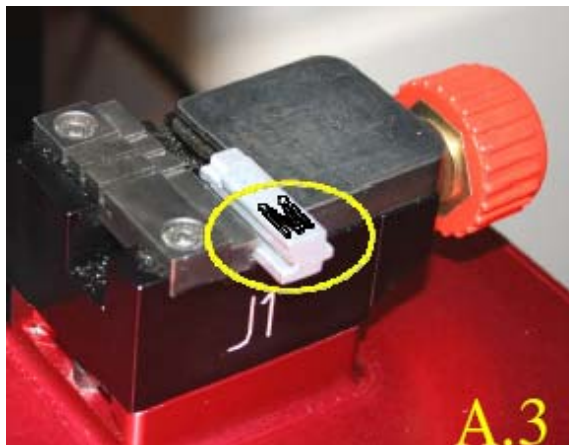
“M” Adaptor

When a Mercedes 2 Track key is selected, it requires that the “M” adapter be used.

Open Jaw 1 wider than you normally would to allow the adaptor to be inserted, it should slide in the right, or moveable side of Jaw 1 and you will notice that there is a slot on the right side that the adapter slides into, see fig A.3

The adaptor will be on the right side of the key once clamped, see fig A.4

Note: When using this adaptor you will also need to use the tip stop in “Tip Stop 2” (slot 2)



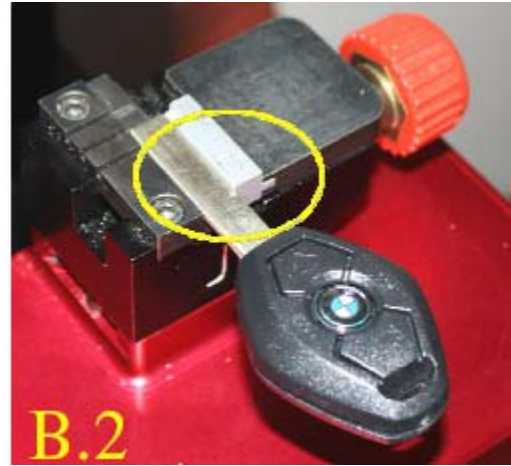
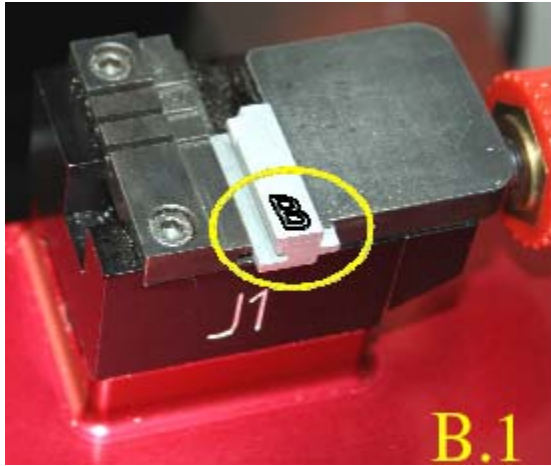
"B" Adaptor

When a BMW HU92 2 Track key is selected it requires that the "B" adaptor be used.

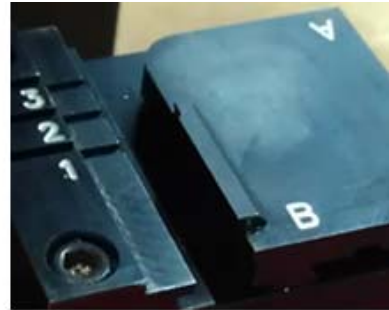
Open Jaw 1 wider than you normally would to allow the adaptor to be inserted; it should slide in the slot on the "right" or moveable side of the Jaw, see fig B.1

The adaptor will be on the right side of the key once clamped, see fig B.2

Note: When using this adaptor you will also need to use the "Tip Stop" in tip stop 2 (slot 2)



Or if your Jaw 1 has an A and B side simply flip the Jaw Top to the "B" side.



USING JAW 2

Clamping Non-High Security “Shoulder Stop” Keys in Jaw 2

When you select a standard security key from the menu, the software will tell you which “Stop” to use, “Shoulder” or “Tip”

This is an example of a Shoulder Stop key. Slide the key forward until it stops on the shoulder of the key, as in fig. J.3. Tighten the red knob on top until the key is clamped firmly.



Clamping Non-High Security “Tip Stop” Keys in Jaw 2

This is an example of a Tip Stop key. Insert the key into the jaw and raise the “Tip Stop” slide the key forward until it touches on the stop... See fig J.4



Remember to fold the “Shoulder” or “Tip” Stop back down before you start to “Trace” or “Cut” a key

Clamping Non High Security Keys in Jaw 2

Be sure that all keys are inserted completely into the back (bottom) of the Jaw unless otherwise specified in the text box in top right corner of the home screen.

The message will appear once the key is selected, if there are any notes like “clamp key on milling” it will appear here.

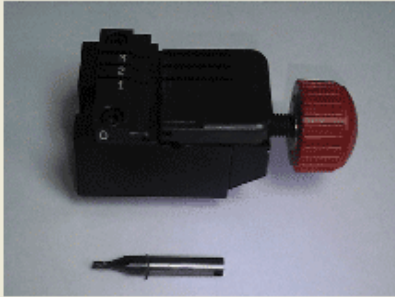
Main	
DSD	25 <input type="button" value="Search"/>
Manufacturer	FORD <input type="button" value="v"/>
Spaces	8
Depths	5
Stop	Tip 1 <input type="button" value="v"/>
Track	Two (Left) <input type="button" value="v"/>
Cut	External <input type="button" value="v"/>
Key Blank	H75
Step	1
Jaw	Jaw 2 <input type="button" value="v"/>
Jaw Clamp	A

8	<input type="checkbox"/>
7	<input type="checkbox"/>
6	<input type="checkbox"/>
5	<input type="checkbox"/>
4	<input type="checkbox"/>
3	<input type="checkbox"/>
2	<input type="checkbox"/>
1	<input type="checkbox"/>

Side A

CLAMP KEY ON MILLING

Refer to page 10 in the 3D Pro instruction manual for details



Jaw type & Cutter

When tracing or cutting the second side of a double sided key, if there are no 1 depths towards the tip of the key it will not automatically align in the jaw.

To keep the key correctly aligned in the jaw, you must align the key by eye.

The best way to do this is compare the milling marks on the key to the straight edge of the jaw.

Calibrating your 3D Pro

Calibrating Cutter for Jaw 1

1. Clean any shavings or debris from jaw (Any metal shavings, dirt or grease that the stylus touches will take an incorrect reading). And open Jaw 1 all the way!
2. Put the Stylus in the collet. The Stylus must be used to calibrate.

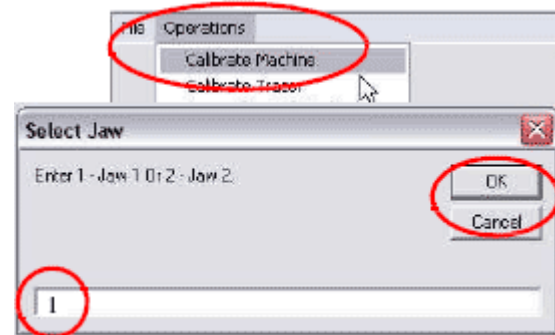
Do not use cutters to calibrate or else your keys will cut wrong.

This is the Stylus.



3. Make sure the tracer arm is up, if the tracer arm is down, you will receive an error message.
4. On the main screen, click on the "Operations" menu and choose "Calibrate Machine"

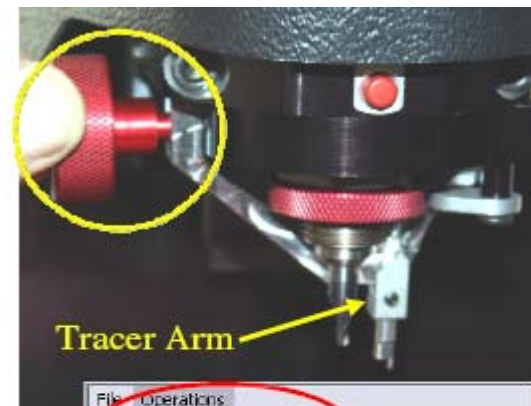
5. When the window appears asking to "Select Jaw" insert the correct jaw number in the window, 1 (1, 2, or 3 depending on which jaw you want to calibrate) as we are calibrating Jaw "1" we would enter "1" and click "OK"



6. The stylus will touch the jaw in three places. After the procedure is complete it will say "Update in Progress Please Wait" give it a moment and don't click anything or it can possibly freeze the software and you will have to restart it.

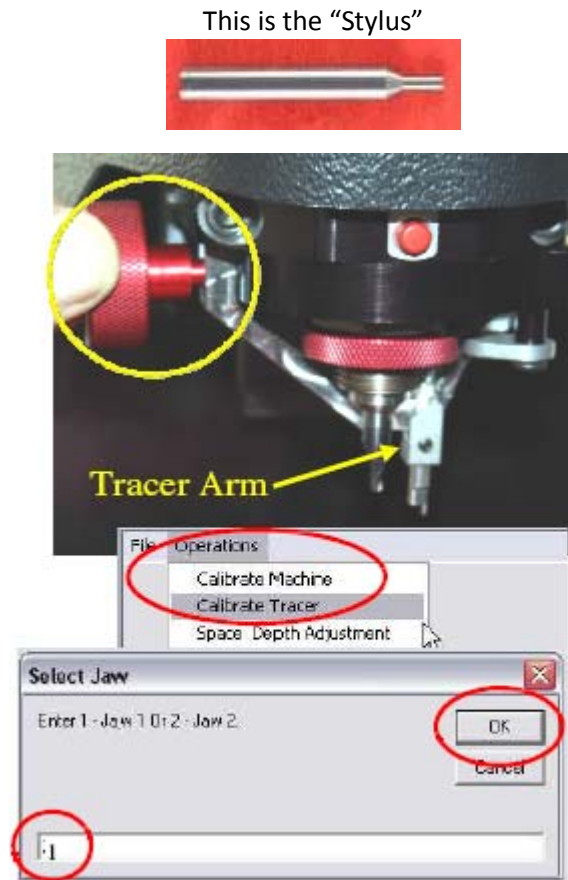
Calibrating Tracer for Jaw 1

1. Always have a "Cutter" or "Stylus" installed while calibrating the Tracer, do not leave the collet empty or it will get in the way of the Tracer.
2. Flip the tracer arm down with the "red knurl knob" on the left side of the head.
3. On the main screen, click on the "Operations" menu and choose "Calibrate Tracer"
4. When the window appears asking to "Select Jaw" insert the correct jaw number in the window, (1, 2, or 3 depending on which jaw you want to calibrate) as we are calibrating Jaw "1" we would enter "1" and click "OK"
5. The tracer tip will touch the jaw in three places. After the procedure is complete it will read, "Update in Progress Please Wait" give it a moment and don't click anything or it can possibly freeze the software and you will have to restart it.



