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# 057 HS

## Automotive High Security Key Manual Duplicator



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# OPERATION MANUAL

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This manual applies specifically to the Ilco 057 HS Key Machine. It properly identifies your model and helps assure you will receive correct parts if ever you require replacement parts. Retain this manual in a safe place. If ownership of this machine is transferred, this booklet should accompany the machine. When seeking service information about this machine, refer to the Model No. (057 HS) and the part number desired (see pages 5-7).

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### ONE YEAR LIMITED WARRANTY

Kaba Ilco Corp. warrants to the original buyer of any new model 057 HS s machine that it will repair or replace, at its option, any part of any machine which proves, to the reasonable satisfaction of Kaba Ilco Corp. to have defects arising from the faulty manufacture of the machine or from defective material or components, during a period of one (1) year from the date of the shipment of the machine by Kaba Ilco Corp., provided that the machine is returned by prepaid transport to Kaba Ilco Corp. or to its authorized representative before the expiry of the warranty period together with a detailed description of the alleged defect (s). Kaba Ilco Corp. may, at its discretion, elect to refund the purchase price allocable to the part affected, or to issue a credit if the price therefore remains unpaid.

Kaba Ilco Corp. sells precision-made machines. The buyer assumes all risks, and Kaba Ilco Corp. shall not be liable for any reason if the machine has been subjected to improper installation, improper use, improper or inadequate maintenance, negligence, if any unauthorized modification or alteration is made to the machine, or in case of accident. For greater certainty, any machine not operated in accordance with Kaba Ilco Corp. printed instructions or operated beyond its rated capacity shall not be covered by this or any other warranty.

Any and all warranties made by Kaba Ilco Corp. on any machine, product, or component thereof shall be effective only if and for so long as the buyer complies with all payment obligations pursuant to the buyer's accepted and acknowledged order. Failure to meet such payment obligations shall void all warranties and not extend the period of time for which such machine, product or component thereof is warranted irrespective of whether or not payment is eventually made.

These warranties are in lieu of and not in addition to any other warranty of condition, expressed or implied, including without limitation merchantability, fitness for a particular purpose or latent defect. The buyer releases Kaba Ilco Corp. from any liability for any reason other than a breach of its warranties hereunder.

The liability of Kaba Ilco Corp. shall in no case, including negligence, exceed the purchase price of the defective machine, nor shall Kaba Ilco Corp. be liable for any personal injuries, property damage or consequential damages.

Use only genuine Kaba Ilco Corp. replacement parts on this machine!

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# WARNING - SAFETY NOTICE

## IMPORTANT: PLEASE READ CAREFULLY BEFORE OPERATING MACHINE

Safety begins with education, and continues with proper application ... **ALL** personnel who operate this machine should **READ THE SUPPLIED OPERATION MANUAL** for information on how to properly operate the Ilco 057 HS. The likelihood of accidents and miscuts will be greatly reduced.

### General Safety:

- Safety glasses **MUST BE WORN** to reduce the possibility of eye injury while operating, or in the immediate vicinity of key cutting equipment.
- Always turn machine off before making adjustments, or inserting or removing keys.
- Machine should be located in an area accessible only by authorized operators. Location must be such that customers and other personnel are not subject to potential injury from “flying chips”.
- Do not defeat safety features built into the machine. Removal or modification of safety shields, cutter guards and other safety devices should be strictly forbidden.
- At no time should the mechanically driven parts of the machine be touched while it is in operation. Extra care should also be taken by the operator to ensure that loose fitting clothing, long hair, etc. are kept from the area of machine operation.
- **Your machine has been specifically designed and built for key cutting purposes only and should be operated according to its operator’s manual. All other uses are strongly discouraged, are potentially hazardous, and should not be attempted! Such use will immediately void the machine warranty.**
- Some states have specific age restrictions concerning the operation of certain types of equipment. Check local and state ordinances for compliance.

### Electrical Safety:

- (120 volt models) Your machine is designed to operate using 120 Volt AC, 60 Hz electrical current. It is supplied with a three-prong power plug which should be used with a properly grounded three-prong outlet only. Do not defeat the safety purpose of the plug by modifying or using with nongrounded outlets.
- To reduce risk of fire or electrical shock, do not expose or operate machine in damp or wet locations.
- Electrical problems should be referred to qualified repair technicians. If the machine is under warranty, contact Kaba Ilco Corp. (Kaba Ilco Corp. also offers repair service for out-of-warranty machines. Contact us for details.)
- Always unplug the machine before opening the hood or changing the cutter.

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## INTRODUCTION

The Ilco 057 HS is a precision engineered key machine specifically designed for duplicating high security type keys. As shipped, the Ilco 057 HS will efficiently duplicate high security “internal and external track” automotive keys (as used by Honda, Mercedes Benz, GM, Volvo and others). Optional adapters and cutters are required to enable the Ilco 057 HS to duplicate keys for certain vehicle models (See page 15).

This unique key machine has the ability to duplicate keys to exacting specifications, a result of the precision of its critical parts. The Ilco 057 HS was designed with the operator in mind, from the versatility of the vise jaws to its easy one-handed operation.

Because of the precision nature of the vise jaws, avoid any abuse that will damage or reduce their accuracy. Treat them with care and the jaws will help produce accurate keys for years.

## UNPACKING INSTRUCTIONS

When unpacking the Ilco 057 HS, you will note the cushioning material and the possible presence of lubricating oil to prevent rust and corrosion. Before using this machine, wipe off any excess grease or oil. Lubricate only the moving parts. It is recommended to save the original packing carton for later shipment if necessary.

Place the key machine on a sturdy, level work bench with good lighting. The 120 VAC receptacle should be properly grounded. Do not use a two-prong plug adapter. Unpack all cutters, key guides, and adapters. Wipe each part free of grease and oil. Be sure to keep all operating parts as free as possible from cutting debris to maintain trouble free operation. Store accessories in an organized manner, protecting them from damage or loss.

