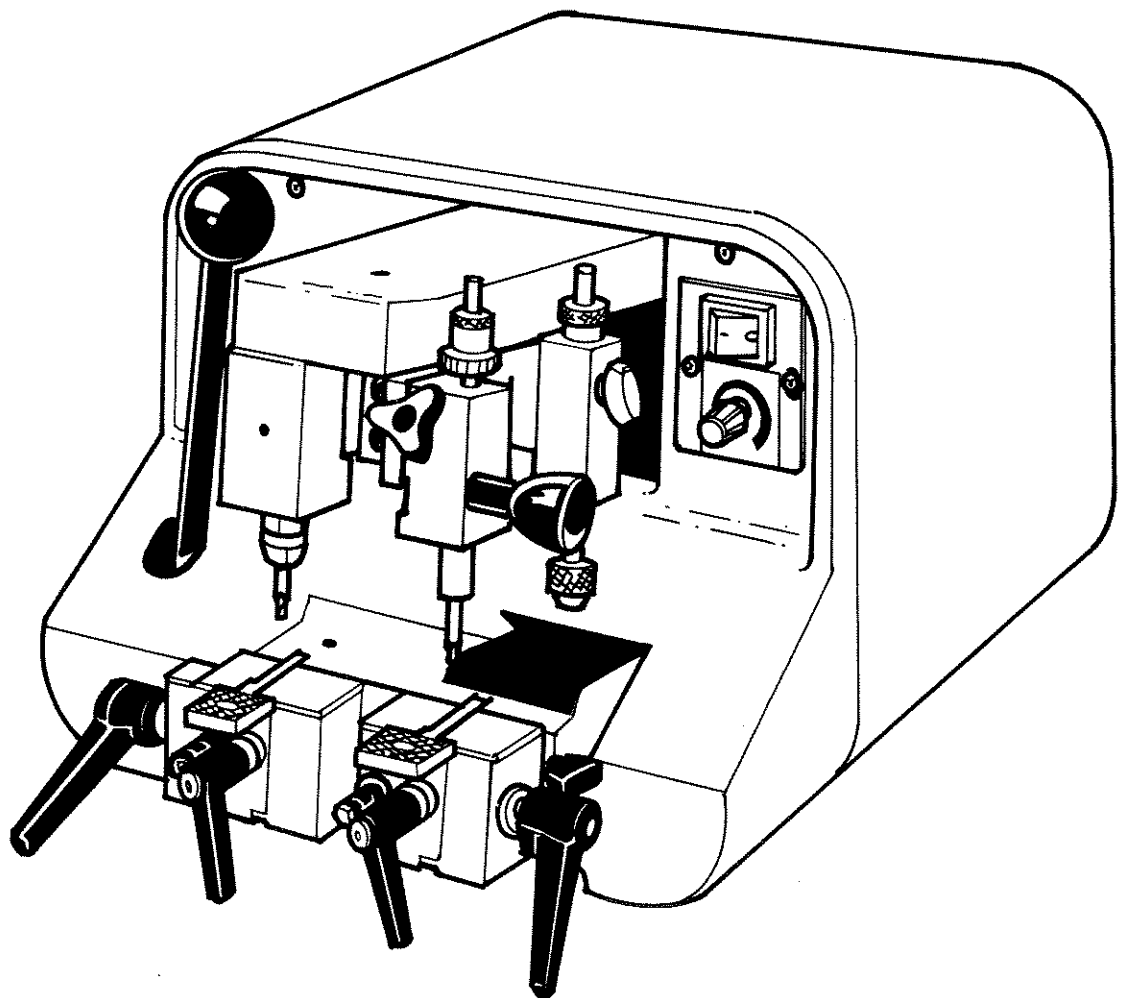


KD 55

INSTRUCTION MANUAL



ILCO UNICAN



400 Jeffreys Rd., P.O. Box 2627, Rocky Mount, NC 27802-2627 USA • Tel.: (919) 446-3321 Fax (919) 446-4702
Export Dept.: 7301 Decarie Blvd., Montréal, Qué. Canada H4P 2G7 • Tel.: (514) 735-5411 Fax (519) 273-3521

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

chine is transferred, this service manual should accompany the machine.

When seeking service information about this machine, refer to the Model No. (which is KD55), your registration number (see below) and the part number desired (see pages 4 and 5).

CONTENTS

Warranty -----	2
Introduction (to the KD55) -----	3
Operating Parts (Illustrated) -----	4
Operating Parts (Names and Part Numbers) -----	5
Instructions (Depth Limiter/Depth Guide Assembly) -----	6
Instructions (Cutter Installation/Operating Levers/Cutter Head) -----	7
Adjustments - Cutters and Guides -----	8
Vise Jaws - Dimple Keys -----	9 -10
Vise Jaws - Sidewinder Type Keys -----	11
Exploded View -----	12,13
KD55 - Parts List -----	14
Adapters (Optional Kits) -----	15
Adapters (Special Order) -----	16

TWO YEAR LIMITED WARRANTY

Ilco Unican warrants to the original buyer of any new model KD55 machine that it will repair or replace, at its option, any part of any machine which proves, to the reasonable satisfaction of Ilco Unican, to have defects arising from the faulty manufacture of the machine or from defective materials or components, during a period of two (2) years from the date of shipment of the machine by Ilco Unican, provided that the machine is returned by prepaid transport to Ilco Unican or to its authorized representative before the expiry of the warranty period together with a detailed description of the alleged defect(s). Ilco Unican may, at its discretion, elect to refund the purchase price allocable to the part affected, or to issue a credit if the price therefore remains unpaid.

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

capacity shall not be covered by this or any other warranty.

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

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

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

Use only genuine Ilco Unican replacement parts on this machine!

Registration and serial number is _____ .

Congratulations !

You've just purchased one of the most versatile key machines on the market today. It's designed to duplicate special function keys like Kaba and Keso. It also will duplicate sidewinder type keys, or Bell type keys that have a track running down the blade. With adaptors, it can cut Opel, Mercedes, BMW, Fichet and even tubular (round) keys. Once you develop an understanding of what this machine can do, you'll find many other uses, like milling extra grooves in key blanks.

The real value of the KD55 Multi-Drill machine comes from the precision of its parts. Since the keys it will cut are intended for high security cylinders, this machine must match the precision built into these cylinders. It does ! Its vise jaws are highly engineered and meticulously manufactured, literally a machinist's marvel. They will perform exactly as intended - to hold a key and key blank securely during the actual cutting, and at the precise angle.

