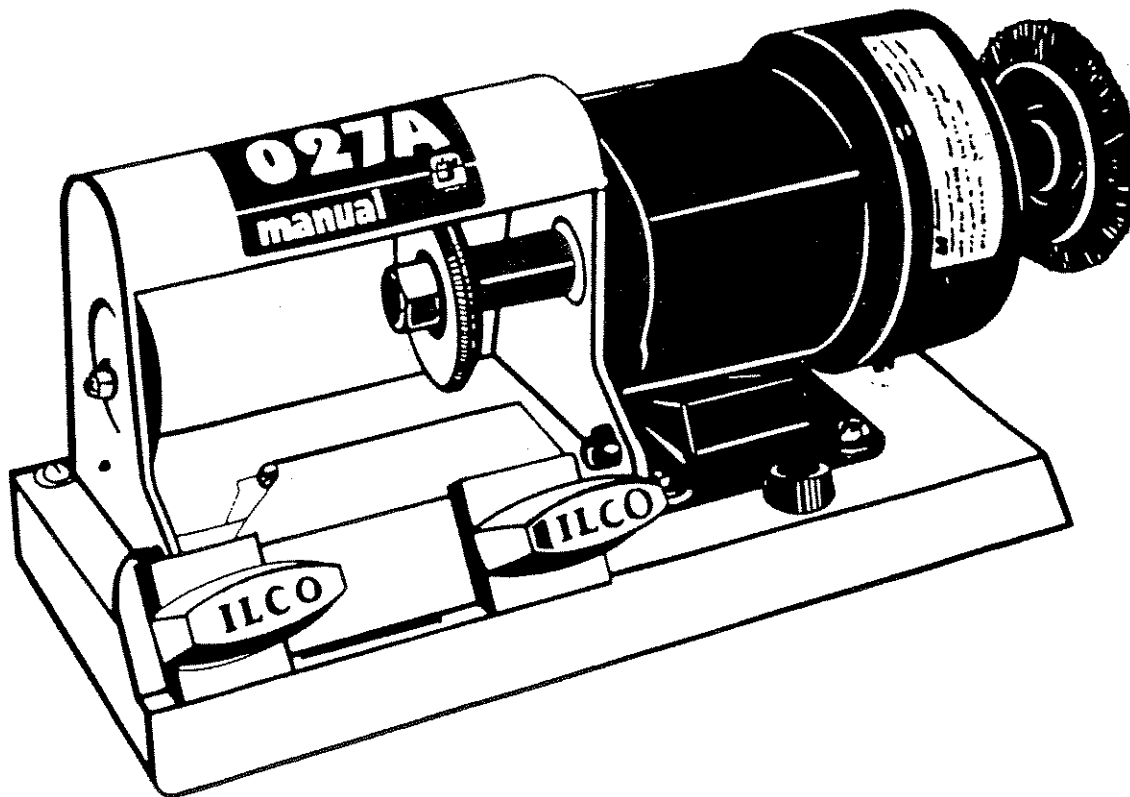


027A

INSTRUCTION MANUAL

IMPORTANT! Read these instructions before you use your new 027A Key Machine.



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A Member of the Kaba Group

This manual is registered and applies specifically to the machine which carries this serial number. It properly identifies your model and assures you will receive correct parts, if and when you require replacement parts. Retain this manual in a safe place. It's the only one of its kind. If ownership of this machine is transferred,

this service manual should accompany the machine.

When seeking service information about this machine, refer to the Model No. (which is 027A), your registration number (see below) and the part number desired (see pages 6 to 8). Note that many parts are not interchangeable with other ILCO UNICAN machines.

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ONE YEAR LIMITED WARRANTY

ILCO UNICAN warrants to the original buyer of any new model 027A machine that it will repair or replace, at its option, any part of any machine which proves, to the reasonable satisfaction of ILCO UNICAN, 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 shipment of the machine by ILCO UNICAN, provided that the machine is returned by prepaid transport to ILCO UNICAN or to its authorized representative before the expiry of the warranty period together with a detailed description of the alleged defect(s). ILCO UNICAN may, at its discretion, elect to refund the purchase price allowable to the part affected, or to issue a credit if the price therefore remains unpaid.

ILCO UNICAN sells precision-made machines. The buyer assumes all risks, and ILCO UNICAN 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 ILCO UNICAN's printed instructions or operated beyond its rated capacity shall not be covered

by this or any other warranty.

Any and all warranties made by ILCO UNICAN 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 defects. The buyer releases ILCO UNICAN from any liability for any reason other than a breach of its warranties hereunder.

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

Use only genuine ILCO UNICAN replacement parts on this machine!

Registration and Serial number is _____

Congratulations! You've purchased a fine key cutting machine.

This machine is designed to cut cylinder keys, such as popular house, padlock, and automotive keys. It's a compact unit, with a straight-forward design that makes it easy to use. Adjustments are factory pre-set and

normally don't require any changes. Its rugged construction will resist abuse so it will retain its accuracy over a long period of time.

