

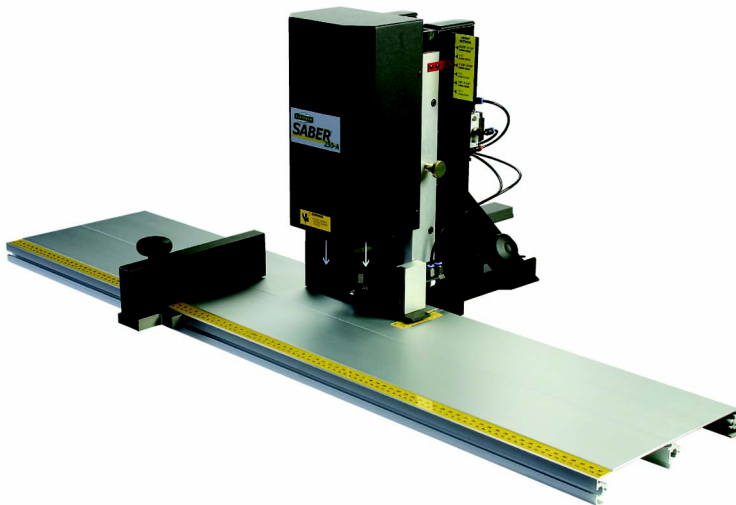


Owner's Manual

Frameaware Saber™ Machine

For Accurate and Efficient Saw Tooth Hanger Installation

Model: 400
ASM



Frameaware Inc.

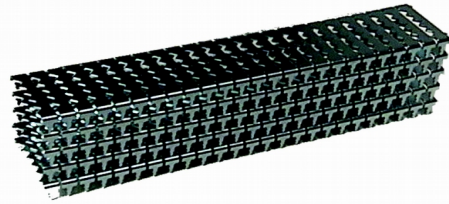
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sales@frameawareinc.com

First, we'd like to congratulate you for adding the Saber 400 ASM to your production line. From now on your operators will be able to insert saw tooth hangers with efficiency, accuracy, and reliability. It's easy to use and designed to require minimal maintenance. Regardless of the size of the frame or thickness of the moulding, the Saber will secure a 5-tooth hanger perfectly placed and instantly secure.

Next, we ask you to inspect the two containers that were used to ship the Saber. If damaged, please contact your carrier and file a claim. Locate the warranty card that



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Product Warranty

Framework Inc. warrants the machine purchased to be free from defects in parts and workmanship for (1) one year from the date of purchase. Framework Inc. warrants that it will repair or replace any such defective machine or replace parts, providing the machine has been under normal use and service and the defective part or machine is returned to Framework at the purchaser's expense. Framework Inc. must authorize the return 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. Framework Inc. does not authorize any company employee or representative to assume for it any other liability than that set forth in this Product Warranty.

Safety First!

Please read through this manual before operating the Saber™ 400 ASM. If after reviewing these pages you still have questions about the machine please contact Ron: (toll-free) 1.800.582.5608 or e-mail at: ron@framewareinc.com.

- It is the employer's responsibility to enforce compliance with these safety warnings and procedures by all users of the Saber machines. Keep this manual available so all employees have access to it and the opportunity to review procedures periodically.
- The intended purpose of the Saber is to insert saw tooth hangers in picture frames of various shapes, sizes, and materials. It must not be modified or used for any other application or purpose.
- Use safety glasses. The operator of this machine, and others in the work area, must wear safety glasses with rigid side shields. Wear ear protection. Ear protection is recommended in any work environment where repetitive, mechanical machinery is in operation.
- Only connect the Saber to an air supply with a coupling that removes all pressure when disconnected. Always disconnect the machine from the air supply before performing maintenance, removing a jam or cleaning the Saber. Even if a hanger strip is not visible on the guide, assume that there may be one or two hangers remaining in the machine.
- Use clean, dry, regulated compressed air at a minimum pressure of 100 PSI at 2 CFM. The system includes a filter and pressure regulator. Do not connect this machine to an air supply with maximum potential pressure greater than 150 PSI.
- Never use oxygen, carbon dioxide, combustible gases or any type of bottled gas as a source for this machine. Explosion and serious injury may result.
- Never use the machine if the air supply is compromised, the machine is missing parts, or repair of the Saber is required. Do not use the machine if the safety warning labels are missing or unreadable. Do not use the machine if the ram safety guard is missing or broken. Contact a Frameware Inc. Sales Representative for replacement labels or parts.
- Only use the parts, supplies, and accessories that are recommended by Frameware Inc.

