



# LEGACY Ornamental Milling

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## Assembly Instructions and Owners Manual Legacy Ornamental Mill Models 200/900/1200/1800/2000 and Accessories



Revised 2/06

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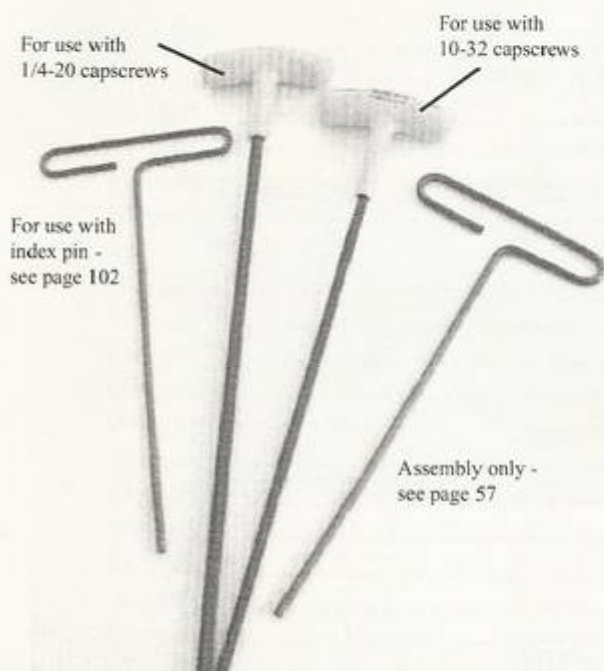
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## LOOK FOR THIS SYMBOL

Machine assembly requires moving throughout the manual depending on model configuration.  
The logo to the right is used to alert you when a page change is required.



# Assembly: General Information



## Tools

Two ball end wrenches have been supplied for assembly and for use with the machine. The larger ball end wrench is used with the 1/4-20 capscrews. The smaller ball end wrench is used with 10-32 capscrews.

The small t-handle allen wrench is used when locking the shaft collar located on the index pin. And the 9/64" allen wrench is used when assembling the extension shaft for the y-axis handle (see page 57).

Other tools you may need during assembly:

- File
- Measuring scale
- Phillips head screwdriver
- Plain screwdriver
- 3/8" Open end wrench or Crescent wrench

**NOTE:** Occasionally the design of some parts change. If there are photos in this manual that do not match exactly the part that you have been shipped - it is simply an old photograph. Proceed as directed with the updated part.

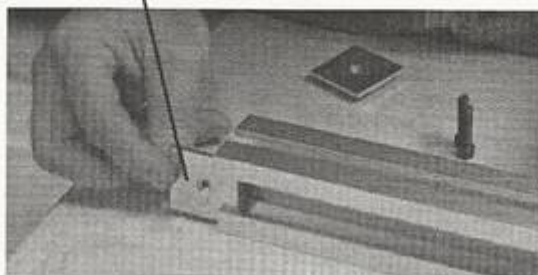
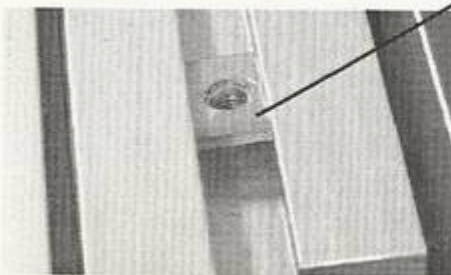
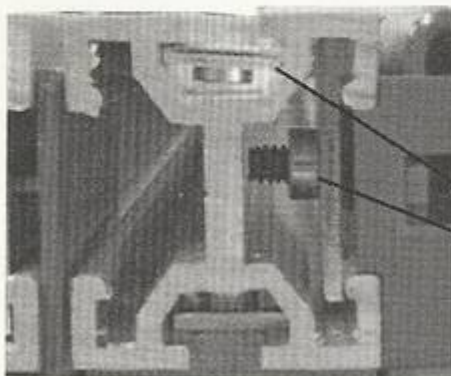


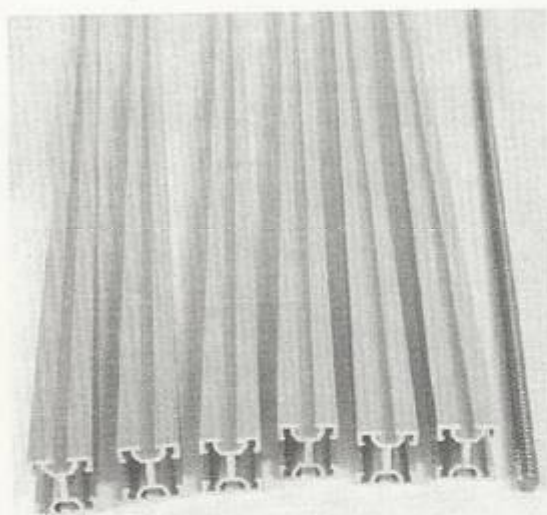
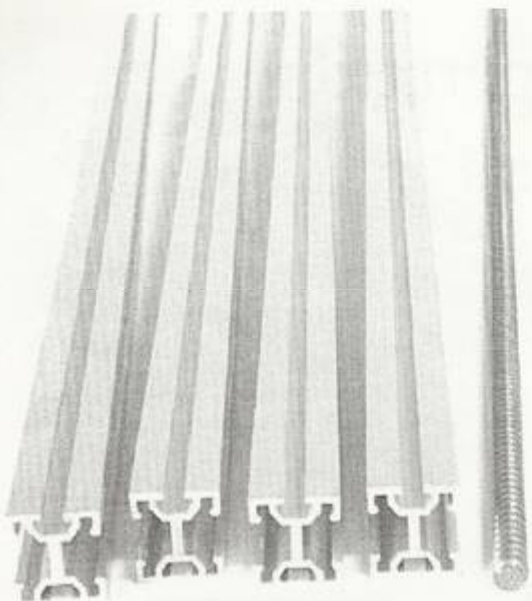
## Locking Plates

A key component of the machine assembly are locking plates of various styles and sizes. These locking plates are designed to slide inside the channels of the extruded aluminum rails, allowing parts and accessories to be fastened securely into place.

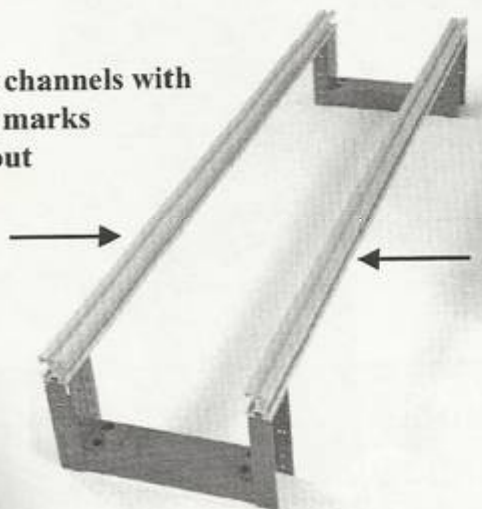
When sliding the locking plates into the channels, care should be given to insure that the attached hardware faces down inside the rail, assuring that the hardware is pulled into the plate as the capscrews lock down.

**Locking plates with hardware facing into channel**





Wide channels with  
score marks  
face out



Once you have read this section go to:

## Rails

The longest box contains the rails to the machine.

If you purchased the **model 400 or 900** your box will contain (4) rails measuring 60" long.

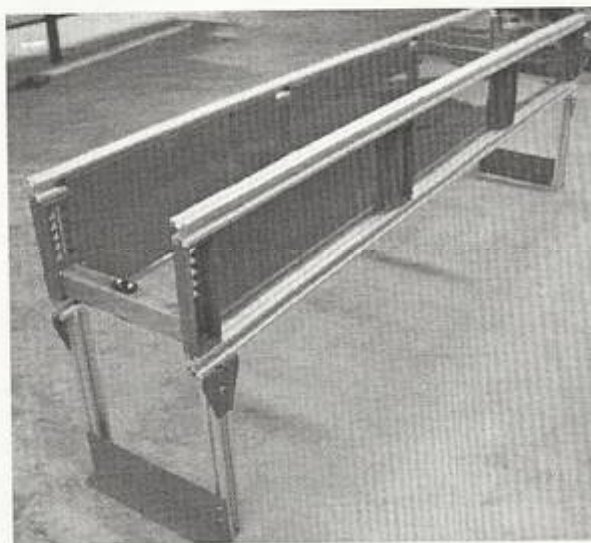
If you purchased the **model 1200 or 1800** your box will contain (6) rails. The 1200 rails measure 84", and the 1800 rails measure 108" long.

**NOTE:** When assembling the machine, the thin channel of the extruded aluminum rail faces up and down, and the wide channels face to the sides. One of the wide channels has a score mark down the center and should be positioned to the outside of the machine.

These rails will be assembled in two sections.

1) The fixed rails (holding the router carriage) held together with the rail legs, and 2) the adjustable bed rails held together with the headstock and tailstock.

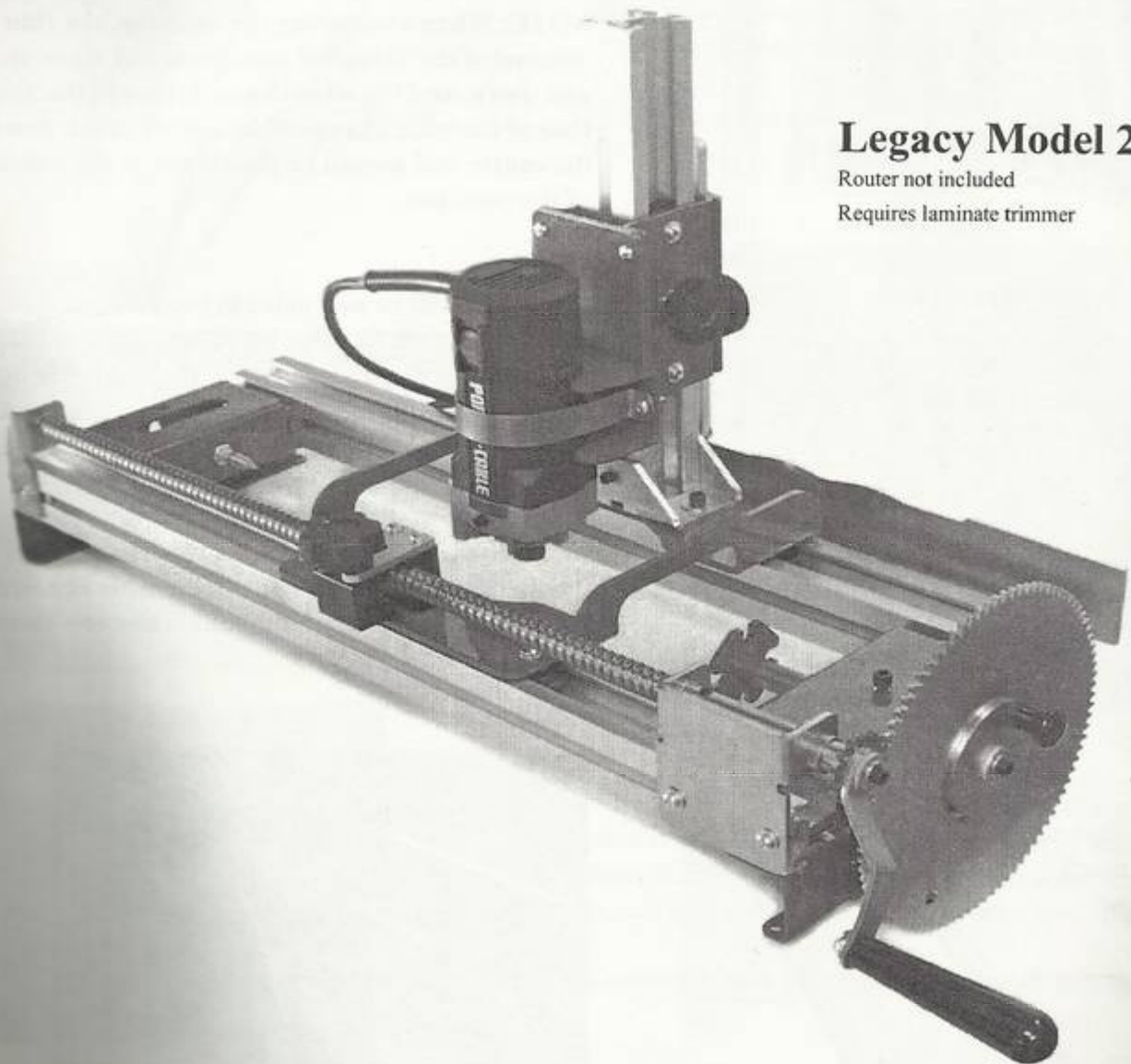
**NOTE:** The model 200 is an exception to the information above. It contains two bed rails. These rails are positioned with the wide channels facing up and down, and the thin channels facing to the sides (see page 5).



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Model 900 - page 18  
Model 1200 and 1800 - page 26  
Model 2000 - page 63

# Assembly & Operation Instructions

200

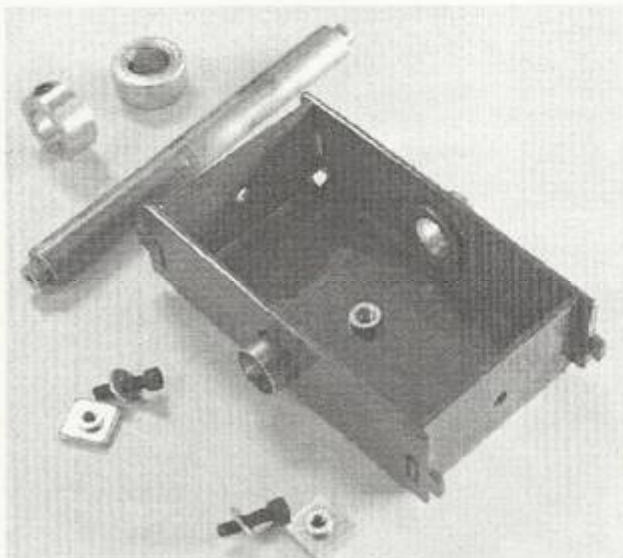


## Legacy Model 200

Router not included

Requires laminate trimmer

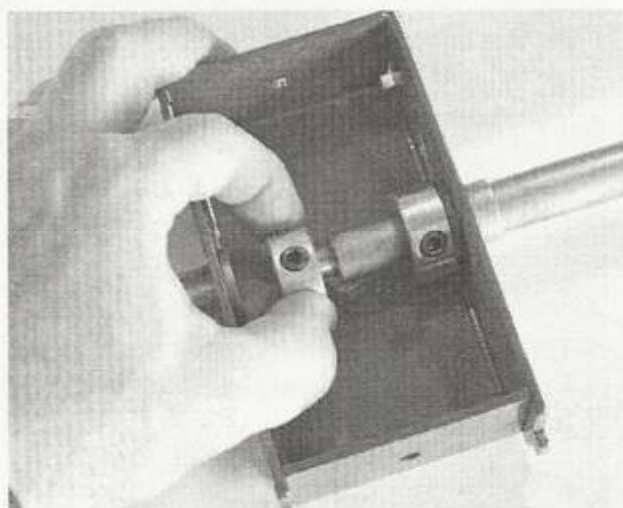
**NOTE:** To complete the machine assembly you will need a phillips head screwdriver and a 3/16" allen wrench. A 5/32" t-handle ball end wrench has been provided for gear adjustment.



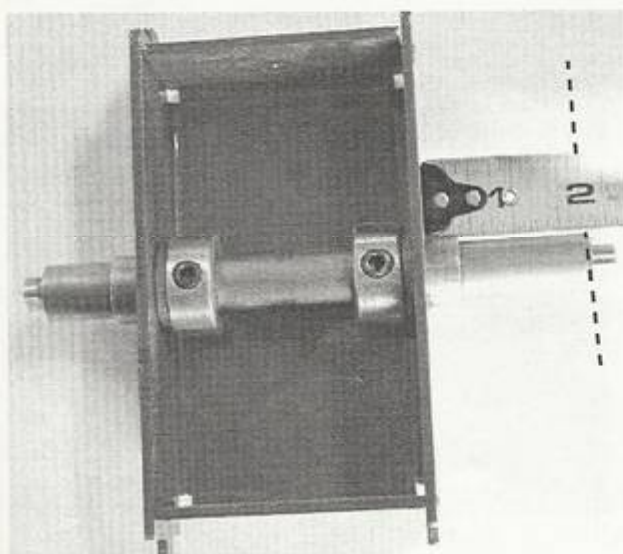
## Headstock

The headstock parts consist of :

- (1) headstock housing
- (1) spindle shaft
- (2) shaft collars
- (2) locking plates
- (2) 10-32 x 5/8" capscrews
- (2) #10 flat washers

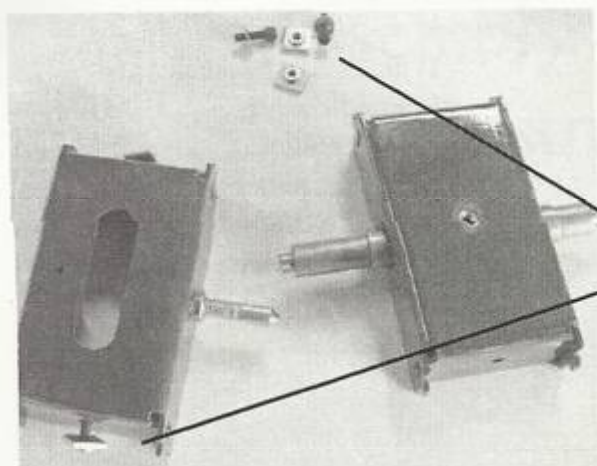


Slide the spindle shaft through one side of the housing and slip the two shaft collars on before sliding the shaft through the opposite side of the housing.



One end of the spindle shaft should stick out of the housing 1 3/4".

With the spindle shaft in the proper position, lock the two shaft collars against the brass bushing.