UNPACKING INSTRUCTIONS

Your 027A is shipped in a carton provided with corrugated spacers. When the carton is opened, the machine can be lifted out, separated from the packing material and set on a work bench/table. It's a good idea to save the original packing materials.

For best results, the 027A should be used on a solid level surface. It's convenient to fasten it down, but not necessary. It's compact size and light weight makes it an ideal unit to transport to a location where key cutting is to be done.

A WORD ABOUT YOUR MACHINE

The 027 is accurate, easy to operate, dependable and compact. It's the simplest and most reliable way to get into the key replacement business.

The key replacement business is the practice of providing cut (or operating) keys to customers. To do this, you need keys without cuts (called key blanks) and a machine like the 027A to cut the key blanks. Technically,

the 027A is called a key duplicator; it transfers and duplicates the cuts from your customer's key on to the key blank. To accomplish this, the machine has a cutting wheel to grind away the unwanted metal of the key blanks, vise jaws to hold the keys securely during cutting, a key guide to trace the original cuts, an electric motor for power, and a brush for removing burrs from the cut key.

SAFETY

The 027A has been engineered to duplicate cylinder keys. It is not intended or designed for any other purpose. The machine operator assumes all liability when using this machine in a manner inconsistent with its stated design purpose.

ILCOUNICAN strongly recommends the use of protective eye glasses or goggles when operating this machine,

or when in the vicinity of the machine while it is being operated. Protective eye wear prevents injuries!

Note that this machine does not turn off automatically when the carriage is released. Also, when the machine is operating, be careful not to butt the vise jaw or carriage against the cutting wheel as this will cause damage to the cutter, jaw or carriage.

CAUTION!