It is strongly recommended that this manual be thoroughly read by anyone who intends to operate the Ilco 057 HS. Fig. 1 should be studied in order to learn the general operating parts of the machine and their nomenclature.

**CAUTION! DO NOT DESTROY OR DISCARD THE SHIPPING CARTON STORE IT CAREFULLY IN A SAFE PLACE. IN THE EVENT OF A PROBLEM WITH YOUR MACHINE, IT SHOULD BE RETURNED TO OUR SERVICE FACILITY IN ITS ORIGINAL PROTECTIVE CARTON.**

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## TRANSPORTING THE 057 HS

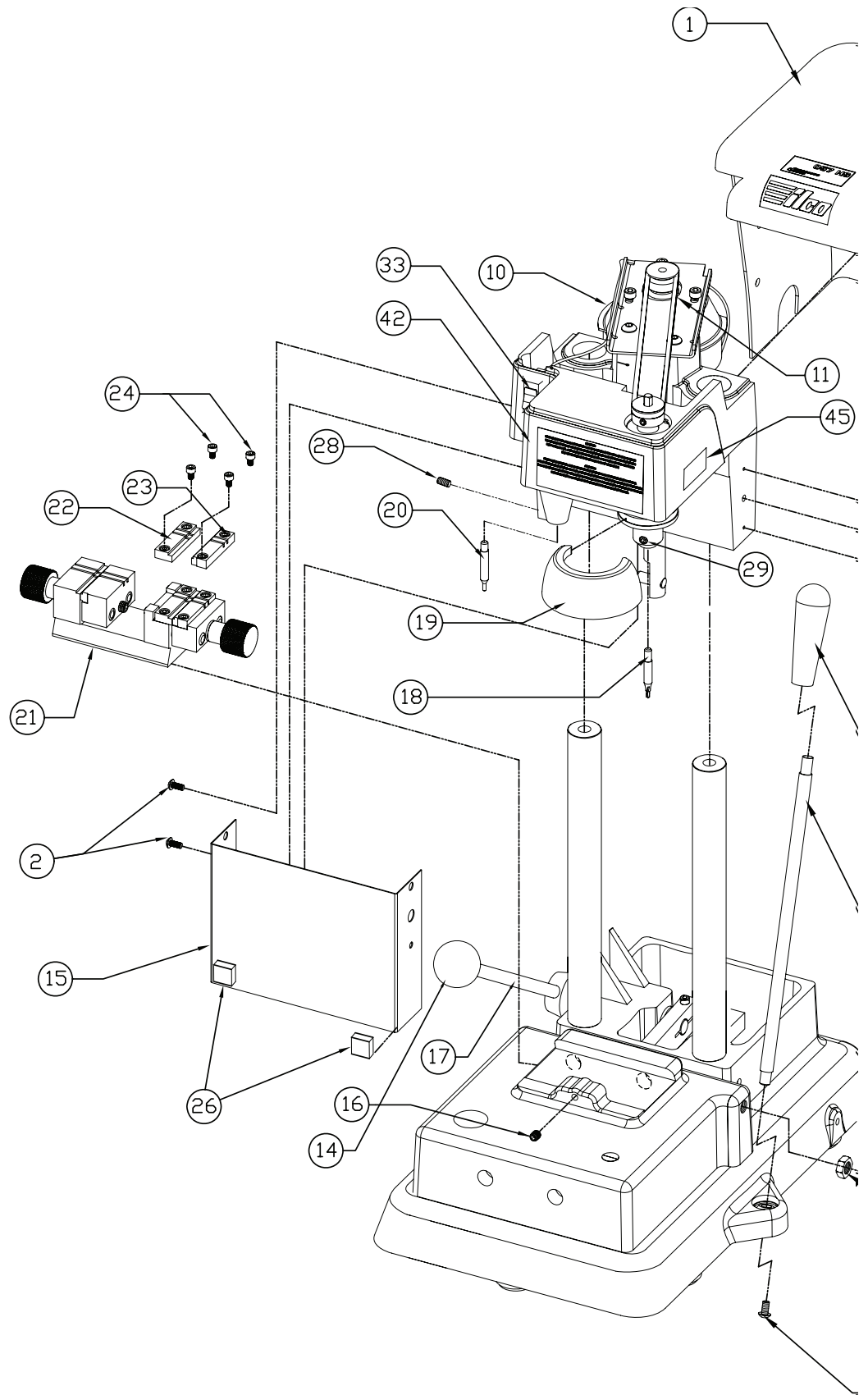
The Ilco® 057 HS is “inverter friendly” which makes it ideal for mobile use (220 run wattage/ 460 peak wattage). The carriage table is designed to allow smooth movement when cutting keys and does not lock in place when not in use. The carriage table is held in place by bushings that are attached to the ends of the X-Y connecting rods.

### **IMPORTANT!**

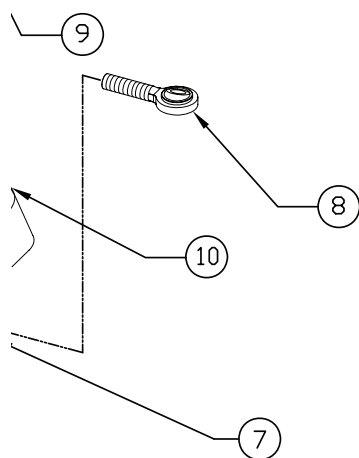
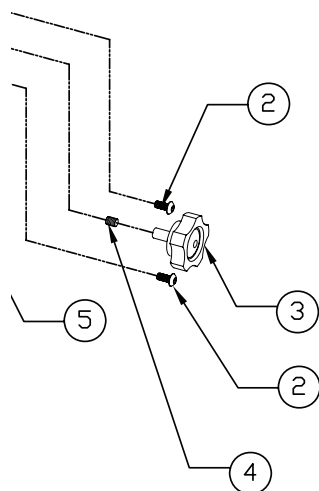
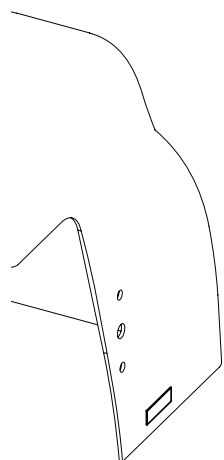
**When mounting** the 057 HS in a **vehicle**, or when the unit is being transported, it is **recommended that you secure the table using** a strap or bungee cord. If the table is not **properly** secured, it will slam from side to side and back to front during **transport**. **This movement can displace** the bushings holding the table in place.

