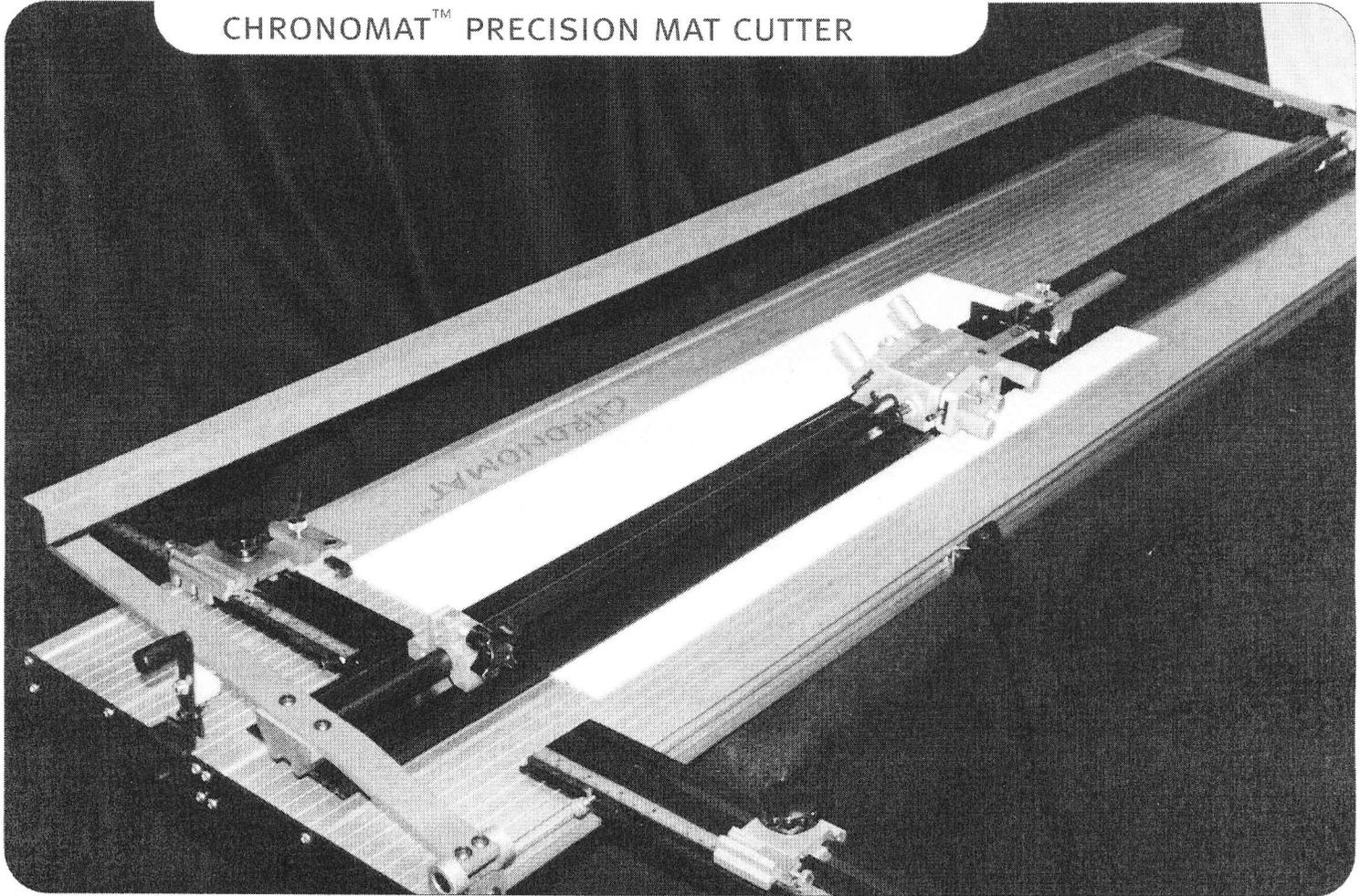


CHRONOMAT™ PRECISION MAT CUTTER



instruction manual

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OUT OF BOX SET UP

The Chronomat mat cutter has been aligned and calibrated at our facility before shipping. With a few simple steps, you will be able to set up your mat cutter and begin production immediately.

Remove the Chronomat mat cutter from the box and unwrap the pieces carefully. Remove any rubber bands that have been attached to the cutter head. You may need to use compressed air or a clean cloth to wipe away any pieces of stray packing foam that may have come loose during shipping.

Your Chronomat should be set up on a flat, stable work surface, aligned so that you can easily access the clamp lifter and cutter head.

Extend the mat stop from the mat guide by loosening the metal knob on the mat guide and sliding the stop towards the clamp rail (figure a).

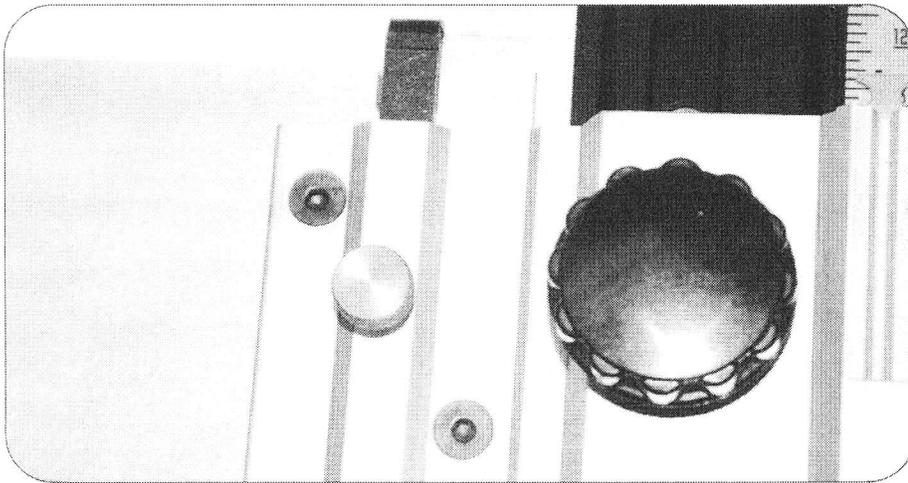


figure a

CHANGING AND INSTALLING MAT CUTTER BLADES

A note about Mat Cutter Blades: They are sharp. Super sharp. Imagine a sharp thing and then multiply it by a power of three. That sharp. So, be careful.

