

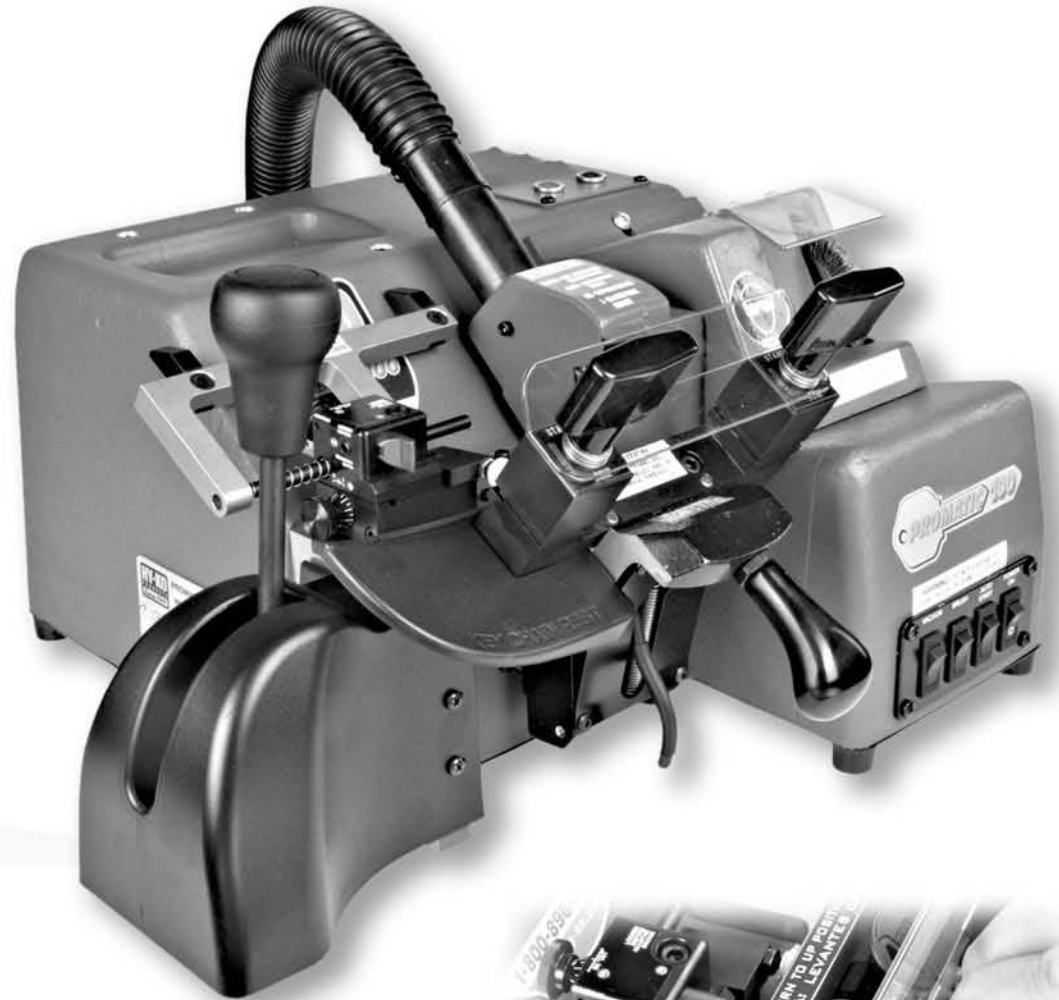


USER'S MANUAL

for the PROMATIC-100™ Key Machine

Exclusively
Offering
Three
Cutting
Modes

- Manual
- Semi-Automatic
- Automatic



800-896-7890

Read this manual first.

Important Information for Future Reference

Thank you for your recent purchase of our quality-made PROMATIC-100™ Key Machine. Please complete the following information log for reference if customer support is needed:

Hy-Ko® PROMATIC-100™ Key Machine

Serial Number:

(Located on the left side of the machine)

Date Put into Service

If you would like to order a Hy-Ko Key Replacement Catalog, please contact Customer Support Services (See information below).

Customer Support Services

For Customer and/or Technical Support, please contact us by:

Phone: 1-800-896-7890
8am – 6pm EST, Monday thru Friday

Fax: 330-467-7442
(24 hours a day, seven days a week)

E-Mail: cservice@hy-ko.com

Mailing Address: Hy-Ko Products Company
60 Meadow Lane
Northfield, OH 44067-1415

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Important Safety Information

SAFETY DO's:

- DO wear the safety glasses supplied with the key machine or other safety glasses when operating the key cutting equipment.
- DO make sure the machine is off when inserting or removing keys.
- DO wear clothing that protects against potential flying metal chips during key cutting or key deburring. The chips can cause injuries.
- DO ensure that customers or fellow employees are clear of the machine during operation or key deburring. Potential flying metal chips can cause injuries.
- DO ensure that personal grooming and work clothing contribute to safe operation of the key machine.
- DO check local and state ordinances regarding age restrictions on operating certain types of equipment, which may include electrically powered key cutting machines.
- DO pull back long hair.

SAFETY DON'Ts:

- DO NOT modify or remove any of the safety devices on the key cutting machine.
- DO NOT touch moving parts during key machine operation other than those so designated in this manual.
- DO NOT use the key machine for any other purpose than for cutting keys.

ELECTRICAL DO's:

The Promatic-100 Key Machine uses 120 volt AC, 15 amps, 60 Hz of electrical current. The main power cord has a three-prong grounded plug. The main power cord also has an equipment-grounding conductor.

- DO call a qualified repair technician if electrical problems arise.
- DO use three-wire extension cords (if necessary) with three-prong grounding plugs and three-prong outlets.

ELECTRICAL DON'Ts:

- DO NOT modify the three-prong plug to fit a two-prong outlet.
- DO NOT insert the machine's plug into a non-grounded outlet.
- DO NOT use the machine if the main power cord needs repair.
- DO NOT locate or run the machine in damp or wet environments.

Promatic-100 Packaging

Packing your Promatic-100 Key Machine

The Promatic-100 Key Machine is packed in a two-piece solid-foam packaging. The key machine accessories such as safety glasses, allen wrenches for calibration, carriage handle knob and literature are located in the compartments on the top side of the upper packaging.

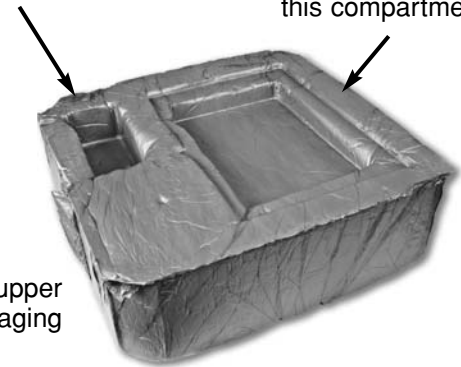
Note: Keep your box and packaging!

It is highly recommended that you keep the box and packaging in the event that you will need to ship your key machine back to Hy-Ko Products Company for repairs or refurbishment sometime in the future. Shipping the Promatic-100 in something other than the packaging that it came in can cause damage during shipment that is not covered under the warranty.

Below is how your Promatic-100 Key Machine should be before placing the solid-foam upper packaging in the box.

Safety glasses and carriage handle knob are in this compartment

Chip tray, allen wrenches, key mat and literature are in this compartment



Solid-foam upper packaging



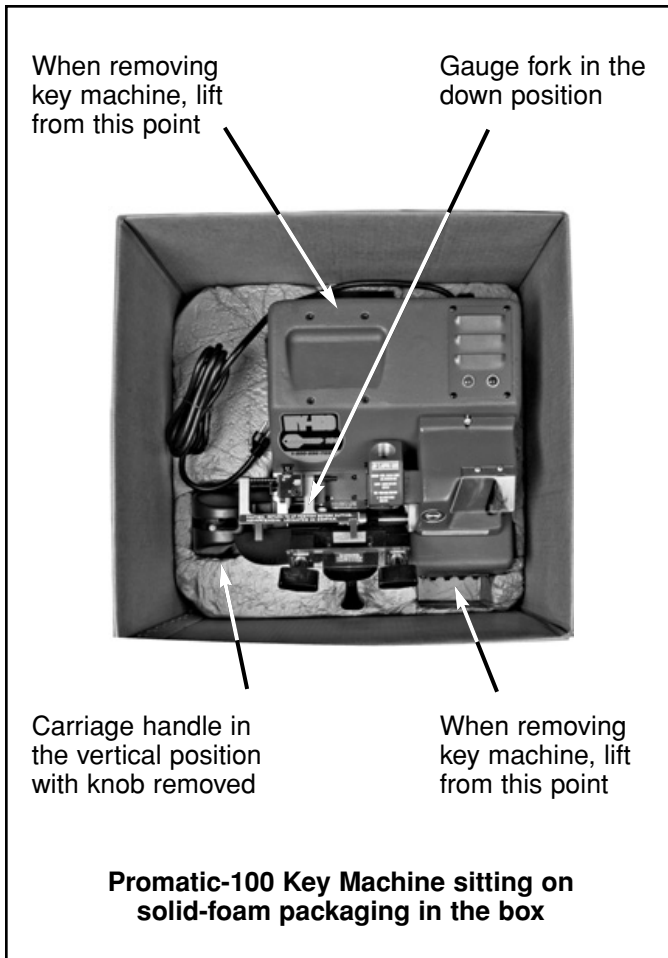
Promatic-100 key machine



Solid-foam lower packaging



Promatic-100 box



Portable Shop Vacuum Option

How to Connect a Portable Shop Vacuum

The Promatic-100 Key Machine is shipped ready for connection to an optional portable shop vacuum with a 1-1/4" suction hose to remove metal chips generated by the key cutting process.

To connect:

- 1) The Promatic-100 Key Machine is shipped ready for connection to an optional portable shop vacuum with a 1-1/4" suction hose to remove metal chips generated by the key cutting process.
- 2) Insert the three-prong plug of the portable shop vacuum into the three-prong outlet located on the back of the key machine and marked "Vacuum Power Supply."

***Note:** Make sure the power switch on the vacuum is in the "On" position. Now, power will be controlled through the switch marked "Vacuum" on the front of the machine.*

To clean up stray metal chips:

- 1) With the main power on and the carriage in the locked-down position, remove the suction hose from the opening on top of the cutter block housing.
- 2) Push the switch marked "Vacuum" located on the front switch panel of the machine to turn on the vacuum.
- 3) Remove any stray metal chips with the suction hose.
- 4) Reinsert the suction hose end into the opening on top of the cutter block housing.
- 5) Push the switch marked "Vacuum" to turn off the vacuum.

How to set up without the portable shop vacuum feature:

If a portable shop vacuum is NOT going to be used with the Promatic-100 Key Machine, the hole plug on the bottom of the cutter block housing needs to be inserted in the hole where the vacuum hose would go. This will redirect the metal chips into the chip tray.

Tool needed:

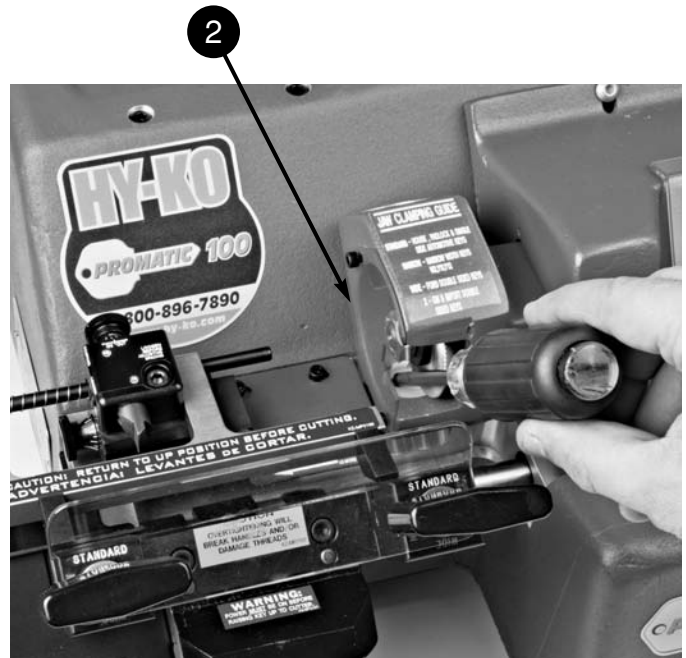
Any screwdriver can be used to remove the plastic plug from its factory position.



Hole plug removal instructions:

- 1) Locate the plastic plug directly UNDER the cutter inside the cutter block housing.
- 2) Using a screwdriver, gently push the hole plug down through the chute.
- 3) Insert the hole plug in the hole on the back of the cutter block housing where the vacuum hose would go.

To restore the portable shop vacuum connection feature, reverse the above procedure.



