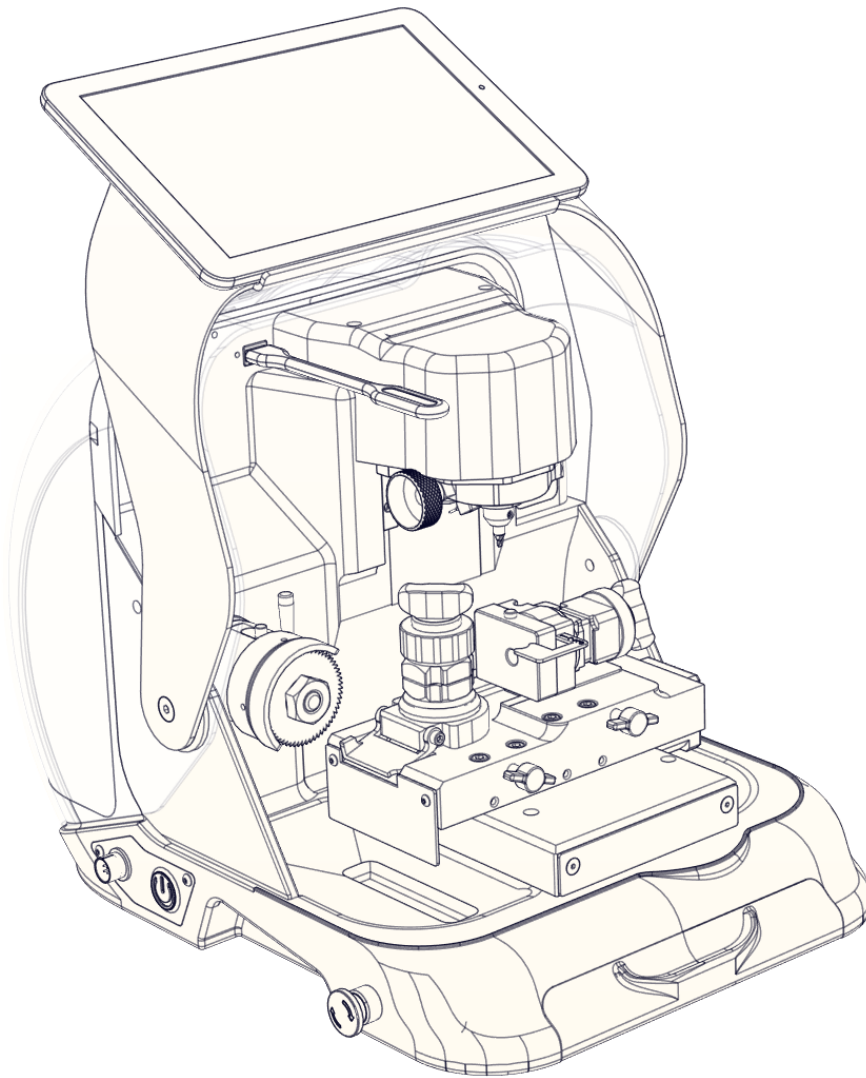


3D ELITE

KEY MACHINE

User Guide Instruction Manual



Please wear Safety Glasses at all times while operating this machine.

DO NOT attempt to lubricate the machine. Clean only with a brush and or vacuum.

Shield must be lowered before any operation can take place.

NO COMPRESSED AIR

Table of Contents

CHECKING YOUR NEW 3D ELITE UPON ARRIVAL	1
COMPUTER HARDWARE AND POWER REQUIREMENTS.....	1
THE EMERGENCY STOP AND ON/OFF BUTTON	2
OPERATING THE SHIELD	2
SOFTWARE INSTALLATION	3
DRIVER INSTALLATION.....	3
DRIVER CONFIGURATION	5
ERROR CONNECTING.....	5
CHANGING JAW 1 CUTTER AND CALIBRATION STYLUS	6
CHANGING JAW 1 TRACER.....	6
CHANGING JAW 2 CUTTER.....	7
CHANGING JAWS	8
CALIBRATING 3D ELITE KEY MACHINE.....	8
USING JAW 1.....	14
USING JAW 2.....	17
SELECTING KEYS IN THE SOFTWARE	23
SPACE AND DEPTH ADJUSTMENTS	29
ADJUSTING SPACE AND DEPTH ON JAW 1 AND JAW 3	30
ADJUSTING SPACE AND DEPTH ON JAW 2.....	34
EXPLAINING THE SOFTWARE: CUT SCREEN, BUTTONS AND MENUS	36
TROUBLESHOOTING	38
USING AN INVERTER.....	40
EXAMPLE OF INVERTER CHASSIS GROUNDING	41

Checking your new 3D Elite upon arrival

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.

Calibrate the machine when you are finished setting up the software and configuring the Device Manager as instructed in this User Guide. The tracing function for duplicating keys works only on metal; please do not try to duplicate painted or plastic keys as the tracer could be damaged. Please register for your free license of Genericode at LASERKEYPRODUCTS.COM

- Make sure the plastic covers including shield are not cracked or broken.
- Check that the tracer swing arms flip up and down properly
- The machine should have no major scratches or markings
- Any damaged or missing parts should be reported upon day of arrival

Contents	
1 x 3D Elite Key Machine	1 x High Security Calibration Stylus
1 x Jaw 1 and Jaw 2	1 x USB Cable
1 x TR 2.5 Single Ended Cutter	1 x AC Power Adapter
1 x Tablet or Laptop	
<i>Optional Parts: Bolt-Down Kit - Laptop Mount - Tibbe Adapter – Tubular Jaw and cutter - GT-R Dimple Cutter - Slot Cutter – Lexus 80,000 Code Cutter TR0625</i>	

Computer Hardware and Power Requirements

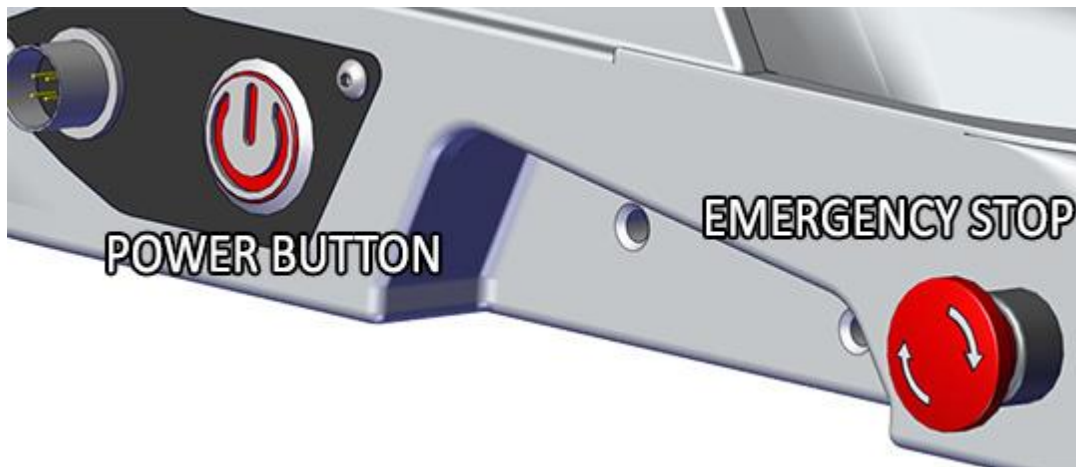
- Windows 8 with **2 GB of RAM** or higher. If using a tablet make sure it has Windows 10 x86 or x64 version, ARM processors not supported. The key machine software does not support Android or Apple iOS. It is possible to get the software running on Windows 7 but sometimes require additional configuration.
- Use at least 1,500 watt pure sine wave inverter when using in a vehicle. Or use direct DC 12v power.
- If using an inverter to power the 3D Pro, make sure the inverter is *properly grounded* to the vehicles chassis otherwise you may experience problems with the operation of the machine. Please follow your inverter manufactures installation instructions and refer to the “Using an Inverter” page of this manual.
- Using an *Uninterruptable Power Supply* (UPS – 400 to 600 watts, which is 800 – 1000 VA) with your machine can have great benefit by compensating for power loss or spikes. Users sometimes call for tech support when the key machine is having problems and we often find there is a problem with their power. This happens most in vehicles. Power problem sources can include corroded wires, insufficient gauge wires, too big or too small of an inverter, improper inverter grounding, attempting to ground to a painted area, not grounding at all, excessive electrical noise, insufficient alternator, and many more variables could cause unreliable power going to the machine causing random breaks in communication between the computer / tablet and the machine resulting in unreliable, inconsistent machine operation. An *Uninterruptable Power Supply* can help compensate for these oversights.

When cleaning key shavings from the machine, please use a brush or vacuum, please **do not use compressed air**, it will likely blow shavings into the machine and over time causing problems such as electrical shorts or gumming up the axis’ to where the carriages could seize. Please use safety glasses.

The Emergency Stop and On/Off Button

The Emergency Stop and main Power Button are located on the left side of the key machine and act as On/Off Switches. In an emergency, push in the button to turn off the machine and twist out according to the arrows to power machine back on.

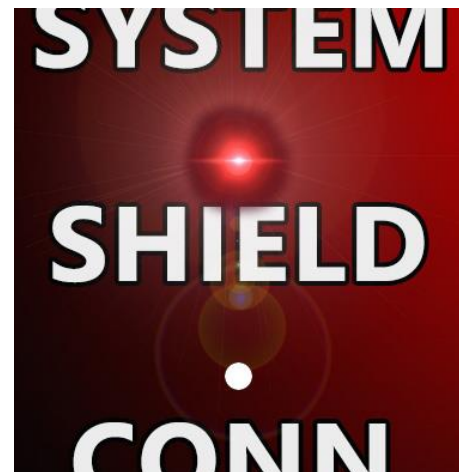
If you simply want to cancel a machine operation, then using the **stop button on the software** is a better option. The stop button in the software appears during machine movement.



Operating the Shield

To operate the Shield simply lift and lower it by hand. When lowered the Shield Light will stay a solid red color. When lifted the Shield Light will be off. The machine can only move and operate when the Shield is lowered.

If an operation is attempted while the Shield is lifted then a message asking to lower shield will appear.



Software Installation

Only use these instructions if:

- You did not receive a preconfigured tablet or computer **with your machine**.
- Purchasing a software upgrade or reinstalling the software on your device.
- Installing the software on another tablet or computer.

Downloading and installing the software:

1. Go to LASERKEYPRODUCTS.COM and browse to the 3D Elite software download page. This can be found on the right side of the main page under “Popular Downloads” or on the 3D Elite product page. Our website is updated frequently so the download locations may change so just browse around if you can’t find it.
2. Next to ‘Tablet Software’ Click ‘Purchase and Download Now’ then click ‘Add to Cart’ then click ‘Checkout’. Either Sign In, or if you are new to the Laser Key Products web store then fill in your information and click ‘Submit the Information’.
3. Enter your payment information; either Credit Card or Coupon Code can be used.

In the ‘Discount Coupon’ box, enter the coupon code if you have one where it says “Redemption Code”. Coupon codes are sometimes provided with new machines. If using a coupon code then select ‘Use Coupon’ payment method instead of ‘Secure Credit Card’. Click ‘Continue’ and then ‘Confirm Order’ and then ‘Download Now’.

(To purchase software updates follow the same instructions and use a credit card)

4. After payment, on the next page click Download. After downloading, extract and run the downloaded file and follow the on screen instructions.

At the start of the software installation be sure to choose ‘3D Elite’ as the machine type and enter your serial number! (If asked)

Machine serial number can be found on the back of the machine.

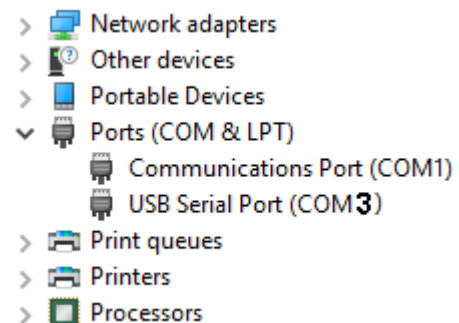
([A video of this procedure can be found on the Elite download page](#))

Driver Installation

After installing the key machine software, follow these steps to get the machine communicating with the computer. These steps can also be used if you get a “Motion board not connected” Error when starting the 3D Pro software. Please make sure the machine is hooked up to the computer, powered on, and configured in the Device Manager according to these instructions before starting the software for the machine. Also check that the red button on the left side of the machine (power / emergency stop) button is twisted out according to its arrows before starting the software for the machine. This is the hardest part of using the machine, once you got this it’s smooth sailing.

1. Connect power cord to the left side of the 3D Elite and twist out the Red Emergency Stop.
2. Connect a USB cable from the back of your 3D Elite key machine to any USB port on your computer. Some tablet devices require a USB OTG cable to be used. (USB On-The-Go cable)
3. Your computer will either install the machine driver automatically or you will have to install the driver manually. Use the next steps to determine this.
4. **Open Device Manager:** On Windows 8 and 10, the Device Manager can be opened by hovering your mouse over the Start button at the bottom left of the Windows 8 Desktop and Right Clicking the Start Button and then Clicking Device Manager.
If using a Tablet, go to the Windows Desktop and Tap, and Hold for 1 second on the Start Menu button and then tap Device Manager. Also, you could go into the Start Menu and do a search for “Device Manager”. There may also be an icon on the Desktop labeled Device Manager. Otherwise please do a web search (Google, Bing, ect.) on how to get into the Windows Device Manager.
5. Once Device Manager is open, look for “Ports”. These items are alphabetically ordered. Under “Ports” look for “SSUSB-RS422 Serial Communication Converter board “. If you see the “USB Serial Port (COM3)” listed under ports then the key machine driver is indeed installed and you can then continue onto **Driver configuration**.
6. If you do not see “Ports” or you do not see “USB Serial Port (COM3)” under ports then go to the software downloads section of our website at LASERKEYPRODUCTS.COM and download the Automatic Driver Installation Utility and run it following it’s instructions. The driver installer may also be found on the main page on the right under popular downloads.
5. If the driver installed correctly you will see “Ports > USB Serial Port (COM3)”. Move onto “Finding the correct COM port” on the next page.

This is what your Ports in Device Manager should look like after installing the drivers:



If you still do not see the USB Serial Port (COM3) then you may have to manually install the drivers. Check out the key machine help section at LASERKEYPRODUCTS.COM. There under User Guides is a guide titled Windows 8 Drivers, those steps will enable manual driver installation.