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

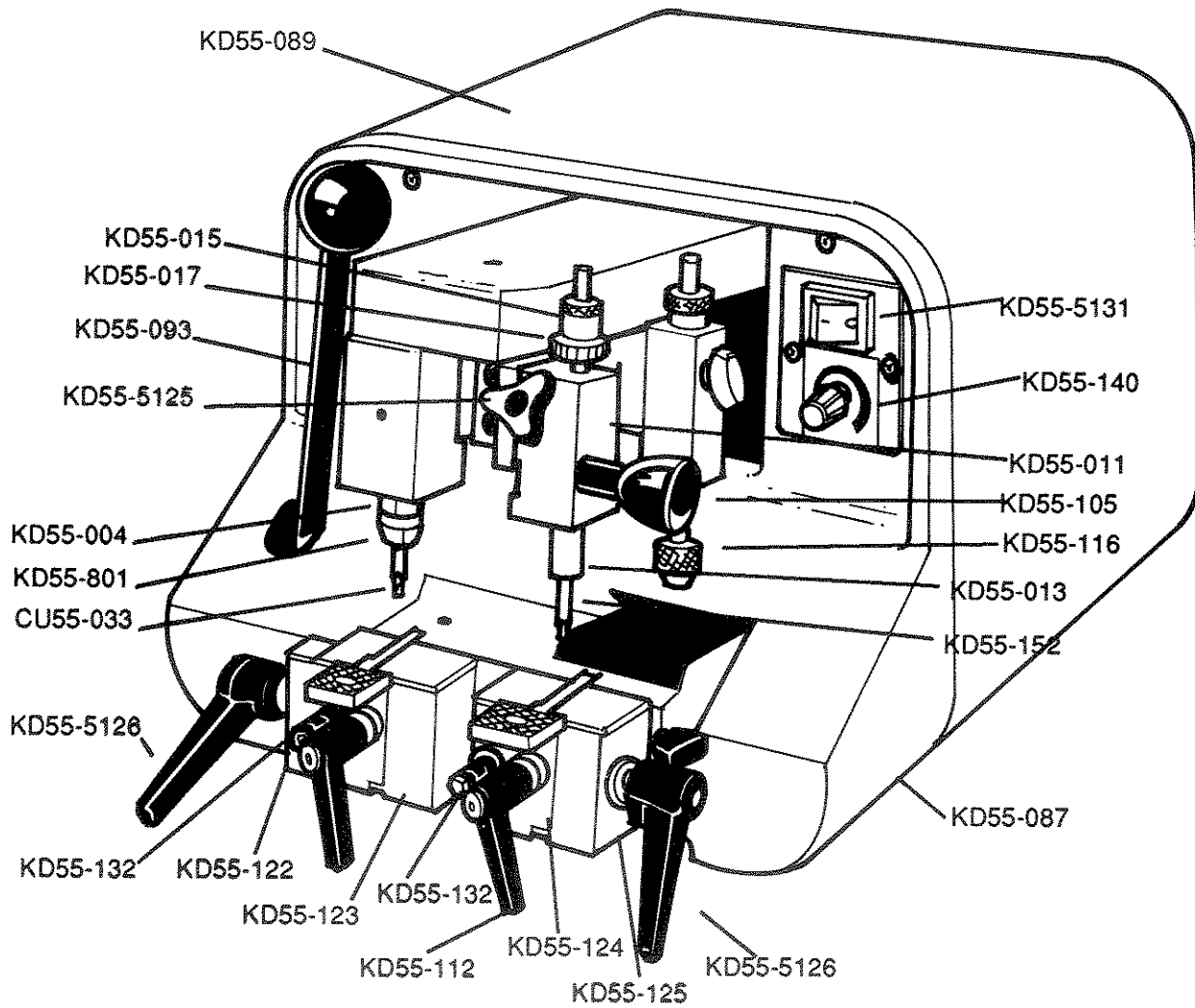
When unpacking the KD55, you'll note the cushioning material and the abundance of lubricating oils to prevent rust and corrosion. Before using this machine, wipe off excess grease and oil. Lubricate only the moving parts. It's a good idea to save the original packing carton for a short period of time.

Set the machine on a sturdy work bench and plug its power cord into a 110 VAC receptacle, preferably one with a surge protector. It is not necessary to bolt down this machine.

Unpack all cutters, key guides and adaptors. Wipe each part free of grease and oil. Store each item in an organized manner, free of damage or abuse.

Refer to the drawing on page 4 to identify the visible operating parts.

OPERATING PARTS



Note: Vise jaw assembly is shown in the reversed position!

Figure 1

OPERATING PARTS IDENTIFICATION

Refer to Figure 1.

Part No.	Identification
KD55-004	Cutter Spindle
KD55-011	Depth Guide Housing
KD55-013	Depth Guide Holder (Chuck)
KD55-015	Top Locking Ring Nut (Locks in adjusting ring nut)
KD55-017	Bottom Adjusting Ring Nut (For depth guide adjustments)
KD55-087	Housing
KD55-089	Machine Cover
KD55-093	Free Operating Lever
KD55-105	Stationary Operating Knob
KD55-112	Rotation Clamp Assembly (Secures rotated position of vise jaw)
KD55-116	Adjusting Knob (Travel Limiter)
KD55-122	Right Vise Jaw (Stationary)
KD55-123	Right Vise Jaw (Movable)
KD55-124	Left Vise Jaw (Stationary)
KD55-125	Left Vise Jaw (Movable)
KD55-132	Anchor Pin (Holds vise jaw at 90° position)
KD55-140	Rheostat Knob (Motor speed adjusting knob)
KD55-152	Depth Guide (Interchangeable)
KD55-801	Chuck (Cutter holder and nut)
KD55-5125	Vertical Locking Screw
KD55-5126	Clamp Assembly
KD55-5131	Power On/off Switch
CU55-023	Cutter (Interchangeable)

INSTRUCTIONS

DEPTH LIMITER ASSEMBLY

This device performs two functions:

1. It can be set to limit the downward travel of the cutter head, to prevent accidental damage to the cutter, depth guide or vise jaws.
2. It can be used to control the cutter's depth of cut, when widening or adding extra grooves to key blanks and the depth guide cannot be used.

The depth limiter has two locking knobs: the vertical position knob (A) and the adjustment locking knob (B). The adjusting knob (C) is located at the bottom end of the limiter (see Figure 2).

To set the limiter at a certain depth, loosen the vertical position locking knob (A). Raise or lower the limiter assembly to set the bottom bumper at the approximate height desired. This height should limit the downward travel of the cutter head. Retighten the vertical position locking knob (A).

To fine tune the adjustment, loosen the adjustment locking knob (B). Turn the bottom adjusting knob (C) until the exact cutter head travel distance is reached. Retighten knob (B).