Testing After Delivery

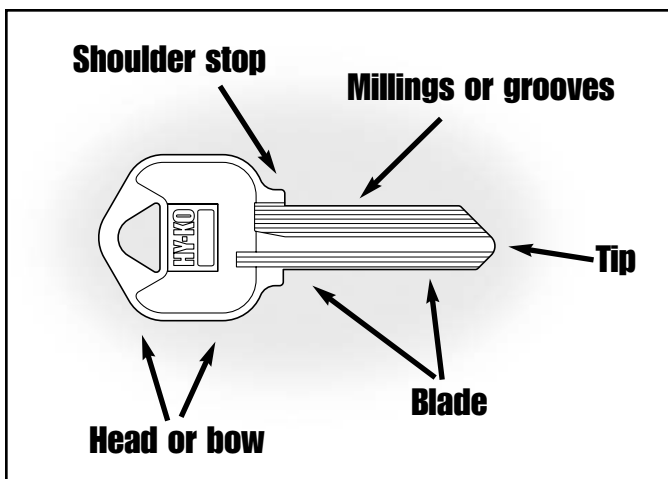
Testing alignment of your new key machine (recommended)

Your new Promatic-100 Key Machine was factory-aligned, but it is wise to test the alignment in case of rough handling during shipment. To do so, use a “quality” test padlock key and duplicate a blank key with the jaws set in the “Standard” setting (see Jaw Clamping Guide section) and follow the alignment and cutting instructions in this manual. If the key does not open the padlock and the machine is out of alignment, follow the instructions in the sections on adjusting for carriage stop, spacing and depth.

Duplicating Keys

The basic parts of a key

Be familiar with the various parts of the key. This will help you identify the right key blank for your customer.

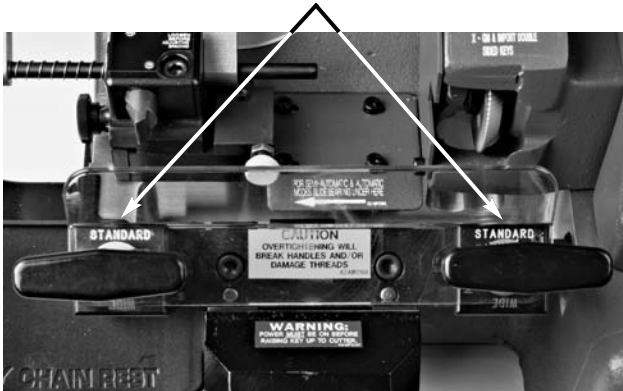


Jaw Clamping Guide

The Promatic-100 Key Machine is equipped with a handy “Jaw Clamping Guide” for the selection of the correct jaw for cutting a duplicate key. It is conveniently located on the top of the cutter housing.

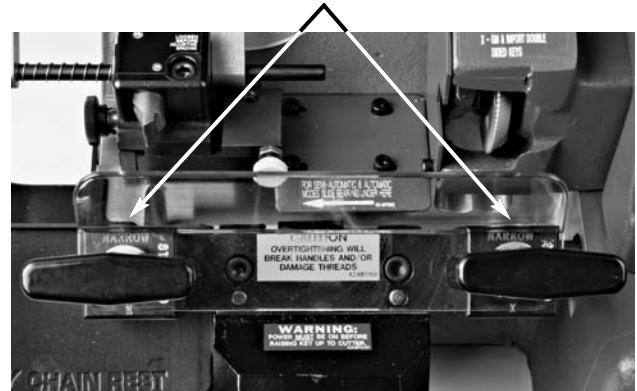
As the guide explains, there are four basic jaw settings for cutting keys:

Standard Jaw Setting



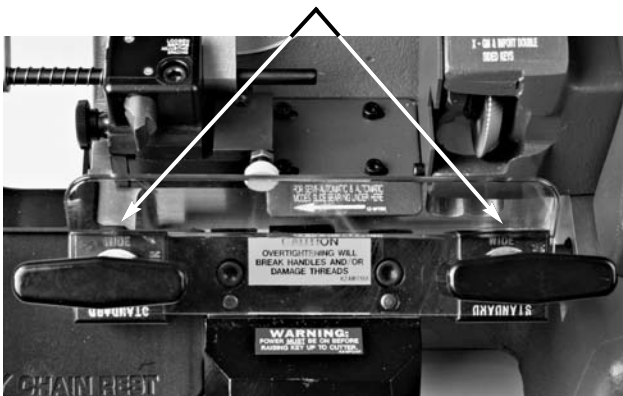
Standard Jaw Setting – for most cylinder keys, such as house keys, single-sided automotive keys and padlock keys. These keys may have one or two shoulders.

Narrow Jaw Setting



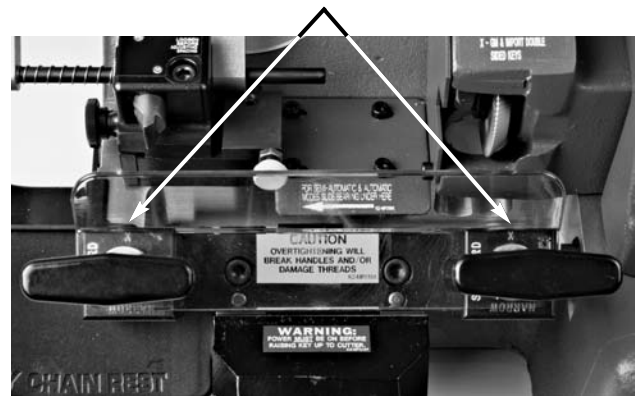
Narrow Jaw Setting – for narrow width keys that need to sit a little higher in the jaw.

Wide Jaw Setting



Wide Jaw Setting – for wide blade keys that need to sit a little deeper in the jaw such as older Ford and similar type keys.

“X” Jaw Setting

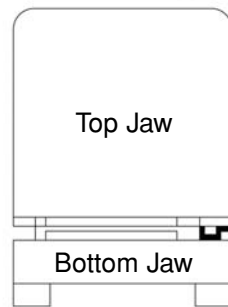
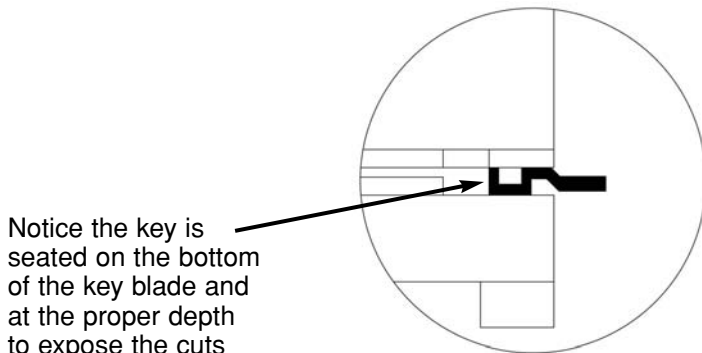


“X” Jaw Setting – for most double-sided automotive keys, such as GM and foreign car keys. This setting is specifically for keys that must be secured by the center groove.

For a more detailed explanation of the jaw settings, please see the next section.

Standard Jaw Setting

The Standard Jaw Setting allows most averaged-sized keys to sit in the jaws at the proper depth so that all the cuts on the customer's key are visible. This will allow the tracer to follow the path of the key so the cutter can make the proper cuts in the blank.

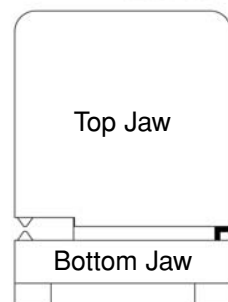
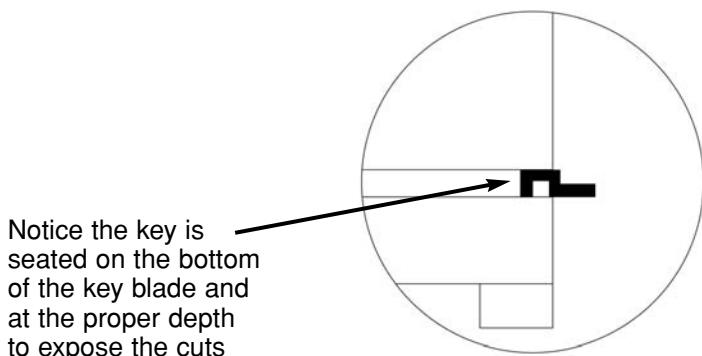


Standard Jaw Setting
(this side facing the cutter)

KW1 key seated in the Standard Jaw Setting
(see close up view above)

Narrow Jaw Setting

The Narrow Jaw Setting allows the smaller-sized keys, where the blades are narrower, to sit in the jaws at the proper depth so that all the cuts on the customer's key are visible. This will allow the tracer to follow the path of the key so the cutter can make the proper cuts in the blank.



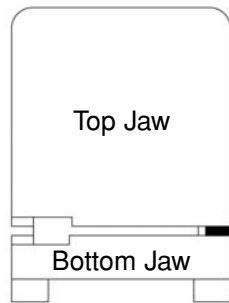
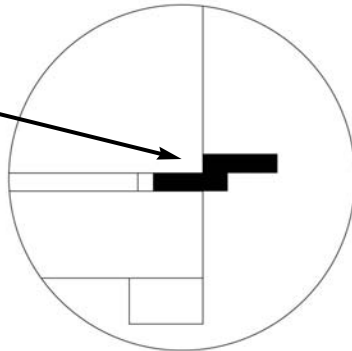
Narrow Jaw Setting
(this side facing the cutter)

M1 key seated in the Narrow Jaw Setting
(see close up view above)

Wide Jaw Setting

The Wide Jaw Setting allows the larger-sized keys, where the blades are much wider, to sit in the jaws at the proper depth so that all the cuts on the customer’s key are visible. This will allow the tracer to follow the path of the key so the cutter can make the proper cuts in the blank.

Notice the key is seated against the inside of the milling on the bottom corner of the top jaw



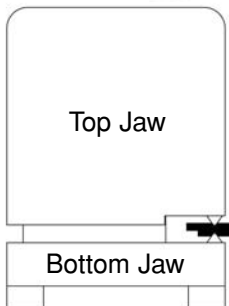
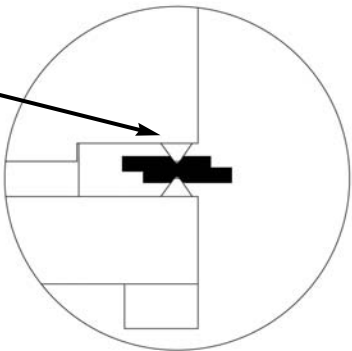
Wide Jaw Setting
(this side facing the cutter)

H60 key seated in the Wide Jaw Setting
(see close up view above)

“X” Jaw Setting

The “X” Jaw Setting allows the double-sided automotive keys that contain a center groove to sit in the jaws at the proper depth so that all the cuts on the customer’s key are visible. This will also allow the customer’s key to stay properly aligned in comparison to the key blank that is to be cut in the other jaw.

Notice the center grooves of the key are centered over each other allowing both halves of the “X” Jaw Setting to be utilized

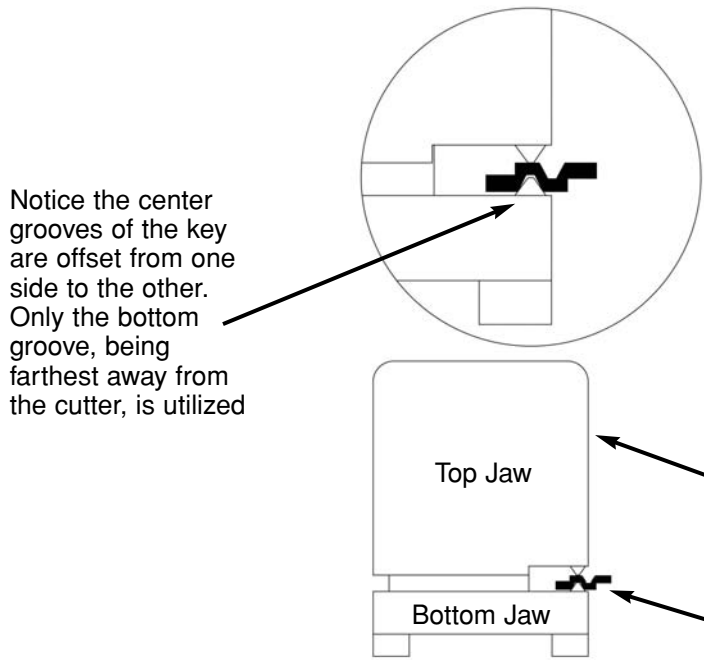


“X” Jaw Setting
(this side facing the cutter)

