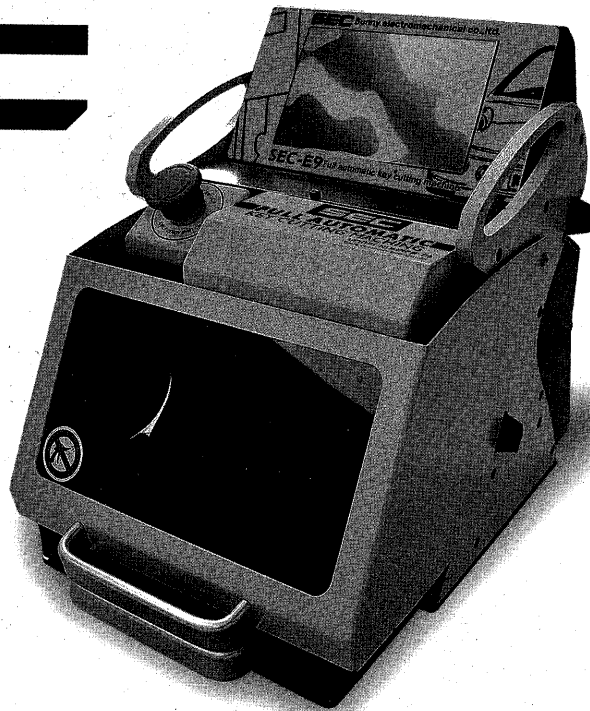


SEC-E9 Instruction Manual

SEC



- Please read the manual before operating this equipment without fail
- The appearance and performance of this product is subject to change without prior notice for usability improvement, and there may be parts not homologous with the manual

Tbale of Contents

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Use	
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Make sure to comply with the following when you use the machine.

SEC-E9 is designed to be operated under DC24V. Normal operation is only made when DC24V is supplied. When other power supply than DC24V is applied, the machine may not be operated accurately. In particular, under low voltage (less than 24V), DC motor output decreases, which leads to slower rotation.

Replace the cutter on a regular basis. Delayed replacement may deteriorate the cutting force, which leads to failure of accurate key cutting.

Depending on the alloy of the key blank, the cutting force of the end mill differs. Set the cutting speed and cutting unit by the strength of the key blank.

Take cautions not to drop the machine or get it get wet by rain or snow when used outside.

Make sure to check errors on key blank before cutting the key. The error on key blank itself may produce unexpected results even if the machine cuts the key with accurate measurement.

Cautions for Safety

Make sure to observe the followings for safe use of the product.
The below information is provided to promote the user safety and prevent property loss.
Read the cautions carefully for correct use.

	It indicates that you may get injured or experience equipment damage if you fail to follow the instructions.
	It indicates that it's the sign that you can be seriously injured if you fail to follow the instructions.

Cautions for power

	Never use damaged power cords or loose plugs or sockets. ➤ They may cause electric shock or fire.		Never plug in many power cords in an outlet simultaneously. The outlet may get too hot and cause fire.
	Never pull out the plug by tugging the power-cord, or touch the power plug.		Keep the machine unplugged when unused for a long time.
	If smoke rises up while using the machine, turn off the power right away. Contact your dealer or our factory for advice.		Cigar jack fuse may blow out when you connect the machine to the vehicle cigar jack. In such a case, replace the old fuse with the new fuse with 10A or more. You can only use the machine connected to the cigar jack, while the vehicle engine is running.

cautions for Installation

	Do not install the machine in a place with oil, smog, moist, dust and water splashing		Do not put burning cigarettes or candles on the machine and install it away such heating apparatus such as stoves. The unit could get overheated, resulting in failure or fire.
	Make sure to install the main body on a stable flat surface. The machine weighs about 20Kg and generates vibration on both sides during operation. If you use the machine on a weak or bumpy surface, it may lead to damages on machine/worktable and injuries on users.		

cautions for use

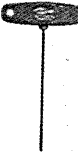
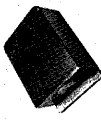
	The blade of the machine spins at high speed during its operation. Be careful not to put any part of worker's body or clothing or other things inside of the machine. The operator may get seriously injured by the cutter if this is ignored		Do not put any tools, water containers, mugs, cups or small metal pieces on the unit or cutting bed. ➤ Vibration of the machine and carelessness of the user may cause falling of the above objects, which leads to injuries on the user. Overheating or electric leakage may lead to fire or malfunction. ➤ It may also cause electric shock or fire when the unit gets wet.
	Be careful not to catch any part of your body or clothing in the route of each axis of the machine so as not to be scratched by its blades. When a part of body or object is jammed in the axis path of the machine, or gets scratched by a sharp blade, serious injuries, machine damage and failure may occur.		

other cautions

	Do not disassemble or remodel the body of the machine ➤ It may cause fire, electric shock & equipment failure. If you need a check-up, adjustment, repair of the machine, please ask your dealer for service or contact our factory.		Curiosity or carelessness of the young children about the machine may lead them to touch the machine and be hurt. Keep them away from the machine.
	In winter, sub-zero temperatures may cause the unit to be unable to work properly. If such thing happens, increase the temperature of the work environment. Do not let the machine room temperature go below zero.		

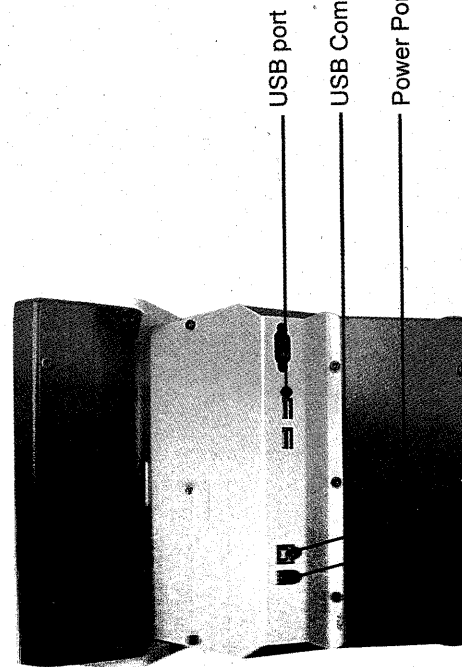
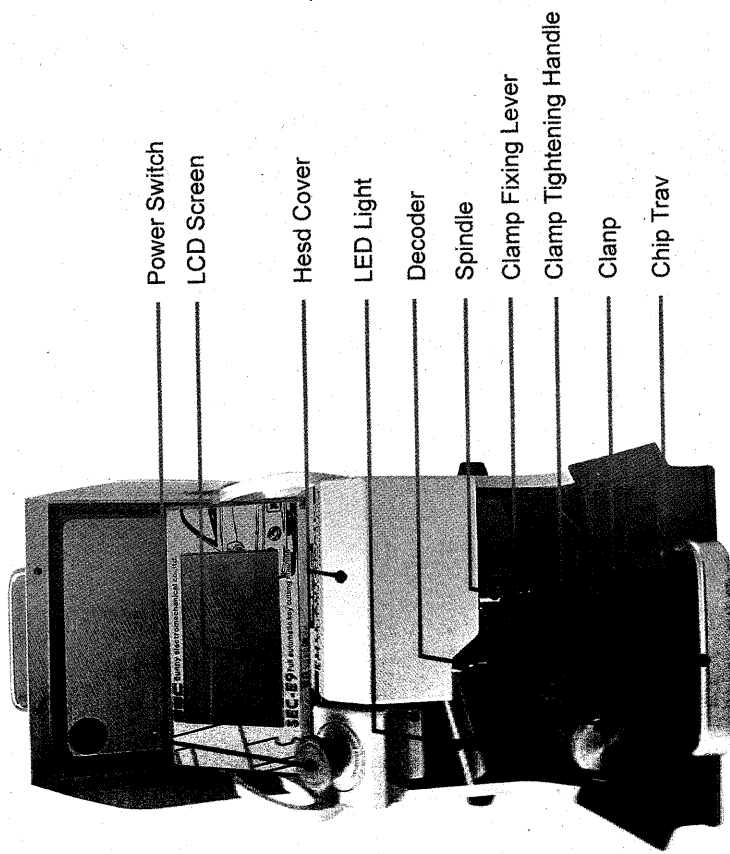
Parts