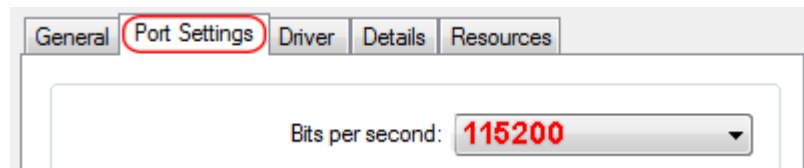
Driver Configuration

Open the Device Manager. To open the Device Manager, right click or tap and hold for a second the Windows start menu button at the bottom left of the desktop screen and click Device Manager. Or, click the start button and search for Device Manager.

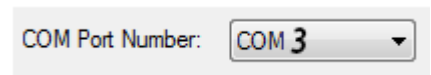
After installing the 3D Pro software, follow these steps to get the machine communicating with the computer. These steps can also be used if you get a “Motion board not connected” Error.

1. Open “Device Manager” and look under “Ports” for “USB Serial Port (COM3)” then right-click it and click properties.

2. Under “Port Settings” **change the Bits per second to 115200**

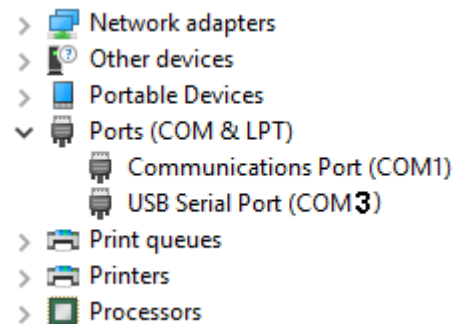


3. Click the “Advanced” button and **set the COM number to 3** and press OK, and OK again on the Properties page and exit the Device Manager



4. Close the Device Manager window, then push in the red button on the left side on the machine and **unplug the USB** cable going to the computer from the machine, **wait 30 seconds** then twist the red button out **and plug the USB cable back** into your computer and **wait 30 more seconds** and then **start the software**.

This is what your device manager should look like after setting the COM port:



Error Connecting

COM Error

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

1. Power from the power outlet? **Is there power from the wall socket?**
2. The emergency stop button is disengaged (twisted out according to the arrows)
3. The USB cable from the 3D Pro is plugged into a USB port on your computer.
5. Unplug the USB Cable for 15 seconds, plug it back in and wait 15 more seconds and then start the software for the machine.
6. **Repeat the Driver Installation and Configuring COM Port instructions on the previous pages.**

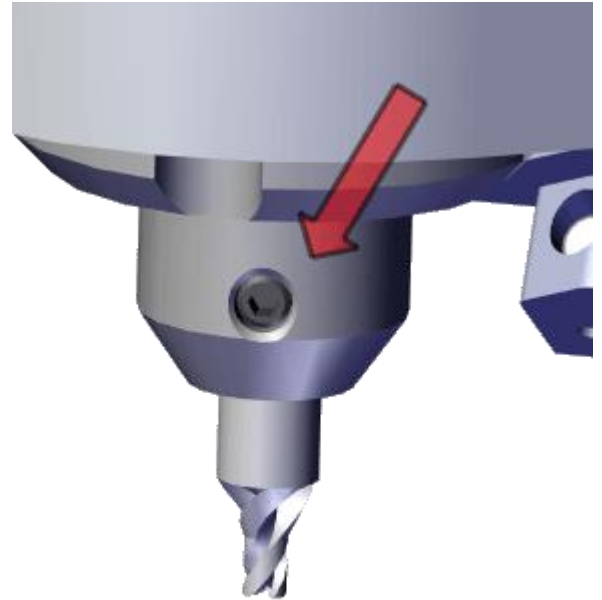
Changing Jaw 1 Cutter and Calibration Stylus

1. Lift Shield
2. Rotate cutter spindle until Allen screw is visible.
3. Using a 5/64" Allen Wrench turn spindle lock screw counter clockwise to loosen cutter from spindle.
4. Change tool and tighten Allen screw back.

Available Jaw 1 Tools: Stylus Calibrator, TR2.5 Cutter, TR0.0625 Cutter, 5mm cutter, Dimple Cutters and Tracers.

"The Collet" Holds the Cutter or Stylus in the spindle. To remove the cutter or stylus, lift shield and rotate spindle by hand until Allen screw is visible. Use Allen wrench to loosen the spindle tool screw.

The cutter or stylus can now be removed and changed.



When replacing the cutter or stylus, insert into spindle and slide up until it stops.

Regularly check that the cutter stays tight (after cutting several keys).

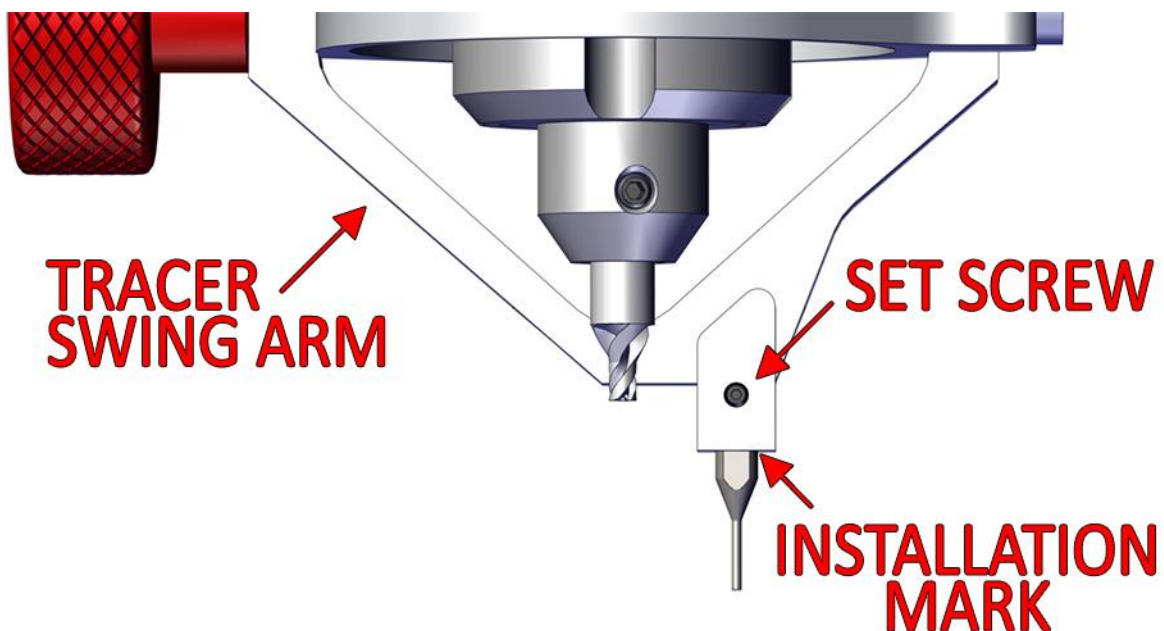
A loose cutter can slip out of the collet causing damage to the key, jaw and cutter itself.

Changing Jaw 1 Tracer

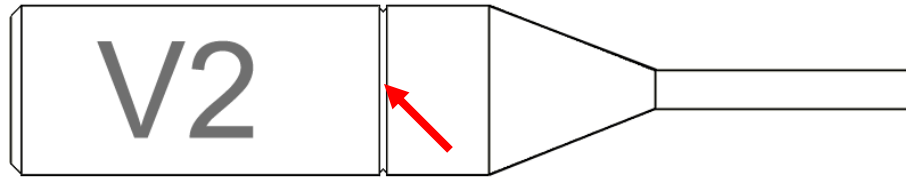
When changing the tracer, tighten the set screw that holds the tracer tip in place above the installation mark. The tracing function for duplicating keys works only on metal; **don't try to duplicate plastic keys**

Single ended tracer tip installation:

1. Loosen Set Screw on tracer Swing Arm and remove current tracer



2. Install the Tracer into the Tracer Swing Arm to the installation mark and tighten the set screw.



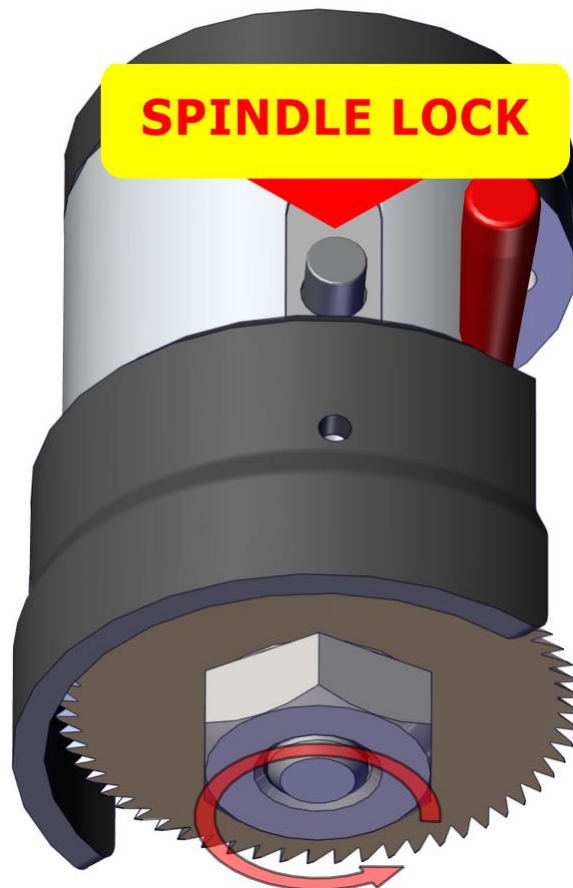
(Installation mark indicated by the arrow)

The mark should not be visible after installation

3. Calibrate the tracer after changing tracer tips. (Jaw 2 Tracer is not commonly changed)

Changing Jaw 2 Cutter

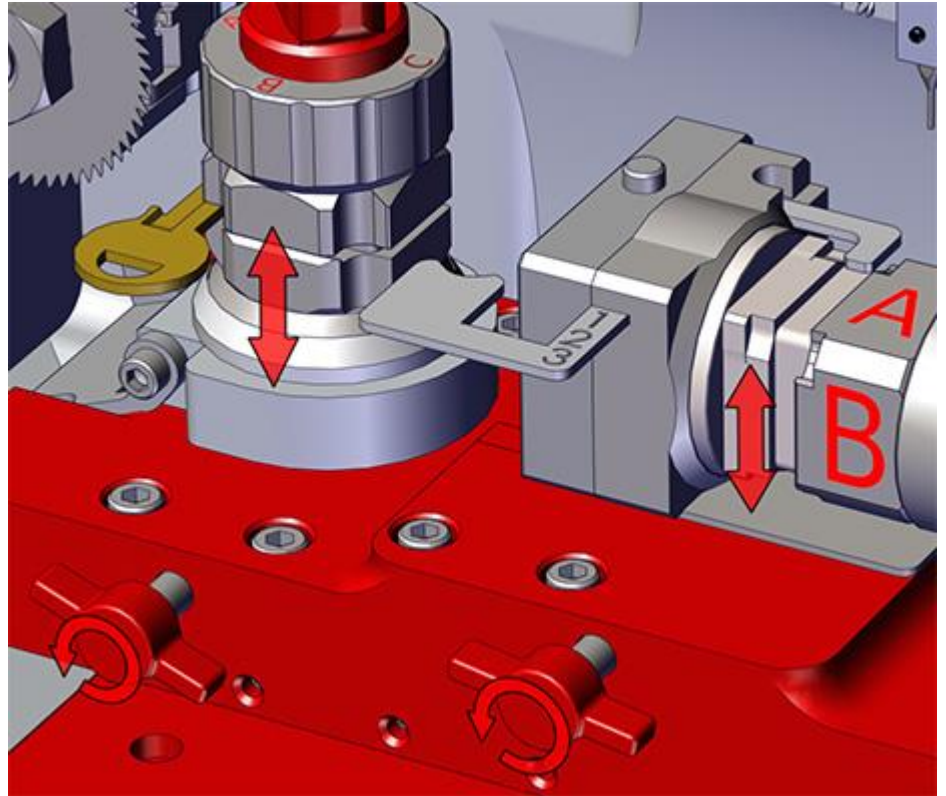
1. Press and hold the Spindle Lock button



2. Reverse thread nut, counter-clockwise to tighten, clockwise to loosen.

Changing Jaws

Jaw 1 is on the right and Jaw 2 is on the left. They can be removed for cleaning or to insert another jaw such as the Tubular Jaw. When changing a jaw, look in front of where the jaws are 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 lifting it off the carriage. 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 into the dovetail.



Calibrating 3D Elite Key Machine

If keys are not cutting or tracing properly or if you get “Obstruction Detected” or “Out of Range” errors while cutting or tracing keys you may need to calibrate. Make sure you are calibrating with the **stylus** and **not the cutter** when calibrating Jaw 1. *To change the Jaw 1 Tip Stop push in the selector on the top left and push Tip Stop in and out until the 1 is visible (which is Tip Stop 1 selected).*

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). Select A Side (A facing up) and **CLOSE** Jaw 1 all the way! **Set the Jaw 1 Tip Stop to 1** ←
2. Put the **Stylus** in the **collet**. The Stylus must be used to calibrate Jaw 1. Do not use cutter to calibrate or else your keys will cut wrong or not at all.
3. Make sure the Jaw 1 tracer arm is up, if the tracer arm is down, you will receive an error message. Also, make sure the Jaw 2 tracer is flipped back.

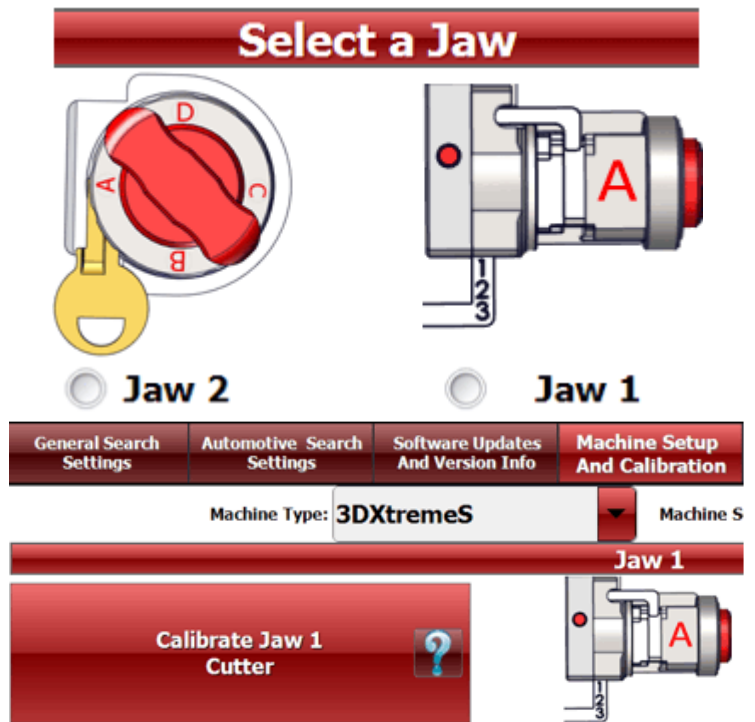
This is the Stylus



Used for calibrating cutters for Jaw 1

4. From the main menu at the top left, click on "Settings" and choose "Machine Setup and Calibration" and select "Jaw 1"

5. Click "Calibrate Jaw 1 Cutter". The stylus will touch the jaw in three places. The Stylus should touch in the center of the Jaw 1 where keys sit and then touch to the left then touch the front of the Jaw 1.