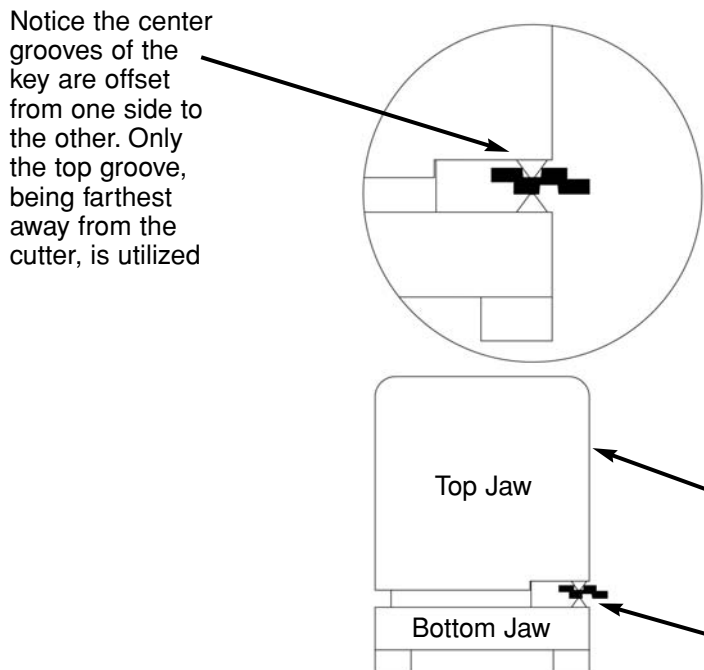
B86 key seated in the “X” Jaw Setting
(see close up view above)

***Note:** There are three variations to holding a key in the “X” Jaw Setting. Continue on to see more ways to properly hold a key in the “X” Jaw Setting.*

“X” Jaw Setting (continued)

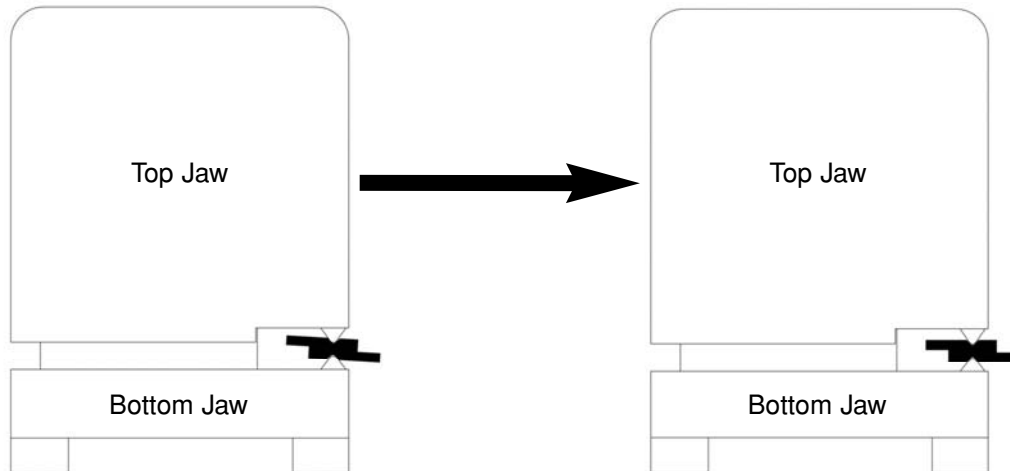


“X” Jaw Setting (continued)

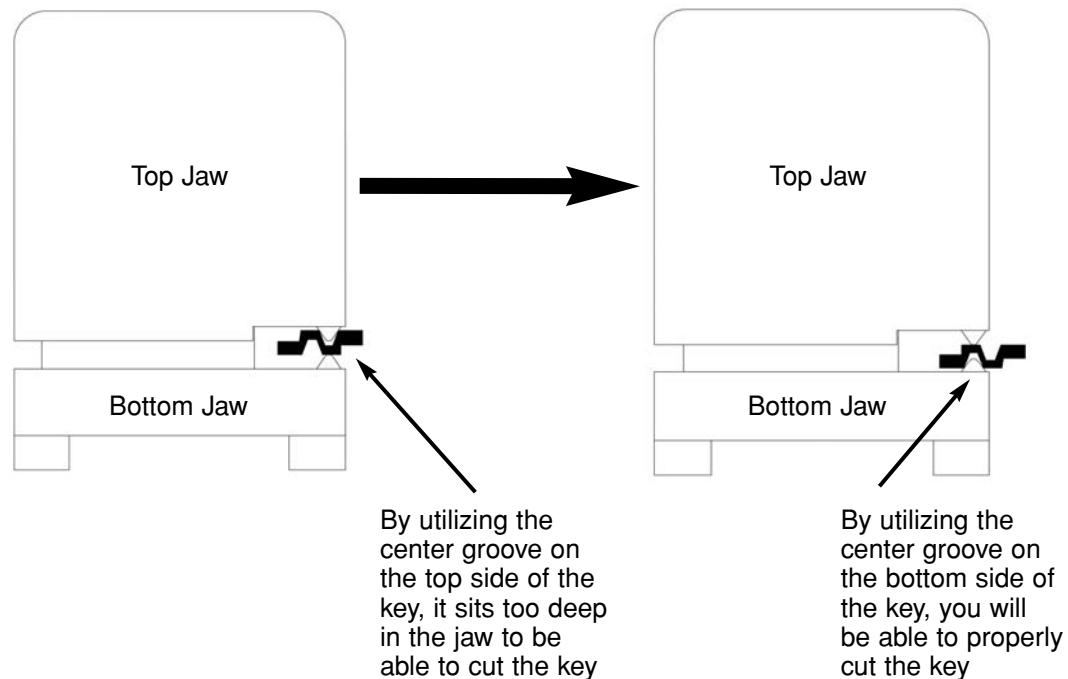


“X” Jaw Setting (continued)

When using the “X” Jaw Setting, you may notice that some keys tilt as they are being clamped down on as shown in the example below. If this happens, loosen the jaw just slightly so that the key can be moved but not enough so that it will fall out (approximately 1/4 – 1/2 turn). While holding onto the key to keep it straight, re-tighten the jaw.



When using the “X” Jaw Setting, and you have a key that has center grooves that are offset from one side to the other, as shown in the example below, it is very important to make sure that you utilize the correct groove otherwise the key will sit in the jaw too deep.



The Jaw Clamping Guide covers most types of keys, but there are exceptions, such as deep cut keys which may require a different setting. Use your best judgment in selecting a jaw setting for keys that do not specifically fall in the basic categories.

For double-sided keys, the cuts are usually the same on both sides of the key. However, when cutting these keys, we do recommend rotating both keys to cut the opposite side of the blank. Sometimes, there are variances in the customer's key even if it is the original. If the customer's key is not rotated when the blank is rotated to cut the opposite side, there is a possibility that the side of the customer's key that is being duplicated on to both sides of the new key blank may be the side with the bigger variance. The doubling of this variance could cause the key not to work in the customer's ignition or lock.

Selecting the correct jaw setting

The right jaw holds the key blank that is going to be cut. The left jaw holds the customer's key to be duplicated.

- 1) Make sure the carriage is in the locked-down position.
- 2) Turn the wing nut on the left jaw counterclockwise approximately four revolutions to loosen the jaw.
- 3) Rotate the jaw so that the desired setting is on top.

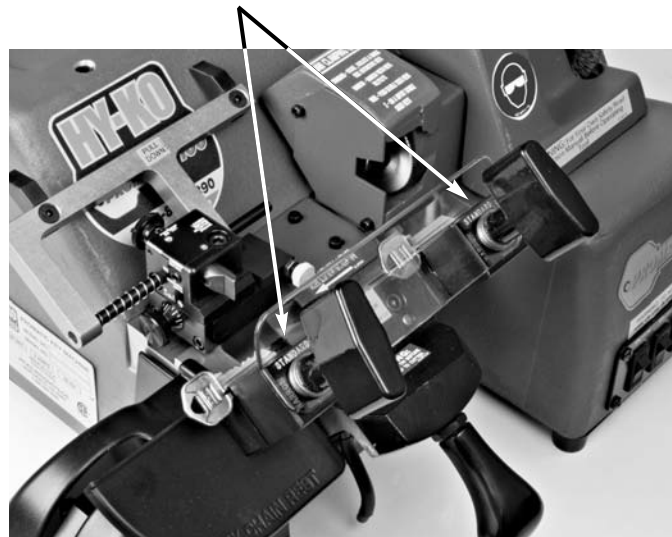
***Note:** It is not necessary to lift up on the jaws to rotate them. If they will not rotate, turn the wing nut counterclockwise one more revolution until you can rotate the jaw. Be careful not to turn the wing nut counterclockwise too many times as the top jaw will lift completely off the bottom jaw. If this happens, manually guide the top jaw back down onto the bottom jaw as you slowly turn the wing nut clockwise.*

- 4) Repeat Steps 2 and 3 for the right jaw.



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***Note:** The jaw settings MUST MATCH for you to be able to properly duplicate a key blank.*



Aligning Keys in the Jaws

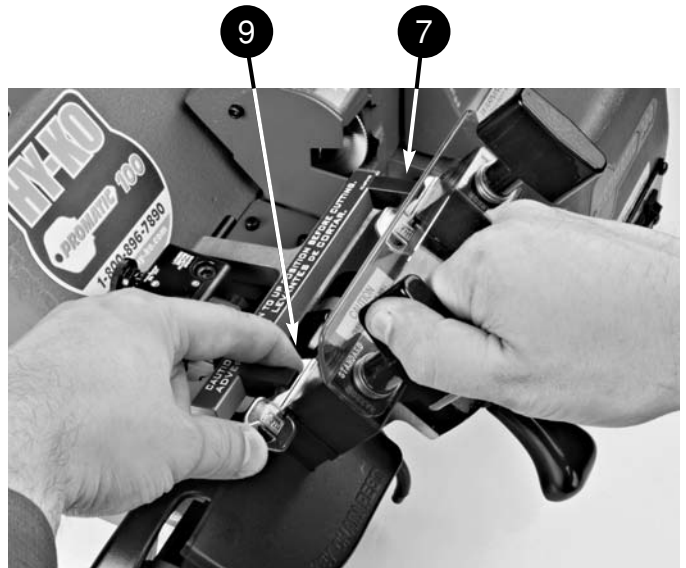
Note: If the key blank has a UPC-coded label affixed to it, just fold part of the label back onto the bow to expose the blade. Then proceed to Step 1.

There are two ways of aligning keys based on different key types:

- 1) Shoulder gauging
- 2) Tip gauging – (for those keys that do not have shoulders)

For Shoulder Gauging

- 1) Insert the key blank to be cut into the right jaw.
- 2) Lightly tighten the wing nut clockwise to hold it in place, making sure the key is seated flat in the jaw.
- 3) Place the customer's key in the left jaw.
- 4) Lightly tighten the wing nut clockwise to hold it in place, making sure the key is seated flat in the jaw.
- 5) Move the carriage to the middle of the carriage rod.
- 6) Lower the gauge fork until the gauge inserts are resting on the keys.
- 7) Loosen the wing nut on the right jaw and slide the key blank in the jaw so that the shoulder of the key blank rests against the gauge insert on the gauge fork. Make sure the key blank is still seated flat in the jaw (there should NOT be any space between the shoulder of the key and the insert on the gauge fork).
- 8) Now fully tighten the wing nut on the right jaw.
- 9) Slide the customer's key in the left jaw until the shoulder of the key rests against the gauge insert (make sure the shoulder of the key blank is still against the other gauge insert).
- 10) Raise the gauge fork back to the "up" position.



Now you are ready to cut your key

See the section "Three Operating Modes for Cutting Keys"

For Tip Gauging

- 1) Insert the key blank to be cut into the right jaw so that the tip of the key does not protrude past the right edge of the jaw.
- 2) Lightly tighten the wing nut clockwise to hold it in place, making sure the key is seated flat in the jaw.
- 3) Place the customer's key in the left jaw so that the tip of the key does not protrude past the right edge of the jaw.
- 4) Lightly tighten the wing nut clockwise to hold it in place, making sure the key is seated flat in the jaw.
- 5) Move the carriage all the way to the left by pushing down on the carriage rod handle.
- 6) Lower the gauge fork until the gauge inserts are resting on the keys.
- 7) Slide the gauge fork along the gauge fork rod all the way to the right so that the gauge inserts rest against the right side of the jaws.
- 8) Loosen the wing nut for the key blank to be cut just enough to be able to gently slide it until the tip of the key just touches the gauge insert.
- 9) Now fully tighten the wing nut on the right jaw.
- 10) Loosen the wing nut for the customer's key just enough to be able to gently slide it until the tip of the key just touches the gauge insert.
- 11) Now fully tighten the wing nut on the left jaw.
- 12) Raise the gauge fork back to the "up" position.



10

Now you are ready to cut your key

See the section "Three Operating Modes for Cutting Keys"

Three Operating Modes for Cutting Keys

The Promatic-100 Key Machine is the most versatile key machine on the market today. Keys can be cut manually, semi-automatically or automatically. Following are instructions on how to cut keys in each mode.