Calibrating Cutter for Jaw 2

1. Insert Stylus into Collet
2. Clean any shavings or debris from jaw (Any metal shavings, dirt or grease that the stylus touches will take an incorrect reading)
3. Close the Jaw 2 so that it is completely shut with the 'A' side facing calibration post and make sure the tip and shoulder stops are flipped down.
4. On the main screen, click on the "Operations" menu and choose "Calibrate Machine"
5. When the window appears asking to "Select Jaw" insert the correct jaw number in the window, (1, 2, or 3 depending on which jaw you want to calibrate) as we are calibrating Jaw "2" we would enter "2" and click "OK"
6. The tracer tip will touch the jaw in three places. After the procedure is complete it will read "Update in Progress Please Wait" give it a moment and don't click anything or it can possibly freeze the software and you will have to restart it.



*Jaw 2 may need minor adjustments to space or depth after calibrating to be correct.
Refer to the section "Checking and Adjusting the "Tracer" for instructions.*

Calibrating Tracer for Jaw 2

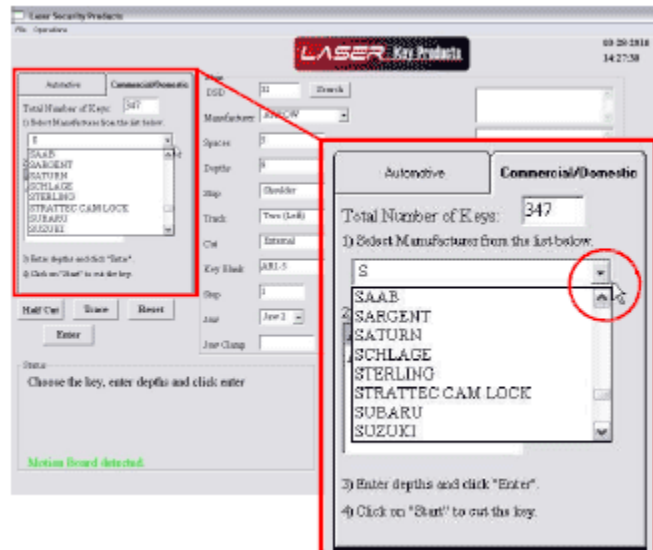
1. Clean any shavings or debris from Jaw 2.
2. Always have a "Cutter" or "Stylus" installed while calibrating the Tracer, do not leave the collet empty or else you will have problems reading key spacing.
3. Flip the tracer down with the red knurl knob on the left side.
4. When calibrating Jaw 2, tighten the jaw top so it is completely shut and make sure that side "A" is facing the left toward the post and that the Tip and Shoulder stops are flipped down.
5. On the main screen, click on the "Operations" menu and choose "Calibrate Tracer"
6. When the window appears asking to "Select Jaw", insert the correct jaw number in the window
As we are calibrating "Jaw 2" we would enter "2"
8. The tracer tip will touch the post once and the jaw in two places, after the procedure is complete it will read, "Update in Progress Please Wait" give it a moment and don't click anything or it can possibly freeze the software.

Cutting a Key “Commercial/Domestic”

1) “Select Manufacturer”

The “Select Manufacturer” box will have an “Arrow Down” key that you must click. Pressing any letter at this point will jump directly to all the manufacturers listed starting with that letter, for example, pressing the letter “S” will pull up all entries beginning with “S”

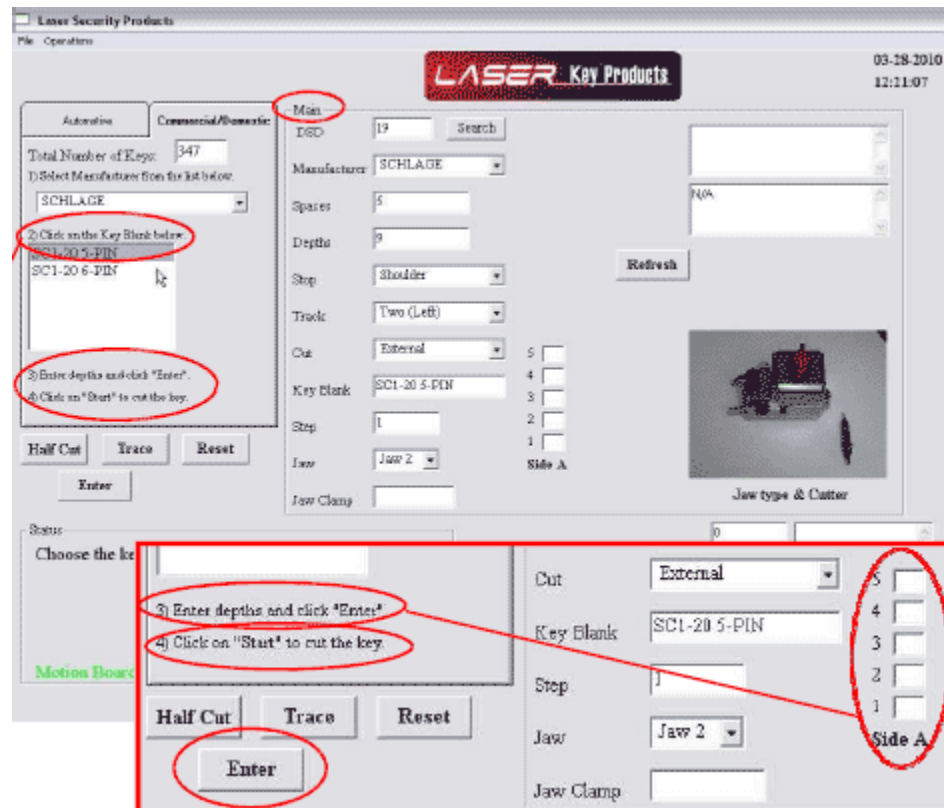
In this example I have used SCHLAGE choosing this will open a box showing all the relevant keys (in the database) for this manufacturer.



2) “Click on the Key Blank below”

Click on the key blank you want and it will open the “Main” cutting information window.

The “Main” section gives us all the information we need to cut the key.



3) "Enter depths and click "Enter"

Enter the depth of your cuts starting with "1" as the cut nearest the shoulder of the key. Once the cuts have been entered click "Enter"

4) "Click on "Start" to cut the key"

Once you have entered the cuts, click "Enter" and the "Start" button will appear, click on the start button and you will see a check box "Click OK if Jaw 2 and TR62 cutter installed" If you have the correct jaw and cutter installed, click "OK" to cut the key.



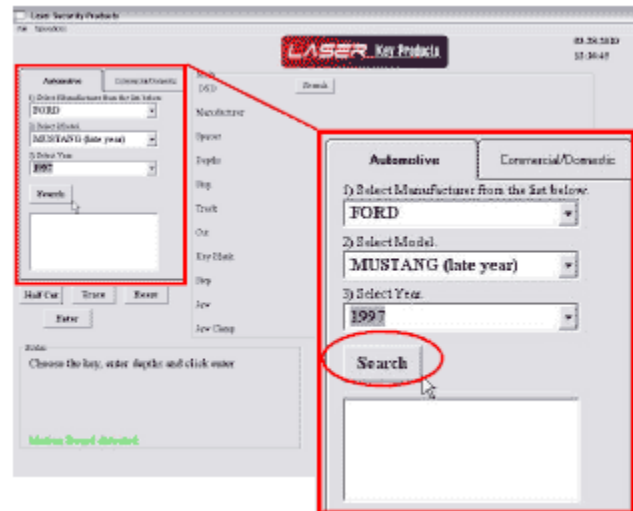
Cutting a Key "Automotive"

On the main screen you will see two "tabs" "Commercial/Domestic" and "Automotive" Click on the "Automotive" tab and go to step "1"

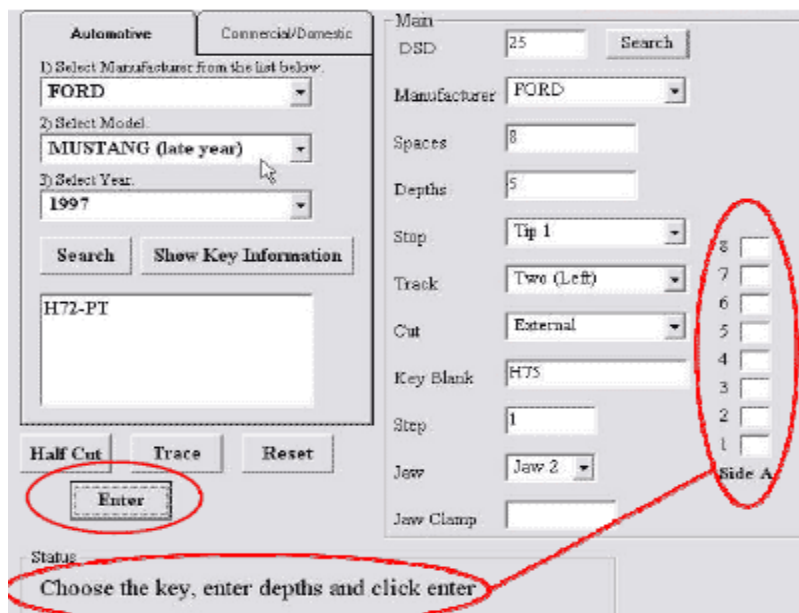
1) "Select Manufacturer from list below" Press the down arrow and select FORD

2) "Select Model" Choose the Model of the vehicle next. For example: MUSTANG

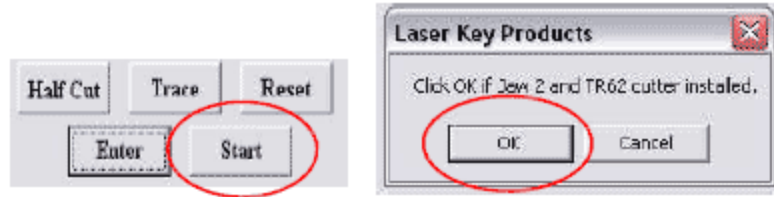
3) "Select Year" Choose the year of the Vehicle Now click on the "Search" button, the software will choose the correct key for the information you have selected.