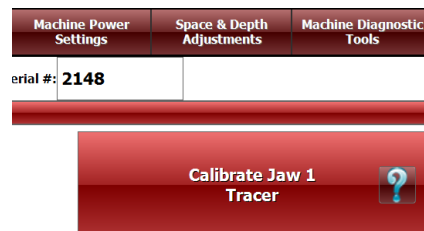
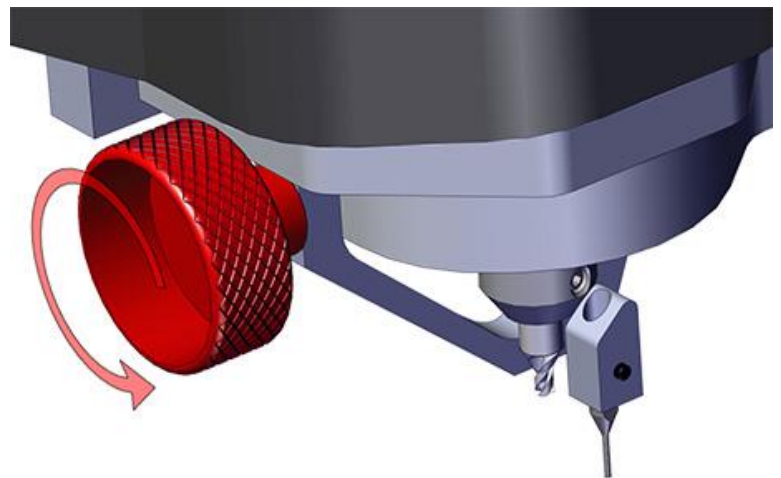
6. After the procedure is complete, the screen will say "Update in Progress Please Wait" give it a moment and don't click anything until the Calibration Complete message appears and click OK.

Calibrating Tracer for Jaw 1:

1. Clean any shavings or debris from jaw (Any metal shavings, dirt or grease that the tracer touches will take an incorrect reading). Select A Side (A facing up) and **CLOSE** Jaw 1 all the way! **Set the Tip Stop to 1**

2. Lower the Jaw 1 Tracer (red knob counter clockwise). From the Main Menu, click on "Settings" at the top left and select "Machine Setup and Calibration" and choose "Jaw 1"

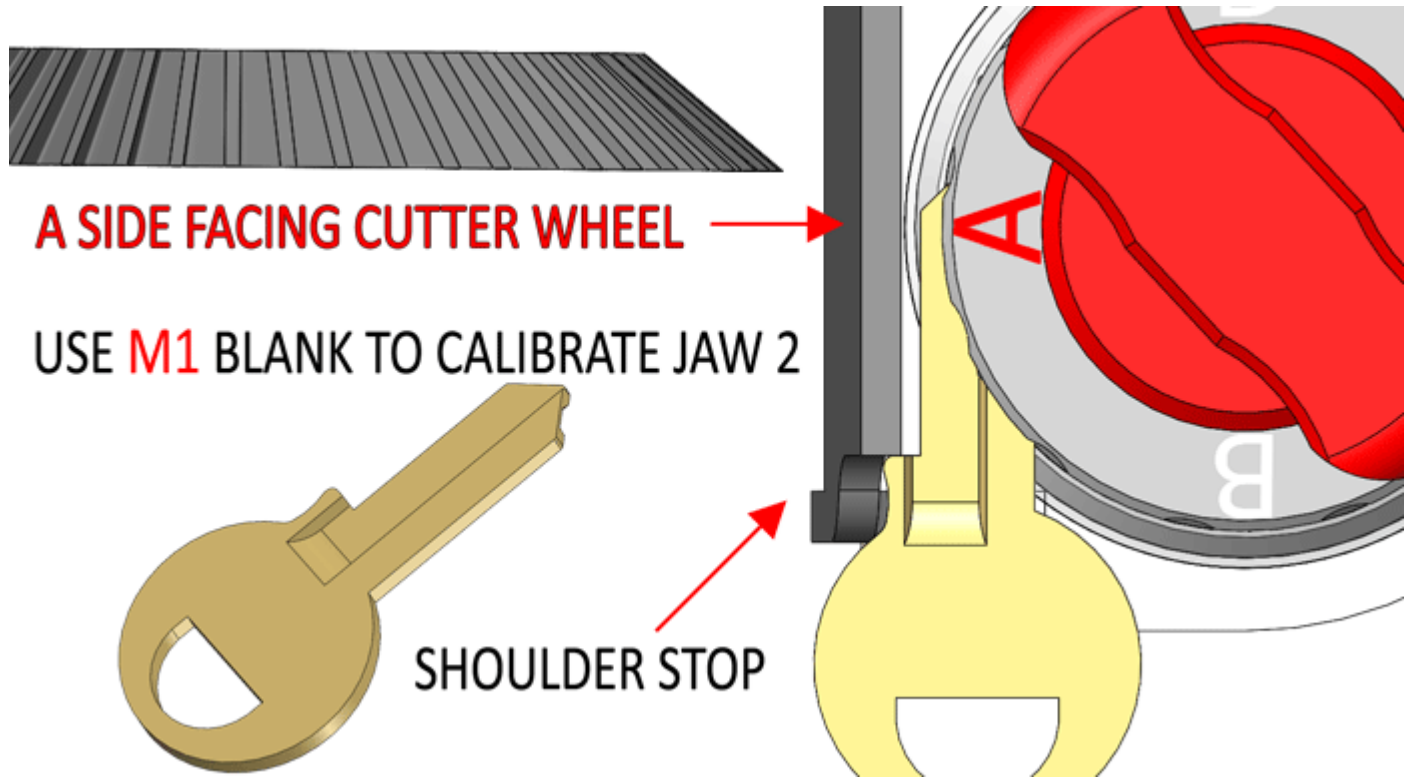
3. Click "Calibrate Jaw 1 Tracer". The tracer tip will touch the jaw in three places, same as the Stylus cutter calibration. After the procedure is complete, you will see "Update in Progress Please Wait" give it a moment and do not click anything or it can possibly freeze the software and you will have to restart it.



Calibrating Cutter and Tracer for Jaw 2:

1. **Clean** any shavings or debris from jaw (Any metal shavings, dirt or grease that the cutter touches will take an incorrect reading). **Flip the Jaw 2 Tracer back to the inside of the machine away from the cutter.**

2. **Select A side of Jaw 2.** Whichever letter is toward the cutter wheel is the currently selected clamp letter. The A side is selected when the **A on top** is toward the cutter wheel:



3. **Insert an M1 key on Shoulder Stop.**

From the “Main Menu”, click on “Settings” and choose “Machine Setup and Calibration” and click “Calibrate Jaw 2”



Jaw 2 may need minor adjustments to space or depth after calibrating to be correct. Refer to the section “Space and Depth Adjustments” for instructions.

4. The cutter wheel should cut some of the key and will instruct you to engage the Jaw 2 tracer.

Flip out the tracer in front of the cutter wheel and press OK. The tracer will touch the key and Jaw 2. After the procedure is complete, it will read “Update in Progress Please Wait” give it a moment and click OK when done.

Jaw 2 Calibration Setup Numbers Explained

X Axis = Left and Right movement (all the way to Right is Home)

Y Axis = Forward and Back movement (all the way to Forward is Home)

Z Axis = Vertical Up and Down movement (up is Home, not used with Jaw 2 and Cutter Wheel)

To switch Jaw 2 clamp letters just loosen the Jaw 2 and twist by hand. To calibrate 3D Elite key machine Jaw 2, make A Side face left toward Cutter Wheel. Clamp an M1 or similar single side shoulder stop key blank into the A Side Shoulder Stop and initiate from software (see user guide).

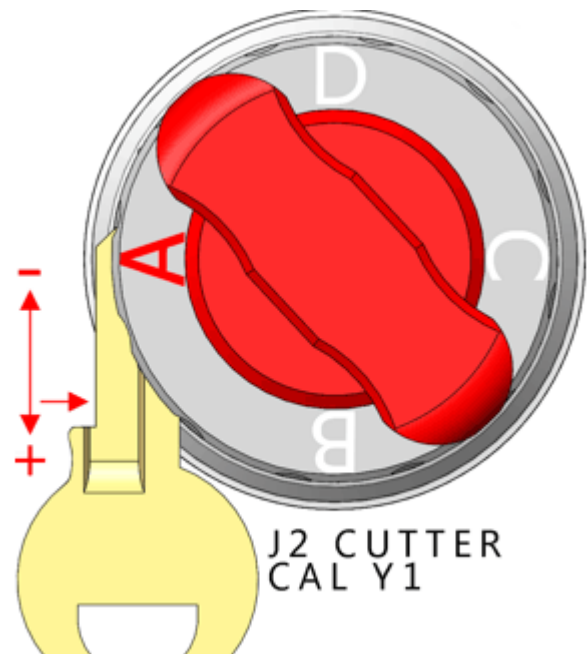
Calibration Movements:

1. Calibration Y1

1350

1. J2 Cutter Calibration Y1

This is where Cutter Wheel touches edge of key blank just past the Shoulder. Typically set to 1350. Decrease to touch key edge closer toward the tip (further from shoulder).



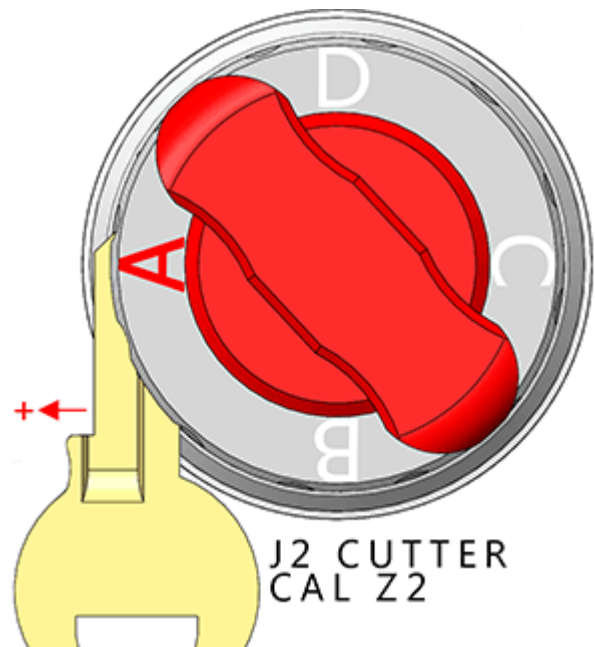
2. Calibration Z2

20

2. J2 Cutter Calibration Z2

This is how far Cutter wheel backs away after touching key edge before finding shoulder of key. Typically set to 20. If this number is set too high, it might miss the shoulder of the key.

Y Axis then moves back until Cutter Wheel touches shoulder of key. No Setup value for this.

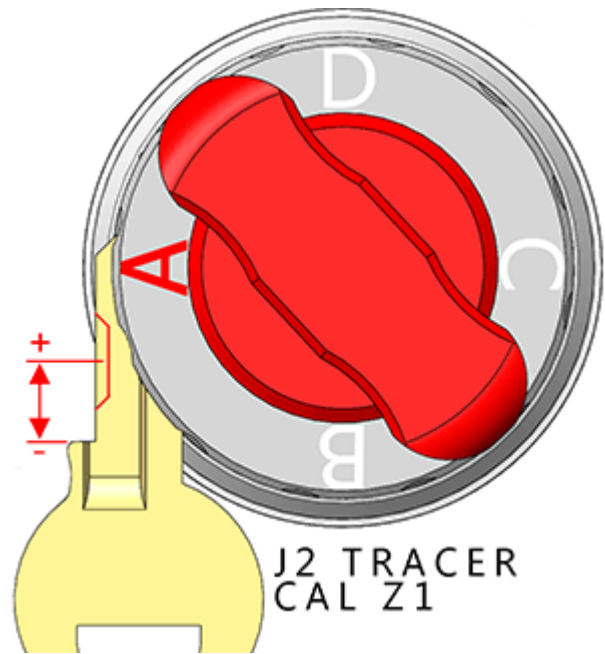


3. Calibration Z1

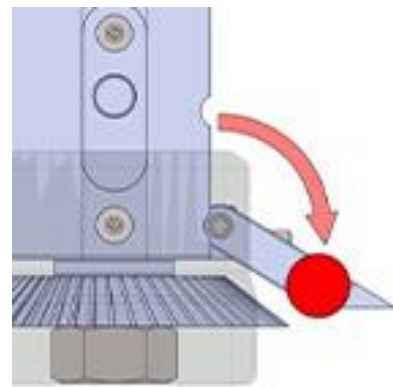
375

3. J2 Tracer Calibration Z1

This is the distance to the center of a notch cut on the key blank. The notch is 0.100" deep, 0.250 wide, with outward 45 degree angles at each end. *Increasing this number moves the notch further away from the shoulder of the key blank (toward the tip).* Typically set to 350. Both angles of the notch must be on the key for the tracer to touch. If set too high the notch will be cut to far off the tip of the key.



Then flip out Jaw 2 Tracer



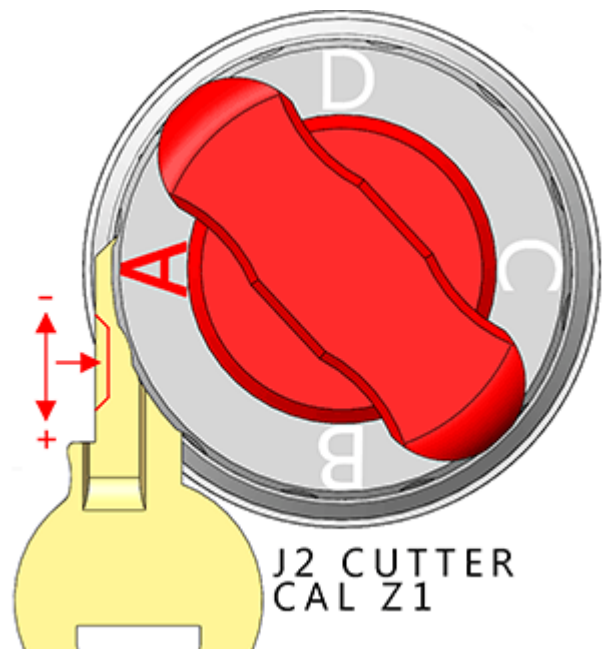
4. Calibration Z1

1100

4. J2 Cutter Calibration Z1

This moves J2 Tracer into position on the Y Axis before moving to touch the bottom of the notch that was cut out of the key blank. *Decreasing this number moves tracer more to tip of key (away from shoulder).* Typically set to 1100.