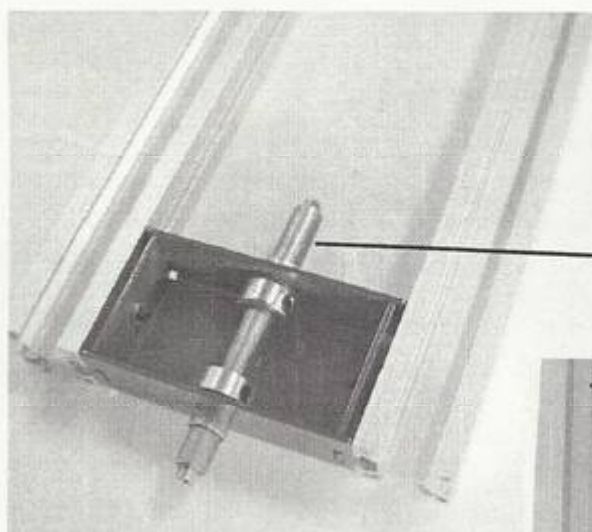


Mount the locking plates to the sides of the headstock and tailstock housing using the 10-32 capscrews.

Locking plates

Tailstock

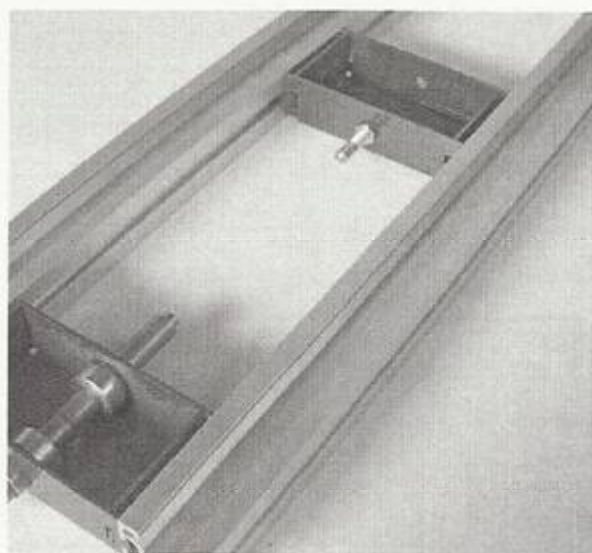
Headstock



Mount the headstock between the two rails as shown. Note that the locking plates slide inside the thin channel of the rails and the capscrews are tightened to insure that the headstock is locked firmly into place.

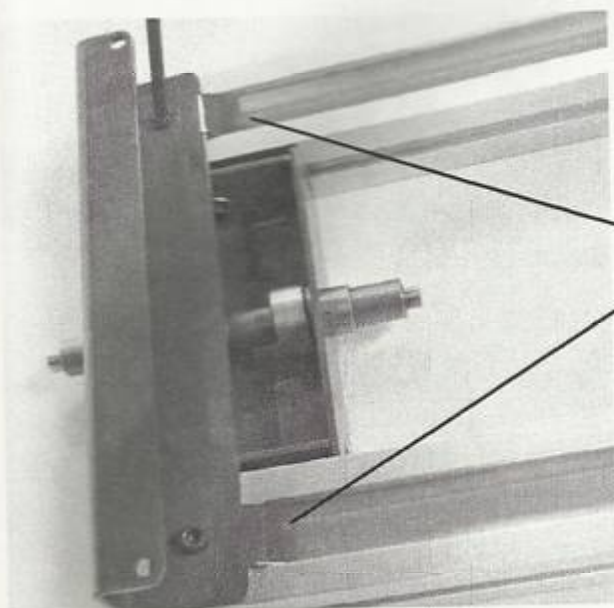
1 3/4" side of shaft

Note: The wide channel of the rails with score mark should be facing up with the headstock (or down in the photo to the far left).



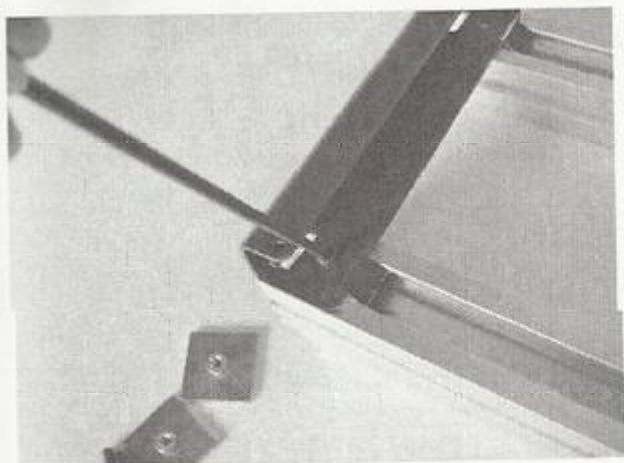
The tailstock also slides onto the rails with the locking plates and is locked into place when the workpiece is ready to be milled.

Note: It may be necessary to file the tabs so that the tailstock slides freely between the rails.

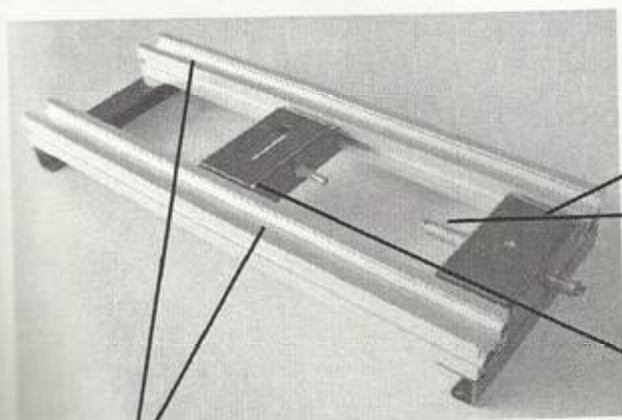


The two base pieces will act as a stand to hold the rails up. These pieces will connect to the ends of the rails

**Tabs**



The tabs should slide inside the channel, and the cap screws lock onto the locking plates inside the wide channel.



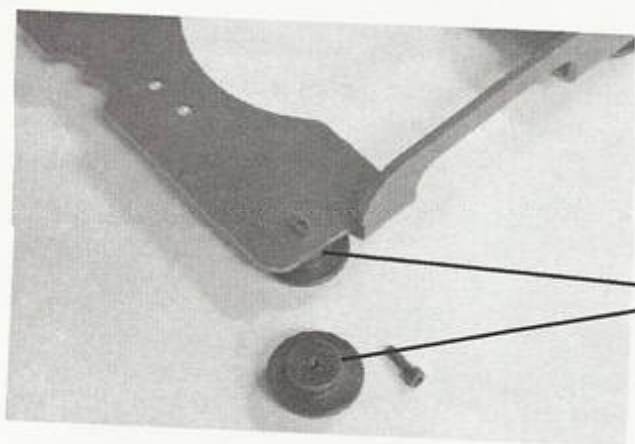
The bed assembly should appear as the photo to the left.

**Headstock**

**1 3/4" side of shaft**

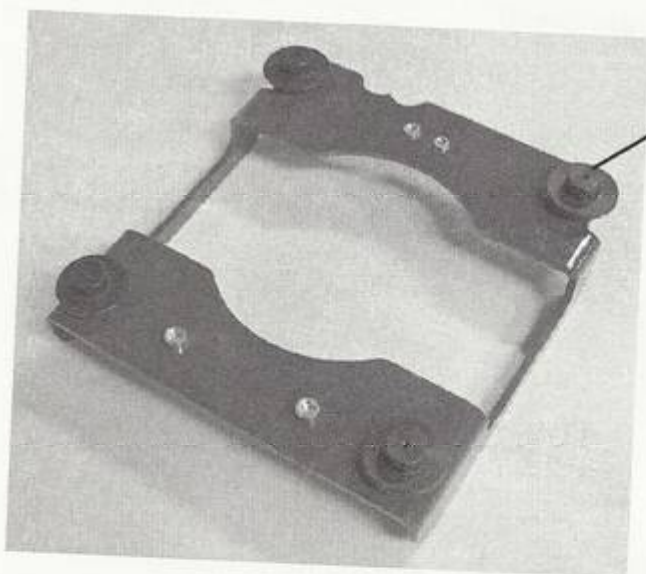
**Tailstock**

Score marks in channels face up

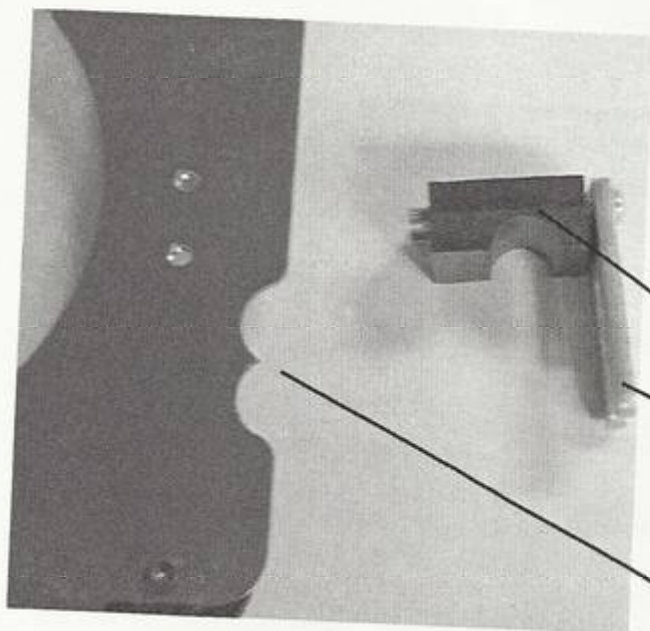


Attach the four top hat bushings to the underside of the router carriage with the capscrews provided.

**Bushings**



Note that the smallest diameter of the bushing faces away from the router carriage.

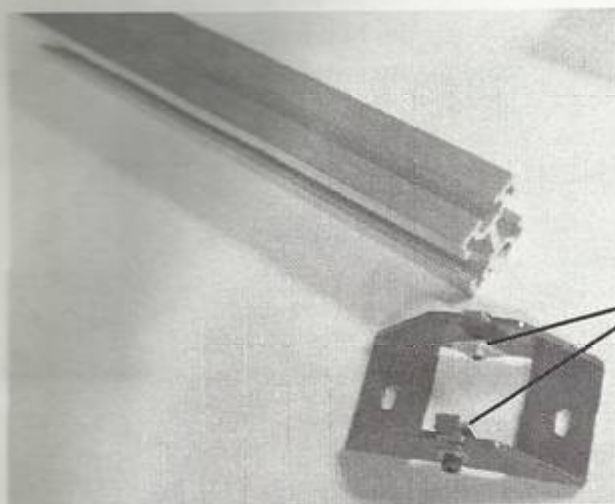


Once the bushings have been mounted to the router carriage, locate the side of the carriage with the pointer and mount the split-nut backer and plate to the carriage with the two long panhead screws.

**Split-nut backer**

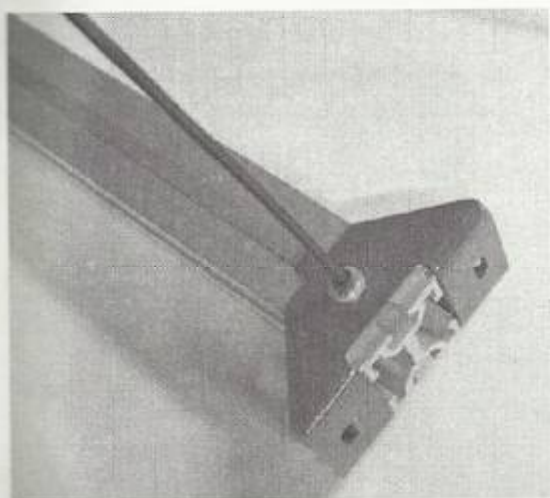
**Split-nut plate**

**Pointer**

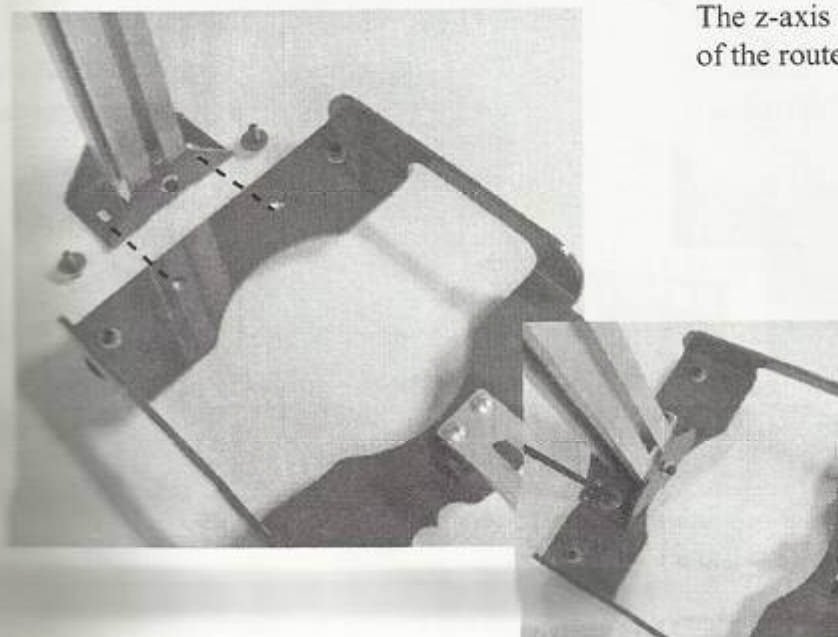


Locate the shortest piece of extruded aluminum rail and mount the bracket on the end with the two locking plates and cap screws provided.

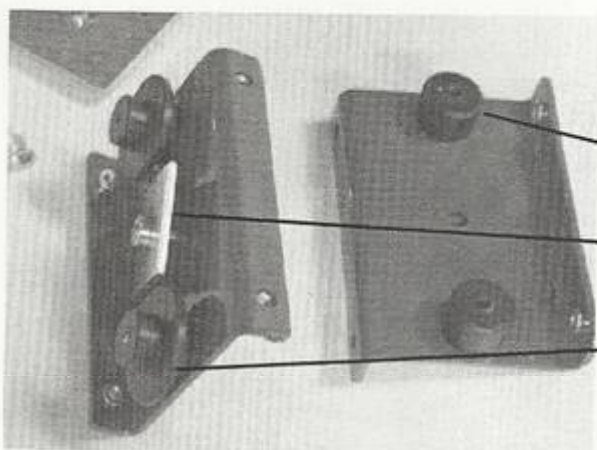
**Locking plates**



This assembly will support the router on the z-axis (up & down).



The z-axis assembly will mount on the side of the router carriage opposite the split-nut.

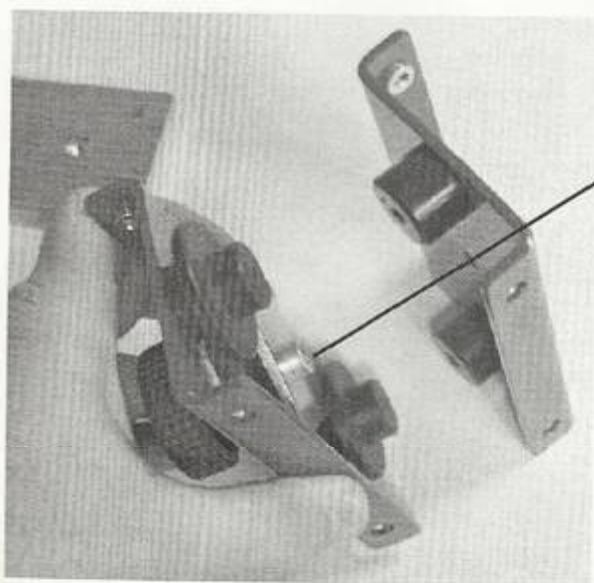


Mount the two remaining top hat bushings and the two round bushings to the plates as shown.

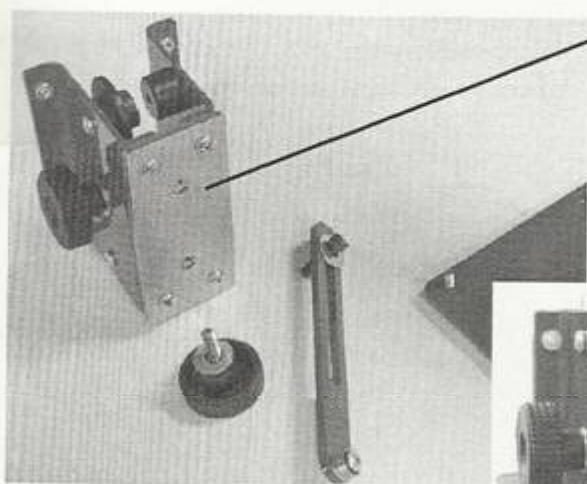
**Round bushings**

**Locking plate**

**Top Hat bushings**  
(small diameter faces away from plate)



The locking plate is mounted to the center of the plate with the two top hat bushings. Note that it attaches with a locking knob.