The Chronomat mat cutter uses size .012 blades. Whether you use single bevel blades or double bevel blades is really up to you, but either version can be purchased from a picture frame supply company.

CHANGING AND INSTALLING MAT CUTTER BLADES (continued)

When a blade becomes dull you will need to remove it and either exchange it for a new one or, in the case of double sided blades, reverse the blade to use the as-yet-unused side. To remove a blade magazine from the blade carrier, first loosen the stainless steel thumbscrew located beneath the front handle of the blade carrier (figure b).

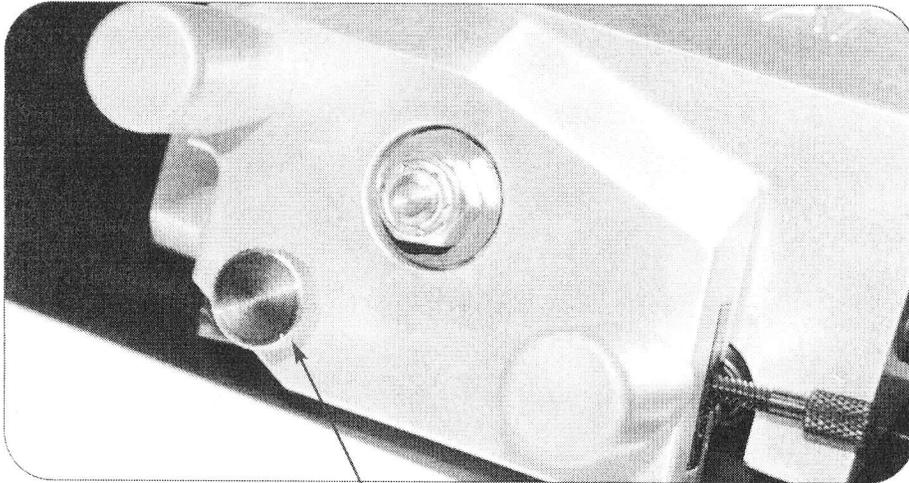


figure b (stainless steel thumbscrew)

Take hold of the black adjustment screw at the rear of the magazine and pull the magazine out. If the magazine does not come out smoothly, loosen the thumb screw a bit more. Place a fresh blade on the magazine with the sharp edge down – the magnet will hold it in place (figure c).

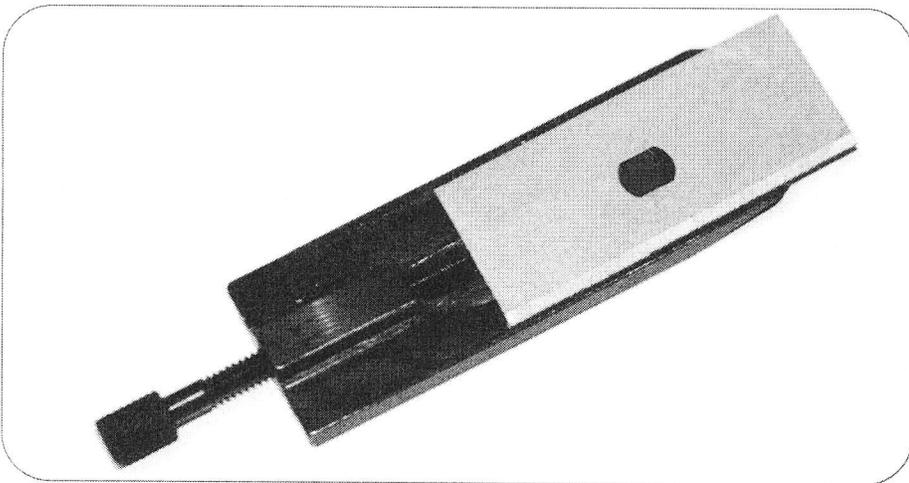


figure c

Insert the magazine into the blade carrier slot until the rear of the magazine is even with the rear of the blade carrier, then tighten the thumb screw securely. You will be able to feel where the thumbscrew falls into the divot machined into the blade magazine.

CHANGING AND INSTALLING MAT CUTTER BLADES (continued)

Blade depth adjustments are made by loosening the thumbscrew slightly and turning the rear adjustment screw in or out. If you are adjusting the blade to cut shallower, you need to push the blade inward after backing off the adjustment screw.

Each blade should be set so it only just cuts through the mat being cut. Usually 1/32nd of an inch is sufficient. The blade on the 45 degree blade carrier will normally extend farther out of the magazine than the 90 degree carrier.

CUTTING A BEVELED MAT

Always use a sharp blade when cutting mats. Signs your blade may be too dull include jagged cuts or a tendency for the blade to tear the mat rather than slice it.

Bevel cutting is done from the back side of the mat with the colored side down. Always use a slip sheet of sacrificial mat board beneath the mat you intend to cut in order to provide a crisp edge (figure d).