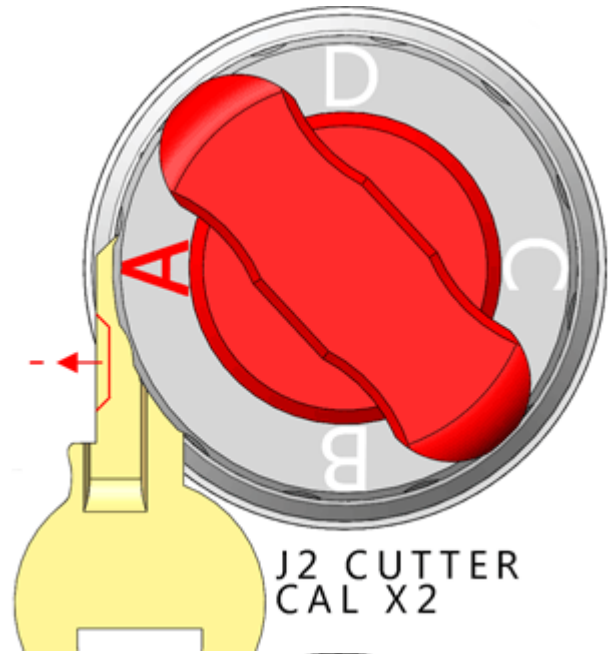
Tracer then touches bottom of notch, pulls away 0.050", then touches each of the two angles on each end of the notch.



5. Calibration X2

5. J2 Cutter Calibration X2

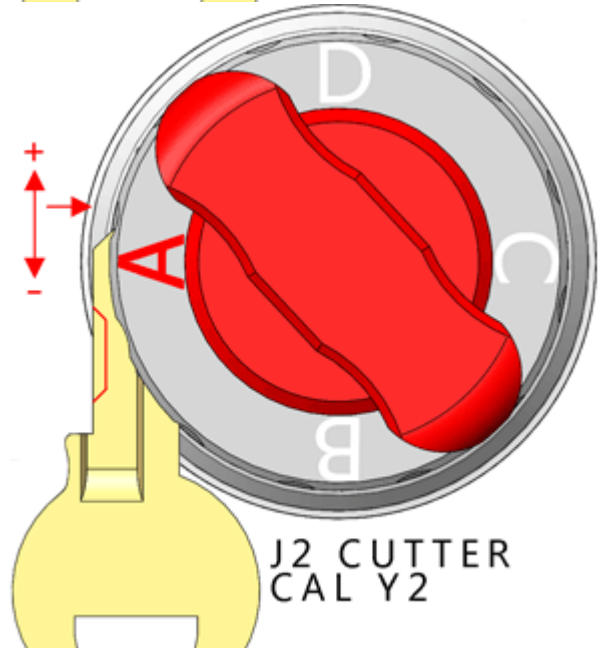
This is the distance to pull Tracer out of the notch on the X Axis after touching the angles of the notch. Typically set to 800. *Decreasing this number pulls further from key away from notch.* If this number is set too low the tracer won't pull far enough from the key when moving to touch the face of the Jaw 2 and it will hit the angle of the notch at the tip of the key and force through it, possibly damaging the J2 Tracer.



6. Calibration Y2

6. J2 Cutter Calibration Y2

This is the position that the J2 Tracer moves to on Y Axis before moving on X Axis to touch the face of Jaw 2 A Side. Should move just past the tip of the key blank. Typically set to 800. Decreasing this number moves toward the shoulder of key. *Increasing this number moves further past the tip of the Key.*



Cutter:			Tracer:		
X-Start	Y-Start	Cutter - Tracer Difference	X-Start	Y-Start	Z-Start
<input type="text" value="1888"/>	<input type="text" value="1688"/>	<input type="text" value="552"/>	<input type="text" value="1335"/>	<input type="text" value="1628"/>	<input type="text" value="553"/>
Step 1(x)	Step 1(y)	Manf. Offset	Step 1(x)	Step 1(y)	Step 1(z)
<input type="text" value="300"/>	<input type="text" value="-700"/>	<input type="text" value="0"/>	<input type="text" value="300"/>	<input type="text" value="-700"/>	<input type="text" value="0"/>
Calibration X1	1. Calibration Y1	4. Calibration Z1	Calibration X1	Calibration Y1	3. Calibration Z1
<input type="text" value="1400"/>	<input type="text" value="1350"/>	<input type="text" value="1100"/>	<input type="text" value="800"/>	<input type="text" value="1250"/>	<input type="text" value="375"/>
5. Calibration X2	6. Calibration Y2	2. Calibration Z2	Calibration X2	Calibration Y2	Calibration Z2
<input type="text" value="800"/>	<input type="text" value="800"/>	<input type="text" value="20"/>	<input type="text" value="800"/>	<input type="text" value="1240"/>	<input type="text" value="0"/>
X-Start Offset	Y-Start Offset		X-Start Offset	Y-Start Offset	
<input type="text" value="0"/>	<input type="text" value="0"/>		<input type="text" value="0"/>	<input type="text" value="0"/>	

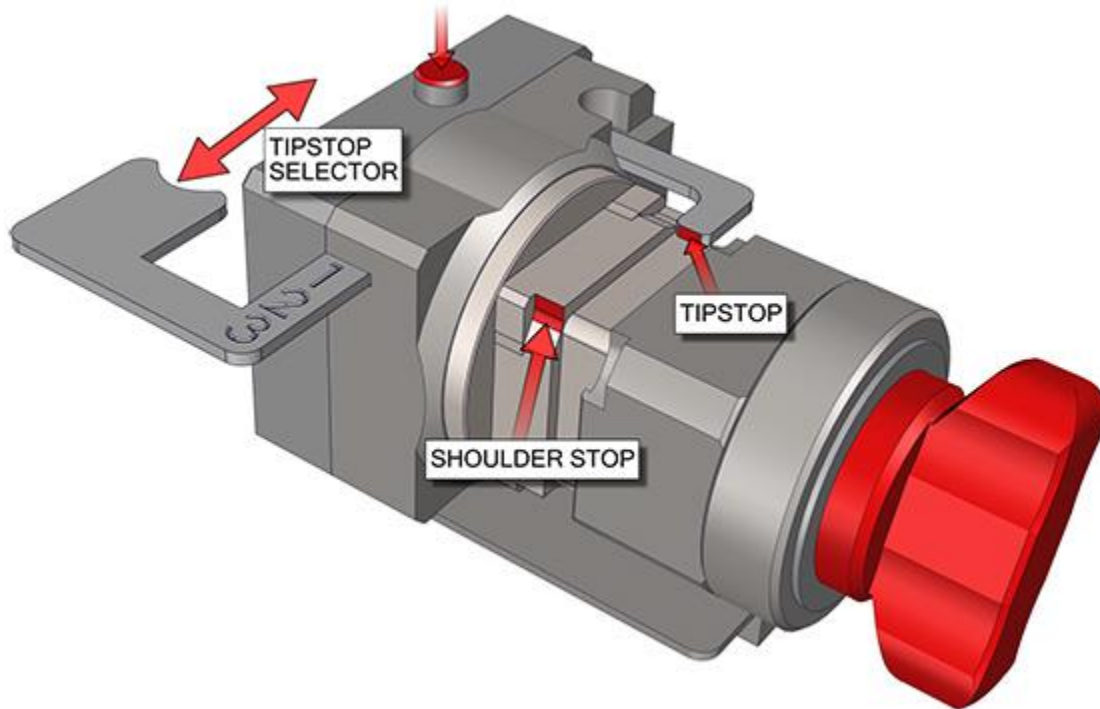
USING JAW 1

Available tools are the 5mm Tubular Cutter, TR.0625 Lexus Cutter, Calibration Stylus

The Cutter used most with Jaw 1 is the TR2.5 single ended Cutter :



and Nissan GT-R Dimple Cutter. The highest clamp number visible on the Tip Stop selector is the clamp currently selected. Must be set to 1 during calibration. Image below is set to Tip Stop 1:



Jaw 1 Key Clamping:

After selecting a key in the software, first pay attention to the bottom left corner of the screen under “Key Loading Information”. This shows how the key should be clamped. The example shown here is a Honda HO01.

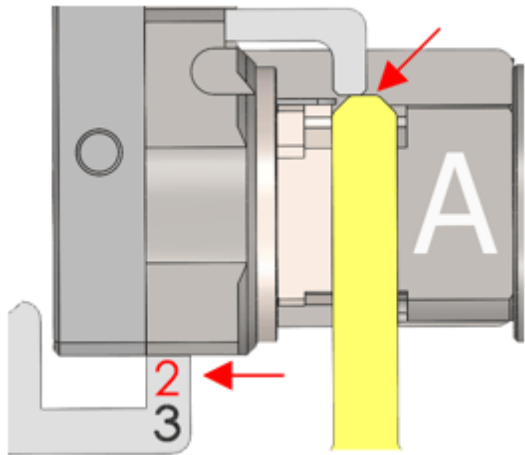


Clamp key in the Jaw 1 According to the information displayed under “Key Loading Information”

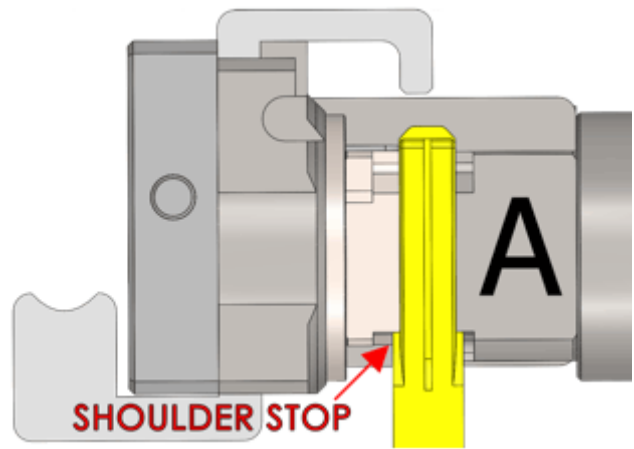
Most Jaw 1 keys use A side

Clamping High Security Keys in Jaw 1 - Using the "Tip Stop"

Jaw 1 Tipstop Example (tipstop 2)



Jaw 1 Shoulder Stop:

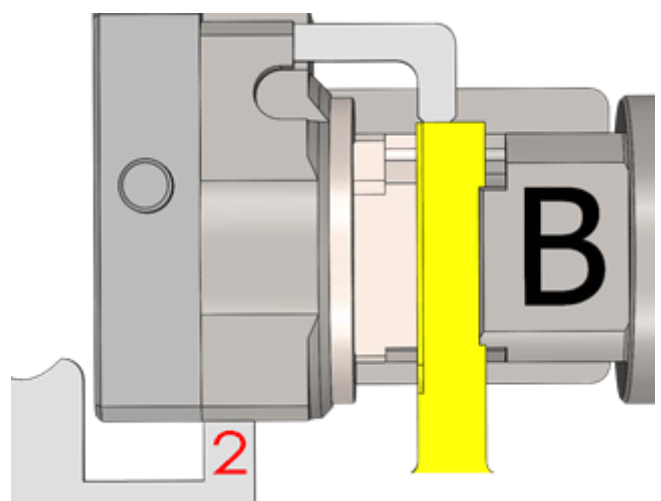
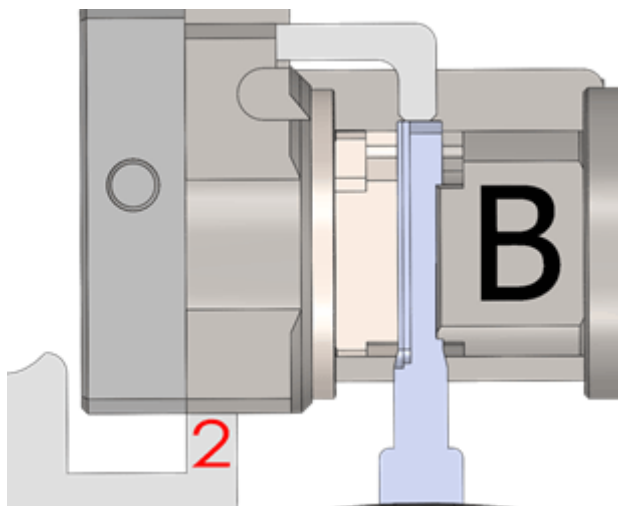


When you selecting High Security keys, the software will tell you which slot to place the "Tip Stop". It will read "Tip 1", "Tip 2", or "Tip 3". Push the Tip Stop Selector Button and slide the tip stop to where the number is the first visible. Then lay the key flat in the jaw and slide the key forward until it touches the tip stop then tighten the jaw using the red knob on the right side of the Jaw 1. You may leave the tip stop in place or move it away from the key.

When selecting keys 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. Tighten the red knob to lock the key in place.

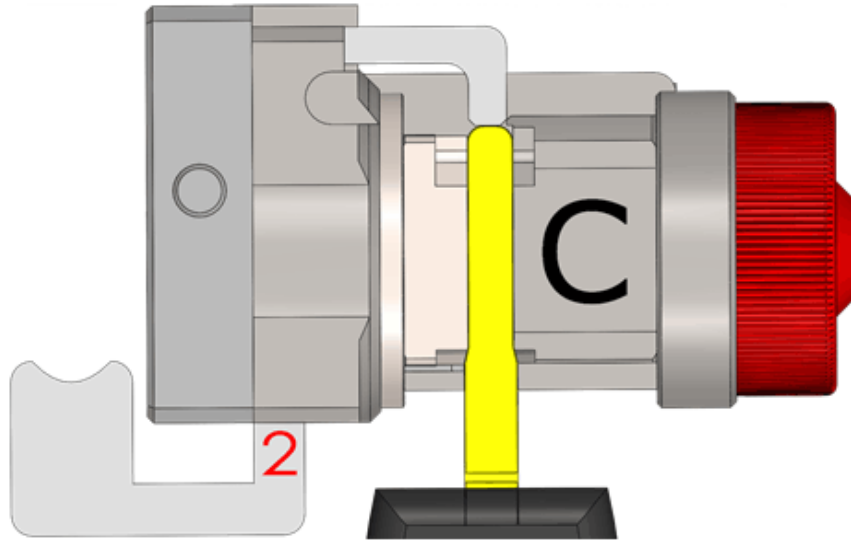
Jaw 1 "B" Side

When a Mercedes 2 Track or BMW HU92 2 Track key is selected, it requires that the Jaw 1 "B" side be used. Open the Jaw 1 and twist until the B is on top.