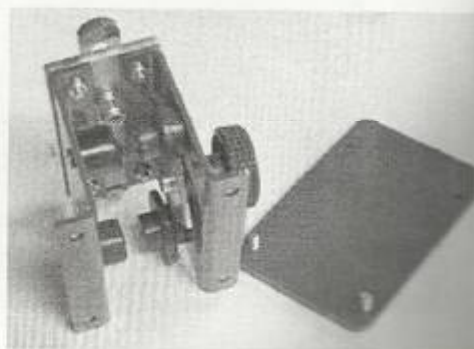
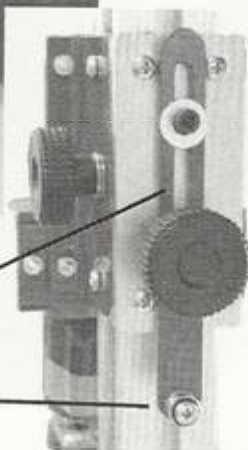


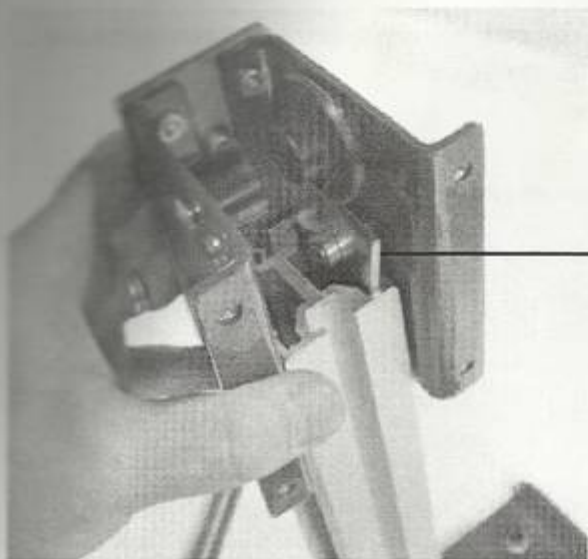
Use the four panhead screws to mount the plate on the back side.

The z-axis control with bearing mounts to the face of the plate with the cap screw and locking knob.

**Z-axis control**

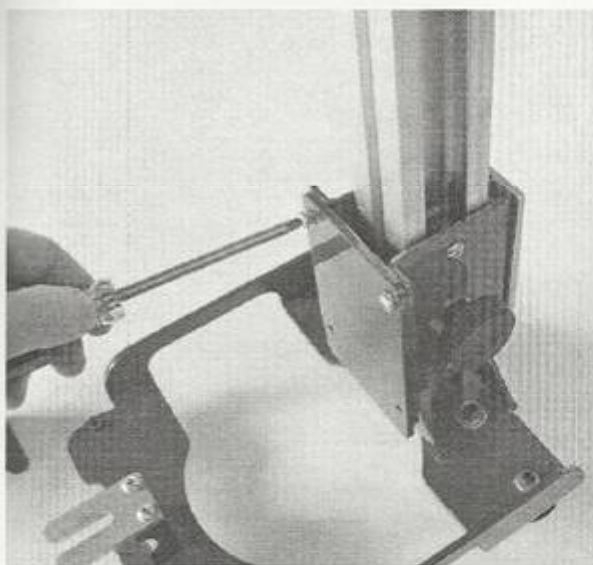
**Bearing**



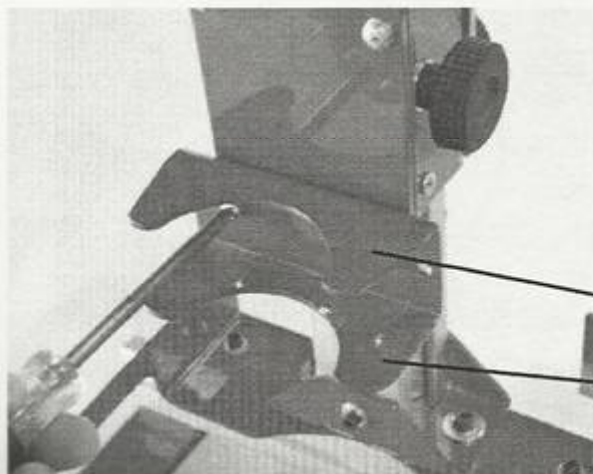


Before securing the opposite plate to the face, slide the assembly onto the top of the z-axis assembly.

Locking plate



Secure the second plate to the assembly with the two panhead screws (Note: Use the two top corners of the plate).

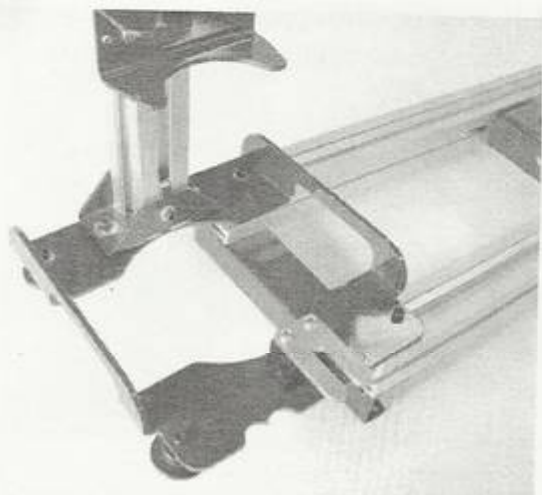


The two bottom corners of the plate will hold the router plate.

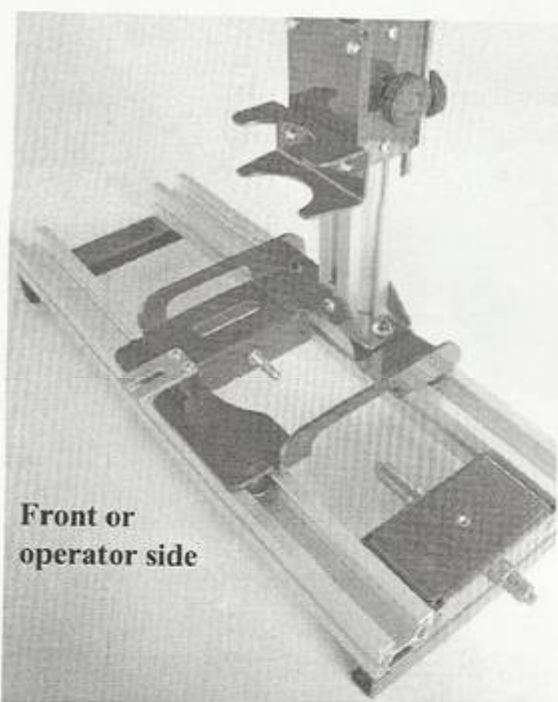
**Note the orientation of the bracket. The small tabs should be on the top, and the larger tabs on the bottom.**

Small tabs

Large tabs



You can now slide the router carriage onto the rails of the bed assembly.

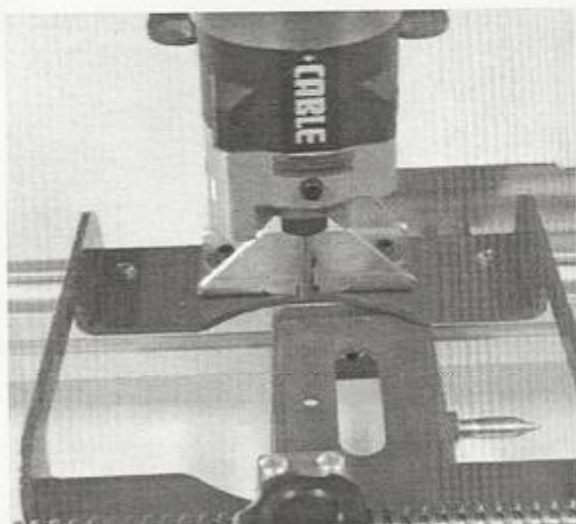


Note the position of the split-nut backer in relation to the headstock.

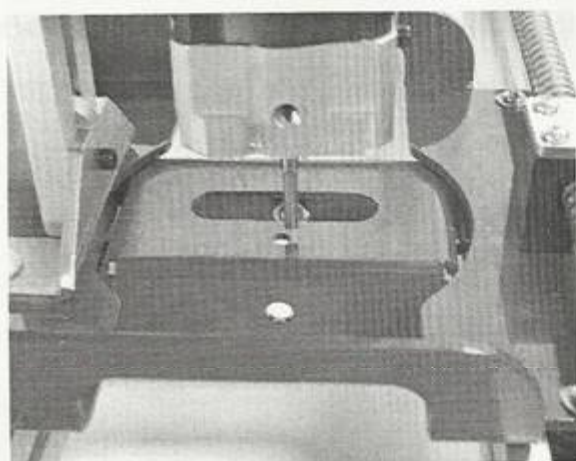
**Headstock end**



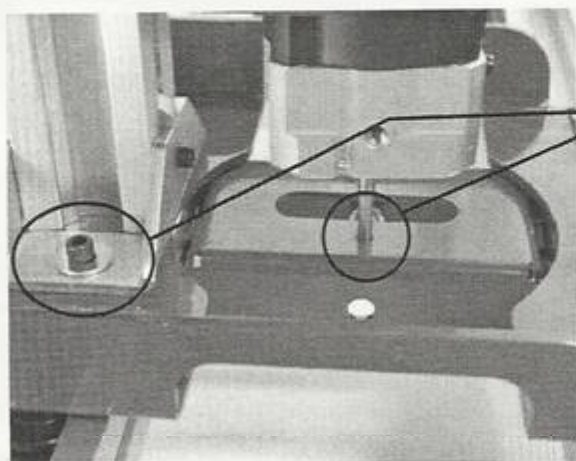
Use the band clamp provided to secure the router to the router plate.



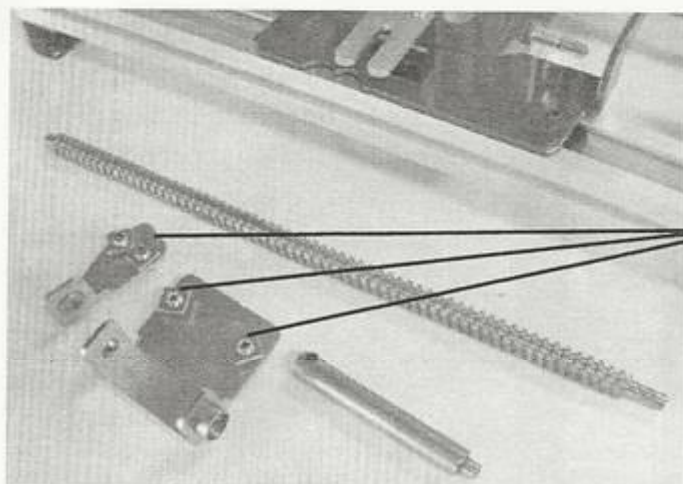
To locate center you will need to install a 1/4" shank router bit into the router (The picture shown uses a straight cutter).



Lower the router to the tailstock and align the tip of the bit with the round alignment hole in the tailstock.

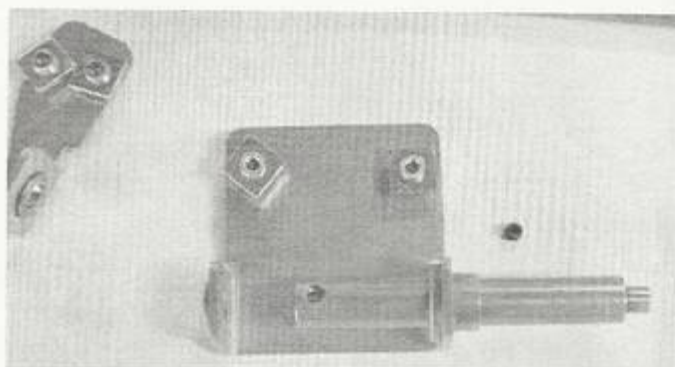


Once the router bit is aligned with the alignment hole, secure the two cap screws into place.

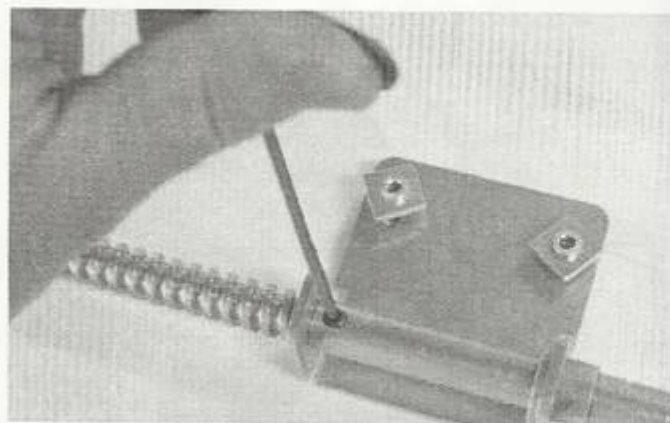


Locate the two x-axis screw mounting brackets, the x-axis lead screw and the drive shaft.

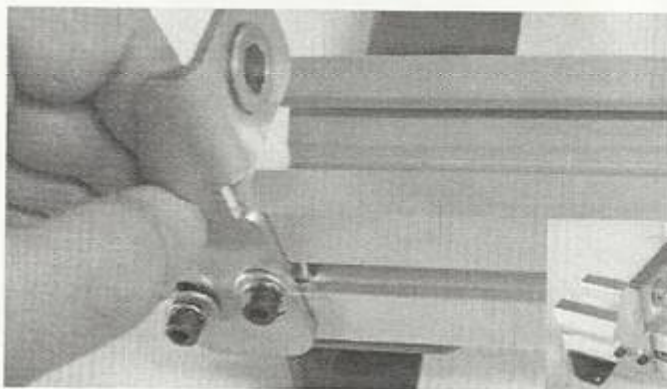
Mount the locking plates to the mounting brackets with the capscrews and washers as shown.



Carefully remove the allen head screw and slide the drive shaft through the double mounting bracket.

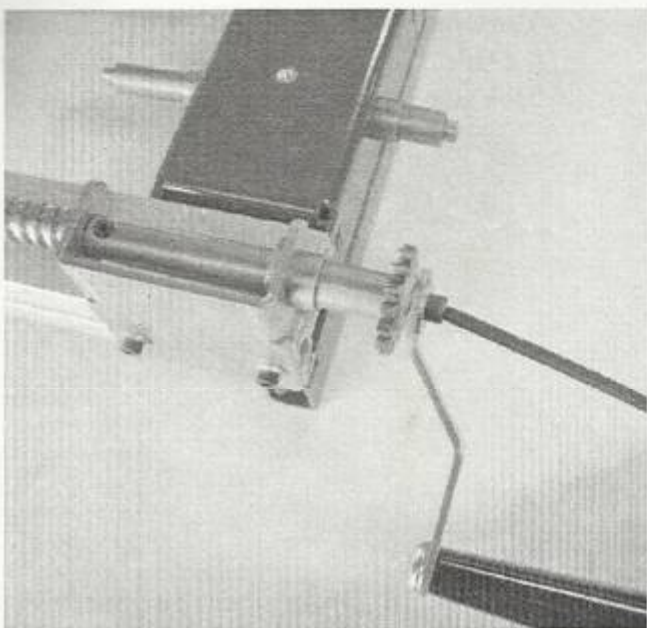


The x-axis lead screw is mounted to the drive shaft (Note: Use the end of the lead screw that has the longest milled end) with the allen head screw.



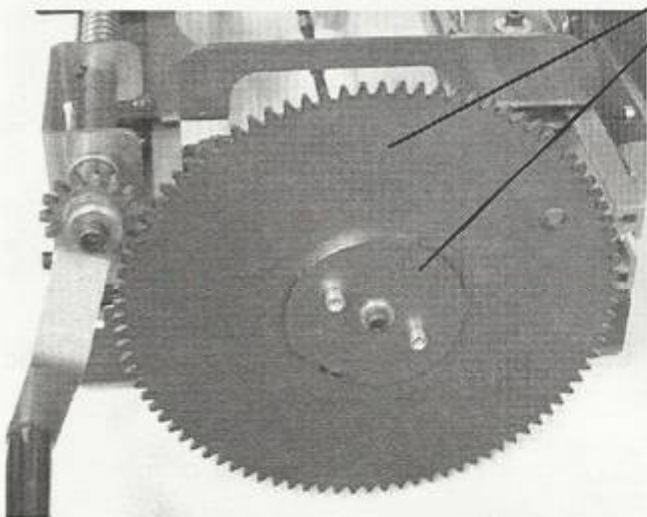
Slide the single mounting bracket onto the tailstock end of the front (operator side) extruded rail.





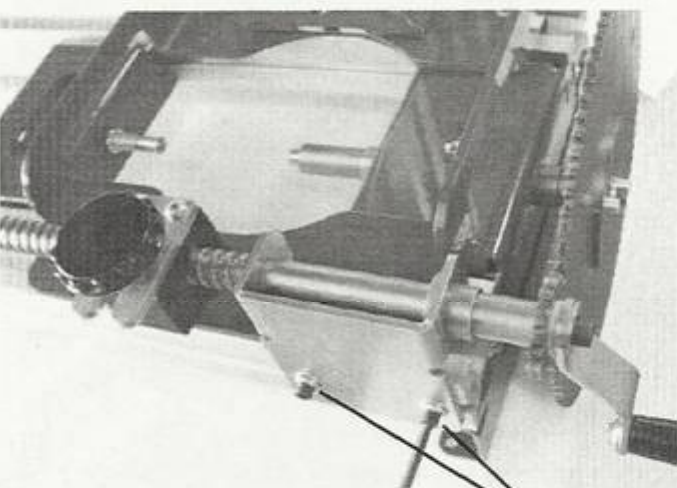
Slide the double mounting bracket (with the lead screw attached) on to the extruded rail at the headstock end (opposite end of the single mounting bracket).

Mount the small drive gear, washer and handle on the end of the drive shaft with the capscrew and washer.



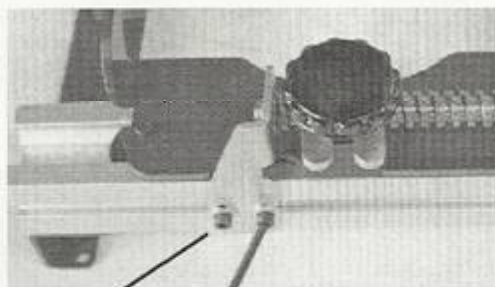
The large gear and the index gear mount on the end of the spindle shaft located in the center of the headstock.

The two spindle shaft gears are at a fixed point, and the small gear on the drive shaft will need to align with the large gear.