Setting Up Your Machine

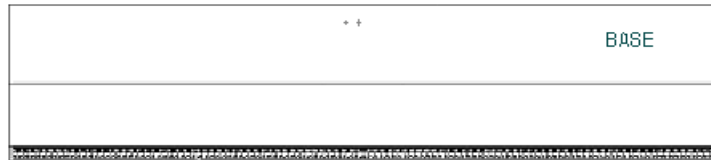


Figure 1

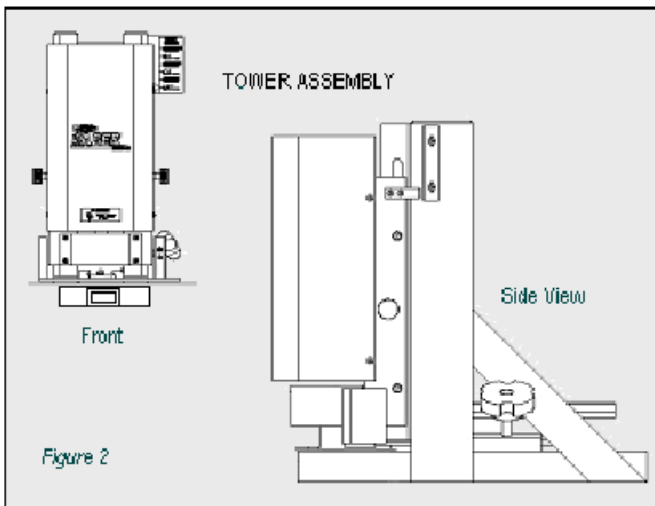


Figure 2

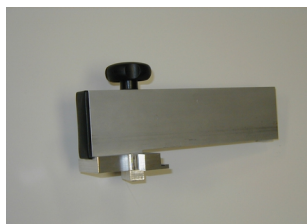


Figure 3: Fence

All instructions in this manual assume that you are facing the front of the machine and

Unpacking the Saber 400 ASM

The Saber has been shipped to you in two containers. The longer, flatter carton contains the **Base** (Figure 1).

The other box contains the **Tower Assembly** (Figure 2), the **Fence** (Figure 3), and a **Parts Bag**.

You will have found that the Parts Bag contained:

- a) This Owners' Manual
- b) A Warranty Card
- c) Flat Head Socket Cap Screws (2)
- d) Hex Key (1)
- e) Triangle Template

If anything is missing, please contact Ron at Frameware Inc. at 800.582.5608 or at 973.808.2022, or ron@framewareinc.com.

VIEW A: FROM RIGHT SIDE

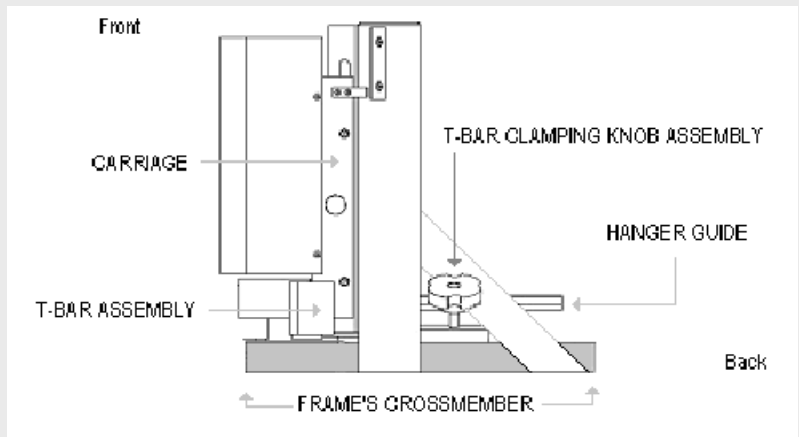


Figure 4

VIEW B: FROM THE FRONT

Before assembling the machine, determine whether you will anchor the Saber to your work surface. Placing and securing the machine will be a matter of personal preference and it is left to the owner to decide how best to use the Saber.

Assembling the Machine

Figure 5

VIEW C

If you decide to anchor the Saber to your work surface, locate the four, predrilled holes on the cross member of the frame (Figure 7). These will allow you to secure the machine with four bolts (not included).

that the front of the machine is facing the operator. Be sure to leave sufficient room for attaching the base assembly. The base assembly will run along the front edge of the workstation.