It is also recommended that you keep the Styrofoam block from the original packing to provide additional protection when the table is secured for transit.

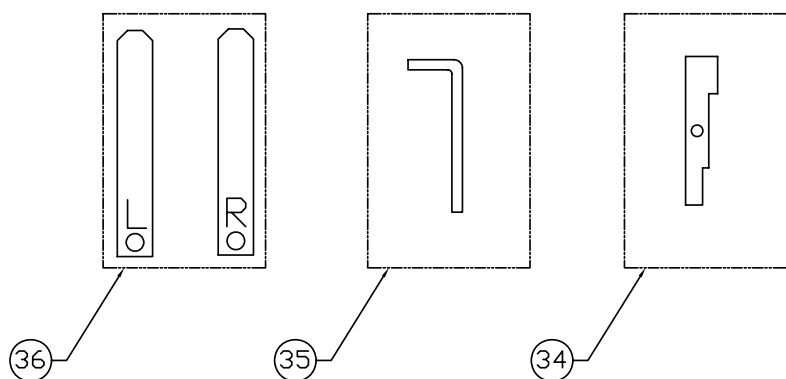
# EXPLODED VIEW



# EXPLODED VIEW



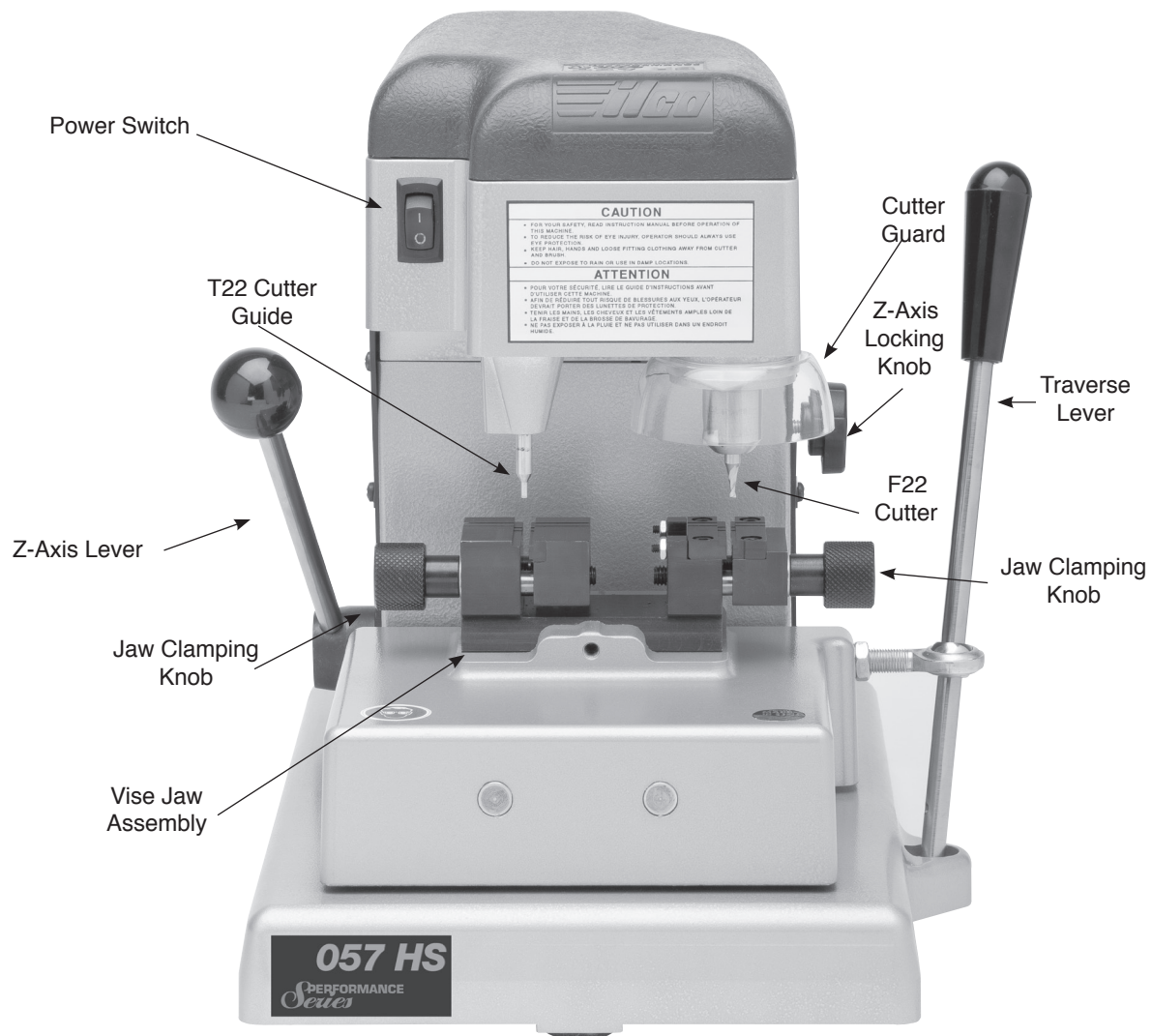
12



Item #	Code No.	Description
1	600938	Hold Assembly
2	174151	8-32 x 3/8 Hood Screws
3	132847	Z-Axis Locking Knob
4	132848	Brass Pellet
5	131516	Handle Knob
6	132851	Z-Axis Spring
7	132846	Jam Nut
8	132849	Rod End Bearing
9	132827	X-Y Joystick Shaft
10	502698M	Motor Sub Assembly
44	132850	Drive Belt
14	129600	Z-Axis Handle Knob
15	132364	Front Shield
16	174145	1/4-20 x 1/2 Socket Head Set Screw
17	132825	Z-Axis Handle
18	132882	F22 Cutter
19	132364	Chip Shield
20	132852	T22 Cutter Guide
21	132819	Vise Jaw Sub-Assembly (complete)
22	132815	Fixed Jaw Insert
23	132814	Mobile Jaw Insert
24	174192	Jaw Insert Screws
26	129493	Rubber Bumper
28	174198	1/4-20 x 3/7 Socket Head Set Screw
29	174061	1/4-28 x 5/16 Set Screw
33	132854	Power Switch
34	131992	Tip Gage
35	129109	1/8" Hex Wrench
36	132883	Depth Calibration Gage Set
42	131809	Caution Label
45	132859	Replacement Parts Label

# OPERATING PARTS IDENTIFICATION

Fig. 1



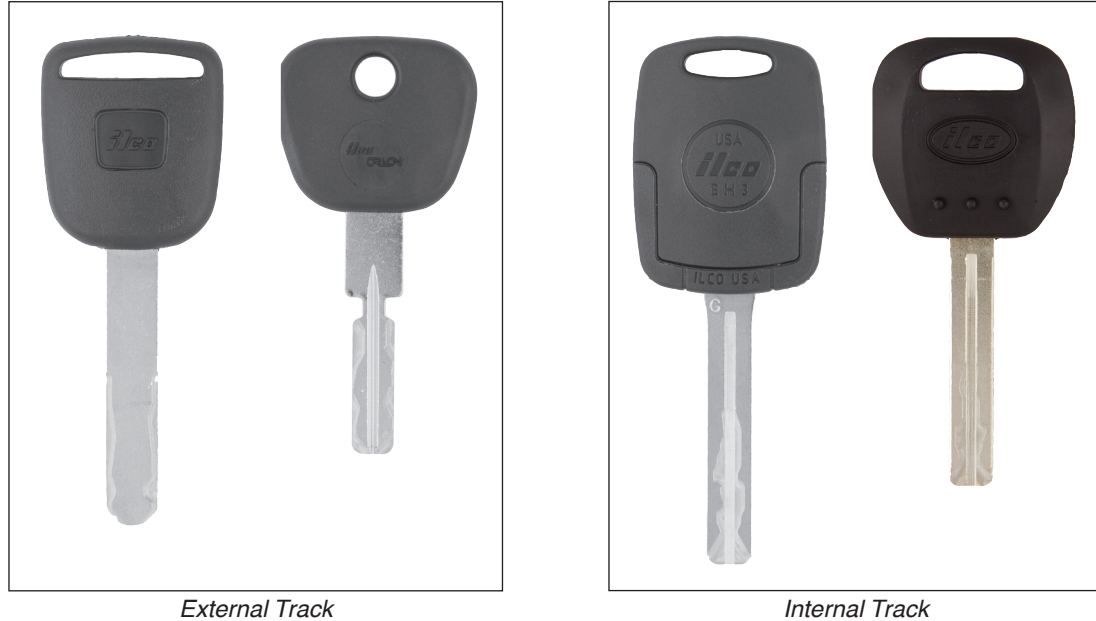
EZ-TS1 Tip Stop  
Gage Bar





## BASIC OPERATION

The 057 HS is designed to duplicate internal and external-track high security automotive keys. Most versions of these two key styles can be duplicated without requiring the use of additional accessories. Optional accessories for the limited number of applications that require them are shown on page 15.