Manual Mode

Semi-automatic Mode



Automatic Mode

Manual Operation

Before proceeding to manually cut a key, read the information provided on the Jaw Clamping Guide, and follow the instructions in selecting the jaw setting and aligning keys in the jaws.

- 1) Make sure that the key machine is in the “On” position and the customer’s key and the key blank to be cut are already properly gauged in the jaws before continuing.
- 2) Manually raise the carriage by unlocking it using the trigger.

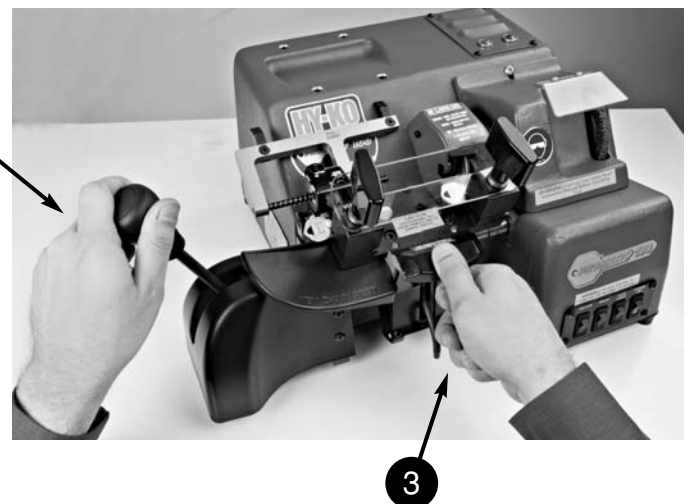
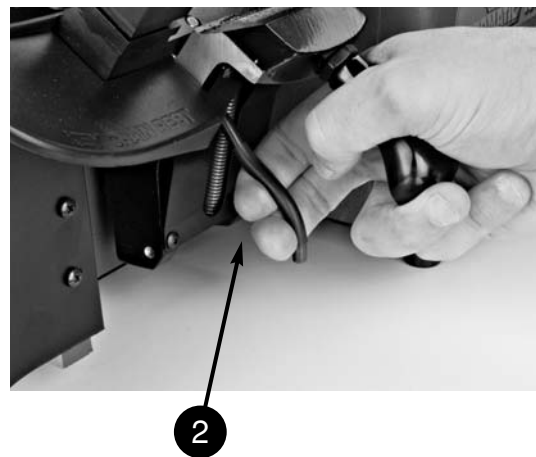
Note: Once you have squeezed the trigger enough to unlock it so the carriage can be raised, you can let go of the trigger and just hold the handle on the front of the carriage.

- 3) Bring the carriage up with your right hand. At the same time use your left hand to move the carriage left or right using the carriage handle on the left. As you bring the carriage up, the cutter and brush will begin to run.

Note: You want to position the customer’s key so that the tracer touches the key between the shoulder and the first cut or just before the first cut if it does not have a shoulder. Never actually touch the shoulder!

- 4) Begin cutting the key by applying steady pressure with your right hand and using your left hand to move the carriage left slowly by pulling down on the carriage handle.
- 5) When tracing is complete, let the carriage return to the locked down position. The cutter and brush will automatically shut off.
- 6) Remove the keys from the jaws.

When power is “On”, the red light will be illuminated



Now you are ready to deburr your key

See the section “Deburring Newly Cut Keys”

Semi-Automatic Operation

Before proceeding to semi-automatically cut a key, read the information provided on the Jaw Clamping Guide, and follow the instructions in selecting the jaw setting and aligning keys in the jaws.

- 1) Make sure that the key machine is in the "On" position and the customer's key and the key blank to be cut are already properly gauged in the jaws before continuing.
- 2) Move the carriage all the way to the left by pushing down on the carriage handle to the left.
- 3) Raise the carriage by unlocking it using the trigger. Fully squeeze the trigger to allow the roller bearing to go under the pressure plate.

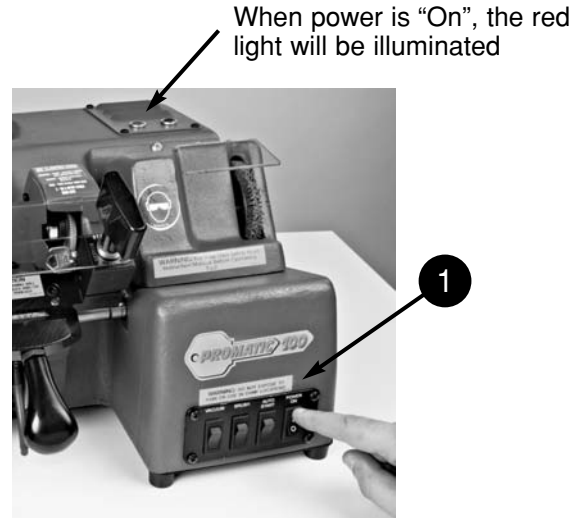


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- 4) Guide the roller bearing under the pressure plate while keeping the carriage pulled back slightly so the keys do not touch the cutter and tracer. As you bring the carriage up, the cutter and brush will begin to run.

Note: You want to position the customer's key so that the tracer touches the key between the shoulder and the first cut or just before the first cut if it does not have a shoulder. Never actually touch the shoulder!

- 5) Begin cutting the key by using your left hand to move the carriage left slowly by pulling down on the carriage handle. When the carriage is all the way to the left it will automatically drop back down to the locked down position and the cutter and brush will shut off.
- 6) When tracing is complete, let the carriage return to the locked down position.
- 7) Remove the keys from the jaws.



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5

Now you are ready to deburr your key

See the section "Deburring Newly Cut Keys"

Automatic Operation

Before proceeding to automatically cut a key, read the information provided on the Jaw Clamping Guide, and follow the instructions in selecting the jaw setting and aligning keys in the jaws.

- 1) Make sure that the key machine is in the "On" position and the customer's key and the key blank to be cut are already properly gauged in the jaws before continuing.
- 2) Move the carriage all the way to the left by pushing down on the carriage handle.
- 3) Raise the carriage by unlocking it using the trigger. Fully squeeze the trigger to allow the roller bearing to go under the pressure plate.



3

- 4) Guide the roller bearing under the pressure plate while keeping the carriage pulled back slightly so the keys do not touch the cutter and tracer. As you bring the carriage up, the cutter and brush will begin to run.

Note: You want to position the customer's key so that the tracer touches the key between the shoulder and the first cut or just before the first cut if it does not have a shoulder. Never actually touch the shoulder!

- 5) Begin cutting the key by pressing the "Auto Start" switch on the front switch panel. When the carriage is all the way to the left it will automatically drop back down to the locked down position and the cutter and brush will shut off.
- 6) Remove the keys from the jaws.

When power is "On", the red light will be illuminated



1



3



5

Now you are ready to deburr your key

See the section "Deburring Newly Cut Keys"

Deburring Newly Cut Keys

Deburring a newly cut key is often required. It is a simple procedure on the Promatic-100 Key Machine.

- 1) Make sure that the key machine is in the "On" position.
- 2) Push and HOLD in the switch marked "Brush" on the front switch panel.

Note: *DO NOT jog the switch.*

- 3) While firmly holding the key, deburr the blank by gently running the key across the brush.
- 4) Once the key is deburred, release the "Brush" switch.



By brushing the key above the centerline of the brush wheel and having the cuts on the key facing down, you will be less likely to have the key pulled out of your hand and drawn down inside the brush cover.

When power is "On", the red light will be illuminated

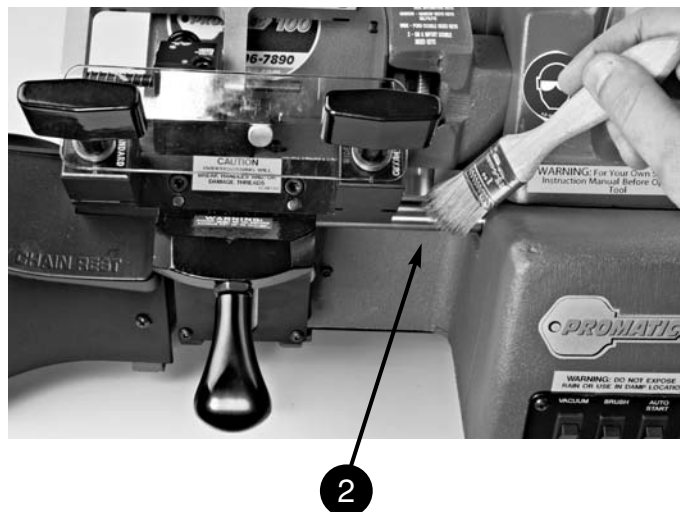
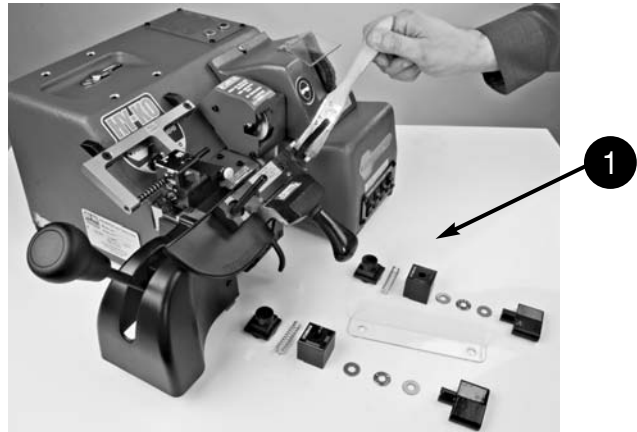


Operating Do's and Don'ts

- 1) **DO** use only nominal hand pressure to tighten the wing nuts on the jaws. **DO NOT** use pliers or other tools for tightening for this will eventually damage the wing nuts, if not the jaws themselves.
- 2) **DO** protect the cutter from foreign objects, instruments or tools that could chip or otherwise damage the cutter teeth, thereby making the cutter ineffective in key duplication.
- 3) **DO NOT** touch the shoulder of a key blank to the tracer. This will result in the shoulder of the key blank touching the side of the cutter wheel. In the cutting operation, the cutter wheel will shave off a bit of the shoulder which will throw off the spacing. The new key blank may not work depending on how much of the shoulder has been shaved off.
- 4) **DO NOT** run the jaw into the cutter. This dulls the cutter and reduces cutter life.
- 5) **DO NOT** use extreme force when raising the carriage up manually. This can cause the key blank to bang into the cutter, possibly damaging the cutter.
- 6) **DO NOT** allow the keys to slam into the cutter and tracer when operating the key machine in the, spring loaded, semi-automatic or automatic modes.
- 7) **DO NOT** apply heavy pressure when manually cutting duplicate keys. This will increase cutter wear.
- 8) **DO NOT** cut two or more duplicate keys (one on top of the other) at the same time. This will result in inaccurate cuts and will increase jaw and cutter wear.

Maintenance Tips for More Accurate Duplication

- 1) **Jaws** – Routinely clean the jaws so that no metal chips accumulate. Both keys need to lie flat across the entire length of each jaw to make an accurate duplicate key.
- 2) **Carriage Shaft** – Keep free of metal chips so that it moves smoothly, especially important during the cutting operation.
- 3) **Handle** – Lubricate for smooth operation. (semi-annually)
- 4) **Deburring Brush** – Routinely clean to prevent metal chip buildup within the bristles.



How to Replace the Cutter

There is no warranty on the cutter. Therefore it should be treated with care. It will dull with usage, though cutting keys in the automatic mode will contribute to longer life because the cutting feed and speed are controlled.

There are signals indicating it is time to replace the cutter.

Time – a dull cutter takes longer to make cuts in the key blank. (when operating in the manual or semi-automatic modes)

Lack of Cuts – a dull cutter will just skim across the key in the automatic mode. By applying more pressure to the carriage in the manual or semi-automatic mode you can get the cutter to cut the key. It may seem like the carriage spring is not applying enough tension on the carriage but it most likely is a dull cutter.

Sound – a dull cutter emits a shrill sound as it runs across a key blank.

Burrs – a dull cutter rolls metal away rather than cutting it away, causing a buildup of metal burrs on the underside of the key. The heavier the buildup, the duller the cutter.