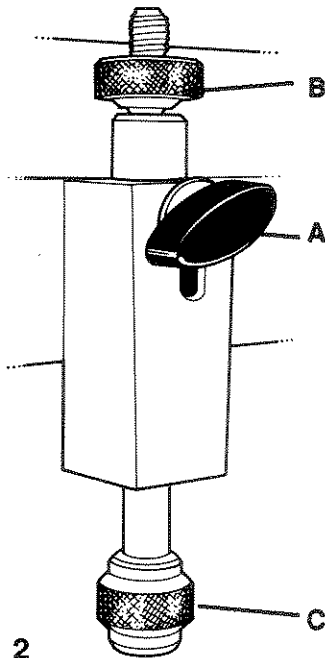


Figure 2

When cutting dimple keys, the depth limiter assembly should be raised sufficiently to allow the cutter to reach the bottom of the cut.

DEPTH GUIDE ASSEMBLY

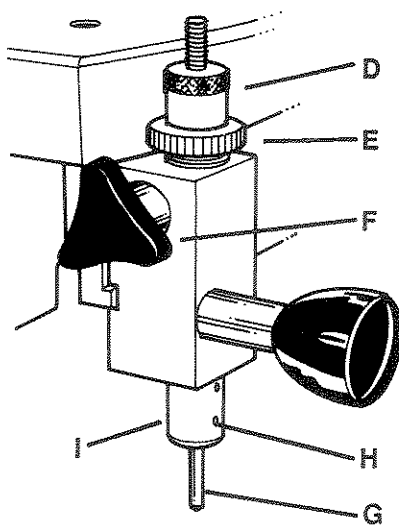


Figure 3

The depth guide is spring-loaded, which permits you to pre-position the tip of the depth guide into a cut before lowering the cutter head to actually make the cut. The top locking ring nut (D) controls the spring loading feature, while the bottom adjusting ring nut (E) controls the depth position of the depth guide. Once the proper adjustment is determined, the vertical locking knob (F) secures the adjustment (see Figure 3).

Note that the depth guide assembly also is adjustable front to back and side to side. However, these adjustments are set at the factory and, under normal conditions, it is not necessary to change them.

The depth guide (G) is held by the bottom set screw (H). To replace the depth guide, loosen set screw (H) and let the old guide drop out. Push a new depth guide up into the chuck (I) until it stops. Tighten the set screw to secure it in position.

INSTRUCTIONS

Any of the cutters supplied with this machine are to be installed in the same manner. An open end wrench is used to steady the cutter spindle (J) while another open end wrench is used to loosen the cutter chuck (K) (see Figure 4). The new cutter then is inserted partially into its chuck and the chuck partially tightened, ready for adjustment with the depth guide (see section on Adjustments).

CUTTER INSTALLATION

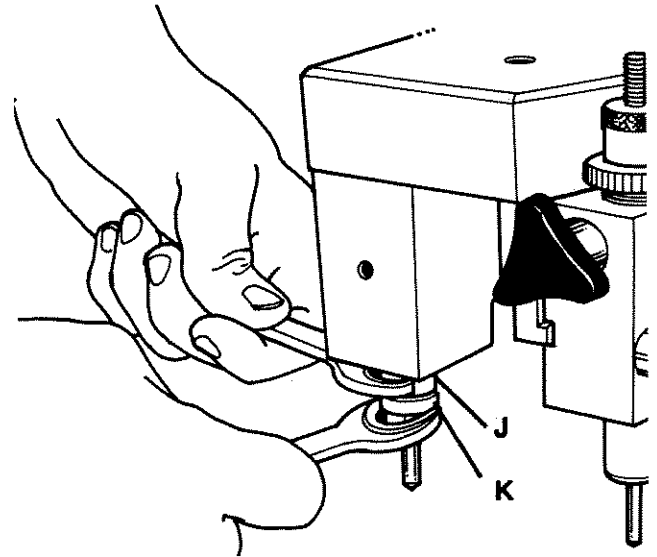


Figure 4

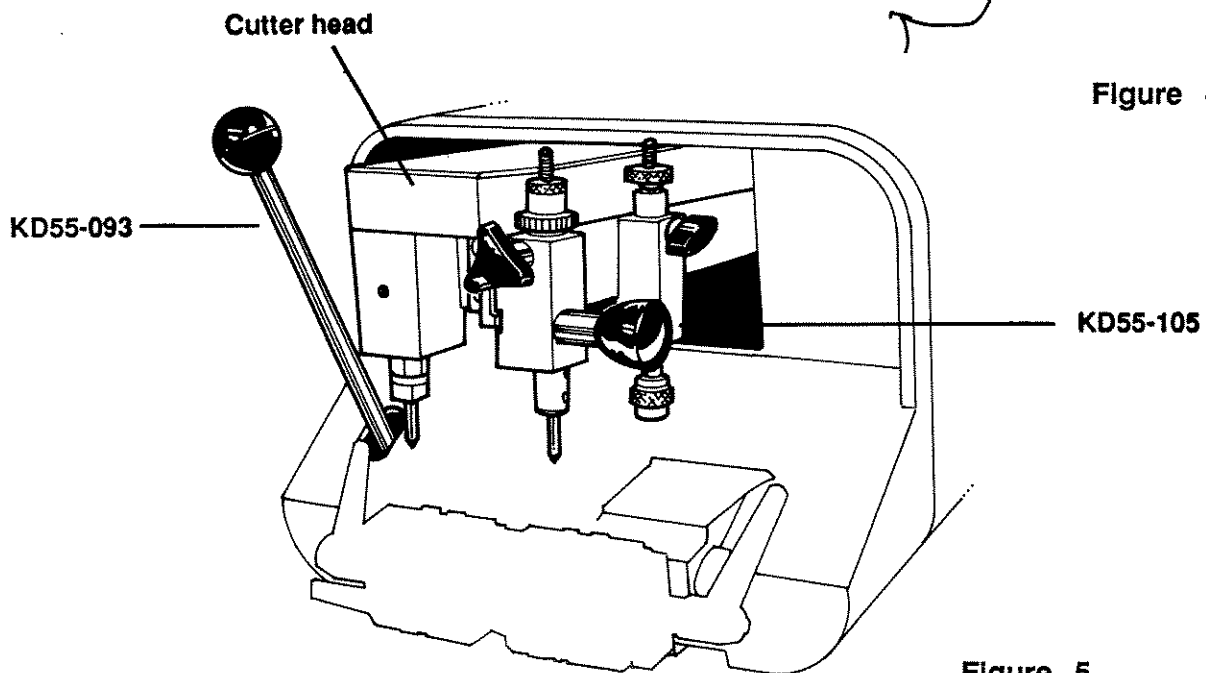


Figure 5

OPERATING LEVERS

Two levers are used to operate this machine: the stationary lever (KD55-105) and the free lever (KD55-093). The left hand, on the free lever, sets the side-to-side and in or out movement of the cutter head. When this position is set, the right hand on the stationary lever pulls down the cutter head to make the cuts. Both movements occur at almost the same time (see Figure 5).