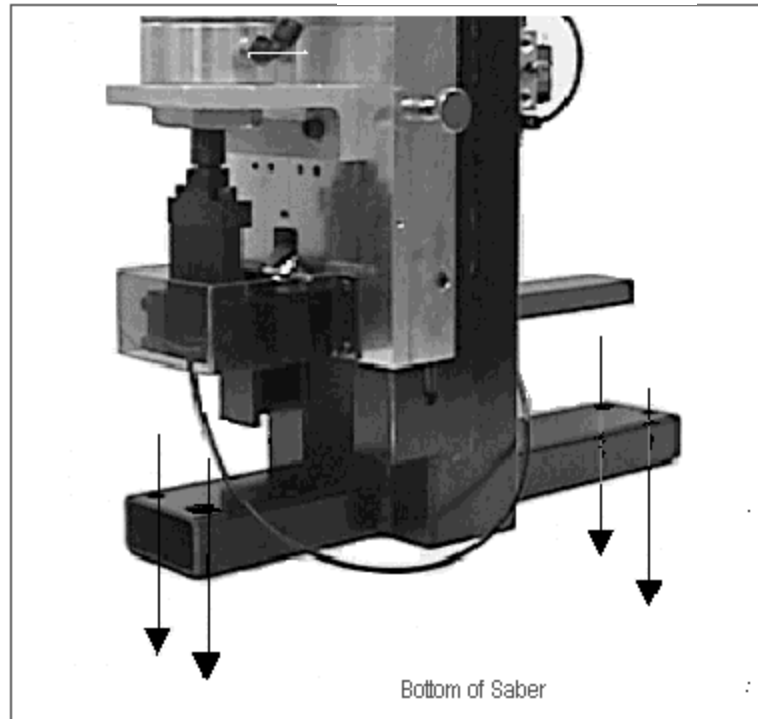
Figure 6

LEFT DETE

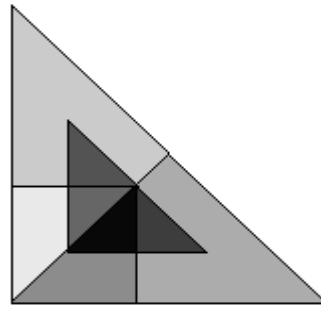
T-BAR ASSEM
MOUNT

E

KT

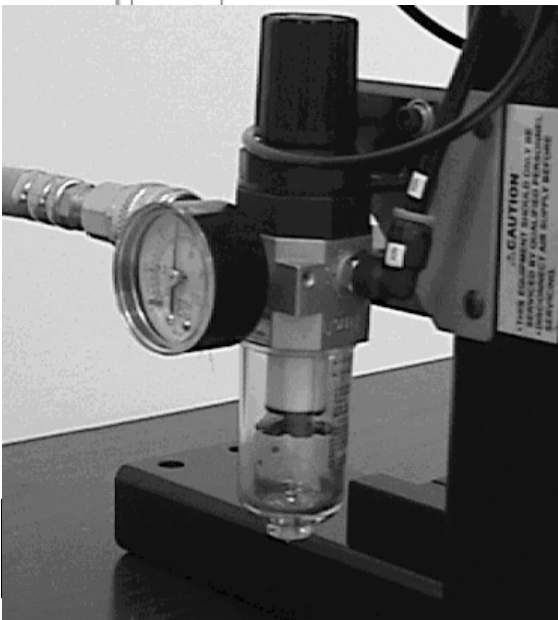
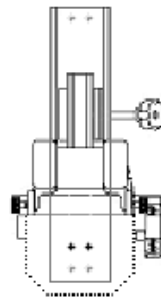


(See Figure 8)



Squaring the Machine

Figure 8:
top
view



...SQUARED AND YOU MAY ATTACH YOUR SOURCE OF
REGULATOR AT THE LEFT REAR OF THE SABER. (Figure 9)

Operating the Saber

- A. Load** the Hanger Strip
- B. Measure** the Frame and **Adjust** the Machine
- C. Activate** the Saber

A. Load the Hanger Strip

Saw tooth hanger strips contain 25 collated hangers. Individual hangers are barbed to ensure maximum holding power when inserted into a frame.

The hanger strip is loaded onto the guide, barbs pointing downwards and teeth facing the machine operator, i.e., the front of the Saber.