4) "Choose the key, enter depths and click enter" Enter the depth of your cuts starting with "1" as the cut nearest the shoulder of the key. Once the cuts have been entered click "Enter"

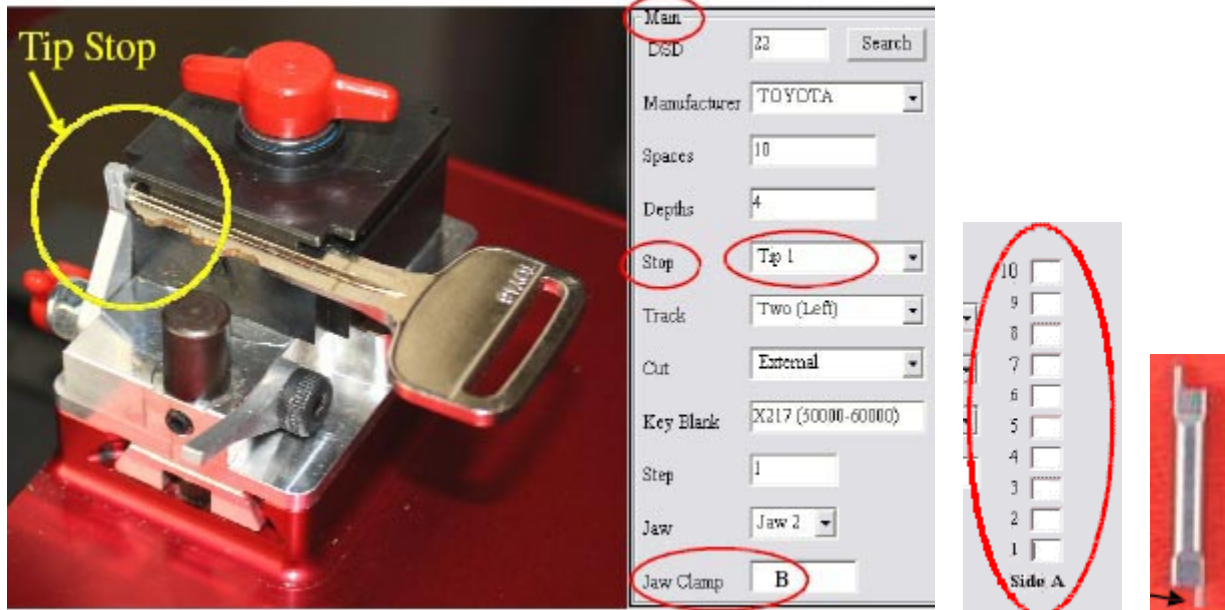
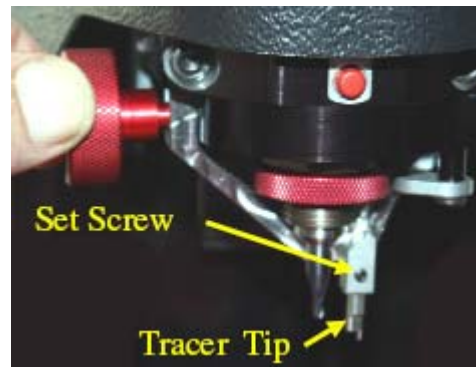


5) "Click on Start to cut the key"
 Once you have entered the cuts, click "Enter" and the "Start" button will appear. Click on the start button and you will get a check box "Click OK if Jaw 2 and TR62 cutter installed" If you have the correct jaw and cutter installed, click "OK" to cut the key.



Tracing a Key

We are going to trace a Toyota key, choose the relevant Manufacturer, Model and Year on the "Main Screen" Clamp your key into Jaw 2 as shown and remember to fold down the tip stop once you have clamped the key in the jaw.



Fold down the "Tracer Arm" and click on the "Trace" button. The machine will now trace the key and the results of the trace will be entered in the "Side A" depth of cuts table.

If the double ended "Tracer Tip" should get damaged it can be turned around or changed. Use a 3/64 Allen wrench to loosen the "Set Screw" replace the tracer tip making sure the "Tip" faces to the right, re-tighten the set screw.

SPACE AND DEPTH ADJUSTMENTS

The following pages will show you how to check and set your machine to cut and trace perfectly.

Explaining the X, Y, Z Axis

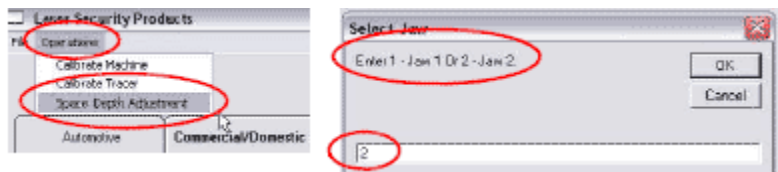
1. This machine has three axes which are X, Y, and Z
2. The X axis is the movement from left and right and controls the depth.
3. The Y axis is the movement from front to back and controls the spacing.
4. The Z axis is the movement up and down and controls the height at which the cutter is lower

How to use "Space/Depth Adjustment"

All adjustments are in .001" (one thousandths of an inch)

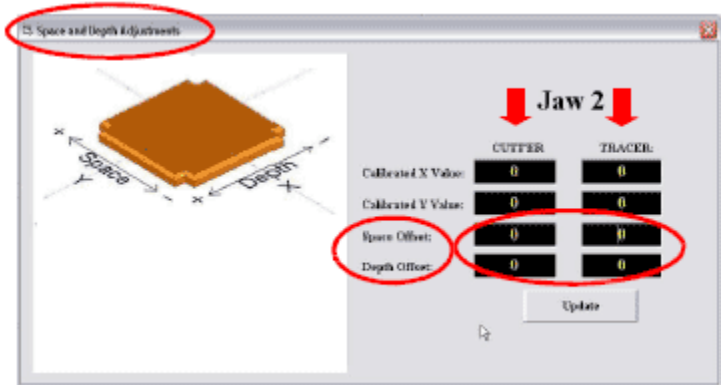
The "Space" or "Depth" on either the "Tracer" or the "Cutter" can be adjusted by a maximum of ".020" (20 thousandths) either way (+ or -) plus or minus.

To make any of these adjustments, go to "Operations" and choose "Space Depth Adjustment" on the drop down menu and this will open the "Select Jaw" box.



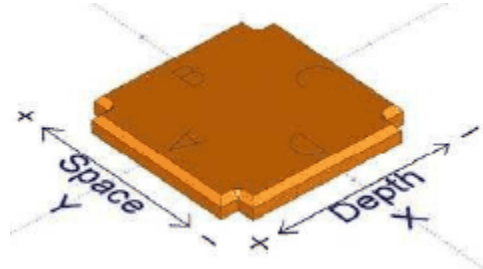
Enter the "Jaw" you are intending to make adjustments to, in this example I have entered "2" for Jaw 2. Now click "OK" and the "Space and Depth Adjustments" box will open

As you will see we can choose "Cutter" or "Tracer" and also we can choose "Space" or "Depth" offset. By changing the value from "0" we can adjust the depth or spacing on both the cutter and the tracer.

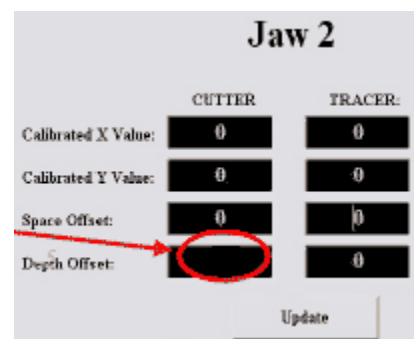


When we change the values here we are in fact adjusting where the "cutter" or "tracer" makes contact with the key.

If we want to make the cutter cut deeper we would enter a minus number (-) in the Depth Offset box. To cut the key ".005" (5 thou) deeper we would enter "-5" in the "Depth Offset" box.



To cut less -5 material off the key and make the cut .005 thicker we would enter "5"



To make the cutter cut closer to the shoulder of the key we would enter a minus number (-) in the "Space Offset" box.

To cut the key .005 closer to the shoulder of the key you would enter "-5" in the "Space Offset" box.

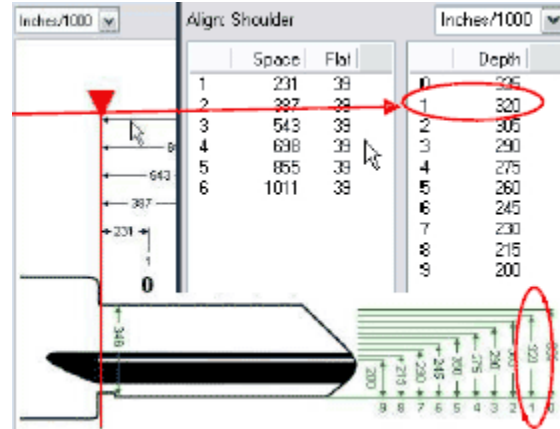
To cut the key .005 closer to the tip of the key you would enter "5" in the "Space Offset" box.