Jaw 1 "C" Side

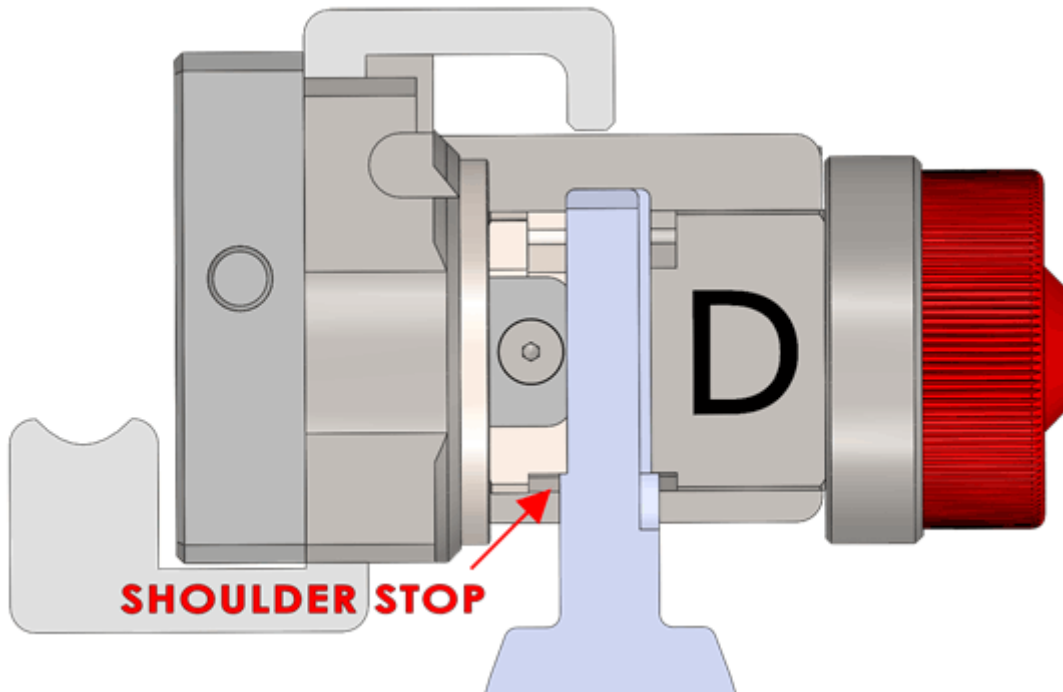
When a 10 or 7 cut Ford key is selected then use the C side:



10 Cut uses Tip Stop 2. 7 cut uses Tip Stop 1.

Jaw 1 "D" Side

When a VAG (HU66) key is selected, it requires Jaw 1 D Side to be used. Insert the key into D Side and slide the key forward until the shoulder of the key and tighten the red knob on the right of Jaw 1.



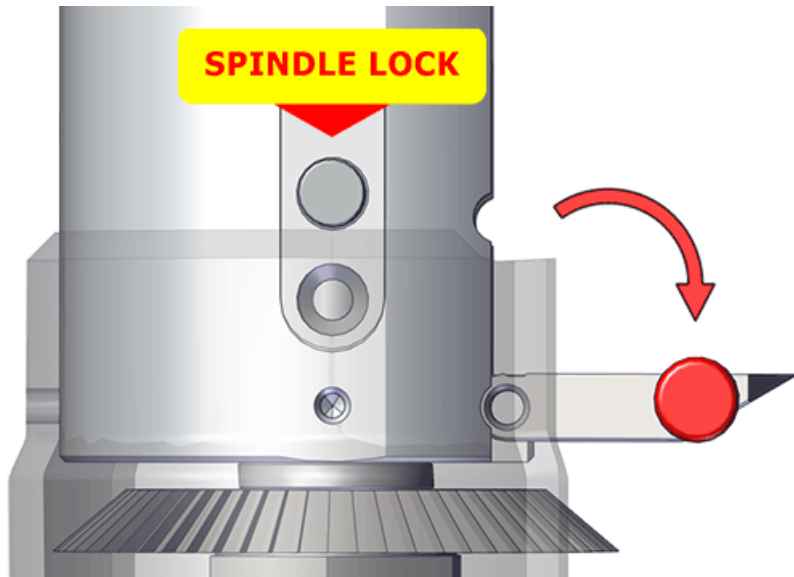
USING JAW 2

When loosening the Jaw 2 to clamp keys be careful not to unscrew the Red T Knob too far, doing so will cause the moving Jaw 2 top to slide out of the fixed Jaw 2 inner base and will require special instructions to reassemble.

Jaw 2 Tracer

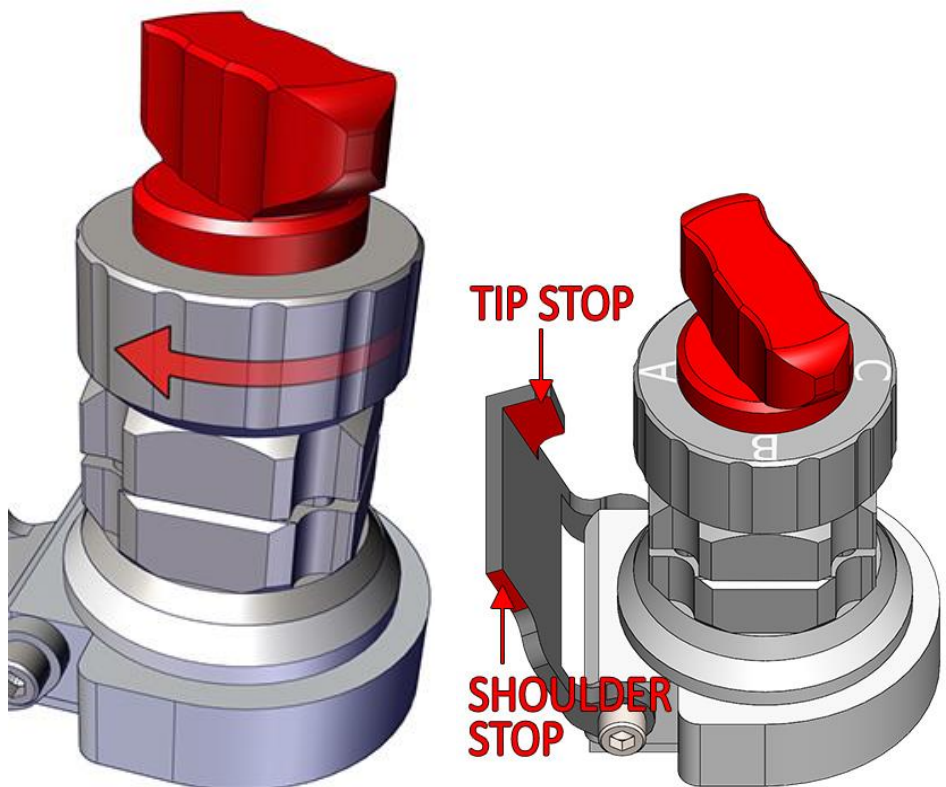
To cut a key leave the Jaw 2 cutter wheel tracer down.

To trace a key for duplication flip the Jaw 2 tracer out.



Changing Jaw 2 Clamp

To change which jaw clamp faces the cutting wheel all you have to do is loosen the jaw 2 and firmly twist the jaw 2 in any direction until the desired jaw clamp letter is to the left toward the cutter wheel.



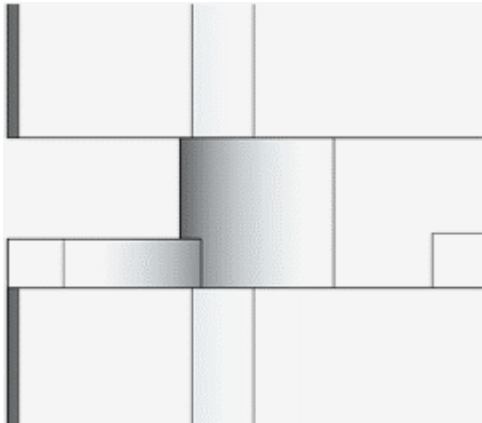
B Side has a tooth that is pointed up. D Side has a tooth that is pointed down.

The A, B, C, and D Sides of Jaw 2

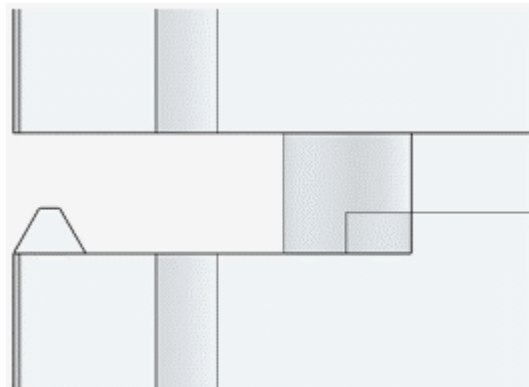
Always clamp single sided keys all the way to the back of the Side A or C flat clamps. The different sides of the Jaw 2 clamp a variety of key shapes. The A and C sides are flat clamps and the B and D sides clamp key on a tooth protruding from the bottom and top of the clamp.

Note that the software recommends Jaw 2 Sides but may not always be accurate.

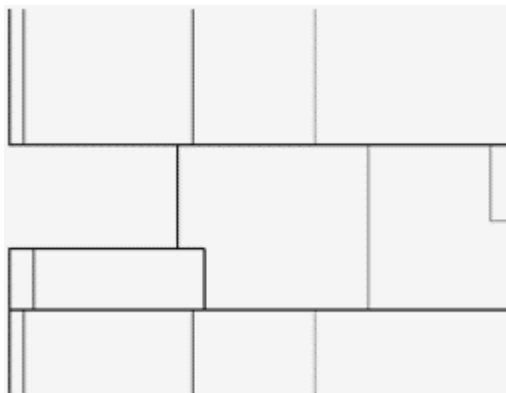
Follow this clamping guide.



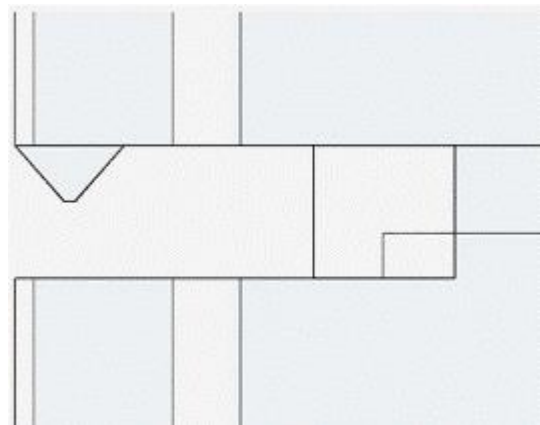
A Side



B Side

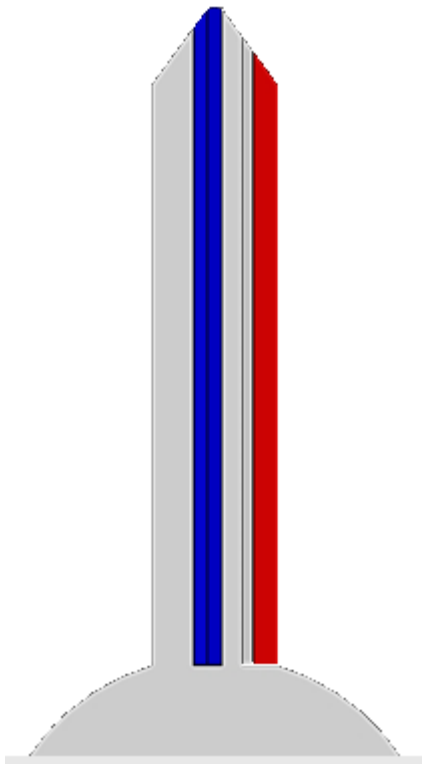


C Side

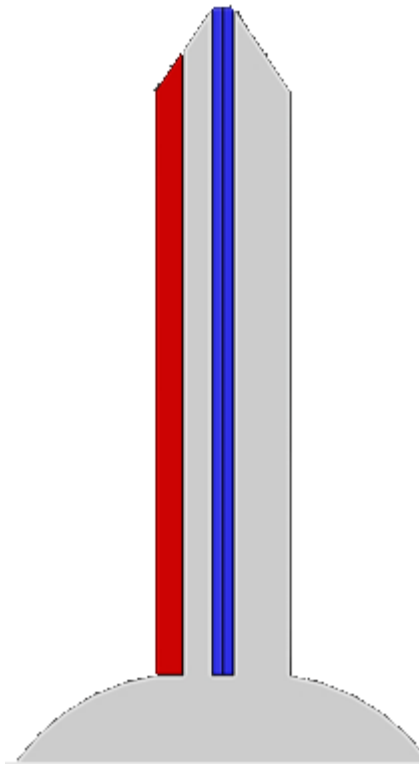


D Side

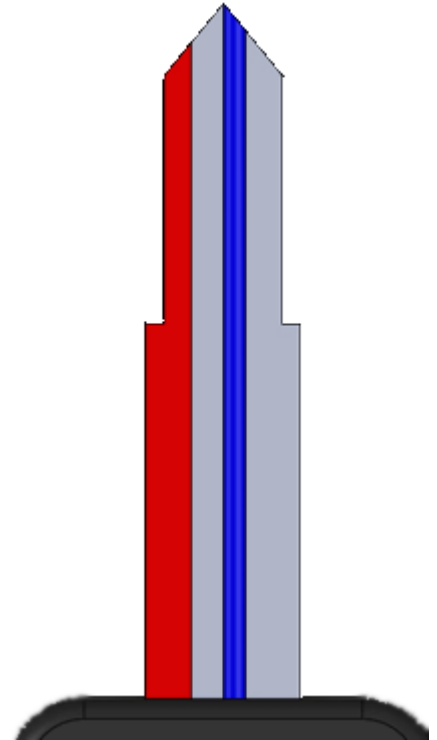
Notice that the Jaw 2 B and D sides have teeth that can help clamp double sided keys straight by clamping on a key's center groove. Double sided keys can also be clamped in the A or C flat clamps but they often have problems clamping the second side if there are no one cuts or if the key has many deep cuts not allowing for good clamping on the milling (milling highlighted in red below). When the center groove of the key is down the middle of the key then it doesn't matter if the key is clamped from the B Side bottom tooth or the D Side top tooth, it will clamp the same. (Center grooves in blue) When using the teeth, whichever clamp makes the key sit further out of the Jaw 2. The milling is the thinnest part of the key along the edge where the cuts go.



