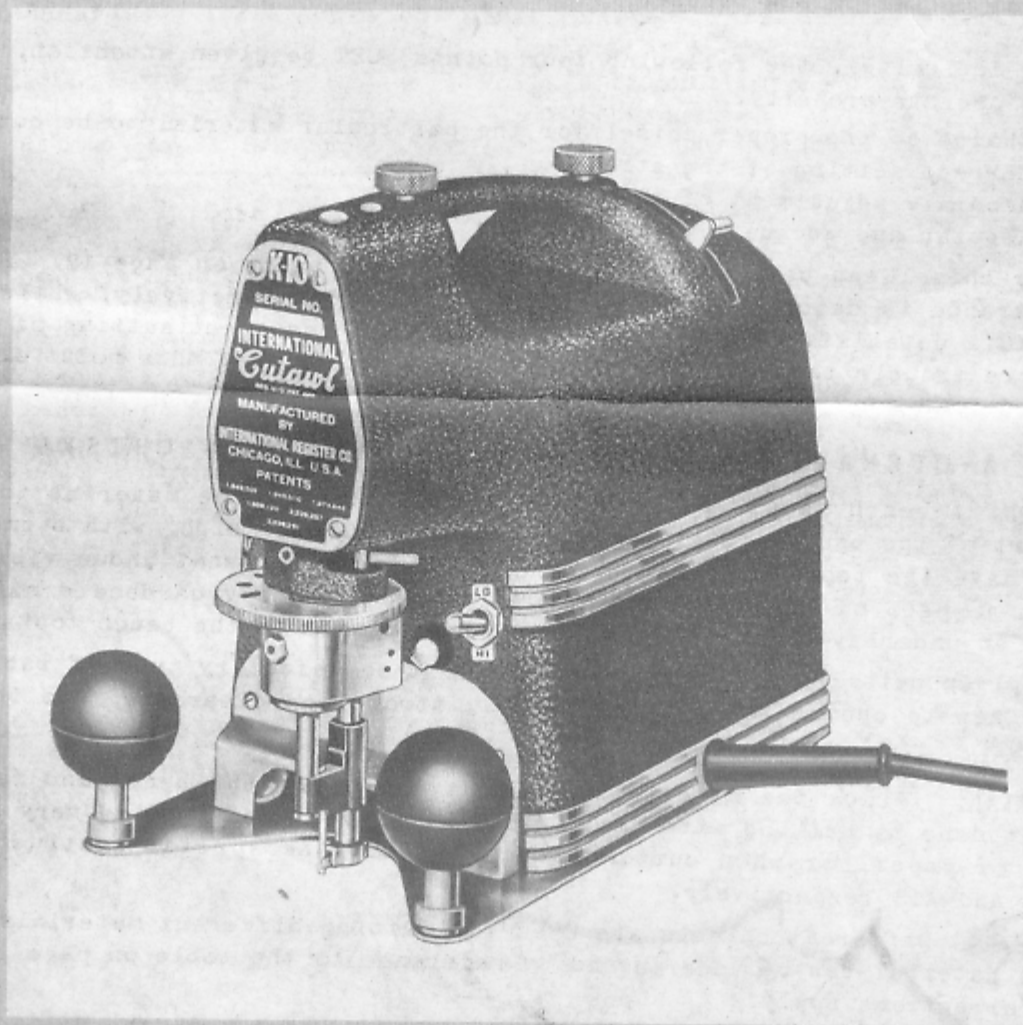


INSTRUCTIONS FOR OPERATING

The K10

Cutawl



MANUFACTURED BY

INTERNATIONAL REGISTER CO.

2622 W. Washington Blvd., Chicago 12, Ill.

Established 1891

YOUR K10 CUTAWL

Your K10 Cutawl is a precision-built cutting tool. All parts subject to wear are engineered for long life. Ball bearings are used extensively throughout the machine and many of the moving parts are permanently lubricated. The K10 is powered by a 1/8th horsepower motor especially built for this machine. With reasonable care and attention your K10 Cutawl will give you many years of useful service.

SETTING UP THE K10 CUTAWL

The Cutawl as shipped is assembled completely and is ready for immediate use. The universal motor may be used on current of any cycle but it must not be used on voltages differing from that stamped on the name plate.

GENERAL INSTRUCTIONS

The Cutawl uses either a chisel or a saw. The chisel is for cutting thin layers of hard materials such as sheet metal or fibre, and soft materials to a maximum of 11/16 inch; the saw for cutting harder materials to a maximum of 1-1/4 inches. On page 12 is given a list of materials which can be cut with the Cutawl, the maximum thickness that can be handled, and the best chisel or saw to use.

When using the chisel, the following four points MUST be given attention, otherwise the Cutawl will not operate properly.

1. Choice of the proper chisel for the particular material to be cut.
2. Correct setting of the stroke.
3. Accurate adjustment of the clearance.
4. Regular and adequate lubrication.

The proper chisel can be chosen by reference to the table on page 12. Setting of the stroke and clearance is described in paragraphs A5 and A6 respectively, while Figure 16 on page 11 gives full details for lubricating the machine. Incorrect setting of the clearance accounts for more trouble than all other factors combined so that this point should be given particular attention.

A-OPERATION OF THE CUTAWL USING A CHISEL

A1--BENCH. A bench should be provided on which to lay the material to be cut. For greatest comfort of the operator, it should be about 38 inches high, with a smooth wood top. It is best to have the top at least 1-3/4 inches thick to prevent undue vibration. Cover the bench with a sheet of wallboard or several layers of heavy cardboard nailed in place. This serves as an underlay for the work and prevents damage to the bench top and the chisels.

Below is given detailed information on the most satisfactory type of table or bench on which to work, how to choose the correct chisel, stroke and clearance, and the best way to guide the Cutawl.

A2--MATERIAL. Place the material to be cut on top of the bench and fasten it down. This is easiest done by nailing with small nails or brads. For cutting very soft materials such as cloth or paper, or when cutting metal, follow the special instructions given in paragraphs A12 and A13 respectively.

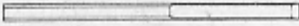
A3--CHISELS. Different chisels are used for cutting different materials. The correct chisel for any material can be ascertained by reference to the table on page 12. In general, the following directions apply:

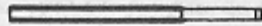
1. For soft materials such as wallboard, cardboard, etc., use the No. 24 chisel.
2. For hard materials such as stencil board and sheet fibre, use the No. 25 chisel.
3. For wood and metal, use the No. 22 chisel.


All chisels should be inserted far enough into the chisel block so that the upper end is flush with the top of the block. Care must be used to see that the chisel blade is vertical, and also parallel with the sides of the chisel block, after the set screws are tightened. Otherwise the chisel will not cut properly.

The foot is to be used at all times for both chisels and saws. Do not let the chisel rise above or come out of the chisel guide foot at any time. Otherwise the guide will wear quickly and may be broken.

CHARACTERISTICS OF INDIVIDUAL CHISELS

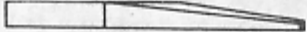
No. 0 CHISEL.  For cutting all soft material such as wallboard, cardboard, soft wood, felt and linoleum. Maximum thickness it can cut is 1/2 inch.

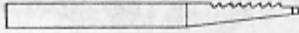
No. 3 CHISEL.  For cutting fine designs in soft materials. Maximum thickness it can cut is 1/4 inch. Use high or low speeds. Place the flat side of the chisel shank against the set screws.


No. 7 CHISEL.  For cutting from 1 inch minimum to 1-1/2 inches maximum of very soft materials, such as felt, cloth and tissue paper. The upper layers of material are cut with the knife edge without the chisel coming out of the work, while the lower layers are cut with the end.

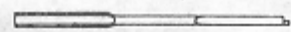
To use, fasten down the work as directed in paragraph A12. Set the stroke at a maximum of 3/4 inch and adjust the depth of the stroke (see CLEARANCE paragraph A6) until at the bottom the chisel cuts into the underlay 1/32 inch. Proceed as directed in paragraph A8 CUTTING.

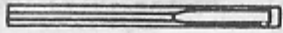
Use on low speeds only.

No. 11 CHISEL.  For cutting designs in soft materials such as wallboard, cardboard and thick layers of paper, where a very smooth cut is required. The maximum thickness it can cut is 11/16 inch. Use on low speeds only.