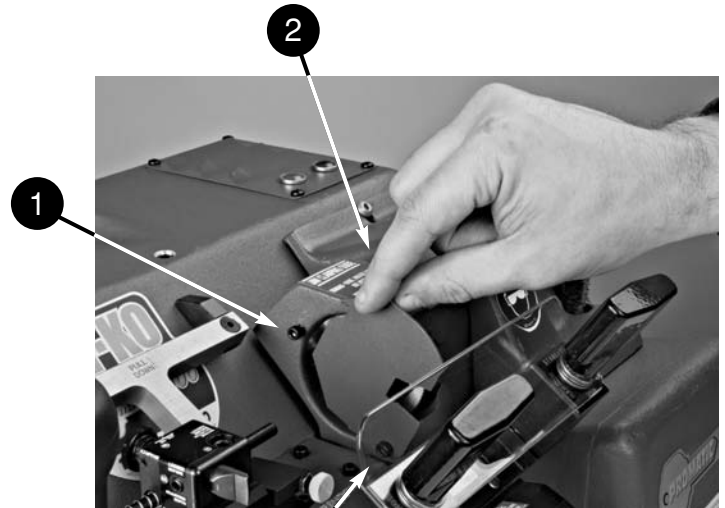
Tools Needed for Cutter Replacement

9/64" allen wrench	1/2" open-ended wrench
5/32" allen wrench	3/4" box wrench

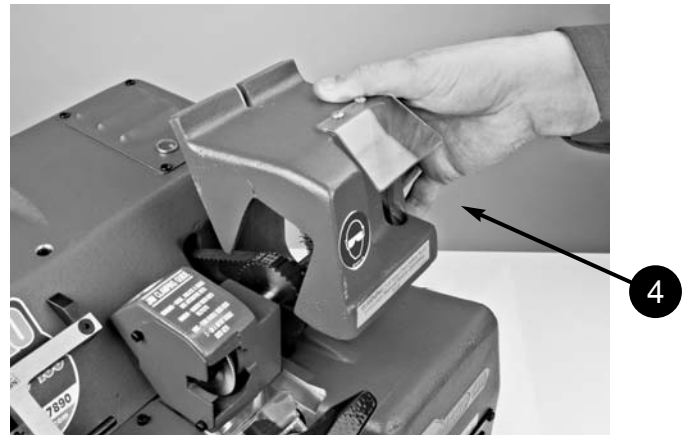
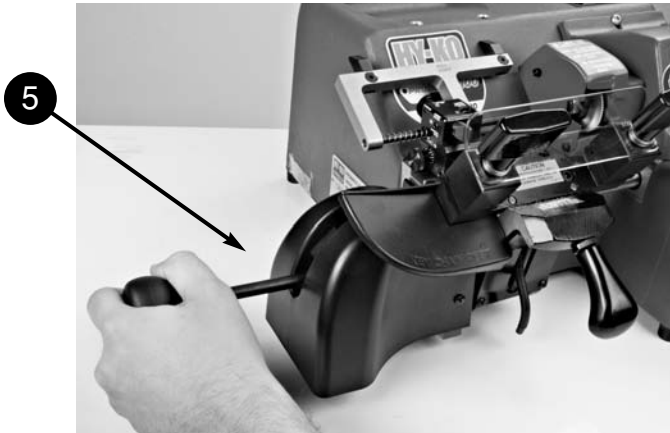
Cutter Replacement Instructions

Note: FOR SAFETY, MAKE SURE THE MAIN POWER IS OFF OR UNPLUG THE MACHINE FROM ITS POWER SOURCE.

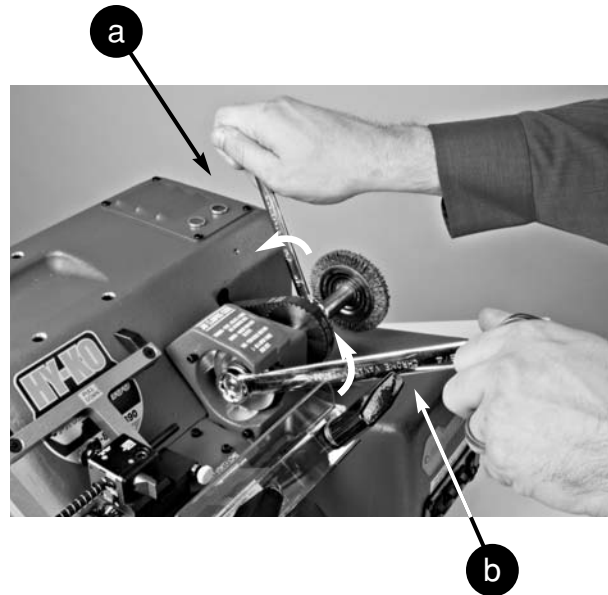
- 1) Using a 9/64" allen wrench, loosen – but **DO NOT** remove – the two screws holding the cutter cover to the cutter housing.
- 2) Remove the cutter cover by sliding it towards you.
- 3) Using a 5/32" allen wrench, remove the screw attaching the brush guard assembly to the machine housing.



- 4) Remove the brush guard assembly.
- 5) Press the carriage handle down to move the carriage as far to the left as it will go.



- 6) The cutter nut holding the cutter in place must be loosened. **It is a left-handed thread.** To do so:
 - a) Position the 3/4" box wrench on the cutter nut.
 - b) Position the 1/2" open-ended wrench on the flat surfaces of the spindle closest to the pulley.
 - c) Simultaneously, raise the 3/4" box wrench up until the cutter housing stops it and push the 1/2" open-ended wrench towards the back of the machine until the cutter nut loosens.



- 7) Remove the cutter nut, outer washer, cutter and the inner washer.

Note: The outer and inner washers are identical and interchangeable.



Tip: If the cutter doesn't just slide off, you can usually "walk" the cutter off by using your thumbs. Put one thumb behind the cutter from the front of the cutter housing and put the other thumb behind the cutter from the back by going through the vacuum attachment hole.



- 8) Clean the cutter shaft with a soft bristle brush or a rag, removing all dirt and debris.
- 9) Wipe off the two washers with a clean, soft cloth. Insert one of the washers back on the cutter shaft.
- 10) Wipe the new cutter with a clean, soft cloth. Place the new cutter on the spindle so that the side with the arrows is facing to the left of the machine. Gently snug the cutter up against the washer.
- 11) Insert the second washer and gently snug it up against the new cutter.



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- 12) Apply the cutter nut. Remember that **it is a left-handed thread**. To securely tighten the cutter nut:
 - a) Position the 3/4" box wrench on the cutter nut.
 - b) Position the 1/2" open-ended wrench on the flat surfaces of the spindle closest to the pulley.
 - c) Push the 1/2" open-ended wrench down towards the front of the machine. The 3/4" box wrench will stop on the front lip of the cutter housing. Make sure that the nut is tight before proceeding.

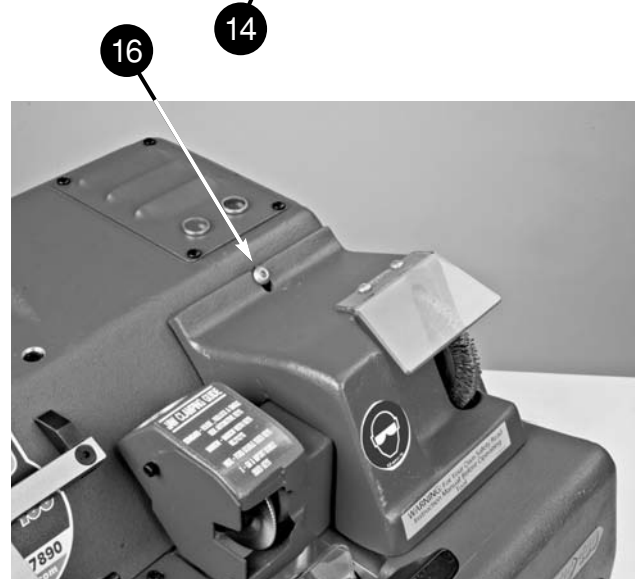
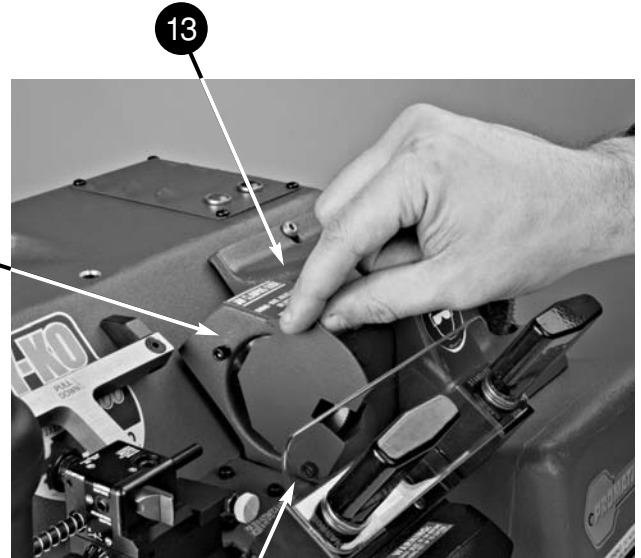


13) Slide the cutter cover back onto the cutter housing.

14) Using a 9/64" allen wrench, tighten the two screws to secure the cutter cover to the cutter housing.

15) Replace the brush guard assembly.

16) Using a 5/32" allen wrench, tighten the screw to secure the brush guard assembly to the key machine.



Now you are ready to calibrate your key machine

See the section "Calibration"

Calibration

Calibrating your key machine will not only ensure that you are duplicating keys that will work for the customer, it also helps to prolong the life of your key machine.

There are three areas to check to make ensure that your key machine is properly calibrated.

1. Carriage Stop
2. Spacing
3. Depth

When checking the calibration of your key machine, it should be done in order shown above.

Carriage Stop Calibration

The carriage stop is a dead-stop that keeps the right jaw from running into the cutter in the event a very short key is in the jaw or there are no keys in the jaws. The carriage stop does not determine the depth on the key. It is only there as a safety to keep the right jaw and the cutter from getting damaged.

Tools Needed for Cutter Replacement

11/32" open-ended wrench

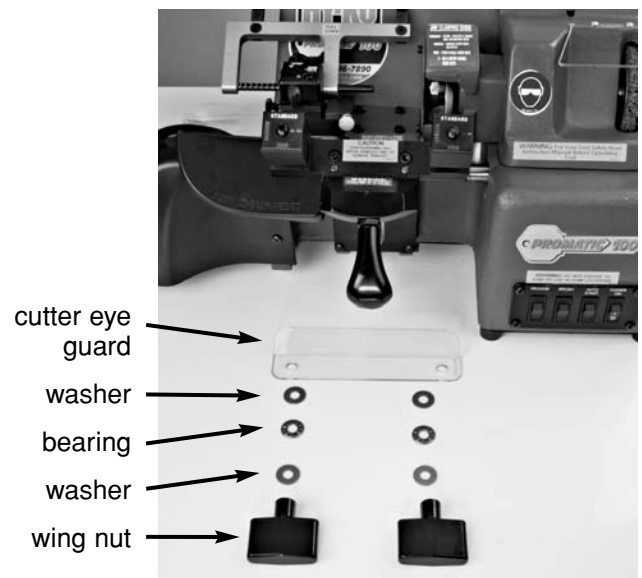
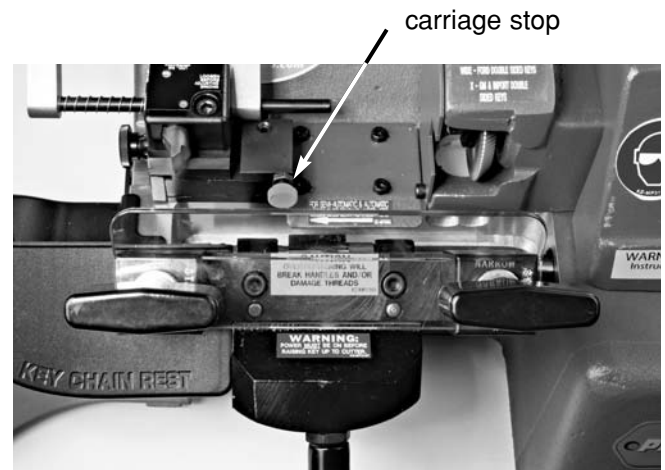
Business card with a plain back side

Removal of Plastic Eye Guard

Note: FOR SAFETY, MAKE SURE THE MAIN POWER IS OFF OR UNPLUG THE MACHINE FROM ITS POWER SOURCE.

To better access the carriage stop during checking and adjustment, the plastic eye guard mounted across the jaws can be removed.

- 1) Remove the wing nuts on the left and right jaws by turning them counterclockwise. Be careful as the jaws are spring-loaded and they might pop off when you take the wing nuts off.
- 2) Remove the washer, bearing and washer from both carriage studs.
- 3) Remove the plastic eye guard.
- 4) Place the washer, bearing and washer back on the carriage studs. Be sure to keep them in that order. You may need to push down on the top jaw to be able to place them on the studs.
- 5) Screw the wing nuts back on the carriage studs.