Parts Name

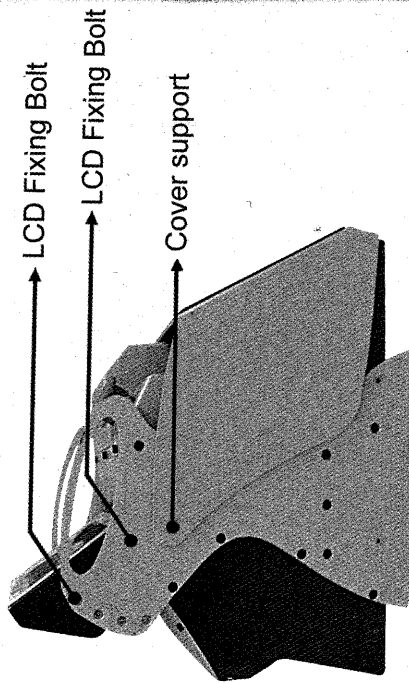
Contents	Figure	Quantity	Purpose
Cutter		2EA	Tool for cutter Consumables. Make additional purchase for replacement.
Decoder		2EA	Key decoding(copying)
T Wrench		1EA	Tool replacement
M5 Bolt		2EA	Cutter and decoder fixing
Stopper		1EA	Key reference position guide
Stopper (Right-to-Left)		1EA	Key reference position guide
Auxiliary Clamp Set SX9 Clamp		2 SET	Key Help fixing
Calibration Block		1EA	To calibrate the clamp
24V Adaptor		1EA	Power supply INPUT 100~240V 50/60 Hz 2.0A OUTPUT 24.0V 5A
Spindle Belt		6EA	
User Manual		1EA	Product Manual

Tip)

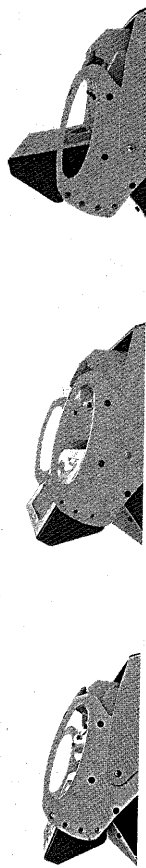
Cutter and spindle belt are consumables. Make sure to replace it with the new parts after a certain period of use.



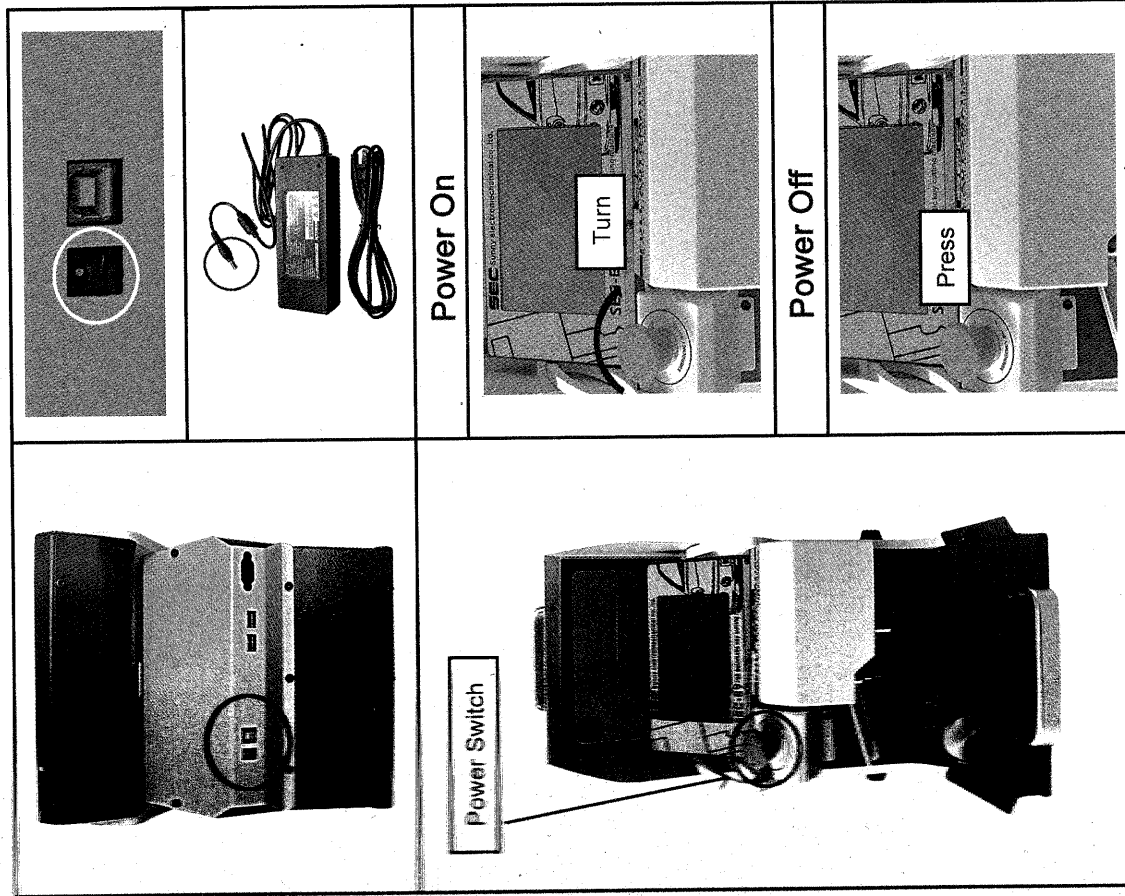
Power



SEC-E9 LCD screen angle is adjustable as you desire.



- LCD may get damaged by impact or heavy objects. Never give impact to LCD screen or put heavy objects on it.
- Decoder is a consumable and easy to break.
- Take cautions not to drop or give impacts to the decoder.
- SEC is not responsible for the broken decoder in any cases.