Figure 10 (Top View)

Once the strip is loaded onto the guide, the operator pushes the strip forward toward the front of the machine until the hanger strip stops.

The required hanger strips (part number FSH 400) may be ordered by contacting the Framework Customer Service Department at 800.582.5608; or e-mail at: sales@frameworkinc.com

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B. Measure the Frame and Adjust the Machine

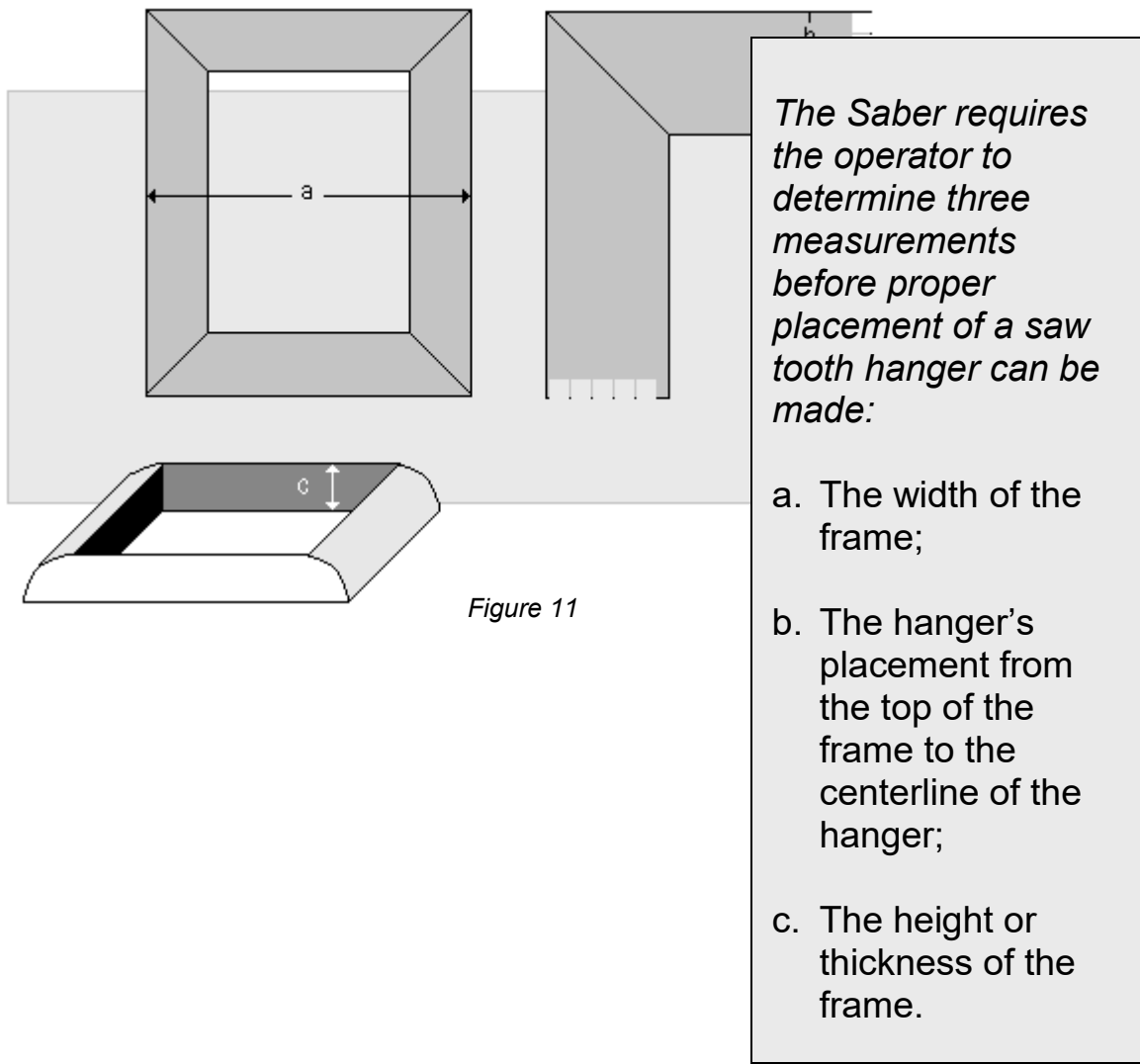


Figure 11

Taking measurements and adjusting the Saber:

▪ **A. How wide are the frames you will be processing?**

- i. Measure the width from outside the left edge to outside the right edge of the frame. (measurement “a” in Figure 11)
- ii. Locate the Fence assembly and loosen it by twisting Knob A, counterclockwise.
- iii. Slide the Fence until its edge is aligned with the mark on the Centering Scale, Scale A, that corresponds to the frame’s width.
- iv. Tighten Knob A.