You will see that the "Space and Depth Adjustments" box is marked with (+ or -) plus or minus on both Space and Depth.

Checking and Adjusting the Depth settings on Jaw 2

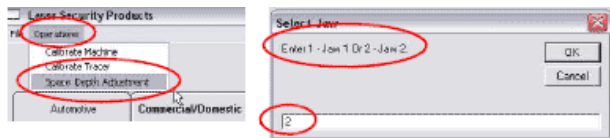
Set the software to cut a key to "Schlage" DSD 19 this is the Schlage 5 pin blank, Instacode shows the "1" (one) depth to be ".320" (320 thou) Enter all the cuts as "1" and cut the key

Once the key is cut, read the key "Depth" with a "caliper" to see if it reads ".320" if it does then your depth setting is correct, if not you will have to make some slight adjustments.



When I cut my key I got a reading of ".324" ... This is ".004" higher than it should be, so I need to make the software cut the key ".004" deeper.

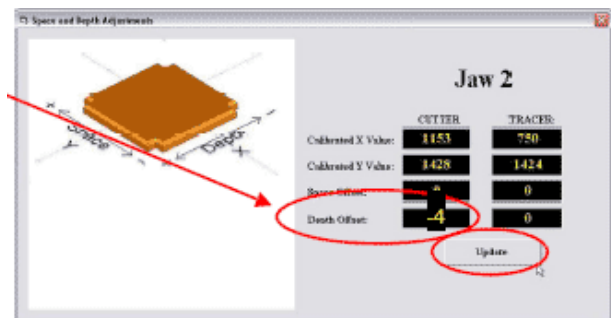
To make this adjustment go to "Operations" and choose "Space Depth Adjustment" In the "Select Jaw" type '2' and click "OK"

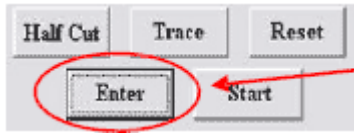


Now change the value in the "Depth Offset" to "-4" and click "Update"

You will see a message "Update in progress, please do not turn OFF system"

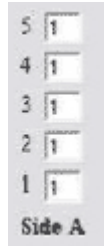
Wait until you see: "Update complete" and then click "OK"





Before you re-cut the key you MUST click "Enter" before clicking on "Start" for the changes to take effect

Now re-enter the "1" cuts in all boxes and re-cut the key, re check the reading with the calipers and you should have a reading of 0320 ".320"



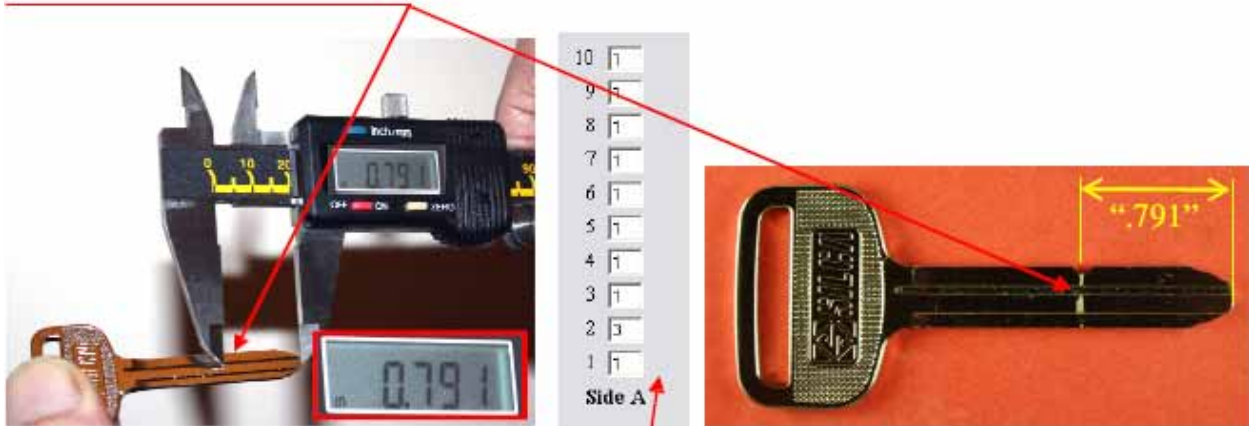
You can find key data in your 3D Pro software as well as most any code program like InstaCode by first choosing your key then pressing "File" then "Edit" and looking under "Cut Depth" and "Tracing Depth"

	0	1	2	3	4	5	6	7	8	9
Cutting Data										
Side A Spaces		231	387	543	699	855	0	0	0	0
Side B Spaces	0	0	0	0	0	0	0	0	0	0
Cut Depth	335	320	305	290	275	260	245	230	215	200
Half Cut Depth	335	320	305	290	275	260	245	230	215	200
Tracing Data										
Side A Spaces		231	387	543	699	855	0	0	0	0
Side B Spaces	0	0	0	0	0	0	0	0	0	0
Tracing Depth	335	320	305	290	275	260	245	230	215	200

Checking the Cutter “Space” settings for a Tip Stop Key on JAW 2

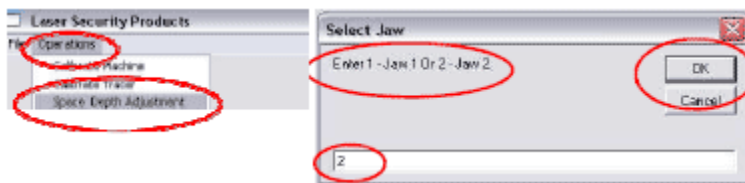
We are going to use the X217 (Silca TOY43) key blank “DSD 22” to check the “Cutter” for a “tip stop key”

First I made a scratch mark on the side of the key with the Caliper at the number 2 position, Instacode shows us that it is “.791” from the tip of the key.



Enter the cuts 1-3-1-1-1-1-1-1-1 and cut the key...

If the cut is not in the center of the mark, you will have to make some slight adjustments. Go to “Operations” and choose “Space Depth Adjustment” on the drop box, select “Jaw2” and click “OK”



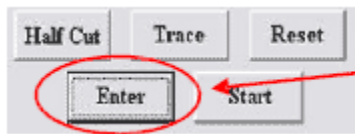
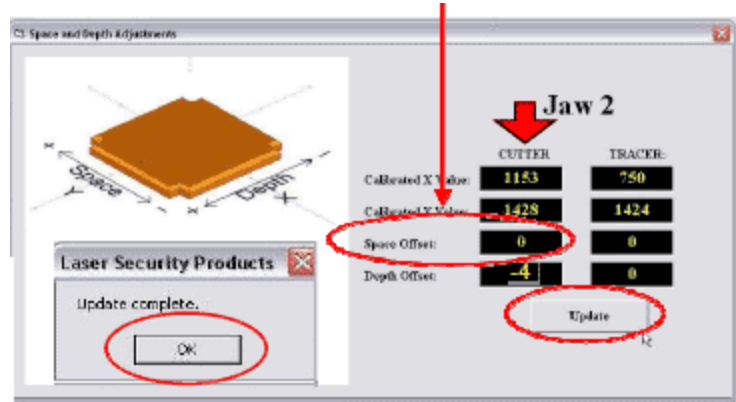
To cut the key .005 closer to the “shoulder” of the key ... enter “-5” (minus 5) in the “Space Offset” box (under cutter)

To cut the key .005 closer to the “tip” of the key ... enter “5” in the “Space Offset” box.

When you have made your changes, click "Update"

You will see a message "Update in progress, please do not turn OFF system"

Wait until you see: "Update complete" and then click "OK"



Before you re-cut the key you MUST click "Enter" before clicking on "Start" for the changes to take effect

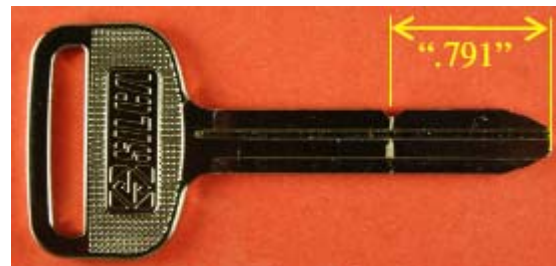
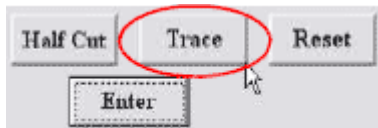
You might want to re-check you depth settings by reading the depth of the number 3 cut with the calipers.

The depth should read 0.272 ".272"



Checking the Tracer "Space" settings for a Tip Stop Key on JAW 2

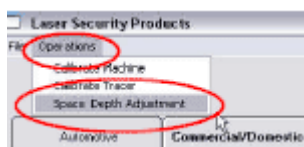
We are going to use the X217 (Silca TOY43) key blank that we marked and cut earlier to check the "Tracer" for a "tip stop key"



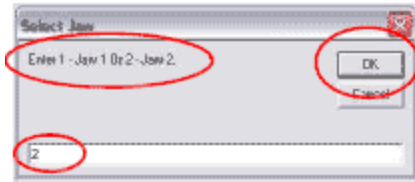
Set the software to X217 (Silca TOY43) "DSD 22" and clamp the key in Jaw 2 and click on the "Trace" button. Now watch the tracer as it moves along the key and see if it drops in the "center" of the number 2 cut, I noticed that the tracer on mine did not drop in the center of the number 2 cut BUT it dropped too close to the head of the key.

To make the tracer tip drop into the center of the cut we need to make some adjustments.