**Three basic steps should occur before the duplication process actually begins:**

1. Key Blank Selection: The key blank selected must be correct for the intended application.
2. Cutter/Cutter Guide Selection: The cutter and cutter guide (F22 and T22) provided with the 057 HS are correct for duplicating almost all internal/external-track automotive keys. Late model Lexus keys (identified by having cuts only on one side of the key) require an optional cutter and cutter guide (F44SPL and T44), available from your Kaba Ilco distributor.
3. Positioning of the Key Blank and Pattern Key: Also referred to as “gauging”, this process involves inserting the blank and pattern keys into the machine vise jaws in a manner that assures proper placement of cuts on the blank during the duplication process.

**Important:** Certain keys require the use of an optional adapter in order to properly secure the key in a key machine’s vise jaw. Refer to the chart on page 15 for a list of the keys involved and the required adapter part numbers.

### Installing Cutter and Cutter Guide/Calibration

**Note:** Always be sure that the machine power is “off” before installing or changing cutters!

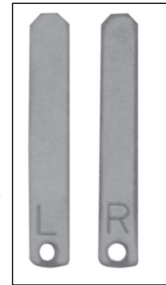
The cutter and cutter guide must “match” and the machine be properly calibrated, in order to cut accurate keys.

After selecting the cutter and guide required for the intended application, install them as instructed. Note: The machine’s depth-of-cut adjustment must be reset each time a cutter or cutter guide is installed on the machine.