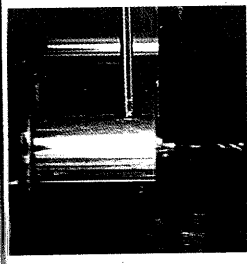
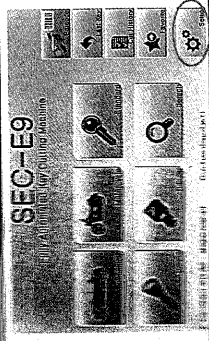
Connect the power adaptor. Turn the switch to clockwise to power on and press it to power off.

Specification

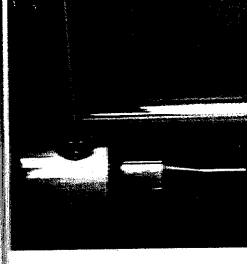
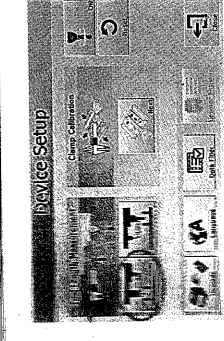
Power Input	
Power Consumption	120W
Dimension	255(W)x360 (H)x340(D)mm
Weight	24kg
Resolution	XY Axis:0.005mm,Z Axis:0.0015mm
Spindle Revolution	16000+rpm
Temperature	0-40°C
Humidity	10-90%
Usage	Automobile Key cutting,duplicating

Replacement of Consumables

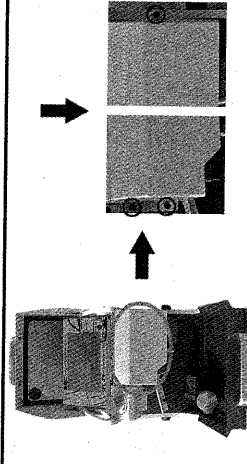
◆ Cutter

	Loosen the bolt by T-wrench to replace the Cutter.
	Press  to go to the setting page
	Press  and measure the Cutter length

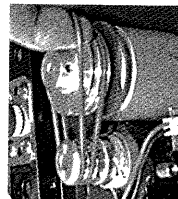
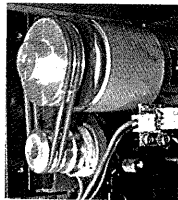
◆ Decoder

	Loosen the bolt by T-wrench to replace the decoder
	Press  and measure the decoder length.

◆ Belt

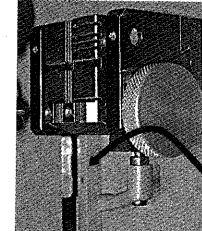
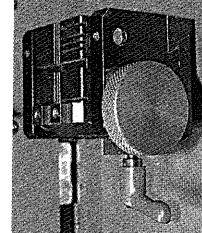


1. Loosen the bolts on the front cover to remove the cover.

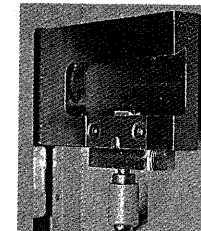
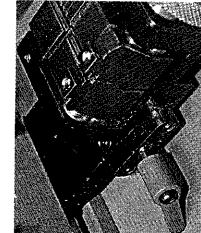


2. Remove the existing belt and replace it with the new belt.

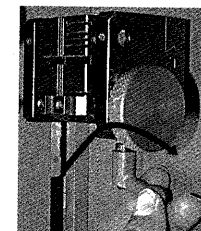
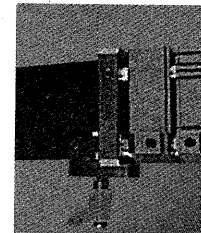
◆ Clamp



1. Loosen the clamp fixing lever.



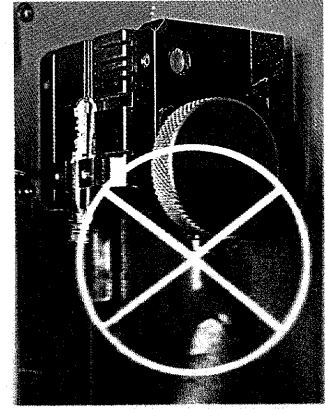
2. Detach the clamp.



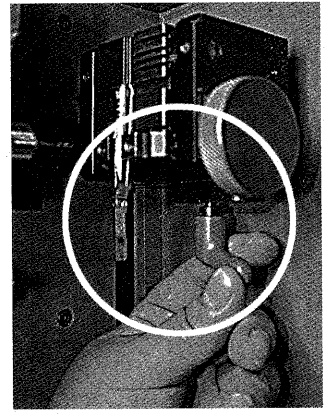
3. Align the clamp to the groove and push it back. And fasten the clamp fixing lever.

Cautions in Clamp Replacement

When you fix the clamp by pressing the lever, the clamp origin may be changed or the clamp may get shaken. Make sure to turn the lever to fix the clamp.



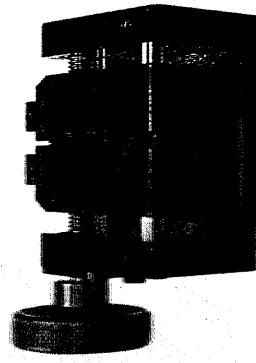
Never fix the clamp by pressing



Make sure to fix the clamp by turning

You can cut various kinds of keys by replacing the clamp based on the key type
 • The clamp is optional part. So it's not included in the product package.

Dimple Key Clamp



Tubular Key Clamp

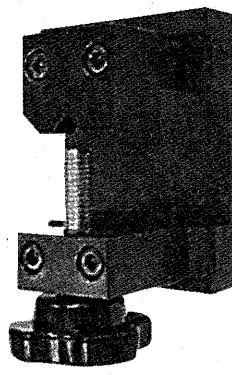
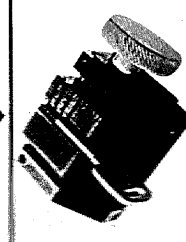
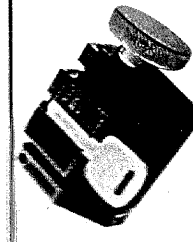
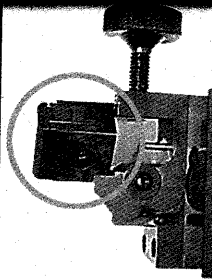
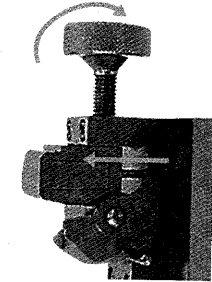
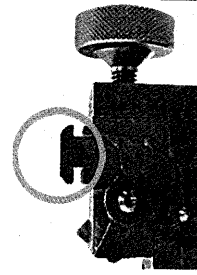
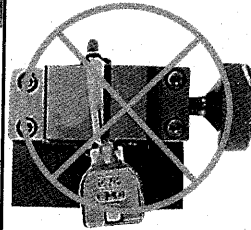
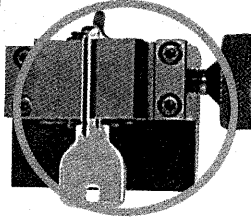
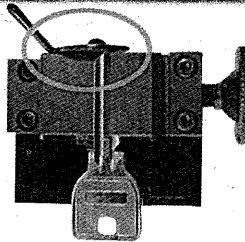
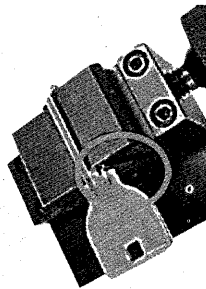
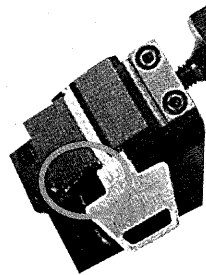
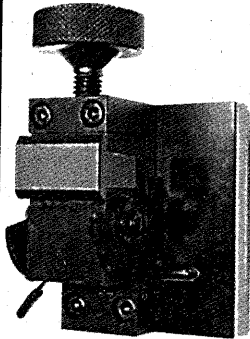


Figure of Key Fixation



For the tubular key, place the key on V-groove and turn the clamp lever to fix the key.