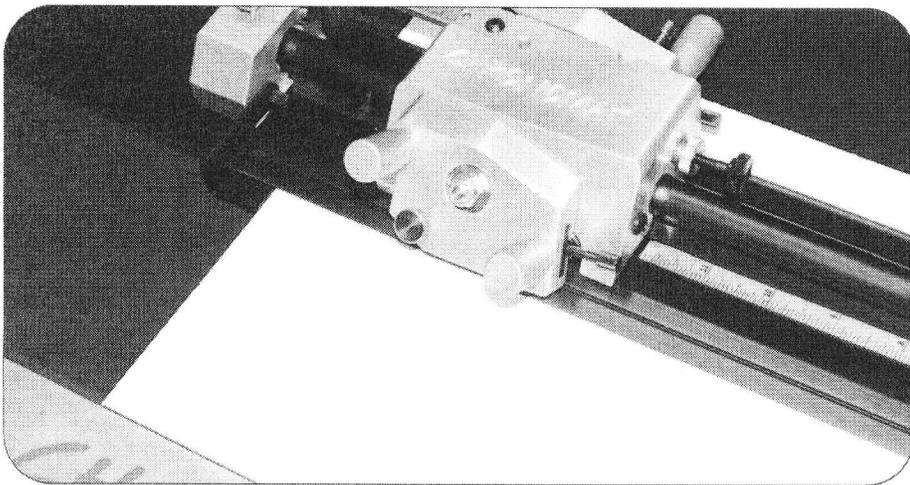


figure d

A slip sheet usually measures about 8 inches wide and is at least a few inches longer than the mat you intend to cut. The 45 degree blade should extend far enough so that it slices through the mat you are cutting and then just into the slip sheet. After you have cut a few mats, you may wish to move the slip sheet or flip it so that the blade does not follow the same slip sheet furrows. Having fresh mat board beneath the surface you intend to cut helps to provide a crisply cut edge.

SETTING THE MAT GUIDE STOPS

Using the ruler guides on the guide rail (figure e), cutter head (figure f), and clamp rail (figure g), set the desired border width for your finished mat.

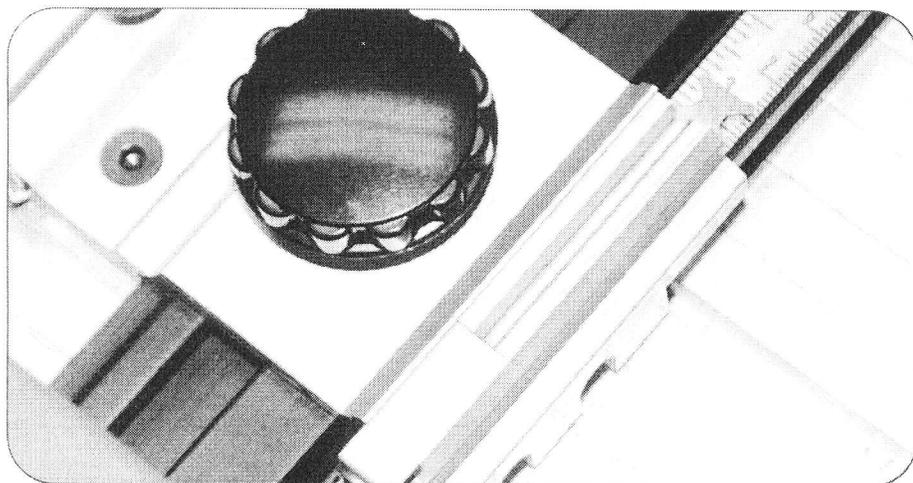


figure e

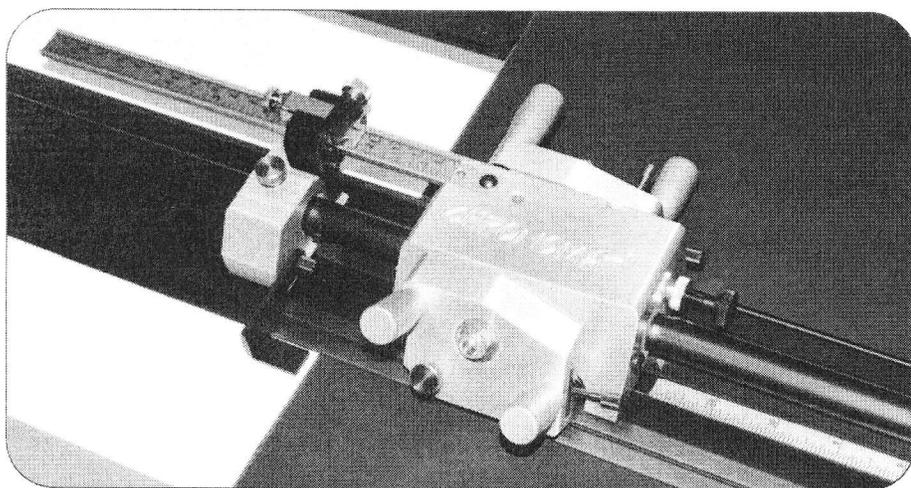


figure f

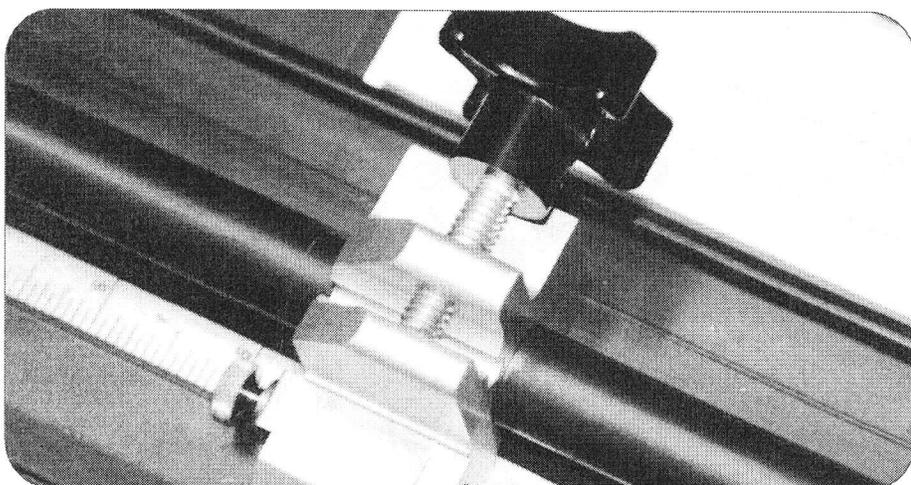


figure g

SETTING THE MAT GUIDE STOPS (continued)

For example, to cut a mat with a three inch border, first set the mat guide at 3 inches, then both the upper and lower stops at 3 inches as well. Tighten the knobs to ensure that the stop won't move as cutting progresses. The automatic stop is magnetic and will allow you to cut all four sides of the mat with a symmetrical border without further adjustment.