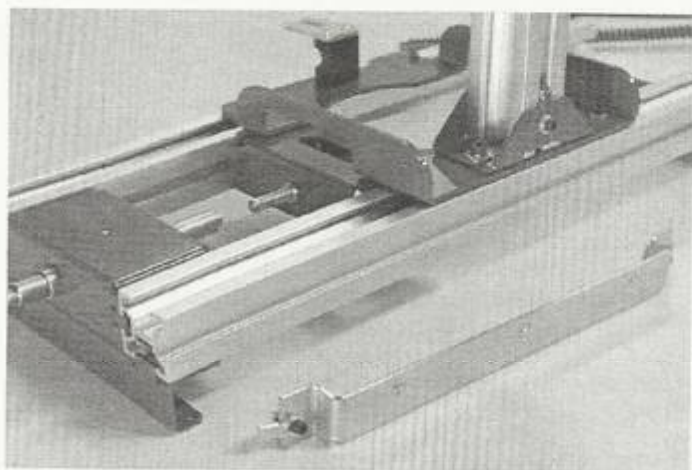


Once you have made sure that the gears are aligned - pull the router carriage forward and lock the split-nut on to the lead screw. This will position the lead screw and support bracket into place. Once in place use the ball end wrench to secure the capscrews on the support brackets.

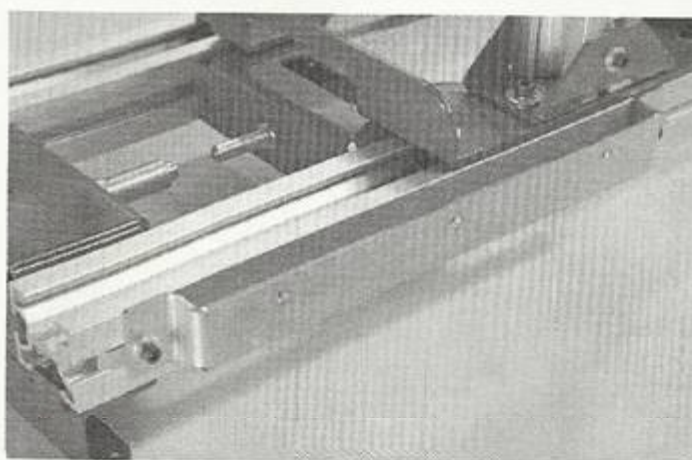
Repeat this procedure on the opposite end.



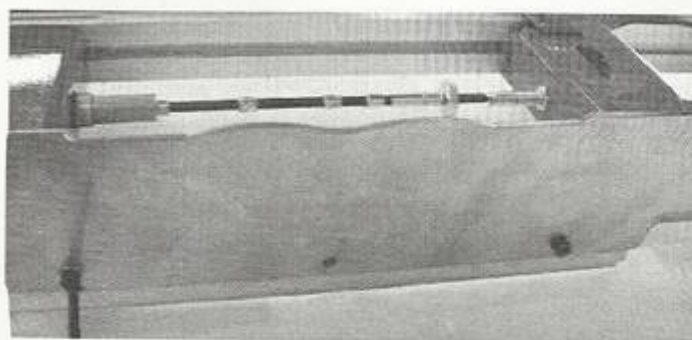
Capscrews



The template mounting bracket attaches to the side channel of the extruded rail on the back side of the machine.



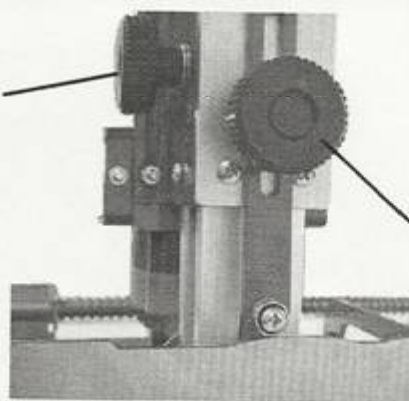
This bracket will allow you to create various templates or patterns for curved profiles.



Note: The template provided has been created out of steel and is used for cigar style pens.

Individual templates can be created on the bandsaw by cutting your designs out of mdf.

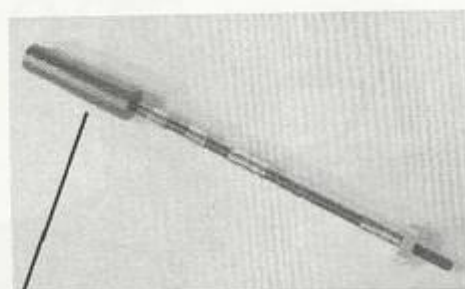
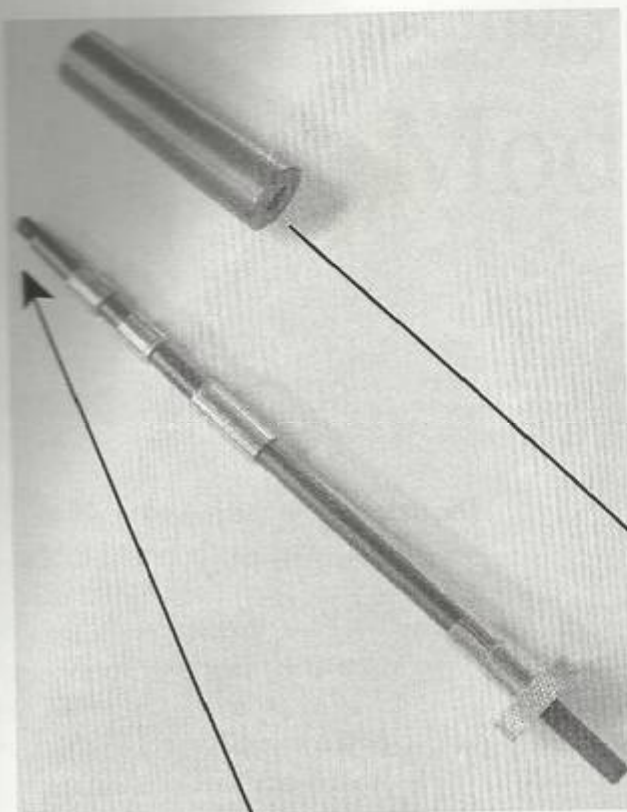
Locking knob must be left loose for z-axis movement.



The template is followed by the bearing riding up and down as the router is moved along the length of the workpiece.

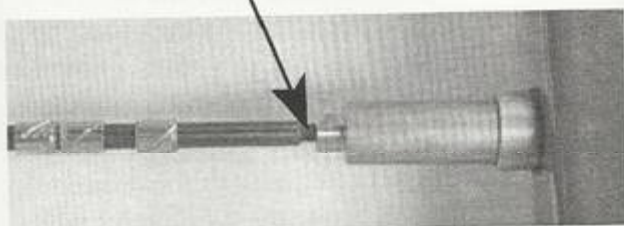
This movement up and down (z-axis movement) is only achieved when the locking knob (far left) has been left loose.

Locking knob for bearing adjustment.

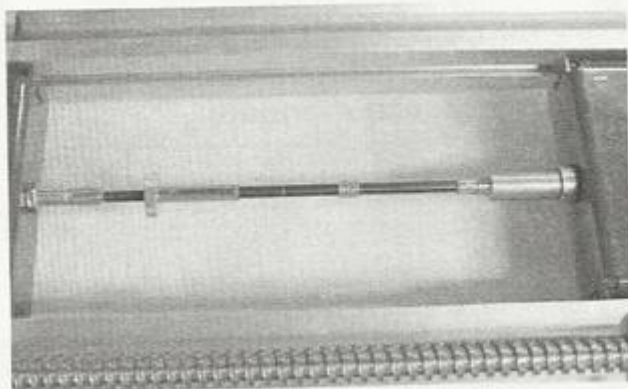


The standard pen mandrel (above) has been designed with a #2 morse taper shaft on the end.

To mount the pen mandrel into the machine it will be necessary to remove the morse taper shaft.

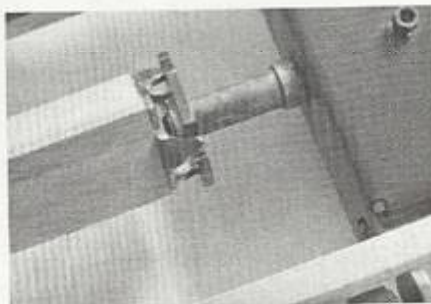


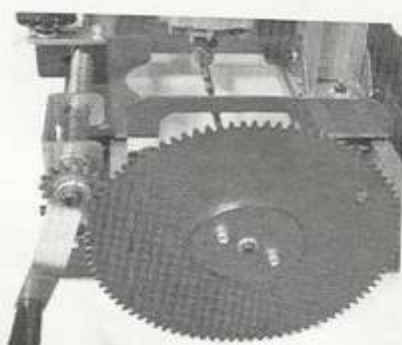
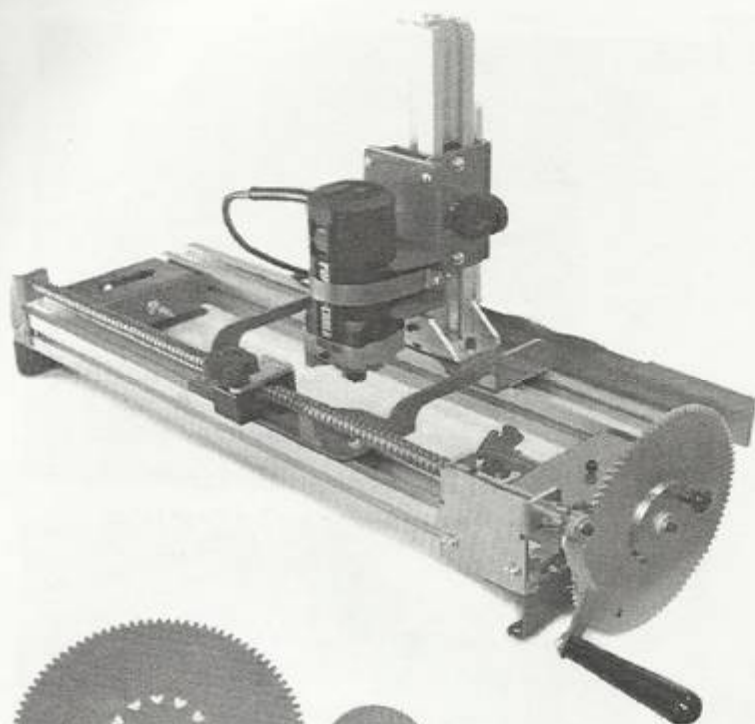
The threads screw into the drive shaft of the machine.



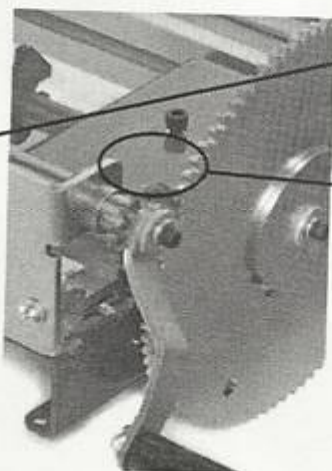
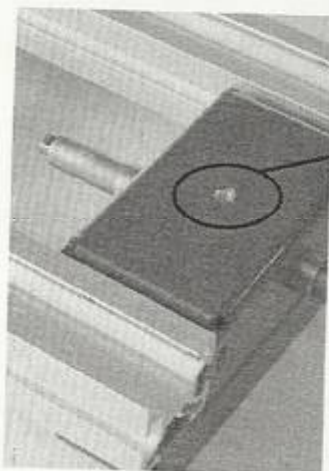
The tailstock is slid forward against the end of the pen mandrel and is locked into place.

In lieu of a pen mandrel, an index drive center can be mounted to the end of the drive shaft. This drive center receives the mounting hub which is mounted on the end of the workpiece.





The indexing on the model 200 uses a two plate system as opposed to the pin and hole system used on the other Legacy models. Notice that the smaller of the two plates has a hole formed in the shape of a "D" and corresponds with the end of the spindle shaft. The larger plate (with the gear teeth) is a round hole and stays connected to the drive gear. When indexing for consecutive cuts (i.e. 2nd and 3rd cuts on a spiral), you will release the capscrew and rotate the small plate (with the "D" shaped hole) until the pointer aligns with the desired tip. This will rotate the workpiece, while leaving the gears (and therefore the router) in the same position, thereby creating a division around the circumference of the workpiece.



PEM hardware is located in the center of the headstock.

A 1/4 - 20 capscrew threads inside the hardware and can be used to lock down the spindle shaft. This is helpful when using the indexing or dividing plate to create reeds or flutes. By locking the capscrew onto the spindle shaft you can insure that the workpiece will not rotate while being milled along the length (x-axis).

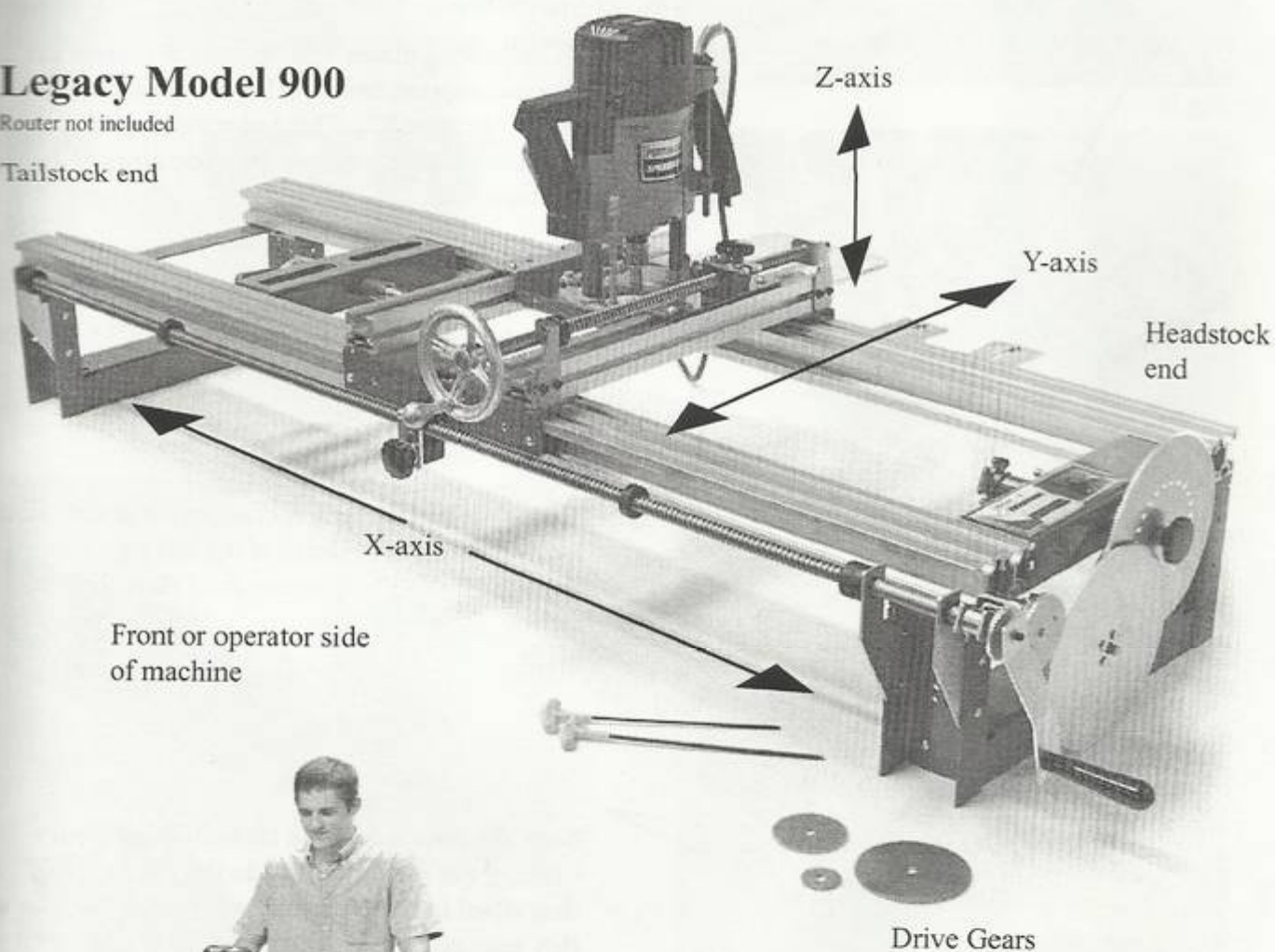
# Assembly Instructions

## Model 900

### Legacy Model 900

Router not included

Tailstock end



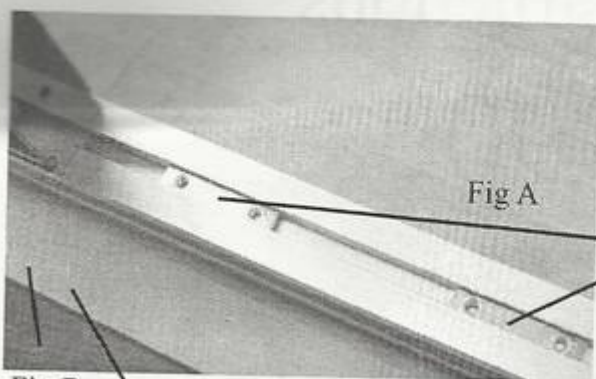
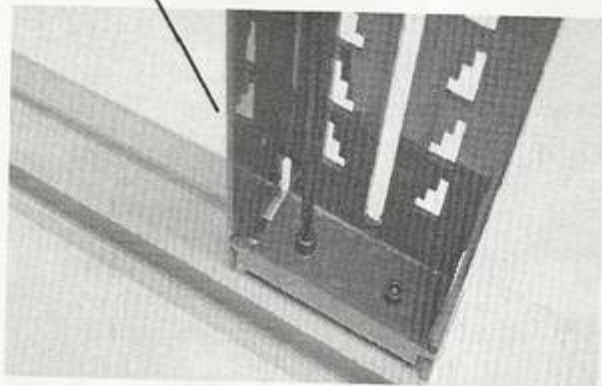


Fig B

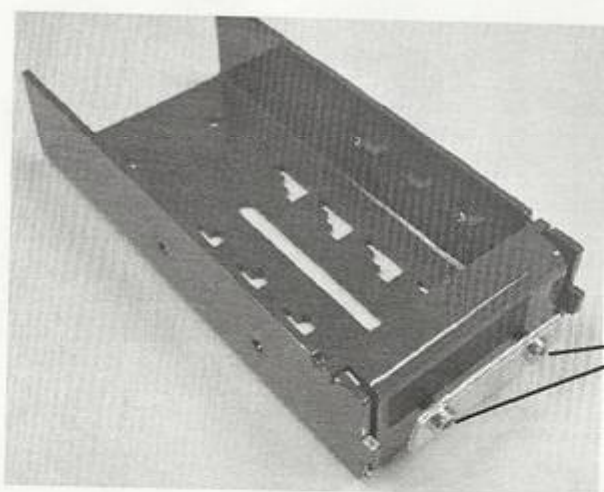


## Rail Legs

Slide (2) of the long narrow locking plates into the middle of the narrow channel of one of the long pieces of extruded aluminum rail (Fig A). **Note the position of the threaded hardware facing inside the channel.**

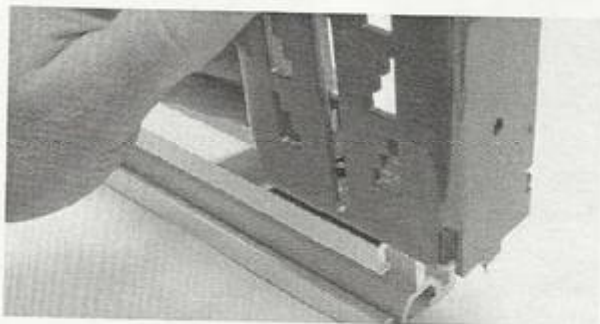
These locking plates will be used to receive the template support brackets for the template follower (see page 87). This rail will be used as the back rail (side opposite the operator) of the machine.