CUTTER HEAD

The cutter head is a free moving arm that can be moved in a variety of directions. It forms the housing for the depth guide assembly and the cutter mechanism. The cutter revolves by means of a drive belt located under the surface of the cutter head. Powering the drive belt is a motor which lies under the protective cover. In normal operation, the drive belt and motor are not visible.

ADJUSTMENTS - CUTTERS AND GUIDES

ADJUSTING CUTTER TO DEPTH GUIDE

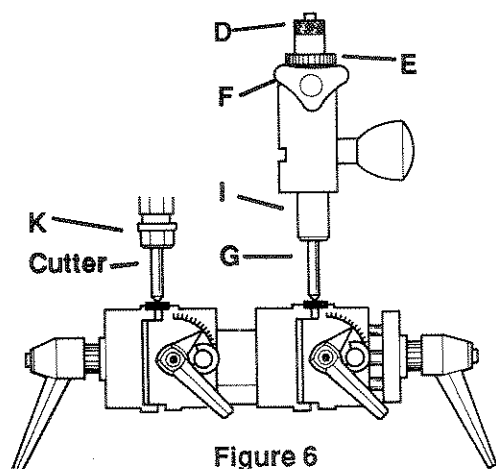
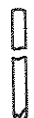


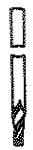






Figure 6

Since the tips of the cutters and the depth guides vary, it's important that the correct depth guide be used with a specific cutter. The chart below shows the mating guides and cutters for various types of keys. Once the guide and cutter have been installed, the cutter must be adjusted to match the depth of the guide. The adjusting procedure is as follows (refer to Figure 6):

1. Install identical key blanks in the right and left vises.
2. On the depth guide assembly, turn the top locking nut (D) clockwise until it stops. This will eliminate the spring-loaded pre-positioning feature and will make the depth guide rigid for adjustment purposes.
3. Lower the cutter head to bring the depth guide in contact with the flat surface of the key blank in the right vise.
4. Loosen the cutter chuck (K) and lower the cutter until it contacts the surface of the key blank in the left vise.
5. Tighten the cutter chuck (K) with a wrench and let the cutter head rise.
6. Lower the cutter head again and loosen the vertical position locking knob (F); this will free the depth guide assembly.
7. While holding down the cutter head, loosen the locking ring nut (D). Then, turn the adjusting ring nut (E) until the cutter just skims the surface of the key blank.
8. Continue to hold down the cutter head and turn on the motor (slow speed). Note that the cutter should just skim the surface of the key blank, when moved in any direction or position. If this occurs, the adjustment is correct.
9. Turn off the motor. Tighten the vertical position locking knob (F) so that it locks the adjusting ring nut (E) in position.
10. Tighten the locking ring nut (D) until it contacts the adjusting ring nut (E).

MATING OF CUTTERS AND DEPTH GUIDES

To Cut	Kaba - Dom - Keso	Micro Kaba	Opel - Mercedes	Opel - Mercedes
Cutter No.	 CU55-023	 CU55-164	 CU55-146	 CU55-148
Depth Guide No.	KD55-152 	KD55-165 	KD55-147 	KD55-149 

VICE JAWS - DIMPLE KEYS

UNIVERSAL VISE ASSEMBLY

The vise assembly (Q) is secured to the machine base by two thumb screws located behind the assembly. When removing the vise assembly, note the extremely close fit of the vise assembly posts into the machine base (see Figure 7).

This assembly is reversible. One side will clamp keys horizontally and is called the horizontal clamping position. The other side will clamp not only in a horizontal position but also vertically; this side is called the dual clamping position.

When the vise assembly is in the dual clamping position, the white index marks and pointers are at the top right corner of the vise jaws.

Each vise jaw has a stationary section (with index marks, L) and a movable section (without index marks, M). The movable section opens or closes as the clamp assembly (N) is turned; note the vise jaw clamp assemblies are located on the sides.

Besides opening and closing laterally, the vise jaws will swivel, that is, rotate to the right or to the left. When one jaw is rotated, the other will rotate to the same angle because of a synchronizing mechanism. The pointers and the white index

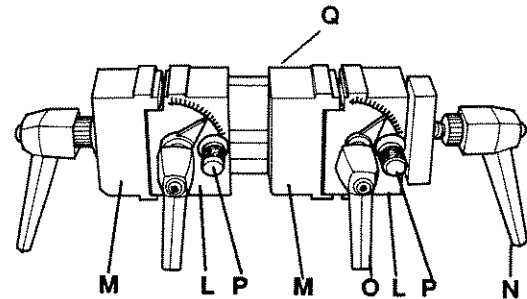


Figure 7

marks indicate the angle of rotation while the small clamp assemblies (O) will clamp the jaws at the desired angle.

The vise jaws cannot be swiveled until the anchor pins (P) have been removed.

Note the vise assembly is a complete unit. Only the handles (clamp assemblies) are replaceable.

There are two reasons for the swiveling action: 1) When the blade of the key is angled and, 2) when the cut in the key comes in at an angle.

SETTING VISES TO CUT DIMPLE KEYS

Be sure the depth limiter is moved to its "out of the way" position. Keys having dimple cuts in the flat sides of the blade can be clamped with the vise assembly in either the horizontal clamping position or in the vertical clamping position. Push the key into the vise slot until the shoulder hits the edge of the jaw; this aligns the key (see Figure 8).

Select the cutter and the mating depth guide, according to the chart on page 8. Install these items as previously described on pages 6-8, Instructions and Adjustments. Be sure the depth guide is set for the spring-loaded pre-positioning action.

Then, maneuver the cutter head with the free lever and the stationary lever to make the cuts. Turn the key over to make cuts on the other side.

If the lock has an additional set of pins, with one or two pins coming in at an angle, remove the

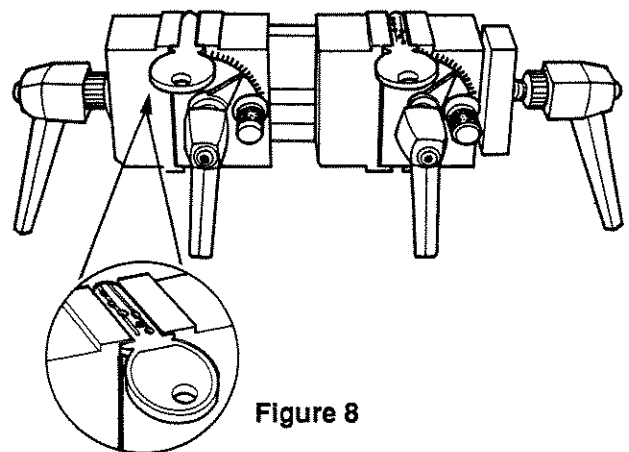


Figure 8

anchor pins and rotate the jaws to the desired angle. Tighten the vise jaws at this angle and proceed to make the angle cuts in the respective cut positions.