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

OPERATING PARTS

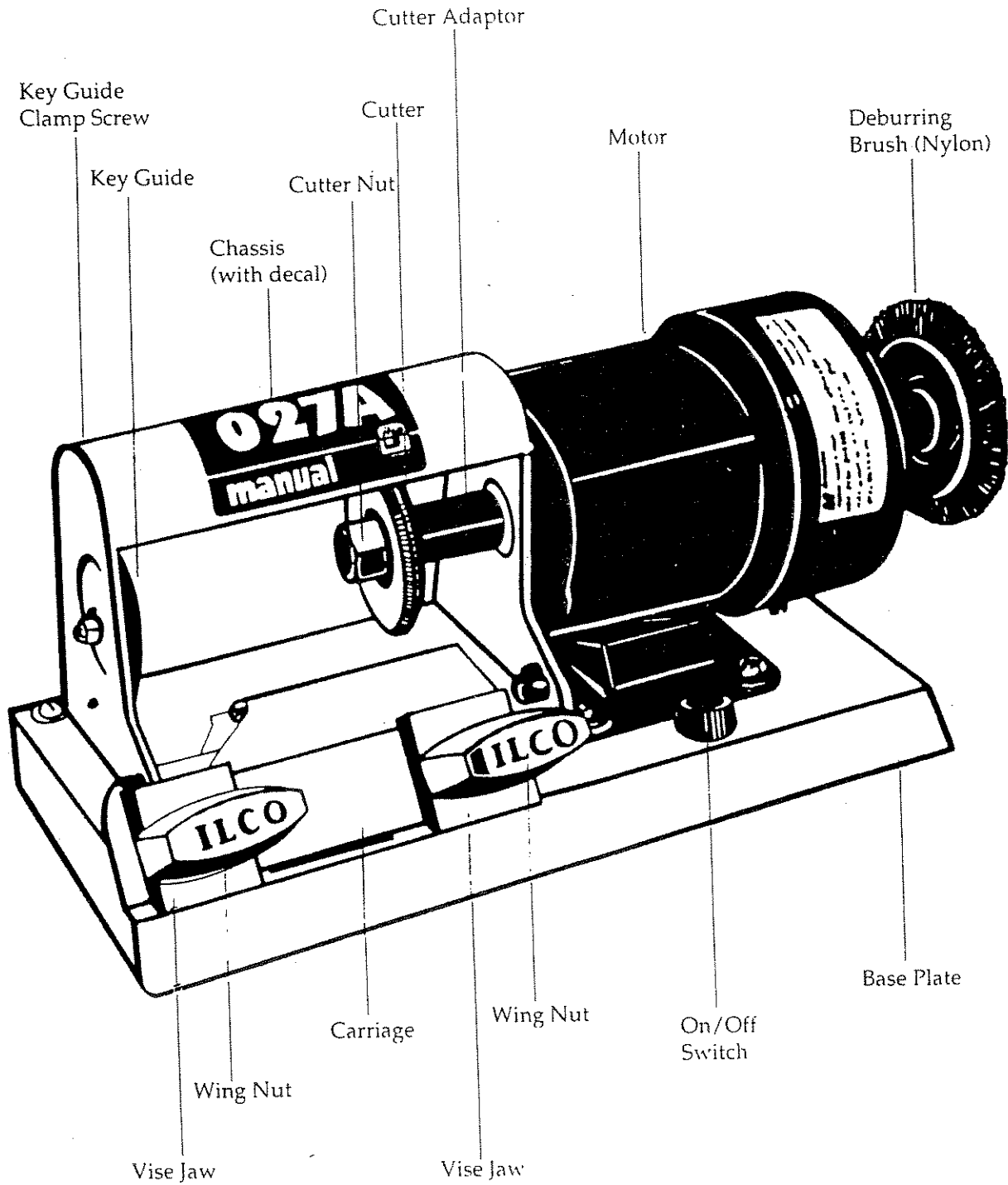


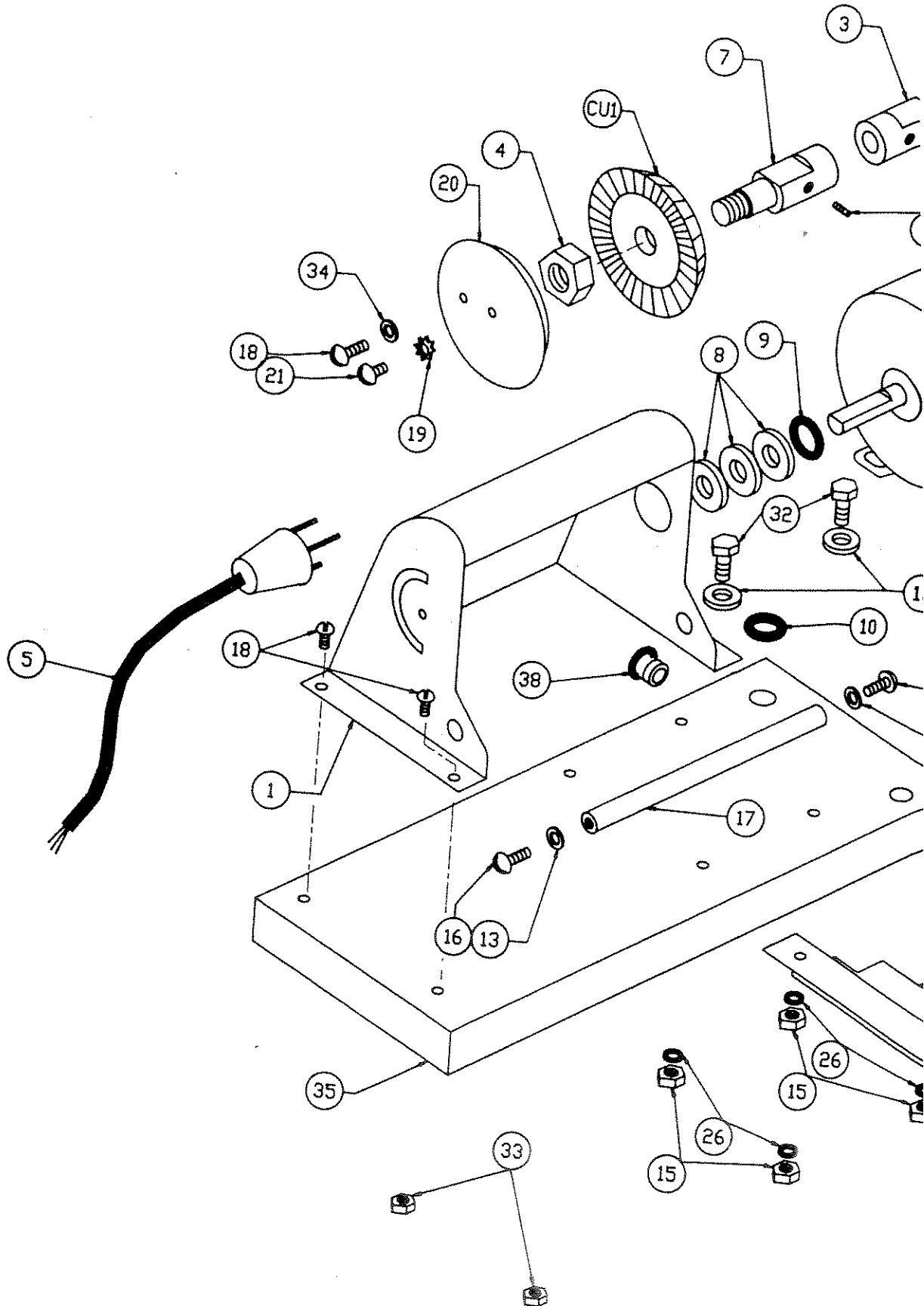
Figure 1

OPERATING PARTS IDENTIFICATION

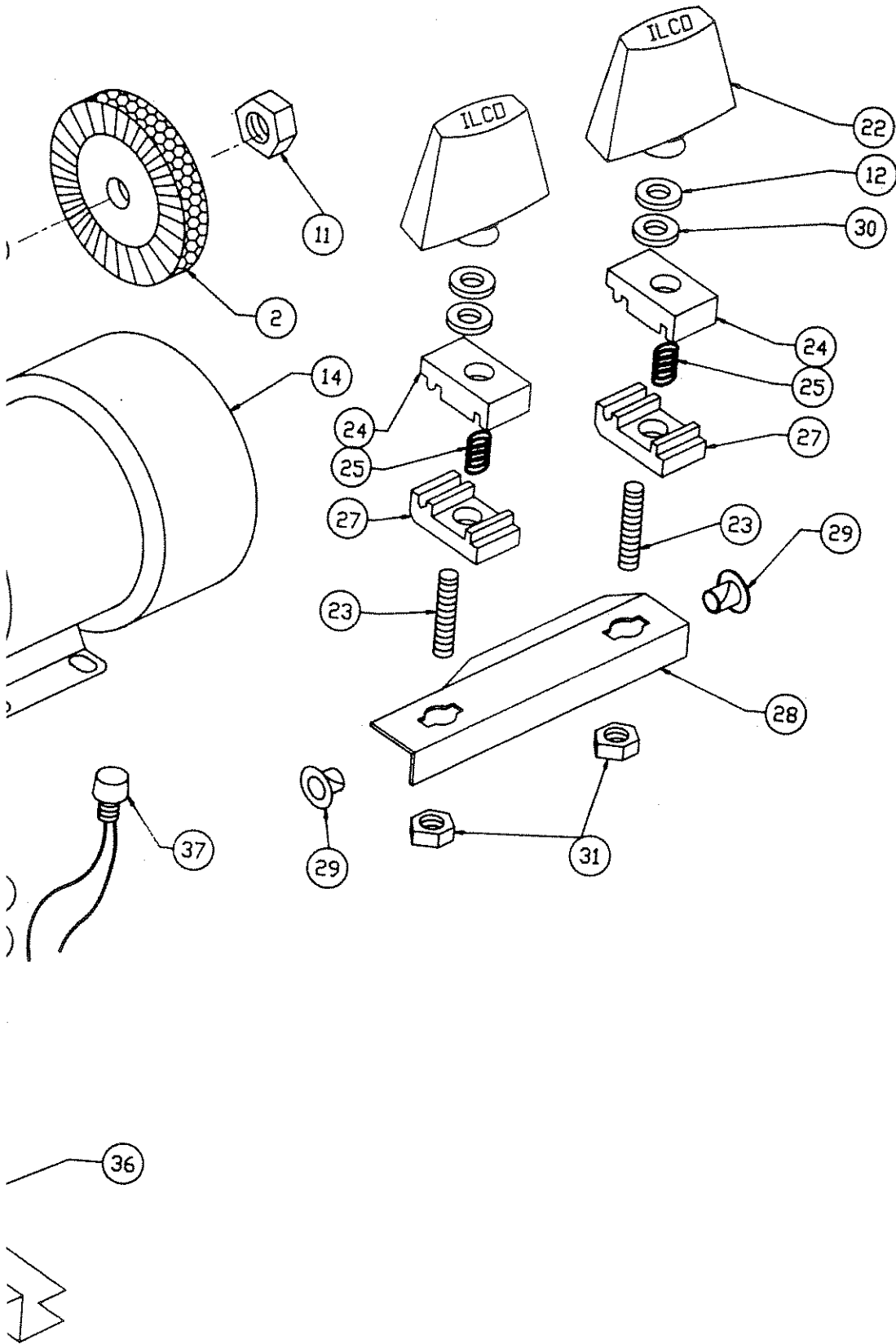
Refer to page 4

Part No.	Identification
027A-1	Chassis (with decal)
027A-2	Brush (nylon)
027A-4	Cutter nut
027A-7	Cutter adaptor
027A-14	Motor (110V)
027A-18	Key guide clamp screw
027A-20	Key guide
027A-22	Wing nut (2)
027A-24	Movable vise jaw (2)
027A-27	Stationary vise jaw (2)
027A-28	Carriage
027A-35	Base plate
027A-37	On/Off switch
CU1	Cutter

EXPLODED VIEW



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

Refer to pages 6 and 7 for illustrations.