Single Standard Key Clamp



Depending on the width of the keys, you can change the direction of the clamp.

Tibbe Clamp

Tibbe clamp enables both Ford and jaguar key cutting with SEC-E9



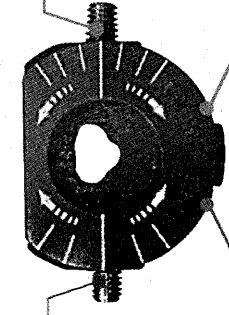
Tibbe clamp is optional part. So it's not included in the product package.

How to Use: (For example: Ford 6cut)

Loosen screw at jaguar side and fasten screw at Ford. Not all the way through, until you feel the ball bearing engage. Repeat the opposite for jaguar 8 cut.

(Front View)

Screw for jaguar



Screw for Ford

Jaguar 8 Cut

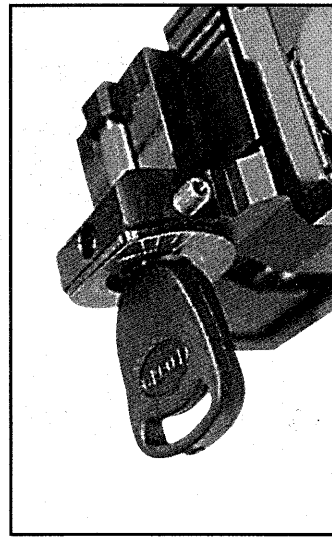
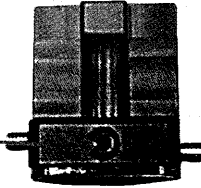
Ford 6 Cut

(Top View)

1. Insert key this way.



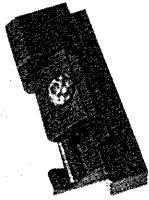
2. Fasten this screw to fix the key.



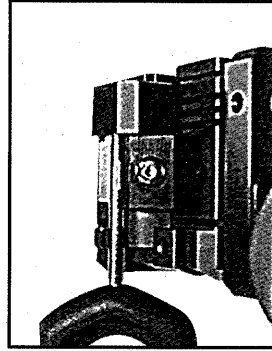
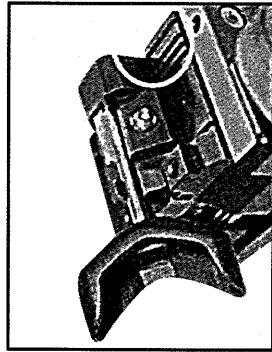
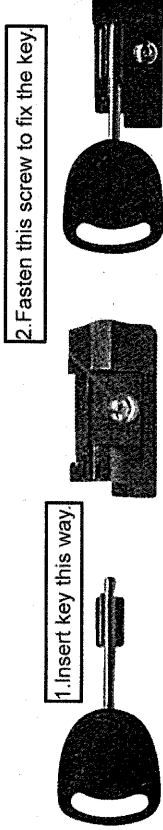
Place the clamp on the main clamp.

Follow guide on the LCD Screen.

LOV(F019)Clamp



LDV(F019)clamp enables LDV key cutting with SEC-E9
LDV(F019)clamp is optional part.It's not included in the
product package.



Place the clamp on the main clamp.

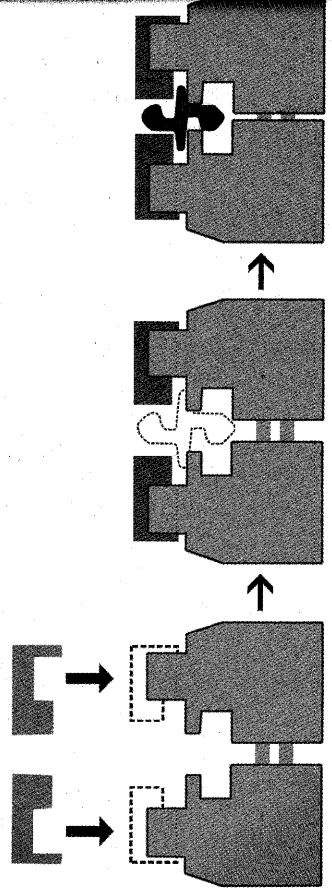
Follow guide on the LCD Screen.

SX9 Clamp



Auxiliary clamp enables easy SX9 key (Side A) and thin
standard (edge) key holding.

SX9 Key Holding



Key fixation

SEC-E9 is a key cutting machine to cut the vehicle key, as well as various
kinds of keys. It provides the clamp and stopper to fix various kinds of keys
easily and quickly. The key fixing method is as follows.

Top and Bottom Clamp:

Key can be held on top or bottom of clamp depending on the type of key. Edge or
double sided non laser keys are always held on top clamp. Laser key can be held
on either, but using bottom clamp is recommended.

Fixing a Key on Top Clamp:(Mostly Edge or Double-Sided Non Laser Keys)



Fixing a Key on Bottom Clamp:(Mostly Laser Keys)

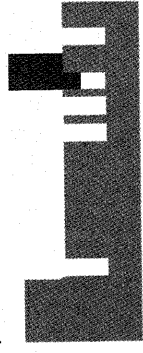


Stopper

Stopper shown in the left figure is used to align key correctly. Insert the
stopper into proper groove.
Then place a key making its shoulder or tip touch this stopper.

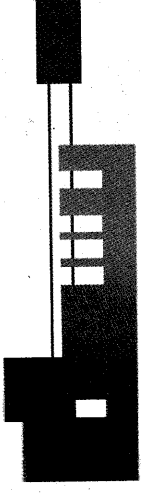


[Shoulder Align]



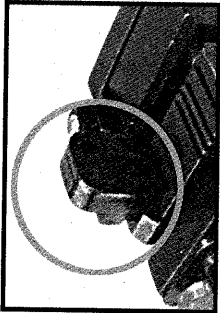
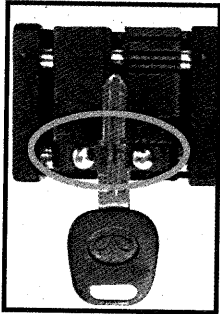
[tip Align]

Use Right-to-Left Stopper Block to hold laser key with short length.