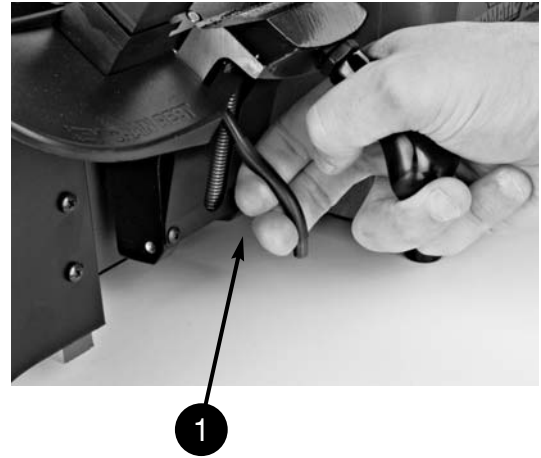
How to Determine the Need for a Carriage Stop Adjustment

To determine the need for a carriage stop adjustment, take a business card and tear it in half lengthwise. Make sure the business card has a plain white backing on it.

- 1) Manually raise the carriage by unlocking it using the trigger.

Note: Once you have squeezed the trigger enough to unlock it so the carriage can be raised, you can let go of the trigger and just hold the handle on the front of the carriage.

- 2) Position the right jaw directly in front of the cutter while placing the torn business card in between with the blank side facing the cutter.



- 3) With your right hand, rotate the deburring brush up toward the back of the machine. The brush is mounted on the same spindle as the cutter. Therefore, rotating the brush rotates the cutter.
- 4) To determine if an adjustment is necessary:
 - a) If the business card remains stationary as you rotate the cutter and brush up and only a light mark or no mark is left on the back of the business card then **NO** adjustment is needed.
 - b) If the business card wants to move up as you rotate the cutter and brush up or there are individual teeth marks in the back of the business card then the carriage stop is too close to the cutter and needs to be adjusted outward.
 - c) If the business card wants to **freely** drop while you are rotating the cutter and brush up then the carriage stop is too far away from the cutter and needs to be adjusted inward.
- 5) Lower the carriage back down to the locked down position.

Carriage Stop Adjustment Instructions

- 1) Using an 11/32" open-ended wrench, loosen the locking nut on the carriage stop screw by turning it counterclockwise.
- 2) ***If the carriage is too close to the cutter,*** manually turn the carriage stop screw counterclockwise to increase the space between the right jaw and the cutter.

If the carriage is too far away from the cutter, manually turn the carriage stop screw clockwise to decrease the space between the right jaw and the cutter.
- 3) Using the 11/32" open-ended wrench, tighten the locking nut of the carriage stop screw by turning it clockwise to hold the screw in the desired position.
- 4) Repeat the steps in "How to Determine the Need for a Carriage Stop Adjustment" to see if more adjustments are needed.



Spacing Calibration

The spacing is the distance, left-to-right between the cutter and the tracer. This distance must match the distance of the gauge fork inserts which are fixed and used to properly space the keys. Since the gauge fork inserts and the cutter are in fixed positions, the spacing is adjusted by moving the tracer left or right as needed.

Spacing needs to be adjusted when a new cutter is installed as well as periodically if a high volume of keys are duplicated on the machine.

Tools Needed for Spacing Calibration

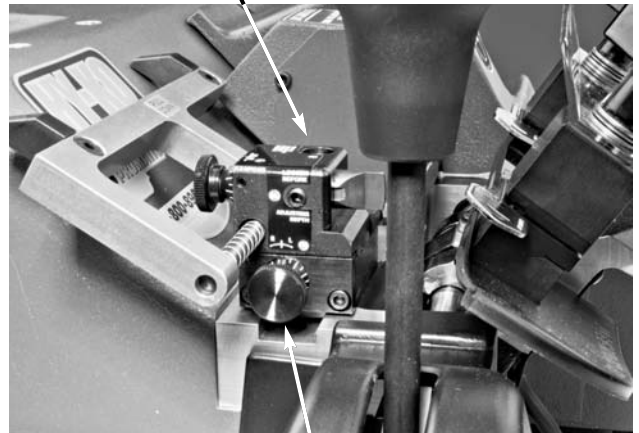
3/16" allen wrench

How to Determine the Need for a Spacing Adjustment

Note: FOR SAFETY, MAKE SURE THE MAIN POWER IS OFF OR UNPLUG THE MACHINE FROM ITS POWER SOURCE.

- 1) Select the standard jaw setting and align two identical KW1 key blanks, upside down, in the jaws by their tips. By putting the keys in upside down the tips will be above the face of the jaw allowing it to be gauged by that feature.

Spacing locking screw



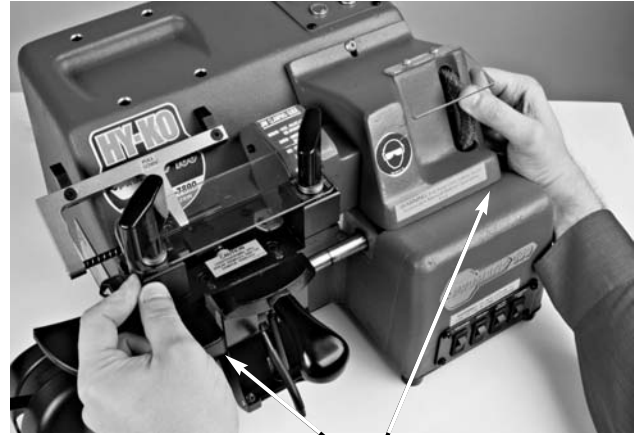
Spacing adjustment dial



- 2) Make sure that the carriage is as far left as it will go and that the gauge fork is in the “up” position.
- 3) Raise the carriage until the tip of the key blank in the left jaw touches the flat, left side of the tracer. Use your left hand on the jaw to maintain this contact.
- 4) While holding the keys in the jaws up to the tracer and cutter, rotate the deburring brush up toward the back of the machine. The brush is mounted on the same spindle as the cutter. Therefore, rotating the brush rotates the cutter.



3

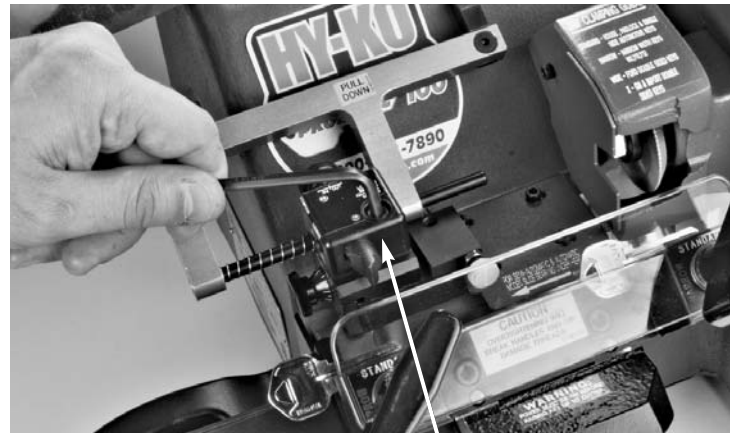


4

- 5) To determine if an adjustment is necessary:
 - a) If you hear the cutter just touching the tip of the key blank in the right jaw and it is making a very slight pinging sound only for a small portion of a full revolution while rotating the deburring brush up towards the back of the machine, then **NO** adjustment is needed.
 - b) If you hear a heavy grinding sound on the tip of the key blank in the right jaw while rotating the deburring brush up towards the back of the machine, then the spacing needs to be adjusted.
 - c) If you hear nothing at all when rotating the deburring brush up towards the back of the machine, then the spacing needs to be adjusted.

Spacing Adjustment Instructions

- 1) Lower the carriage back down to the locked down position.
- 2) Using a 3/16" allen wrench, loosen the screw on top of the tower assembly. Just break it loose. **DO NOT** remove the screw.



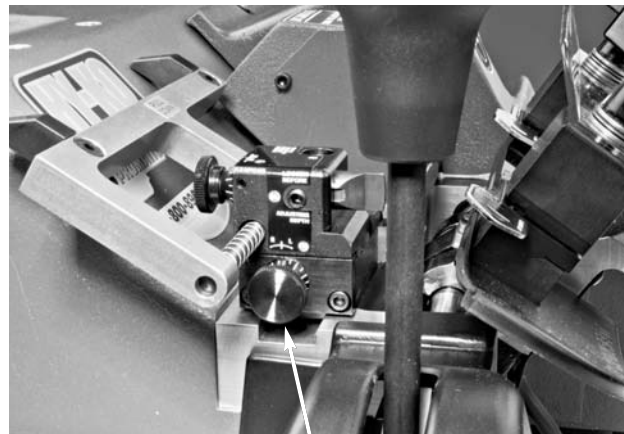
2

- 3) If a heavy grinding sound was heard, turn the spacing adjustment dial clockwise. This will move the tracer to the **LEFT**, farther away from the cutter.

If no sound was heard, turn the spacing adjustment dial counterclockwise. This will move the tracer to the **RIGHT**, closer to the cutter.

Note: It is recommended to only rotate the dial no more than 2-4 marks on the dial at a time before re-checking.

- 4) After making the adjustment, tighten the screw on top of the tower assembly using the 3/16" allen wrench.
- 5) Go back to the section on "How to Determine the Need for a Spacing Adjustment" to see if you need to make any further adjustments.



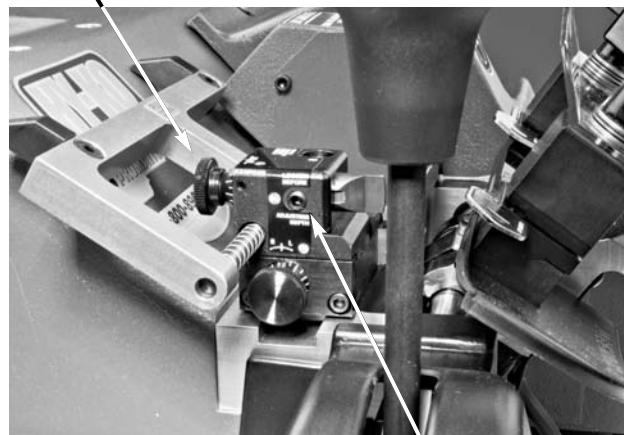
Spacing adjustment dial

Depth Calibration

The depth is the distance, in-and-out, that the tracer is compared to the cutter. This distance must match to have keys cut to the proper depth. The depth is adjusted by moving the tracer in or out as needed.

Depth needs to be adjusted when a new cutter is installed as well as periodically if a high volume of keys are duplicated on the machine. Depth is the most likely adjustment that will be needed as keys are cut. As a cutter is used it wears and will get smaller in diameter. The tracer will have to be moved to compensate for this.

Depth adjustment dial



Depth locking screw

Tools Needed for Spacing Calibration

1/8" allen wrench

How to Determine the Need for a Depth Adjustment

Note: FOR SAFETY, MAKE SURE THE MAIN POWER IS OFF OR UNPLUG THE MACHINE FROM ITS POWER SOURCE.

- 1) Select the standard jaw setting and place two identical KW1 key blanks, as you would normally, in the jaws. The keys do not need to be gauged by the gauge fork, as long as they are in relatively similar positions in the jaws.



- 2) Move the carriage all the way to the left by pushing down on the carriage handle to the left.
- 3) Raise the carriage by unlocking it using the trigger. Fully squeeze the trigger to allow the roller bearing to go under the pressure plate.



3



3

- 4) Guide the roller bearing under the pressure plate while keeping the carriage pulled back slightly so the keys do not touch the cutter and tracer.

***Note:** You want to position the key in the left jaw so that the tracer touches the key close to, but not touching the shoulder. An exact position is not necessary. You will be checking along different parts of the key.*



4

- 5) Since the keys in the carriage are being held up to the tracer and cutter there is no reason to hold it. Use your right hand to rotate the deburring brush up toward the back of the machine. The brush is mounted on the same spindle as the cutter. Therefore, rotating the brush rotates the cutter.



5

- 6) To determine if an adjustment is necessary:
- If you hear the cutter just touching the edge of the key blank in the right jaw and it is making a very slight pinging sound only for a small portion of a full revolution while rotating the deburring brush up towards the back of the machine, then **NO** adjustment is needed.
 - If you hear a heavy grinding sound on the edge of the key blank in the right jaw while rotating the deburring brush up towards the back of the machine, then the spacing needs to be adjusted.
 - If you hear nothing at all when rotating the deburring brush up towards the back of the machine, then the spacing needs to be adjusted.
- 7) To check in another spot on the key, pull back slightly on the carriage just enough so that the keys are not touching the cutter and tracer. Use the carriage handle on the left to then move to a new spot on the keys for checking.

Note: It is always good to check on two or three spots along the blade of the key. If you there is a noticeable difference when checking, such as one spot has a heavy grinding and another spot there is no sound, then check to make sure that the keys are seated flat in the jaws and that the jaws are seated properly on the jaw seat.