Standing at the end of the mat cutter, use the clamp lifter to raise the clamp bar above the surface of the deck (figure h).

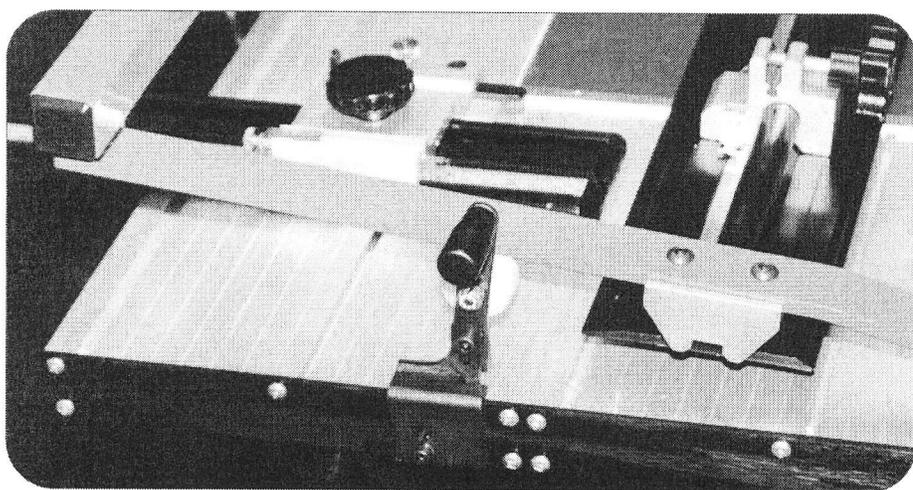


figure h

Slide the mat and slip sheet beneath the clamp and align the lower corner of the mat you intend to cut at the junction of the mat stop and mat guide. It is important to make sure the mat you are about to cut sits squarely in the angle provided by the mat stop and the mat guide. Lower the clamp lifter to secure the mat in place for cutting (figure i).

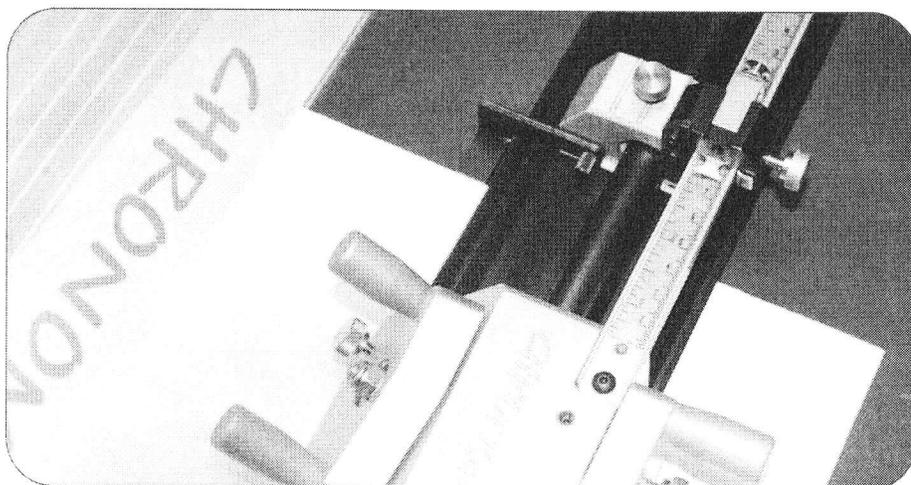


figure i

SETTING THE MAT GUIDE STOPS (continued)

The process described below will be explained in specific steps, but in reality, making each cut is a smooth, continuous series of events. For now, let's go through the step-by-step.

While pressing down on the clamp handle, slide the cutter head up the clamp bar until the automatic stop magnetically catches the cutter head. The black foot of the automatic stop should be in an elevated position to miss catching on the slip sheet. Continue sliding the cutter head up the guide bar until the black foot of the automatic stop has gone past the upper edge of the slip sheet and then drop it down into position. When the foot catches the edge of the mat you are about to cut, rotate the cutter head down into the mat, starting your cut (figure j).

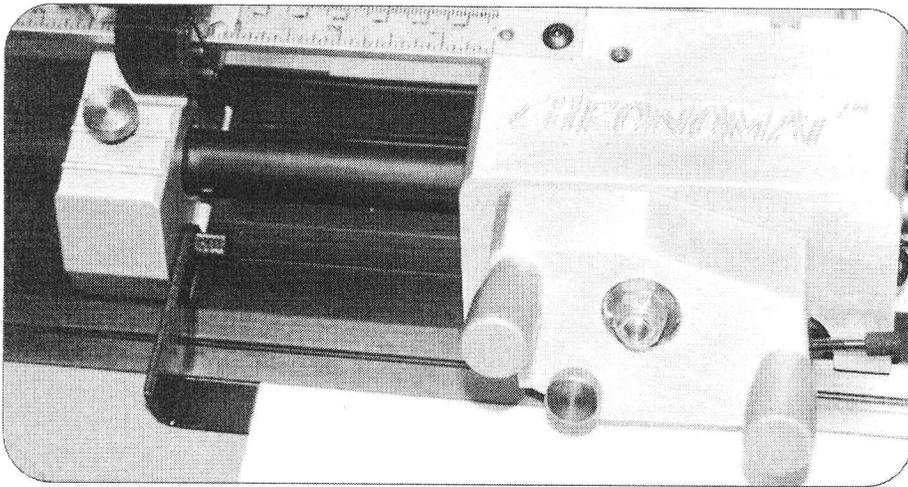


figure j

Pull the cutter head towards you, separating away from the magnetic catch. Continue the cut with a steady pull until the cutter head stops at the lower stop. Raise the clamp lifter to release the mat, turn the mat 90 degrees, align the corner of the mat back into the corner of the mat stop and mat guide and repeat the cutting process.

SIZING MAT BOARD

Full size mat boards can be cut down to a desired size using the 90 degree blade on the cutter head. The removable sizing arm is helpful for squaring and sizing the mat. Attach the sizing arm as shown in the picture below. Make sure to tighten the brass screw on the side of the sizing arm (figure k).

