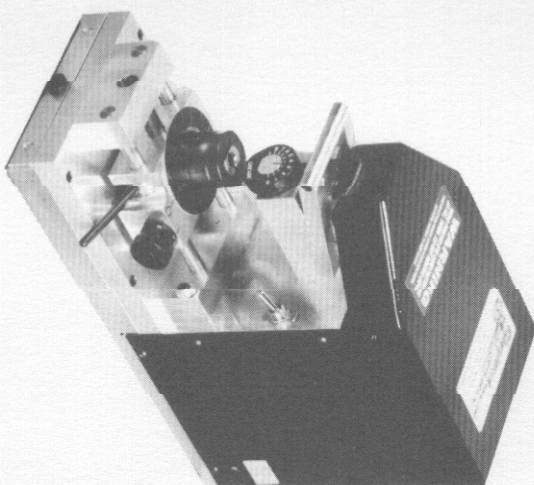
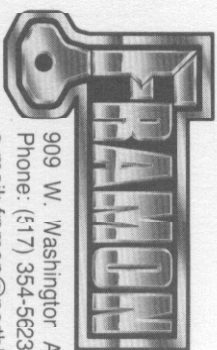


Framon TKM-100



**NEW AREA CODE
(989)**



909 W. Washington Ave., Alpena, Michigan 49707
Phone: (517) 354-5623 Fax: (517) 354-4238
e-mail: framon@northland.lib.mi.us

MANUFACTURING COMPANY, INC.

Mfr:

Key diameter
Key blank No.:
No. of steps:
Drop
No. of cuts:

- 0 -.
- 1 -.
- 2 -.
- 3 -.
- 4 -.
- 5 -.
- 6 -.
- 7 -.
- 8 -.
- 9 -.

Use # spacing plate.

Use depth cam.

Set side depth at . for standard cuts.

Set side depth at . for master cuts.

Set side depth at . for ward cuts.

Set vertical ceptn at # cut for ward cuts.

Mfr:

Key diameter:
Key blank No.:
No. of steps:
Drop:
No. of cuts:

- 0 -.
- 1 -.
- 2 -.
- 3 -.
- 4 -.
- 5 -.
- 6 -.
- 7 -.
- 8 -.
- 9 -.

Use # spacing plate.

Use depth cam.

Set side depth at . for standard cuts.

Set side depth at . for master cuts.

Set side depth at . for ward cuts.

Set vertical depth at # cut for ward cuts.

The Framon TKM-100 is a versatile and durable key machine which cuts very accurate tubular keys according to the predetermined manufacturers depth and cut positions. Included with the machine is a precision depth indicator used to determine cut cepts, depth cams and spacing plates for pin tumbler tubular locks and cutting data for the various manufacturers tubular keys.

Please read all of the following information and instructions thoroughly. This information will prove to be invaluable for the proper use of the TKM-100 Tubular Key Machine.

PARTS DESCRIPTION

Slide Block. The slide block assembly includes the chuck, woodruff key, chuck lock pin, spacing cam, and locking arm (Fig. 1).

The slide block is moved through three positions when cutting a key: when the block is in the position shown in Figure 2, a key can be loaded or unloaded. When it is in the position shown in Figure 3, located under the cam, the key height will be set. When the block is in the position shown in Figure 4, the key is in the cutting position.

The chuck consists of a chuck body, a chuck closer and a set of collets. The chuck is fixed in the turntable in such a manner as to allow the chuck to be rotated by hand for spacing positions around the key blank. When the woodruff key is aligned with the index mark (Fig. 5), the lock pin can be pushed in to lock the chuck.

The chuck lock pin prevents rotation of the chuck body when loading, unloading, and setting key blank height. When the key is inserted in the collet, the chuck closer can be tightened without having the chuck rotate. This is done by hand pressure only (see cutting procedure for full instructions).

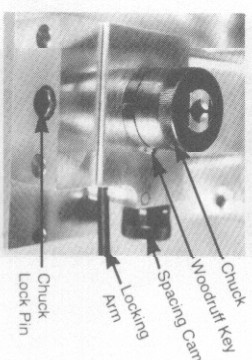


Figure 1

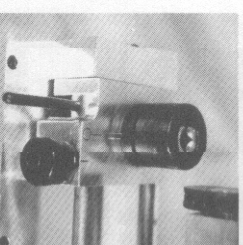


Figure 2

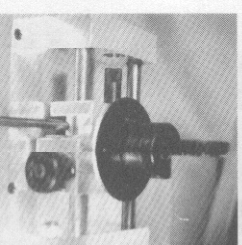


Figure 3

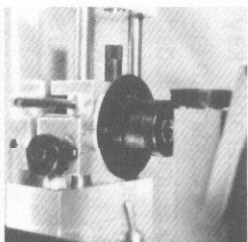


Figure 4

The chuck closer, when turned clockwise, forces both halves of the collet against the key blank for a solid four point grip. The two piece collet and the construction of the chuck allows this one chuck to hold almost all diameter key blanks.

The spacing cam (Fig. 6) is rotated to the correct number, which sets the side depth of cut for different diameter keys. Once the correct setting is made, the locking arm is pushed upward to prevent movement of the slide block while cutting a key (Fig. 7).