Go to "Operations" and choose "Space Depth Adjustment" on the drop box select "Jaw2"



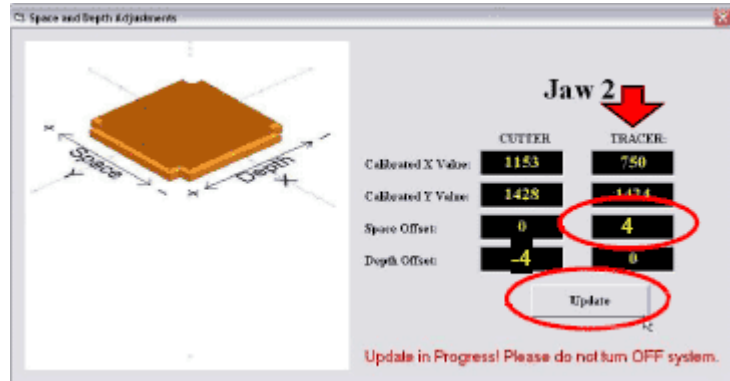
and click "OK". Now change the value in the "Space Offset" on the tracer to "2" to bring the center of the tracer ".002" (2 thou) closer to the tip of the key, then click "Update"



You will see a message “Update in progress, please do not turn OFF system”. Wait until you see: “Update complete” and then click “OK” ... Now trace the key again.



I found that the tracer was still dropping too close to the head of the key so I changed the offset to “4”, then click “Update” again and wait 4 until you see: “Update complete” and -4 then click “OK”



I traced again and this time the tracer was perfectly in the center of the cut.

Your 3-D Pro should now be Calibrated perfectly for Cutting and Tracing on JAW2 Tip Stop

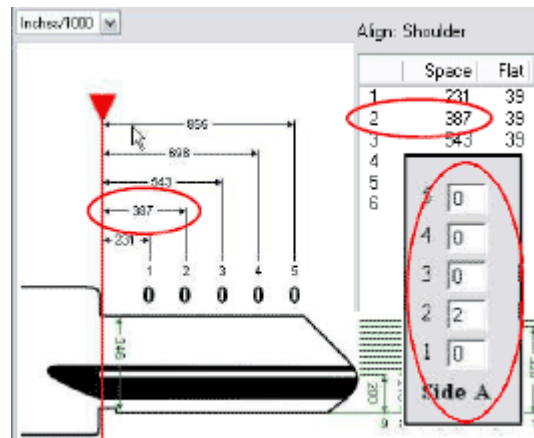
Checking the “Cutter” settings for a Shoulder Stop Key on JAW 2

We are going to use a Schlage to check the “Cutter” for a “shoulder stop key”

Now check to see what Instacode shows for the “2nd” space on a Schlage key.

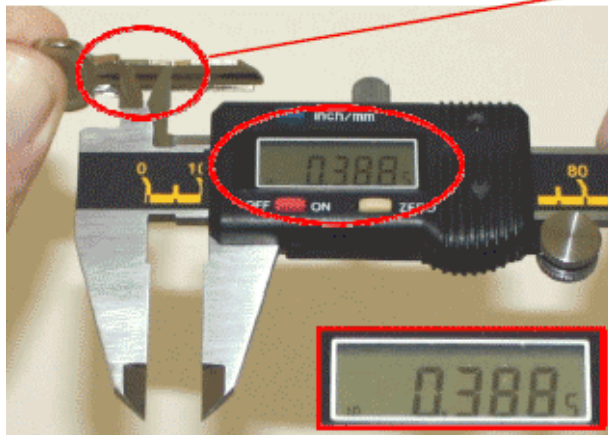
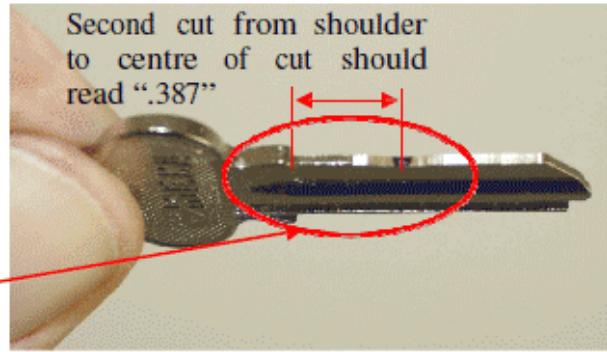
As shown, space two is “.387” (387 thou) from the shoulder of the key.

Set the software to cut a key to “Schlage” DSD 19 settings.
Enter the cuts as 0-2-0-0-0 and cut the key



Once the key is cut, read the key "Space" with a "caliper" from the shoulder of the key to the "2nd cut" this should read ".387" (387 thou)

When I cut my key it read (0388) ".388"

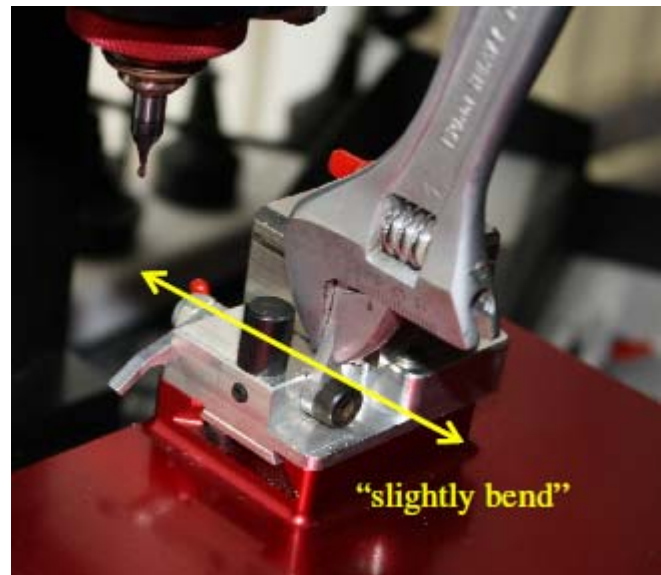


This is cutting well within key specs and should be set properly.

The shoulder stop should be flush with the edge of the pocket which is cut into the corner of the jaw.

If you flip the shoulder stop up you can tell if it has been slightly bent forward, if it has you will want to bend it back to match the edge of the jaw pocket.

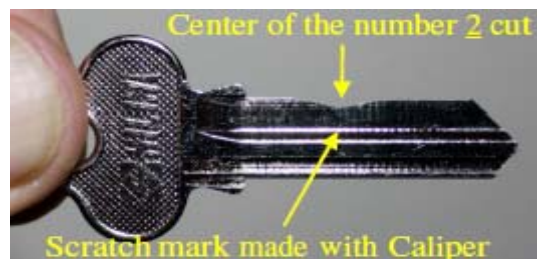
Use a small "Crescent Wrench" to do this; by tightening the Crescent onto the Shoulder Stop you have a lot of control while bending.

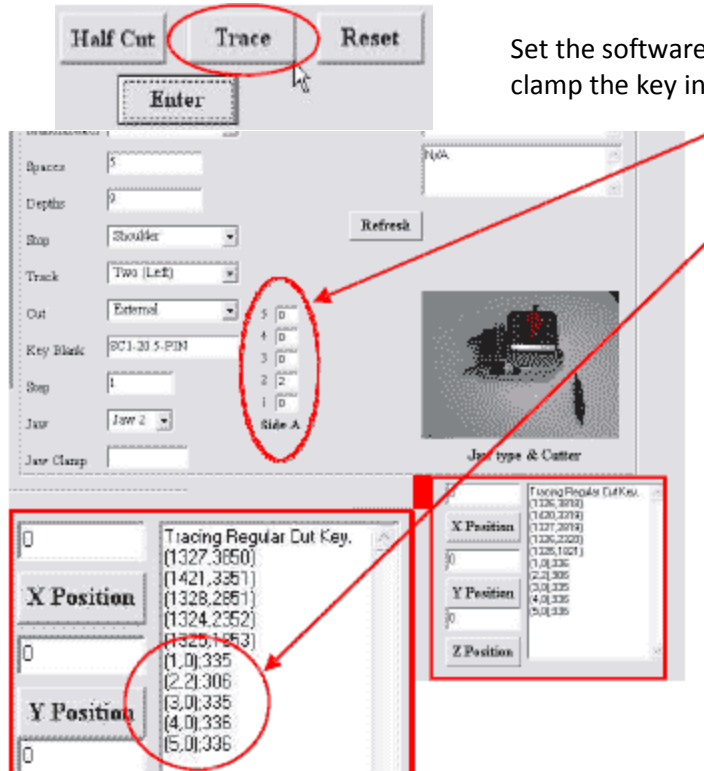


Checking the "Tracer" settings for Shoulder Stop Key on JAW 2

We are going to use the Schlage key with the number 2 depth to check the "Tracer" for a "shoulder stop key"

Make a scratch mark on the side of the key with Caliper.





Set the software to cut a key to DSD19 "Schlage" settings and clamp the key in Jaw 2 and click on the "Trace" button.

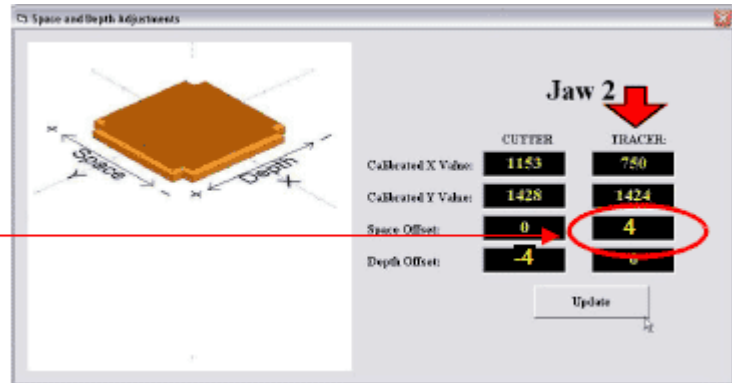
When the tracer has finished, you will see what it read in the box "Side A" and you will also see the readings in the box at the bottom of the "Main" screen, these are the "Actual" depths that the tracer read.