No. 22 CHISEL.  For use in cutting sheet metal, wood, celluloid, very dense cardboard and all similar materials which tend to heat other chisels. The maximum thickness it can cut is 5/8 inch. Use on high and low speeds.

No. 24 CHISEL.  For general cutting of all soft materials such as wallboard, cardboard, felt, cloth, etc., up to a maximum thickness of 13/16 inch. With soft materials 3/8 inch in thickness, use high speeds, for thicker layers use low speeds only. Place the flat side of the chisel shank against the set screws. Do not use on stroke less than 3/8 inch. For short strokes use No. 28 or No. 0.

No. 25 CHISEL.  Preferred for general cutting of hard materials such as fibre, stencil board, etc., up to a maximum of 3/8 inch where a finer chisel than the No. 22 is required. High or low speeds may be used. Place the flat side of the chisel shank against the set screws.

No. 28 CHISEL.  For general cutting of all soft materials such as wallboard, cardboard, felt, cloth, etc. The maximum thickness which it can cut is 1/4". Place the flat side of the chisel shank against the set screws.

CHISEL BREAKAGE

Chisel breakage is caused by:

1. Using the wrong chisel for a particular material.
2. Trying to cut too much material at one time.
3. Using too long a stroke.
4. Allowing too much or too little clearance.
5. Using high speed when cutting too thick a material.
6. Cutting abrasive materials. Some cheap wallboards contain gritty materials which dull and ultimately cause chisels to break. Do not try to cut these wallboards.

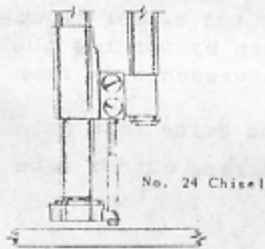


Figure 1.

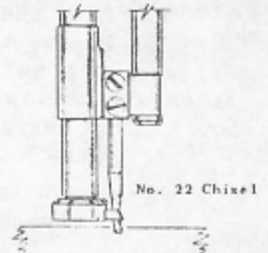


Figure 2.

CHISEL OVERHEATING

Overheating of a chisel which will ultimately cause it to break is caused by:

1. Cutting too much material at one time. Do not exceed the maximums given in the table on page 12.
2. Using the wrong chisel. If other chisels burn, shift to the No. 22 or No. 25. These seldom overheat.
3. Employing too long a stroke. Always use the shortest stroke which will still cut through the material.
4. Running on high speed. Restrict the use of high speeds to metal cutting and not more than 3/8 inch of wallboard, cardboard, or similar soft materials.
5. Moving the Cutawl so slowly that the chisel cuts in essentially the same place for some time. Move the Cutawl as fast as practicable if the chisel tends to heat.

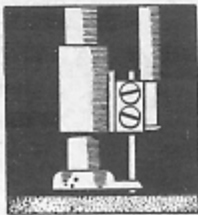


Figure 3

The spring mounted guide tube of the K10 Cutawl assumes a vertical position as shown whenever the chisel is out of the work.

A4--CHISEL GUIDE. (See Figures 5, 6 and 7) The chisel guide foot, (A) supports the chisel just above the work and directs it so that each cut follows the path begun by its predecessors.

The guide foot is held by a spring-mounted guide tube (B). The springs are indicated by the letter C. The guide tube, chisel block, and chisel are free to swing in a short arc. The backward swing is checked by a guard while the forward swing is arrested in a vertical position by the swivel body.

The degree of spring action can be controlled by the knurled knob, D. For cutting material over 3/8 inch thick, use maximum spring action by turning the knob to the left (counter-clockwise). For material 3/8 inch thick or less, place guide tube in rigid position by turning knob to the right (clockwise).

Additional ease of operation is assured by the spring-actuated guide foot (Figure 7). This action permits the guide foot to absorb part of the tension placed on the chisel by the forward pull on the CUTAWL. The spring action on the guide foot requires no adjustment.

The chisel action of the K10 is illustrated in Figures 3 and 4. Whenever the chisel is out of the work it is held vertically as shown in Figure 3. As soon as the chisel enters the work, the drag against the chisel caused by the forward movement of the machine flexes the spring mounting and swings the chisel block and guide tube backward as a unit so that they take the inclined position shown in Figure 4. The extent of the incline depends on the rate of forward movement of the Cutawl. While excessive incline is limited by the guard, sufficient deflection is provided to permit operating the machine at the most satisfactory forward rate without placing undue strain on the chisel. The spring strength, machine speed and limit of deflection have been coordinated to insure smooth forward action, rapid cutting, greatly increased bearing life and reduced chisel breakage.

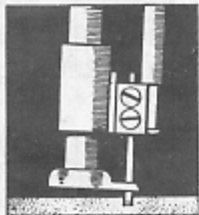


Figure 4

When cutting with the chisel in the work, the spring mounting of the K10 guide tube permits the guide tube and chisel to incline backwards as shown, without bending the chisel.

An open guide foot is used on the K10 Cutawl. With proper care, this guide foot should give long service.

CAUTION:

- a. Do not allow the chisel to rise above and come out of the guide foot at any time. To do so may injure the guide foot and chisel.
- b. Do not try to use chisels with short blades, such as Nos. 3, 25, or 28, on more than 3/8 inch stroke.

TO REPLACE A WORN CHISEL GUIDE FOOT

(See Figures 5, 6, and 7. In following these instructions please note that the Set Screws F & G are on the operator's left when the swivel is in the position shown in Figure 13, and on the right when the swivel is in the position shown in Figure 15. In replacing the guide foot, the swivel is locked in the position shown in Figure 15.)

Remove the guide foot as follows;

1. Lean Cutawl on back of housing (with base plate perpendicular to the table).
2. Lock the swivel in the position shown in Figure 15.
3. Remove the guide tube group by loosening the four set screws (E, F, G & H) in the swivel block (I) with a 5/64" Allen wrench. (The screws F & G, on the operator's right, loosen by turning the Allen wrench toward you; the screws E & H, on the operator's left, by turning the wrench away from you.) Draw the guide tube (B) free.
4. Knock out the foot pin (J) from the guide tube and remove the spring (K) and guide foot (A).

Note: In working with the guide tube, handle carefully to avoid denting or bending out of line which will adversely affect the operation of the machine.

To reassemble;

1. Insert the spring and new guide foot in the guide tube. Line up the hole in the tube, spring, and foot by means of a drift pin. These must be lined up perfectly, otherwise driving in the staking pin may crack the guide foot. Fasten with a foot staking pin. Then rivet the foot pin with a small hand punch, taking care that the foot pin is flush with or under the guide tube surface after riveting takes place.
2. Assemble the chisel block (M) to the guide tube group.
3. Insert the guide tube assembly into the swivel. (Be sure that the guide tube is pushed up into the swivel as far as it will go so that the shoulder on the tube rests firmly against the swivel.)
4. Turn in the bottom set screws (G & H) in the swivel block until the guide tube group is held loosely in place. DO NOT FULLY TIGHTEN SET SCREWS G & H AT THIS TIME.
5. Adjust the guide foot so that it is EXACTLY IN LINE with the chisel block. This is done as follows:
 - (1) Install a new straight chisel in the chisel block. (Use a No. 0, 3, or 11. No. 24 is too long.) Make sure that the bottom of the chisel clears the top of the guide foot until the latter is properly lined in position.