## INSTALLING CUTTER AND CUTTER GUIDE & MACHINE CALIBRATION

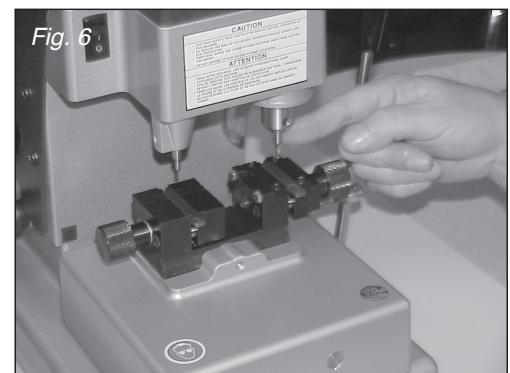
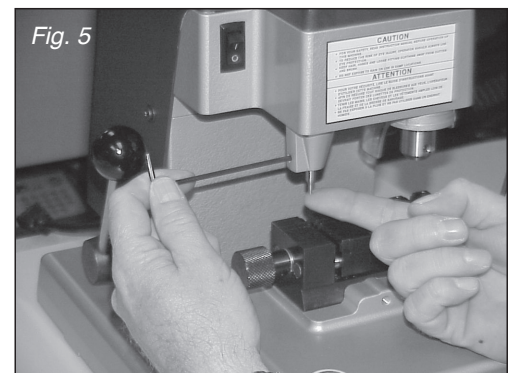
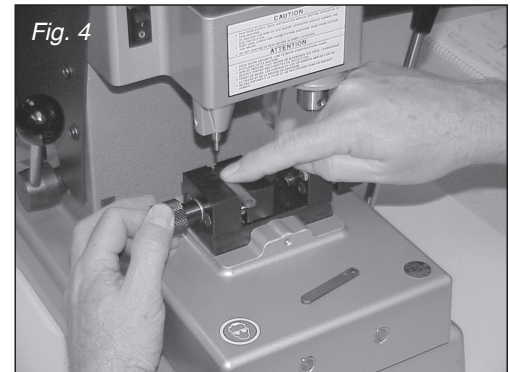
Tools Needed: 2.5 mm Stylus (T22)  
2.5 mm Cutting Bit (F22)  
1/8" Allen Key  
Left Side Calibration Key (marked **L**)  
Right side Calibration Key (marked **R**)

NOTE: The **R** calibration key is slightly thicker (.002") than the **L** calibration key. This will prevent the cutting bit from making contact with the Vise Jaw when the Head is lowered into the cutting position.



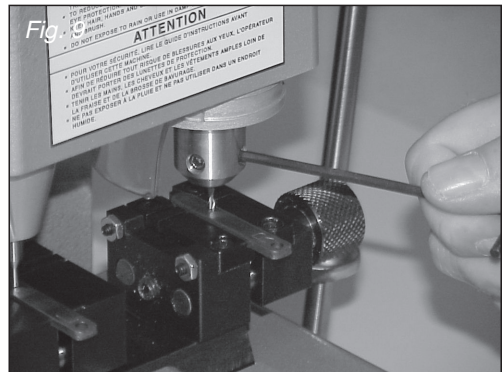
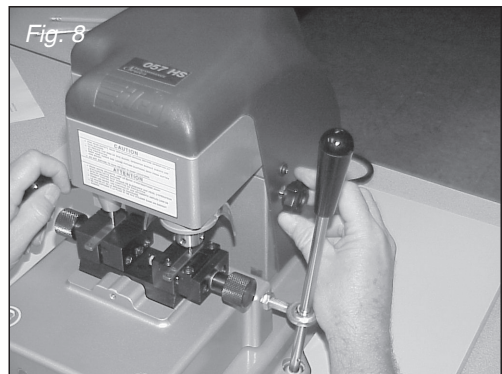
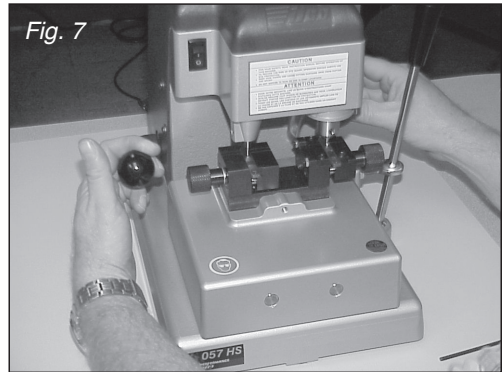
**ATTENTION - MAKE SURE THAT THE MOTOR START SWITCH IS IN THE OFF POSITION (O)!**

1. Place the left side Calibration Key (marked L) into the left hand key slot of the Vise Jaw Assembly and secure in place by turning knob clockwise. (Fig. 4)
2. Place the right side Calibration Key (marked R) into the right hand key slot of the Vise Jaw Assembly and secure in place by turning knob clockwise.
3. Rotate the plastic Chip Shield to allow access to the cutting bit spindle.
4. Insert the appropriate cutter guide (Normally T22) into the sleeve over the left side calibration key until it bottoms out. Secure by tightening the set screw on the sleeve holding the guide. (Fig. 5)  
**CAUTION! Do not over-tighten the set screw. Over-tightening the set screw could cause damage to the aluminum casing of the head assembly.**
5. Insert the appropriate cutter (normally F22) into the right hand spindle (do not tighten the cutter locking set screws yet). (Fig. 6)



## INSTALLING CUTTER AND CUTTER GUIDE & MACHINE CALIBRATION (Con't)

- Lower the Head Assembly by pulling down on the Z-axis lever handle located on the left hand side of the machine until the Stylus **lightly** contacts the "L" calibration key. (Fig. 7)
- While maintaining slight contact with the calibration key, tighten the Z-axis locking knob located on the right side of the machine to hold the Head Assembly in place. (Fig. 8)
- If properly done, both the cutter and cutter guide should now be in contact with the respective calibration keys.
- Tighten the two (2) set screws in the cutter spindle to secure the Cutting Bit in position. (Fig. 9)
- Rotate the plastic Chip Shield into the safety position over the Cutting Bit. (Fig. 10)
- Loosen the z-axis locking knob and raise the Head Assembly.
- Remove both of the Calibration Keys and store for future use.
- The 057 HS is now ready for use.**



## KEY DUPLICATION PROCEDURES

### Gauging

Once the appropriate key blank has been selected and the depth calibration verified, the only step remaining before actually duplicating the key is to “clamp and gauge” the pattern key and key blank. Gauging is simply the process of positioning both keys to insure that the cut pattern on the original key is copied onto the key blank at the proper location.