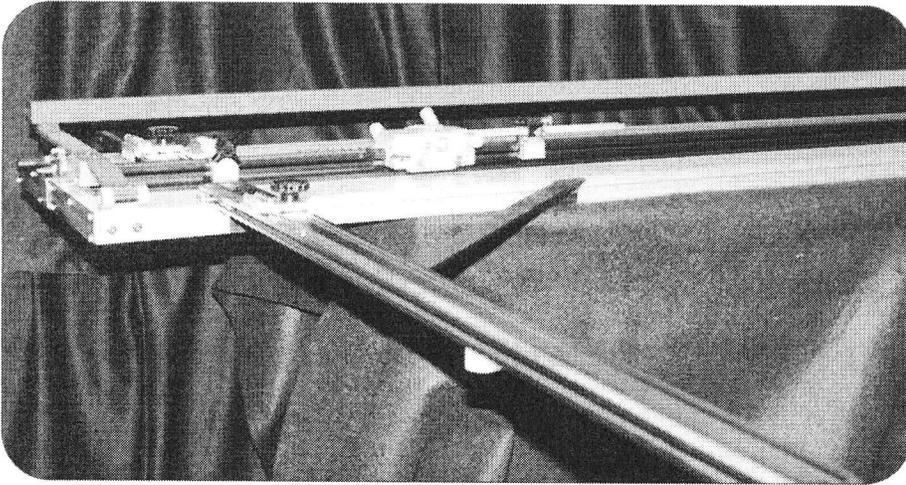


figure k

Set the sizing arm stop for the measurement you want and tighten the knob (figure l).

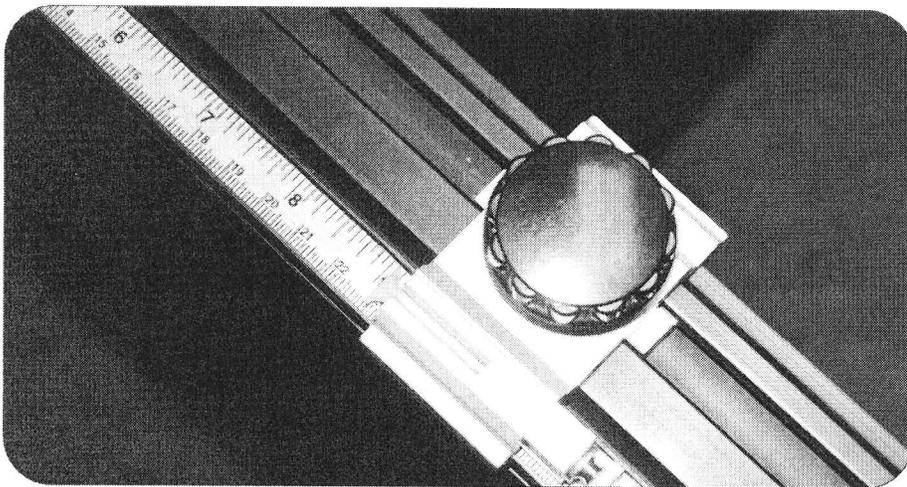


figure l

SIZING MAT BOARD (continued)

Place the full size mat board under the mat clamp. Its lower edge should be against the sizing arm and the corner against the sizing arm stop. The left edge of the mat should not rest against either the mat guide or mat stop on the opposite side of the clamp bar. In fact, it may be advantageous to remove the mat guide entirely while sizing a mat. The lower stop should be moved all the way to the bottom of the clamp bar – it does not need to be tightened.

The blade on the 90 degree cutter head should be set so it will cut about 1/32nd of an inch deeper than the mat board you are cutting. For thicker mat board, such as 8-ply, you may want to make the cut in a few passes, rather than trying to slice through the entire thickness of the mat in a single cut.

Start the cut with the cutter head above the top edge of the mat board and rotate the 90 degree carrier down as far as it will go. You may lock it in the position with the lockout pin for the cutting process, if this feels more comfortable or stable for you (figure m).

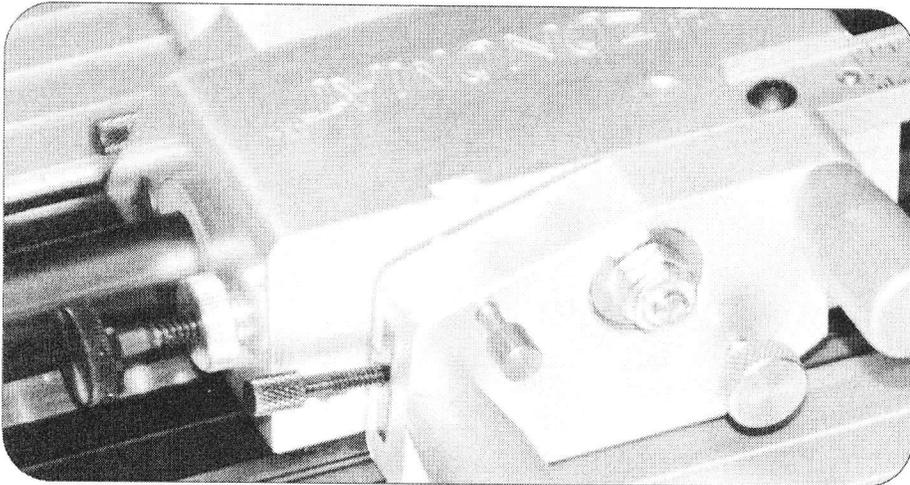


figure m

CUTTING V GROOVES

There is a V groove stop included with your Chronomat mat cutter (figure n).