[Tip Align for Right-to-Left]

Standard Key (Single & Double-Sided Key)

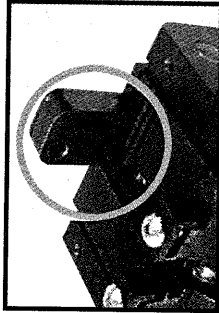
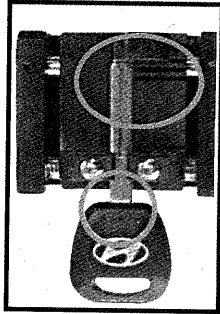
1. Put the stopper in the stop of Shoulder Align Stop.

2. Place the key shoulder to touch the stopper and fasten the clamp tighten handle to fix the key.

Cross Section of Double-Sided Key Fixed



Laser Key

1. put the stopper in the stop of Tip Align Stop. (Follow the instruction displayed on the machine LCD for the proper stop.)

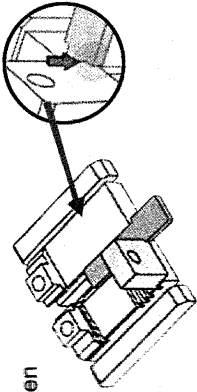
2. Place the end of the key to touch the stopper and fasten the clamp tighten handle to fix the key.

Cross Section of Laser Key Fixed

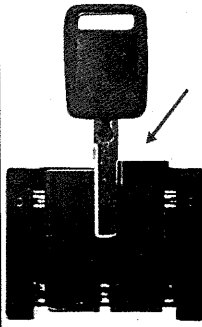


You can fix the laser key turning the opposite side.

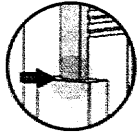
Shoulder Align Key



Display on LCD Screen



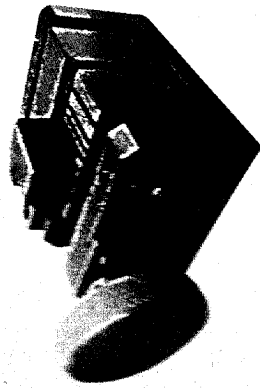
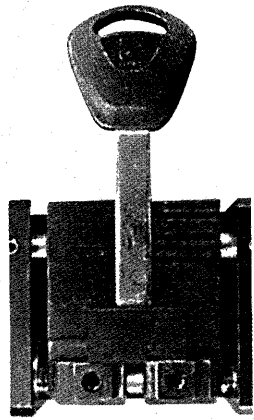
Tip Align Key



CP-96

Display on LCD Screen

In case of fixing the key on the opposite direction, Right-to-Left stopper block is necessary.

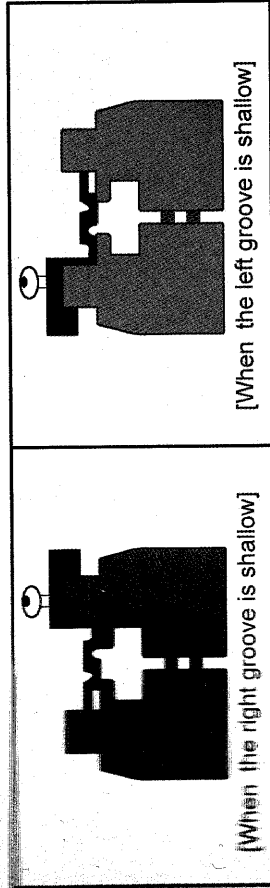
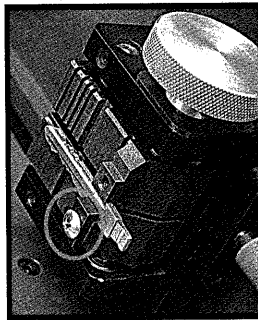
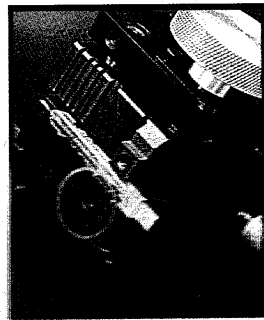
Auxiliary Clamp

*Use the auxiliary clamp only when it is absolutely necessary. If you use it incorrectly, the center may get changed.

1. Fix the vehicle key on the clamp.



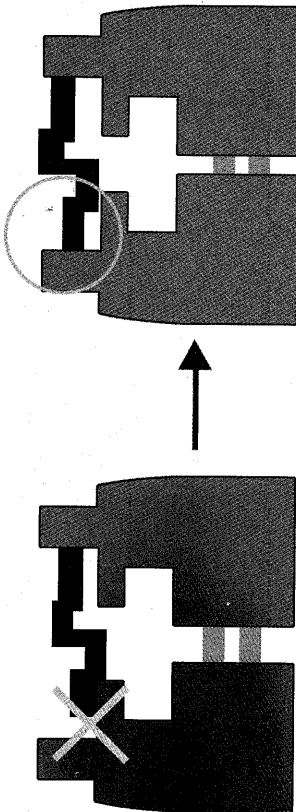
2. Insert the auxiliary clamp for key fixation into the shallow groove of the vehicle key for fixation.



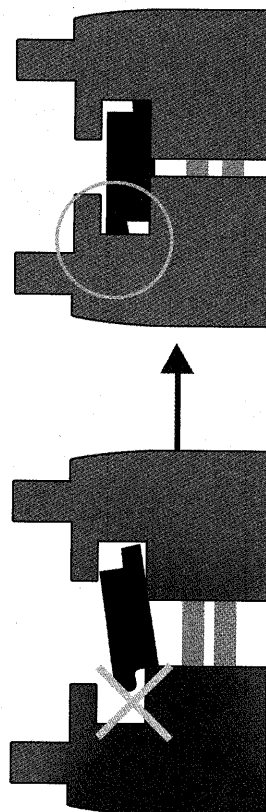
Cautions for Key Fixation

Take cautions not to make the following mistakes when fixing the key.