- 1 = 335 = 0
- 2 = 306 = 2
- 3 = 335 = 0
- 4 = 336 = 0
- 5 = 336 = 0

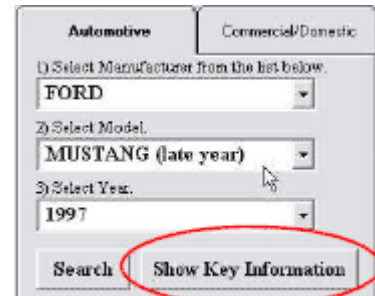
Align Shoulder		Inches/1000	
	Space	Flat	Depth
1	231	39	0
2	387	39	2
3	543	39	2
4	698	39	3
5	855	39	4
6	1011	39	5
7			6
8			7
9			8
			9

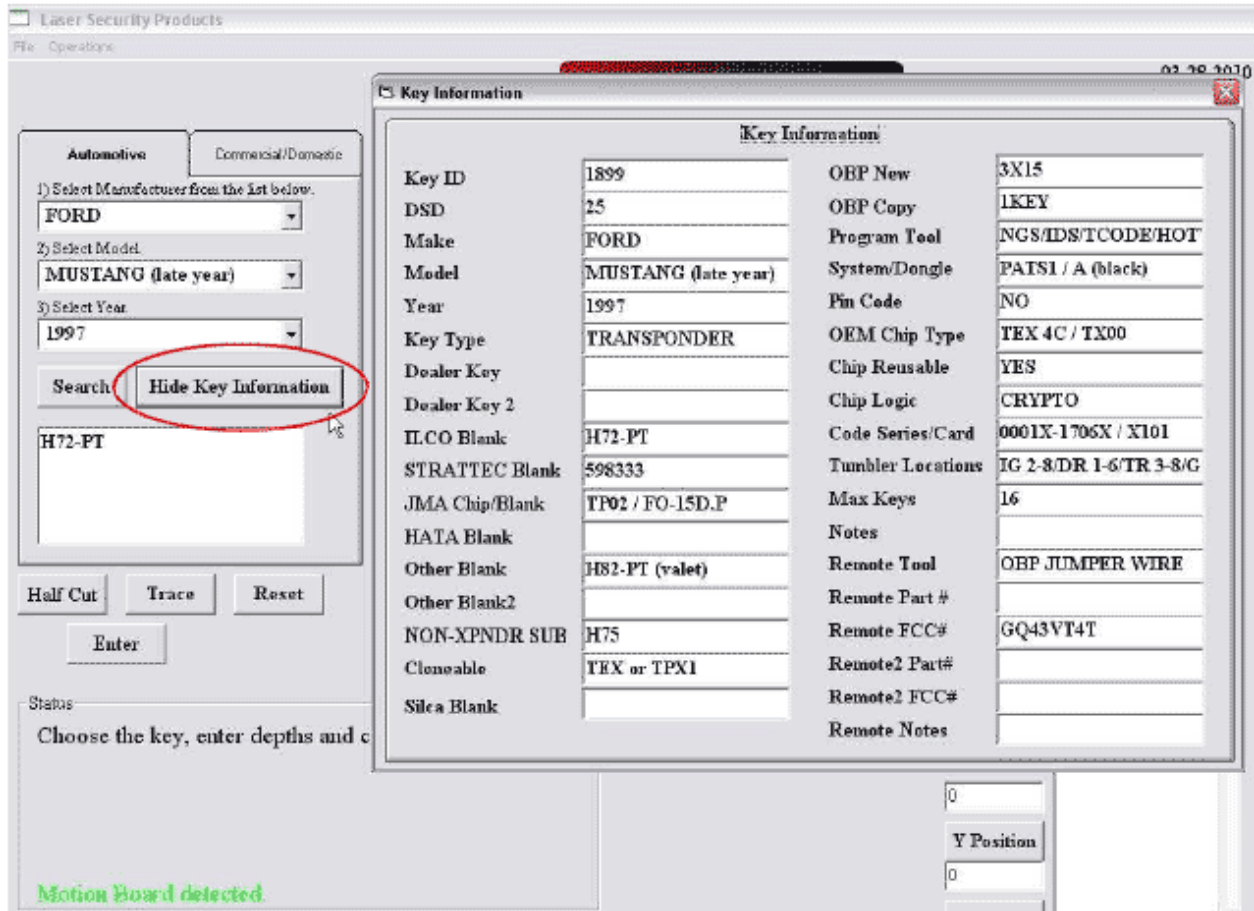
As you can see the readings are within a ".001" (one thou) of the cuts shown in "Instacode", see pic above.

Should the "Depth" settings need to be changed, this can be done by changing the "Depth Offset" under "Tracer" in the "Space and Depth Adjustments" box.



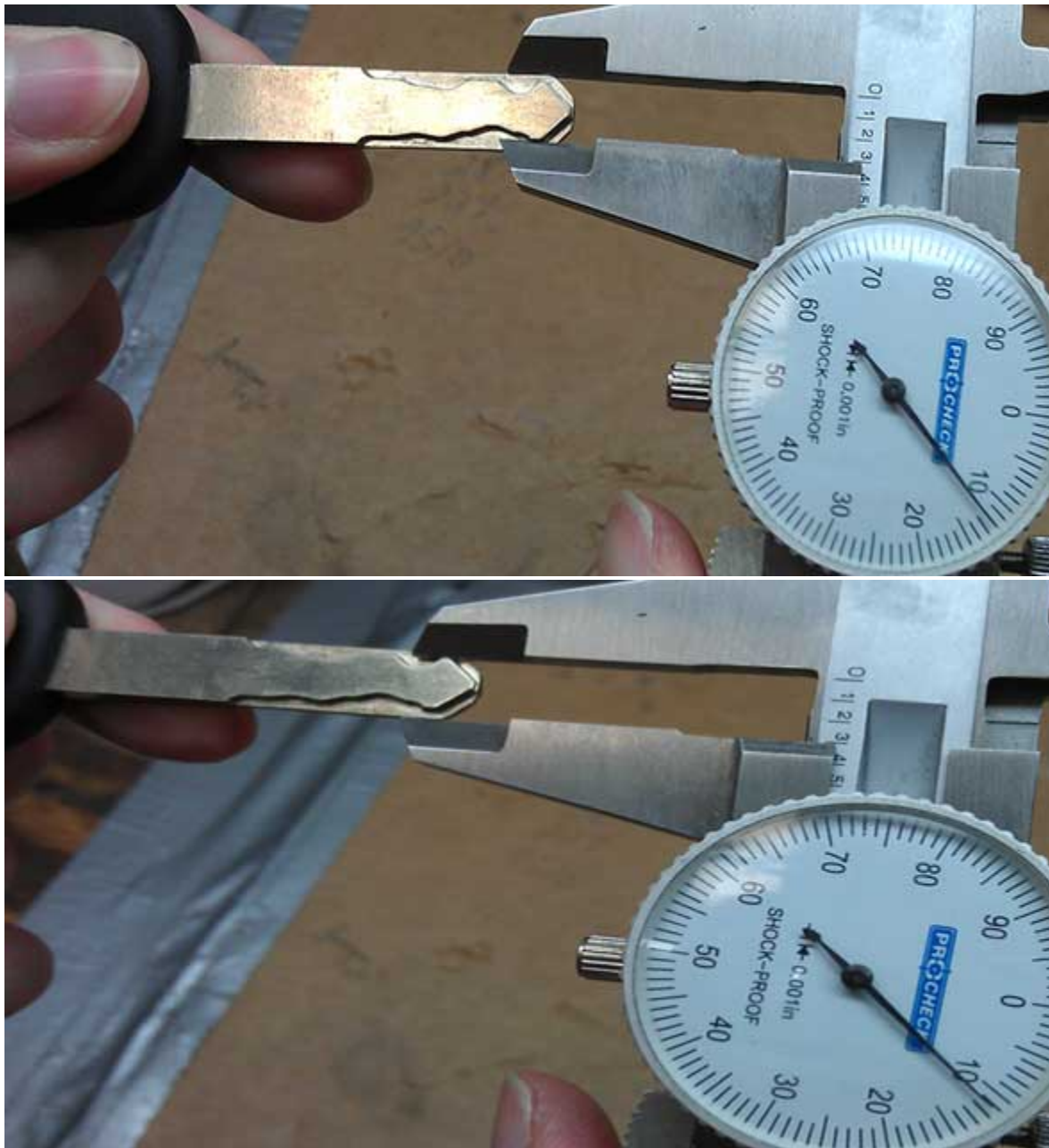
There is an optional "Show Key Information" button, you can select this to read available information or add additional information to the key database. See Below





When you have finished with this information you can click the "Hide Key Information" button.

Example of how to measure a high security Honda key: DSD 3



The tip of these Honda keys are always 1 depths and should measure to .311 inches

Explaining the software, buttons, tabs, boxes and drop down menus

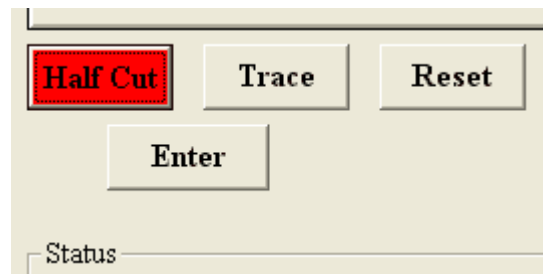
Half Cut

The button “Half Cut” refers to cutting 1/2 depths when using Determinators. When half cut mode is entered, 1=1-1/2 (one and a half) and 3=3-1/2 (three and a half) etc. You must still follow the procedures to choose the correct key blank type first.

When using the half cuts you must first click on the “Half Cut” button and the button will blink red, this assures you that you are in half cut mode. Now you can enter your depths into the spaces and click “Enter” and then “Start”.