Mount the (4) rail legs to the ends of (2) pieces of extruded aluminum rail (Fig B).



This is done by loosely mounting the double hole locking plates to the ends of the rail legs with the 10 - 32 x 5/8" capscrews, and then slide the locking plate into the narrow channel of the rail.

**Note the position of the threaded hardware - facing out (or down inside the channel) as described in the *General Information* section of this manual.**

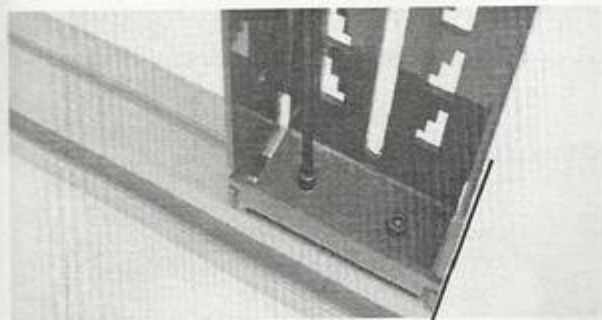


The locking plate slides into the narrow channel.



Wide channel with score mark

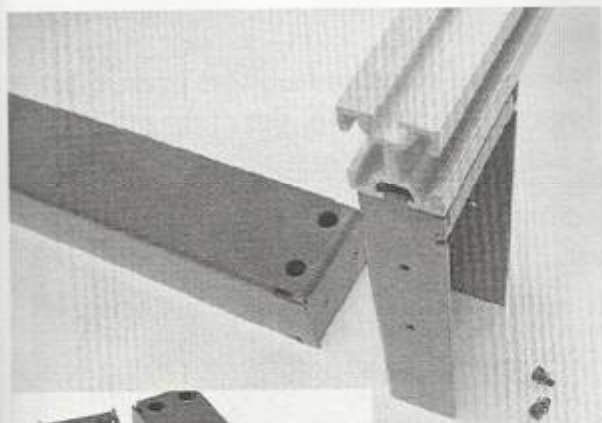
**Note:** The thin channel of the extruded aluminum rail faces up and down, it locks onto the tabs of the rail legs. When positioning these two rails on the rail legs, position them such that the wide channel with the score mark down the middle faces to the outside of the machine. This channel is slightly wider than the channel on the opposite side and will be more accepting of the bushings on the carrier tray.



The rail leg is locked into place using the cap-screws provided.

Notice that the side of the rail leg is flush with the end of the rail.

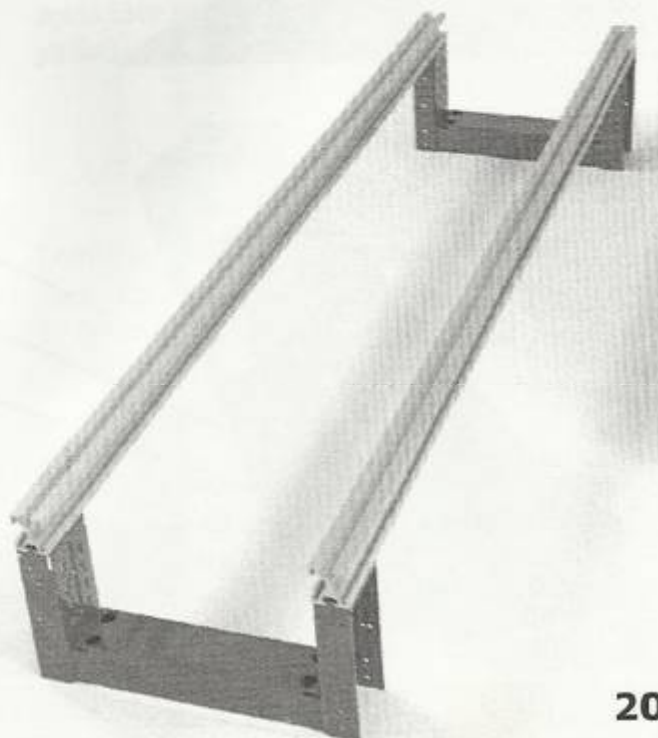
Align flush



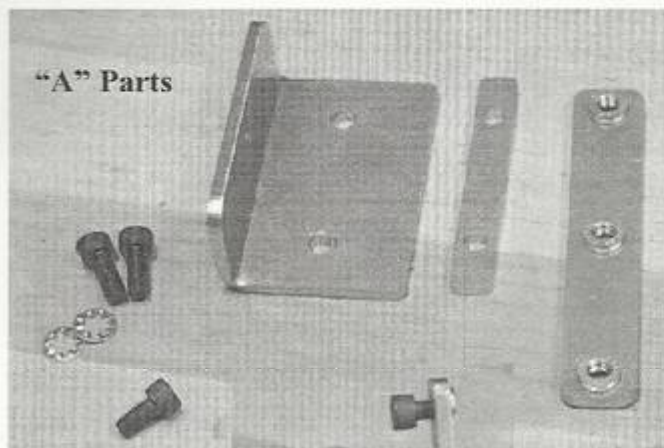
Once the rail legs have been mounted to the (2) rails, flip the pieces over as pictured left.

Locate the (2) base pieces and attach them to the rails legs with the capscrews provided.

This will create a base for the router carrier-tray to slide across.



**"A" Parts**



## Elevation Brackets

Two "A" elevation brackets (pictured left) are used on the headstock end of the adjustable bed rails.

**Note:** These elevation brackets have an extra long locking plate with 3 holes for capscrews.

Assemble the elevation brackets as shown

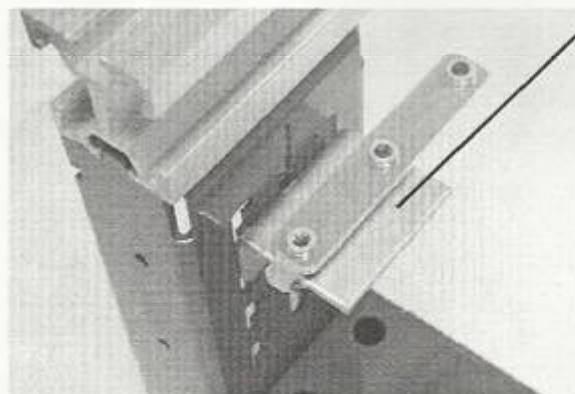
**Assembled**



Use 3/4" capscrews here.

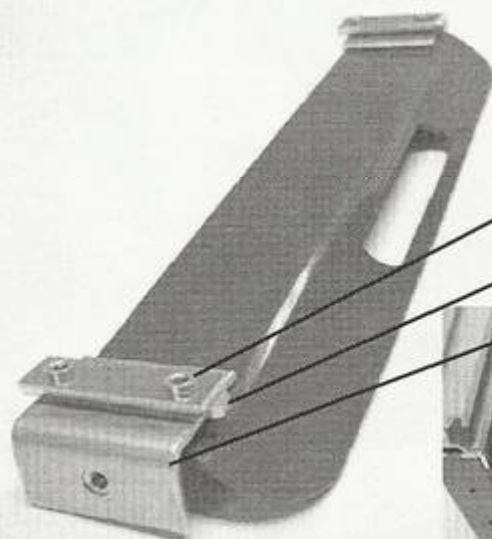
These brackets mount to the inside of the rail leg as shown (left) using the 1/4-20 capscrew and washers provided.

Notice that the center hardware of the bracket lines up with the center slot of the rail leg.



**Headstock end**

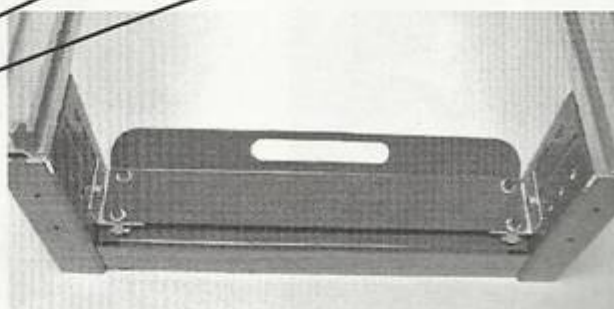
Mount the two remaining brackets to the adjusting panel on the tailstock end.



Locking Plate

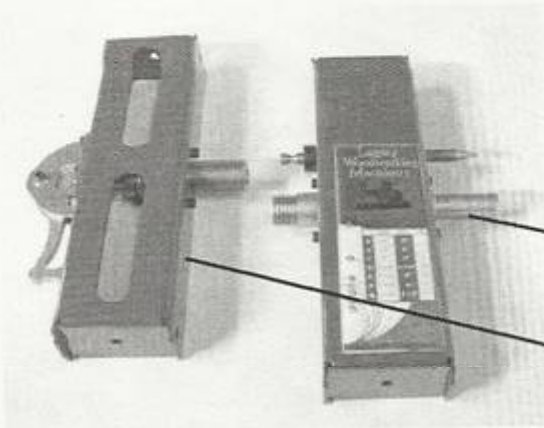
Spacer

Bracket



**Tailstock end**  
with bracket  
turned upside  
down.

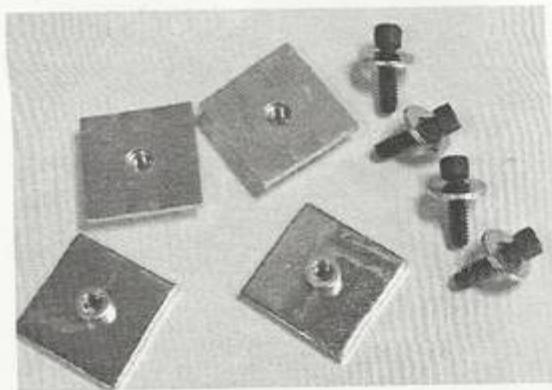
## Headstock/Tailstock Assembly



Locate the tailstock and headstock of the machine.

Headstock

Tailstock

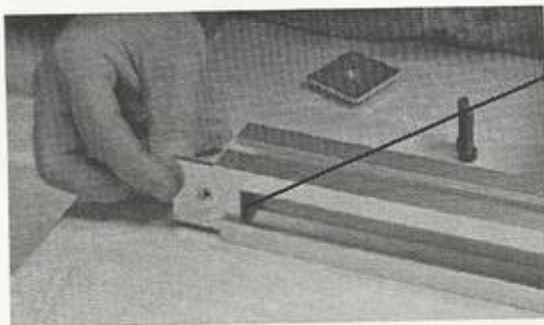


Headstock/Tailstock Hardware

4 - locking plates

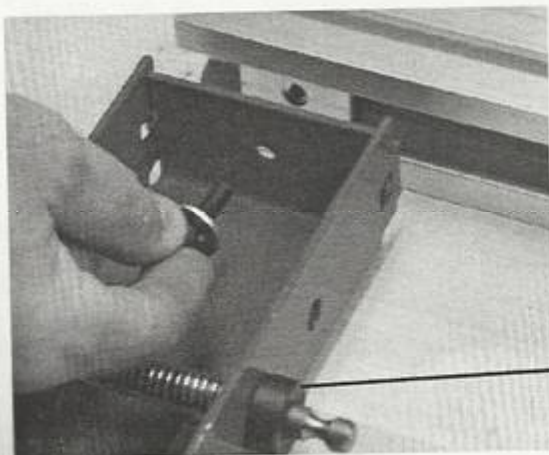
4 - 1/4-20 capscrews

4 - washers



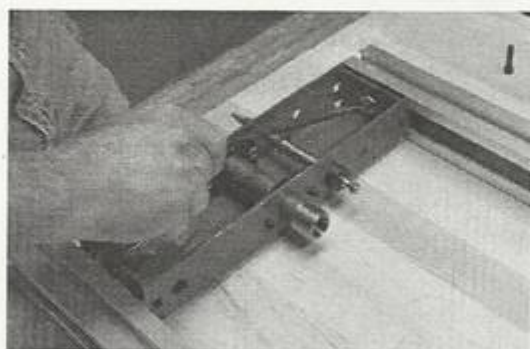
Slide the (4) 1/4-20 x 1 locking plates into the wide channels of the two remaining extruded aluminum rails.

**Note:** The position of the threaded nipple must face in to the channel so as not to be pulled off of the locking plate.

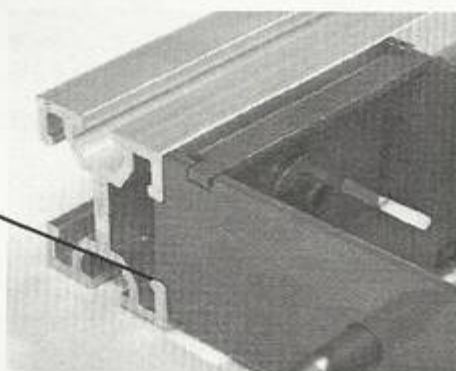
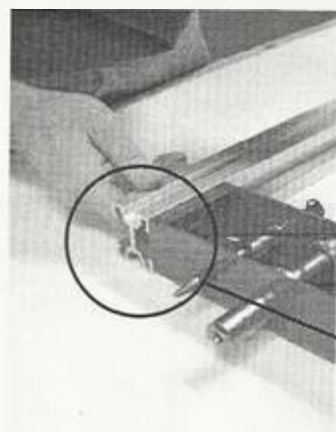


Lock the headstock into place on one end of each of the aluminum rails using (2) 1/4-20 x 1" capscrews and washers.

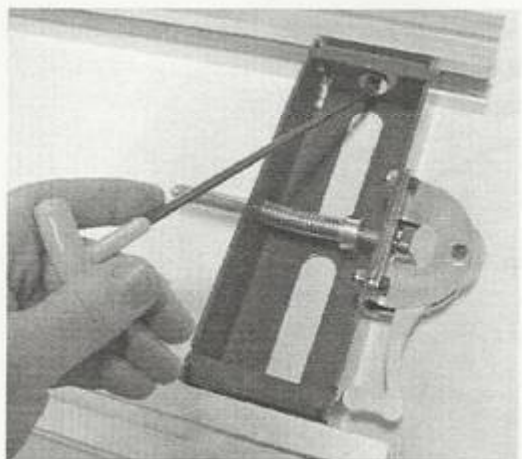
**Note** the position of the headstock with the threaded shaft and the locking collar facing into the center of the rails.



The face of the headstock should be positioned flush with the end of the extruded aluminum rails. (see closeup photo below).

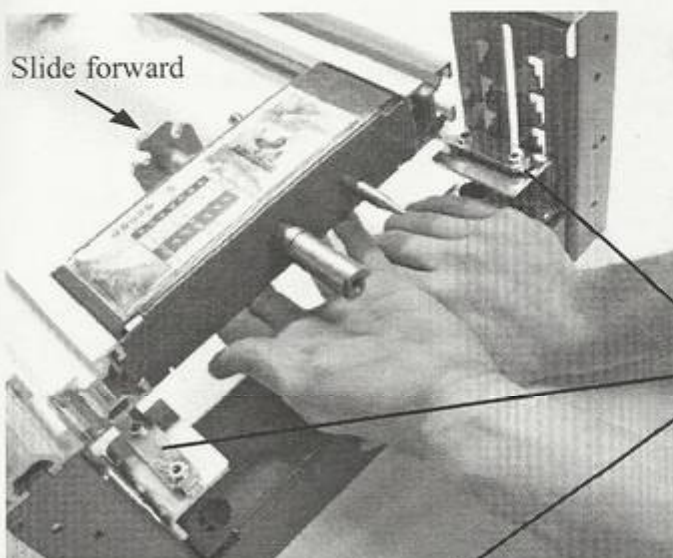


It may be necessary to file the flanges of the tailstock to insure that the tailstock slides freely along the length of the rails.



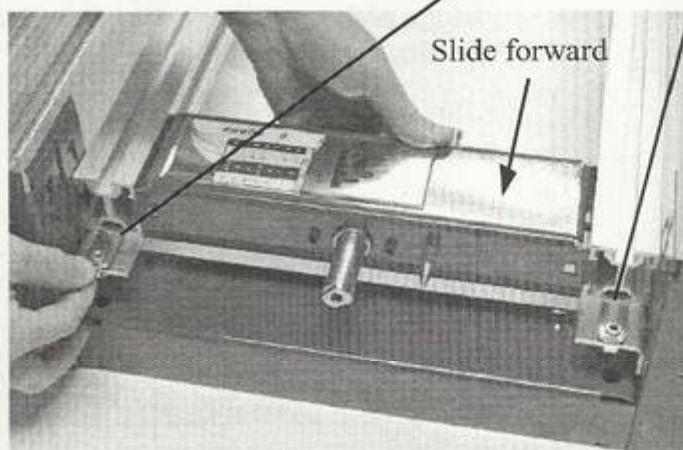
Once you are satisfied that the tailstock will slide freely, mount the tailstock to the rails at the opposite end of the headstock.