On the slide block itself is an end view of a tubular key (Fig. 8). When loading a key, it must be inserted as shown into the chuck

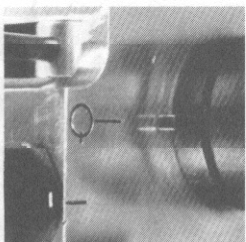


Figure 5

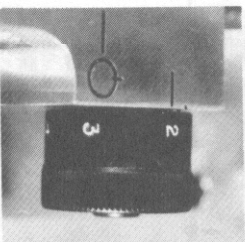


Figure 6

Spacing Cam-The spacing cam has six different positions. They are as follows
1-standard diameter (.375), regular cuts
2-standard diameter (.375), master cuts
3-small diameter (.365), regular cuts
4-small diameter (.365), master cuts
5-large diameter (.400), regular cuts
6-large diameter (.400), master cuts
Each individual depth and space chart will list which position to use.

Spindle Assembly-The spindle assembly consists of the spindle and attached cutter, spindle lever, and spindle housing.

The spindle travels in a vertical motion to make the actual cuts in the blank when the spindle lever is pushed in a downward motion. Spring pressure returns the spindle to its normal position when the lever is released.

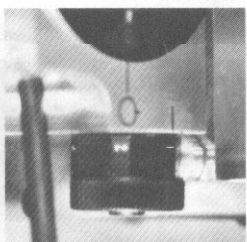


Figure 7

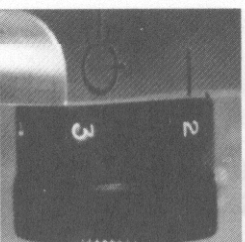


Figure 8

Mgr:
Key diameter: 0 -
Key blank No.: 1 -
No. of steps: 2 -
Dip: 3 -
No. of cuts: 4 -
5 -
6 -
7 -
8 -
9 -

Use # spacing plate.
Use depth cam.

Set side depth at for standard cuts.
Set side depth at for master cuts.

Set side depth at for ward cuts.
Set vertical depth at # cut for ward cuts.

Mgr:
Key diameter: 0 -
Key blank No.: 1 -
No. of steps: 2 -
Dip: 3 -
No. of cuts: 4 -
5 -
6 -
7 -
8 -
9 -

Use # spacing plate.
Use depth cam.

Set side depth at for standard cuts.
Set side depth at for master cuts.

Set side depth at for ward cuts.
Set vertical depth at # cut for ward cuts.

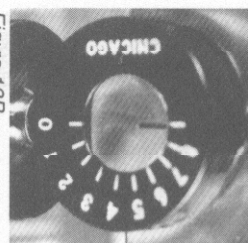


Figure 13B

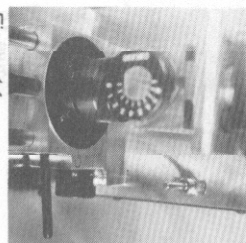


Figure 14



Figure 15

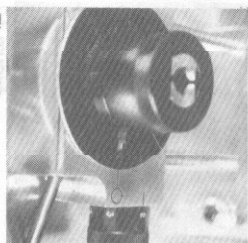


Figure 16

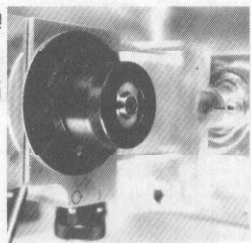


Figure 17

removed, be sure to wipe off the top end before replacing it. Allow the cutter to bottom out firmly and tighten the set screw.

Information Book - Included are a number of depth and space charts. Much of this information was gained from our measurements and some from helpful locksmiths.

The depth and space charts give information in relation to each manufacturer. To cut keys properly, it is critical that the manufacturer be known. The Cuts of Various Keys chart on pages 20 and 21 shows the depths each uses. You will note that the variation between the manufacturers depth in most cases are very slight on the shallower depths and much greater on the deeper cuts.

Reading by eye will not show these differences. The depth indicator is supplied for determining exact depth of cuts, then determining what manufacturers' chart should be used. When the correct information is known, the proper depth cam and spacing plate can be selected. Also note that some manufacturers use reverse reading for the depth of cut.

Cutting depths and measurements are from the face of the blank toward the bow of the plank. Side depths are measured from the outer perimeter of the blank toward the center of the blank. Standard cuts normally do not break through the wall of the blank nor do ward cuts. Master cuts and cuts-within-cuts do break through the side wall.

Not all blanks are perfectly round. They may be out of round by as much as .012".

— TUMBLER DATA —

| Code | Chicago | American | Fort | Dominion | Unican | Zipf | Lab | Segal |
|------|---------|----------|----------|----------|--------|------|------|-------|
| 0 | (.185) | | 185 - X | | 175 | | | |
| 1 | .2025 | .180 | .202 - 0 | .200 - 0 | .200 | .203 | .204 | |
| 2 | .218 | .195 | .218 - 1 | .216 - 1 | | .218 | .219 | .220 |
| 3 | .2335 | .210 | .233 - 2 | .232 - 2 | .225 | .234 | .234 | .240 |
| 4 | .249 | .225 | .249 - 3 | .248 - 3 | .250 | .249 | .249 | |
| 5 | .2645 | | .264 - 4 | .264 - 4 | | .265 | .264 | .260 |
| 6 | .280 | | .280 - 5 | .280 - 5 | .275 | .280 | .279 | .280 |
| 7 | .2955 | | .296 - 6 | .296 - 6 | | .295 | .294 | .300 |
| 8 | (.311) | | .311 - 7 | .312 - 7 | | | | |
| Dia. | .078 | .094 | .078 | .077 | .079 | .078 | .077 | .094 |
| BSHG | .185 | .151 | .185 | unk | .176 | --- | --- | .188 |
| DRVR | varies | .180 | .201 | .202 | .175 | .125 | .125 | .170 |
| | | | | | | .140 | .141 | |
| | | | | | | .180 | .180 | |

Greenwald: similar to Chicago; codes to GR8999 all odd, GR9000 starts even cuts.