There are two general types of keys which can be duplicated on the Ilco 057 HS; shoulder gauged keys and tip gauged keys. These terms refer to the method by which a key is correctly oriented within a lock cylinder, relative to its pins or “tumblers”. They are clamped into the Ilco 057 HS vise jaws using different techniques.

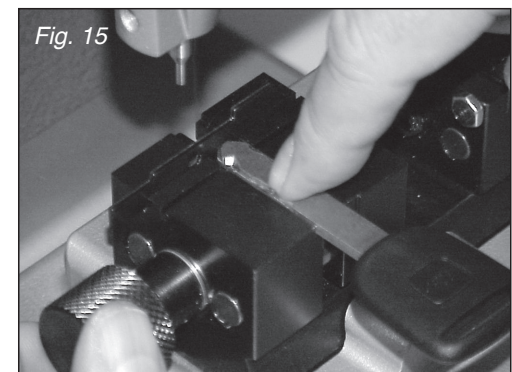
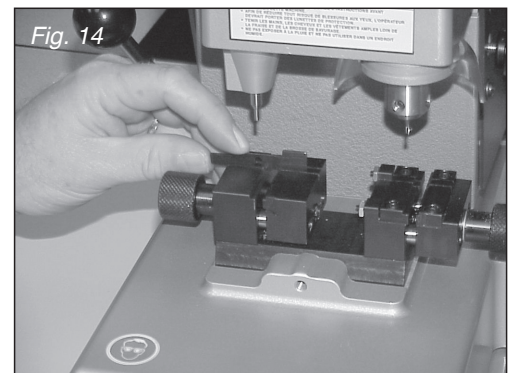
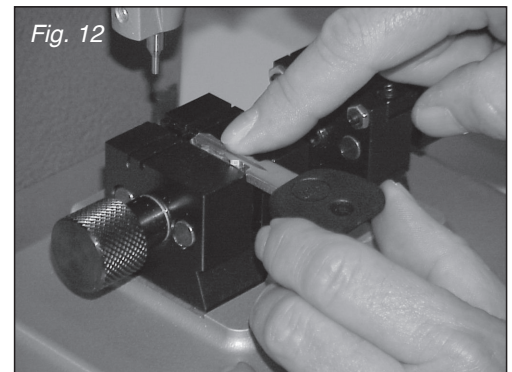
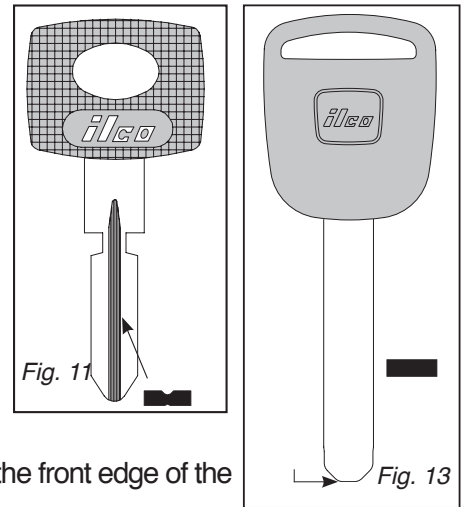
Shoulder Gauged Keys (See Fig. 11) - Keys that have a distinct square shoulder, such as the S48HF-P. These keys are positioned in the vise so that their shoulder surface is in contact with the front edge of the vise jaws when the clamp knob is tightened. (See Fig. 12)

Tip Gauged Keys (see Fig. 13) – Keys that have no shoulder (HO01-PT LX90-P, etc), or if their shoulder is not square to the key blank (S50HF-P, etc.) are gauged using the tip of the key as the positioning reference point. These keys are positioned by placing the Tip Stop Gage Bar into an appropriate slot on the left vise jaw (Fig. 14) and allowing the tip of the pattern key to contact the gage bar's side surface prior to tightening the jaw's clamping knob to secure the key (Fig. 15). Note: the “appropriate slot” is typically the one furthest from the front of the vise; short keys however may require the use of the first slot, in order for their tips to make contact the Gage Bar. Once the key is clamped in place, set the vertical height adjustment as described on page 12 under “Duplicating Procedure”.

Then take the Tip Stop Gage Bar and insert it into the same slot in the right side vise jaw, positioning the key blank against its side surface (as was done with the pattern key). Remove the Tip Stop Gage Bar after clamping the key blank.



*EZ-TS1 Tip Stop Gage Bar*



## KEY DUPLICATION PROCEDURES (con't)

**NOTE:** Always wear safety glasses or goggles when operating the Ilco 057 HS or any other key cutting device.

### Preparing the machine for duplication consists of the following steps:

- Assuring that the proper cutter and cutter guide are installed for the intended application (typically cutter F22 and Cutter guide T22)
- Positioning and clamping the pattern key in the left vise jaw
- Setting the vertical cut depth
- Positioning and clamping the key blank in the right side vise jaw

### Duplicating a key (preparation for cutting the key):

Internal and external-track high security automotive keys are not at all difficult to duplicate, requiring only that the machine operator follow the required steps in the order required.

1. Verify that the appropriate cutter and cutter guide are installed on the machine (normally F22 cutter and T22 cutter guide) and that the depth adjustment is correct (as covered on pages 9 & 10).
2. Position (gauge) and clamp the pattern key in the left side vise jaw (do not insert the key blank yet). Gauge keys using the appropriate method for the key involved (as covered earlier, the choice is to either tip stop or shoulder stop to gauge the key). As you tighten the machine's Jaw Clamping Knobs to secure keys, use your finger to apply slight pressure on their top surface to help assure that the keys are not clamped at an angle (tilted).
3. Use the Z-axis Lever handle to lower the cutter head, allowing the tip of the cutter guide to make very light contact with a CUT area on the pattern key. (Fig. 16) Use the machine's Traverse Lever as necessary to position the cutter guide over a cut area.
4. While using the Z-axis Lever handle to maintain this light contact, tighten the Z-Axis Locking Knob to secure the cutter head in this position. **WARNING: Do not apply excessive pressure on the Z-Axis Lever handle during this step, as this will make it difficult to trace the pattern key, or lead to inadvertent cutter contact against the right side vise jaw surface during the cutting process.**
5. NOW insert, position, and clamp the key blank using the appropriate procedure for the type of key involved.