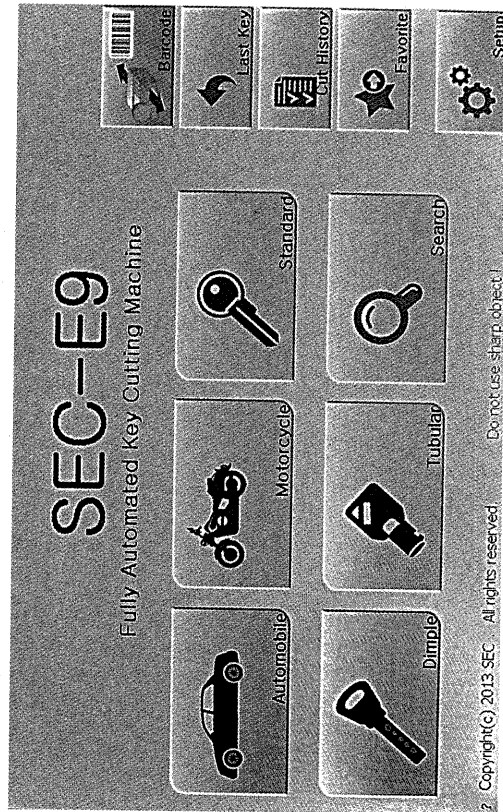
Standard(Edge)Key

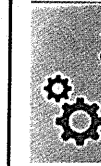


Laser Key

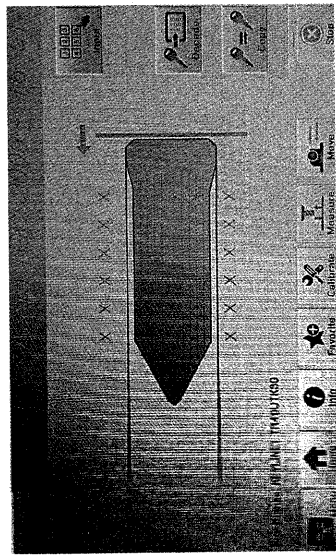


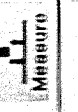
Standard Menu



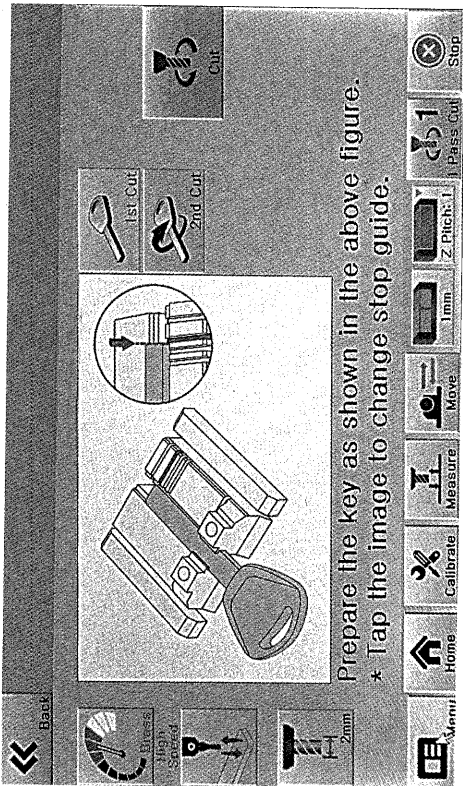
	Vehicle key Cutting		Key Data Search
	Motorcycle Key Cutting		Previous Key Data
	Standard Key Cutting		Key Cutting Lisy View
	Dimple Key Cutting		Favorite Key Data
	Tubular Cutting		Setting
	Clamp Movement for easy Barcode Scanning		

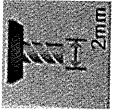
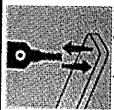
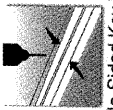
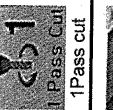
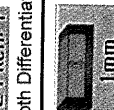
SEC-21



	Bitting Number Input	
	Read Bitting of Key	
	Key Copying	
	Key Cutting	
	Menu(When you press the icon,the hidden menu appears.)	
	Return to Home	
	Detailed Key Data View	
	Frequently Used Key Data Registration	
	Vise Origin and Tool Calibration	
	Tool Heighe Measure	
	Clamp Move	

SEC-22



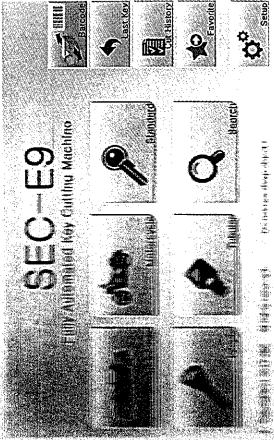
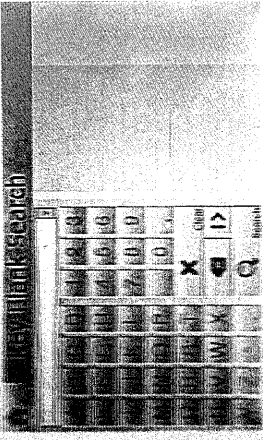
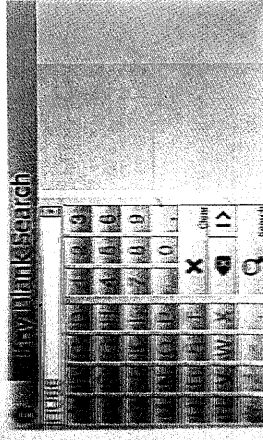
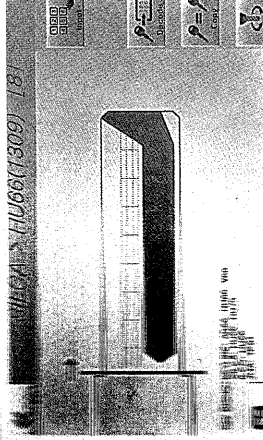
	Speed Setting	4 levels of cutting speed are provided: Low-Normal-High-Highest, depending on the key blank strength.
	Tool Thickness Setting	You can set the thickness from minimum 1.5mm to maximum 2.5mm, depending on the tool.
	Laser Key Height Auto-Measurement	Key height is automatically measured for the laser key cutting to prevent the clamp damage.
	Double-Sided Key Width Auto-Measurement	Key width is automatically measured for the double-sided key cutting to offset the key blank error.
	1 Pass Cut	Key cutting is complete in 1 pass cut. (It is used when the cutting key is not completely done.)
	Depth Differentiation	This icon appears for the laser key cutting. You can make up to 3 cuts with different depth.
	Depth Adjustment	Cutting depth is manually adjustable for the laser key cutting.

Convenient Function

Data Search

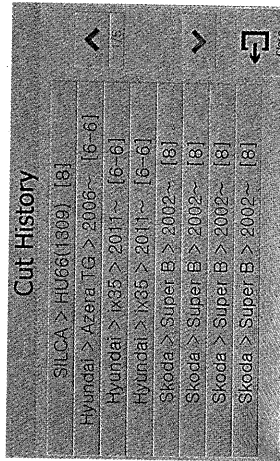
SEC-HU006(Audi A4, A6)

You can search and read data by the key type.

	1. Press  in the first page.
	2. Enter the key name.
	3. Press  .
	4. Enter the biting number and start cutting.



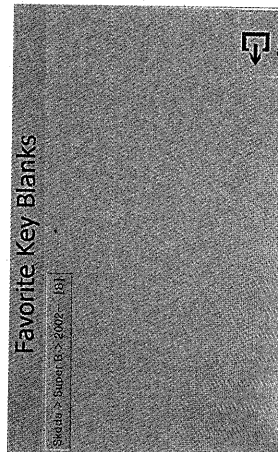
Key cutting List View



You can check the cut key list.



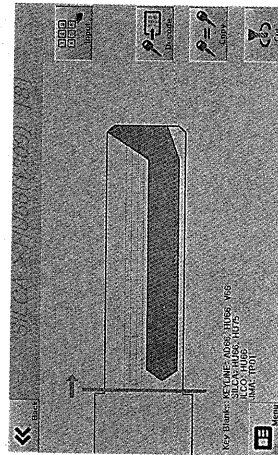
Favorite



You can register key data in Favorite and read the data in the initial page.