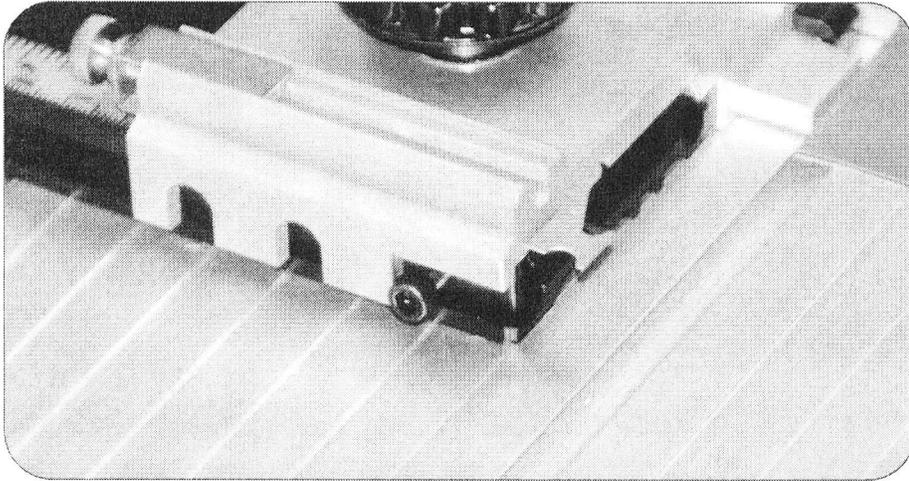


figure n

If you look on the side of the mat guide rail you will see a stop set into the side of the rail. This rail is not set at the factory, so it will have to be manually set when setting up the V groove procedure. Logan does make a V groove stop (the 706 Universal V-Groover) that is available from picture frame suppliers if you wish to use an alternative V groove cutting system.

V grooving on the Chronomat involves trimming and reinstalling the fallout piece that is normally discarded when cutting a regular mat. The steps below will guide you through the process.

1. Mark the back of the mat board with a pencil line so the fallout piece can be realigned correctly.
2. First, decide where you want your V Groove to appear. If you want a V Groove 2 1/2 inches away from the outside of the mat, set your stops at 2 1/2 inches as if you were cutting a regular mat. Save the fallout piece.

CUTTING V GROOVES (continued)

3. Retract the mat stop so it does not protrude from the mat guide. Loosen the screws securing the V groove stop then move the mat guide towards the clamp rail. The basic job of this stop is to allow the mat guide to get just close enough to the clamp bar/cutter head so that the 45 degree cutter will trim the beveled edge from the fall out piece. Some trial and error may need to occur, since differing mat thicknesses may alter where the stop is set. Initially, set the stop so the mat guide comes to about $1/32$ of an inch of the clamp bar (figure o).

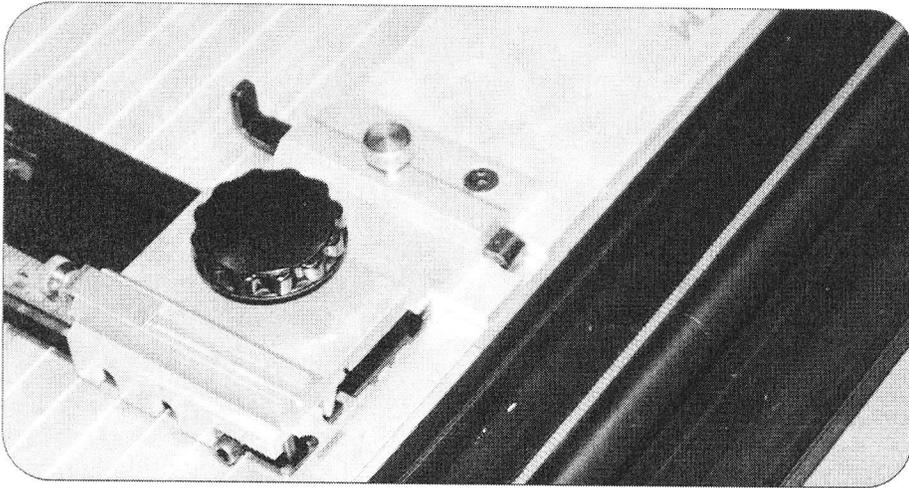


figure o

4. Place the fallout piece on the deck colored side up with one edge against the mat guide. Use the 45 degree angle blade to cut a counter bevel in the face of the mat. Remove the trimmed off edge so it doesn't interfere with the next cut. Rotate the fallout piece and trim each side.
5. Note that the V groove cut makes a counter bevel on the fallout piece that does not cut all the way to the bottom edge of the mat. Caution: if you extend the cutting blade too far or make the V groove too narrow, the cutting blade will touch the mat guide. If you make the V groove too wide, there will be a gap instead of a crisp V groove. It is wise to experiment on a spare piece of mat board to get the geometry just right before launching into a production piece.
6. Place the fallout piece back into the original piece of mat board so the pencil marks made previously match up. Use thin tape to secure the fallout piece in to place and then set up your mat cutter to cut the final, center window. Remember to extend the mat stop when measuring and cutting beveled openings.

MAKING ADJUSTMENTS

From time to time, you may need to make adjustments to your Chronomat mat cutter. The following categories will guide you through the process of adjusting your mat cutter if some fine tuning is needed.

Alignment

If the mat guide or sizing arm stub is not square to the clamp bar, it can easily be adjusted by loosening the two Allen screws that lock the angled brace between the rail and the side of the Chronomat (figure p).