To exit half cut mode, click the “Half Cut” button and the red blinking will stop. Change the spaces to the correct numbers and click “Enter”.

If you press “Start” without clicking “Enter”, half cut mode will not be disabled.



Trace

The Trace button is used for duplicating keys.

Reset

clears all entry boxes to make starting over easier.

Enter

If any input data is changed, you must press this button for the changes to take effect, if data is changed after the “Enter” button has been pressed, the software will require you to press the button again.

Start

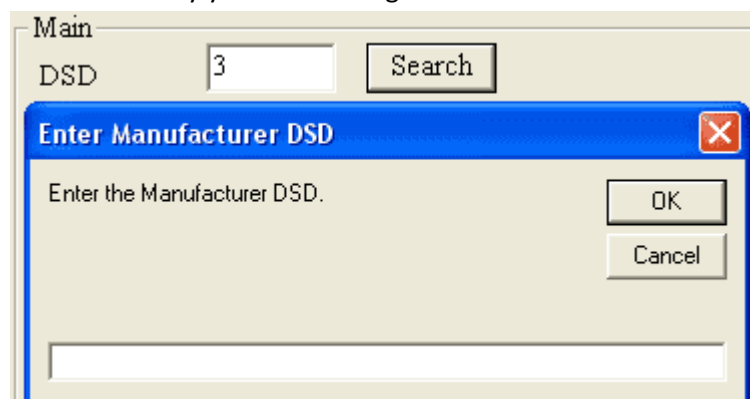
The “Start” button will only appear after the “Enter” button has been clicked. If any data is changed, this button will disappear.

Main Screen

The main screen shows you all of the parameters of the key you are working with.

DSD (Depth and Space Data)

Every key has its own DSD number. When clicking on the “Search” button, you can enter any DSD number in the database. Once the DSD has been entered, press the “Ok” button. This will bring up the key you have selected in the “Main” column. You may exit the search by clicking on “Cancel”.



Manufacturer

The manufacturer gives you reference to the current car you are working on.

Spaces

This value tells you how many spaces are on the key you are working with.

Depths

This value tells you how many depths are on the key you are working with.

Stop

There are 4 different types of “Stop”: Shoulder, Tip 1, Tip 2, and Tip 3. Make sure that you insert the key to the correct tip stop. If not done properly, you may cut the key wrong or damage the cutter.

Track

This tells you how many edges of the key will be cut. There are 3 different types: Four, Two (Left), and Two (Right).

Cut

This location explains how the key will be cut, internally or externally.

Key Blank

Tells you what key blank you should be using.

Step

Used by the Matrix Retro and is set to 1 by default.

Jaw

There are 3 types of jaws: Jaw 1, Jaw 2, and Jaw 3. Once the key is chosen, the software will indicate which jaw should be used.

Jaw Clamp

This indicates which side of Jaw 2 you should clamp the key with, A, B, C, or D.

Side A / Side B Spaces

The spaces that are needed will show up according to the type of key blank that is being cut. “Side A” will be a left-hand cut to the key, and “Side B” will be a right-hand cut. If “Side A” and “Side B” are present, it will cut both sides of the key.

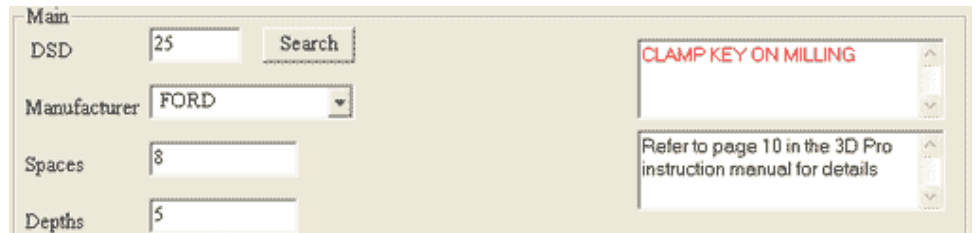
The image shows a software interface titled "Main" with various input fields and checkboxes. The fields are: DSD (25), Manufacturer (FORD), Spaces (8), Depths (5), Stop (Tip 1), Track (Two (Left)), Cut (External), Key Blank (H75), Step (1), Jaw (Jaw 2), and Jaw Clamp (A). To the right of the Stop, Track, Cut, and Key Blank fields are checkboxes numbered 1 through 8. The text "Side A" is located at the bottom right of the interface.

DSD	25	Search		
Manufacturer	FORD			
Spaces	8			
Depths	5			
Stop	Tip 1		8	<input type="checkbox"/>
Track	Two (Left)		7	<input type="checkbox"/>
			6	<input type="checkbox"/>
Cut	External		5	<input type="checkbox"/>
			4	<input type="checkbox"/>
Key Blank	H75		3	<input type="checkbox"/>
			2	<input type="checkbox"/>
Step	1		1	<input type="checkbox"/>
Jaw	Jaw 2			
Jaw Clamp	A			

Explaining the software

Comment Boxes

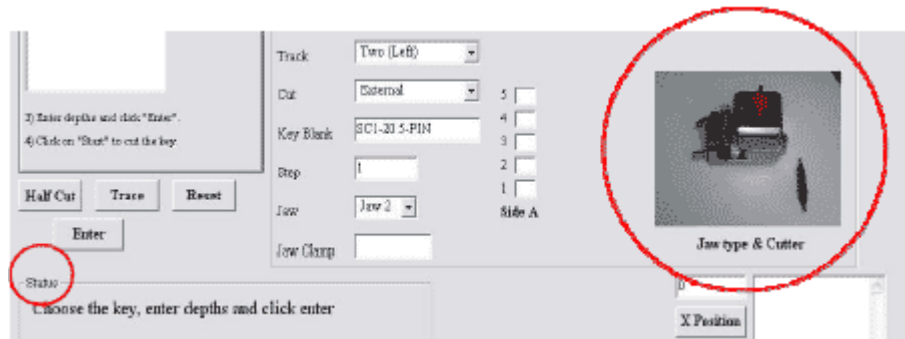
There are two comment boxes. The top box displays default comments about the key, while the bottom box displays comments that you set in the edit screen.



The bottom box allows the user to enter notes for a specific key type or comments about the car type. To edit user comments, you go to the "File" menu and click on "Edit". Once in the "Edit" screen, click on the "Edit" button and a dialog box will appear asking you to verify yourself as an authorized user. Press "Yes" and another box will appear. You do not have to enter a password. In the "Domain" drop-box, press the down arrow key and choose "This Computer", then press "Submit". After editing the comments, you MUST click on the "Done" button that has appeared. Failing to do so may cause the software to not recognize the database.

Jaw type & Cutter

Jaw type & Cutter displays a picture of the jaw type and cutter that should be used to cut the key.



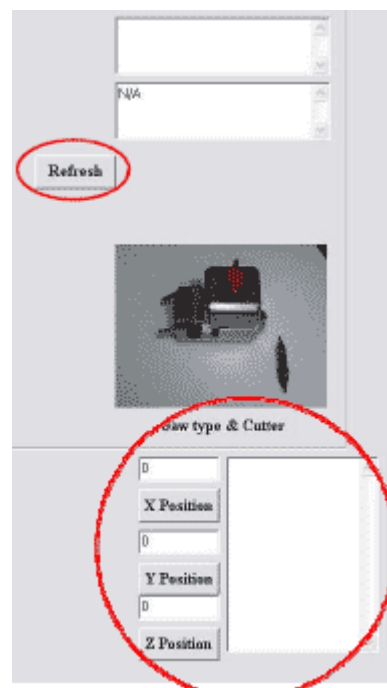
Status

This box displays what the 3D Pro is currently working on.

It also shows the status of the connection board, whether it has been found by the software or not. The status box will also give you the next step in the process of cutting a key and lets you know when the process of cutting a key is complete.

Re-Connect

The re-connect button is only used when the board cannot be found. To use this button you must cycle the power on the machine off and then on again. You may now press the reconnect button to refresh it with the software. The software can only be refreshed once. If it loses the connection after it has already been refreshed you must restart the software.



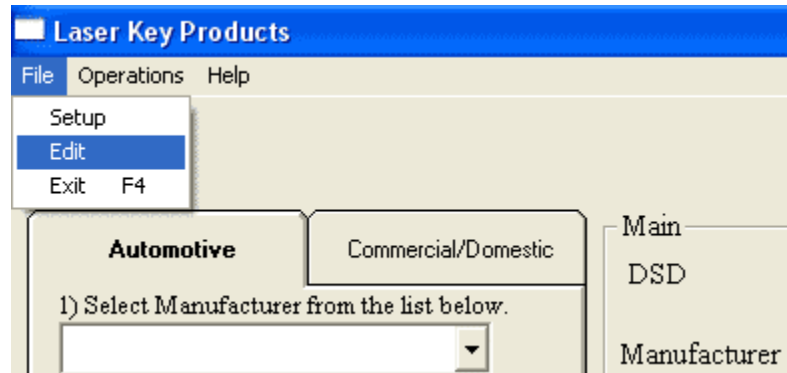
Tech Box

This box is located at the bottom right-hand corner of the software interface. If you are having trouble cutting or tracing a key, this box displays data that the service tech will use to fix the problem. This also shows the parameters in which the cutter is going to cut a key and what the tracing parameters were measured at.

Using the Edit Screen

The Edit screen is for displaying all of the information about any chosen key. In this screen, the only parameters that can be edited are “Cutting Data” and “Tracing Data”. To edit these parameters, follow this procedure: You must have the key chosen that you want to make the changes. If you open the edit screen but notice the wrong key is displayed, simply choose it from the drop down box on the right just like the home screen.

Click on the “Edit” button and a dialog box will appear asking you to verify yourself as an authorized user. Press “Yes” and another box will appear. You do not have to enter a password. In the “Domain” drop down box, choose “This Computer”, now click on “Submit”. After editing the parameters, you MUST click on the “Done” button that has appeared. Failing to do so may corrupt the database in which case you would have to reload it.