Dynalock: appears like Unican; not verified.

| | | |
|-------------------------|--------------------|-----|
| Mfr: | | 0 - |
| Key diameter: | | 1 - |
| Key blank No.: | | 2 - |
| No. of steps: | | 3 - |
| Drop: | | 4 - |
| No. of cuts: | | 5 - |
| | | 6 - |
| | | 7 - |
| | | 8 - |
| | | 9 - |
| | | |
| Use # | spacing plate. | |
| Use | depth cam. | |
| Set side depth at . | for standard cuts. | |
| Set side depth at . | for master cuts. | |
| Set side depth at . | for ward cuts. | |
| Set vertical depth at # | cut for ward cuts. | |
| | | |
| Mfr: | | 0 - |
| Key diameter: | | 1 - |
| Key blank No.: | | 2 - |
| No. of steps: | | 3 - |
| Drop: | | 4 - |
| No. of cuts: | | 5 - |
| | | 6 - |
| | | 7 - |
| | | 8 - |
| | | 9 - |
| | | |
| Use # | spacing plate. | |
| Use | depth cam. | |
| Set side depth at . | for standard cuts. | |
| Set side depth at . | for master cuts. | |
| Set side depth at . | for ward cuts. | |
| Set vertical depth at # | cut for ward cuts. | |

Spacing Plates - Seven spacing plates are provided with each machine (Fig. 9). These plates cover almost all of the tubular keys used today.

1. Ace Standard 7 Pin-positions common 7 tumbler cuts.
2. Offset Right 7 Pin - positions Chicago offset right cuts.
3. Offset Left 7 Pin - positions Chicago offset left cuts.
4. National Keyset - positions National Keyset.
5. Ace Change-matic 8 Pin - positions special Chicago Change-matic cuts.
6. Segal 8 Pin - positions Segal.
7. Universal - 360 wheel to position cuts at other locations. This plate is graduated in 2 increments around the full 360 circumference of the plate. It can be used by first determining the spacing on the blank, then converting this spacing to the spacing on the universal plate.

The spacing plates are placed over the chuck with the notch set over the woodruff key on the side of the chuck (Fig. 10).

Depth Cams - Depth cams are provided for most manufacturers (Fig. 11). These cams are machined to a tolerance of plus or minus .001". The cam hub on the spindle housing has a detent ball which applies pressure to the cam to prevent turring. The depth cams are double sided.

Cutters - The cutter furnished with the TKM-100 (Part #TCA1001) is a solid carbide, six fluted cutter. If the cutter is



Figure 9

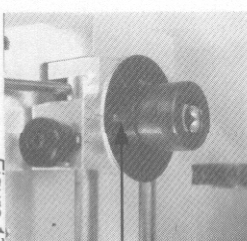


Figure 10

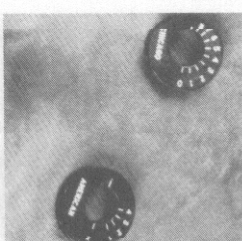


Figure 11

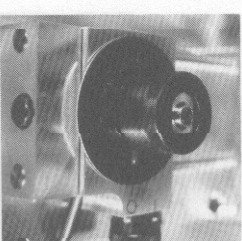


Figure 12



Figure 13A

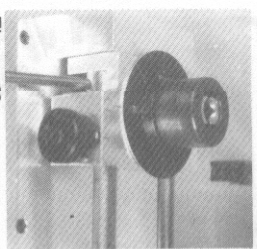


Figure 23

arm to secure the slide block in place (Fig. 14). So that the chuck can be rotated, the lock pin must be pulled out. The key is now in the cutting position and the chuck can be rotated.

The depths of cut are controlled by the proper depth cam which straps on the hub and is then rotated to the desired depth setting. Align the proper depth with the index on the hub.

The spacing position is set by rotating the chuck to the desired positions as marked on the spacing discs.

The cutter is fed down onto the end of the key blank by pushing down on the spindle lever until the depth stop screw contacts the depth cam. The cutter moves back up after releasing the handle and the chuck may be rotated to the next position to make that cut.

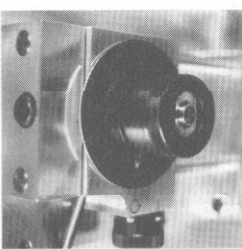


Figure 24

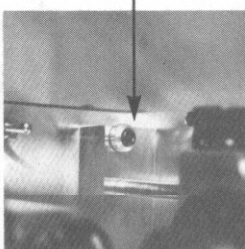


Figure 25

DECODING KEYS

The depth indicator is supplied for decoding keys. You must determine cuts, size of key and manufacturer for proper key cutting.

There are three sizes of tubular keys: .365" dia., .375" dia. and .400" dia. Each diameter key needs a different side depth adjustment.

Set the end of the indicator tip in the cut and push the face of the blank against the hub on the indicator. The reading on the dial will give you the depth of cut. You then use the chart on page 20 to convert to the number of the cut. Example: The indicator reads .046" on the first cut; this equals a #3 cut for Chicago. The second cut reads .031"; this equals a #2 cut for Chicago. Continue taking readings in a counter-clockwise direction until all the cuts are read.

| Mfg: | Unican / Hercules | 0 - .125 |
|---------------|-------------------|-----------|
| Key diameter: | .375 | 1 - .100 |
| Key blank No: | 1137 | 2 - .075 |
| No. of steps: | 6, 0-5 See Note | 3 - .050 |
| Drop: | .025 | 4 - .025 |
| No. of cuts: | 7 | 5 - NoCut |

Use #1 spacing plate.
Use Unican depth cam.