Part No.	Description	Part No.	Description
027A-1	Chassis	027A-21	Key guide pivot screw
027A-2	Brush (for deburring keys)	027A-22	Wing nut
027A-3	Brush adaptor	027A-23	Vise stud
027A-4	Cutter nut	027A-24	Movable vise jaw
027A-5	Power cord	027A-25	Vise spring
027A-6	Adaptor screw	027A-26	Lock washer, 1/4"
027A-7	Cutter adaptor	027A-27	Stationary vise jaw
027A-8	Steel thrust washer	027A-28	Carriage
027A-9	Nylon thrust washer	027A-29	Nylon carriage bushing
027A-10	Grommet	027A-30	Fiber washer
027A-11	Brush nut	027A-31	Vise stud nut
027A-12	Thrust washer	027A-32	Machine bolt, 1/4"
027A-13	Carriage screw washer	027A-33	Nut, #8
027A-14	Motor (110V)	027A-34	Waher, #8
027A-15	Nut, 1/4"	027A-35	Base plate
027A-16	Carriage screw	027A-36	Cover plate
027A-17	Carriage shaft	027A-37	On/Off switch
027A-18	Key guide clamp screw	027A-38	Strain relief bushing
027A-19	Star washer		
027A-20	Key guide	CU1	Cutter

GENERAL OPERATING SEQUENCE

In setting up the key machine, note that the cutting wheel lies under the chassis and the cutter is attached directly to the motor shaft. When the motor is running, keep fingers and other foreign objects out from under the chassis to avoid injury. The only object that should come in contact with the cutting wheel is a key blank, which always must be clamped in the right vise jaw.

You should test the 027A for operation. If you're presently in the key replacement business and understand key machine, you can proceed directly to the cutting procedure. If you're new in the business, refer to the parts breakdown on pages 4 to 8 to familiarize yourself with the various parts of this machine. Don't try to duplicate any

keys until you have read the instructions and/or you understand this machine and its operation.

To duplicate this key, you need the original key (with cuts) and a key blank, which is the same as the original key but without any cuts. Both keys must be clamped in the vise jaws and aligned to each other. Alignment is set by the shoulder of the key, which is the upward projection just below the key head.

Note that the 027A is designed to cut cylinder keys only. It will not cut flat steel keys, safe deposit keys, mail box keys, trunk keys or bit keys. The vise jaws are not reversible; as a result, it may not be practical to clamp certain double-sided keys in these jaws.

PROPER KEY CUTTING TECHNIQUES

Even though your 027A key machine is designed to make key cutting fast, easy and accurate, operator skill is important. The actual mechanics of placing keys within the vise jaws are simple to learn, but there are some basics that must be followed. A properly adjusted key machine, used by someone who ignores good key cutting techniques, will NOT produce a good key. The way a person clamps a key into the vise jaws is critical to the accuracy of the duplicated key.

Remember - the real purpose of a duplicate key is simply to operate the lock for which it was intended. If your customers don't bring back the keys, you can assume the keys are cut correctly. If customers return the keys, you should re-examine your cutting techniques and adjustment of the machine.

Here are some important operating tips:

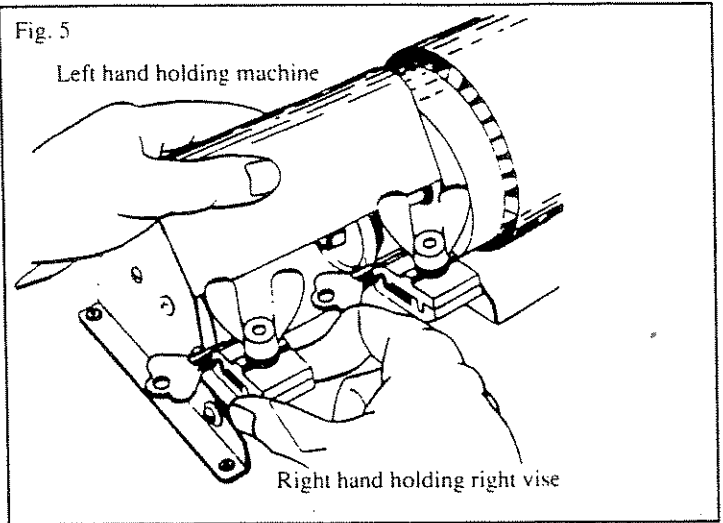
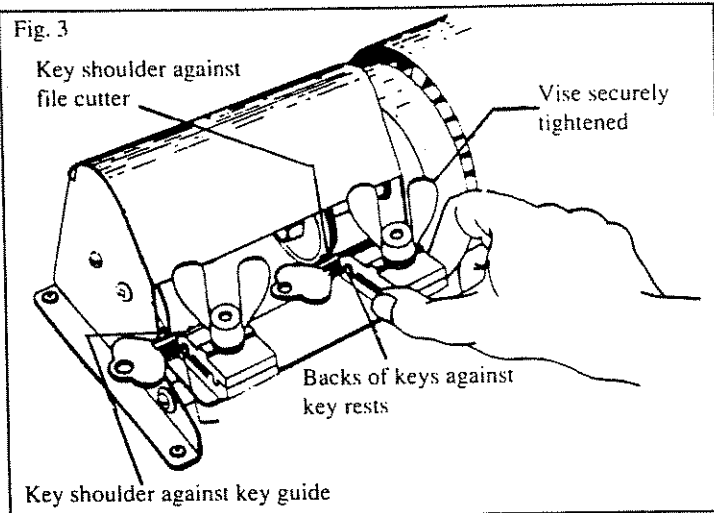
1. Vise jaws - clean them regularly so that no metal chips lie under the keys. **It is essential that both keys lie flat across the entire width of both vise jaws. Neither key should be tilted.**