Center groove on the Left
Clamp on B Side Bottom Tooth



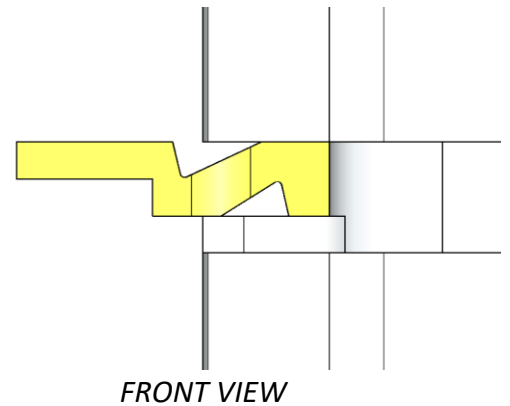
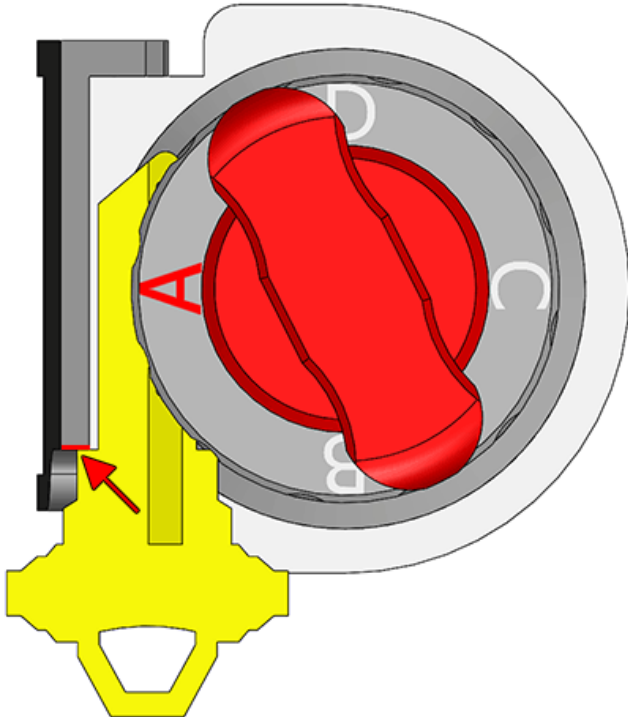
Center groove on the Middle
Clamp on B or D Side
Bottom or Top Tooth



Center groove on the Right
Clamp on D Side Top Tooth

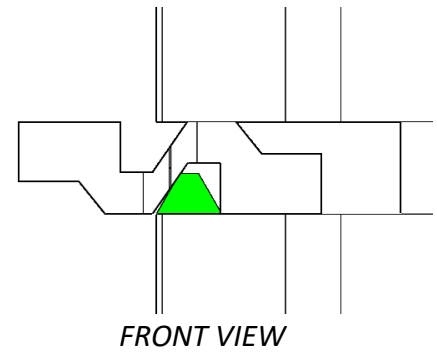
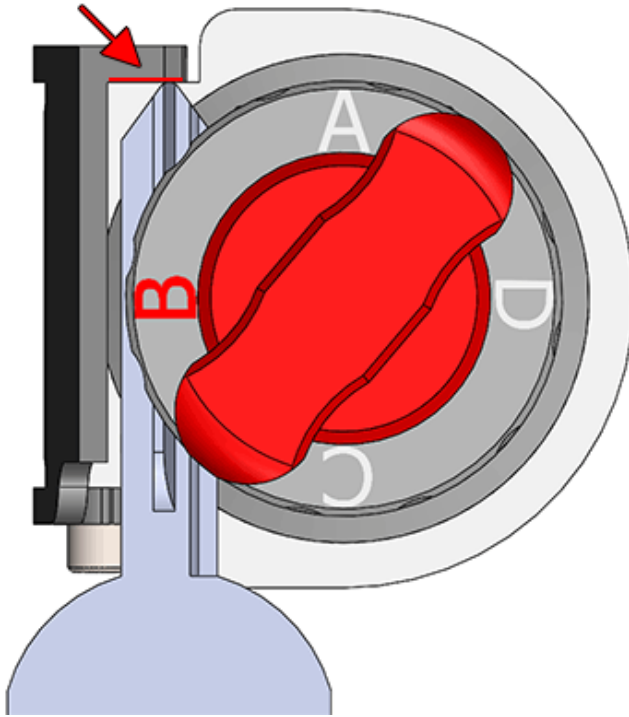
Here is an example of a Schlage SC1 key clamped in Side A:

Always clamp single sided keys all the way to the back of Side A or C.

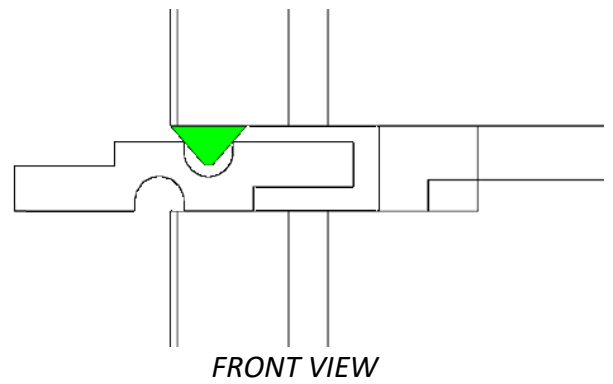
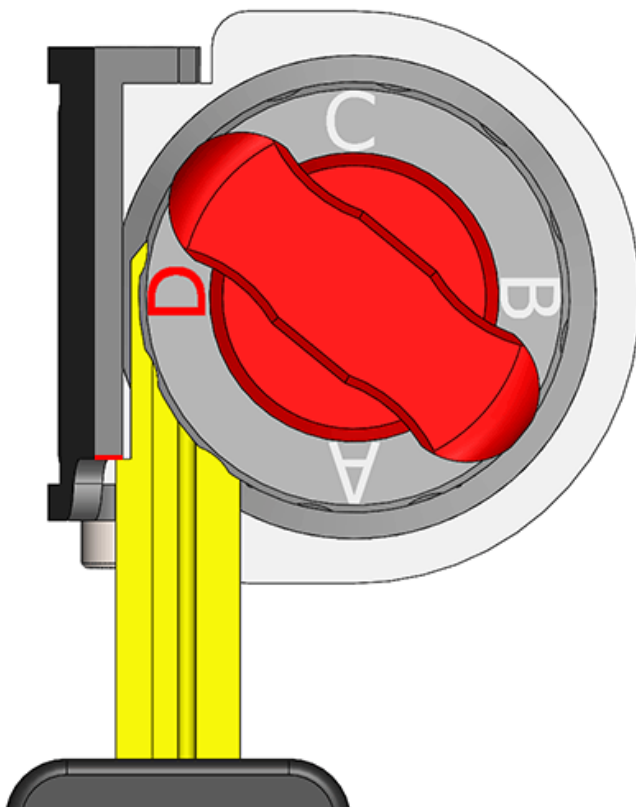


FRONT VIEW

Here is an example of a B106 P1115 key clamped in Side B:



Here is an example of a DWO4RAP key clamped in Side D:



Jaw 2 Trace Types

When tracing a standard key you may be asked to choose which Trace Type you want:

Select a Trace Mode

EXACT DUPLICATE TRACE MODE
Allows for rapid duplication of Jaw 2 keys from one original keys physical measurements.
The original key manufacturer's cut depths are ignored.
Instead exact measurements are used to determine depths.

Example Use: Trace an original key, and cut as many exact copies as needed.

MANUFACTURER SPECIFICATIONS
Allows for accurate duplication of Jaw 2 keys, matching each depth measurement taken during the trace operation, to the closest matching depth from the original manufacturer depth specifications.

Example Use: Trace a worn or damaged key and attempt to cut it back to original manufacturer depths.
You may also match traced cuts to a code series if the key has one.

Exact Duplicate
Manufacturer Specifications
Cancel

Trace Type

Exact Duplicate

Manf. Specs

Exact Duplicate: It does not matter how a key is clamped in the Jaw 2 when using Exact Duplicate trace type as the machine will detect how the key is clamped and trace accordingly. The blank key needs to be clamped the same way as the original key. Most keys can be clamped on A Side either all the way to the back of the Jaw 2 or on the milling. There are four sides because different types of keys will sometimes clamp better on the different lettered Jaw 2 sides. Side C is flat like Side A but shallower for clamping thin keys such as keys for filing cabinets and safety deposit boxes. If you clamp a single sided key into A side and find that the milling is recessed into the clamp then try clamping with C side. Exact Duplicate trace type does show cut results but they are only accurate if the key is clamped all the way to the back of the Jaw 2.

Trace Type

Exact Duplicate

Manf. Specs

Manufacturer specifications: Traces a key and displays the closest measured cuts of the key. The resulting key blank gets cut to the original manufacturer space and depth specifications. This is useful for restoring a worn

key or finding what the cuts of a key are. Single sided tip and shoulder stop keys must be clamped all the way to the back of A or C side for this trace type. Double sided tip stop keys may be clamped either on the teeth of B or D sides, clamped on the milling of A or C sides, or clamped all the way to the back of the Jaw 2 on A or C sides for this to work. Double sided shoulder stop keys are not supported by this trace method.

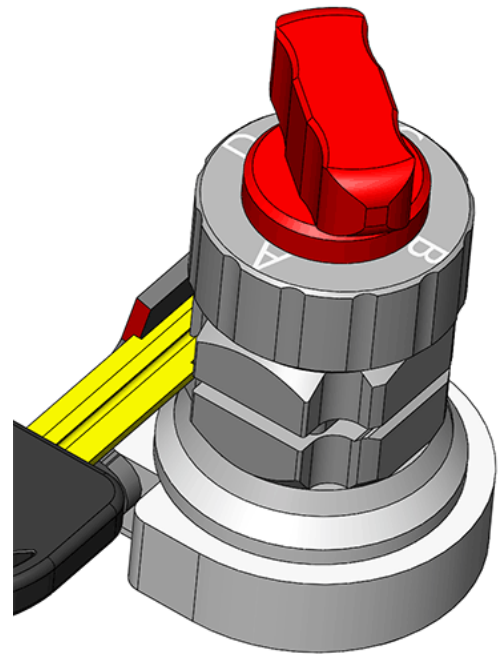
Double sided keys will not automatically align in the Jaw 2 when clamped all the way to the back of the Jaw 2 if there is no 1 depth toward the tip of the key, therefore clamping on teeth and on the milling are a better option for double sided keys.

Clamping “Shoulder Stop” Keys in Jaw 2

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

This is an example of a Shoulder Stop key:

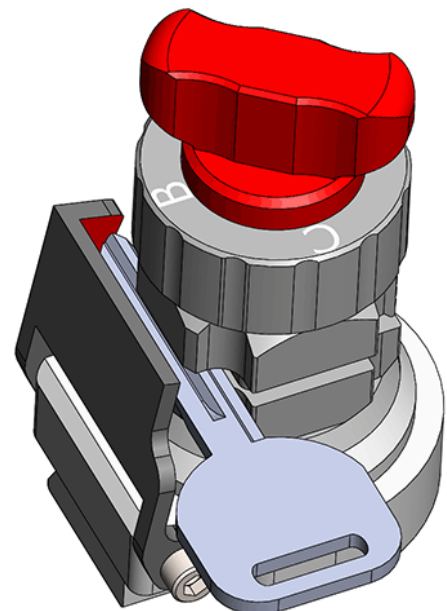
Slide the key forward until it stops on the Shoulder Stop. Tighten the red knob on top until the key is clamped firmly. Lower the shoulder stop before cutting or tracing.



Clamping “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. Lower the tip stop before cutting or tracing.



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

Cut Types

Cut Type

- Laser Cut
- Plunge Cut

Laser Cut



Plunge Cut



Selecting keys in the software

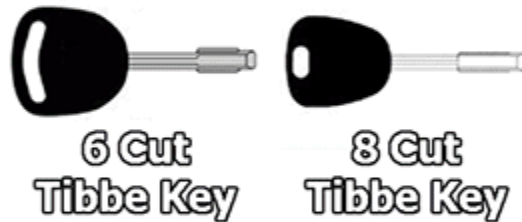
There are multiple ways to select keys in the 3D Pro software, if you can't find a key one way then try another. If you try to select a key from the year make and model selector only to find the year you have is not listed then try the closest year or make of vehicle or select the key from one of the other key selection methods.

The **Key Selection Buttons** are located on the **Main Menu**:

Residential & Commercial Keys



Vehicle Keys



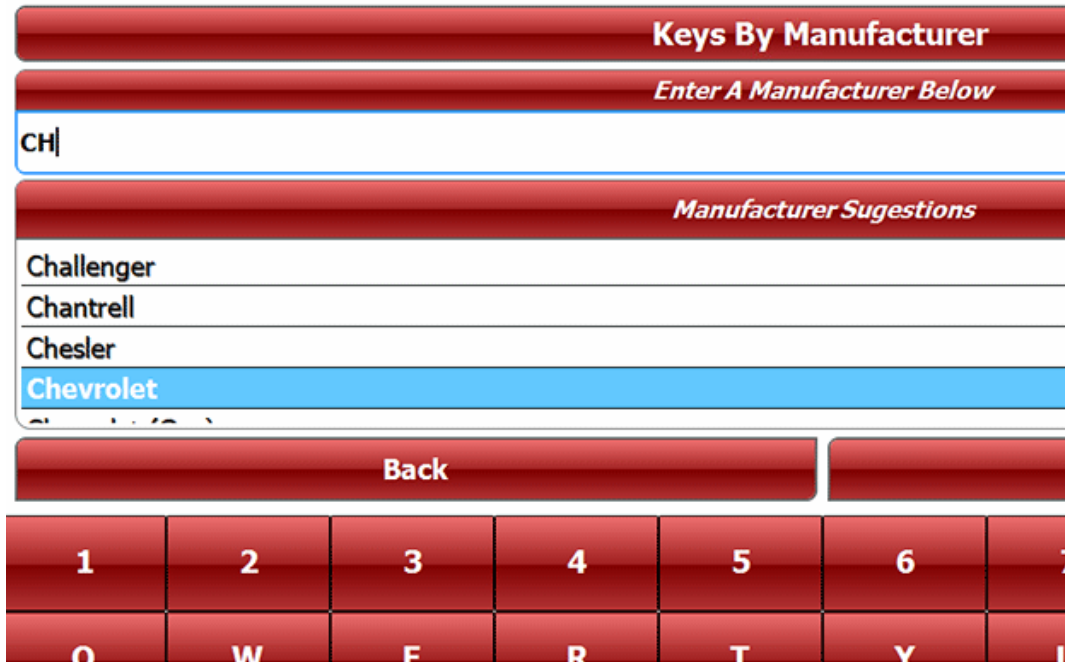
Miscellaneous



The **Main Menu** is displayed after starting the software. You can go back to the main menu anytime by hitting the main menu button at the top of the software.