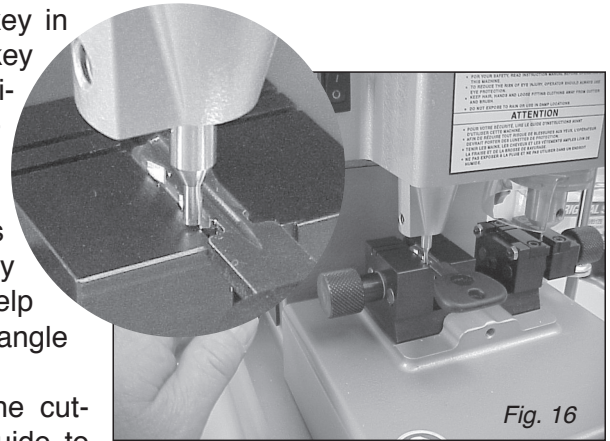


Fig. 16

### Duplication process:

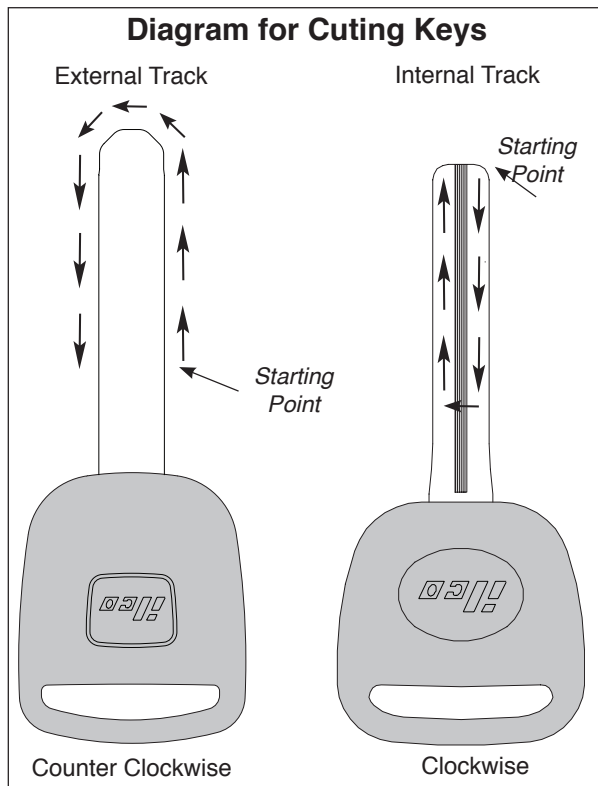
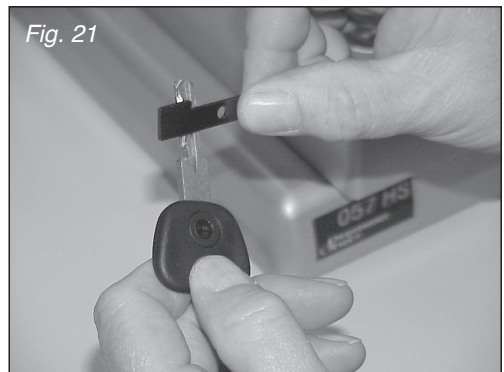
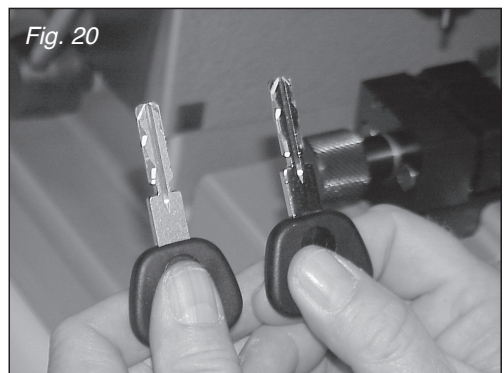
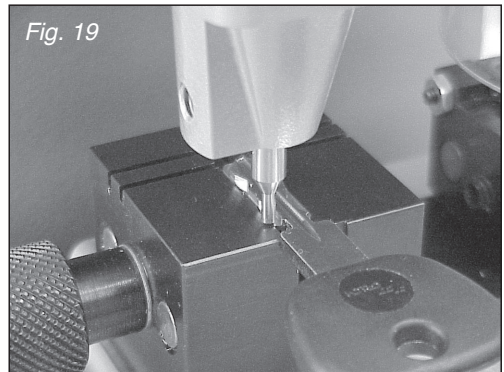
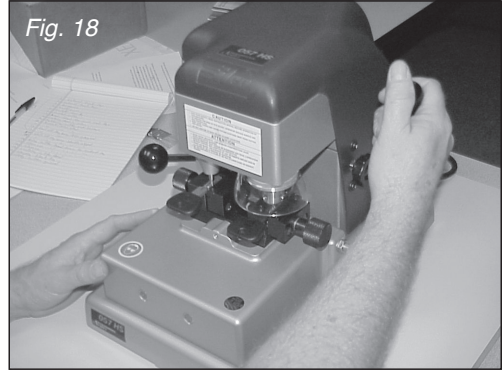
1. With the key blank and pattern key now correctly clamped in the machine's vise jaw unit, rotate the cutter guard to the front and press the power switch to start the machine. (Fig. 17) **WARNING: As with any machine tool, it is highly recommended that the operator wear safety glasses or a similar form of eye protection whenever the machine is in use!**