WISE JAWS - DIMPLE KEYS

SETTING VISE TO MAKE CUTS IN KEYS HAVING ANGLED BLADES

When cutting keys with angled cuts, or keys that have angled surfaces, the vise jaws can be rotated to the correct angled position. Note that the anchor pins must be removed before the jaws can be rotated. Since the jaws are synchronized, only one jaw has to be set to the angled position; the other jaw will set automatically to the same angle. Tighten the small clamp assemblies to secure the jaws. When cutting is complete, be sure to replace the anchor pins (see Figure 8A).

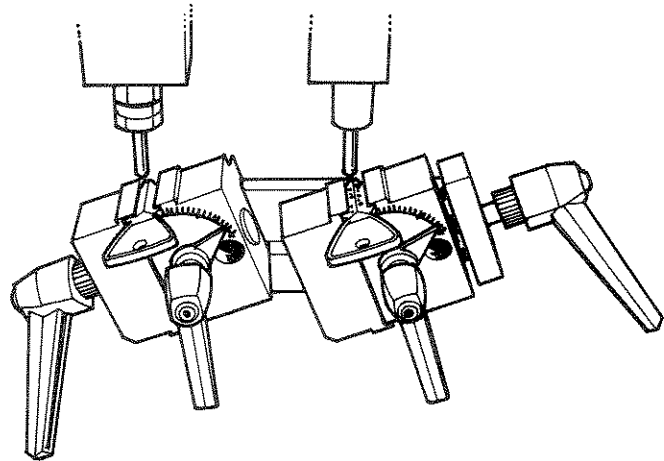


Figure 8A

SETTING VISE TO MAKE EDGE CUTS IN DIMPLE KEYS

Keys with dimple cuts in the edges of the blade must be clamped with the vise assembly in the dual clamping position. In this position, the stationary jaws are notched to hold the keys. Push a key all the way into the slot until its shoulder hits the edge of the jaws; this aligns the key. Proceed to make the cuts as in a flat side (see Figure 9).

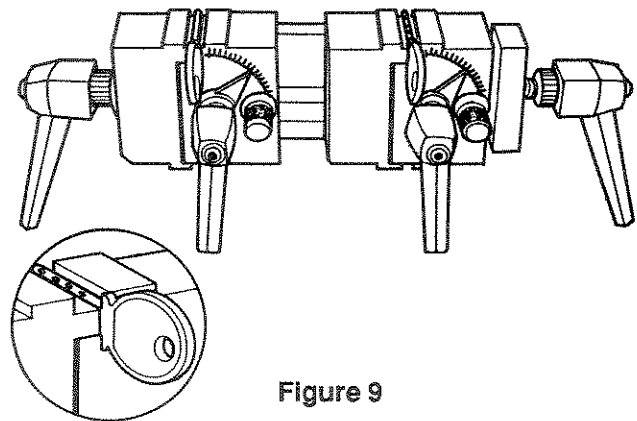


Figure 9

PRE-POSITIONING OF THE DEPTH GUIDE

The pre-positioning (spring-loaded) feature of the depth guide is useful when cutting dimple keys. This feature allows you to set the depth guide into a dimple cut before the cutter makes contact with the key blank. In essence, the depth guide will locate the center of the dimple cut on the original key, ensuring proper positioning of the cut.

Once the guide is pre-positioned, downward pressure on the stationary lever will cause the cutter to start cutting into the blank. As cutting occurs, the depth guide will slowly retract into its housing until it reaches the depth adjustment point. After the cutter has reached the full depth, and the downward pressure is released, the depth guide

will spring out, ready to locate the next cut position on the original key.

To set the pre-positioning, lower the cutter arm so the depth guide is pushed all the way up into its housing. Hold it there and tighten the locking ring nut (KD55-015) clockwise, until it can't be turned any further. This holds the depth guide up in the locked position (which is the position for making depth adjustments or for cutting sidewinder type keys). Next, slowly turn the locking ring nut counter-clockwise, so the depth guide drops slightly. One or two turns is recommended; this will give the depth guide enough leeway to pre-position into any dimple cut.

VICE JAWS - SIDEWINDER TYPE KEYS

ALIGNING KEYS WITHOUT SHOULDERS IN THE VISES

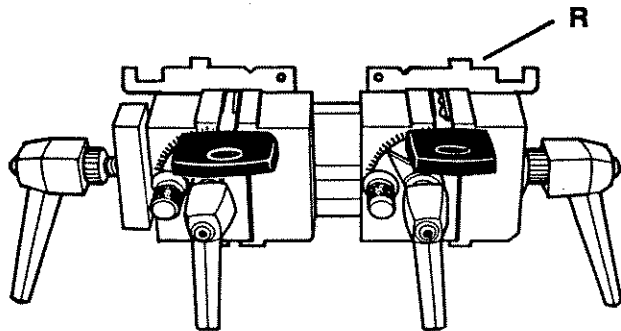


Figure 10

Keys without shoulders are aligned in the vises from the tips. A service bar (R) is inserted into the groove at the rear edge of the vise jaw. Then, the key is pushed up the vise jaw slot until it contacts the service bar. Once the vise is tightened to clamp the key, the service bar is lifted out of the groove (see Figure 10).

SETTING VISES TO CUT SIDEWINDER TYPE KEYS

This type of key does not have a shoulder nor does it have cuts which pass fully through the blade. The cuts are wavy lines that are cut to about half the thickness of the blade. Depth, therefore, is critical. When cutting this key, the depth guide must be pushed up into its locked position. Follow this procedure for cutting these keys (see Figure 11):

1. Select the appropriate cutter and depth guide according to the chart (page 8) and install these items.
2. Set the vise assembly into the horizontal clamping position.
3. Insert a service bar into the rear groove of each vise jaw.
4. Position the original key in the vise slot under the depth guide. Push the key back to the service bar and tighten the vise jaw.
5. Position the key blank into the vise slot under the cutter. Push the key back to the service bar and tighten the vise jaw.
6. Remove the service bars.
7. Check the depth adjustments to the depth guide and cutter, as described under Adjustments. Note that the cutter is properly adjusted when cutter marks appear very lightly on the surface of the key blank.
8. Proceed with the cutting, starting from the head of the key and working towards the tip. Maneuver the free lever and the stationary knob to position the cutter head for the actual cutting. Trace slowly around the curvature of the cuts.
9. When one side is done, turn the key blank over and repeat the cutting operation on the other side.