Set side depth at position #1 for standard cuts.
Set side depth at position #2 for master cuts.
Set side depth at position #1 for ward cuts.

NOTE: Unican uses reverse reading for cut depths.

— CUTS - VARIOUS KEYS —

| Code | Chicago | Greenwald | American | Fort | Dominion | Dynalock | Unican | Segal |
|-------|---------|--------------------|----------|--------------|----------|----------|--------|-------|
| 0 | (--) | | | -- X | | -- 5 | -- | |
| 1 | .0155 | .013 | | .017 - 0 | .016 - 0 | | | |
| 2 | .031 | | .030 - 1 | .033 - 1 | .032 - 1 | .025 - 4 | .025 | .026 |
| 3 | .0465 | .043 | .045 - 2 | .048 - 2 | .048 - 2 | .050 - 3 | .050 | .046 |
| 4 | .062 | | .060 - 3 | .064 - 3 | .064 - 3 | | | .066 |
| 5 | .0775 | .074 | .075 - 4 | .079 - 4 | .080 - 4 | .075 - 2 | .075 | .086 |
| 6 | .093 | | | .095 - 5 | .096 - 5 | .100 - 1 | (.100) | |
| 7 | .1005 | .104 | | .111 - 6 | .112 - 6 | | | .100 |
| 8 | (.124) | | | .126 - 7 | .128 - 7 | .125 - 0 | (.125) | |
| Incr. | .0155 | Similar to Chicago | .015 | .015 to .017 | .016 | .025 | .025 | .020 |

As far as side depth clearance is concerned with these blanks, you may have to cut a little deeper to allow pins to enter the cuts.

The features described above allow the TCM-100 to cut any depth required in any position around the circumference of the blank. Depth cuts are controlled by the depth cams; spacing positions are controlled by the spacing plates; and side depth is controlled by the spacing cam and stop screw. These three motions cover all the requirements needed to cut tubular keys.

BASIC OPERATION

The chuck is mounted vertically on the slide block. The first position is the bad position where the blank is inserted fully into the vise and temporarily tightened (Fig. 12). The key must be inserted according to the diagram on the slide block. Make sure that the lock pin is fully engaged, preventing the chuck from turning.

The second position is the set position where the blank is released against the depth cam. The set line on the cam (the line with no number above it) should be aligned with the index mark on the cam hub (Fig. 13A). Loosen the chuck closer, allowing the blank to pop up and touch the cam (Fig. 13B). The key is now set at the proper height for cutting. Tighten the chuck - NEVER use anything but finger pressure to tighten the chuck.

The final position is the cutting position. Select the proper number on the spacing cam, push the slide block firmly against the stop screw, and lift the locking

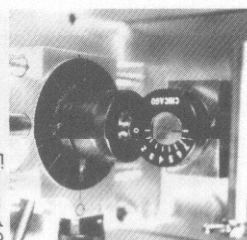


Figure 18

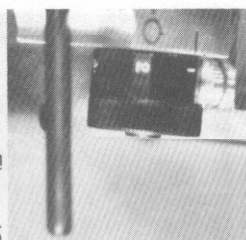


Figure 19

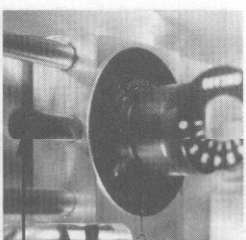


Figure 20

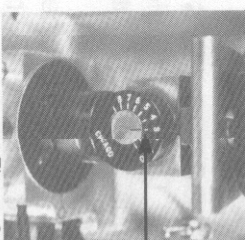


Figure 21

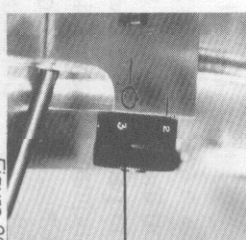


Figure 22

7. To make the first cut, turn on the machine. Hold the chuck so that it doesn't rotate while the cut is being made. Slowly push down the spindle lever as far as it will go. Release the handle so that the spindle will retract to the upper position. The first cut is now made.
8. To make the second cut, rotate the chuck to the second space position on the spacing plate. Rotate the depth cam to the #2 setting and depress the spindle lever. Continue this procedure until all cuts are made.
9. To cut the master cuts, push down the locking arm and bring the slide block slightly towards the user. Turn the spacing cam to the #2 position as indicated by the Chicago depth chart (Fig. 22). Push the slide block back against the stop screw and lift the locking arm.
10. Rotate the chuck to the #3 spacing position. Set the depth cam to the #2 depth and make the cut. Rotate the chuck to the #4 spacing position, set the depth cam to the #4 depth, and make the final cut. The key is now complete. Turn off the machine at this point.
11. Rotate the chuck so that the woodruff key is aligned with the spacing index mark on the slide block (Fig. 23). Push in the locking pin so that the chuck will not rotate.
12. Release the locking arm and bring the slide block back to the key load position (Fig. 24). Loosen the chuck closer to release the key.