2. Do NOT use pliers or other tools to tighten the vise jaws. Firm hand pressure is sufficient.
3. Keep the carriage shaft free of metal chips. A thin film of oil can be applied to it. The carriage should travel smoothly along its shaft.
4. NEVER touch the shoulder of a key to the side of the key guide. This will cause the shoulder of the key blank to touch the side of the cutting wheel. When this happens, some of the metal will be cut away from the shoulder of the key blank. If the resulting duplicated key is duplicated two, three, four times over, an error will accumulate and cause a non-operating key. Do not grind away the shoulder.
5. Don't run the cutter into the vise jaw; this will only dull the cutter, and reduce cutter efficiency.
6. Keep the cutter clean. Don't let foreign objects or instruments blunt it. This cutter is a precise cutting tool and should be handled with care.

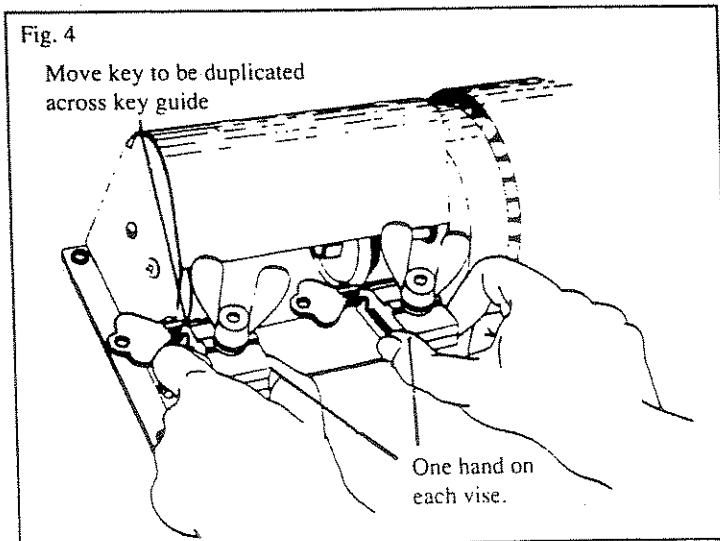
HOW TO DUPLICATE KEYS

CUTTING KEYS WITH SHOULDERS

1. Clamp the original pattern key in the left vise jaw. Be sure the key lies flat in the jaw and is not tilted.
2. Clamp the key blank in the right vise jaw.
3. Raise the carriage and set the shoulder of the pattern key against the key guide (See Figure 3).
4. Loosen the wing nut of the right vise jaw and position the key blank so that its shoulder rests against the side of the cutter (See Figure 3). Tighten the wing nut and lower the carriage.



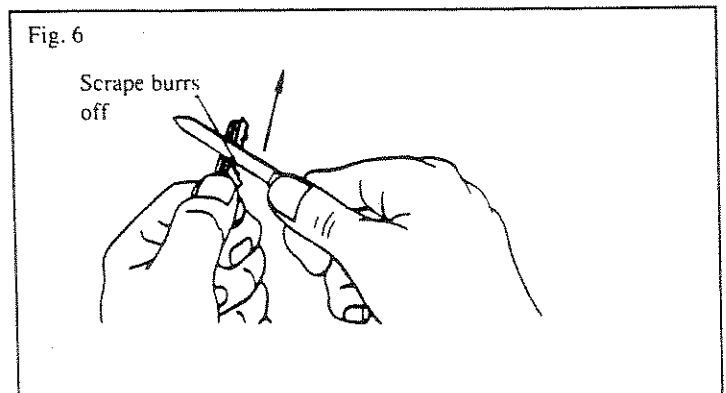
5. Start the motor.
6. Lift the carriage to the key guide and cutting wheel as shown in Figure 4. Then, move the carriage to the left, so that the pattern key moves across the key guide. Only light inward pressure should be used. As the carriage is moved, the cutting wheel will make cuts in the key blank.



7. When you reach the tips of the keys, move the carriage back to the right, which will bring the cutter across the key blank again, clearing away any uncut metal.