Letter	Part No.	Part Description
A	30K2	Foot - Chisel guide
B	52K23-A	Shaft Assembly - Guide tube (less foot & spring)
C	48K4	Spring - Guide tube block
D	105K3	Screw - Spring tension adjustment
E	104PP2	Screw - Holding guide tube shaft
F		
G		
H		
I	2K8A	Case Assembly - Housing swivel complete
J	60K6	Pin - Chisel guide foot
K	48K23	Spring - Chisel guide foot
L	52K8	Shaft - Holding guide tube block
M	4K2GR	Block Assembly - Holding chisel (with 2 screws)
N	82K2	Screw - Chisel block
O	4K4A	Block Assembly-- Guide tube
P	169K1	Wick, Cross - Guide tube shaft
Q	169K4	Wick, Horizontal - Guide tube shaft
R	PP354	Screw - Guide tube plate
S	24K67GR	Plate - Group - Guide tube
T	30K2A	Guide tube & foot assembly (includes all parts shown in Fig. 7)

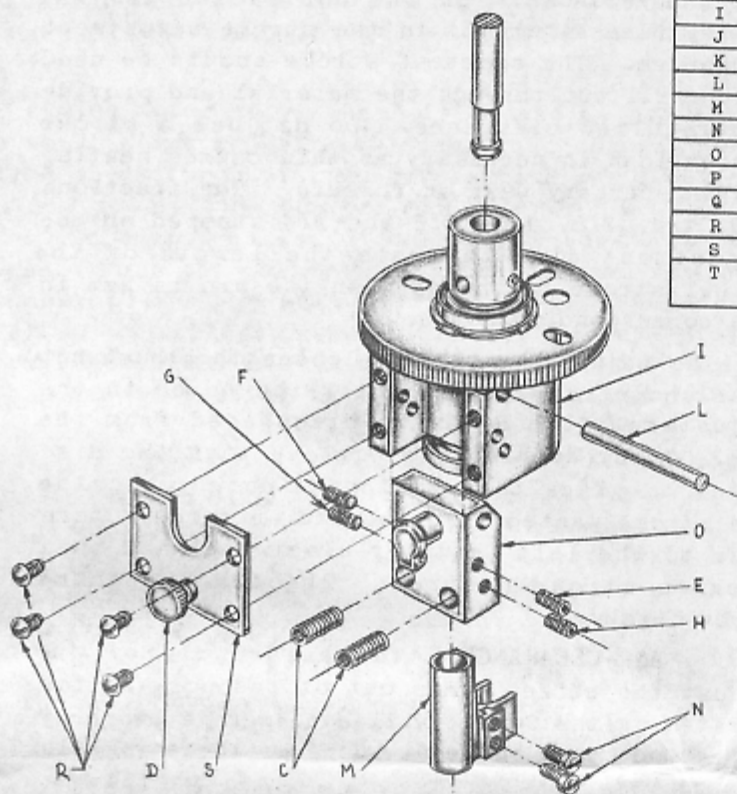


Figure 5

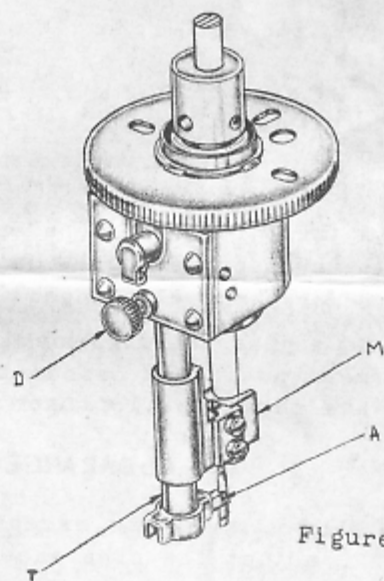


Figure 6

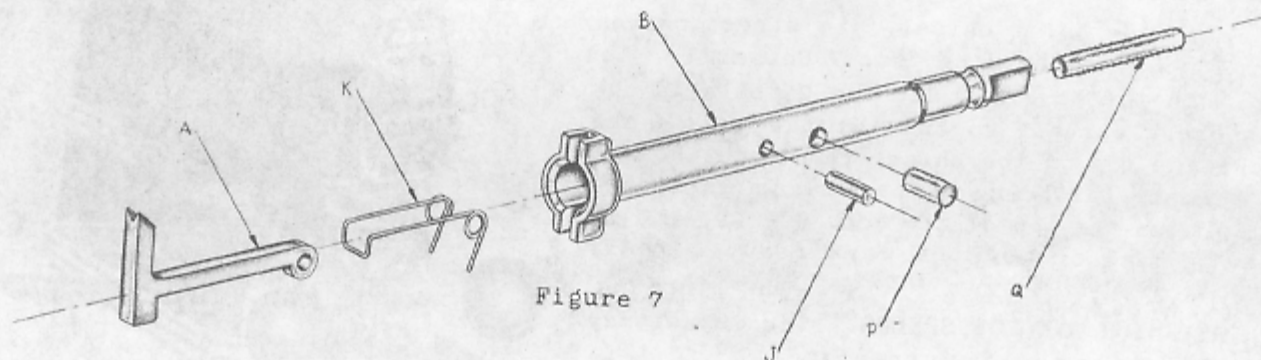


Figure 7

NOTE: If you prefer, send the guide tube to your authorized Cutawl dealer or the factory. A new chisel guide foot will be installed promptly at a reasonable charge.

- (2) Turn the guide handle until the cutting edge of the chisel is approximately centered in the guide foot "V" notch.
- (3) Now make the exact adjustment by turning the top set screws (E & F). Top set screw E on the left of the swivel block (viewing the Cutawl from the front with the chisel facing the operator) turns the guide foot from right to left (which is a clockwise direction when the Cutawl is in its normal position and you are looking down the guide tube toward the bench.) Top set screw F on the right turns the guide foot counter-clockwise.
- (4) When exact alignment is attained, tighten the bottom set screws VERY FIRMLY.

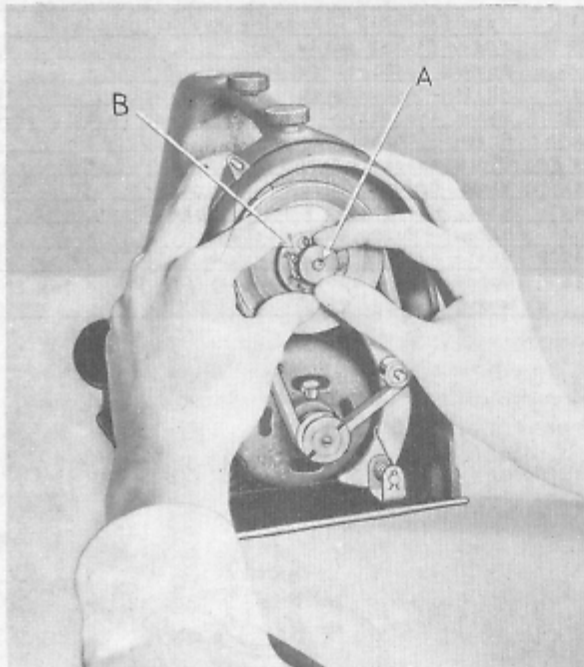


Figure 8

A5--STROKE. On the hub of the driving pulley (see Figure 8) is the stroke adjustment mechanism. The shortest stroke should be used which will cut through the material and provide the required clearance. Do not use a stroke longer than is necessary as this causes heating and unnecessary wear on chisels. The fractions 1/8, 1/4, 3/8, 1/2, 5/8 and 3/4 stamped on the adjustment disc indicate the length of the chisel stroke in inches when the pin is set in the corresponding notch.

To adjust the stroke, loosen the thumb nut A as shown in Figure 8 until the notch in the adjustment disc B can be disengaged from the pin. Then, holding the pulley, turn the disc so as to place the pin in the notch opposite the stroke wanted. For maximum accuracy, turn disc to the left (counter-clockwise) and then back to stroke desired. Tighten the thumb screw firmly.

A6--CLEARANCE. The clearance, or the amount the chisel comes out of the work at the top of the stroke, must be correctly adjusted or the Cutawl will not operate properly and may even be seriously damaged. The clearance must be reset whenever the stroke is altered or a chisel changed.

To adjust the clearance, turn the large driving wheel until the chisel is in its uppermost position. Loosen the two knurled knobs (C) Figure 9 and, using lever D, turn the shaft until proper clearance is obtained. Then tighten knobs C securely.

CLEARANCE REQUIRED BY VARIOUS CHISELS.

With all chisels except the Nos. 7, 11, and 22, adjust the clearance so that the cutting edge of the chisel at the top of the stroke is JUST BELOW THE BOTTOM OF THE CHISEL GUIDE, as shown in Figure 1.

With the No. 7 chisel, see directions on page 3 under the heading "No. 7 Chisel."

With the Nos. 11, 22, and 25 chisels adjust the clearance so that at the top of the stroke the tip of the chisel remains 1/16 inch in the material being cut, as shown in figure 2. To have the tip of the Nos. 11, 22, and 25 chisels come out of the work reduces their efficiency.

A7--HIGH AND LOW SPEEDS. The Cutawl may be driven at any of four speeds:

	Cutting Speed	Strokes Per Minute	Motor Speed	Pulley Diameter
1.	Low	2050	Low	Small
2.	Low	2370	Low	Large
3.	High	2950	High	Small
4.	High	3400	High	Large

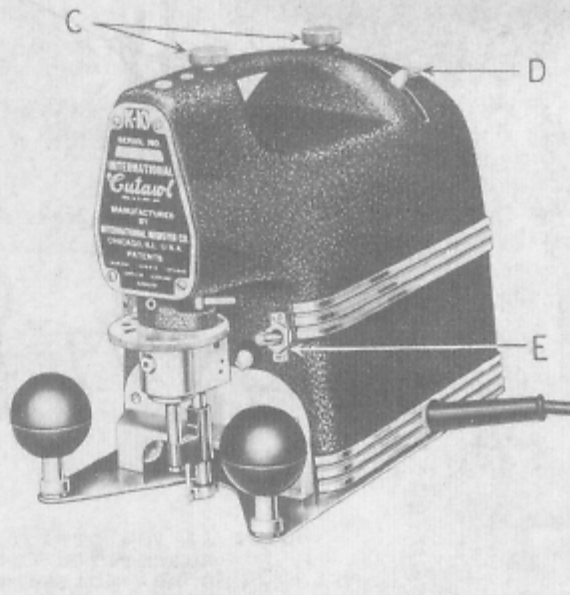


Figure 9

Pulley speeds are changed by reversing the pulley on the motor shaft to use the large (high speed) or small (low speed) diameter. The change of motor speeds is accomplished by pushing the motor switch E (Figure 9) down for "high" speed, and up for "low" speed.

LOW SPEEDS are to be used whenever the material being cut exceeds 3/8 inch or when the chisel heats excessively. It is always to be used in cutting three layers of wallboard.

HIGH SPEEDS are for cutting hard and brittle materials such as sheet metal, stencil board, and fibre, or for thin layers of soft materials such as 1 layer of wallboard, 1/4 inch of cardboard, or 3/16 inch of wood. Cutting two layers of wallboard on high speeds will cause excessive heating of the chisels unless the Cutawl is kept moving rapidly.

TO CHANGE SPEEDS

The motor drive wheel is a cone pulley with both a large diameter (for high speed) and a small diameter (for low speed). To change speeds it is only necessary to remove the pulley from the motor shaft, and reverse the positions of the pulley. The driving belt is always engaged by the cone nearest the motor.

To change pulley, first remove the motor shaft lock screw by turning it counter-clockwise. Pull the pulley off the shaft, and remove the belt. Now, reverse the position of the cones, place the belt on the pulley, slip the pulley over the shaft, and push it on as far as it will go. Make sure the pulley engages the key on the motor shaft in the notch provided in the end of the pulley for this purpose. Replace the washer and lock the pulley in place by turning the lock screw clockwise until tight. Put the idler pulley in place.



Figure 10

A8--CUTTING. Place the machine on the work and connect the motor cord to any source of direct or alternating current of the proper voltage. Grasp the ball handles as shown in Figure 10. Tilt the machine back so that the chisel clears the work. Turn on the switch with a finger of the right hand as shown in Figure 10. Take hold of the swivel by the knurled disc using the thumb of the left hand. Turn the swivel until the now swiftly moving chisel points in the direction in which it is desired to cut. Then, still holding the knurled disc with the left thumb, insert the moving chisel at the desired place.

As soon as the chisel is in the work, release the knurled disc and guide the machine by holding the ball handles ONLY.

When changing directions or turning corners, DO NOT turn the whole machine. Merely push, without turning, in the direction in which it is desired to cut. The chisel will turn of itself and cut in the direction wanted.

The action of the machine is shown in Figures 11, 12, and 13. In Figure 11 the chisel is cutting directly towards the operator; in Figure 12 it is cutting towards the operator's left; in Figure 13 it is cutting away from the operator, completing the end of the cut. The chisel and cutting mechanism have turned through a half circle but neither the work nor the Cutawl itself has been rotated. The chisel and cutting mechanism do all the turning.

At the end of any cut, turn off the motor switch and tilt the machine back until it rests in a vertical position on the frame. Do not let it rest on the chisel. To do so will dull and bend it.



Figure 11---Cutawl cutting toward the operator. neither work nor Cutawl is turned.

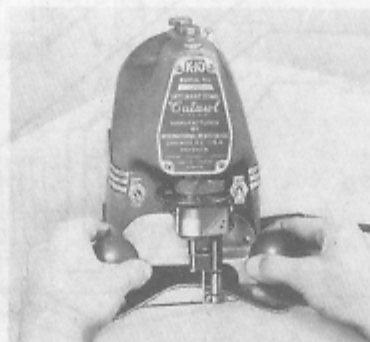


Figure 12---Cutawl cutting toward the operator's left. The cutting mechanism alone does the turning.



Figure 13--- Cutawl cutting away from the operator.

A9--SWIVEL BRAKE. For most satisfactory cutting the swivel mechanism should not turn too easily but should always exert a slight uniform drag on the chisel. The necessary resistance to turning is provided by the swivel brake (Figure 14). The brake is set at the factory and should not be adjusted or touched.

105 K1-A-THUMB SCREW - LOCKING

38 K18-A-LEVER-CLEARANCE ADJ.

52 K32-A-SHAFT ASS'Y.-DRIVING

71 K1 - V-BELT

PP-162-LOCK WASHER

PP-210-SCREW-STROKE ADJ. LEVER

57 K2-A-PULLEY ASS'Y.-DRIVING

106 K1 - LOCK NUTS-BEARING

146 K3 - KNOB-STROKE ADJ.

106 K11-NUT-STROKE ADJ.

PP-434-LOCK WASHER

52 K31-A-SHAFT ASS'Y.-STROKE ADJ.

2 K3 - CASE-HOUSING

PP-551-SET SCREW

56 K19 - BUSHING-STROKE ADJ. INSERT

PP-357-LOCK WASHER

84 K1 - SCREW-BEARING GROUP

2 K5 - CASE-HOUSING SUPPORT

54 K4 - BEARING-IDLER STUD

PP-252-LOCK WASHER

106 K5 - NUT-IDLER STUD

57 K1 - PULLEY-MOTOR

72 K2 - WASHER-MOTOR SHAFT

78 PP4 - SCREW-MOTOR PULLEY

38 K17A-LEVER ASS'Y.-IDLER

48 K41 - SPRING-IDLER

22 K2 - BRACKET-IDLER STUD

60 PP7 - PIN - COTTER

24 K93-A-PLATE ASS'Y.-BASE

PP-191-RIVET

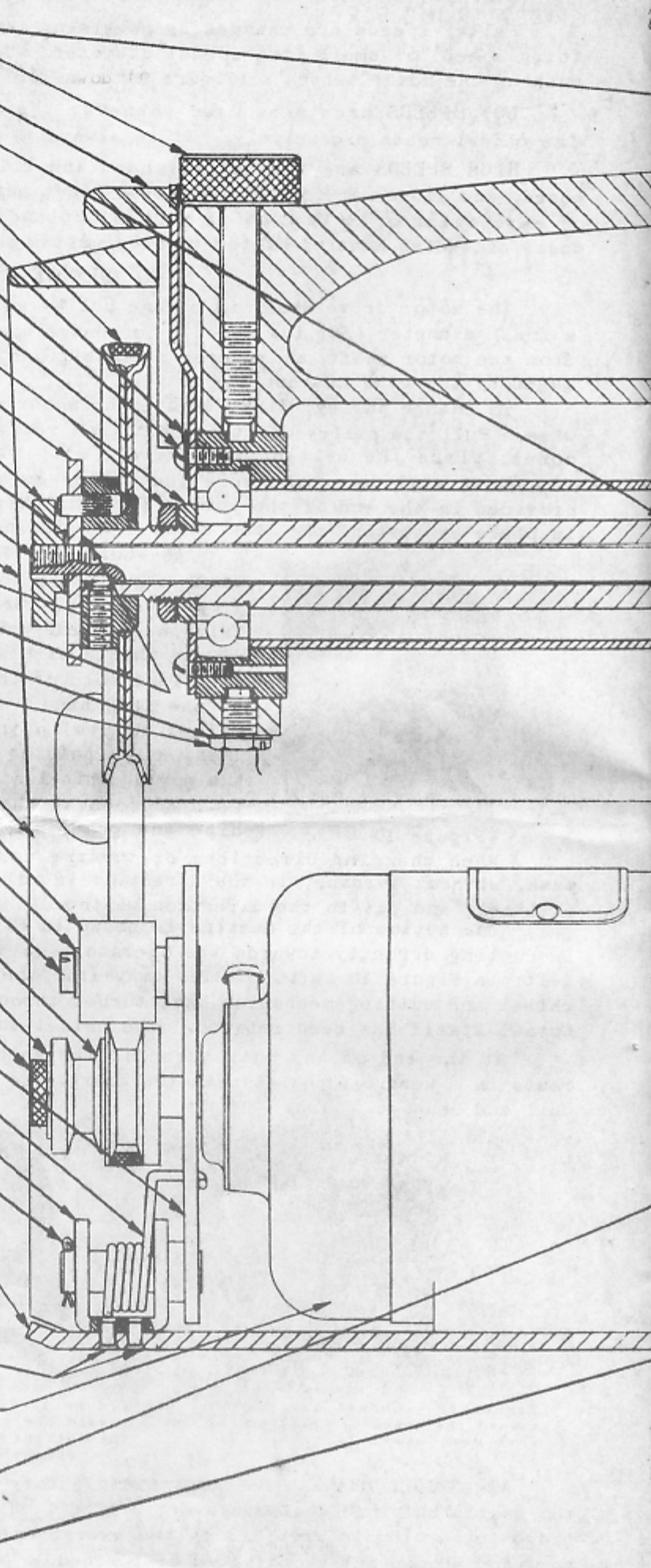
131 K1 - MOTOR (115 V.)

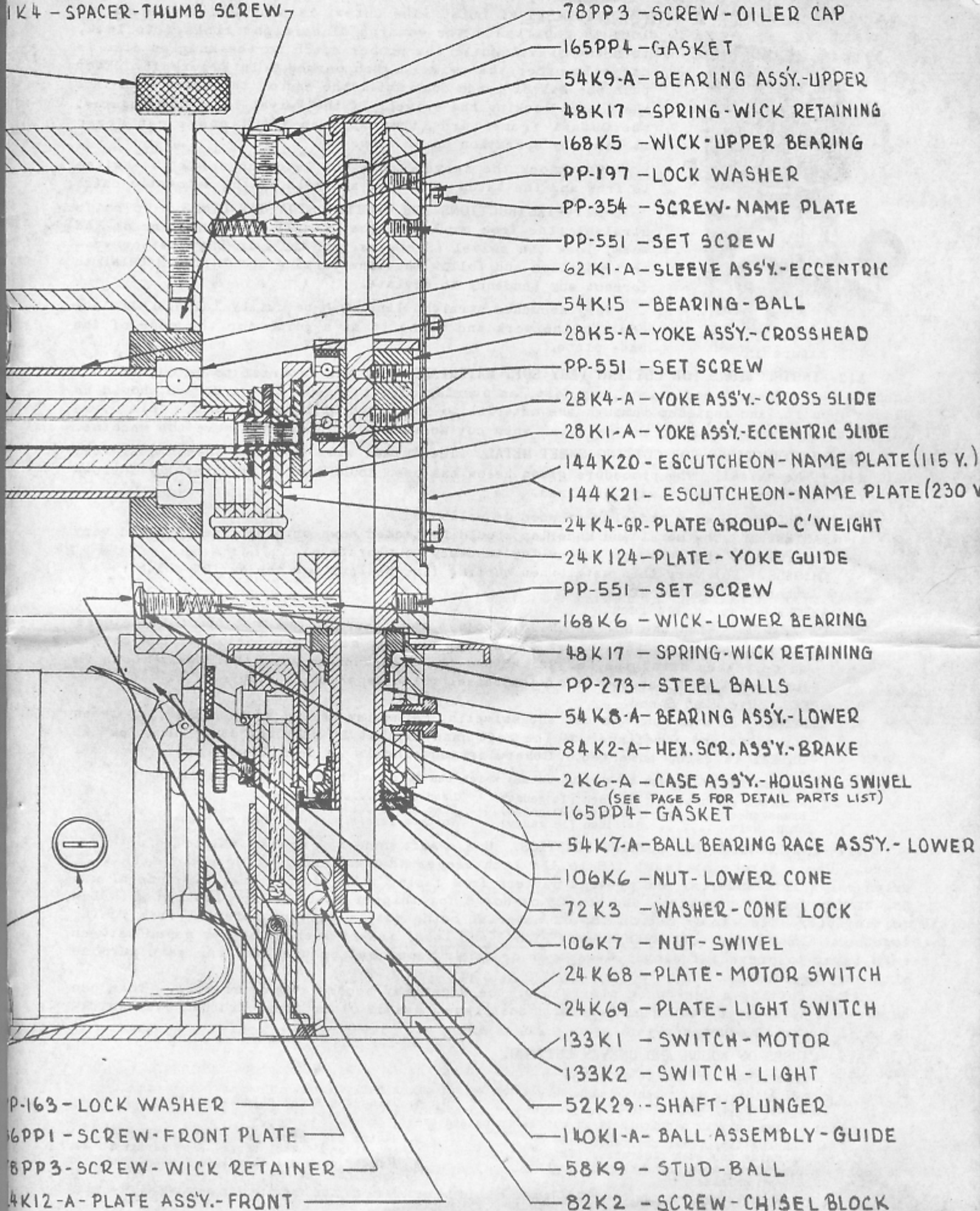
131 K2 - MOTOR (230 V.)

13A PP1 - MOTOR BRUSHES & SPRING

6 PP6 - MOTOR BRUSH CAP

136 K2 - LAMP-BAYONET BASE





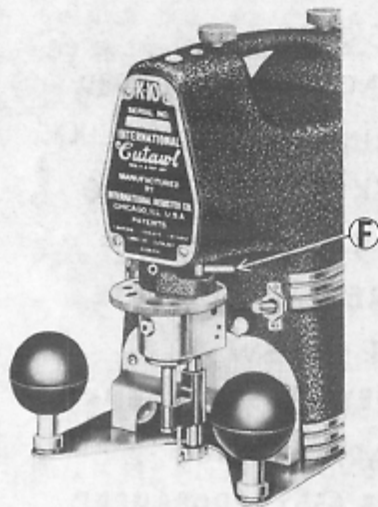


Figure 15

A10--SWIVEL LOCK. The Cutawl is provided with a swivel lock to facilitate the cutting of straight lines. To lock, turn the swivel until the proper notch in the knurled disc is directly under the swivel latch marked F in Figure 15. Then push the swivel latch down until the end of the latch fits into the notch, locking the swivel. If the swivel latch lies against the Cutawl frame turn it outward so the fingers can grasp it for easy operation up or down.

To unlock the swivel, push the latch up until the swivel is free and the latch is caught and held by the automatic catch.

A11--INSTRUCTIONS FOR CUTTING STRAIGHT LINES. To cut a straight line free hand with the Cutawl, rule the line on the work, lock the swivel (See paragraph A10) in the most convenient position and follow the line turning the ENTIRE MACHINE to correct any tendency to deviate.

Very accurate straight lines can be cut by laying a straight edge on the work and using it as a guide for the edge of the base plate.

A12--INSTRUCTIONS FOR CUTTING VERY SOFT MATERIALS. If the material to be cut is soft such as tissue paper, soft cloth, or felt, an overlay of stiff paper or cardboard should be placed upon it, and fastened through the material to the bench with small nails. This overlay holds down the edges of the material when cut and makes it easier to move the machine.

A13--INSTRUCTIONS FOR CUTTING SHEET METAL. The Cutawl will cut thin sheet metal very well using the chisel. The procedure given below has been found best. If carefully followed, excellent results are always obtained.

1. UNDERLAY. Use an underlay of wood or wallboard.
2. FASTENING. The metal and underlay should be tacked down or otherwise fastened very firmly to the table to reduce the tendency to vibrate.
3. CHISELS. For very thin metal when cutting fine designs use the No. 25 chisel; otherwise the No. 22.
4. STROKE. Set on 1/4 inch.
5. CLEARANCE. With the No. 25 chisel, adjust the clearance so that the cutting edge of the chisel at the top of the stroke is just below the bottom of the chisel guide. When using the No. 22, adjust the clearance so that the lowest tooth is just level with the bottom of the chisel guide as shown in Figure 2.
6. SPEED. Use High Speed.
7. CUTTING. In starting the cut the swiveling mechanism should be held firmly between the thumb and forefinger of the left hand so that it will not dance about as the chisel is being inserted. Otherwise, cutting is as described in paragraph A8.

The maximum thickness of various metals which can be cut with the chisel is as follows:

Aluminum sheet	1/16 inch (14 gauge)	Lead sheet	1/4 inch
Brass sheet	1/32 inch (20 gauge)	Zinc sheet	1/32 inch (13 gauge)
Iron, Galv.047 inch (18 gauge)	Thicker layers must be sawed with the No. 13 Saw.	

A14--INSTRUCTIONS FOR CUTTING PLASTICS. Use a soft underlay such as wallboard or cardboard. Use a stroke at least 1/8 to 1/4 inch deeper than material being cut. This will drive chips into underlay and prevent pattern from fusing with scrap stock. In general use No. 22 for thicker plastics, and No. 25 or No. 6 for thinner stock. For plastics with low melting point use wax or oil on top of material being cut to prevent material from fusing together. In cutting very thin sheets (1/64" and less) insert a sheet of wax paper between each layer to prevent fusing. Newspaper or other paper may be used for the same purpose with varying results.

After cutting a design in plexiglass, the edges may become cloudy or dull. This can be cleared up by application of heat with acetylene, gas or other flame brushed over quickly until material becomes clear.

A15--CAUSES OF ROUGH AND UNEVEN CUTTING.

A cut with a rough edge may be caused by--

1. Not allowing sufficient clearance.
2. Allowing too much clearance.
3. A dull chisel.
4. Using the wrong chisel.

Jumping of the chisel, particularly on curves is caused by--

- A. Running the Cutawl too fast.
- B. Allowing too much clearance. (This is particularly true when using the No. 3 chisel.)
- C. A bent chisel.
- D. Having the chisel guide not in line with the chisel and chisel block. (See paragraph A4.)
- E. A badly worn chisel guide, plunger shaft or chisel block.

If worn parts are responsible, the Cutawl should be returned to the factory for repairs.

B1--GENERAL. Because of the high speed at which the Cutawl operates, all moving parts always must be kept well lubricated. The points that require oiling or greasing are discussed below. All other moving parts are permanently lubricated and do not require any attention.

B2--OILING. Reservoirs are provided from which oil is fed by wicks at a slow uniform rate to the bearings. Only Cutawl oil should be used. This is a special oil which will feed indefinitely through wicks without clogging -- USE NO OTHER. Figure 16 shows the five (5) points that require lubrication with Cutawl oil.

Fill Once A Day:

1. Guide tube bearing (A).
2. Lower plunger bearing (B).
3. Upper plunger bearing (Remove Screw C).
4. Motor forward oil cup (D).
5. Motor rear oil cup (E).

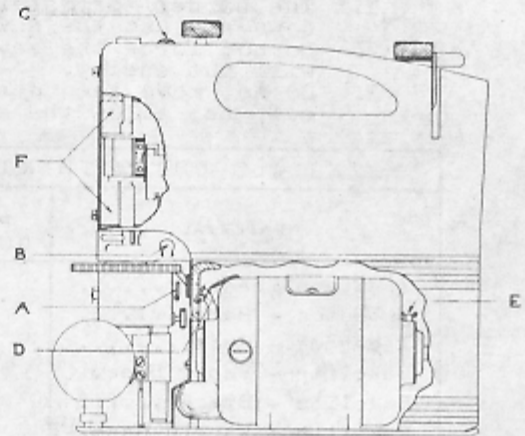


Figure 16

B3--GREASING. The head (F) of the machine has been packed with Cutawl lubricant at the factory. Under normal usage, this grease will last several years. Check the head once or twice a year by removing the name plate. If additional grease is needed fill with K10 CUTAWL LUBRICANT ONLY. This is a special high temperature lubricant. Other lubricants will break down, damage moving parts, and drip on to the work. After filling with K10 LUBRICANT, make sure to replace the stabilizer plate as well as the nameplate. In order to make a tight fit and avoid dripping of grease, seal the stabilizer plate to the casting with PERMA-TEX or ordinary shellac.

C - CUTAWL USED AS A SAW

The Cutawl can be used as a saw by replacing the chisel with a saw blade. When used in this way it takes the place of a band or scroll saw. It possesses the distinct advantage over all other sawing tools of having the cutting mechanism swivel mounted so that in cutting curves or turning corners neither work nor machine need be rotated.

Figure 17 shows how material being cut should be raised on parallel bars to allow clearance below the saw.

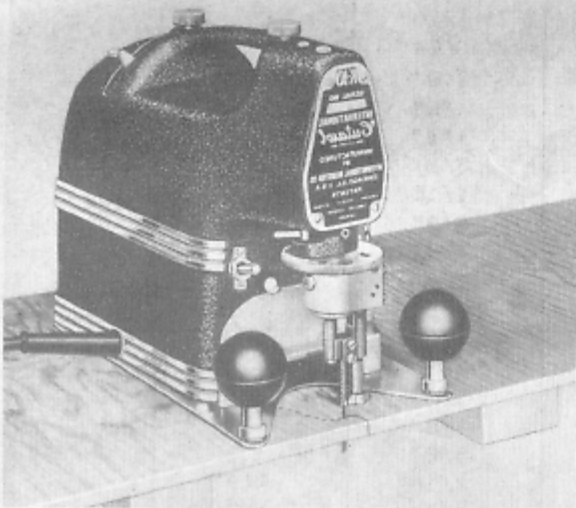
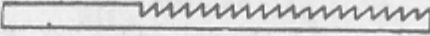


Figure 17

The teeth should face toward the plunger as shown in Figure 17.

C1--MATERIAL. Place the material to be sawed on parallel strips of wood or other material of sufficient thickness so that the saw blade, at its lowest position will not strike the bench top.

In sawing thin metal or other hard materials where its strength is not sufficient to stand the strain without bending or catching between the teeth and moving up and down with the saw, the material should be placed on or between layers of thin wood such as 3/16 inch thick three-ply veneer. It is usually necessary to fasten metal and wood layers together, as any movement between the several layers will cause saw breakage.

C2--SAW BLADE. The No. 13 Saw is to be used.  The shank should be inserted far enough into the chisel block so that the upper end is flush with the top of the block. The

teeth should face toward the plunger as shown in Figure 17.

C3--STROKE. Set the stroke at 3/4 inch, as described in paragraph A5.

C4--CLEARANCE. Loosen the knurled knobs C (Figure 9) and turn the lever D as far as it will go counter-clockwise viewing the machine from the front. This puts the plunger as close to the work as possible and permits cutting the maximum thickness of material. Lock the shaft housing in place by tightening the knobs C.

C5--SPEED. Use high speed wherever the saw does not heat and cuts smoothly. Otherwise use lower speed.

C6--SAWING. Place the Cutawl on the material with the saw teeth toward the edge of the work and saw as when cutting with the chisel. When starting to saw from the middle of the work, a hole must first be drilled in which to insert the saw.

The following precautions should be observed:

1. The harder the material the more firmly the Cutawl must be held down against the saw table.
2. Do not force the saw against the material any faster than it will cut easily.
3. Do not move the Cutawl suddenly at right angles to the line of cut, but allow the saw to cut itself free in making all turns.

MATERIALS CUT WITH K10 CUTAWL USING EITHER CHISEL OR SAW				
MATERIAL	CHISEL PREFERRED GIVEN FIRST	SPEED	MAXIMUM THICKNESS WHICH CAN BE CUT	
			WITH CHISEL	WITH NO. 13 SAW
Aluminum Sheet.....	22	Hi	3/32"	
Asbestos - Hard.....				3/8"
Asbestos - Soft.....	24	Lo	1/2"	
Bakelite - Paper Base..	22	Lo	1/8"	
Bakelite - Black.....	22	Lo	3/16"	
Bakelite - Fabric Base.	22	Lo	1/4"	1/2"
Beaver Board.....	24 - 3 - 11	Hi or Lo	5/8"	
Brass Sheet.....	22	Hi	1/16"	
Cardboard - Soft.....	24 - 3 - 11	Hi or Lo	11/16"	
Cardboard - Hard.....	22 - 24	Hi or Lo	5/16"	3/4"
Celluloid.....	22	Lo	1/8"	
Celotex.....	24 - 3 - 11	Hi or Lo	11/16"	1 3/8"
Cloth.....	24 - 11	Hi or Lo	11/16"	
Cloth.....	7	Lo	1 1/2"	
Copper Sheet.....	22	Hi	3/64"	
Cork.....	7	Lo	1"	1 1/4"
Cornell Board.....	24 - 3 - 11	Hi or Lo	5/8"	
Felt.....	24 - 11	Hi or Lo	11/16"	
Felt.....	7	Lo	1 1/2"	
Fibre Sheet.....	22	Hi	1/8"	3/8"
Foam Rubber.....	25 - 6 - 0	Hi	5/8"	
Formica.....	25 - 6 - 22	Hi or Lo	3/8"	
Homasote.....	24 - 11	Hi or Lo	11/16"	1 1/4"
Insulite.....	24 - 11	Hi or Lo	11/16"	
Iron, Galvanized.....	22	Hi	3/64"	
Lead Sheet.....	22 - 25	Lo	3/8"	
Leather.....	24 - 11	Hi or Lo	1/2"	
Linoleum.....	25 - 22	Hi or Lo	1/4"	
Lucite (Plexiglas)....	22 - 25	Lo	3/8"	
Masonite - Soft.....	24 - 3	Hi or Lo	11/16"	1 1/4"
Masonite - Hard.....	22	Lo	3/8"	3/4"
Metallic Foils.....	22	Hi	1/4"	
Mica.....	25	Hi	1/8"	
Paper - Crepe.....	24 - 11 - 3	Lo	5/8"	
Paper - Kraft.....	25	Lo	5/8"	
Paper - Tissue.....	11 - 24 - 3	Lo	5/8"	
Plexiglas (Lucite)....	22 - 25	Hi or Lo	1/2"	
Pressed Board.....	22	Lo	3/8"	
Rubber.....	24 - 25	Lo	5/8"	
Rubber - Hard.....	22	Lo	3/16"	1/4"
Steel.....	22	Hi	3/64"	
Stencil Board.....	25	Lo	1/4"	
Tenite.....	22	Lo	1/4"	
Upson Board.....	24 - 3 - 11	Hi or Lo	5/8"	
Veneer, 3 Ply - Soft...	22	Lo	3/8"	1 1/4"
Veneer, 3 Ply - Hard...	22	Lo	1/4"	3/4"
Vynlite.....	22 - 25 - 6	Lo	1/4"	
Wallboard.....	24 - 11 - 3	Hi or Lo	11/16"	1 1/4"
Wood - Soft.....	22	Lo	1/2"	1 1/4"
Wood - Hard.....	22	Lo	1/4"	5/8"
Zinc Sheet.....	22	Hi	1/16"	1/8"

* The high & low speeds indicated on this chart apply to motor speeds without regard to size of the motor pulley.

D-CIRCLE CUTTING ATTACHMENT

D1--DESCRIPTION.

The Circle Cutter is an attachment which fits on the front of the Cutawl and guides it so that the chisel cuts a true circle.

The attachment may be quickly fastened to the two ball handle studs. It has a removable slide carrying a pivot pin which may be adjusted so that circles from 3/4-inch to 48 inches in diameter may be cut.

D2--TO ATTACH.

1. Lock swivel so that the chisel cuts to the operator's right.
2. Hook the slot in the right side of the circle cutting attachment over the ball handle stud A, as shown in Figure 19.
3. With the stud A acting as a pivot, swing the attachment to the left, as indicated by the arrow, until the notch D is engaged with the ball handle stud E.
4. Remove the ball handle from the stud E and drop the lock sleeve F over this stud so that the large end of the sleeve engages the circular depression of the notch D.
5. Lock the attachment in place by screwing the ball handle down firmly.

D3--TO SET FOR DIAMETER OF CIRCLE.

The Circle Cutter can be set to cut circles of any desired diameter from 3/4 inch to 48 inches. There are two scales, a black one for circles up to 24 inches, and a red one for circles from 24 inches to 48 inches in diameter. Each scale is marked in 1/4 inch divisions. (See Figure 20).

FOR CIRCLES OF 3/4 INCH TO 24 INCH DIAMETER:

1. Loosen the two thumb screws G and place the adjustable slide H so that the black arrow M is on the same side as the black numbered scale I and the pivot pin K is in the end nearest the chisel.
2. Move the adjustable slide until the black arrow M is opposite the desired diameter on the black scale.
3. Tighten both thumb screws securely.

FOR CIRCLES OF 24 INCH TO 48 INCH DIAMETER:

1. Remove the two thumb screws and reverse the slide, end for end, so that the red arrow N is on the same side as the red scale J.
2. Insert the thumb screws in the end of the slide opposite the pivot pin.
3. Move the slide until the red arrow N is opposite the desired diameter on the red scale.
4. Tighten both thumb screws securely.

D4--TO CUT OUT THE CIRCLE.

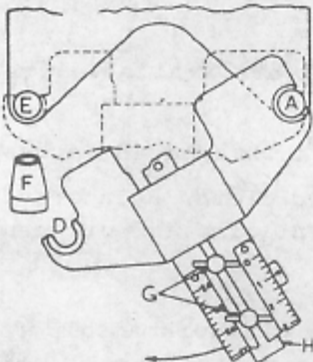


Fig. 19 - Attaching Circle Cutter to Cutawl

First, check to make sure that the swivel has been locked so that the chisel cuts to the operators right. Set the chisel stroke, clearance adjustment, and speed, as for ordinary cutting. Then adjust the circle cutter for the desired diameter as described above.

Insert the pivot pin K in the center of the desired circle. Start the motor and guide the movement of the machine by placing one hand on the Circle Cutter handle Q and the other on the ball handle at E. Move the machine in a clockwise direction until the desired circle is completed.

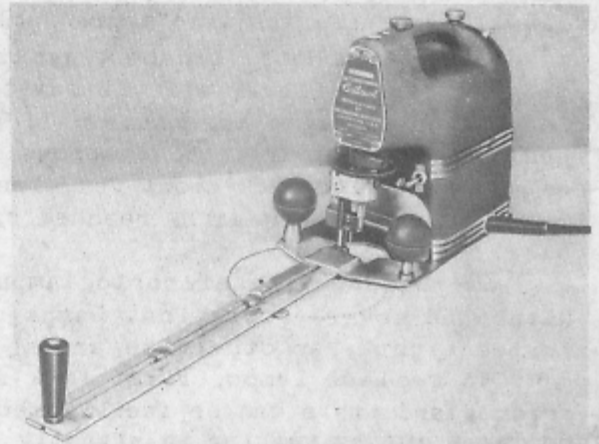


Fig. 18- Cutawl with Circle Cutting Attachment

NOTE: This model Circle Cutter (part no. K-2170-A) can be used only on the K10, K9AB, K9A, and K9 Cutawls. Circle Cutters for other models have now been discontinued.

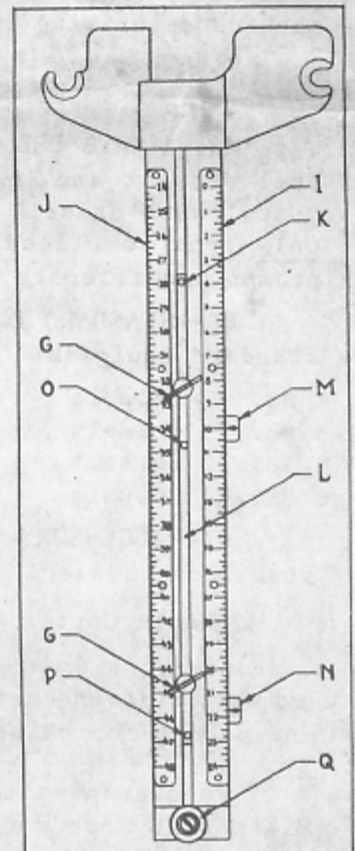


Fig. 20- Setting Circle Cutter for Desired Diameter

E1--MOTORS. The motors used on the Cutawl are specially built for this service. The only attention they require is regular lubrication and occasional replacement of the brushes. In ordering brushes, be sure to give the name of the motor, the motor model number, and the Cutawl model and serial number. For all other replacements or repairs, the motor should be returned to the factory. Satisfactory repair work on Cutawl motors ordinarily cannot be done by the average electrical repair shop. Keeping the motor free from dust and oil will increase its life appreciably.

To replace motor brushes, it is necessary to remove the housing. First, place the stroke clearance lever all the way to the left (until the large drive pulley 57K2A is as close as possible to the motor pulley 57K1). Remove the V-belt from the drive mechanism. Then loosen the four outside screws in the base plate. The housing and cutting mechanism can now be tilted back about 75%, leaving the motor attached to the base plate. The motor brushes can now be readily reached by removing the black brush caps near the front of the motor.

E2--LAMPS. The electric lamps provided with the Cutawl are especially mounted to withstand severe vibration. Lamps are of the bayonet-base type, and should be kept inserted tightly as otherwise arcing will occur which will burn out the lamp socket.

To replace lamps, first lock swivel in position shown in Figure 13. Remove metal front guard (this can be facilitated by first removing the ball handles). Then lamps can be taken out by pushing in slightly and a quarter-turn to the left. Insert new lamp, making sure to engage the two pins on the lamp base with the corresponding slots in the receptacle. Push all the way in and turn a quarter to the right.

E3--SPECIAL CUTTING PROBLEMS. Should you have any special problems or unusual type of material to cut, contact your local dealer. It will be helpful if you send him complete data and samples of the material to be cut.

E4--SERVICE. For repairs, adjustment or overhauling contact your local dealer. He can handle minor repairs and will return the machine to the factory for major overhaul. When returning your Cutawl to your dealer or to the factory for repair, attach a tag to the machine describing the nature of the trouble encountered.

When corresponding with your dealer or the factory concerning your machine, or when ordering parts, be sure to give both MODEL and SERIAL NUMBER.

E5--ALWAYS USE GENUINE CUTAWL CHISELS, LUBRICANTS, AND PARTS. You are thus assured of best results and longer life for your machine. We do not guarantee the operation of the Cutawl with chisels not of our manufacture. Chisels, lubricants, and parts are available only from your local authorized Cutawl dealer. Place your orders directly with him for prompt and friendly service.

E6--STANDARD EQUIPMENT. Each new K10 Cutawl is furnished with the following items of standard equipment (subject to change without notice):

6 No. 0 Chisels	6 No. 25 Chisels	1 Allen Wrench (for guide tube set screws)
6 No. 11 Chisels	6 No. 13 Saws	1 Can CUTAWL Oil
6 No. 22 Chisels	2 Screws (for chisel block)	2 Bayonet-base CUTAWL lamps
6 No. 24 Chisels	1 Screw Driver	1 Instruction Manual

E7--ACCESSORY EQUIPMENT. The following items for your K10 Cutawl are available from your local dealer. When ordering, please specify for Model K10.

Circle Cutter -- will cut circles of any desired diameter from 3/4 inch to 48 inches.

Carrying Case -- made of 3-ply firwood, covered with proxlin coated cloth. Reinforced construction and metal corners. Serviceable handle and lock. Convenient clip for oil can and pocket for chisels.

GUARANTEE

We guarantee the INTERNATIONAL CUTAWL against defects of material and workmanship for SIX MONTHS from date of shipment, and will replace or repair defective parts free of cost, provided they are returned transportation charges paid to the factory at Chicago.

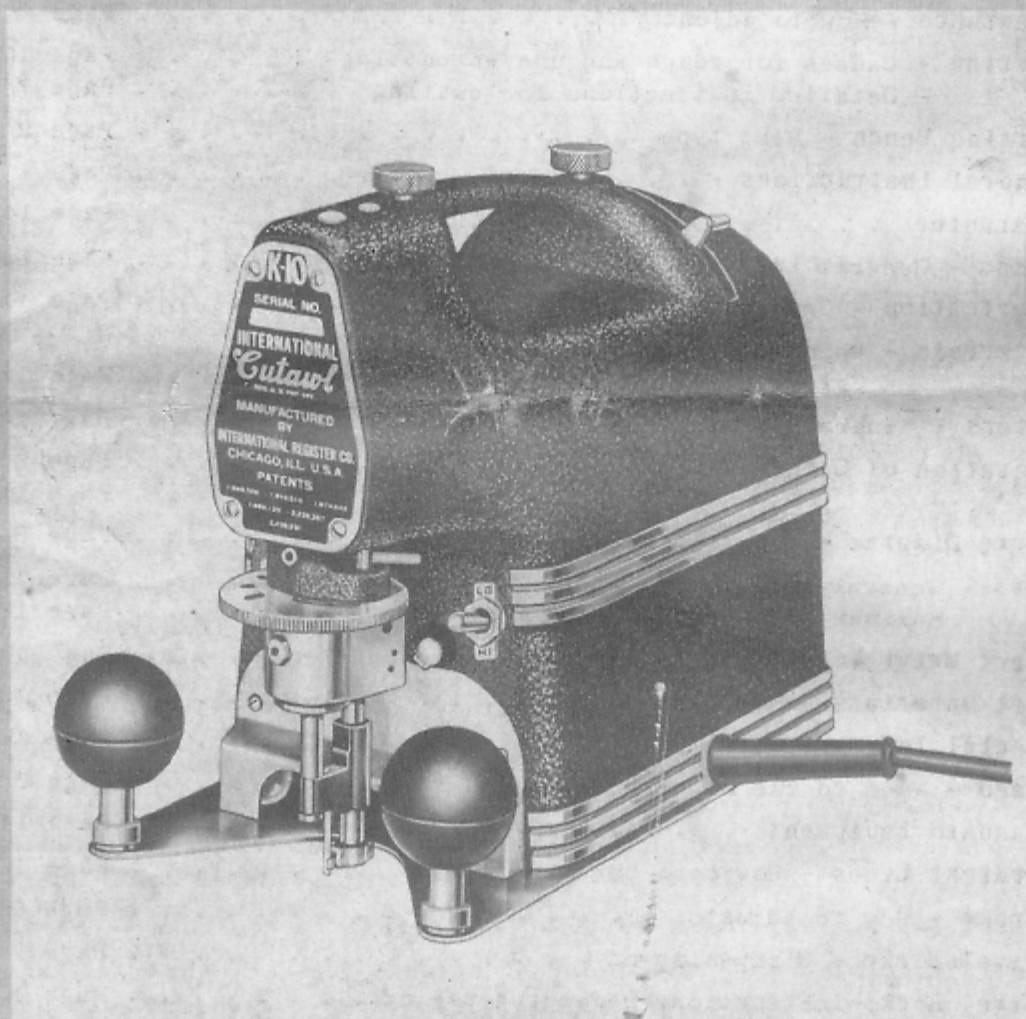
INDEX

Chisel - Breakage, causes of	Page 3
Detailed discussion of various types	Page 3
Diagrams showing different types	Page 3
Operation of Cutawl with chisel	Page 2
Overheating, causes of	Page 3
Proper chisel which should be used	Page 2-12
Chisel Guide - Complete information	Page 4
Circle Cutting Attachment - Complete information	Page 13
Clearance - How to adjust	Page 6
Cutting - Causes for rough and uneven cutting	Page 10
Detailed instructions for cutting	Page 7
Cutting Bench - Best type	Page 2
General Instructions -	Page 2
Guarantee	Page 14
Lamps - General information	Page 14
Lubrication - General instructions	Page 11
Materials - Which can be cut with the Cutawl and Chisel or Saw which should be used	Page 12
Motors - General Information	Page 14
Operation of Cutawl - With a chisel	Page 2
With a saw	Page 11
Parts Diagram -	Page 8-9
Saws - General information	Page 11
Maximum thickness which can be sawn	Page 12
Sheet Metal - How best to cut	Page 10
Soft Materials - How best to cut	Page 10
Special Information -	Page 14
Speed - When to use high or low speed	Page 6
Standard Equipment -	Page 14
Straight Lines - How best to cut	Page 10
Stroke - How to adjust	Page 6
Swivel Brake - Discussion of	Page 7
Swivel Lock - Instructions regarding use of	Page 10

INSTRUCTIONS FOR OPERATING

The KIO

Cutawl



MANUFACTURED BY

INTERNATIONAL REGISTER CO.

2622 W. Washington Blvd., Chicago 12, Ill.

Established 1891