The above procedure is used on all tubular keys. The average seven pin key can be cut in less than 30 seconds when the proper combination is known.

| Mfg | Dominion | |
|----------------|----------|----------|
| Key diameter: | .375 | 0 - .016 |
| Key blank No.: | 1137 | 1 - .032 |
| No. of steps: | 3, 0-7 | 2 - .048 |
| Drop | .016 | 3 - .064 |
| No. of cuts: | 7 | 4 - .080 |
| | | 5 - .096 |
| | | 6 - .112 |
| | | 7 - .128 |

Use #1 spacing plate.

Use Dominion depth cam.

Set side depth at position #1 for standard cuts.

Set side depth at position #2 for master cuts.

Set side depth at position #1 for ward cuts.

| Mfg | Dynalock | |
|----------------|-----------------|------------|
| Key diameter: | .375 | 0 - .125 |
| Key blank No.: | 1137 | 1 - .100 |
| No. of steps: | 6, 0-5 See Note | 2 - .075 |
| Drop | .025 | 3 - .050 |
| No. of cuts: | 7 | 4 - .025 |
| | | 5 - No Cut |

Use #1 spacing plate.

Use Dynalock depth cam.

Set side depth at position #1 for standard cuts.

Set side depth at position #2 for master cuts.

Set side depth at position #1 for ward cuts.

NOTE: Dynalock uses reverse reading for cut depths.

| Mfg: | Fort / Gem |
|----------------|------------|
| Key diameter: | 0 - .017 |
| Key blank No.: | 1 - .033 |
| No. of steps: | 2 - .048 |
| Drop | 3 - .064 |
| No. of cuts: | 4 - .079 |
| | 5 - .095 |
| | 6 - .111 |
| | 7 - .126 |

Use #1 spacing plate
Use Fort depth cam.

Set side depth at position #1 for standard cuts.
Set side depth at position #2 for master cuts.
Set side depth at position #1 for ward cuts.

| Mfg: | Taylor |
|----------------|------------|
| Key diameter: | 0 - .125 |
| Key blank No.: | 1 - .100 |
| No. of steps: | 2 - .075 |
| Drop | 3 - .050 |
| No. of cuts: | 4 - .025 |
| | 5 - No Cut |

Use #1 spacing plate.
Use Unican cept cam.

Set side depth at position #1 for standard cuts.
Set side depth at position #2 for master cuts.
Set side depth at position #1 for ward cuts.

NOTE: Taylor uses reverse reading for cut depths.

UNKNOWN LOCK MANUFACTURER

If the brand of the lock is not known, measure the cuts (see decoding key) and then consult page 20. Determine which manufacturers' depth cam to use. Convert the measurements to the depth of cut. Then proceed to cut the key as explained above.

CUTTING PROCEDURE

This is the procedure used to cut a standard tubular key for an Ace lock with a combination of 3245323 and master cuts in the third and fourth position of 2 and 4 respectively. This is a standard size key.

1. The slide block should be towards the front of the machine, with the lock pin engaged. Select the Chicago depth cam and the Ace spacing plate. Push depth cam onto hub and align index mark with the set mark on the cam (Fig. 15) Place the Ace spacing plate over the chuck, aligning the woodruff key with the cut-out on the plate (Fig. 16).
2. Loosen the chuck closer and insert the key according to the slide block diagram. Push the key down far enough so that it will clear the depth cam (Fig. 17). Tighten the chuck closer.
3. Move the slide block until the key is directly under the cam. Loosen the chuck closer. The key will pop upward and make contact with the cam. Tighten the chuck closer. The key is now set to the proper height for cutting. See Figure 18.
4. Set the spacing cam to the #1 position as indicated in the Chicago depth chart. This is the position to make the standard cuts. Push the slide block firmly forward against the stop screw and lift the locking arm upward. This locks the slide block in place. See Figure 19.
5. Pull out the chuck locking pin so that the chuck can be rotated by hand. The chuck and spacing plate can now be turned to position #1 (Fig. 20).
6. Rotate the depth cam so the #3 depth aligns with the index mark on the hub (Fig. 21).

7. To make the first cut, turn on the machine. Hold the chuck so that it doesn't rotate while the cut is being made. Slowly push down the spindle lever as far as it will go. Release the handle so that the spindle will retract to the upper position. The first cut is now made.
8. To make the second cut, rotate the chuck to the second space position on the spacing plate. Rotate the depth cam to the #2 setting and depress the spindle lever. Continue this procedure until all cuts are made.
9. To cut the master cuts, push down the locking arm and bring the slide block slightly towards the user. Turn the spacing cam to the #2 position as indicated by the Chicago depth chart (Fig. 22). Push the slide block back against the stop screw and lift the locking arm.
10. Rotate the chuck to the #3 spacing position. Set the depth cam to the #2 depth and make the cut. Rotate the chuck to the #4 spacing position, set the depth cam to the #4 depth, and make the final cut. The key is now complete. Turn off the machine at this point.
11. Rotate the chuck so that the woodruff key is aligned with the spacing index mark on the slide block (Fig. 23). Push in the locking pin so that the chuck will not rotate.
12. Release the locking arm and bring the slide block back to the key load position (Fig. 24). Loosen the chuck closer to release the key.

The above procedure is used on all tubular keys. The average seven pin key can be cut in less than 30 seconds when the proper combination is known.

| Migr: | Dominion | |
|----------------|----------|----------|
| Key diameter: | .375 | 0 - .016 |
| Key blank No.: | 1137 | 1 - .032 |
| No. of steps: | 8, 0-7 | 2 - .048 |
| Drop: | .016 | 3 - .064 |
| No. of cuts: | 7 | 4 - .080 |
| | | 5 - .096 |
| | | 6 - .112 |
| | | 7 - .128 |

Use #1 spacing plate.