Fig. 17

## KEY DUPLICATION PROCEDURES (con't)

- The “starting point” of the cut will depend upon the type of key being duplicated. Like using a router (as in carpentry), there is a “correct” direction of travel to be maintained, which is dependent on the style of key you are cutting. Refer to the diagram below for recommendations in this regard.
- With the “starting point” determined, use the machine’s traverse lever to begin cutting into the edge of the blank at the indicated spot. Normally you will use your right hand to move the lever, allowing your left hand to be placed on the left edge of the carriage table to provide extra support during the cutting process. (Fig. 18)
- Pay attention to the cutter guide while using the traverse lever to “trace” over the cuts on the pattern key. (Fig. 19) The goal is to use a steady, even pressure, maintaining contact between the cutter guide and the cut pattern on the key; do not apply excessive force! Tip: Keys with very deep cuts are best cut using more than one pass... an initial “shallow” first pass, and then a second pass to clear away material not removed on the first. **Be careful when cutting, not to overlook cutting away all of the necessary material... especially with deep cuts.** Take care that you do not leave an “island” of uncut material along the edge of the key blade.
- After the cuts on the first side of the key have been produced, press the power switch to the “off” position, and flip the key blank over, re-gauge it, and repeat the cutting process. The pattern key DOES



NOT have to be removed or flipped over at this point.

- Upon completion, carefully inspect the duplicate key and compare it against the pattern key. Take special care to assure that you have not left material on the duplicate key that should have been cut away. Excessive burring or roughness resulting from cutting a key is indicative of a dull cutter. This must be removed from the key before trying it in its intended lock; scraping the rough area with the edge of the EZ-TS1 Tip Stop Gage Bar will typically remove any resulting burr. (Fig. 20 and 21)

## KEY DUPLICATION PROCEDURES (con't)

### Key Cutting Tips

The following are a few pointers that will make your key duplicating efforts more productive.

1. Operate the Ilco 057 HS in a well lit, reasonably clean work area.
2. Replace the cutter on the machine when it starts to get dull. Symptoms include visible burrs on the duplicate keys produced, greater noise, and noticeably more pressure required to cut them.
3. Keep a spare cutter on hand for the machine; the slight expense is small compared to the potential lost sales you could experience awaiting a replacement.
4. Keep a small brush near the Ilco 057 HS at all times. Don't allow key shavings to accumulate on the machine; brushing the vise jaws off after every couple of keys is very important and can help prevent miscuts.

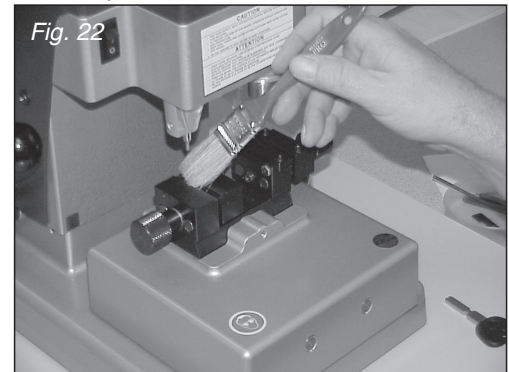
### Maintenance

**LUBRICATION-** Special long life lubricants were applied to your 057 HS during assembly.

Field lubrication of the machine is neither required nor desirable. Most lubricants will tend to attract dust and cutting debris to the moving parts of the machine, possibly adversely impacting smooth operation.

**CLEANING-** More so than with other types of key cutting machines, those designed for cutting high security keys require that the moving parts and vise jaw surfaces of the machine be

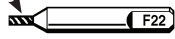
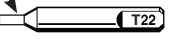
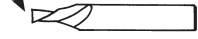
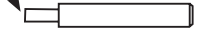
kept as free as possible from dust, dirt, and chip debris created during the cutting process. A stiff bristle brush (supplied) kept near the machine is ideal for this purpose. Using the brush to keep dust and chip debris from accumulating on the machine will help assure that the machine provides the most accurate results possible.... and the smoothest operation! **Pay special attention to vise jaw surfaces... accumulation of chip debris will adversely impact the proper clamping of keys.** (Fig. 22)

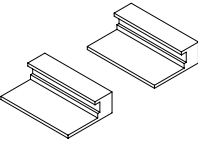
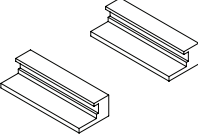


**CUTTER LIFE-** Cutters gradually dull through use. There is no set “number” of keys that one can cut using a particular cutter. Key blank material and cutting pressure all directly influence effective cutter life. For machines of this type, 30-50 keys is about average. Signs that a cutter is dull or becoming dull include: increased noise level when cutting, additional pressure must be exerted to “make the cutter cut”, and the presence of a rough area (burr) along the side of the keys that are cut.

**WISE JAW SURFACES-** Under normal usage, the vise jaw clamping surfaces will provide exceptional clamping performance for several years. The jaw surfaces can be replaced when no longer able to grip keys adequately (due normal wear or from cutter contact).

## CUTTERS AND ACCESSORIES

Cutter	Cutter Guide	Application
<p>2.5 mm tip diameter</p>  <p>F22 - optional item except with Lexus</p>	<p>2.5 mm tip diameter</p>  <p>T22 - optional item except with Lexus</p>	GM, Chrysler, Ford, BMW, Mercedes Benz, Volvo, Infiniti, Saab, Honda, VW Audi and most Lexus
<p>2 mm tip diameter</p>  <p>F44SFL</p>	<p>2 mm tip diameter</p>  <p>T44</p>	Required for cutting "New Style" Lexus keys (cuts found on just one side of key.)

	To Fit	Part No.	Description
	VW/Audi, Porsche, BMW & Rover	BD0723XXXX	Pair of clamping adapters - will allow user to cut VW/Audi, Porsche, BMW and Rover keys (2-track style)
	Mercedes	BD0722XXXX	Pair of clamping adapters - will allow user to cut 2-track Mercedes

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