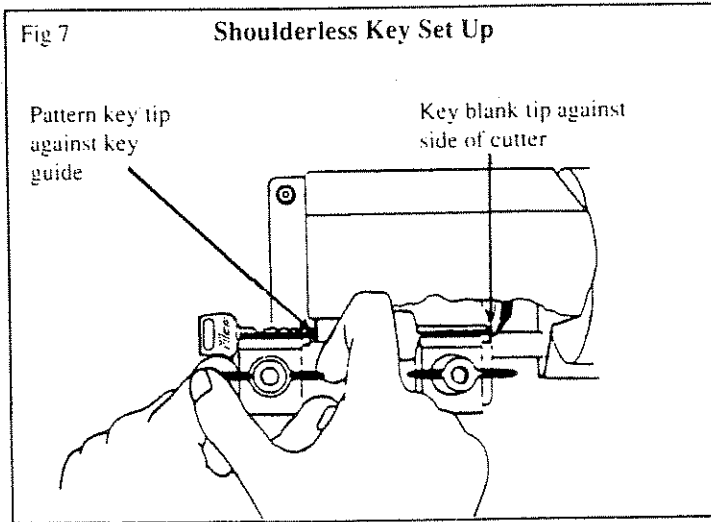
NOTE: Try to avoid having the cutter wheel contact the vise jaw. The vise jaw is made of hardened steel and it will dull the cutting wheel.

8. If the machine is not fastened down, hold the machine with the left hand during the cutting operation (See Figure 5) and move the carriage with the right hand.
9. Remove the duplicate key from the vise and scrape it with a knife blade or a file to remove the cutting burrs (See Figure 6). Or, use the deburring brush.
10. Remove the pattern key. Lay the pattern key on the duplicate key and line up the shoulders. The cuts on both keys should be in exactly the same position.



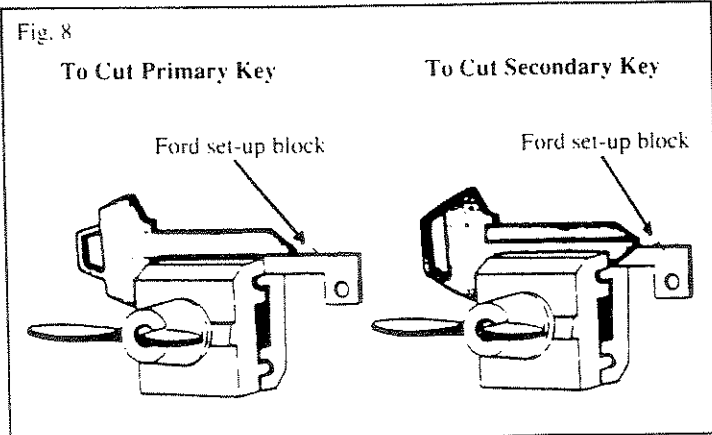
CUTTING KEYS WITHOUT SHOULDERS

Some keys, such as those for Ford cars, are made without shoulders. With these keys, the tip of the key is the aligning point. The original key is clamped in the left vise jaw so that its tip is against the side of the key guide (See Figure 7). The tip of the key blank should butt against the side of the cutting wheel.



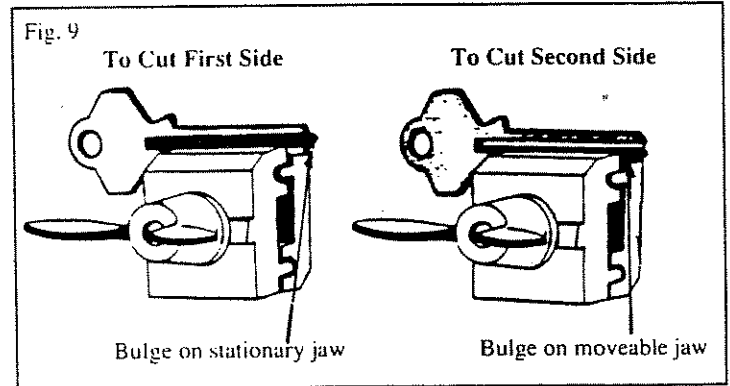
All vehicles made by Ford Motor Company are cut on both sides, called double-sided keys. And, these keys require special set-up blocks to hold them securely in the vise jaws. (See Figure 8) The block is placed in the lower groove of the key before clamping the key in the vise.

In most cases, double-sided keys have the same cuts on both sides. You can tell this by studying the key before you clamp it in the vise. If the cuts are the same on both sides, you need only turn over the key blank for the second side cutting. You do not have to turn over the pattern key.

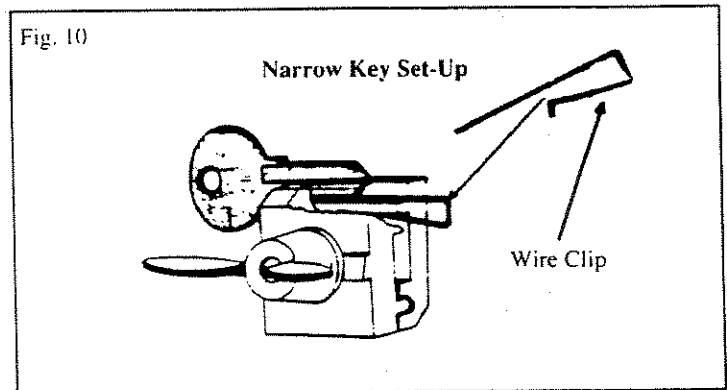


CUTTING FORMED KEYS AND NARROW KEYS

Formed keys, such as the SC6 and SC22 for Schlage, cannot be fully inserted into the vise jaws. Set these keys in the vises with the formed bulge resting on top of either the stationary or movable jaw (See Figure 9). Note that the SC6 and SC22 are double-sided keys but the cuts are NOT the same on both sides. You must turn over both keys for the second side cutting.