Use Dominion depth cam.

Set side depth at position #1 for standard cuts.

Set side depth at position #2 for master cuts.

Set side depth at position #1 for ward cuts.

| Migr: | Dynalock | |
|----------------|-----------------|------------|
| Key diameter: | .375 | 0 - .125 |
| Key blank No.: | 1137 | 1 - .100 |
| No. of steps: | 6, 0-5 See Note | 2 - .075 |
| Drop: | .025 | 3 - .050 |
| No. of cuts: | 7 | 4 - .025 |
| | | 5 - No Cut |

Use #1 spacing plate.

Use Dynalock depth cam.

Set side depth at position #1 for standard cuts.

Set side depth at position #2 for master cuts.

Set side depth at position #1 for ward cuts.

NOTE: Dynalock uses reverse reading for cut depths.

LUBRICATION

Slide Block - The slide block requires only a slight amount of lubrication to keep it moving back and forth freely. WD-40 or a teflon lubricant is recommended.

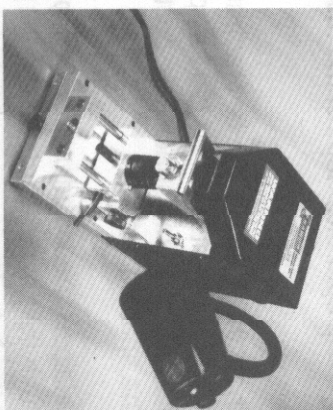
Cam Hub - A little oil on the cam hub is the only other lubricator needed.

Note: When lubricating any parts, excess oil and grease only tend to gum up and collect dirt. Wipe off all excess lubricator before using machine.

WARRANTY

The Framon TKM-100 carries the same warranty as other Framon products. We will repair or replace any product found to be defective as to workmanship or material. This warranty is in effect for a period of one year from the date of purchase. The purchaser must inform Framon Manufacturing Company by telephone or letter and obtain permission before returning any machine. We will not accept any product returned without prior permission.

This warranty does not cover cutters. We feel our cutters are among the finest in use today, but we have no control over their use. This warranty is valid only to the original purchaser.



Optional worklight - A small worklight is available for the TKM-100. Contact your distributor or Framon Manufacturing for more information.

| Mfg. | American | |
|----------------|----------|----------|
| Key diameter: | .375 | 1 - .030 |
| Key blank No.: | 1137 | 2 - .045 |
| No. of steps: | 8-4,1-4 | 3 - .060 |
| Drop | .015 | 4 - .075 |
| No. of cuts: | 7 | |

Use #1 spacing plate
Use American or Chicago depth cam.

Set side depth at position #1 for standard cuts.
Set side depth at position #2 for master cuts.
Set side depth at position #1 for ward cuts.

| Mfg. | Chicago/Ace | 0 - No.Ct |
|----------------|-------------|-----------|
| Key diameter: | .375 | 1 - .0155 |
| Key blank No.: | 1137 | 2 - .031 |
| No. of steps: | 9,0-8 | 3 - .0465 |
| Drop | .0155 | 4 - .062 |
| No. of cuts: | 7 | 5 - .0775 |
| | | 6 - .093 |
| | | 7 - .1085 |
| | | 8 - .124 |

Use #1 spacing plate.
Use Chicago depth cam.

Set side depth at position #1 for standard cuts.
Set side depth at position #2 for master cuts.
Set side depth at position #1 for ward cuts.

| Mfgr: | Chicago/Mastered | 0 - NoCut |
|----------------|------------------|-----------|
| Key diameter: | .403 | 1 - .0155 |
| Key blank No.: | 1137A | 2 - .031 |
| No. of steps: | 4/9,0-8 | 3 - .0465 |
| Drop: | .0155 | 4 - .062 |
| No. of cuts: | 7 | 5 - .0775 |
| | | 6 - .093 |
| | | 7 - .1085 |
| | | 8 - .124 |

Use #1 spacing plate.

Use Chicago depth cam.

Set side depth at position #5 for standard cuts.

Set side depth at position #6 for master cuts.

Set side depth at position #5 for ward cuts.

| Mfgr: | Cop | 0 - .125 |
|----------------|----------------|-----------|
| Key diameter: | .375 | 1 - .100 |
| Key blank No.: | 1137 | 2 - .075 |
| No. of steps: | 6,0-5 See Note | 3 - .050 |
| Drop: | .025 | 4 - .025 |
| No. of cuts: | 7 | 5 - NoCut |

Use #1 spacing plate.

Use Unican depth cam.

Set side depth at position #1 for standard cuts.

Set side depth at position #2 for master cuts.

Set side depth at position #1 for ward cuts.

NOTE: Cop uses reverse reading for cut depths.

ADJUSTMENTS

Depth Adjustment - If the machine is not cutting proper depths, adjustments can be made by the following procedure.

Example: Cut is .002" too deep. Turn the depth stop screw with 3/13" allen wrench (provided): Turning the adjustment screw clockwise makes cuts shallower, turning the screw counter-clockwise makes the cuts deeper (Fig. 25). 1/4 turn of the allen screw is approximately .008".