Notice that the headstock and tailstock have been attached to the rails upside down. This position will allow the capscrews to insert into the locking plates with easier accessibility.

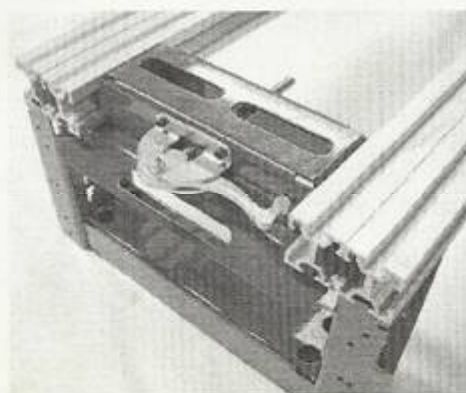
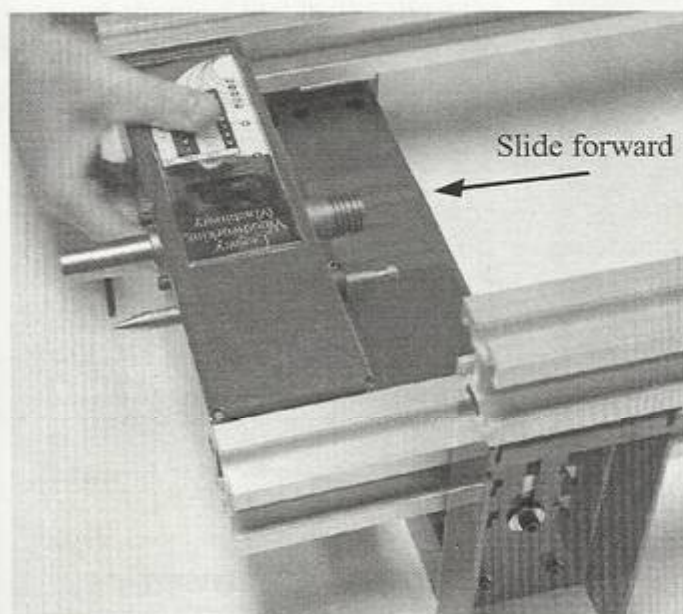


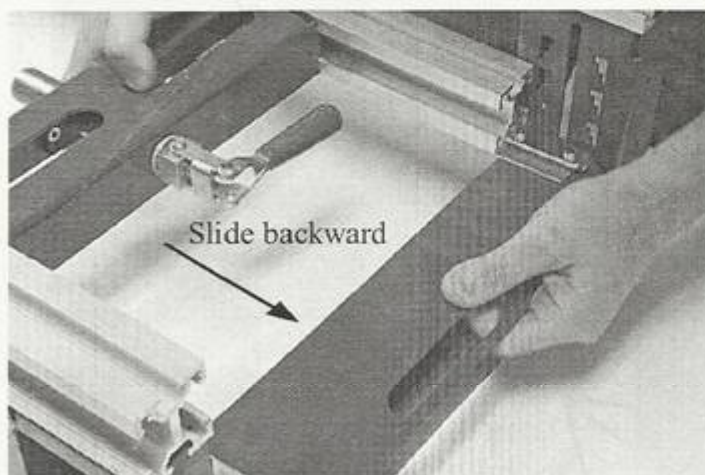
Once the headstock and tailstock have been mounted to the rails, you will slide the assembly between the rails that were previously mounted to the rail legs.

Slide the narrow channel of the rails on the headstock end onto the locking plates.

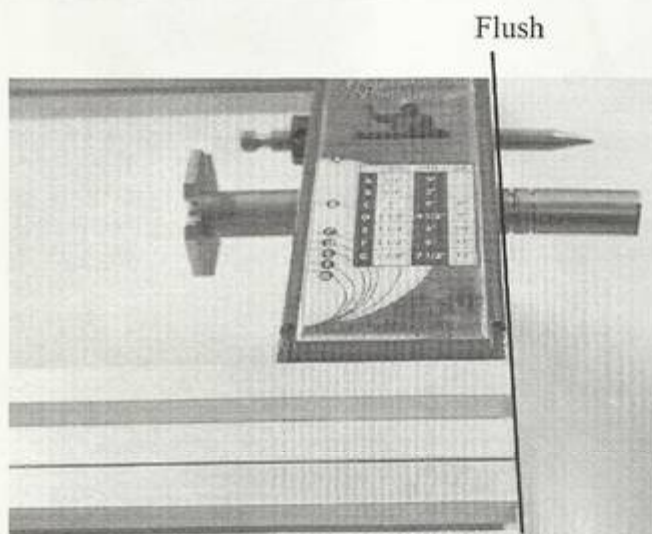


Once both rails have been mounted to the locking plates on the headstock end, slide the bed assembly forward so that the back end (tailstock end) can be slid onto the locking plates mounted on the opposite end of the rails (see photo next page).

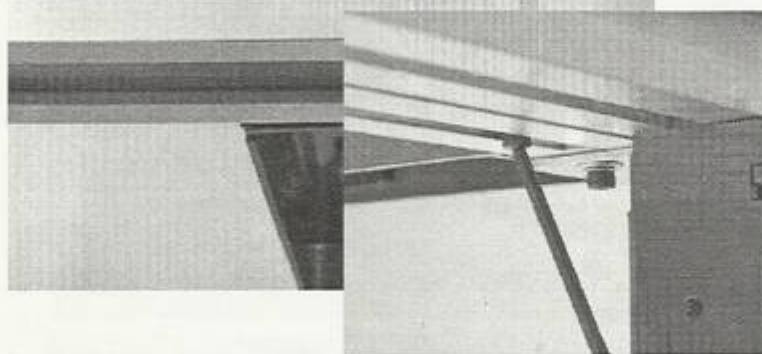




The back or tailstock end being slid onto the locking plates.

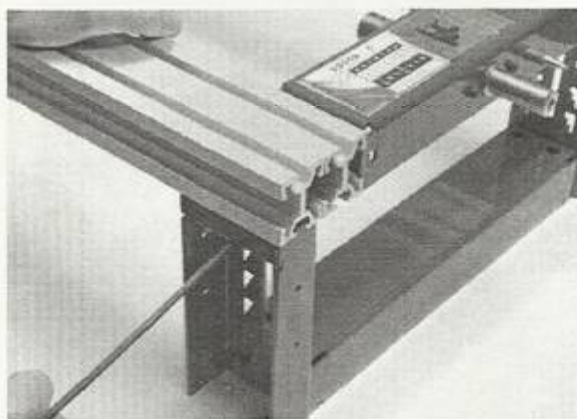


With the bed assembly slid onto all four locking plates, align the ends of the four rails flush on the headstock end.



Once the rails are in position, tighten the cap screws on each side of the headstock into the rails.

**Note:** Any fine tune adjustment for gear alignment will be made by loosening these cap screws and sliding the adjustable bed assembly forwards or backwards.

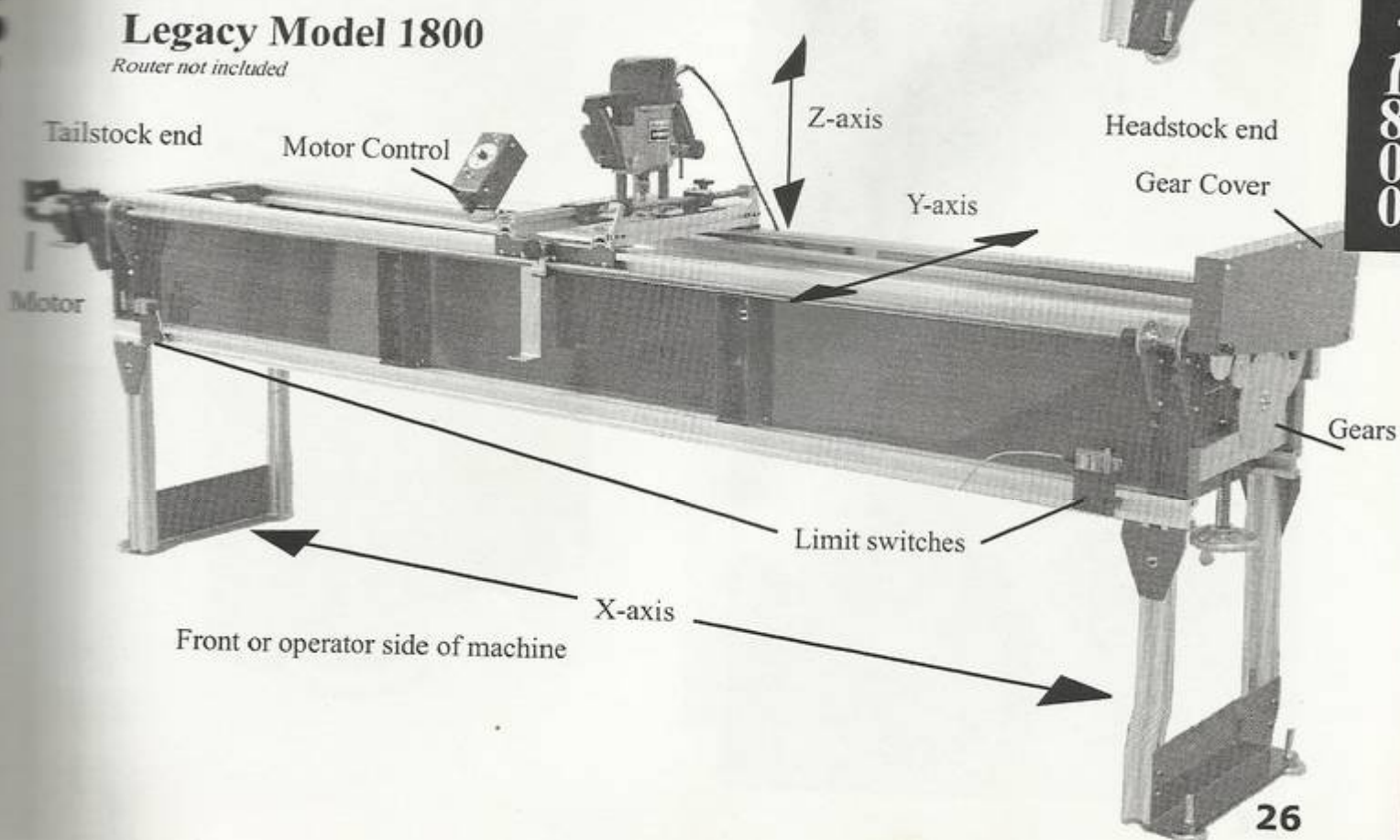
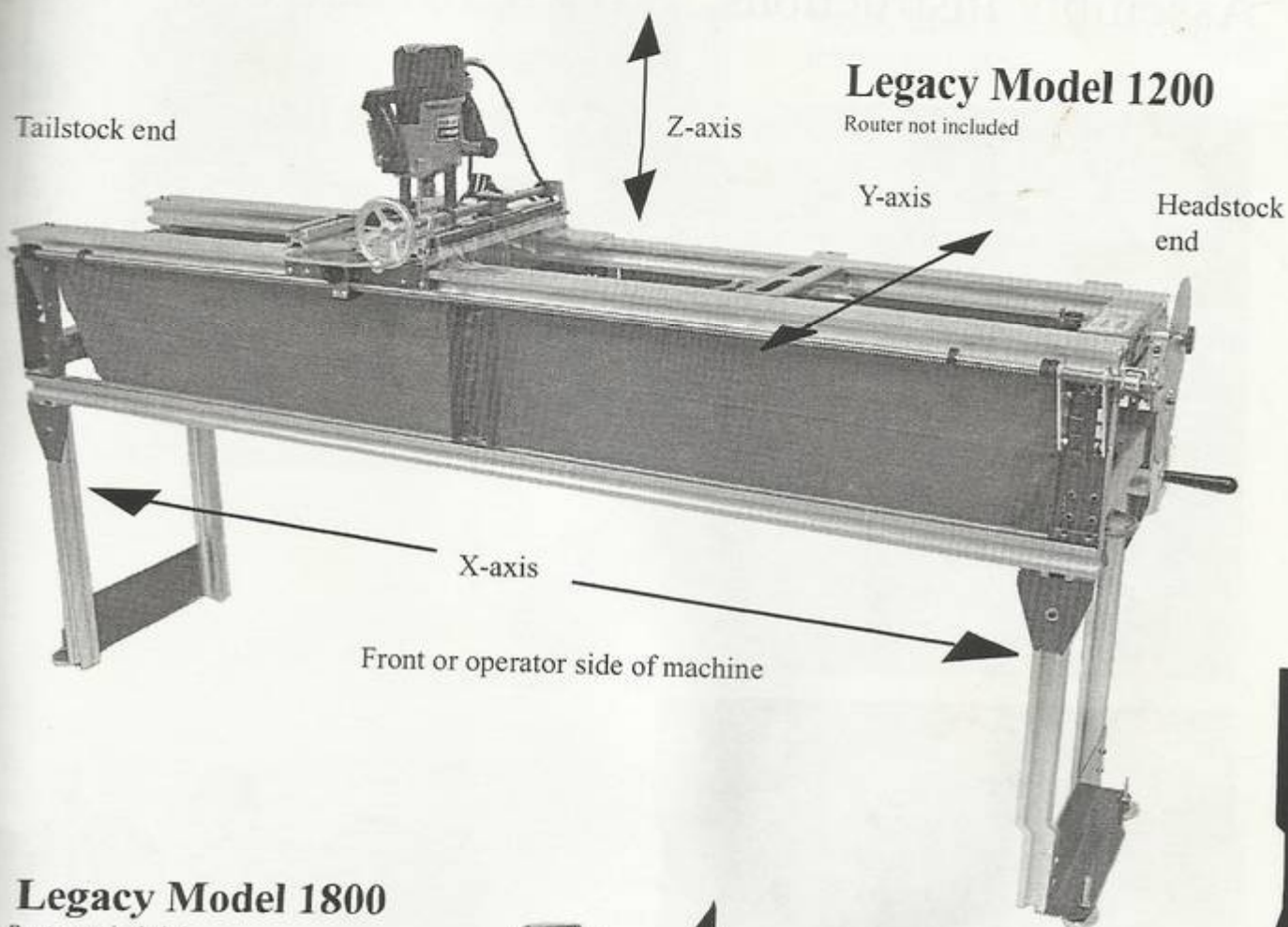


The bed is adjusted up and down, and locked into place using the 1/4-20 cap screw in the center of the rail legs.



**Model 900 owners -**  
*proceed to page 55*

# Assembly Instructions

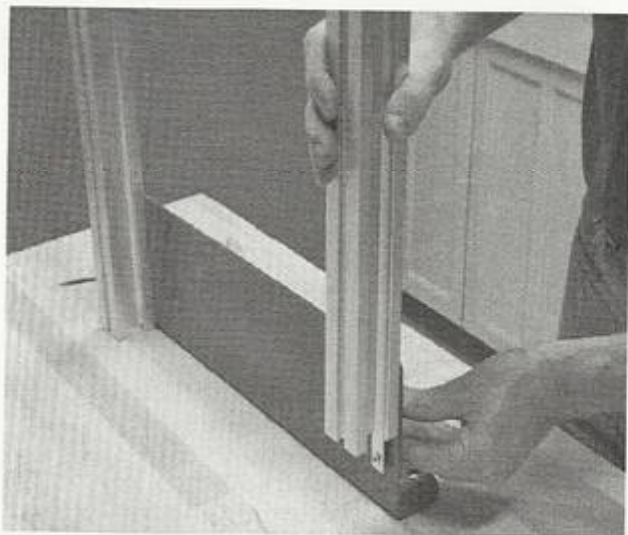
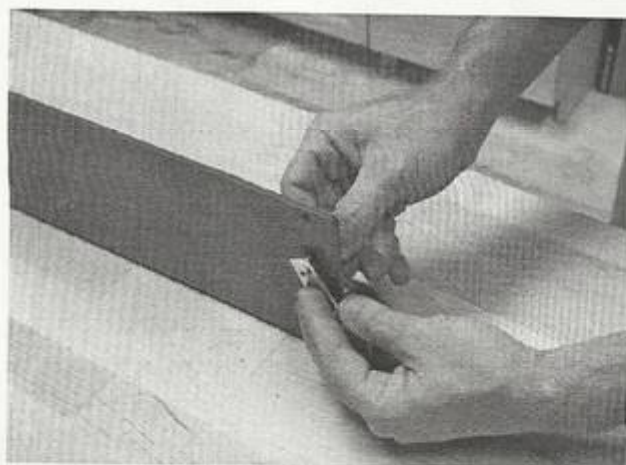
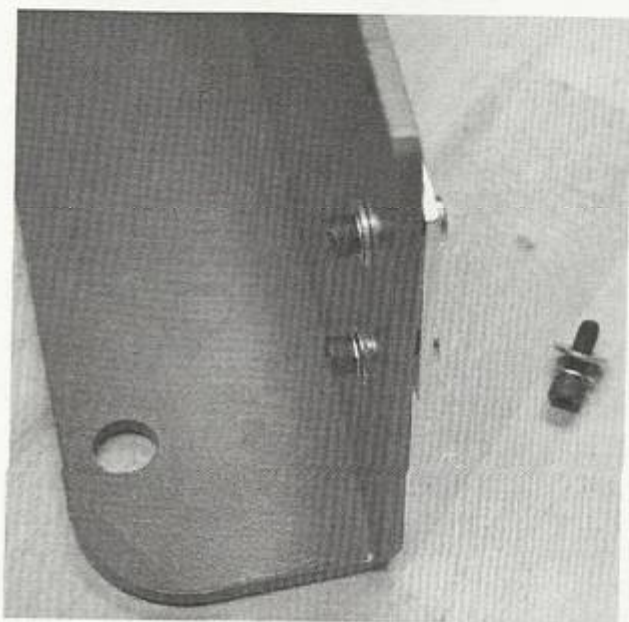


1200-1800

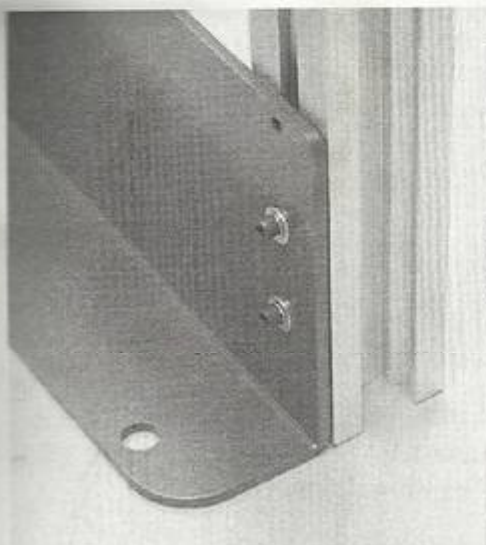
# Assembly Instructions: Models 1200 & 1800

## Floor Stand Base

Attach the (4) locking plates (long narrow, double hole) to the large flange of the floor stand base using the (8) 10-32 x 5/8" capscrews and washers.