Manufacturer Key Search

The Manufacturer Key Search is the only key selection method that does not have a code search and is mostly useful for duplication or filling in cuts manually. You can choose keys by manufacture such as Schlage or GM:



After choosing a manufacturer, all of that manufacturers keys are displayed. Select a key and tap **Continue**.

Manufacturer	Series	Blank
Chevrolet	Console / Pickups	HUD-3
Chevrolet	Double Sided: 00J0-99J9, 00K0-99K9	GM-22
Chevrolet	G0001-3631	B-106-HP
Chevrolet	J0001-1200, T0001-1200	DW-47-RPH
Chevrolet	N5001-7000	GM-5
Chevrolet	Old 10 Cut: A000-ZZ99, S000A-S711K, H0001-3988, O5000-6999	GM-14
Chevrolet	S8001-9000	GM-47D
Chevrolet	V0001-1200	DW-47-RPH
Chevrolet (Geo)	10001-15000	TR-47-NP

Show Alternative Blanks

Go Back
Continue

The next page will be the **Cut Screen**. Pay attention to the key clamping instructions at the bottom left. Check out the Depth & Space data tab to determine if this is the correctly selected key. If it is a double sided jaw 2

key then measure the blank width and confirm that the software is showing the correct width, change if necessary.

Key Code Search

Enter a code and select filters if needed:

General Code Search

Enter A Key Code Below

V1234

Filter By Key Types

Automotive
 Antique Automotive
 Utility
 Padlocks
 Chicago / Iico Double Sided Keys

Back

Search

1	2	3	4	5	6	7	8
Q	W	E	R	T	Y	U	I

Choose desired code series from the search results and tap **Continue**.

General Search Results

Series Range	Comment
V0001 - V3056	EURO AUTO/6 cut
V0001 - V3056	EURO AUTO/7 cut
V0001 - V5573	GM TRUCK/Sdw
V0000 - V1999	GM/Holden/AUST.'79+

Show Alternative Blanks

Go Back

Continue

The next page will be the **Cut Screen**. Pay attention to the key clamping instructions at the bottom left. Check out the Depth & Space data tab to determine if this is the correctly selected key. If it is a double sided jaw 2

key then measure the blank width and confirm that the software is showing the correct width, change if necessary.

Key Blank Search

Enter a key blank name, set filters if necessary:

General Blank Search

Enter A Blank# Below

HO01

<i>Blank Suggestions</i>	<i>Filter By Key Types</i>
HO01-PT	<input checked="" type="checkbox"/> Automotive <input type="checkbox"/> Antique Automotive <input type="checkbox"/> Chicago / Ilco Double Sided Keys <input type="checkbox"/> Padlocks <input type="checkbox"/> Utility
Back	Search

1	2	3	4	5	6	7	8	
Q	W	E	R	T	Y	U	I	

Choose desired code series from the search results and tap **Continue**:

General Search Results

Series Range	Comment	Blank
K000 - N999	HONDA CRV/SdwM<Trsp	HO01-PT

Show Alternative Blanks

Go Back	Continue
----------------	-----------------

Code Series Confirmation								
Enter A Valid Key Code								
Enter A Key Code								
Series Code Range					Series Comment			
K000 - N999					HONDA CRV/SdwM<Trsp			
Valid Code					Cuts			
Invalid Code					Invalid Code			
Back			No Code			Code To Cuts		
1	2	3	4	5	6	7	8	9
Q	W	E	R	T	Y	U	I	O

Enter a code or tap **No Code**. This is what entering a valid code looks like:

Enter A Valid Key Code								
K073								
Series Code Range					Series Comment			
K000 - N999					HONDA CRV/SdwM<Trsp			
Valid Code					Cuts			
K073					313151264131			
Back			No Code			Code To Cuts		

Click **Code to Cuts** or **No Code** and the next page will be the **Cut Screen**. Pay attention to the key clamping instructions at the bottom left. Check out the Depth & Space data tab to determine if this is the correctly selected key. If it is a double sided jaw 2 key then measure the blank width and confirm that the software is showing the correct width, change if necessary.

Automotive Keys

Choose Make, Model and Year:

ACURA	ALFA ROMEO	AMC						
AUDI	AUSTIN	BENTLEY						
Previous Page	1 / 10	Next Page						
Make	Model	Year	Series					
Back <i>Type here to filter the above list.</i>								
1	2	3	4	5	6	7	8	9
Q	W	E	R	T	Y	U	I	O

Choose necessary code option for the vehicle selected:

K000 - N999(<M>Trsp)								
K000 - N999(<M>Clone)								
Previous Page	1 / 1	Next Page						
HONDA - CIVIC <4dr - 2011								
Make	Model	Year	Series					
Back <i>Type here to filter the above list.</i>								
1	2	3	4	5	6	7	8	9
Q	W	E	R	T	Y	U	I	O

Enter a code and tap **Code to Cuts** or if not using a code tap **No Code** (such as for duplication):

Code Series Confirmation								
Enter A Valid Key Code								
K639								
Series Code Range					Series Comment			
K000 - N999					<M>Clone			
Valid Code					Cuts			
K639					335551253131			
Back			No Code			Code To Cuts		
1	2	3	4	5	6	7	8	9
Q	W	E	R	T	Y	U	I	O

Click **Code to Cuts** or **No Code** and the next page will be the **Cut Screen**. Pay attention to the key clamping instructions at the bottom left. Check out the Depth & Space data tab to determine if this is the correctly selected key. If it is a double sided jaw 2 key then measure the blank width and confirm that the software is showing the correct width, change if necessary.

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 for Jaw 1 and Jaw 3

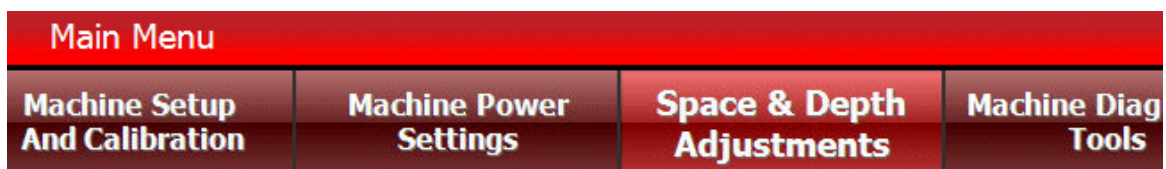
1. Jaw 1 uses three axes which are X, Y, and Z
2. The X axis is the movement from left and right and controls the depth.
3. The Y axis is the movement from front to back and controls the spacing.
4. The Z axis is the movement up and down and controls the height at which the cutter is lowered.

Explaining the X, Y, Z Axis for Jaw 2

1. Jaw 2 uses two axes which are X and Y.
2. The X axis is the movement from left and right and controls the spacing.
3. The Y axis is the movement from front to back and controls the depth.

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. **You will need to know how to measure keys with calipers.**



Adjustments are made by going to "Settings > Space and Depth Adjustment" and the choosing Jaw 1, 2 or 3.

Select the jaw you wish to perform a space and depth adjustment on.

Jaw 1

Jaw 2

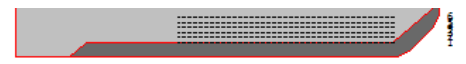
Jaw 3

Cancel

Adjusting Space and Depth on Jaw 1 and Jaw 3

High security keys that are cut and traced on Jaws 1 and 3 uses a profile that can be shifted along the space and depth axis'. We will use a High Security Honda key as an example of how to adjust Jaw 1. The process is the same for Jaw 3.

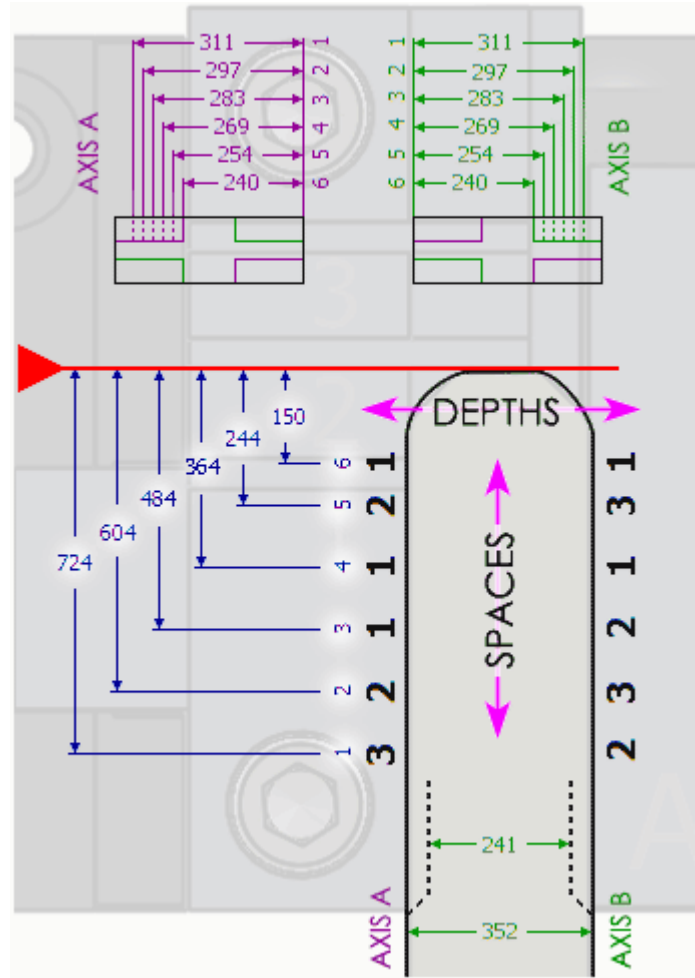
In the 3D Elite software with this Honda key selected tap 'Depth & Space Data'. On this tab show in columns and rows the depth and space numbers are shown in thousandths of and inch (0.000")



1 1 1 1 1 1
 K000 - N999 / HONDA CRV/SdwM<Trsp
 Active Code: None

	1	2	3	4	5
	<i>Depth & Space Data</i>				
Key Loading Information					
Spacing	1	2	3	4	5
A Side	0.724	0.604	0.484	0.364	0.244
Spacing	1	2	3	4	5
B Side	0.724	0.604	0.484	0.364	0.244
Depths	1	2	3	4	5
A & B	0.311	0.297	0.283	0.269	0.254

Here is a visual representation of this DSD:



To measure the spacing on a tip stop key like the high security Honda key set a caliper to the space that you want to measure using the space data on the edit page and the measure from the tip toward the bow. For a shoulder stop key, measure from shoulder to tip.



To measure a depth on a high security Honda key, find the space for the depth you want to measure and measure from the edge of the key to the edge of the cut. Compare the reading against the Cut Depth info on the edit page.



Now trace either a blank or OEM cut high security Honda key. It's best not to use an aftermarket key because it may not be cut to spec. In this example we are tracing an OEM cut key.

Trace Reading Example

At the bottom right corner of the software tap the 'Cut / Trace Data' button. At the bottom right corner is a text box, and at the bottom of this box are the readings for the trace, one line per cut. The readings show the space, cut and tracer measurement. The readings are shown in the order in which they have been traced.

(1,3);283
 (2,5);253
 (3,5);253
 (4,4);268
 (5,5);253
 (6,1);308

A blank will read all zeroes measuring 352 all the way down the key.

An OEM key should always read ones in both 6th spaces measuring 311.

The 6th spaces will show in the middle of the readings list and we see in the example that the key profile is off to the left by 3 thousandths of an inch. The trace reading shows that the 6th space on side A measured to 308 thousandths of an inch when it is supposed to be 311 thousandths of an inch. This in turn causes the 6th space on side B to be off as well. To correct this we will make a space and depth adjustment to move the cut profile to the right by 3 thousandths of an inch. This will make the 6th space on side A measure 311 and the 6th space on side B measure 310.

(6,1);313
 (5,5);256
 (4,1);312
 (3,5);256
 (2,6);242
 (1,4);269

To make this adjustment go to "Main Menu > Settings > Space Depth Adjustments" and choose Jaw 1

Jaw 1

Cutter	Select Another Jaw	Tracer
1777	Calibrated X Value	1356
1817		1821
- 0 +	Space Offset	- 0 +
- 0 +	Depth Offset	- 3 +
Update		

You will see the window shown above. Type "3" under "Tracer" next to "Depth Offset:" and then press "Update"

Adjusting space and depth for the Jaw 1 cutting is the same as adjusting Jaw 1 Tracer except that you will have to cut a key, measure it, and make the adjustment. Cut a high security to a random code or all ones and measure as shown below. The tip of this high security Honda key will have ones on both 6 space cuts (or along the whole key if you cut to all ones) and should measure to 311.

Shown to the right is an example of how to measure a cut high security Honda key at the 6th space on side A.

If the 6th space on side A measures less than 311 then make a positive adjustment to move the keys profile to the right if the measurement is more than 311 then make a negative adjustment to move the key profile to the left.

Making adjustments affects all cuts.

Let us say that 6th space on side A is measuring to 314 then the adjustment will be made as shown below.



To make this adjustment go to “Main Menu > Settings > Space Depth Adjustments” and choose Jaw 1

Jaw 1

Cutter	Select Another Jaw	Tracer
1777	Calibrated X Value	1356
1817		1821
- 0 +	Space Offset	- 0 +
- 0 +	Depth Offset	- 0 +
Update		

You will see the window shown above. Type “-3” under “Cutter” next to “Depth Offset:” and then press “Update”. Repeat the same process for spacing.

Adjusting Space and Depth on Jaw 2

We will use a Schlage key as an example of how to adjust Jaw 2.