Cutting Data

This contains the spaces that are on each type of key. Depending on which type of key you are working with, either a shoulder stop or a tip-stop key, this will determine the order of the spacing's. If you are using a shoulder stop key, the spacing will start from 0 and move up. If using a tip-stop key, it will start with the last cut and move up, in increments, towards the first cut of the key. Depending on the track of the key, there may be “Side A Spaces” and/or “Side B Spaces”.

	0	1	2	3	4	5	6	7	8
Cutting Data									
Side A Spaces		724	604	484	364	244	150	0	0
Side B Spaces	0	724	604	484	364	244	150	0	0
Cut Depth	311	311	297	283	269	254	240	0	0
Half Cut Depth	305	305	292	278	264	249	235	0	0
Tracing Data									
Side A Spaces		724	604	484	364	244	150	0	0
Side B Spaces	0	724	604	484	364	244	150	0	0
Tracing Depth	311	311	297	283	269	254	240	0	0

Cut Depth

This is where you enter in how deep the cuts should be. When editing these cuts, you should be careful as not all key depths are calculated the same. (Example: Measuring from the bottom of a Schlage key to the top of the cut would give you the thickness of the key. A 1 depth on a Schlage key should measure .320")

Half Cut Depth

This is for use with Determinators. When clicking on the "Half Cut" button on the main screen, it will flash red to indicate that it has been selected. Whatever parameters you have filled in the "Half Cut Depth" boxes, it will use these instead of the default parameters once the button has been selected.

Tracing Data

Tracing Data should normally match the "Cutting Data", but in some cases it will not.

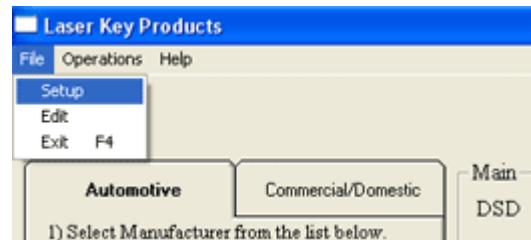
End Cuts

These are pre-defined parameters of how the tip of each key will be cut, these are not in any way adjustable by the user.

Using the Setup Screen - Read From PC

This is the button that you would use to see what the stored calibration numbers are on your computer. Remember that it also stores your preset calibration numbers on the memory in the 3D Pro so you want these numbers to be the same.

A lot of times your default calibration numbers that come up once new software is installed are not the correct numbers you want to use, it would be the ones saved in the memory on your 3D Pro.



Example: If you open the software, and the machine is found but the machine does not seem to be acting correctly. Check the setup screen "File/Setup" and it would probably look like Fig. S.1. It is best to first try re-connecting the software to make sure your calibrations are read from the machine.

Height and Jaw Calibration

Fig. S.1.

Jaw 1			Jaw 2			Jaw 3		
Cutter:			Cutter:			Cutter:		
X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start
0	0	0	0	0	0	0	0	0
Step 1(x)	Step 1(y)	Step 1(z)	Step 1(x)	Step 1(y)	Step 1(z)	Step 1(x)	Step 1(y)	Step 1(z)
0	0	0	0	0	0	0	0	0
Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1
0	0	0	0	0	0	0	0	0
Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2
0	0	0	0	0	0	0	0	0
Tracer:			Tracer:			Tracer:		
X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start	X-Start	Y-Start	Z-Start
0	0	0	0	0	0	0	0	0
Step 1(x)	Step 1(y)	Step 1(z)	Step 1(x)	Step 1(y)	Step 1(z)	Step 1(x)	Step 1(y)	Step 1(z)
0	0	0	0	0	0	0	0	0
Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1	Calibration X1	Calibration Y1	Calibration Z1
0	0	0	0	0	0	0	0	0
Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2
0	0	0	0	0	0	0	0	0

If you cannot retrieve the preset calibrations stored in your 3D Pro, click on the “Read from PC” button and all of the parameters will be restored to default. You must then click on the “Master Update” button; this will save the calibrations to the memory on the 3D Pro. Keep in mind that these are the “default” calibrations and your machine would need to be recalibrated.

Jaw 3		
Cutter:		
X-Start	Y-Start	Z-Start
912	522	0
Step 1(x)	Step 1(y)	Step 1(z)
0	0	0
Calibration X1	Calibration Y1	Calibration Z1
0	0	0

How to Update Software

- The “Locksmith Database”, “Software Icon”, “Keys and Remotes Database” and “Setup Files” are all able to be updated individually.
- The “Locksmith Database” contains all the specs on the keys like space, depth, end cuts, and all the key parameters.
- The “3D Pro Software” is the program that controls the machine and gives all of the motion control commands
- The “Setup Files” contain all of the calibration numbers.
- The “Key’s and Remote’s” database contains all of the information about the key chosen like FCC#, Chip type, is it programmable and so on.

Database Updates

The key database updates will be free. Sometimes a new key that is input will not work with older software and you must have the newer version.

Our website is located at: www.laserkeyproducts.com

Navigate to the website and choose the “3D Pro Database Update”

It will now prompt you for a password (please call in for the password and assistance if this is the first time doing a database update)

All new installs should already have the newest database

Software Updates

There will sometimes be a charge for newer software.

Our website is located at: www.laserkeyproducts.com

1. Navigate to the website and click on “3D Pro Install Bundle”, it will now prompt you for a password. Please call for the password if there is some reason you need to download the software bundle again. We will ask a series of questions to ensure that you receive the right version.

For help or support in Australia:

AA Emergency Locksmith

Tony & Suzanne Audsley

Perth, Western Australia

Phone: 08 9358 3016

Mobile: 0416 11 22 69

Email: lockey@iinet.net.au

Web: www.locksmithtools.com.au

If you find any mistakes or have any suggestion to this manual, please contact info@laserkeyproducts.com

Saving your machines “Setup Information”

Once you have your 3D Pro up and running and everything is working well, it is important that you save these 3 files, I would advise that this information is saved or stored on a memory stick or in a separate place on your hard drive. Go to: Start – Control panel – My Computer – Local Disk (C:) .. open Folder “Program Files” open folder “Laser Security Products” The 3 files we are looking for to save are:

“J1 Setup” contains the setup information for

Jaw 1 on YOUR machine

“J2 Setup” contains the setup information for

Jaw 2 on YOUR machine

“J3 Setup” contains the setup information for Jaw 3 (Tibbe) on YOUR machine

This information is important and relevant only to your machine should your machine or PC lose this information.

Troubleshooting

COM Error

If you start your software and the software says “Communications Error” or “Board Not Found” check these options:

1. Insure that the power button on the back of the 3D Pro is on
2. Make sure that the emergency stop button is disengaged
3. Insure that the USB cable from the 3D Pro is plugged into a USB port on your computer.

Freezing Load Bar

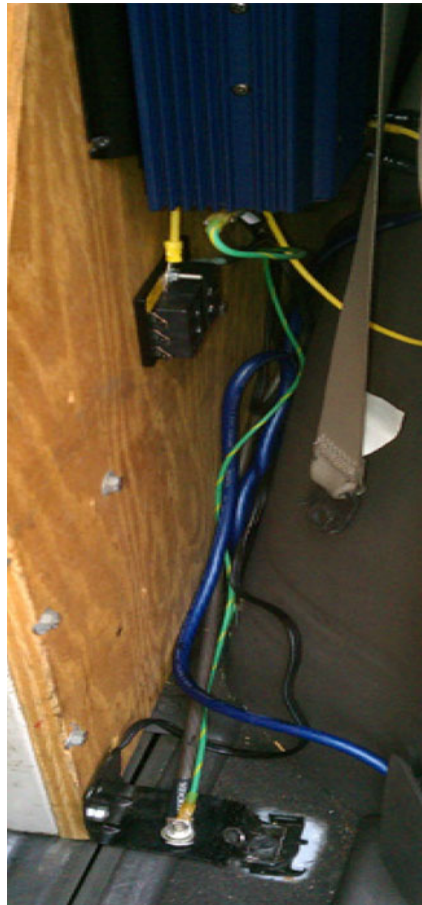
If while opening the software the load bar freezes, and the software doesn't respond, check and make sure that the X motor is plugged in and screwed down. This cable is not connected when the machine is shipped. Also make sure that you are on the latest version of software, some of the earlier versions had issues freezing up on the load bar. If you open your software and it freezes on the blue load bar, check and make sure your version is current.

Using an inverter

If using an inverter to power the 3D Pro, make sure the inverter is properly grounded to the vehicles chassis otherwise you may incur problems with the operation of the Machine.

If a problem occurs that you are unable to repair yourself, please call us at: 281-339-3501

Example of Inverter Chassis Grounding



Changing the Fuses

!!Please Disconnect Machine Before Proceeding to Change Fuses!!

Insert a small tipped screwdriver into slotted area in the front face of the fuse box located on the left side of the 3D Pro key machine and pull fuse cartridge toward you.



Once fuse cartridge is open slide out until fuses are fully visible



Install new 6amp 250v fuses into cartridge and push back into fuse box until cartridge snaps into fuse box .



Hints and Tips

Cutting a key by DSD number

When cutting a key, if you know the DSD number you can short cut by going direct to "Search" Click on "Search", when the box opens enter the DSD number and click "OK", this will take you straight to the key blank.

Replacing the Tracer Tip

When replacing the tracer tip use a small allen to loosen the tracer tip the flip it around or use a new one if both ends are broken. The tracer tip should protrude half an inch from the swing arm and the tip itself should be to the right.



Look at the tracer from the side and make sure it lines up straight with the cutter.

If it does not, adjust the cam pin by forcing it with a crescent wrench.



Once you learn how to use the 3-D Pro, you might find a quicker or easier way of doing something. If you would like to share it with others and have it included in this section of the "User Guide" please drop us an email: info@laserkeyproducts.com