Slide the (4) floor stand legs onto the locking plates, and then tightly secure the capscrews into place.



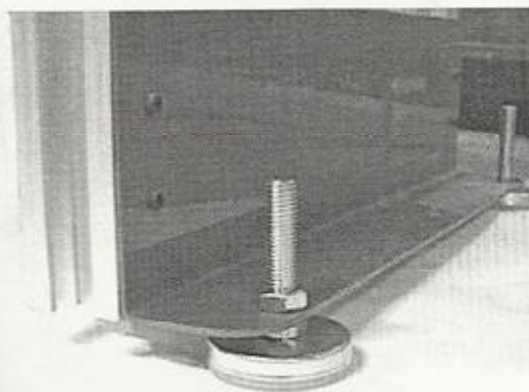
Tightly secure the capscrews into the locking plates.



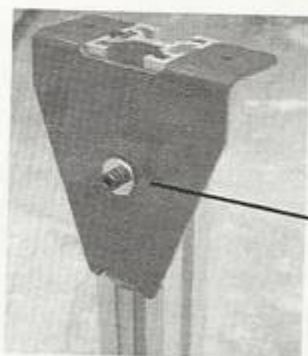
The (4) leveling pads mount to the bottom of the base using the (8) 1/2" jam nuts.

**Note:** The floor stand base has (3) holes on the large flange. If you wish to secure casters to the floor stand (in lieu of the leveling pads) you may wish to use the (2) top holes for the locking plates.

Casters are not standard to the machine. They may be purchased by calling 800-279-4570.



## Floor Stand Bracket



Mount the (4) brackets on the ends of the extruded floor stand legs as shown using the 1/4-20 x 7/8" capscrews and washers.

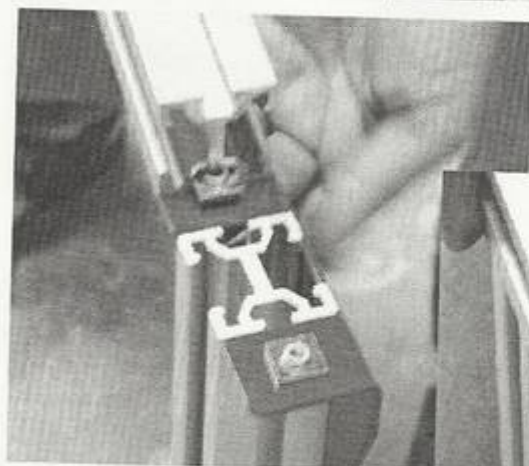
The 1/4-20 x 1 locking plates are slid into the wide, outside channel of the floor stand rail.



The (8) small square (10-32 x 1) locking plates will attach loosely to the tops of the brackets with the (8) 10-32 x 5/8" capscrews and washers (#10 flat & #10 star).

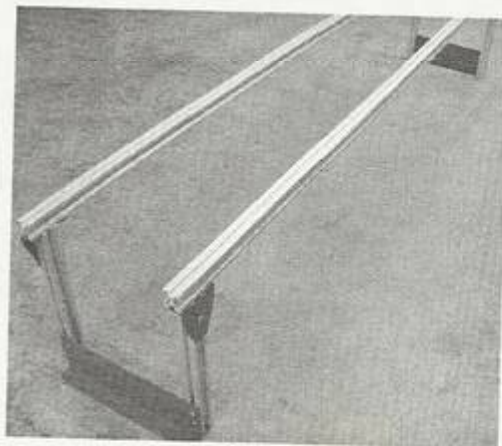


Slide the thin channel of the long extruded aluminum rails through the small square locking plates.

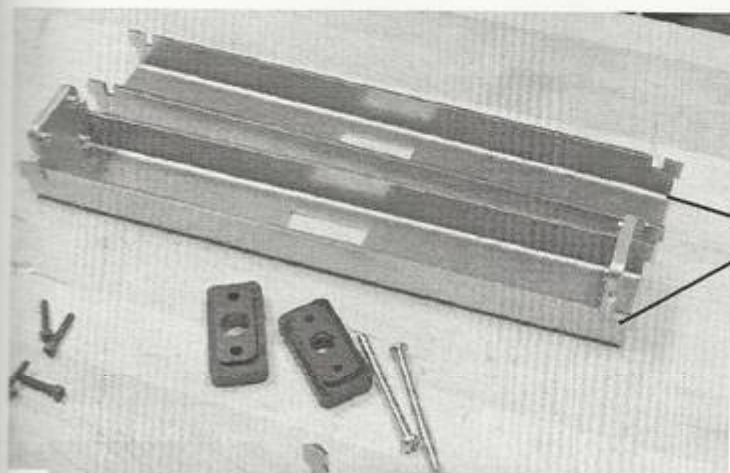


The rails should be tightly affixed to the brackets once the ends are aligned with the outside edge of the brackets.

The completed assembly.



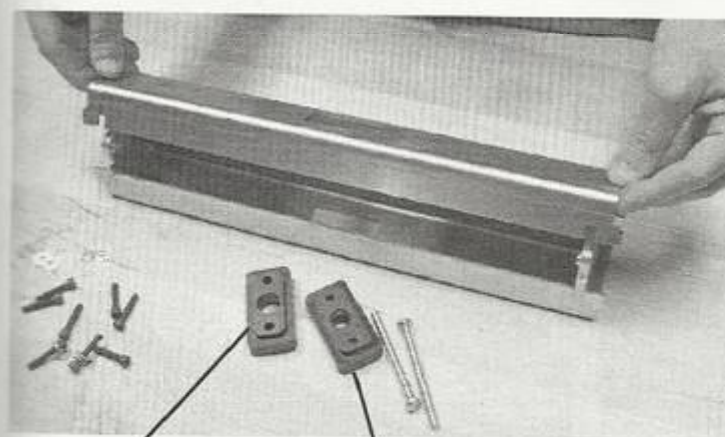
## Rail Leg Base



Locate the four elevation bases.

The (2) base end plates slip into the notched ends of the elevation base.

Base end plate

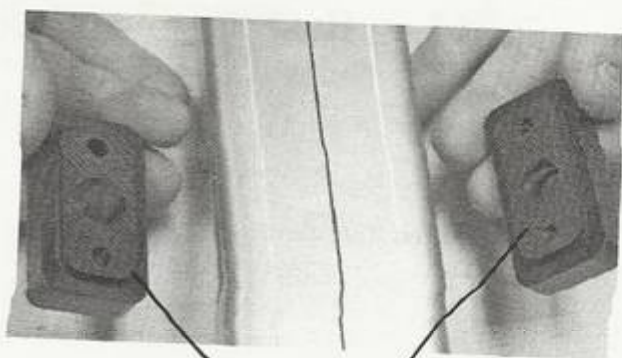


Slide the 2 elevation bases together. The elevation base will be held together with the threaded nut plate and the screw support plate.

Screw support plate

Threaded nut plate





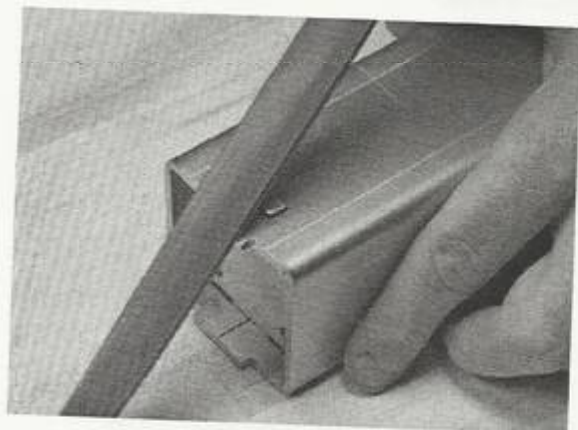
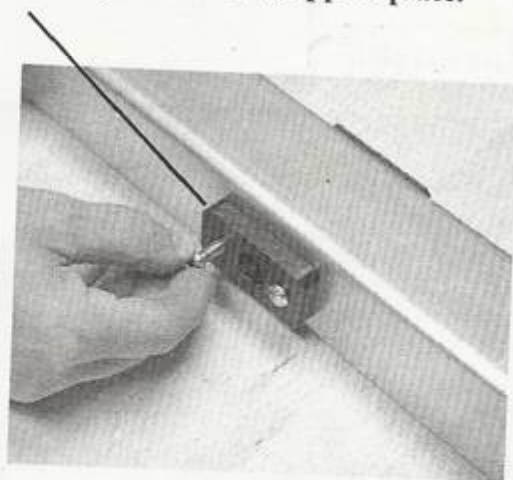
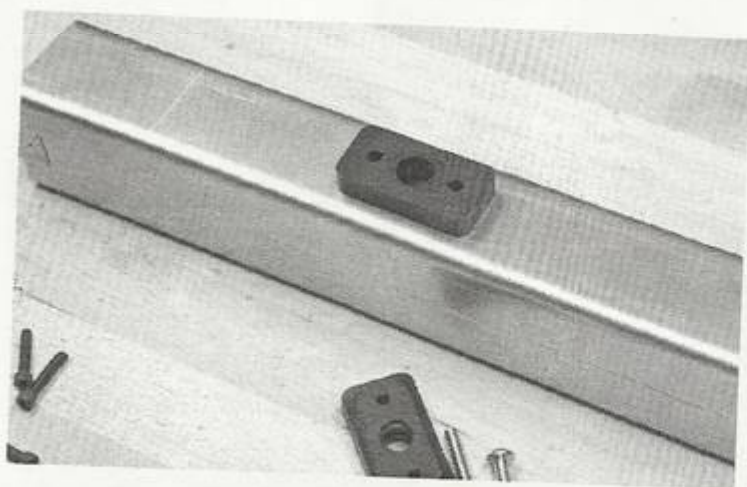
Screw support plate

Threaded nut plate

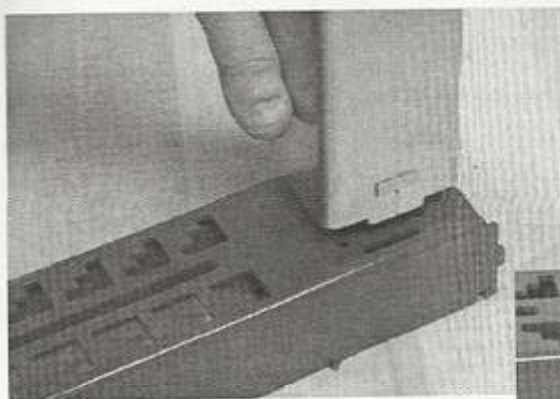
Snap in the screw support plate and the threaded nut plate into the center hole in the elevation base. These plates are held together with the (4) 3 1/2" phillips drive pan head screws.



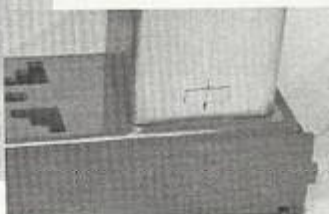
Note: Pan head screws should go on through the screw support plate.



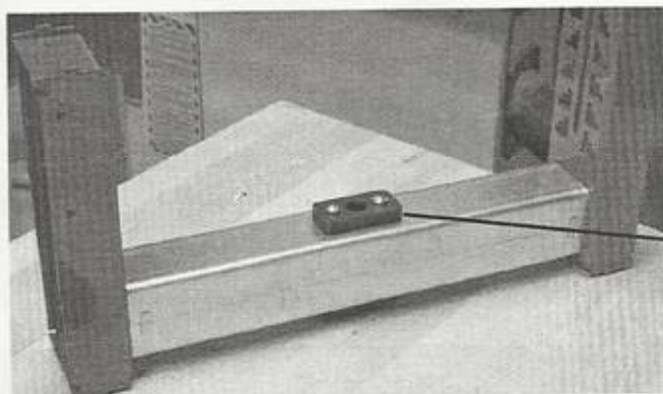
It may be necessary to file the edges of the elevation base before mounting into the red rail legs.



Use the (16) 10-32 x 1" capcrews and washers (#10 star & #10 flat) to attach the elevation base to the rail legs.



**Note:** Do not securely tighten the capscrows at this time.

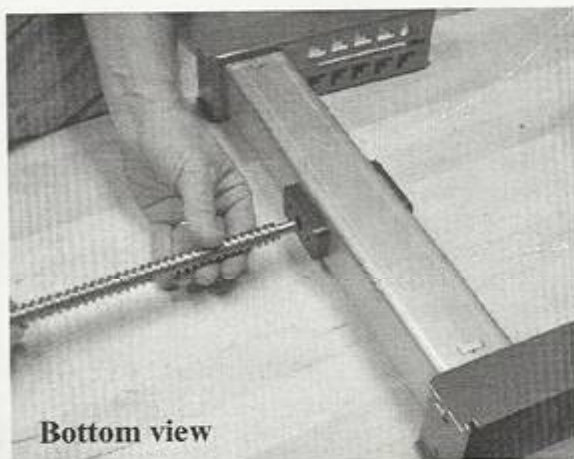


The completed rail leg assembly.

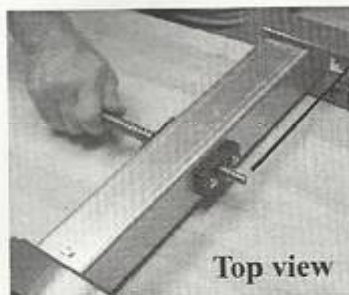
**Note:** You should have two identical assemblies.

The screw support plate and panhead screws toward the top.

Thread the acme screw through the rail leg base.



Bottom view



Top view

**Note** the orientation of the milled end of the acme screw.



**Model 1800 owners -**  
*proceed to page 36*

## Rail Legs - Model 1200 Only

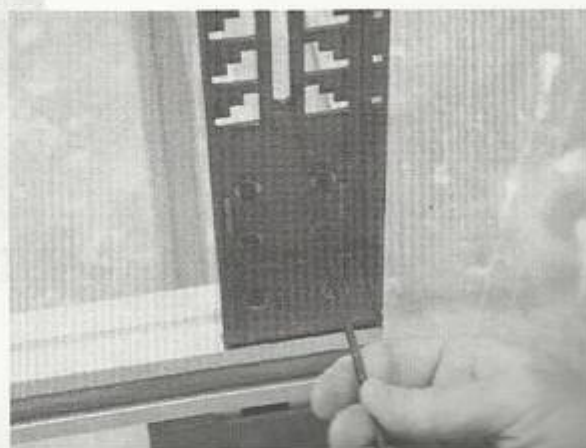
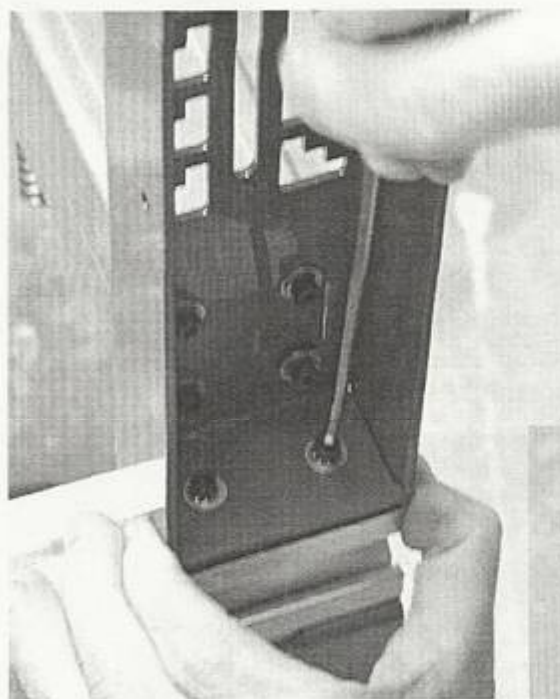
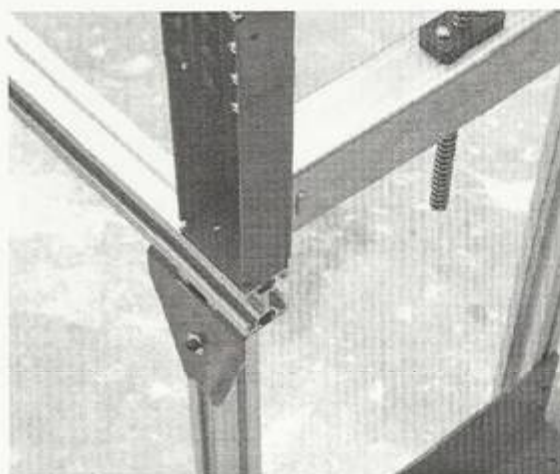
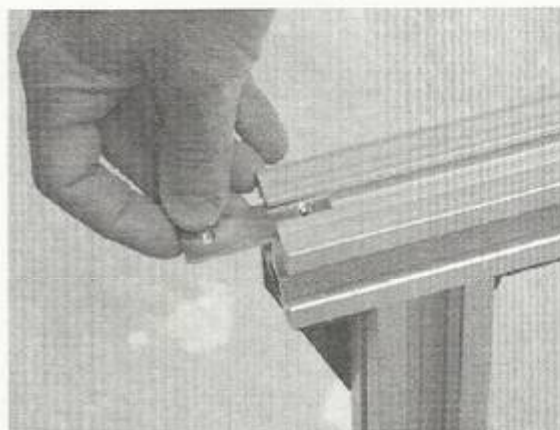
Return to the previously assembled frame and insert (6) long narrow (double hole) locking plates into the top channels of the extruded aluminum rails (note: 3 in each rail). Position one locking plate on each end, and one locking plate in the middle of the rails.