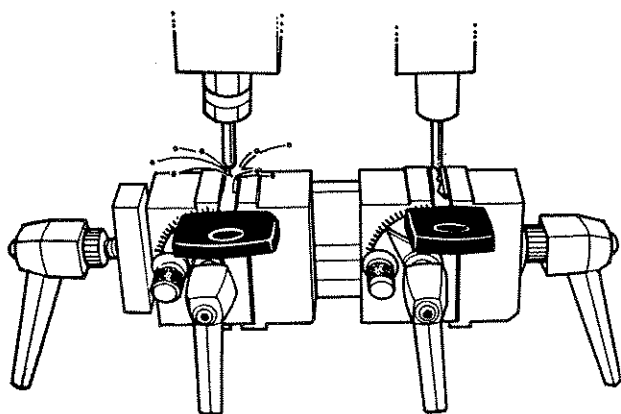
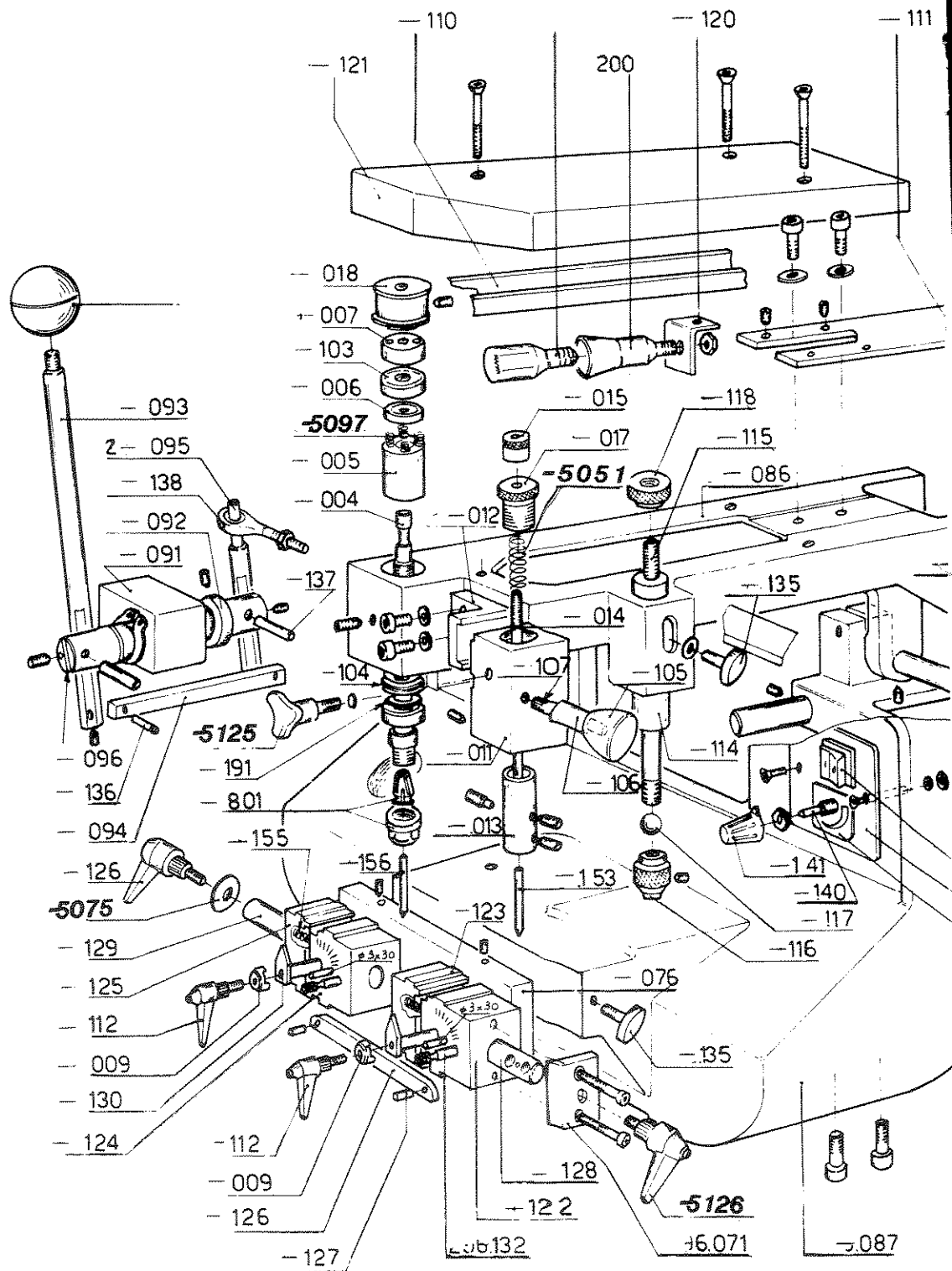
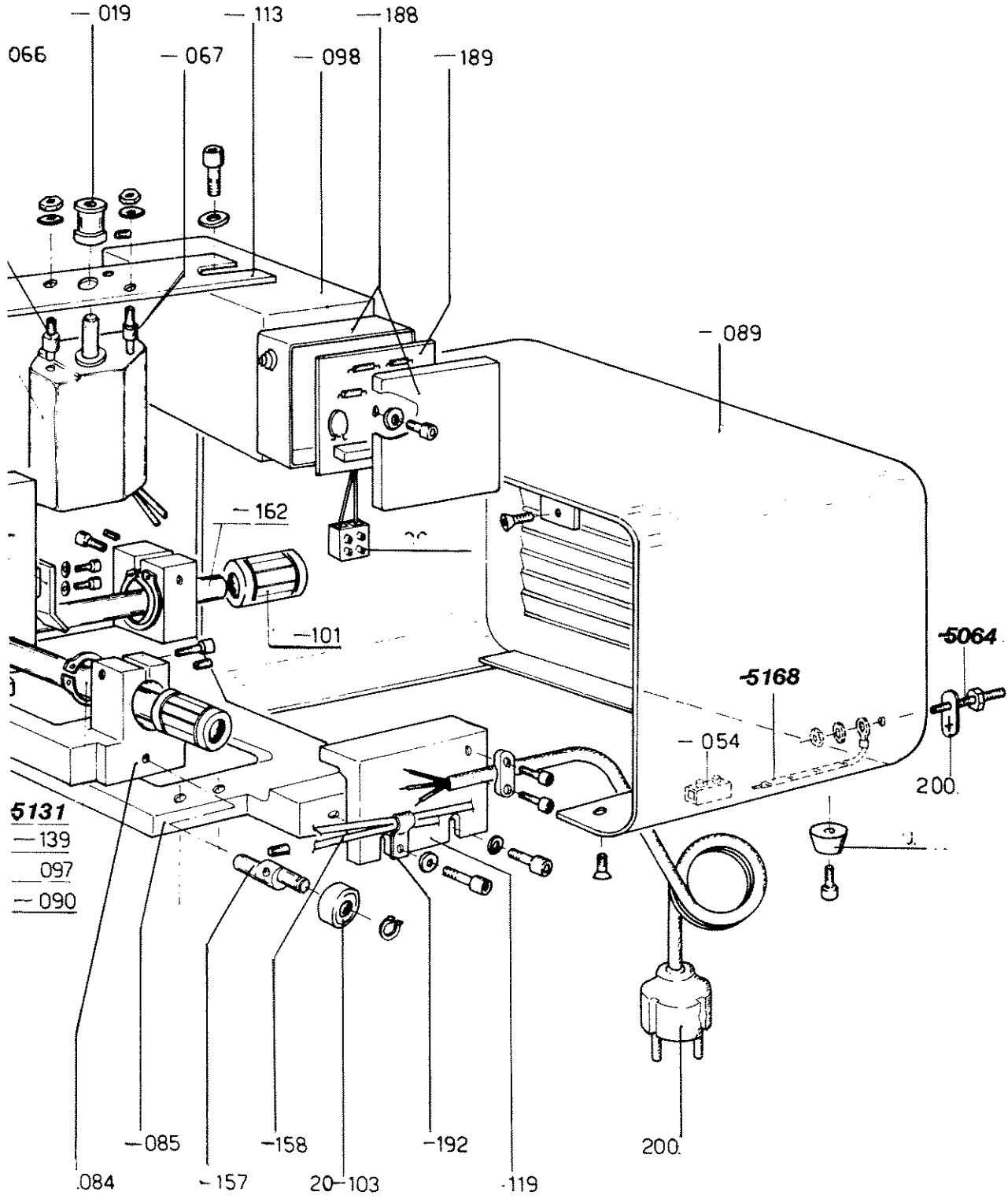