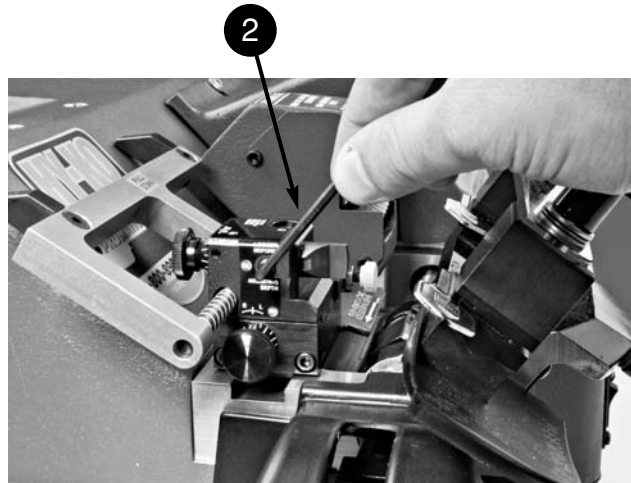


Depth Adjustment Instructions

- Lower the carriage back down to the locked down position.
- Using a 1/8" allen wrench, loosen the screw on the left side of the tower assembly. Just break it loose. **DO NOT** remove the screw.
- If a heavy grinding sound was heard, turn the depth adjustment dial to the right. This will move the tracer farther **OUT** of the tower assembly which in turn will move the key in the right jaw farther away from the cutter.

If no sound was heard, turn the depth adjustment dial to the left. This will move the tracer farther **IN** the tower assembly, which in turn will move the key in the right jaw closer to the cutter.

Note: It is recommended to only rotate the dial no more than 2-4 marks on the dial at a time before re-checking.



- 4) After making the adjustment, tighten the screw on top of the tower assembly using the 3/16" allen wrench.
- 5) Go back to the section on "How to Determine the Need for a Depth Adjustment" to see if you need to make any further adjustments.

Testing for Calibration Accuracy

To ensure that the adjustments made to the machine are accurate, the following steps are advised.

- 1) Locate a new, "quality" padlock key and make a duplicate key of the original key following the instructions in this manual.

Note: For this test, duplicating the key in the automatic mode is preferred since the feed and speed are controlled.

- 2) Insert the newly cut key in the lock to ensure it works. It should operate smoothly with no hesitation.

Note: If the first key did not work, try cutting another key. The calibration may be OK. The key may have been miscut due to gauging. Take your time to properly gauge the key and try again.

How to Replace the Deburring Brush

There is no warranty on the deburring brush. Therefore it should be treated with care just like the cutter. It will wear down with usage. A newly cut key only needs a "light brushing". Pressing harder will only cause the brush to wear down quicker. When the bristles extend only 1/4" from the hub, it is time to replace the brush.

Tools Needed for Spacing Calibration

5/32" allen wrench

1/2" open-ended wrench – qty. 2

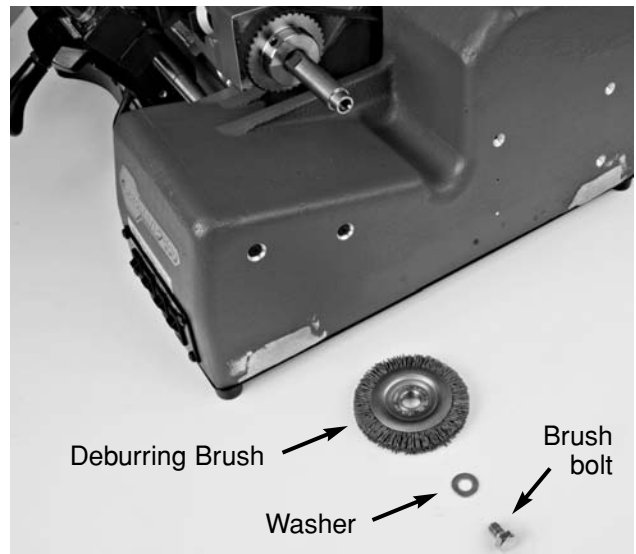
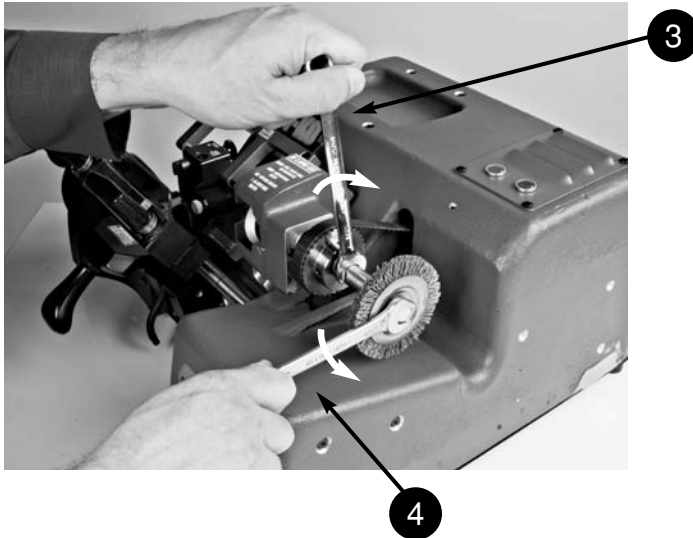
Deburring Brush Replacement Instructions

Note: FOR SAFETY, MAKE SURE THE MAIN POWER IS OFF OR UNPLUG THE MACHINE FROM ITS POWER SOURCE.

- 1) Using a 5/32" allen wrench, remove the screw attaching the brush guard assembly to the machine housing.



- 2) Remove the brush guard assembly.
- 3) Position the 1/2" open-ended wrench on the flat surfaces of the spindle closest to the brush. Keep pressure on it by pushing to the back to keep it from turning.
- 4) Position the other 1/2" open-ended wrench on the brush bolt and turn it counterclockwise to loosen it.



- 5) Manually unscrew the brush bolt and remove the bolt and washer.
- 6) Remove and discard the worn brush.
- 7) Install the new brush. It does not matter which way it goes on. Then replace the washer and the brush bolt.
- 8) Use the two 1/2" open-ended wrenches to securely tighten the brush bolt.
- 9) Replace the brush guard assembly.
- 10) Using a 5/32" allen wrench, tighten the screw to secure the brush guard assembly to the key machine.



Troubleshooting Guide

The following are possible issues and solutions that may or may not be relevant to your situation. For further assistance, please contact Customer Service.

ISSUE: The cutter and brush run constantly when the main power is on. The only way to stop the cutter and brush is to turn the main power off.

SOLUTION: The brush switch needs to be replaced. It is a momentary (spring-loaded) switch that is fused in the 'ON' position which makes the key machine think that someone is constantly pressing the switch. Sometimes it will feel sticky or sluggish and will not spring back to the 'OFF' position. This is because shavings or dirt could have built up behind the switch. It is part number KZ-MP0038. It is very easy to replace the switch out in the field. Just remove the 4 screws on the front switch panel and carefully pull out the panel to expose the back of the switches. Disconnect the old brush switch making sure to remember the order of the wires. Pop out the old switch by pressing the tabs and then snap in the new switch. Replace the wires in the correct order. Finally, mount the switch plate back onto the key machine.



KZ-MP0038 - Brush switch

Troubleshooting Guide

ISSUE: When bringing up the carriage to cut a key the vacuum turns on but the cutter and brush will not turn. Also, pressing the brush switch does not turn on the cutter and brush. The machine does have power to the unit shown by the red light on top when the main power button is on.

SOLUTION: This is due to someone “cold starting” the machine. Someone has brought a key up against the cutter and then turned on the main power. The thermal overload switch has been popped on the main motor. They need to remove the white plastic cap on the back of the machine and press the rubber button inside the machine. It can be very hard to push in sometimes. The back end of a Sharpie pen or something else blunt may help. The more that the switch is popped the harder it will be to reset eventually causing the motor to burn up. The thermal overload switch is sometimes confused with the breaker on the back panel. That is only for when there is no power at all to the machine. If there is power to the machine, the red light will be illuminated on the top of the machine when the main power is on.



Remove the white cap



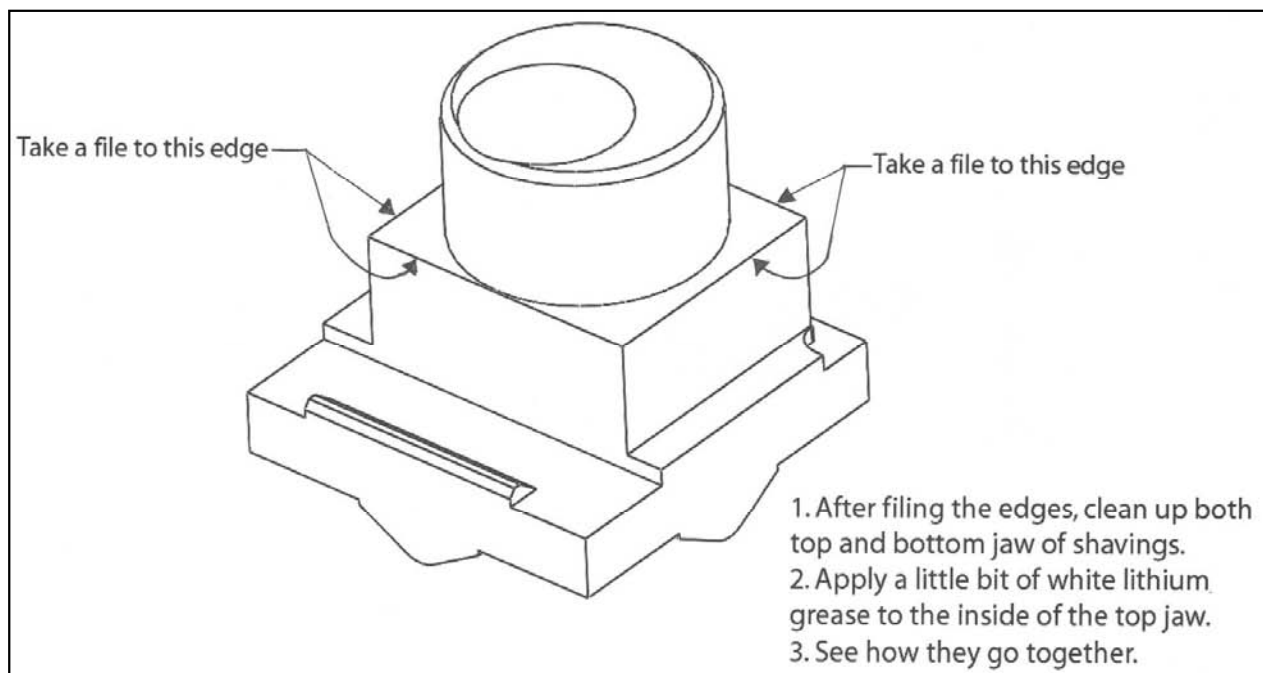
Motor reset button

When standing in front of the key machine, the motor reset button is located around the back-left side. It is not on the back switch plate where the vacuum plugs in and the power cord enters the machine. That is the location of a 15 amp breaker.

Troubleshooting Guide

ISSUE: The jaws keep sticking and won't come apart. They have to get a screwdriver to pry them apart. This is caused by someone opening up the jaws too much so that the top and bottom jaws are completely apart on the jaw assembly. Then when they try to tighten them back down they are not completely aligned and as the jaws are aligned by the pressure of tightening down, a small burr is created as the top jaw fits over the bottom jaw.

SOLUTION: Pry apart the jaws using one or two screwdrivers. Once they are apart take a small file and file the four edges as noted on the following drawing which can be faxed to the customer. Just go over the edges lightly to take off any slight burr that may be there. Wipe the jaws completely clean and put a very light coat of white lithium grease on the inside walls of the top jaws. Re-assemble the jaws.



Troubleshooting Guide

ISSUE: The machine seems to have lost tension when cutting a key. The cutter just skims across the key and does not go all the way down into the cuts. It will cut fine in manual and semi-automatic mode, but not automatic.

SOLUTION: The cutter is probably very dull. The reason it works in manual and semi-automatic modes is because the person is applying extra pressure on the carriage to compensate for the dull cutter. They should put on a new cutter and re-calibrate the machine. If the cutter is fairly new it probably hit the jaw causing it to become dull prematurely. A new cutter will have to be put on with particular attention paid to the carriage stop adjustment. It is extremely rare that the carriage spring (KZ-MP0174) has lost tension. If they say that they can get it to cut a key in manual or semi-automatic mode by applying more pressure, then it is the cutter that needs to be replaced.