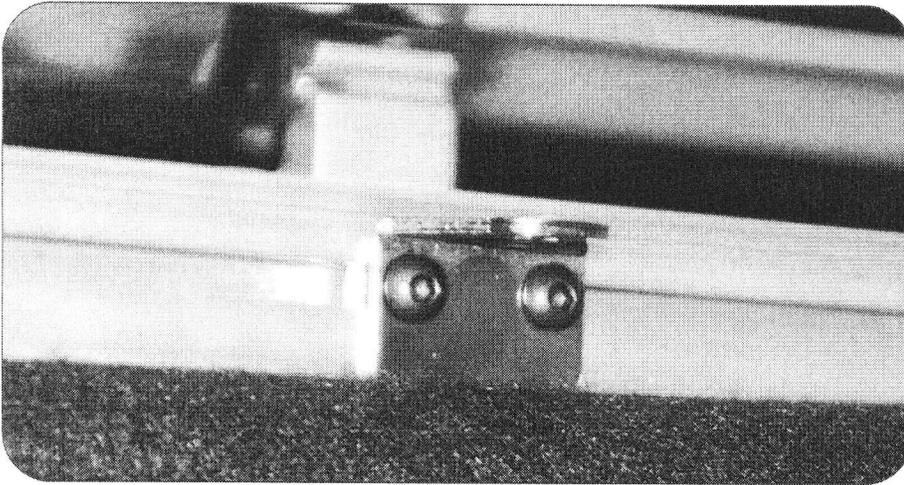


figure p

For best results, loosen the screws slightly and use a soft hammer to lightly tap the guides back into position. Use a quality square to check the squareness of the new alignment. Slowly tighten the two screws, alternating between them to prevent the rail from moving out of alignment.

MAKING ADJUSTMENTS (continued)

Cutter Head

If the cutter head becomes loose on the clamp bar and the head begins to wobble, there are three setscrews to tighten. **Caution: do not over tighten these screws.** On the right side of the cutter head there are two recessed holes. One is in front of the 90 degree blade carrier and one is behind it (figure q).

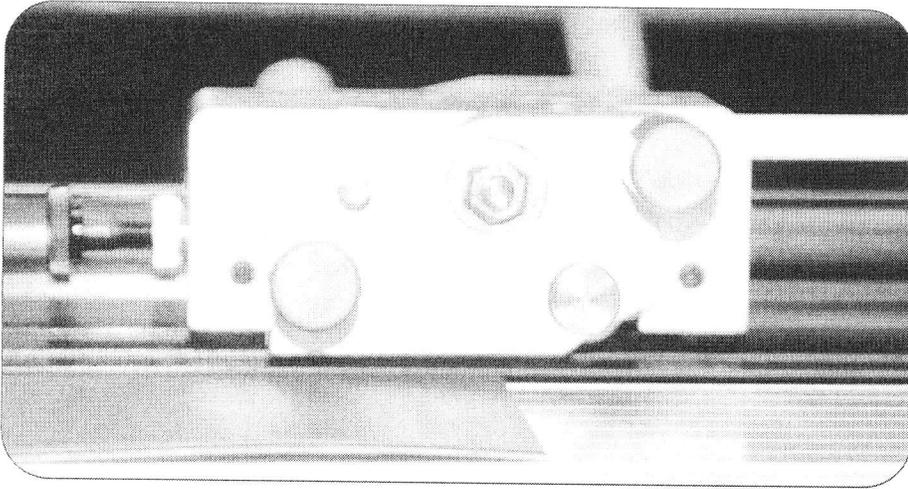


figure q

With the Allen wrench provided, tighten the front bushing 1/8 of a turn at a time. After each adjustment, slide the cutter back and forth until some resistance is felt. If there is too much resistance, back off the screw very slightly so the cutter head slides easily. Repeat this process on the rear bushing.

The third adjustment screw for the cutter head is in a recessed hole on the top of the head just above the "R" in Chronomat (figure r).



figure r

MAKING ADJUSTMENTS (continued)

This screw uses the same Allen wrench used for adjusting the other screws on the cutter head. This tightens the roller bearing. Again, tighten the screw 1/8 of a turn at a time and check for resistance by sliding the cutter head. As soon as resistance is felt, back off the setscrew slightly. **Caution: do not over-tighten these screws or damage to the bearing may result.**

Adjustable Blade Magazine

When using the 45 degree cutting head, if the blade appears to deflect or hook at the top of the cut, you may need to adjust the small screw set into the blade magazine. This screw will stiffen the blade to prevent hooking. To adjust the screw, remove the blade magazine from the cutter head and remove the blade. The screw is machined into the black blade magazine and requires minimal adjustment to affect the blade.

Magnetic Stops and Ruler Indicators

A small hash mark has been made on top of each ruler indicator to indicate the factory settings. These ruler indicators control the amount of overcut at each junction of mat cuts. If you wish to increase or decrease the amount of overcut at the intersection of the cuts, adjusting these indicators with the brass screw will fine tune where your cuts start and stop. If things go too far out of adjustment, reset the ruler indicators to their factory settings and start from there.

Automatic Stop (the stop connected to the cutter head)

Should the overcut at the top of the cut need to be fine tuned, turn the brass screw counter-clockwise to make a slightly shorter cut or turn the knob clockwise for a slightly longer cut.

Lower Stop (the stop on the clamp bar)

If the cut seems to go too long or stop too short at the bottom of your cut, you may need to adjust the lower stop. Rotating the knob counter-clockwise will lengthen the distance for the end of the cut and turning the screw clockwise will decrease the distance the blade travels at the bottom of the cut.

Mat Guide Stop (slides up and down on the mat guide rail)

Fine tuning the width of the border is done on the mat guide. If you need to make the border width a bit narrower, turn the brass screw counter-clockwise. Conversely, turning the knob clockwise will widen the border width slightly.

MAKING ADJUSTMENTS (continued)

Clamp Bar Bow

The clamp bar has been bowed at the factory to help secure the mat in place. If, over the course of use, the clamp bar loses its curve, the tension can be reapplied by tightening the screw at the end of the clamp bar (figure s).

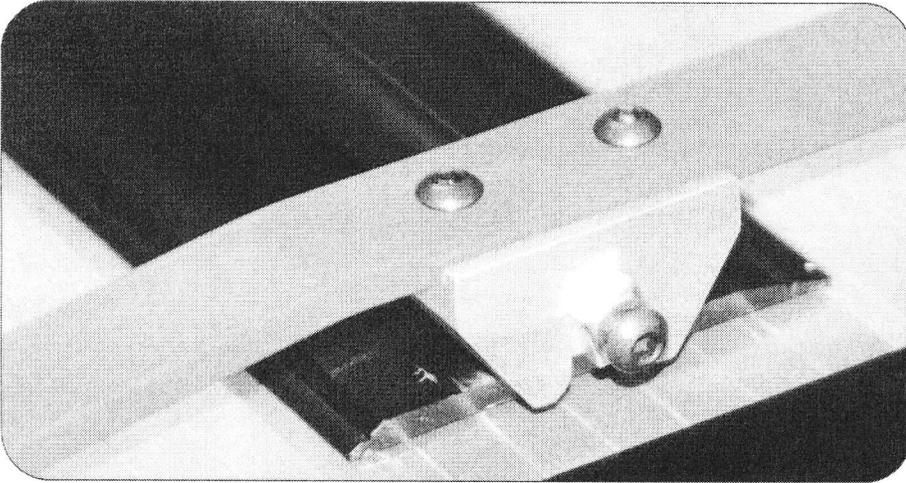
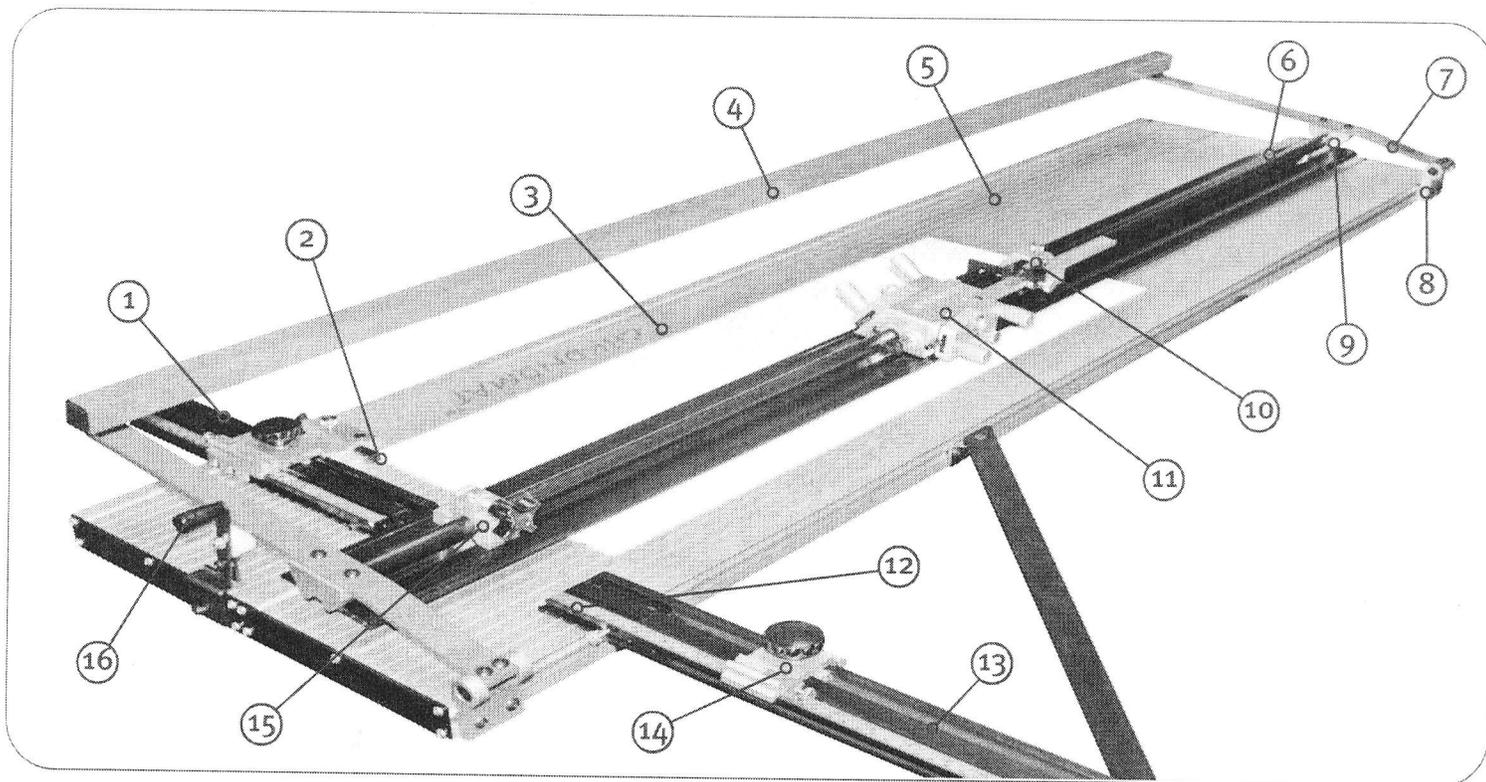


figure s

MAINTENANCE

After wiping the surface of the clamp bar clean, loosen the bearing screw on top of the cutter head slightly. Attach a length of double-sided tape to the clamp bar. Slowly run the cutter head over the tape and any debris will stick to the tape. Re-tighten the bearing screws as indicated in the "Adjustments" section.

CHRONOMAT PRECISION MAT CUTTER



- | | |
|------------------|-----------------------|
| ① Mat Guide Rail | ⑨ Clamp Hinge |
| ② Mat Stop | ⑩ Magnetic Stop |
| ③ Mat Guide | ⑪ Cutter Head |
| ④ Clamp Handle | ⑫ Sizing Arm Stub |
| ⑤ Deck | ⑬ Sizing Arm |
| ⑥ Clamp Bar | ⑭ Sizing Arm Stop |
| ⑦ Handle Strut | ⑮ Lower Stop |
| ⑧ Rear Hinge | ⑯ Clamp Handle Lifter |

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ABOUT SAWTOOTH SPECIALTY TOOLS

Sawtooth Specialty Tools, Inc. is the manufacturer and distributor of the Phaedra Framing line of products. From our Minneapolis headquarters we ship both our Quadrant cutting systems and Chronomat mat cutters to customers across North America.

Our products are made with pride in the USA and our commitment to superior workmanship and customer service is unsurpassed.

Our tools are not cheap, our tools are not disposable and our tools are not for the casual user. We serve the pro who demands long-lasting performance and value.

We are committed to deliver tools that make your work better, faster, more profitable and, yes, more fun.