Figure 11

EXPLODED VIEW



EXPLODED VIEW



KD55 - PARTS LIST

KD55 MULTI-DRILL KEY MACHINE PARTS LIST

Part No.	Description
KD55-004	Spindle (Cutter)
KD55-005	Spindle Body (Cutter)
KD55-006	Spindle Body Bushing (Cutter)
KD55-007	Spindle Ball Bearings Adapter
KD55-009	Washer, Angle Clamp Assembly
KD55-011	Depth Guide Housing
KD55-012	Mounting Bracket, Depth Guide Housing
KD55-013	Depth Guide Holder
KD55-014	Depth Guide shaft
KD55-015	Top locking ring nut
KD55-017	Bottom Adjusting Ring Nut
KD55-018	Spindle Pulley (Cutter)
KD55-019	Motor Pulley
KD55-066	Motor Mounting Screw L 25 mm
KD55-067	Motor Mounting Screw R 33 mm
KD55-071	Connecting Plate (Right vise)
KD55-076	Vise jaws Support Plate
KD55-084	Middle Carriage
KD55-085	Middle Carriage Support
KD55-086	Cutter Head
KD55-087	Housing
KD55-089	Cover
KD55-090	Transv. Sliding Shaft
KD55-091	Support Block, / Free Lever Shaft
KD55-092	Collar and Pin, Free Lever Shaft
KD55-093	Free Operating Lever
KD55-094	Connecting Rod
KD55-095	Connecting Lever
KD55-096	Control Shaft, Free Lever
KD55-097	Speed Indicator Plate
KD55-098	Balancing Weight
KD55-101	Axial Bearing
KD55-103	Ball Bearing (Dia. 10 x 26 x 8)
KD55-104	Ball Bearing (Dia. 10 x 24 x 9)
KD55-105	Knob (Stationary Operating)
KD55-106	Spacer (Stationary Lever)
KD55-107	Stationary Lever
KD55-110	Flat Drive Belt
KD55-111	Motor
KD55-112	Rotation Clamp Assemblies
KD55-113	Motor and Weight Support
KD55-114	Jaw (For Travel Limiter)
KD55-115	Shaft (Travel Limiter)
KD55-116	Adjusting Knob (Travel Limiter)
KD55-117	Ball, Dia. 8 mm (Travel Limiter)
KD55-118	Vertical Adjustment Locking Knob
KD55-119	Stop Bracket

Part No.	Description
KD55-120	Light Socket Mounting Plate
KD55-121	Belt Cover Plate
KD55-122	Right Vise Jaw (Stationary)
KD55-123	Right Vise jaw (Movable)
KD55-124	Left Vise Jaw (Stationary)
KD55-125	Left Vise Jaw (Movable)
KD55-126	Vise Jaw Connecting Rod
KD55-127	Vise Jaw Connecting Rod Pins
KD55-128	Activating Pin, Right Vise
KD55-129	Activating Pin, Left Vise
KD55-130	Angle Indicator Pin
KD55-132	Vise Jaw Anchor Pin
KD55-134	Stop Plate
KD55-135	Vertical Position Locking Knob
KD55-136	Connecting Rod Pin
KD55-137	Control Shaft Pin (Dia. 5 x 20 mm)
KD55-138	Pivot
KD55-139	Support Plate, On/off Switch
KD55-140	Motor Speed Adjusting Shaft
KD55-141	Motor Speed Adjusting Knob
KD55-152	Depth Guide (Typical)
KD55-155	Vise Jaw Springs
KD55-156	CU55-023 Cutter (Typical)
KD55-157	Ball Bearing Pin
KD55-158	Power Cable
KD55-162	Long Guide Shaft (Dia. 164 x 230)
KD55-188	Electronic Control Box
KD55-189	Electronic Control Panel
KD55-191	Cutter Spindle Washer
KD55-192	Cable Support Clamp
KD55-801	Cutter Holder and Nut
KD55-5051	Spring
KD55-5063	Grounding Plate
KD55-5064	Grounding Stud
KD55-5066	Electric Cable and Plug
KD55-5075	Clamp (Thrust) Washer
KD55-5097	Spring (Dia. 5 x 24 mm)
KD55-5122	Knob
KD55-5125	Vertical Locking Knob
KD55-5126	Clamp Assembly (Jaws)
KD55-5131	On/Off Switch (Rocker Type)
KD55-5132	Light Socket
KD55-5133	Light Bulb
KD55-5135	Rubber Foot
KD55-5139	Terminal
KD55-5168	Grounding Cable

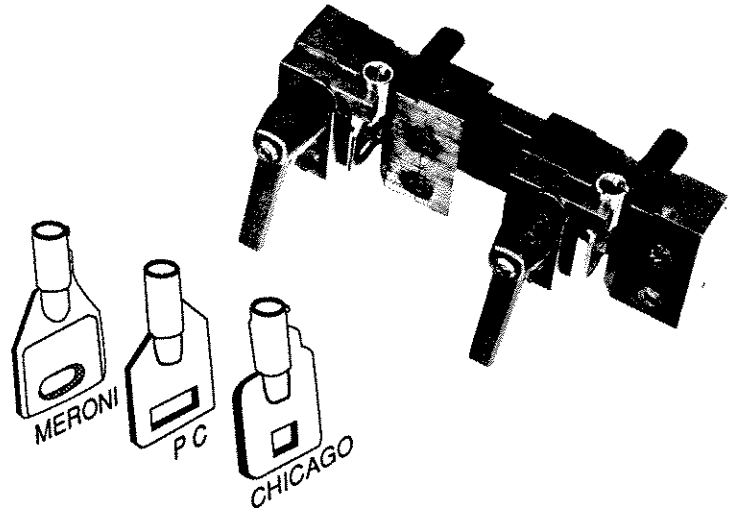
ADAPTERS - OPTIONAL KITS FOR KD55

No. KD55 - MKT Tubular Kit for cutting tubular keys.