Carriage spring at rest



PROMATIC-100 Cutter
Part No. KMC8

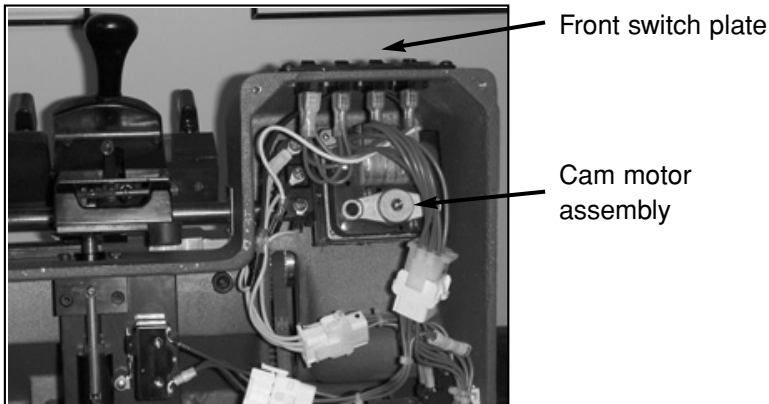


Carriage spring engaged

Troubleshooting Guide

ISSUE: The customer can hear the cam motor running but it doesn't push the carriage over to the left. This issue can be determined by noticing that the green light on top of the key machine stays on and the cam does not move the carriage over at all.

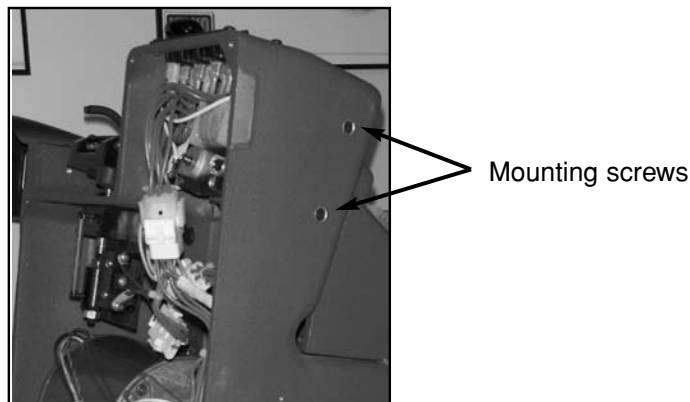
SOLUTION: The gear in the cam motor is stripped not allowing the cam to turn. The cam motor assembly will have to be replaced. The part number is KZ-SA0008. This probably occurred when the carriage handle on the left of the machine was blocked from going down as the carriage moved to the left. This put pressure on the cam and ultimately stripped the cam motor gear. The cam motor assembly is located just behind the front switch plate. Flip the machine up on its back side. Take the bottom cover off the machine using a 9/64" allen wrench and disconnect the white plug between the blue and yellow wires leading to the cam motor from the wiring harness. Remove the two flat-head hex screws on the outside, right-hand side of the machine using a 3/32" allen wrench. The assembly will come out completely. It may help to remove the four screws on the front switch plate and allow it to come forward, out of the machine to give more room for removing the old cam motor assembly and installing the new one.



White plug to disconnect



Cam Motor Assy.
Part No. KZ-SA0008

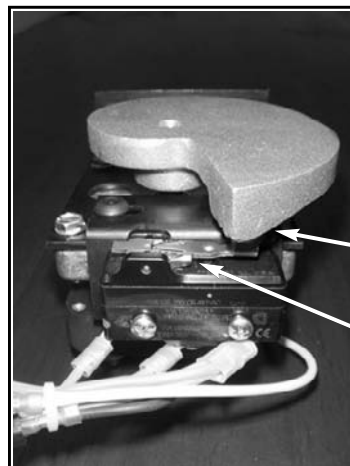


Troubleshooting Guide

ISSUE: The cam motor keeps spinning constantly when the machine is turned on causing it to push the carriage over to the left. To get it to stop they have to turn the machine off at the end of the cam cycle so they can start the next key without the cam being in the way. This issue can be determined by noticing that the green light on top of the key machine stays on and the cam is spinning causing it to get in the way of the carriage.

SOLUTION: The microswitch is out of adjustment. They can adjust the microswitch easily by first removing the cam motor assembly. To do this, move the carriage all the way to the left, unplug the machine and then flip it up on its back. Take the bottom cover off the machine using a 9/64" allen wrench and disconnect the white plug between the blue and yellow wires leading to the cam motor from the wiring harness. Remove the two flat-head hex screws on the outside, right-hand side of the machine using a 3/32" allen wrench. The assembly will come out completely. It may help to remove the four screws on the front switch plate and allow it to come forward, out of the machine to give more room for removing the old cam motor assembly and installing the new one. Use a needle-nose pliers and carefully bend the roller arm slightly up towards the cam. When you rotate the cam around the microswitch it will click when it is just over halfway up the hill of the cam which is the end of the cycle. You can test it by plugging it in and running it before putting it back in the machine. Do this by holding onto the main assembly bracket so as not to interfere with the rotating cam while it is running.

*ALSO REFER TO
PICTURES ON
PREVIOUS ISSUE*



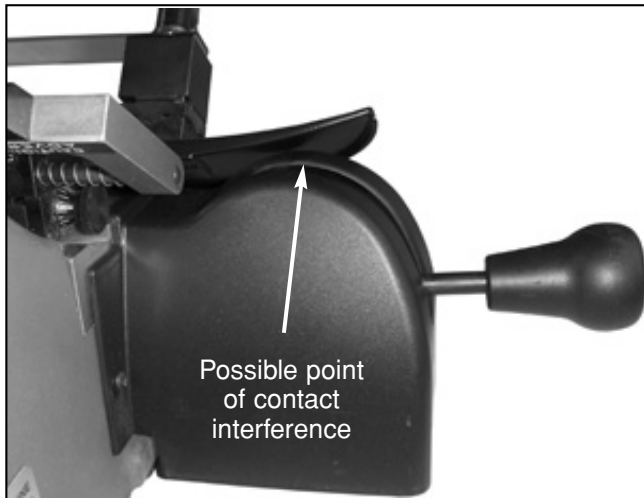
Hill on cam

Bend roller arm
up slightly

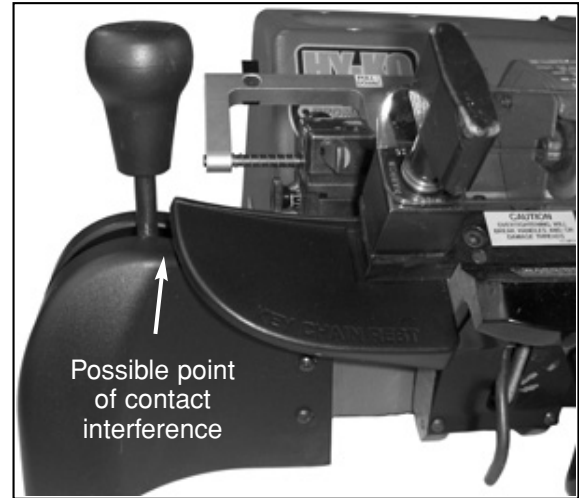
Troubleshooting Guide

ISSUE: After cutting a key in automatic or semi-automatic mode the key machine does not stop running. However, it will turn off when brought down after cutting a key in manual mode.

SOLUTION: When standing in front of the key machine, the motor reset button is located around the back-left side. It is not on the back switch plate where the vacuum plugs in and the power cord enters the machine. That is the location of a 15 amp breaker.



Back view



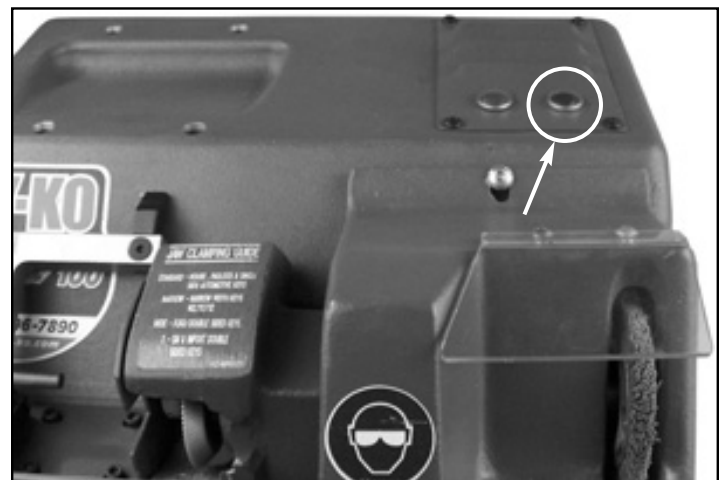
Front view

ISSUE: After cutting a key in automatic mode, the carriage will not move back to the right so they can set up to cut another key.

SOLUTION: The main power may have been turned off before the cam motor finished going back to its home position. While watching the green light on top of the key machine, turn the main power on. The green light will probably turn on for a second or two before going back out. Once it goes out, the carriage should be able to go back to the right so they can cut another key.



Turn the main power back on while...

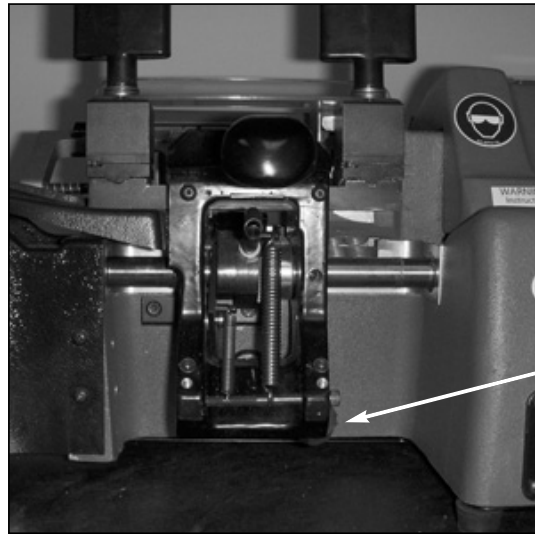


...watching for the green light

Troubleshooting Guide

ISSUE: If you notice that when the carriage is down and you move it left or right, with the handle at the left, the carriage will jump or make a weird noise. It doesn't travel smoothly.

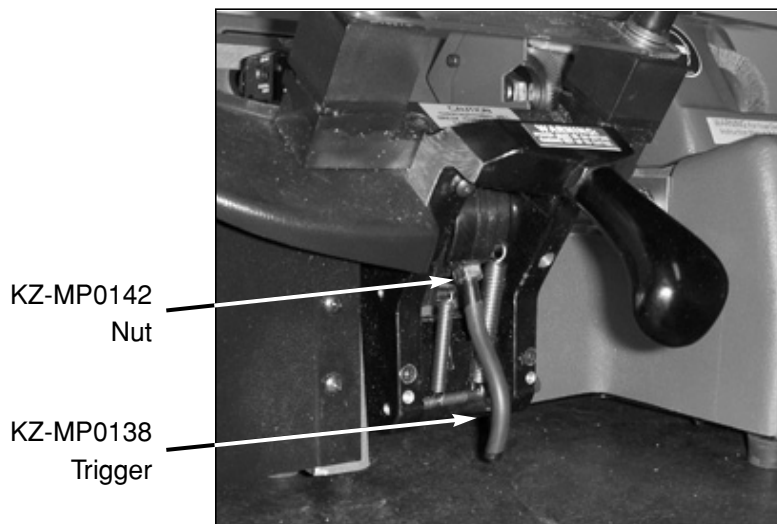
SOLUTION: The carriage has a rubber bumper on the back side of it towards the bottom. This is dragging on the wall of the key machine casting. There is nothing wrong with it. If they want to move more smoothly, bring the carriage up just a little bit and the rubber bumper will not be touching anymore.



Rubber bumper located on back side of carriage

ISSUE: The trigger broke off and needs to be replaced.

SOLUTION: You must remove the portion that is in the left in the cam block. You can do this by removing the front plate on the carriage. To get the carriage up, as if you were going to start it in the automatic cycle, pull up on the nut. Once the roller bearing is under the pressure plate, you can unscrew the nut and remove what is left of the trigger. Once you remove the what is left of the trigger you can temporarily use a 1/4-20 bolt until the new trigger arrives. The part number for the new trigger is KZ-MP0138 and the nut to lock it down is KZ-MP0142.



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The express limited warranty set forth below is given by Hy-Ko Products Company (Hy-Ko) with respect to the Hy-Ko brand key machine that you have purchased, when purchased and used in the United States. The product that you have purchased is the only product to which this warranty card and the limited warranty provided by Hy-Ko and stated on the card apply.

Your product, when delivered to you in new condition in its original container, is expressly warranted against defects in materials and workmanship as follows: for a period of 18 months from the date of original purchase, defective parts or a defective product returned to a Hy-Ko repair facility, upon inspection, will be exchanged for new or comparable rebuilt parts, or a refurbished product, as determined by the Hy-Ko repair facility. Warranty repair or replacement shall not extend the original warranty period of the defective product. This express limited warranty does not cover any supplies or accessories, as to which there shall be no warranty or replacement.

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- (b) Use of parts or supplies (other than those sold by Hy-Ko) that cause damage to the product or cause abnormally frequent service calls or service problems.
- (c) If the product has had its serial number or dating altered or removed.

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