▪ **B. Where do you want the hanger to be inserted, relative to the top edge of the frame?**

- i. Measure or approximate the distance between the top edge of the frame and the point at which you wish to insert the hanger. (measurement “b” in Figure 11)
- ii. Loosen the T-bar Clamping Knob, Knob B, by turning it counterclockwise.
- iii. Move the T-bar Assembly by gently pushing or pulling the unit along its track.
- iv. Align the T-bar so that measurement “b” is reflected on the T-bar scale, Scale B, located on the Base Assembly.
- v. Tighten Knob B.

▪ **C. How high is the frame at its greatest thickness?**

- i. With the frame laying flat on a surface, determine its height at its thickest cross-section. (measurement “c” in Figure 11)
- ii. The Carriage of the Saber is spring-loaded and slides up and down the tower of the machine.
- iii. Firmly pull out the left and right Detent Knobs at the same time.
- iv. You will notice that doing so will free the Carriage to glide up or down as you wish.
- v. This movement of the Carriage will cause the Height Setting Pointer to move along the Height Scale, Scale C, at the upper right hand corner of the machine.
- vi. The Carriage will lock into any one of six (6) pre-set positions that correspond to a range of heights.

Example “A”

A frame measures 10” across. After loosening the Fence with Knob A, move the Fence so that the Centering Scale (Scale A) reads 10”. Tighten the Knob to lock the Fence in place.

Example “B”

After assessing where a hanger should be placed on a certain frame, the operator measures the distance from the top edge of the frame to that spot and finds it to be two 2”. The operator then moves the T-bar assembly to 2” on Scale B and then

Please Note:

The Height Scale (Scale C) shows 6 different height ranges. Choose the one that will best accommodate measurement “c.”

2.5” to 3.5” (64 – 89mm)

2.0” to 3.0” (51 – 76mm)

1.5” to 2.5” (38 – 64mm)

1.0” to 2.0” (25 – 51mm)

0.5” to 1.5” (13 – 38mm)

0.5” to 1.0” (13 – 25mm)

Let's Review:

- ✓ You have read and understand the safety instructions listed inside the front cover of this manual.
- ✓ You are familiar with the operating procedures and safety guidelines of your employer.
- ✓ You are wearing safety glasses prior to working with this equipment.
- ✓ You have assembled the Saber and have created an uncluttered work area for the machine.
- ✓ It is securely positioned (possibly mounted) on your work surface.
- ✓ You are familiar with the major components of the Saber and know that three measurements must be taken before adjusting the machine to your run specifications.
- ✓ The machine has

Please Note:

While this manual uses non-metric measurements in most of its examples, the Saber has both imperial and metric scales.

The Saber has been designed to deliver precise installation of saw tooth hangers with great reliability. If, for any reason, a hanger jams, the machine will not fire.

Safety Tips:

It is recommended that the hanger be driven at the thickest portion of the frame. The further it is driven from a thick portion, the more likely it becomes that the frame will kick upward when the hanger is inserted.

Set the carriage so that there is a minimum clearance of 0.25" from the frame to the bottom of the ram guard. Keep in mind that the machine will operate properly with greater clearances, but there is less room for errors or injury when this space is kept to a minimum.

C. Activate the Saber

Once all three measurements (a, b, and c) have been taken and the machine has been readied with these dimensions reflected on Scales A, B, and C, the operator is now ready to insert the saw tooth hanger.

1.

The frame is inserted backside-up with its left edge pressed against the left fence.

2.

The top edge of the frame is

3.

The operator then pushes the frame squarely into the machine (against the T-Bar), and will depress the foot pedal.

Premature release of pressure from the T-bar switch or foot pedal will automatically interrupt the operation of the ram and return it to the uppermost position. This design feature prevents injury and unintended firing. Depress the switch or pedal again to install the hanger if it was not partially installed into the frame during the interrupted cycle.

Page 10



4.

When the pneumatic cylinder is activated, the machine's ram will insert the hanger into the frame at the proper location.



Optional Equipment

Page 11

The Saber 400 ASM can be outfitted with one or more of the following optional

Using a Small Frame Adapter to Insert Hangers

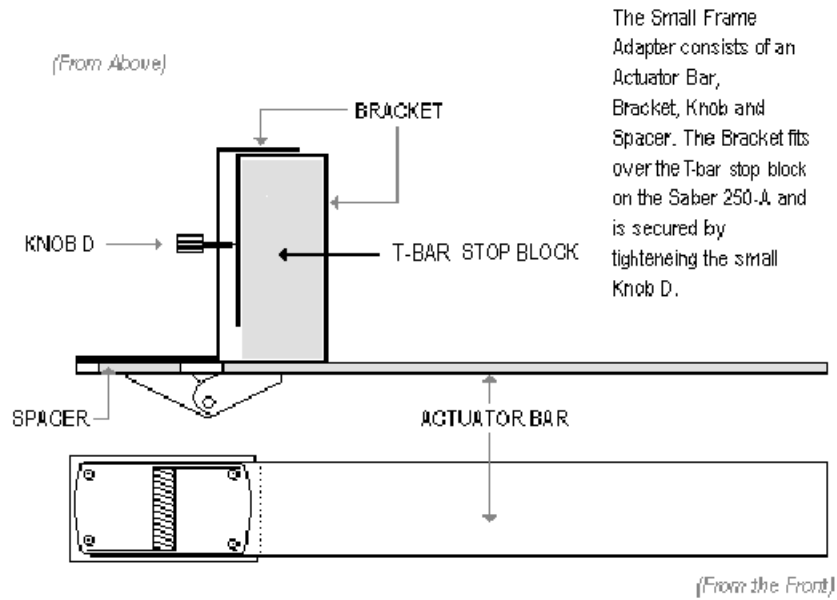
Some frames are too narrow to be effectively handled by the standard T-Bar assembly of the Saber. Therefore, Frameware Inc. has designed an optional adapter that will accommodate frames less than 7" wide.

The adapter is fitted on the T-Bar stop block on the T-Bar assembly. The adapter's bracket is securely tightened to the Saber by turning Knob D. Do not over tighten. The procedure for inserting the hanger is unchanged.

Small Frame Adapter (Part # 04-553): For frames that are too small (7" wide or less) to be handled by the standard T-bar assembly and/or pneumatic switch.

Right Side Saw Assembly (Part # 04-551): The Saber comes equipped with a saw assembly that is used for squaring the left edge of a picture frame. It may be used on the right edge of picture frame that requires two side-by-side saw cuts. This assembly may be ordered (to attach on the right side of the base) in conjunction with the optional adapter with a time saving method of installing the hangers.

A. Small Frame Adapter



The Small Frame Adapter consists of an Actuator Bar, Bracket, Knob and Spacer. The Bracket fits over the T-bar stop block on the Saber 250-A and is secured by tightening the small Knob D.

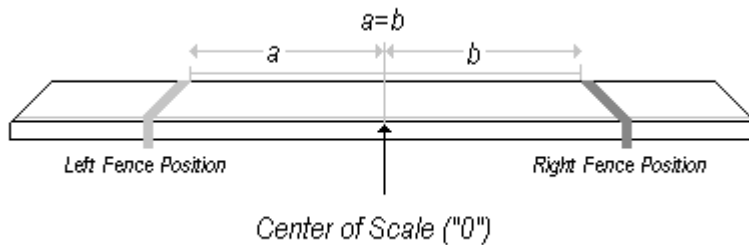
Figure 12
(TWO VIEWS OF THE SMALL FRAME ADAPTER)

The top edge of a small frame is pressed against the Actuator Bar of the Small Frame Adapter to install a saw tooth hanger.

B. Additional Fence Assembly

Inserting Two Hangers Per Frame Using a Second Fence.

- To
- ri
- le
- m



- To
- in
- there is a fence to the left of "zero" on the centering scale, and there is one to the right of this mark.

base on either the left or the right, the fence is positioned to the left of the centering scale, a second fence assembly

hanger. They can be used in the same way as a single hanger. Figure 13 shows the way a second fence is positioned so that there is one to the left of "zero" on the centering scale, and there is one to the right of this mark.

The procedure for inserting two hangers using the second fence is similar to the procedure for inserting one:

- Measurements are taken and the machine is adjusted to reflect them. Whereas a single hanger is centered on a frame, two hangers must be lined up horizontally at an equal distance from the center (or at an equal distance from the frame's edge).
- The operator manually determines the placement of the first hanger and takes that measurement. The essential thing to remember is that the placement and measurement of the second hanger must mirror that of the first. Both fences must be positioned so that their corresponding edges are set to the same dimension on either side of "zero." (See Figure 13 above)

Troubleshooting: Hanger Indexing

To correct saw tooth hanger feeding or “indexing” problems, it may be necessary to follow this procedure:

1. Check the air pressure from the compressor and the regulator setting on the machine itself. Incoming pressure must be at least 80psi, and the regulator must be set at a minimum of 40psi.
2. Disconnect the air supply. Place a mirror under the ram and visually check for any jammed hangers. Remove the hanger from the ram with your fingertip.
3. If the hanger cannot be easily removed, the cover must be removed and the ram assembly taken apart.
4. If the air pressure is adequate, and there is no hanger jam, remove the front cover. Check the position of the indexing switch actuating screw. (Figures 15 & 16) The head of the screw should be in contact with the switch button without forcing it too far upwards.

To recalibrate the actuating screw position:

- a) Disconnect the air supply from the machine. The ram tip and actuating screw will fall downward slowly.
- b) Loosen the jam nut from the actuating screw, (Figure 14) and turn the screw clockwise so that it moves downward at least $\frac{1}{4}$ ".

- c) Reconnect the air hose to the machine. Turn the actuating screw manually (counterclockwise) until the head of the screw fully depresses the indexing switch. Turn the screw back ½ turn (clockwise), and retighten the jam nut to lock the screw in position. The top of the screw head should be about 21/32" or 16mm above the bracket when correctly positioned. See Figure 16.
- d) Depress the foot pedal or switch to test for proper operation of the indexing cylinder. See below for adjustment of indexing speed.

Calibrating the Indexing Speed

If the small cylinder that feeds hangers into the machine is operating either too rapidly or too slowly, indexing problems may result. The lower flow control valve (red connector) on the rear of the machine must be adjusted. Page 14

1. Loosen the knurled jam nut on the valve as indicated. (Valve B, Figure 17)
2. Tighten the valve adjustment knob fully.
3. Open the knob ½ turn from the closed position.
4. Test the machine by depressing the manual switch or foot pedal. You should be able to see the complete stroke of the indexing cylinder when the speed is properly set. Retighten the jam nut when you are satisfied that proper indexing speed has been achieved. Opening the valve increases hanger indexing speed, and vice-versa.

Calibrating the Secondary Air Valve

The flow control to the right, or Valve C (blue connector), regulates the volume of airflow to the indexing cylinder. To adjust the valve:

1. Loosen the knurled jam nut on the valve as indicated. (Valve C, Figure 17)
2. Tighten the valve adjustment knob fully.
3. Open the knob 2 full turns from the closed position.
4. Tighten the jam nut to lock the adjusting knob.

Setting the Ram Speed/ Cycle Time

You must use a stopwatch set the total cycle time for the main cylinder. The total cycle time consists of a complete downward stroke and return back up to the starting position, not counting the foot pedal or pneumatic switch actuation and release time. The cycle time calibration is made with the pneumatic flow control valve located on the upper-right side of the machine, as seen from the rear. (Figure 18)

Safety Warning:

Raise the Saber carriage to the maximum height setting (2 ½") before calibrating. Do not install hangers into the machine or place frame moulding under the ram. Keep hands away from the ram area!

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(counterclockwise) the knurled lock nut on the flow control valve, and then close (clockwise) the small adjusting knob fully (Figure 18). Open the adjusting knob ½ turn counterclockwise and make a timing test by actuating the foot pedal or manual pneumatic switch. Hold down the pedal/switch during the entire machine cycle. Continue to open/close the valve knob in small increments until the optimal cycle time is achieved. (see Figure 19)

Note: Opening the valve decreases the cycle/dwell time, and vice-versa. Actual cylinder speed is not affected.

Correct cycle times for Saber ASM 400 is as follows:

1.1 – 1.2 seconds

When the calibration is complete, hold the adjusting knob in position and tighten the knurled locking

Maintenance and Replac

Description	Part Number
Air Regulator	18-000
Air Valve	18-001
Air Limit Valve	18-002
Indexing Cylinder Assembly	18-003
Main Air Cylinder	18-004
Carriage Spring – 5/8" Dia. x 5" LG	18-005
Carriage Spring – 1/2" Dia. x 5" LG	18-006
Height Adjustment Knob	18-007
T-Bar Shoe	12-349
T-Bar Clamping Knob Assembly	18-008
Hanger Ram Tip Assembly	18-009
Hanger Shear Nose Assembly	18-010
Ram Guard (With Arrow Labels)	18-011
Ram Guard Screw (BHSC Screw, #8-32 x 1/2" LG) (4)	12-848
Detent Height Settings Bracket & Scale	18-012

- The Saber 400 ASM is an efficient and reliable machine, designed to be operated safely and maintained with minimal effort.

- Keeping the work area clean and clutter-free will allow the operator to work quickly and will prevent accidental damage to the machine and production materials.

- A clean dry cloth should be used to wipe down the machine; the surface of the base assembly should be protected from dents and abrasions. While the machine will operate properly despite such marks, it is up to the operator to safeguard the condition of your company's product by taking care of the base and fence(s).

- Lubrication: Do not grease or oil any of the machine's moving parts except the four (4) carriage channel locator nuts. Periodically apply a small amount of **silicone-based** lubricant to the channel and nuts.

- There are no parts to service or replace as part of a regularly scheduled plan. In fact, under normal use there is very little likelihood that a part will need replacement.

- Plastic safety guards, safety labels, replacement knobs, scales and the ram tip can be ordered from Framework Inc..

- The machine's parts and order

Detent Height Settings Pointer	18-013
Base Assembly (With Scales)	18-014
Flat Head Socket Cap Screw, #10-32 x 5/8" LG (2)	18-015
Hex Key (Base-To-Frame Assembly Screws)	18-016
Front Cover Assembly (With Labels)	18-017
Front Cover Screw, (BHSC #8-32 x 1/2" LG) (4)	12-848
Warning Label (Guards in Place)	18-018
Caution Label (Servicing)	18-019
Air Volume Chamber	18-020
Triangle Template (Square)	12-625

TROUBLESHOOTING THE SABER

The machine fires prematurely.	The top edge of the frame is pressing against the activation switch before the side edge is squared on the fence.	Always position the side edge of the frame before pushing the top edge against the T-bar (i.e., the pneumatic switch).
Hanger is not centered on the frame vertically (up-down). A hanger is jammed in the machine.	The hanger need not be centered vertically on the top edge of the frame. However, if the hanger is in the unlikely event of a jam, one of two things may have happened. The hanger strip has been placed on the magazine incorrectly, or the hanger strip was bent or damaged during shipping or handling.	a) Adjust the T-bar scale. Refer to page 9 in order to review measurement settings.
		The operator must manually remove the jam by first disconnecting the air supply, then freeing the remaining hanger strip from the rear of the machine, and finally ejecting the jammed hanger. Only one hanger can ever be jammed because of the machine's design.
Hanger strip does not feed properly.	a) The hanger strip may be slightly bent or twisted. b) One of the flow control valves is closed or clogged.	To remove the hanger strip, locate the ram guard above the T-bar assembly and gently push up on the orange release lever. Do NOT force! Remove the hanger and then make sure the hanger strip is reloaded properly before reconnecting the air supply. (See page 6) b) Adjust the flow control valve(s) to regulate air to the indexing cylinder. (See page 6)
There is no air pressure.	The source of compressed air is disconnected or improperly connected to the Saber.	Re-check your air source and hose connections. Make sure that you have correctly attached the Saber to your existing air supply system.
Frame will not release.	There may have been less than ¼" clearance between the ram tip and the picture frame.	If the pneumatic drive still does not work properly, contact your Framework Customer Service Representative for further advice. A minimum ¼" clearance is necessary to avoid trapping the frame.
There is insufficient air pressure.	Pressure settings are not properly set. The machine is being used on material, or in a way for which it is not designed.	Check your company's compressed air source to make sure that it is in proper working order. Verify that all settings are consistent with the recommendations listed on page 6 of this manual.
Hanger is not fully installed.	(a) There is too much clearance between the picture frame and the ram tip at its extended position. (b) There is not enough air pressure.	(a) Using the detent knobs on either side of the drive carriage, lower the height setting to an appropriate range. A ¼" clearance below the guard is sufficient. (b) Increase air pressure until the hanger is fully installed.