In the 3D Pro software with this Schlage key selected tap 'Depth & Space Data'. On this tab show in columns and rows the depth and space numbers are shown in thousandths of an inch (0.000")

Half Cut Mode

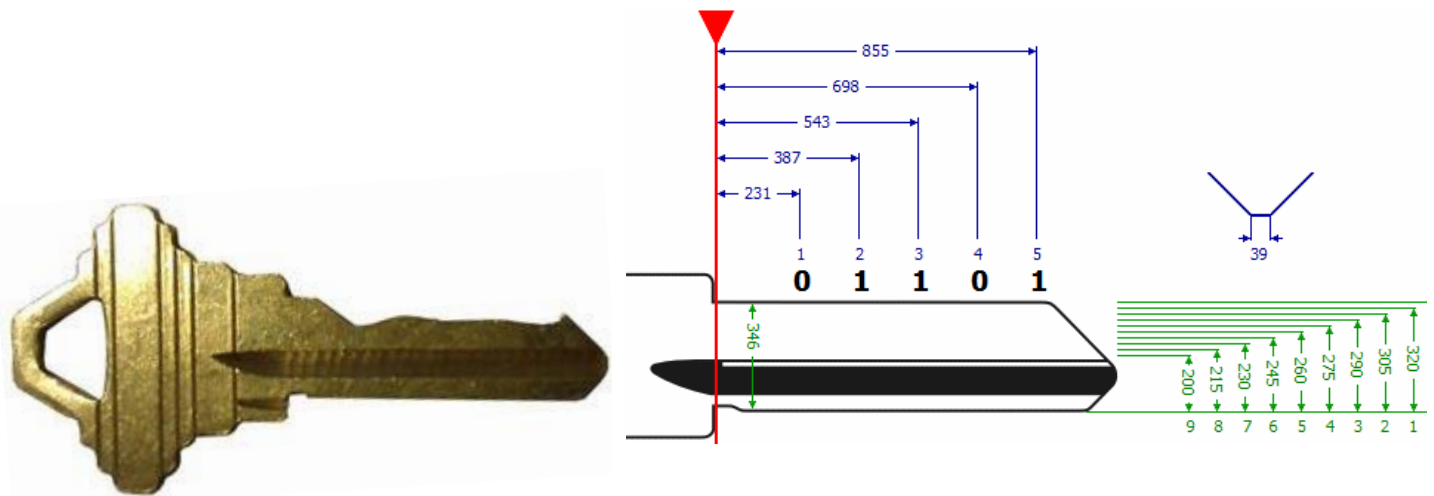


S00100 - S27787 / I

Active Code: Non

	0	1	2	3	4	5	6
	Key Loading Information		Depth & Space Data		Alternate Blanks		Code Series In
Spacing	1	2	3	4	5		
A Side	0.231	0.387	0.543	0.7	0.856		
Depths	0	1	2	3	4	5	6
A & B	0.335	0.32	0.305	0.29	0.275	0.26	0.245

Below is a visual representation of this key DSD:



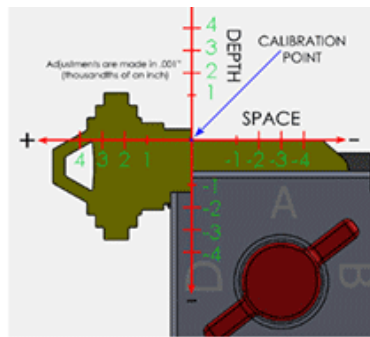


To measure the spacing on a shoulder stop key like the Schlage key, set a caliper to the space that you want to measure using the space info on the edit page and the measure from the shoulder toward the tip. For a tip stop key, measure from tip to bow.



To measure a depth on a Schlage key, find the space for the depth you want to measure and measure from the edge of the key to the edge of the cut. Compare the reading against the Cut Depth info on the edit page.

Cut a Schlage key to all ones and measure the depth with calipers. According the edit page for the Schlage key, one depths should measure to 320 thousandths of an inch. If your key measures too shallow, say 325 then make a negative adjustment to the cutter depth offset. If your key measures too deep, say 315 then make a plus adjustment to the cutter depth offset. Negative adjustments are made by putting a minus sign in front of the number used in the adjustment box.



Jaw 2

Cutter

Select Another Jaw

Tracer

668

Calibrated X Value

492

2275

1451

-	0	+	Space Offset	-	0	+
-	0	+	Depth Offset	-	0	+

Update

To adjust the spacing, cut a Schlage key to all ones with a 3 in the third space set your calipers to .543 inches and measure from the shoulder to the tip and see if the 3 cut meets the measurement. If the 3 cut is too far toward the shoulder of the key then enter a negative number in the Depth Offset under CUTTER. If the 3 cut is too far toward the tip of the key then enter a positive number in the Depth Offset under CUTTER.

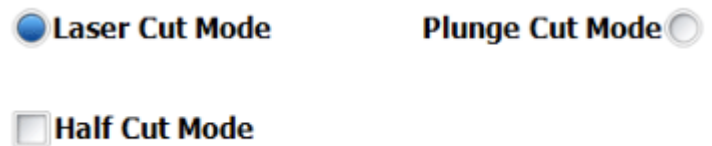
Explaining the software: Cut Screen, Buttons and Menus

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 have a check mark, 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 check mark will go away. Change the spaces to the correct numbers and click “Cut” when ready to cut key.



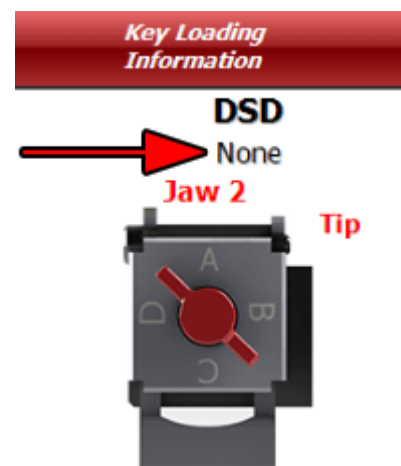
Trace: The Trace button is used for duplicating keys. On Jaw 2 keys, after tapping Trace, the software will ask for the Trace Type. Jaw 2 Trace Types are Exact Duplicate and Manufacturer Specifications. Exact Duplicate makes exact copies of the key. Manufacturer Specs cuts new keys to closest depths measured to compensate for wear. Manuf. Specs. Are not available for **Double Sided Jaw 2 keys**.

DSD (Depth and Space Data)

Some keys have their own DSD numbers. DSD numbers are used when Laser Key Products key machine specific data is used when cutting or tracing keys.

Alternate Blanks

Tells you what key blanks can be used for this cutting data.

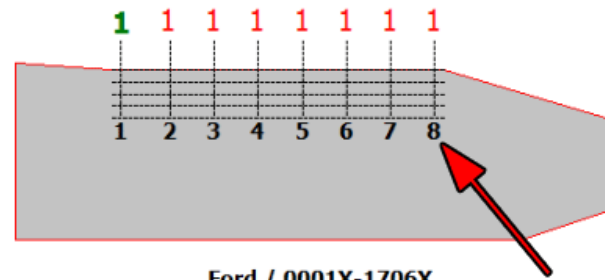


Spaces

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.



Ford / 0001X-1706X

Active Code: None

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.

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 type & Cutter

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

Jaw Clamp

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

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.

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.



Status

It also shows the status of the connection board, whether it has been found by the software or not.

Trace Cut Data

This box is located at the bottom right-hand corner of the cut 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 are **measured in thousandths of an inch (.000")**.

Troubleshooting

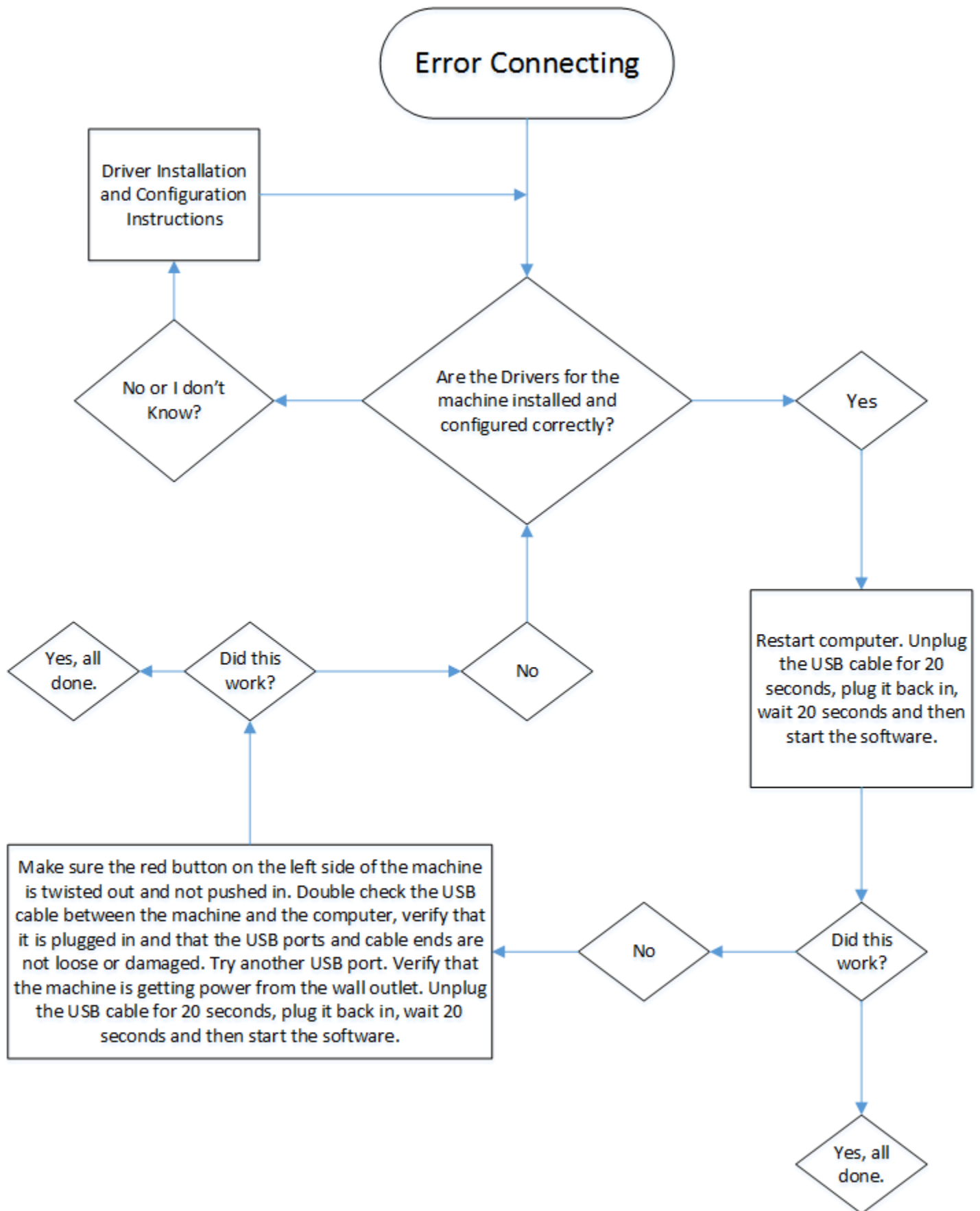
COM Error

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

1. Power is going to your 3D Elite from the power outlet.
2. The emergency stop button is disengaged (twisted out according to the arrows)
3. The USB cable from the 3D Elite is plugged into a USB port on your computer.
4. Multiple instances of the 3D Elite software may be running causing a conflict. Open Task Manager by pressing Control Alt Delete on your keyboard and then clicking Task Manager. Look for ‘3D Elite.exe’, click it, then click “End Process” Then start the 3D Pro software again.

Obstruction detected error

If an obstruction detected error occurs immediately after attempting to trace or cut a key and before the tracer or cutter actually touches anything then you may have key shavings built up behind the cutter wheel. Remove the cutter wheel and brush behind it, put the cutter wheel back on and try the operation again.



Using an inverter

When 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 seek the assistance of a qualified vehicle electrician.

If you plan to use an inverter to power your 3D Pro Xtreme key machine, it is recommended that you use only a PURE SINE WAVE INVERTER with a CONTINUOUS output rating of at least 1500 - 2000 watts. This is the MINIMUM output rating.

Although Modified Sine Wave inverters have been known to work, Pure Sine Wave inverters produce a much 'cleaner' power signal than Modified Sine Wave inverters and as a result, will extend your equipment's life and are much less likely to cause problems with your computer or 3D Pro Xtreme key machine's functionality.

It is recommended that you PRECISELY follow your inverter manufacturer's wiring and connection instructions when installing your inverter and preparing it for use with your 3D Pro Xtreme key machine.

However, here are some important points to remember and apply to your installation:

- THIS IS NOT THE PLACE TO START CUTTING CORNERS OR SAVING A DOLLAR!!!
- Unless you are completely confident in your electrical and wiring skills, we recommend allowing a trained RV electrician or equivalent perform this installation for you.
- Only use an inverter with a minimum continuous power output rating of 1500 - 2000 watts. This is the minimum rating for powering ONLY your 3D Pro Xtreme key machine and computer. If you plan on powering other lights, devices, machines, etc. at the same time as your 3D Pro Xtreme key machine, you should add the total power consumption, in watts, of all the devices you will be powering at once and multiply by 1.25 to determine the output rating of the inverter that will supply enough power for your needs. A power measurement device such as a Kill-A-Watt can help you determine your power requirements.

Amperage rating of the powered device X Volts = Watts X 1.25

- Properly grounding your inverter to the vehicle CHASSIS is absolutely essential for trouble free operation.
- Shorter and fatter is better! Keep your wiring and cabling as short as reasonably possible. When selecting wire and cable gauges, err on the side of larger diameter rather than smaller. Your inverter's manual should have a cable size & length vs. current load chart included. Follow the manufacturer's recommendations.
- The instructions included with your inverter should also include 'supply side power' wiring diagrams detailing wire/cable routing for several different configurations, i.e., one battery, two batteries, etc. Again, follow the inverter manufacturer's recommendations.
- It is possible to power your inverter using the vehicle starting battery but is not advisable. An auxiliary battery system is recommended.
- Use the best deep cycle batteries for your auxiliary battery system that you can afford. Commercial golf cart batteries give the best performance and longest life.

- Upgrade your alternator to a higher output unit.
- When using the vehicle's alternator to charge the auxiliary battery system, it is always best to isolate the auxiliary batteries from the starting battery with either a mechanical or solid state isolator to prevent draining the vehicle's starting battery. This should be covered in the inverter manufacturer's instructions as well.
- Always use fuses where applicable! Do not burn your rig to the ground because you didn't think you needed a fuse!
- Remove any paint, under coating, dirt, etc., from connection surfaces before securing the connection. Establish clean, solid, and reliable connections.
- Double check all of your connections to make sure they are solid and secure. Check them periodically to make sure they remain tight.

Follow these tips and the inverter manufacturer's instructions and you will be rewarded with a long lasting, trouble free system.

Example of Inverter Chassis Grounding