Includes: 1 only MKT adapter unit
1 only CU55-150 cutter
1 only KD55-151 depth guide

Note: The adapter unit is available as the KD55-MKT kit only. However, the cutter and depth guide are available separately as replacement items.

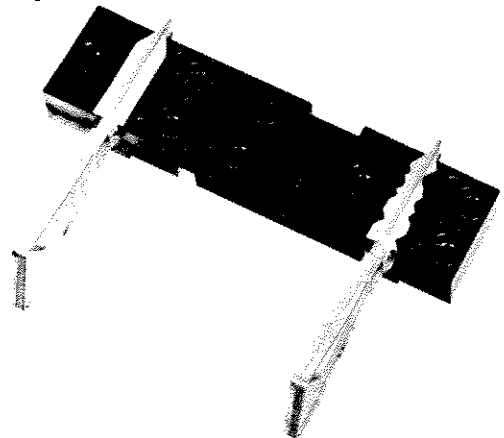
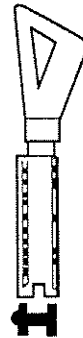
Conventional tubular keys can be clamped in these vises, including large headed keys.



No. KD55-MKF Fichet kit for cutting the four sided Fichet key. (H Profile)

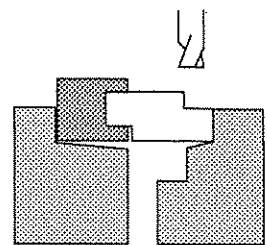
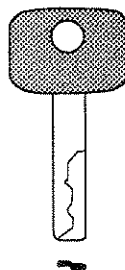
Includes: 1 only MKF adapter
25 only Fichet key blanks (#S10FCTZT)

Cutters and depth guides supplied as standard items with KD55 are used to cut the Fichet key.



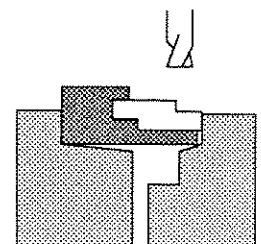
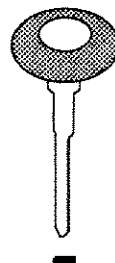
No. KD55-MKO Adapters for Opel (side-winder type key) - supplied with the KD55 machine.

Uses: CU55-146 Cutter
KD55-147 Depth Guide



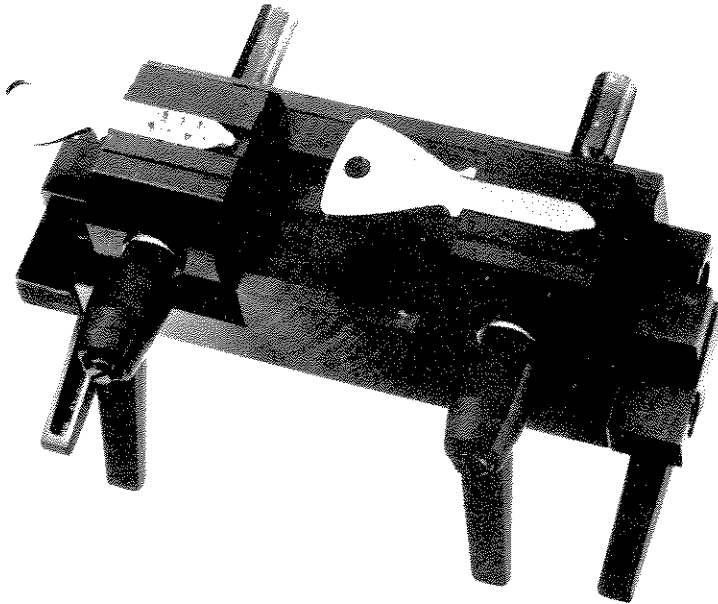
No. KD55-MKM Adapters of Mercedes key - supplied with the KD55 machine.

Uses: CU55-146 Cutter
KD55-147 Depth Guide

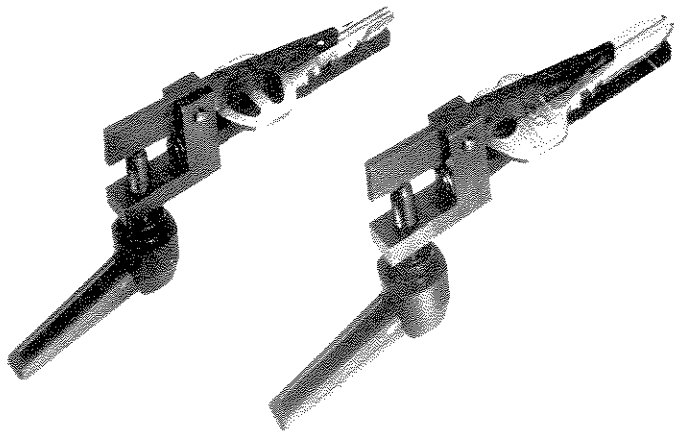
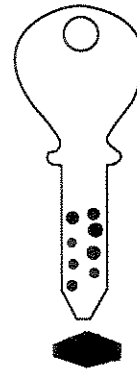


ADAPTERS

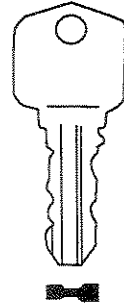
ADDITIONAL ADAPTERS FOR KD55 KEY MACHINE (SPECIAL ORDER ONLY)



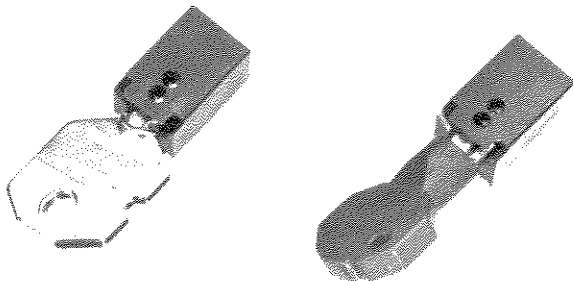
No. KD55-MKU2 for clamping
dimple keys which have angled
blades.



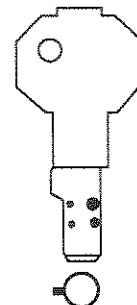
No. KD55-MKP for clamping the
Perino type key.



Uses: CU55-148 Cutter
KD55-149 Depth Guide



No. KD55-MKTP for clamping the
Prefer tubular key.



Uses: CU55-144 Cutter
KD55-145 Depth Guide