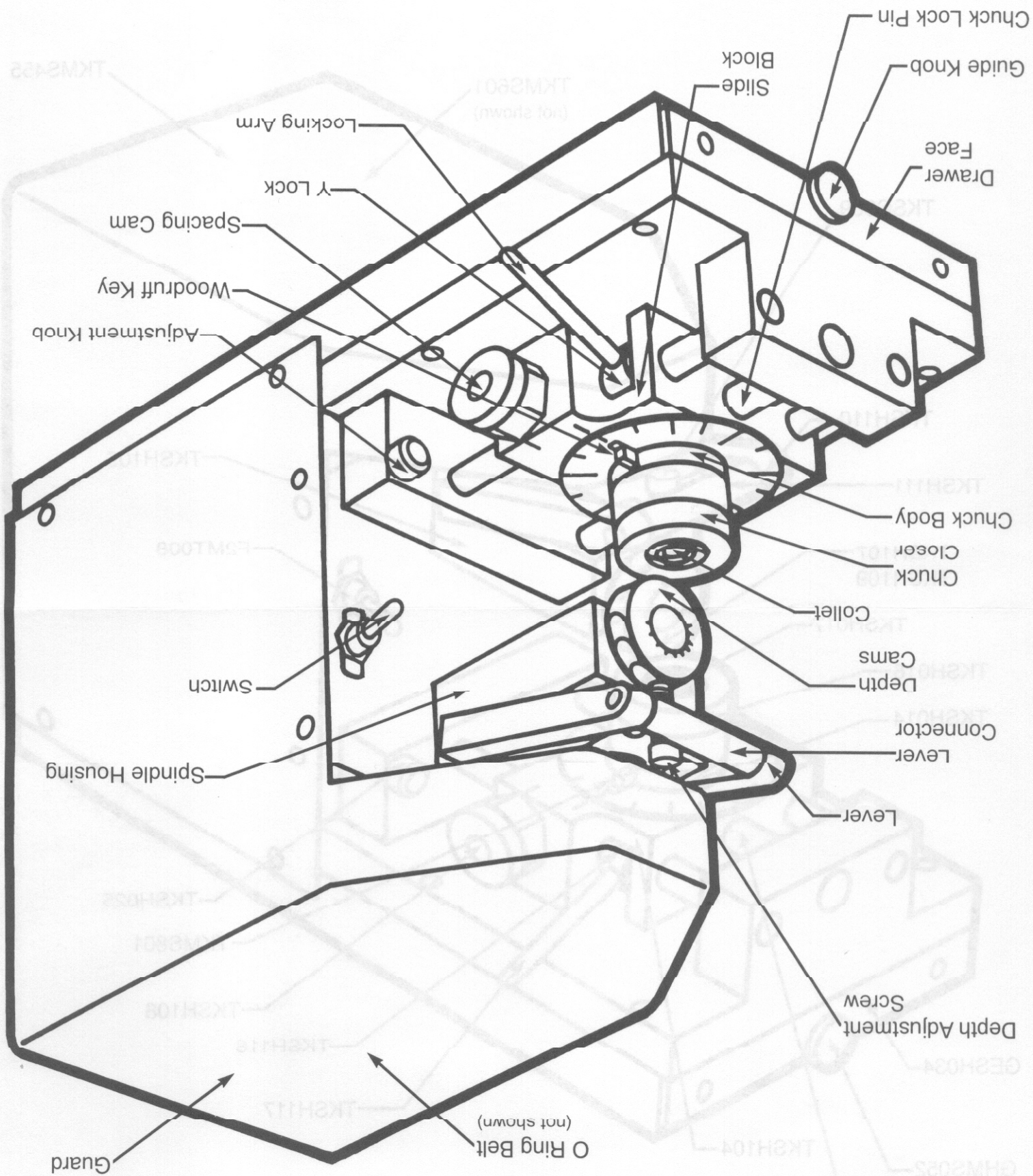
Side Depth Adjustment - The side depth adjustments should be made with a standard size blank. The side depth setting for Ace keys (standard cut) is #1 on the spacing cam. After this setting is made, a cut should be made on each side of the key (space 1 and space 5). Do not remove the key from the chuck. Bring the slide block to the key load position and measure across the inside of both cuts. Dial calipers are ideal for measuring across keys. This measurement should be .325". See the chart on page 12 of the manual for measurements of various keys.