Previous

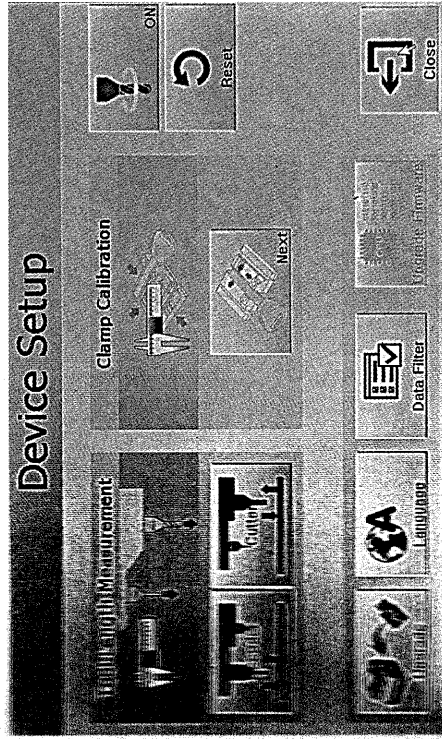


You can read previous key data for reworking.

Setting Menu



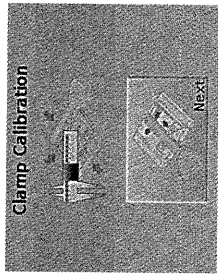
Setting



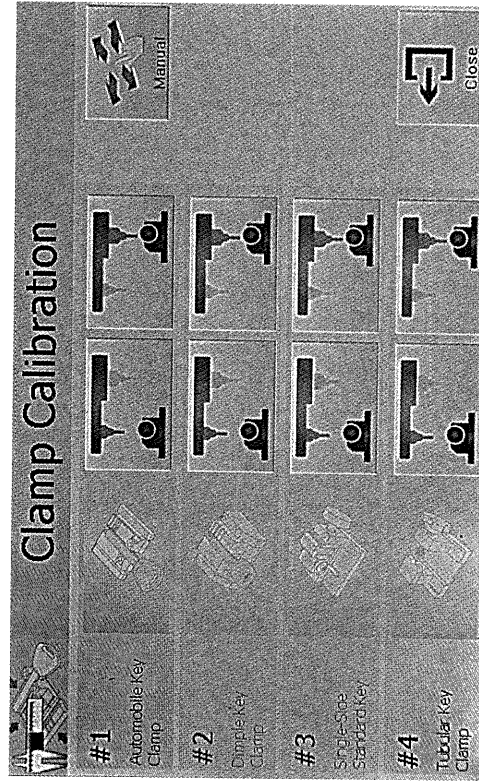
	Decoder Height Measurement (After Replacing Decoder)		Spindle Rotation Check
	Tool Height Measurement (After Replacing Cutter)		Language Setting
	Software Upgrade		Auto Clamp Calibration (Refer to Page 28)
	Firmware Upgrade		

Clamp Calibration

Automatic Setting of Clamp Origin



(*In SEC-E9 you should set up the decoder origin and the cutter origin respectively)



1. Fix the accurate key blank on the clamp.	
	If you press the icon in the picture, the decoder origin is automatically done.
	If you press the icon in the picture, the cutter origin is automatically done.

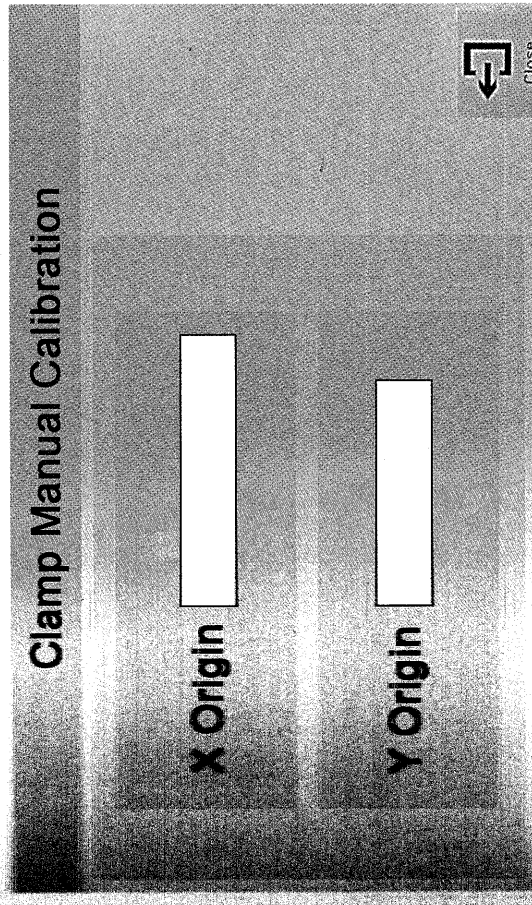
Tio)Make sure to make a note of X & Y origin values after changes,It will make maintenance easy.

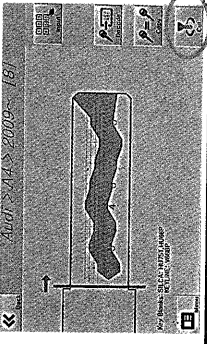
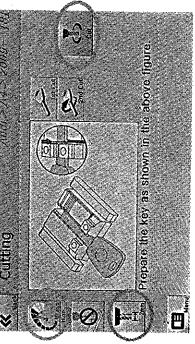
Checking Calibration Value

Each machine will have its unique calibration value after the above calibration process.

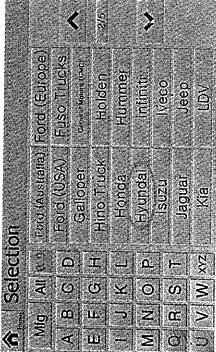
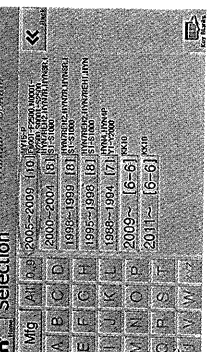


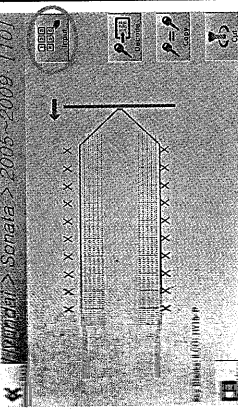
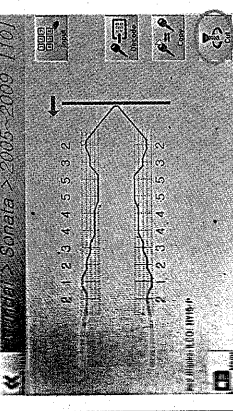
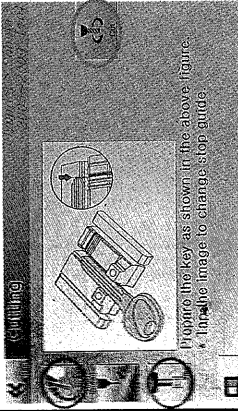
It can be checked press the Manual icon.