Very narrow keys, like the M2, require the use of wire clips. The clips must be inserted in the vises, under the keys, to raise the cuts above the surface of the vise jaws (See Figure 10).



REPLACEMENTS AND ADJUSTMENTS

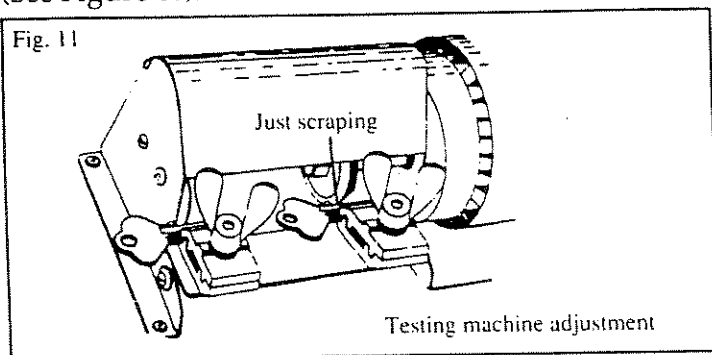
ADJUSTMENTS

The key guide is factory set to trace the exact depths of the pattern key. It's setting is correct when duplicate keys match the cuts of the pattern key and operate their locks. The setting needs adjustment when duplicate keys do NOT match the cuts of the pattern key, or when duplicate keys do not turn smoothly in the locks.

Note that the key guide is held by two screws - the pivot screw and the clamp screw. The clamp screw holds the key guide to the chassis and permits the rotating of the key guide for adjustment when it's loosened.

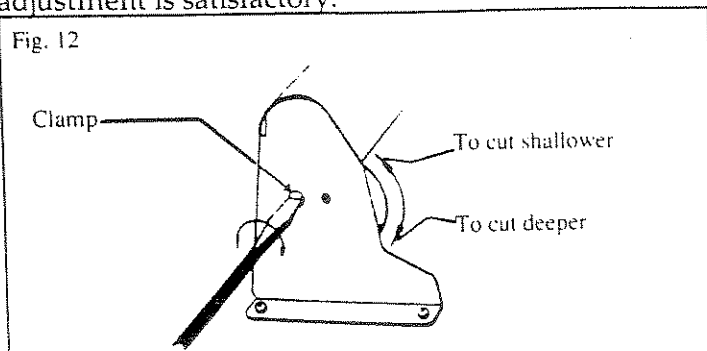
Rotating the key guide upward adjusts the machine to cut shallower. Rotating the key guide downward produces deeper cuts. To adjust the key guide:

1. Clamp two identical key blanks in the vises.
2. Lift the carriage so the left key blank touches the key guide.
3. While holding the carriage up, note the position of the right key blank in relation to the cutting wheel. The blank should just barely touch or scrape the cutter (See Figure 11).



4. If the key blank does not touch the cutter, loosen the guide clamp screw and rotate the key guide down, which moves it back. Move the key guide only a short distance at a time and lift the carriage each time to check the key blank and cutter. When the key blank touches the cutter, retighten the screw (See Figure 12).

5. Duplicate a key. If the key turns in the lock, the adjustment is satisfactory.



ABOUT THE CUTTER

The 027A key machine is supplied with a file cutter (CU1) to cut brass and nickel silver cylinder keys only. Like any other cutting instrument, the CU1 cutter should be protected from damage (Such as banging the key blank against the edge) and should not be used for any other purpose (like filing or grinding tools). It will cut a key blank without heavy pressure and, with care, it should last a long time. Since each cutter leaves the factory in a perfect condition, and since cutter sharpness can be reduced immediately by abusive use, the cutter is NOT guaranteed.

To replace or remove the cutter, grip the cutter adaptor firmly with a lock wrench while removing the cutter nut. Note that the cutter nut has a left hand thread and is turned clockwise for removal.

MAINTENANCE NOTES

- Clean the machine frequently. Use a soft brush to sweep brass filings out of the vise jaws.
- Wire brush the cutter teeth to remove clogged metal.
- When excessive pressure is required for cutting, or cutting takes longer, the cutter is dull and needs replacement.
- Adjustment is always required when replacing a cutter.
- Lubricate the cutter shaft thrust washers frequently with lubricating oil. The motor requires only a few drops of oil once a year.
- Use graphite on the carriage shaft if the carriage becomes hard to remove.
- If end play should develop in the cutter, loosen the cutter adaptor screw. Press the motor shaft to the left with a screwdriver against the motor fan blade (found in motor opposite the shaft end). Move the cutter adaptor to the right and tighten its screw.