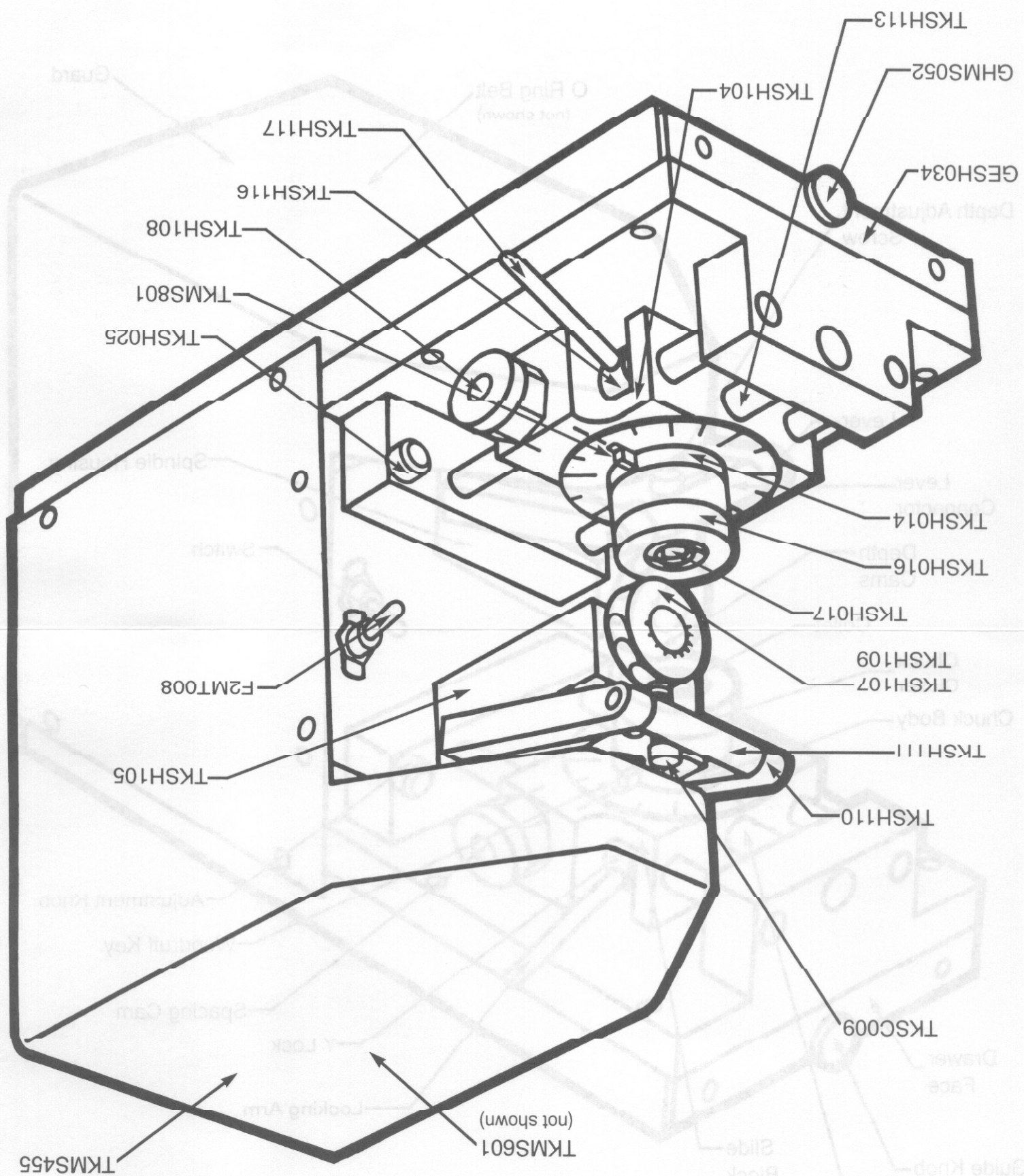
If the measurement is wrong, for example, your reading is .33C", your key is .005" off. Each mark on the stop screw knob is .002". Turn the stop screw clockwise two and a half marks on the stop screw knob (.0025 x 2 sides of key = .005).

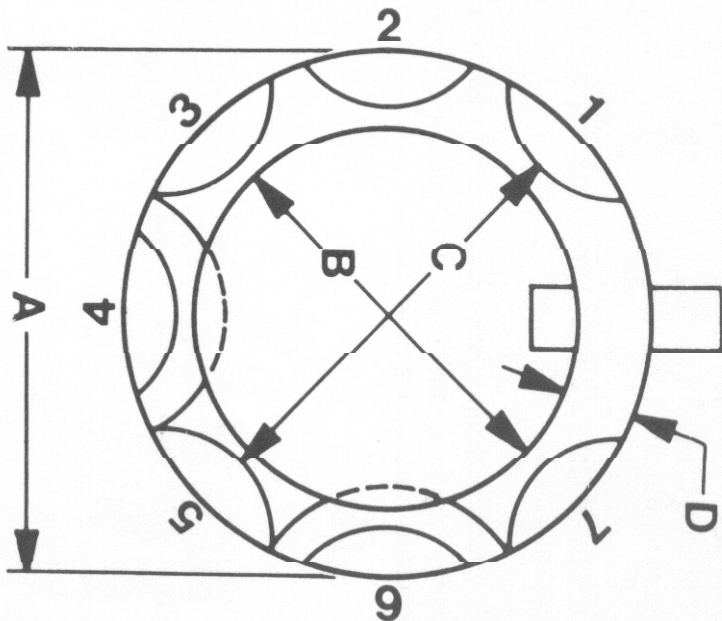
Make two additional cuts in the #2 and #6 spacing positions. If the key is reading the proper side depths, the machine is properly calibrated.

By using this method, the machine can be readjusted using only one key blank. No adjustments are needed for spacing around the perimeter of the key. This spacing is controlled by the graduations on the spacing plates.

Indicator - If the indicator needs adjustment, simply use any flat piece of metal. Push the post upward with the flat piece of metal and hold against the hub. The pointer should be on "0". If not, loosen the thumb screw for the dial and rotate the dial face until pointer is aligned with "0". Tighten the thumb screw.







| Blank Number | Lock Mfg | A | B | C | D |
|--------------|--------------|------|------|------|-------|
| 1137 | All | .375 | .312 | .325 | .0315 |
| 1137 | Chicago Mas. | .400 | .326 | .340 | .037 |
| 1137S | Chicago etc. | .365 | .300 | .305 | .032 |
| K1137 | Fort Mas. | .375 | .285 | .300 | .045 |

This chart is provided to check accuracy of cut keys and for measurements needed to readjust key machine when necessary. Blanks will vary slightly according to manufacturers tolerances. All adjustments should be set with an 1137 key blank with O.D. of .375 and I.D. of .312. Measurement across "C" should be .325 or less. When making side adjustments, remember that correction should be half the distance to be corrected. Side depths will work better if cut is slightly deeper than if cut is too shallow.