7	 Check the biting number and press  on the lower right side.
8	 Fix the key on the clamp as shown in the screen. (Refer to key Fixation) Check  speed and  tool thickness and press

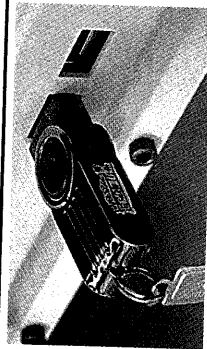
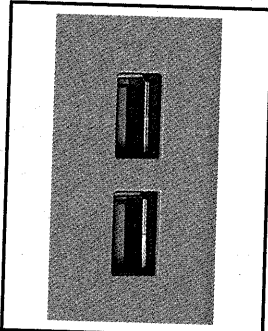
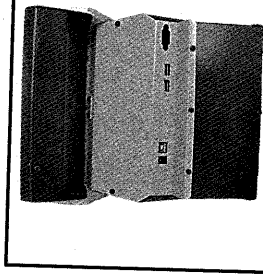
e.g.)Hyundai-Sonata (2005~)

1	 Automobile	Press the vehicle key icon in the initial page to open the manufacturer list.
2	 Select "Hyundai" in the list.	
3	 Select "Sonata" in the vehicle list.	
4	 Select the vehicle manufactured year.	

4	 Press  on the upper right side.	
5	 Enter the biting number in order and press 	
6	 Check the biting number and press  on the lower right side.	
7	 Fix the key on the clamp as shown in the screen. (Refer to key Fixation) Check  speed and  tool thickness and press	

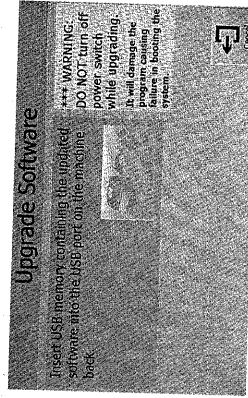
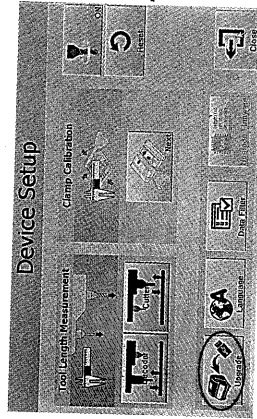
Program and Data Upgrade

You can save new key data and firmware in USB memory and insert it into the USB port on the back of the machine for program and data upgrade.

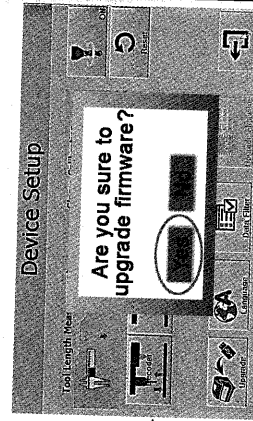
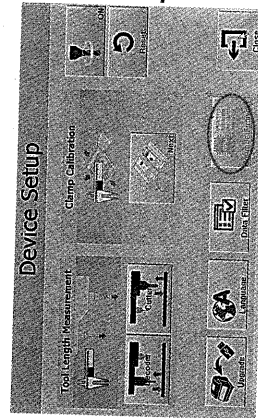


Turn on power and insert the memory into the USB port at the back of the machine.

You can upgrade program and data by pressing the icon in the following order.



Firmware Upgrade



Decoding and Key Copying

1 Audi A4

1		Press the vehicle key icon in the initial page to open the manufacturer list.
2		Select "Audi" in the list.
3		Select "A4" in the vehicle model list.
4		Select the vehicle manufactured year.
5		Press on the right.
6		Fix the key on the clamp as shown in the picture (refer to Key Fixation) and press .

Frequently Used Key Registration

BMW-M3

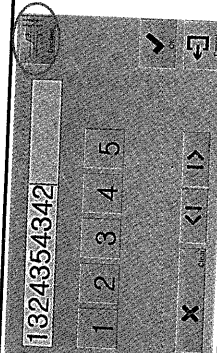
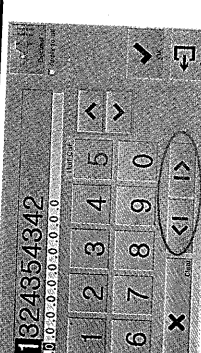
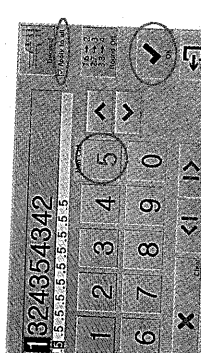
	When decoding is complete, the biting number appears on the screen. Press  and start key cutting.
---	--

- Decoder is a consumable and easy to break.
- When the decoder is bent, a measurement error may occur. For this reason, the decoder is designed to get broken when the force strong enough to bend the decoder is applied.
- Take cautions not to drop or give impacts to the decoder.
- SEC is not responsible for the broken decoder in any cases.

1	Open the key data for registration and press  on the lower left side.
2	Press  in the menu at the bottom of the screen.
3	Press  in the box.
4	Press  in the box.
5	Press  in the initial page.
6	Press Favorite to check the registered key data.

Bitting Adjust

e.g.)Hyundai - Sonata

1		Enter the bitting height and press 
2		Move to the bitting position that you want to add or delete using  button and enter the decimal point desired to adjust.
3		e.g.)Change the theird bitting number "2"into "2.3"and press 
Half-Cut of Entire Bitting		
		
Enter the bitting number and make a check in ☒ Apply to all on the right and press  0.5 is applied to all bitting numbers.		

Warranty

Product:Desktop CNC Cutter
Model:SEC-E9

The manufacturer's warranty lasts for 12 months from the purchase date and the below is thewarranty details.

Warranty Details

1. Warranted product:SEC-E9
2. Warranty Period:12 months from the purchase date.However,if it is unable to confirm the purchasedate,13 months from the manufactured date is the warranty period.
3. Paid Service during Warranty Period
 - ① Product breakdown caused by natural disaster (fire,salt damage,gas,earthquakes,storm andflood damage)
 - ② Replacement of consumables that naturally wear out
 - ③ Product breakdown caused by power failure and poor connecting device
 - ④ Product breakdown caused by exterior factors,not by the product itself
 - ⑤ Product breakdown caused by repairing or remodeling by other personnel,not by SEC Electromechanical engineer
 - ⑥ Product breakdown caused by intentional or accidental mistakes of customers
- 4.Free Service
 - ① In case of product breakdown caused by other factors than the factors described in the paid service section during the above mentioned warranty period
 - ② Shipping in case of product Breakdown
 - ③ In principle,the product should be shipped to SEC Electromechanical for repair
 - ④ During the free A/S period, the product shipping cost shall be paid by SEC Electromechanical.
 - ⑤ After the free A/Speriod, the product shipping cost shall be paid by the customer.
 - ⑥ The shipping cost of product without defect shall be imposed to the customer.
 - ⑦ SEC Electromechanical is exempted from all obligations and accountabilities for the product sold to other countries without a clear export contract with the company.
- 7.For the matters unstated in this Warranty, <Consumer Injury Compensation Rule> shall be observed.

Model:	Purchase Date:	Name:
Customer Information	Name:	Business:
	Business:	Address:
	Address:	Phone:
	Phone:	Dealer Information
		Business:
		Address:
		Phone: