

Fletcher-Terry F3000 48'' Multi-Material Cutter

Instruction Manual



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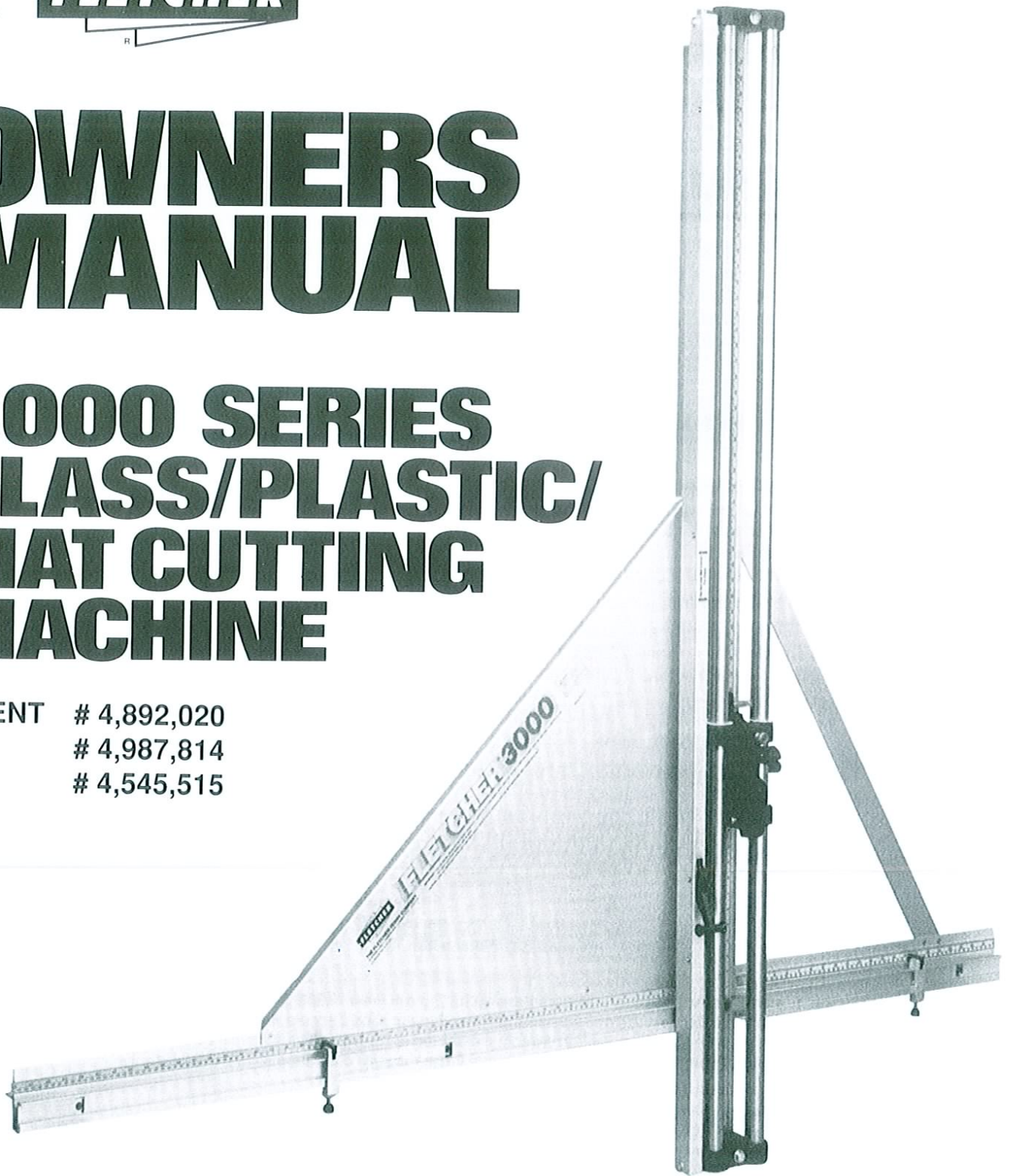
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OWNERS MANUAL

3000 SERIES GLASS/PLASTIC/ MAT CUTTING MACHINE

PATENT # 4,892,020
4,987,814
4,545,515



SET UP, OPERATION & MAINTENANCE

Form 1093

THE FLETCHER-TERRY COMPANY

65 Spring Lane, Farmington, Connecticut 06032-3311 USA (860) 677-7331

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**To Initiate Your Warranty Coverage You Must Return
The Warranty Card Found In The Spare Parts Bag.**

WARRANTY

The Fletcher-Terry Company warrants the Fletcher® 3000 Glass/Plastic/Mat Cutting Machine to be free from defects in parts and workmanship for 2 years. The Fletcher-Terry Company warrants that it will repair or replace any such defective machine or replace parts, providing the machine has been under normal use and service. Authorization for the return must come from The Fletcher-Terry Company in writing. Proof of purchase must be submitted to validate warranty coverage.

This warranty is in lieu of all other agreements and warranties expressed or implied. The Fletcher-Terry Company neither assumes nor authorizes any other person or representative to assume for it any other liability in connection with the Fletcher® 3000 Glass/Plastic/Mat Cutting Machine. The Fletcher-Terry Company shall not be liable for any damages or losses, incidental or consequential, direct or indirect, arising out of the use of this product.

Quality is our Number 1 priority.

INTRODUCTION

Congratulations! The **Fletcher 3000®** is the latest version in the evolution of fine wall mounted glass/plastic/mat cutters. Fletcher-Terry has set the standard for this product for nearly 50 years and now presents the finest in engineering design, sturdy construction, ease of use, and the accuracy which comes from quality.

The **Cutting Head** glides smoothly on two chrome plated and polished tubes to assure accurate cuts. Space age bushings keep the **Cutting Head** closely fitted to the tubes with minimum wear.

The unique **Turret** holds all three cutting tools at the ready. You can switch from glass to plastic to mat cutting (or any other sequence) in seconds by rotating the **Sleeve**. The proper tool will click into place. A new **Mat Blade** has been designed to allow use of both ends for cutting. This means twice the life.

A sturdy **Support** has been added to the right side of the cutting line. This permits you to use optional **Measuring Stops** on the right as well as the left. In addition, it supports the cut off section of mats to protect corners and edges.

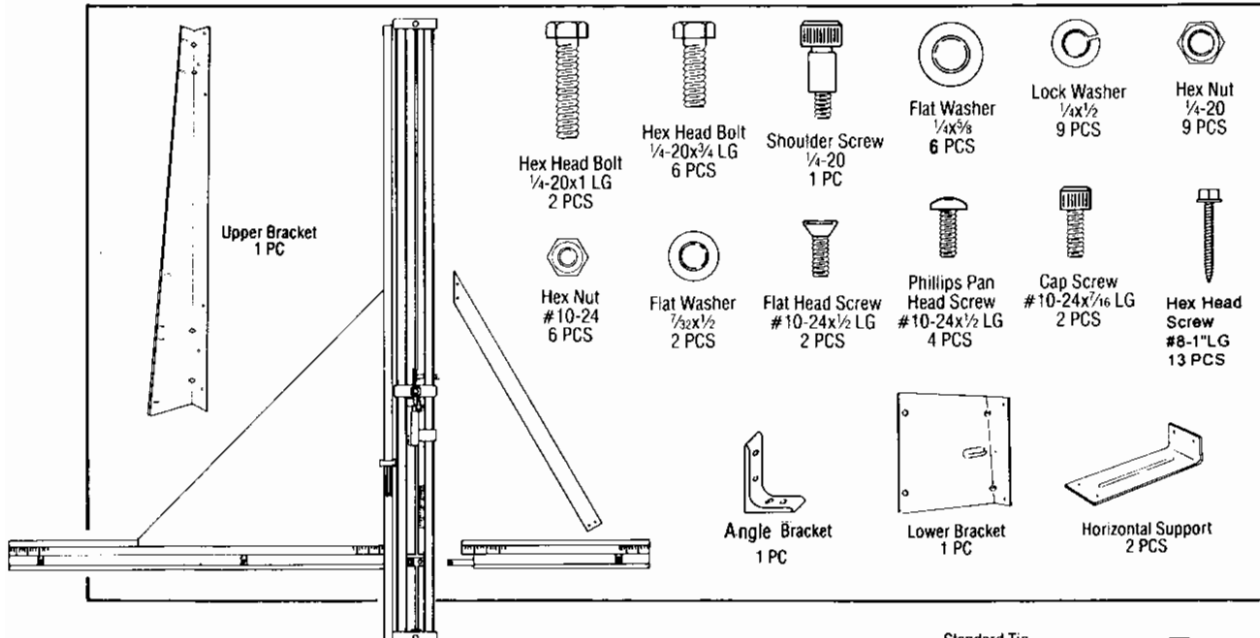
Squaring is quick and easy. Cutout windows allow you to see the position of the **Squaring Edge Bar**.

The **Mat Clamp** is operated by a conveniently located lever and provides positive clamping over the full length of the mat or plastic.

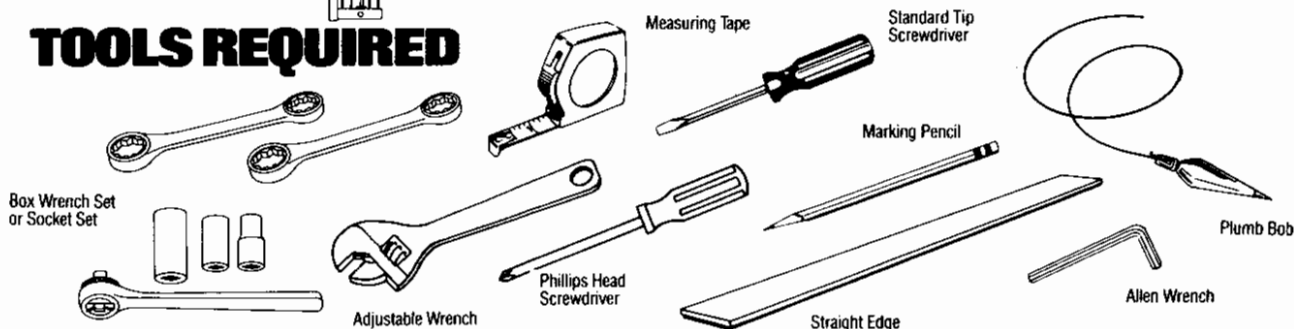
As with its predecessors, the **Fletcher 3000** is easy to operate and care for with a minimum of training. Careful use of this manual will assure proper installation of the machine and correct techniques in the use and maintenance of your new **Fletcher 3000**.

HARDWARE

The **Fletcher 3000** must be properly mounted on your wall before you can cut glass, plastic, and mat board. Provided are two vertical brackets, (**Upper** and **Lower**), two "L" shaped **Horizontal Support** brackets, hex head screws, nuts, bolts, and lock washers as shown below. Check to be sure you have all necessary hardware before you begin mounting the machine. Proper tools as illustrated below will also make assembly easier.



TOOLS REQUIRED



MOUNTING YOUR MACHINE

It is important to mount the machine on the wall so it is secure, rigid, and safe.

At least two people will be required to complete this installation.

Mounting the machine on the wall will include the following major steps in sequence:

1. Attach the **UPPER BRACKET** to the wall.
2. Attach the **LOWER BRACKET** to the machine.
3. Lift and bolt the machine to the **UPPER BRACKET**.
4. Attach the **LOWER BRACKET** to the wall.
5. Install the left **HORIZONTAL SUPPORT BRACKET**.
6. Attach the **RIGHT SUPPORT**.
7. Install the right **HORIZONTAL SUPPORT BRACKET**.

Step by step procedures are as follows:

Hold the upper bracket against the wall to mark the 6 hex screw hole locations. The top of the **BRACKET** should be about 92 inches above the floor for a 60 inch machine, or 80 inches for a 48 inch machine. Suspend a plumb bob or use a level to be sure the **BRACKET** is vertical. Drill pilot holes and fasten the **BRACKET** with six of the hex head screws provided. See Figure 1.

Note: The hex head screws which hold the mounting **BRACKETS** must enter wood, not just plaster or dry wall material. If framing studs in the wall are not in the position to accept the hex head screws, install a sheet of 1/2 to 3/4 inch plywood to two adjoining studs to provide a safe foundation for both the **UPPER** and **LOWER BRACKETS**.

Use two 1/4-20 bolts, nuts, washers, and lock washers to mount the **LOWER BRACKET** to the machine as shown in Figure 2.

Lift the machine and install four 1/4-20 bolts, nuts, washers, and lock washers as shown in Figure 1. The holes in the **UPPER BRACKET** are elongated to allow the **LOWER BRACKET** to rest squarely against the wall.

Drill pilot holes as before and use three hex head screws to firmly attach the **LOWER BRACKET** to the wall.

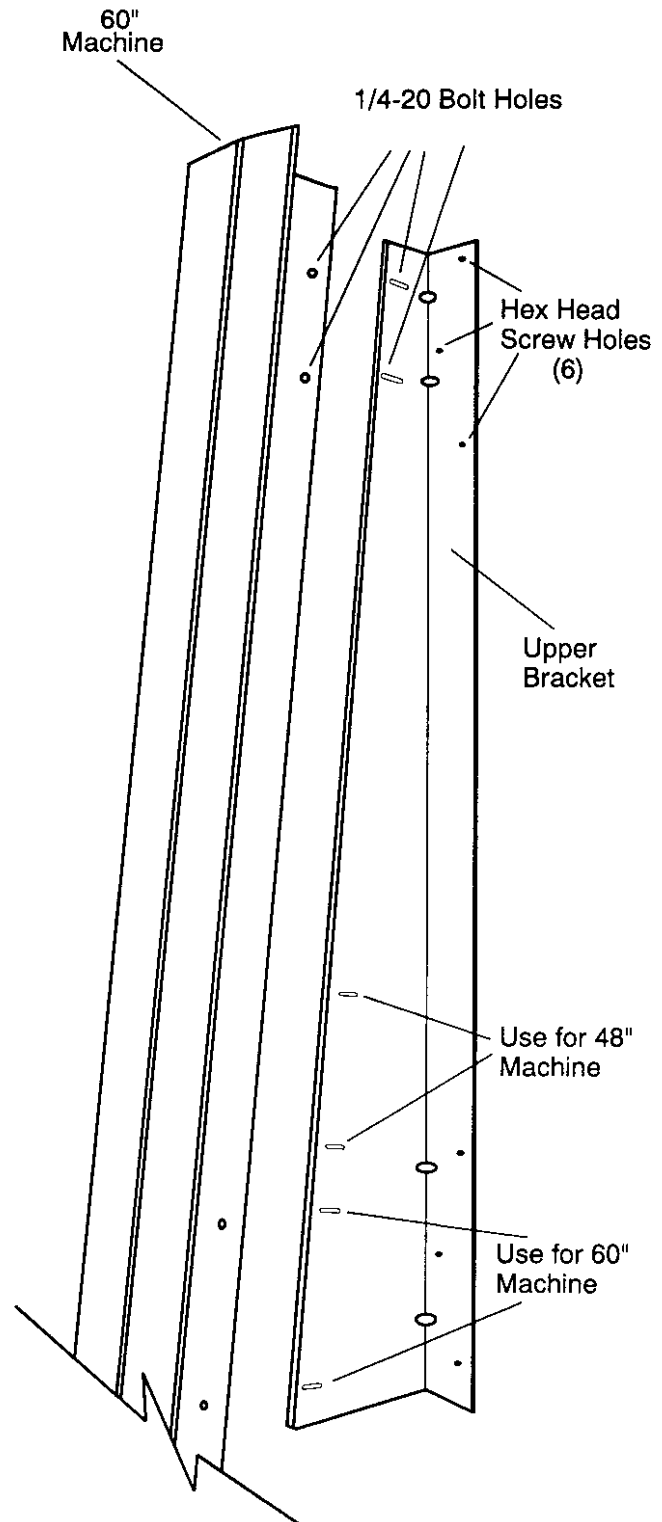


Figure 1

MOUNTING YOUR MACHINE

INSTALLATION

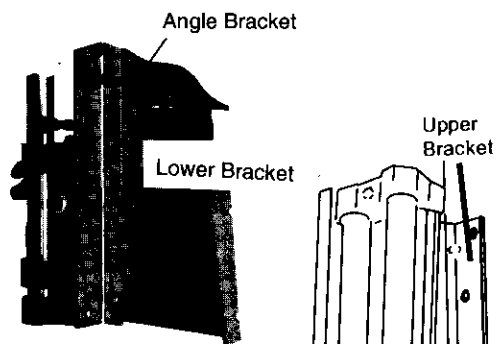


Figure 2

Install the **Horizontal Support Bracket** to the left horizontal channel and the wall. Check carefully to be certain it fits without bending the left horizontal channel. Shim at the wall if necessary, but **DO NOT OMIT THIS Horizontal Support Bracket**. It is essential for accurate cutting.

You are now ready to install the **Right Support**. Taking the following steps in sequence will make it easy. See Figure 3

1. Attach the **Brace** to the **Right Support** with two flat head screws and nuts. Leave the nuts loose for now.
2. Remove the two hex nuts, lock washers, flat washers from the upright leg of the Vertical Extrusion at **Angle Bracket** in back. See Figure 2
Set them aside because you will reinstall them in step 7.
3. Loosen (but do not remove) the button head hex screw in the **Right Support Squaring Edge Bar**. See Figure 3.
4. Attach the loose **Angle Bracket** to the top left end of the **Right Support** with bolts, nuts, washers and lock washers provided. Do not tighten the nuts yet.

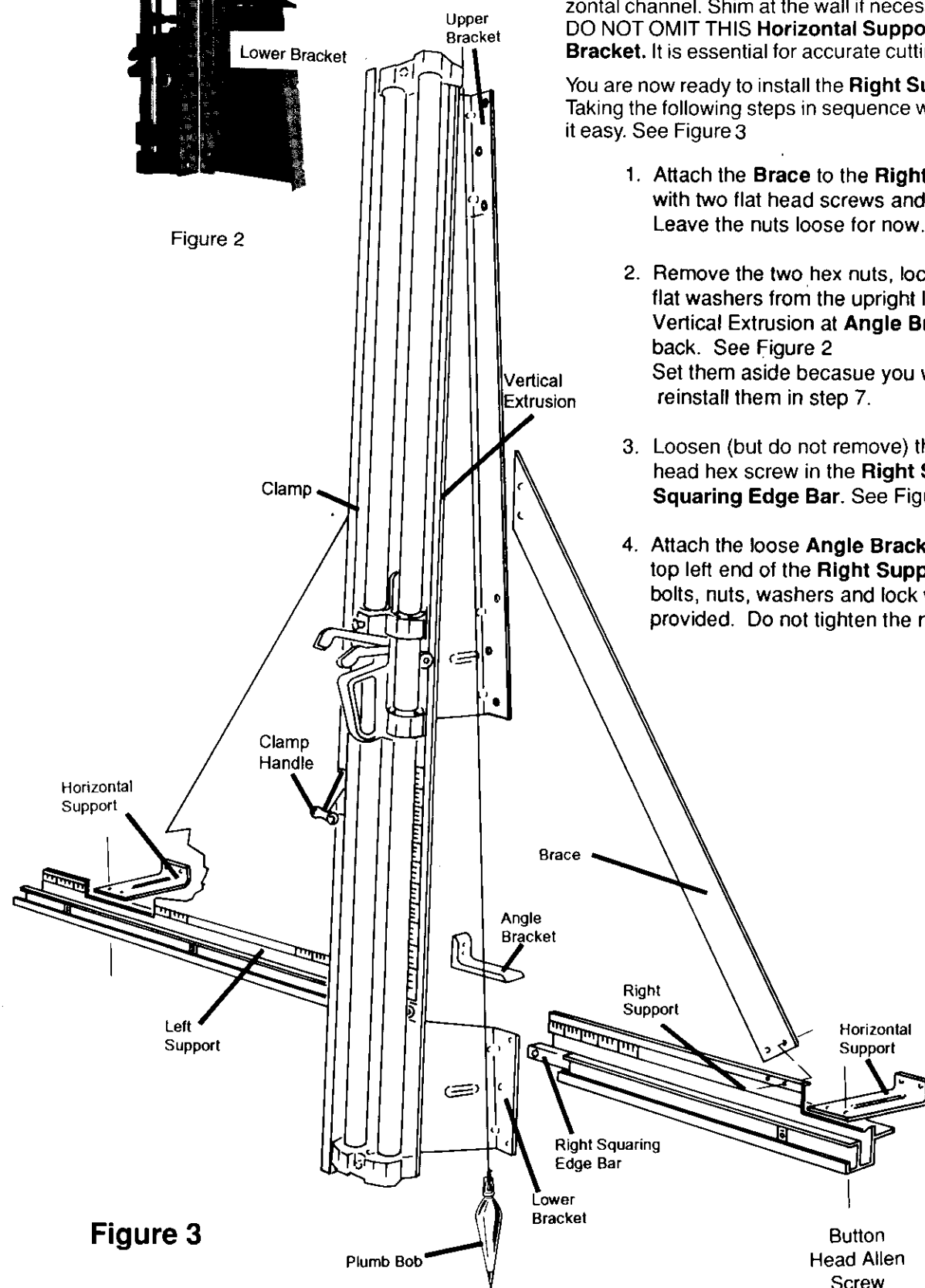


Figure 3

MOUNTING YOUR MACHINE

5. Hold the **Right Support** in position with the left end of its **Squaring Edge Bar** in the machined slot of the **Vertical Extrusion**. Insert the shoulder screw through the **Squaring Edge Bar** and attach a flat washer, lock washer and nut in the back.
6. While continuing to hold the **Right Support**, install two hex cap screws and washers at the top of the **Brace**.

NOTE: At this point, all the screws and nuts for the **Right Support** are still loose.

7. Now reinstall the lock washers, and nuts you removed in step 2. You will note the **Angle Brackets** for both the **Right Support** and the **Left Support** are locked in place on the **Vertical Extrusion** with these nuts. **TIGHTEN THEM FIRMLY.**
8. Now in sequence, tighten the shoulder bolt in the left end of the **Squaring Edge Bar**, and the screws at both ends of the **Brace**.
9. Install the **Horizontal Support Bracket** to the **Right Support** and the wall. Here again, be sure it fits without deflecting the **Right Support**.
10. Lay a straight edge (at least 48 inches long) on the **Squaring Edge Bars** as shown in Figure 14 page 13. Rotate the **Eccentric Hex** in the **Right Support** (remember, the button head screw is still loose), until the **Right Squaring Edge Bar** just touches the straight edge. You can check this by sighting along the under edge of the straight edge in the three windows in the **Left and Right Supports**. Tighten the button head screw in the **Eccentric Hex** firmly without letting the **Eccentric Hex** rotate.

11. The **Right Support Scale** is loose in its track. A strip of double sided tape is attached to the right end on the back of the **Scale**. Pull out the **Scale** to the right far enough to peel off the protective paper from the double sided tape.

Place a ruler on the **Squaring Edge Bar** and locate the glass cutting wheel precisely on the 2 inch line. Slide the **Scale** into position so the 6 inch line on the ruler exactly lines up with the 4 inch line on the **Scale**. Now press the right end of the **Scale** against the **Right Support** adhering the tape.

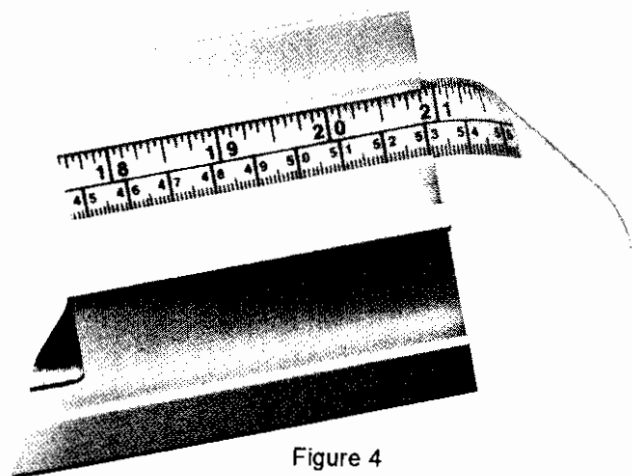


Figure 4

The result of these eleven steps will be a solid support on both the right and left side of the cutting line, with both **Squaring Edge Bars** in line with one another. Since the machine is adjusted for squareness of the **Left Squaring Edge Bar** before leaving the plant, you should be able to load the cutting tools on the **Turret** and start cutting.

THE TURRET

PATENT # 4,987,814

The heart of the new **Fletcher 3000** is the multiple tool holder, the **Turret**. The glass cutting wheel unit, the plastic scoring blade, and the mat cutting blade are mounted in their respective positions on the turret for quick changeover from one material to another.

PRE-LOADING THE TURRET

1. Remove the **Turret** from the machine. While holding the **Trigger** depressed, push the **Pin Detent**, then release the **Trigger**. This will lock the position of the **Rocker Arm Assembly**.

2. Unscrew the **Turret Knob** and remove the **Turret** assembly.

Refer to the **Turret** illustration, Figure 5.

3. A steel wheel is provided with your machine. The SU-01, (order no. 02-120) has a 120 degree angle. Your machine is shipped with an SU-01 wheel unit in place in the **Turret**. When it is worn and needs to be replaced, pry it out with a paper clip. Clean the slot and press a new wheel unit in place. Be sure it is fully seated as shown.

4. Loosen, but do not remove, the two screws which hold the **Plastic Cutting** and **Mat Cutting Blades**.

5. Insert the **Plastic Cutting Blade** under its locking screw head and tighten firmly. Note the orientation and position of this blade. DO NOT try to put it in the **Mat Blade** position.

6. Insert the **Mat Blade** under its screw head as shown and tighten firmly. PLEASE NOTE: The hole in the blade must fit around the circular projection under the screw head.

CAUTION: These blades are very sharp and must be handled with care.

7. Reinstall the **Turret** by screwing it in place on the **Rocker Arm Assembly**. Be certain to rotate the **Turret** until it seats in one of the three detent positions before fully tightening the **Turret Knob**.

8. Depress and release the **Trigger** and the **Rocker Arm Assembly** will return to its normal position.

Follow the appropriate steps above whenever it is necessary to replace a dull or worn tool.

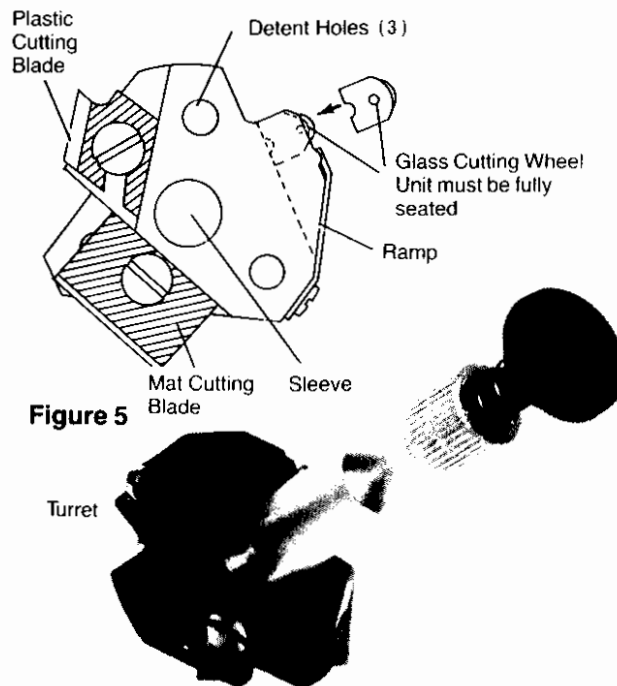


Figure 5

HOW TO ROTATE THE TURRET TO SELECT THE TOOL YOU WANT

Raise the **Cutting Head** to a comfortable level. Depress the short **Trigger** with your thumb. Depress the **Pin Detent** and release the **Trigger**. Unscrew the **Turret Knob** about two full turns. Pull on the **Sleeve** and rotate it until the **Turret** snaps into the **Detent Hole** which places the cutting tool you want into position toward the rear. Retighten the **Knob** firmly. Depress the **Trigger** and release it. The tool will return to its operating position. Lower the **Head** back to its bottom location.

Proper operation of the **Fletcher 3000** requires familiarity with the **Cutting Head Assembly**. The illustration on page 8 identifies important components which will be referred to on the following pages.

THE CUTTING HEAD ASSEMBLY

Before you take over the controls of your new Fletcher-Terry cutting machine let us familiarize you with the "Cutting Head Assembly". This is the operating part of your machine that controls all the cutting action.

Fletcher-Terry Quality Works For You...

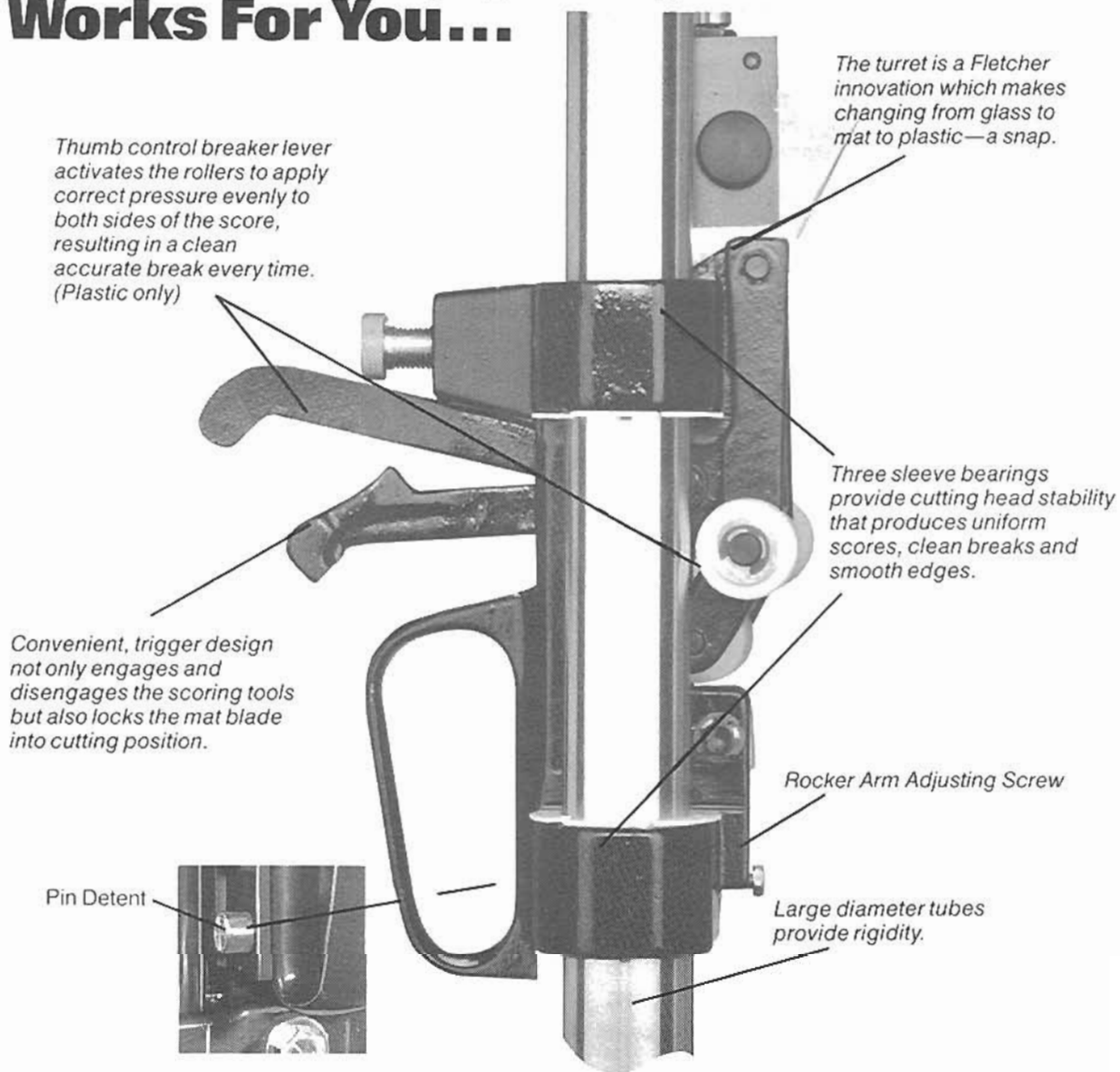


Figure 6

AT THIS POINT YOU HAVE MOUNTED AND FAMILIARIZED YOURSELF WITH THE BEST QUALITY GLASS CUTTING MACHINE IN THE WORLD. NOW LET'S LEARN HOW TO PROPERLY OPERATE, AND MAINTAIN YOUR FLETCHER-TERRY CUTTING MACHINE.

CUTTING GLASS (UP TO ¼ INCH THICK)

CAUTION: REMEMBER TO ALWAYS WEAR EYE PROTECTION, GLOVES, AND PROTECTIVE CLOTHING WHEN HANDLING GLASS!!

ALWAYS LOAD GLASS FROM THE LEFT SIDE OF THE MACHINE!!

GLASS SHOULD NOT EXTEND BEYOND THE LEFT SIDE OF THE MACHINE WHILE CUTTING!!

DO NOT USE CLAMP ON GLASS

1. Slide the glass from the left on the **Squaring Edge Bar**. Locate the narrower piece you will be cutting on the right side of the cutting line. Position the glass for the dimension you need by reading the scale on the **Left or Right Support**, whichever applies.
2. Rest the palm of your hand lightly on the glass to hold it against the **Face Plate**. Grasp the cutting **Head** handle with your right hand and depress the short **Trigger** with your thumb. See Figure 7.

CAUTION: DO NOT USE THE CLAMP ON GLASS. IT MIGHT PREMATURELY BREAK THE GLASS.

3. Raise the **Head** so the cutting wheel is above the upper edge of the glass and release the **Trigger**. Bring the head down until you feel the **Ramp** touch the edge of the glass. With one firm continuous motion, pull the **Cutting Head** down the full length of its travel. You will hear and see the score produced.
4. **DO NOT SCORE THE GLASS MORE THAN ONCE.** A light score without flaking is the best score. The **Pressure Adjusting Knob** should only be changed as a wheel becomes duller. About ½ inch of threads should be exposed when using a new wheel. Remember, you are not really cutting the glass, just scoring it so the subsequent break out will produce a separation along the full length of the score line with a clean square edge.

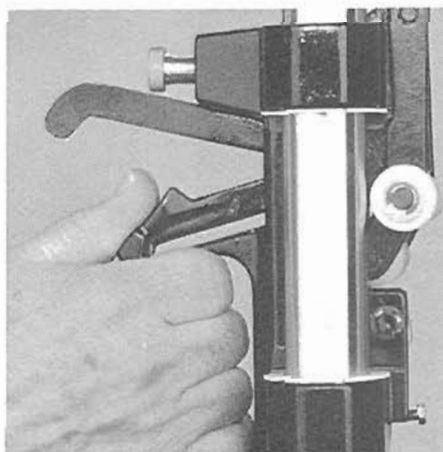
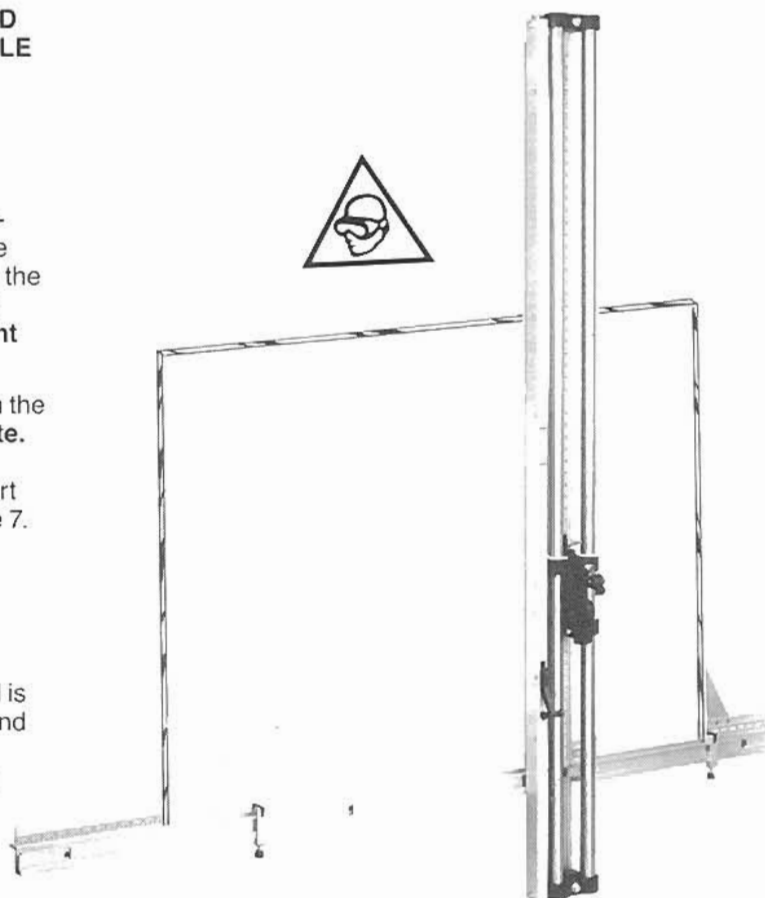


Figure 7

BREAKING OUT GLASS

5. Do not move the glass. While continuing to hold your left hand against the glass, apply bending pressure with your right thumb at the lower right corner of the glass.

For narrow strips or strips less than 1/2 inch, use the **Fletcher Nipping and Running Pliers**.

CAUTION: DO NOT APPLY PRESSURE AT THE CENTER OF THE GLASS. IT MIGHT BREAK INTO MANY PIECES AND CAUSE INJURY.

CAUTION: WEAR SAFETY GLASSES AND PROTECTIVE GLOVES WHILE HANDLING GLASS.

CUTTING PLASTIC

Flat fracture sensitive plastic up to 1/4 inch thick can be easily cut and separated on the **Fletcher 3000**. Acrylics, plexiglas, and similar materials are fracture sensitive.

1. First, you must rotate the **Turret** to lock the plastic cutting blade in position. Refer to this procedure on Page 7.
2. Slide the plastic onto the **Squaring Edge Bar** from the left. Position it to the scale dimension you wish.
3. Activate the **Clamp** by raising the **Clamp Handle**.
4. Grasp the **Cutting Head** with your right hand. Depress the short **Trigger** with your thumb and hold it down while raising the **Head**. Release the **Trigger** so the cutting tool rests on the surface of the plastic as close as possible to the upper edge of the plastic. See Figure 10

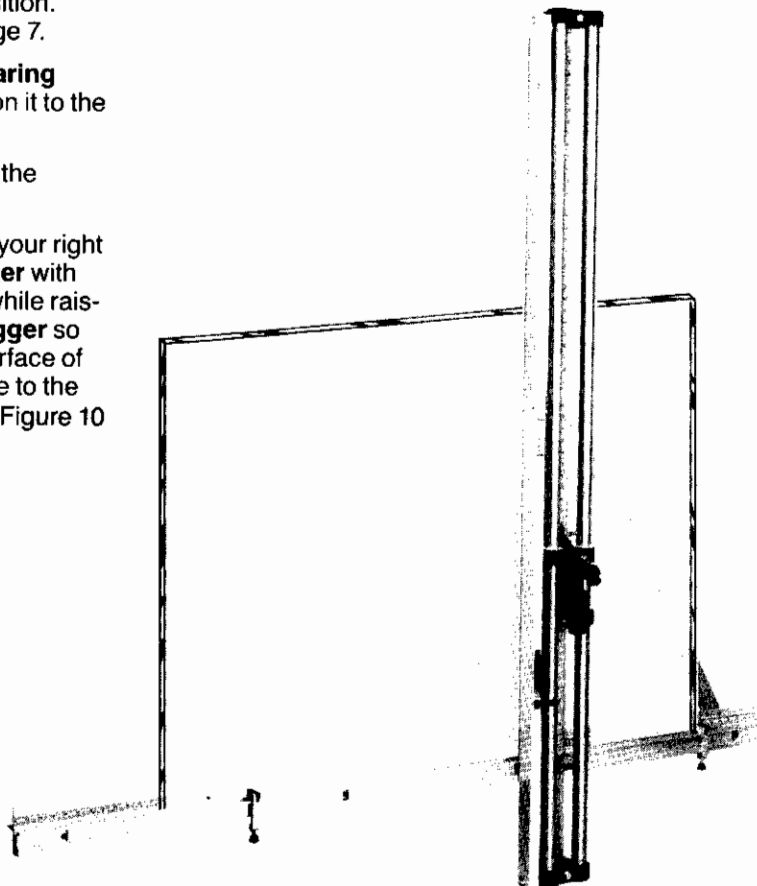
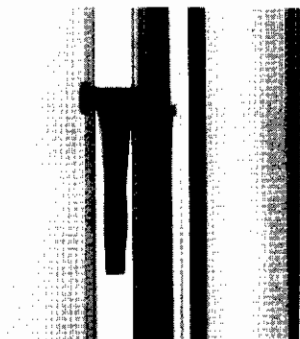


Figure 8

CUTTING PLASTIC

5. Now pull the **Head** all the way down to its rest position. You will note the sound of "gouging" the material. For plastic up to $\frac{1}{8}$ inch thick, only one scribing pass is required. You may want to make two or even three passes on $\frac{3}{16}$ or $\frac{1}{4}$ inch thick plastic. The machine is designed so the same pressure is appropriate for either glass or plastic scoring. If the scoring pass produces "chatter" reduce the pressure by turning the **Pressure Adjusting Screw** counterclockwise, or reduce the speed of scoring.

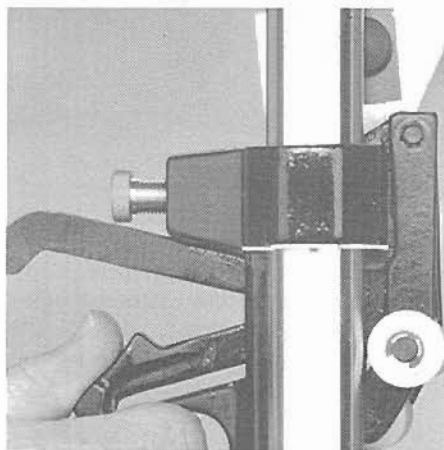


Figure 9

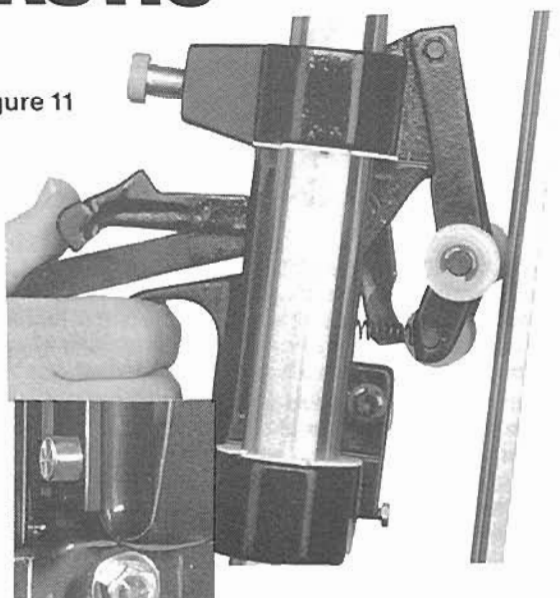


Figure 10

BREAKING OUT PLASTIC

6. With the **Head** at the bottom, depress the short **Trigger** again and lock the tool out by depressing the **Pin Detent** then releasing the **Trigger**.
7. Again using your right hand, raise the **Head** until the white break out rollers are just slightly below the upper edge of the plastic. While holding the **Head** at this position, depress the long **Trigger** firmly until you hear the plastic snap. Continue to hold the **Trigger** fully depressed while pulling the **Head** all the way to the bottom. You will hear a continuous snapping all the way down.
8. Release the **Clamp** and remove the two pieces of separated plastic.

Figure 11



HOW TO CUT MATBOARD OR CARDBOARD

The **Fletcher 3000** will cut matboard, and cardboard, as well as foamboard up to $\frac{1}{4}$ inch thick. We recommend you use a matboard slip sheet behind the material being cut to produce a clean edge.

1. Rotate the **Turret** to bring the **Mat Blade** into position. Follow the procedure outlined on page 7.
2. Slide the material to be cut along the **Squaring Edge Bar** from the left. Align either the right or left edge with the desired dimension.
3. Activate the **Clamp** by lifting the **Clamp Handle**. This assures the mat will be held firmly along its full length to prevent buckling.
4. Hold the short **Trigger** depressed while raising the **Head** above the mat board.
5. Release the **Trigger** and pull the **Head** all the way to its rest position. One pass will normally separate the material. As the blade becomes dull, or if the material is particularly dense, sufficient pressure will be created by pushing upward with your thumb under the short **Trigger**. The **Pressure Adjusting Screw** should not be changed for mat/cardboard cutting.
6. Release the **Clamp** by pushing its lever downward. The cut off piece to the right will rest on the **Right Support**.

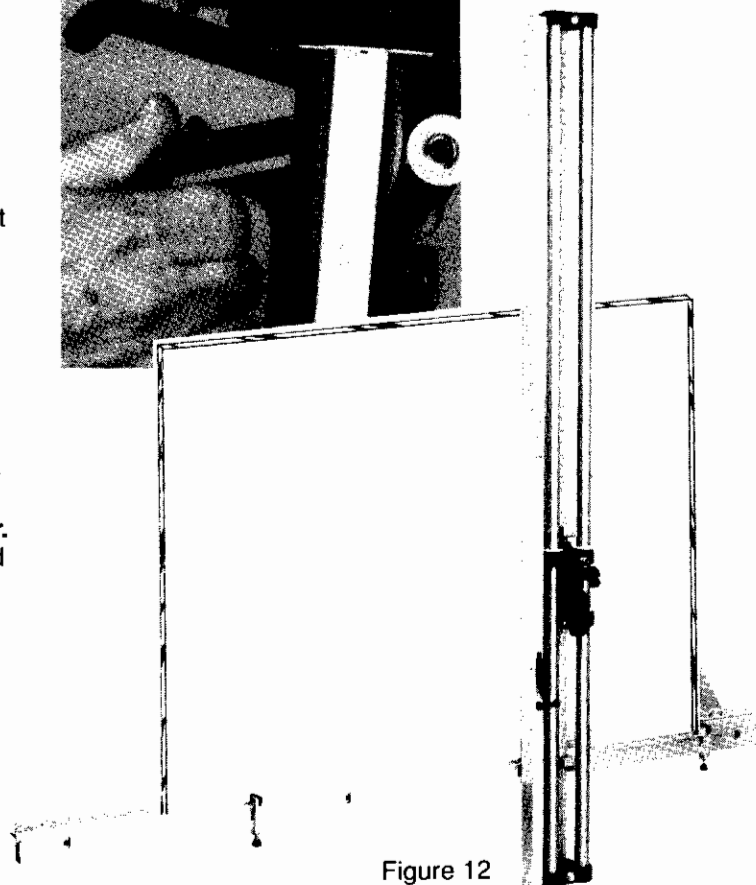
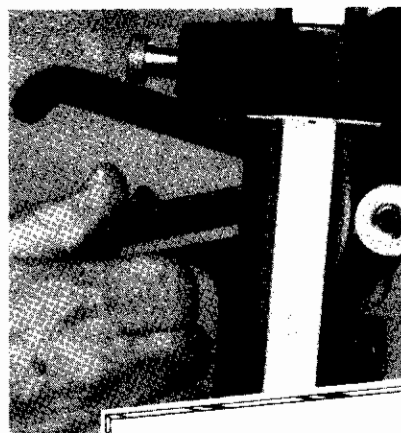


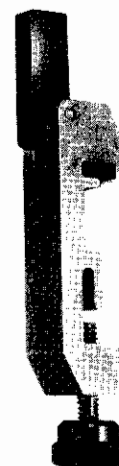
Figure 12

ACCESSORIES

04-112 MEASURING STOPS (OPTIONAL)

The **Measuring Stop** is a valuable accessory when you need to cut several pieces of material to the same dimension. It's easy to use and it eliminates costly cutting mistakes. Simply position the stop to the correct dimension and slide the material to the stop. There's no need to measure, each piece will be exactly the same length.

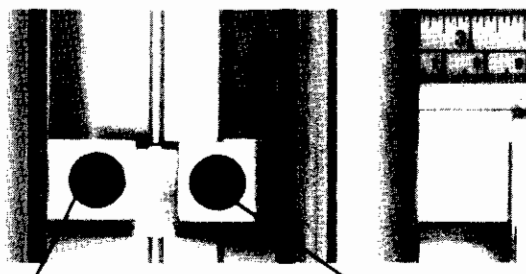
When cutting rectangular pieces of material two measuring stops should be used. Once again the process is simple. Set one stop at the smaller dimension and the other stop at the larger dimension. Slide the material to the first stop, and make the cut. Now, flip the first stop out of the way, rotate the material, and butt up to the stop set at the larger dimension to make the final cut. Flip the first stop at the smaller dimension and repeat the process for x number of rectangular pieces of material, all with the exact same dimensions.



SQUARING YOUR MACHINE

In normal use the machine will make square cuts indefinitely. If it eventually becomes necessary to confirm this or change the squaring adjustment, following is the procedure to be used. Your machine has two separate **Squaring Edge Bars**. The one on the left pivots near the cutting line and has two separate **Eccentric Nuts** to raise or lower the **Squaring Edge Bar**. The one in the **Right Support** also pivots near the cutting line and has one **Eccentric Nut** to raise or lower the right end. For reference purposes in this manual, these **Eccentric Nuts** are numbered 1, 2, and 3 from left to right.

Tools required are an adjustable wrench, the $\frac{5}{32}$ inch allen wrench provided, and a good straight edge at least 4 feet long. Each of the three **Eccentric Nuts** operates the same way. With the button head hex screw loosened, turning one of the **Eccentric Nuts** behind the **Horizontal Extrusion** will cause the **Squaring Edge Bar** to be raised or lowered depending on the direction the **Eccentric Nut** is turned. See figure 15



Left Squaring Edge Bar Figure 13 Right Squaring Edge Bar

1. Brush all glass chips from both **Squaring Edge Bars**.
2. Lay the straight edge on the **Left Squaring Edge Bar** and adjust the left most (number 1) **Eccentric Nut** to make the **Squaring Edge Bar** straight. This is confirmed by seeing the straight edge in contact with the **Squaring Edge Bar** in both cut outs and at the pivot screw at the right end. See Figure 13
3. Slide the straight edge to the right so it lays on the **Right Squaring Edge Bar** and the **Left Squaring Edge Bar**. Holding the left part of the straight edge down on the **Left Squaring Edge Bar**, adjust the right most (number 3) **Eccentric Nut** if necessary, to bring the **Right Squaring Edge Bar** in contact with the straight edge. Again this can be easily observed in the cut out. See Figure 14

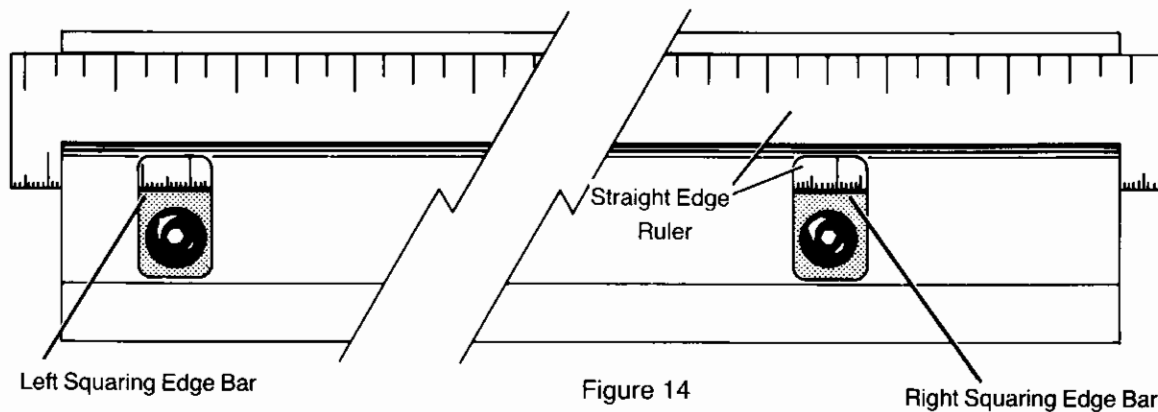


Figure 14

Note: Steps 2 and 3 are required whenever any change is made to any of the **Eccentric Nuts**. The purpose is to insure both **Squaring Edge Bars** are straight and lined up with one another.

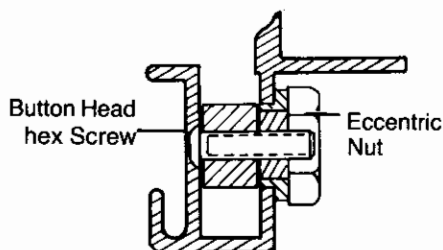


Figure 15

SQUARING YOUR MACHINE

MAINTENANCE

(CONT.)

4. Use a large piece of mat board material or plastic (at least 32 X 40) to check squareness. Make sure one long edge is straight. Lay that edge on the SQUARING EDGE BARS in position as though you were going to cut the board in half. Using the board cutting blade make a short (1/4 inch long) cut at the bottom and another short cut at the top.
5. Remove the board and rotate it end for end and place it back in the machine. The same bottom edge must still be on the SQUARING EDGE BARS.
6. Slide the board into position so the cutting blade is lined up perfectly with the cut at the bottom. Clamp the board.
7. Move the HEAD to the top of the board and make a short cut. No need to cut the entire material.
8. Examine the two cuts at the top, one made from each side of the board. If they coincide exactly, the machine is square. If they do not line up, the machine is out of square by 1/2 the distance between the cuts. If the cut you just made is to the right of the first cut the LEFT SQUARING EDGE BAR is too low and needs to be raised. Conversely, if the second score is to the left of the first, the LEFT SQUARING EDGE BAR needs to be lowered. Adjust the eccentric nut at the middle of the LEFT SQUARING EDGE BAR so the blade is exactly halfway between the two upper cuts while still in line with the cut at the bottom.
9. After any adjustment of the eccentric nut, repeat steps 2 and 3 to align both SQUARING EDGE BARS with one another. Adjust alignment with the far eccentric nut and the one in the RIGHT SUPPORT, not the eccentric nut in the middle of the LEFT SQUARING EDGE BAR.
10. After such adjustments, recheck squareness again as outlined in steps 4 through 8.



CAUTION: WEAR SAFETY GLASSES, GLOVES, AND PROTECTIVE CLOTHING WHEN HANDLING GLASS.

MAINTAINING YOUR MACHINE

PROPER MAINTENANCE AND UPKEEP OF YOUR MACHINE WILL SAVE YOU TIME AND MONEY AND WILL BE AS IMPORTANT AS KNOWING HOW TO USE IT. THIS IS THE MOST ADVANCED VERTICAL CUTTING MACHINE ON THE MARKET. TO KEEP IT WORKING IT IS IMPORTANT TO READ AND REFER BACK TO THIS MAINTENANCE SECTION IN YOUR MANUAL WHEN NECESSARY.

There are some simple procedures that you should get into the habit of doing and some things to avoid, during normal operation. Following this list of procedures will help extend the life of your machine, and increase profits from your business.

FREQUENTLY apply light oil to the cutting wheel.

ALWAYS keep a good supply of mat and plastic scoring blades and new wheels on hand.

CONSTANTLY clean your **Squaring Edge Bar** by brushing away all glass chip accumulations with the brush provided.

IT'S IMPORTANT to start your downward glass cutting stroke with the cutting wheel above the glass. The **Ramp** will contact the glass to guide the cutting wheel over the top edge smoothly. This will prevent chipping the edge of the glass or damaging the cutting wheel.

AVOID lubricating the **Tubes** with any oil or grease. All that is necessary is a frequent cleaning with a dry cloth. Avoid excess cutting pressure. You only need a continuous but LIGHT score. Avoid excess scoring pressure when cutting plastic. Too much pressure will cause the scoring blade to chatter and skip and will damage the surface of your plastic.

DO NOT use the **Clamp** when scoring or breaking out glass. Do not use the plastic break out rollers to break glass.

ROCKER ARM ADJUSTMENT

Two adjustments on the **Rocker Arm** are preset at the factory, but after prolonged use may require readjustment. See Figure 16

1. A set screw is provided at the top of the **Rocker Arm** to prevent the **Sleeve** hitting the **Right Tube** when you depress the short **Trigger**. Adjust this set screw so the **Sleeve** does not hit the **Tube**, but the **Rocker Arm** travels far enough to allow the **Pin Detent** to lock the **Rocker Arm** away from the cutting position.
2. A hex head machine screw is located behind the **Head**. It determines the "at rest" position of the cutting tools. If wear occurs, the mat or plastic cutting blades may touch the vertical extrusion. Turn this screw clockwise to prevent the **Rocker Arm** traveling too far toward the rear. An easy way to adjust it is to raise the **Head** and with the **Turret** set for glass cutting examine the gap between the wheel and the **Vertical Extrusion**. This gap should be very visible. If excessive, the **PIN DETENT** will not lock. If you change either of these adjustments, check for operation of the **Pin Detent**.



Figure 16

Rocker Arm Adjusting Screw

REMOVING THE CUTTING HEAD

See Figure 17

1. Loosen the upper and lower **Bracket Bolts**.
2. Slide the **Left Tube** upward until it clears the **Cutting Head**. Rotate the **Cutting Head** on the **Right Tube** until it is clear of the **Left Tube**. Slide this **Tube** back into the **Lower Bracket**.
3. While holding the **Cutting Head** slide the **Right Tube** upward until the **Cutting Head** is free. Set the **Right Tube** back into the **Lower Bracket**.
4. To reinstall the **Cutting Head**, reverse the above procedure.

REPLACING BUSHINGS

Figure 17

The **Cutting Head** slides on three interchangeable white bushings. It is unlikely they will wear enough to cause play in the mechanism, however, if glass chips are not wiped from the **Tubes** it is possible the **Bushings** will be worn. They can be replaced by the following steps.

1. Remove the **Cutting Head** as described above.
2. The flange at one end of each **Bushing** is trapped in a slot in the **Cutting Head**. Collapse the **Bushing** at the flange and pull it out of the **Cutting Head**.
3. Reverse these steps to install a **Bushing**.

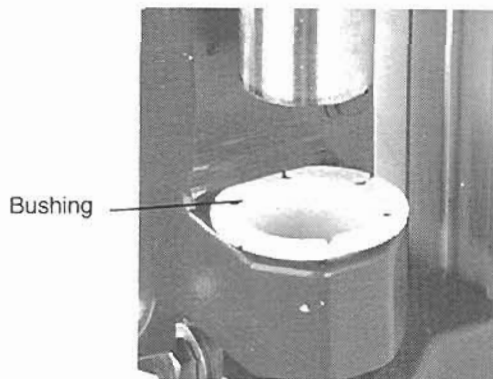
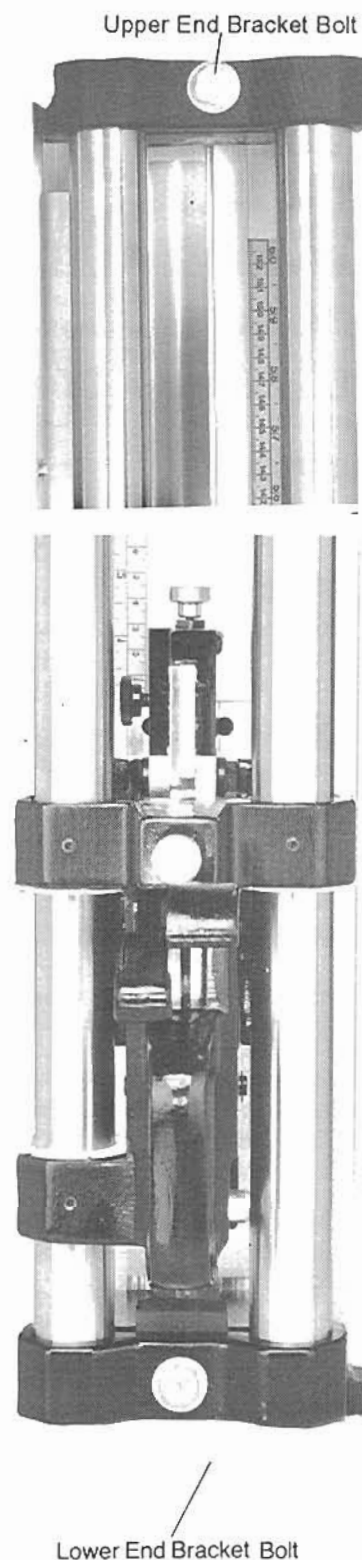


Figure 18



THE 3000 SERIES PROBLEM SOLVING MAINTENANCE CHART

PROBLEM	PROBABLE CAUSE	ACTION
GLASS		
Cutter skips, or poor break out	Worn Wheel Unit Dirty Glass Wheel not touching glass	Replace Wheel Unit Clean Glass Readjust Rocker Arm Adjusting Screw
Score chips or is flaky	Pressure Adjusting Knob unscrewed too far Head dirty	Readjust screw Clean Head
Short wheel life	Pressure Adjusting Knob screwed in too far Too much pressure	Readjust screw Readjust Pressure Adjusting Knob
	Scoring twice Dirty glass If none of above	Score only once Clean glass Use carbide wheel unit (03-126)
PLASTIC		
Chatters or skips	Too much pressure	Readjust Pressure Adjusting Knob
	Scoring tool dull	Replace plastic scoring blade
	Scoring too fast	Slow down while scoring
MAT		
Mat buckles	Not clamped	Use Clamp
Cut edge frayed	Dull mat blade Lack of slip sheet	Replace blade Use slip sheet
"HOOK" At Top	Blade Improperly Installed	See Par. 6, Page 7
GENERAL		
Dimensions incorrect	Scale out of position	Reposition scale
Cut edge not square	Debris on Squaring Edge Bar Squaring Edge Bar(s) not adjusted properly	Brush bar clean Readjust Squaring Edge Bars

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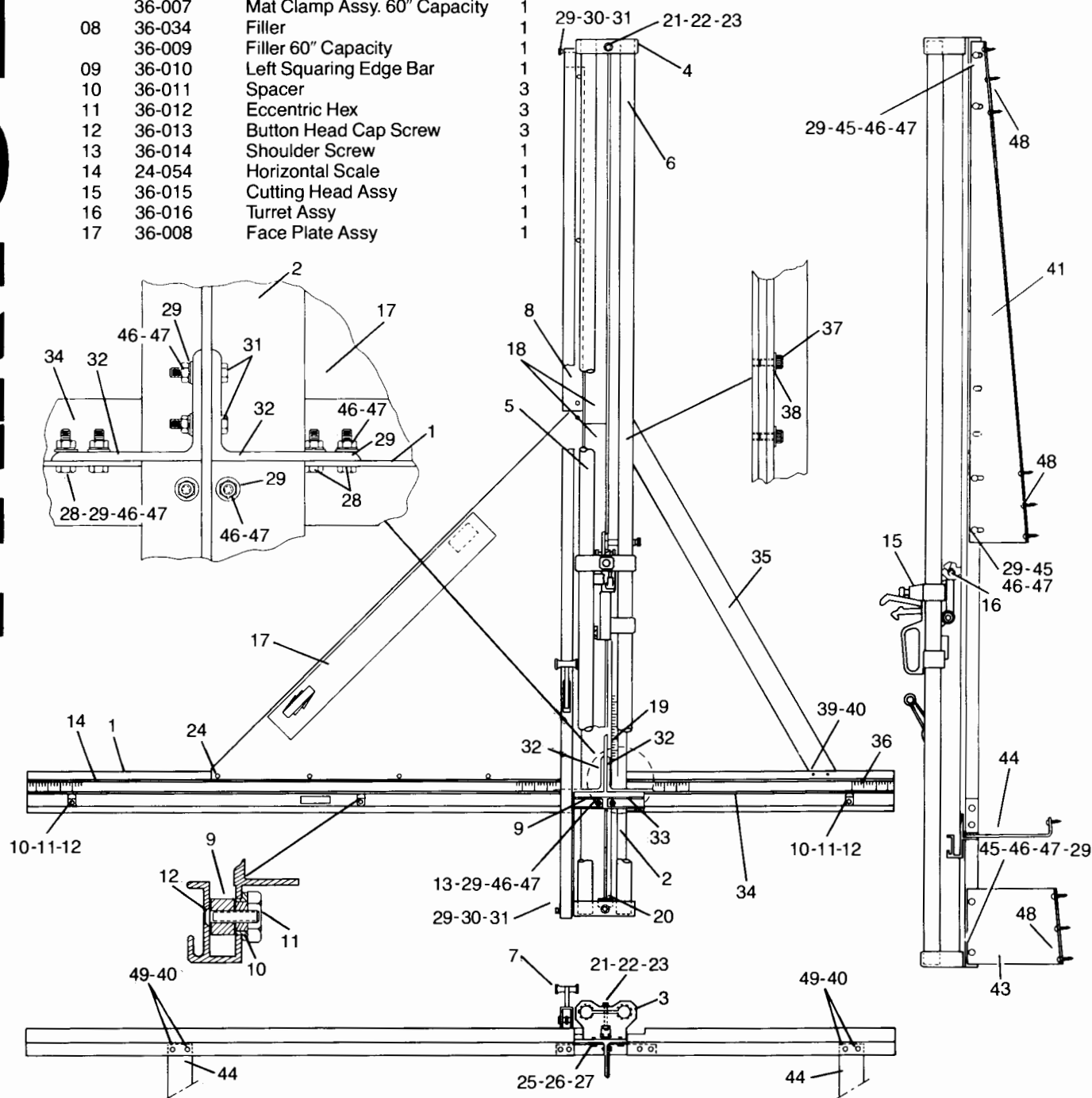
PARTS LIST

FRAME PARTS

Ref. No.	Part No.	Description	Quantity
01	36-001	Left Horiz. Support	1
02	36-031	Vertical Extrusion	1
	36-002	Vertical Extrusion 60" Capacity	1
03	36-003	Lower End Bracket	1
04	36-004	Upper End Bracket	1
05	24-056	Left Tube	1
	24-057	Left Tube 60" Capacity	1
06	36-032	Right Tube	1
	36-005	Right Tube 60" Capacity	1
07	36-033	Mat Clamp Assy	1
	36-007	Mat Clamp Assy. 60" Capacity	1
08	36-034	Filler	1
	36-009	Filler 60" Capacity	1
09	36-010	Left Squaring Edge Bar	1
10	36-011	Spacer	3
11	36-012	Eccentric Hex	3
12	36-013	Button Head Cap Screw	3
13	36-014	Shoulder Screw	1
14	24-054	Horizontal Scale	1
15	36-015	Cutting Head Assy	1
16	36-016	Turret Assy	1
17	36-008	Face Plate Assy	1

FRAME PARTS

Ref. No.	Part No.	Description	Quantity
18	24-029	Wear Plate	2
	24-030	Wear Plate 60" Capacity	2
19	24-052	Vertical Scale	1
	24-053	Vertical Scale 60" Capacity	1
20	24-099	Rubber Bumper	1
21	24-122	Hex Head Bolt	2
22	24-121	Washer	2
23	36-017	Square Nut	2
24	36-018	Rivet	13
25	36-019	Hex Head Bolt	4



PARTS LIST

SECTION

4

PARTS LIST

FRAME PARTS

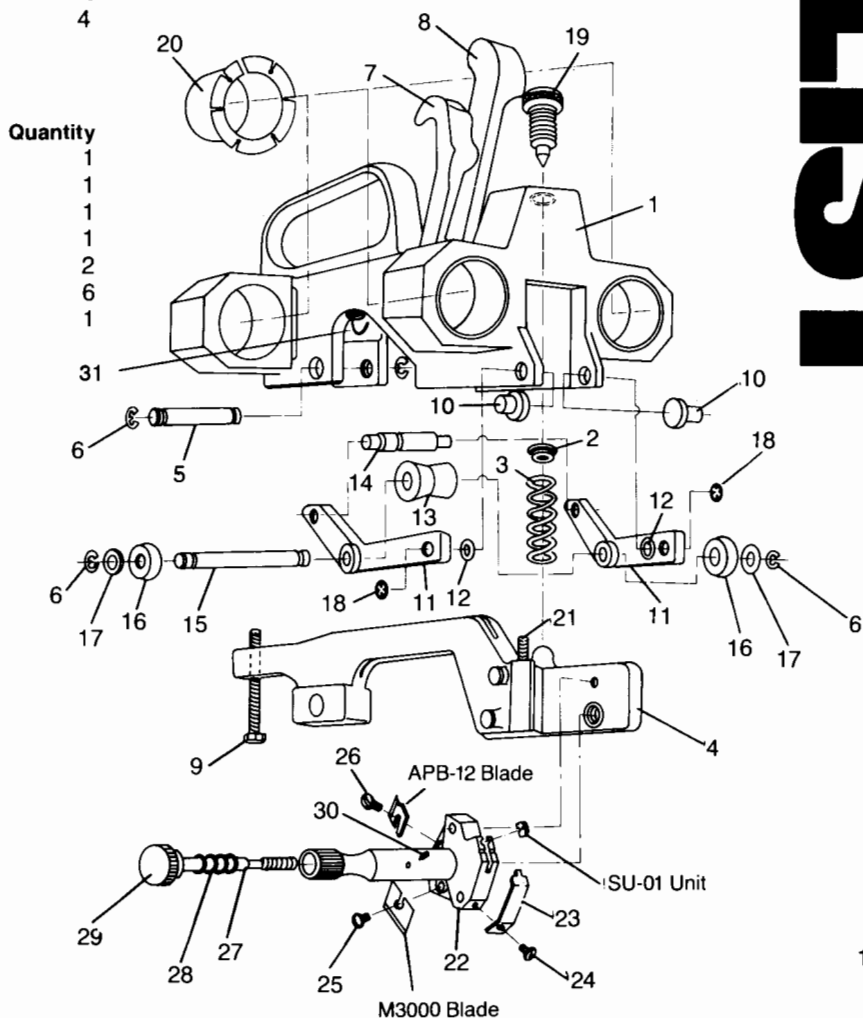
Ref. No.	Part No.	Description	Quantity
26	36-020	Lock Washer	4
27	36-021	Washer	4
28	36-022	Hex Head Bolt	2
29	36-023	Washer	6
30	36-024	Spacer-Mat Clamp	1
31	36-025	Hex Bolt	3
32	36-026	Angle Bracket	2
33	36-028	Right Squaring Edge Bar	1
34	36-027	Right Horiz. Support	1
35	36-030	Brace	1
36	36-029	Support Scale	1
37	36-054	Hex Cap Screw	2
38	24-130	Washer	2
39	12-024	Flat HD Mach Screw	2
40	24-311	Hex Nut	6
41	24-197	Upper Bkt	1
43	24-094	Lower Bracket	1
	24-095	Lower Bracket 60" Capacity	1
44	24-096	Horizontal Support	2
	24-097	Horizontal Support 60" Capacity	2
45	24-288	Hex Head Bolt	6
46	24-153	Lock Washer	14
47	24-196	Hex Nut	14
48	24-205	Wall Mounting Screw	13
49	12-020	Pan HD Mach Screw	4

CUTTING HEAD PARTS

Ref. No.	Part No.	Description	Quantity
08	36-040	Lever Assembly	1
09	24-113	Adjusting Screw	1
10	36-041	Wear Pad	2
11	36-042	Pivot Arm	2
12	24-116	Washer	2
13	24-082	Roller (Inside)	1
14	36-043	Shaft	1
15	24-084	Roller Shaft	1
16	24-083	Roller Outside	2
17	24-115	Roller Washer	2
18	24-410	Retaining Ring	2
19	24-104	Pressure Adjusting Screw	1
20	24-106	Bushing	3
21	36-044	Set Screw	1
22	36-016	Turret Assembly	1
23	36-046	Ramp	1
24	36-047	Ramp Screw	1
25	36-048	Mat Blade Screw	1
26	36-049	Plastic Blade Screw	1
27	36-050	Turret Screw	1
28	36-051	Spring	1
29	36-052	Knob	1
30	36-053	Set Screw	1
31	24-101	Extension Spring	1

CUTTING HEAD PARTS

Ref. No.	Part No.	Description	Quantity
01	36-056	Head Sub Assembly	1
02	24-136	Bushing	1
03	36-036	Compression Spring	1
04	36-037	Rocker Arm Assembly	1
05	36-038	Shaft	2
06	24-114	Retaining Ring	6
07	36-039	Trigger	1



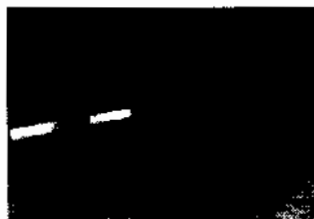
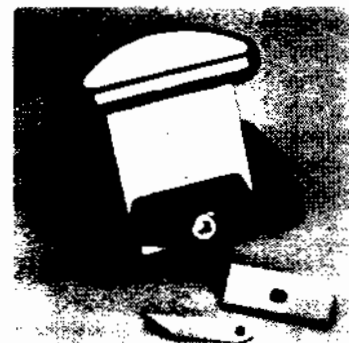
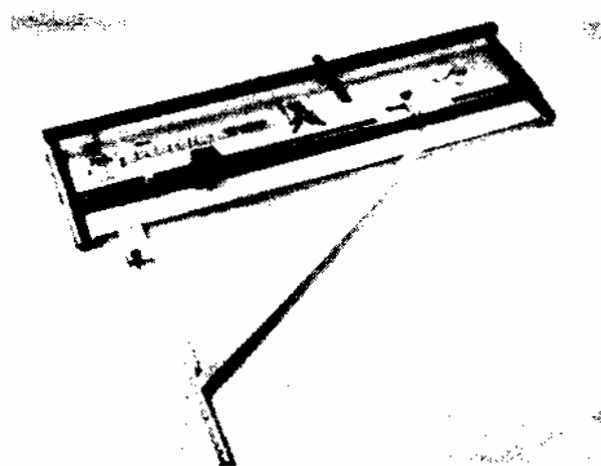
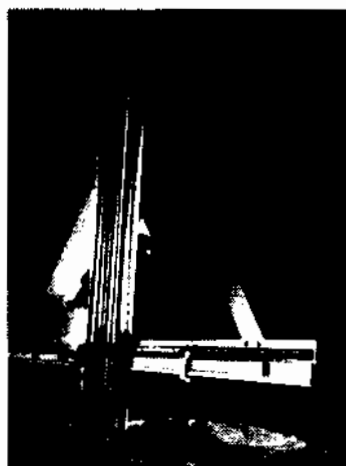
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