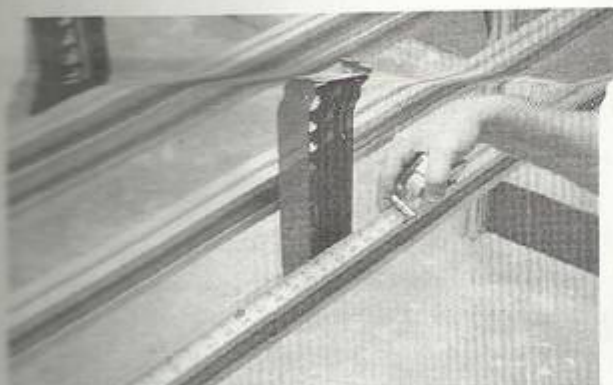
**Note that the pressed threaded nipple faces down into the channel. If this threaded nipple is not installed in the proper direction, it can be pulled off of the locking plate.**

The previously assembled elevation assembly will lock onto the top channel of the extruded aluminum rails.

Secure the rail legs to the extruded aluminum rails using the 10-32 x 3/4" capscrews and washers (#10 flat & #10 star).

Once the elevation assembly has been attached to the extruded aluminum rails, you can secure the (4) capscrews on the elevation assembly. This will insure that the assembly and the rails are square to each other.



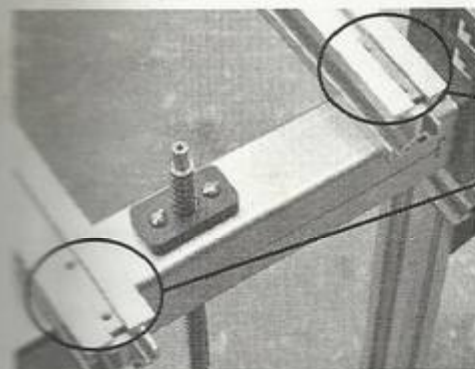


The long extruded rails measure 84". Therefore you will mount the center support legs with the midpoint at 42".

Tightly secure the capscrews into the locking plates.



You are now ready to secure two of the extruded aluminum rails, one on each side of the tops of the rail legs. You may find it beneficial to slide the (6) long narrow locking plates into the narrow channel first and then flip the rails so that the locking plates are faced down on the rail legs

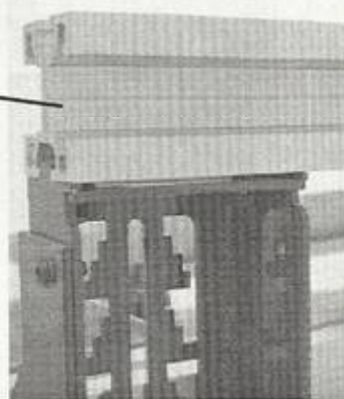


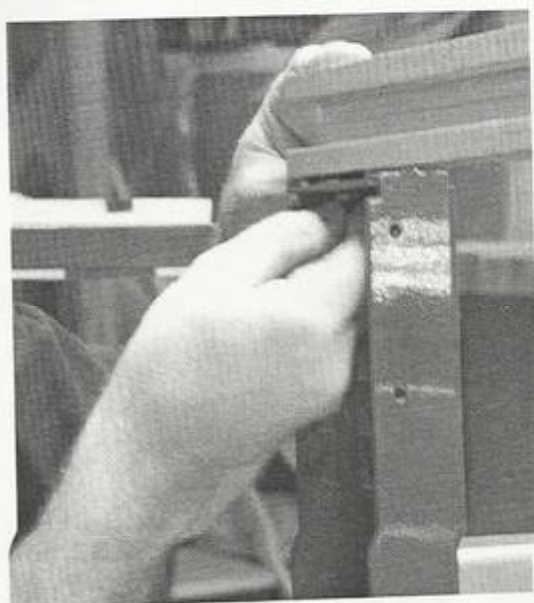
**Note:** Insert the 4 remaining long narrow locking plates into one of the channels, as pictured below. Placement should be into the rail that will be positioned to the back of the machine. This rail will now have a total of 7 locking plates (3 for the rail legs, 4 for the template support brackets to be assembled later).



Wide channel with score mark

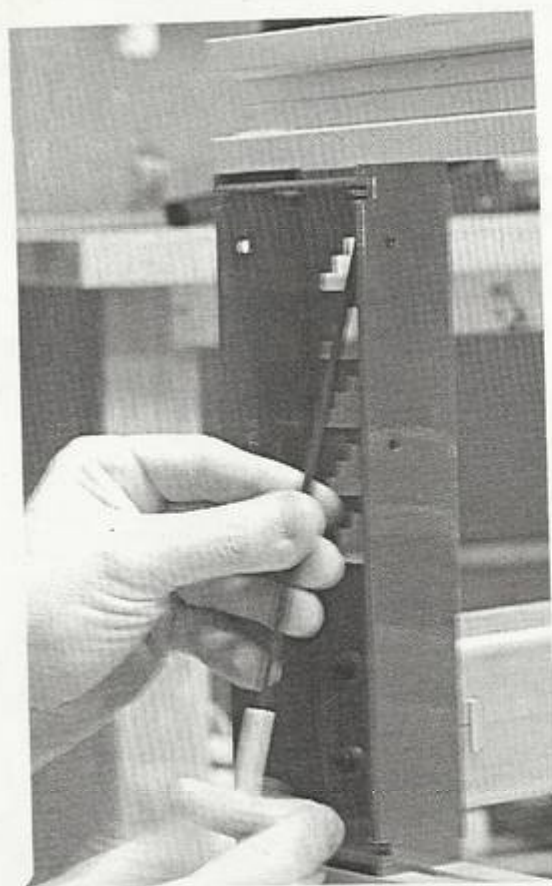
**Note:** The thin channel of the extruded aluminum rail faces up and down, it locks onto the tabs of the rail legs. When positioning these two rails on the rail legs, position them such that the wide channel with the score mark down the middle faces to the outside of the machine. This channel is slightly wider than the channel on the opposite side and will be more accepting of the bushings on the carrier tray.





Secure the top rails to the rail legs using the 10 - 3/2 x 3/4" cap screws and washers (#10 flat & #10 star).

Note that the center rail leg on the back side must mount into the center locking plate inside the rail. There should be (4) remaining locking plates, (2) on each side.



**Model 1200 owners -**  
*proceed to page 46*

## Model 1800 Only Rail Legs

The 2 center support brackets are assembled to the 4 remaining rail legs.

(Note: The center support brackets may be plated (metal color) or painted (red).

Use (4) 10-32 capscrews to mount the rail legs to the base end plates.

The single 1/4-20 capscrew is threaded into the middle hole and will be used to make adjustments to the rail legs.



Base end plate

Center support brackets



1/4-20  
capscrew

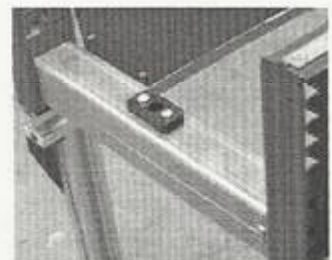


Capscrews - inside view

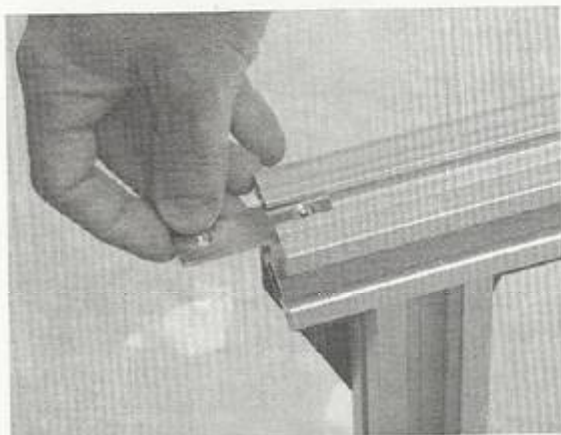


Capscrews - outside view

**Note:** Using the rail legs you will create a total of four support brackets, two for the center (pictured above) and one for each end of the machine (right).



**Note:** The 2 bottom capscrews should be secured tightly. Leave the 2 top capscrews loose - these will be secured later - after the rails have been adjusted straight. See page 33-34.

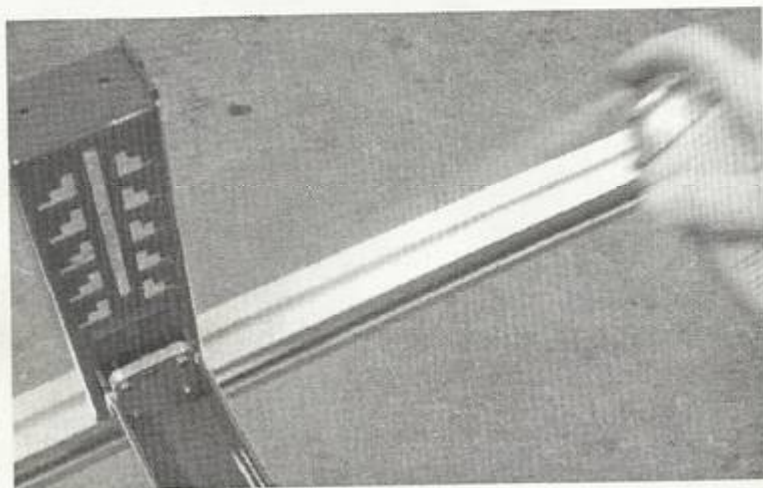


Insert (8) long narrow (double hole) locking plates into the top channels of the extruded aluminum rails that have been mounted to the floor stand. Position one locking plate on each end, and two locking plates towards the center of each rail.

**Note that the pressed threaded nipple faces down into the channel. If this threaded nipple is not installed in the proper direction, it can be pulled off of the locking plate.**



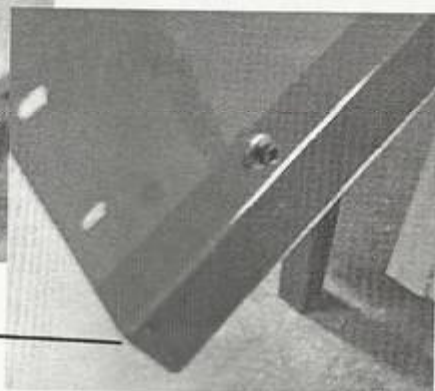
The two center support brackets are slid into the channels first.



Spray the dynaglide lubricant on the rails to improve the ability to slide the rail legs into position.

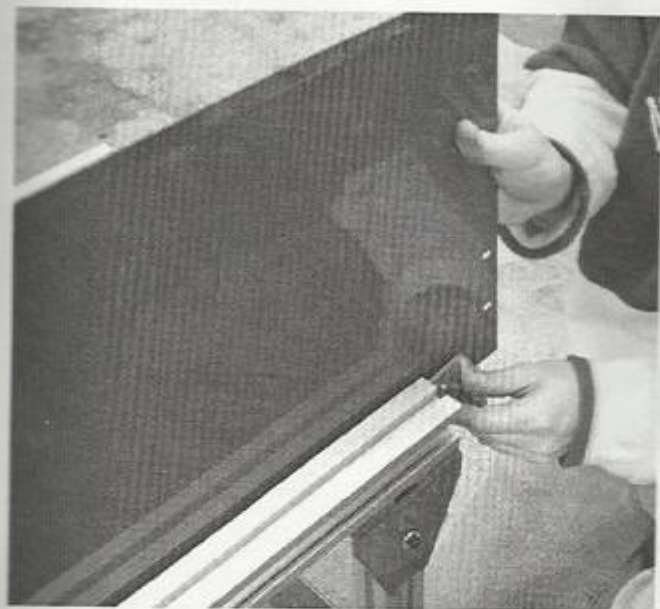


90 degree bend

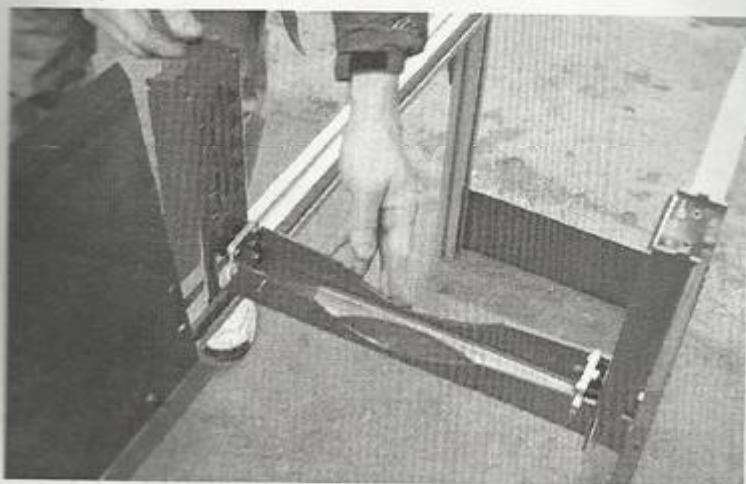


Mount 2 wide locking plates to each of the 6 side panels.

The capscrews are on the inside of the panels (note the position of the bend), and the locking plates are on the outside of the panels.

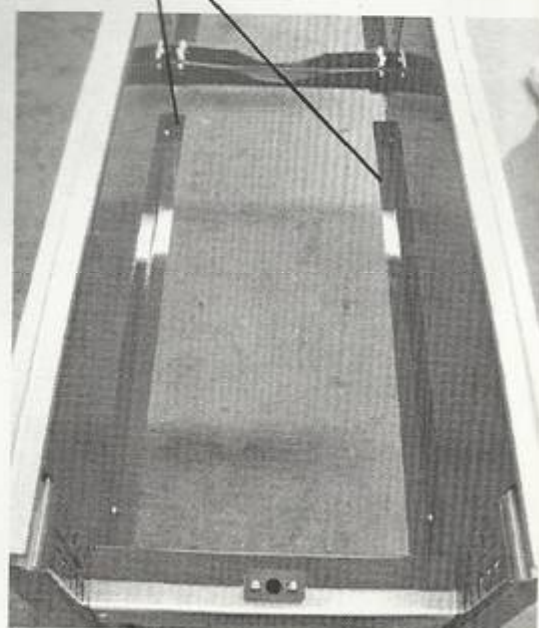


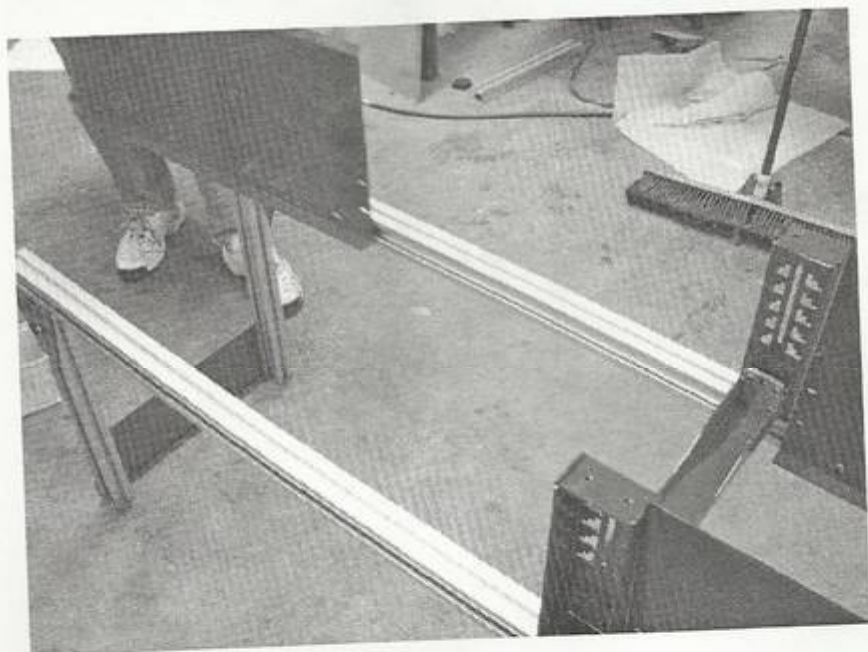
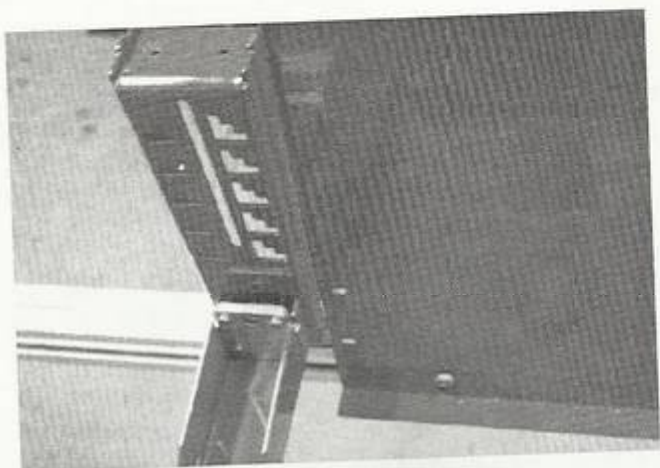
Slide the locking plates on the panels into the inside channel of the aluminum rails.



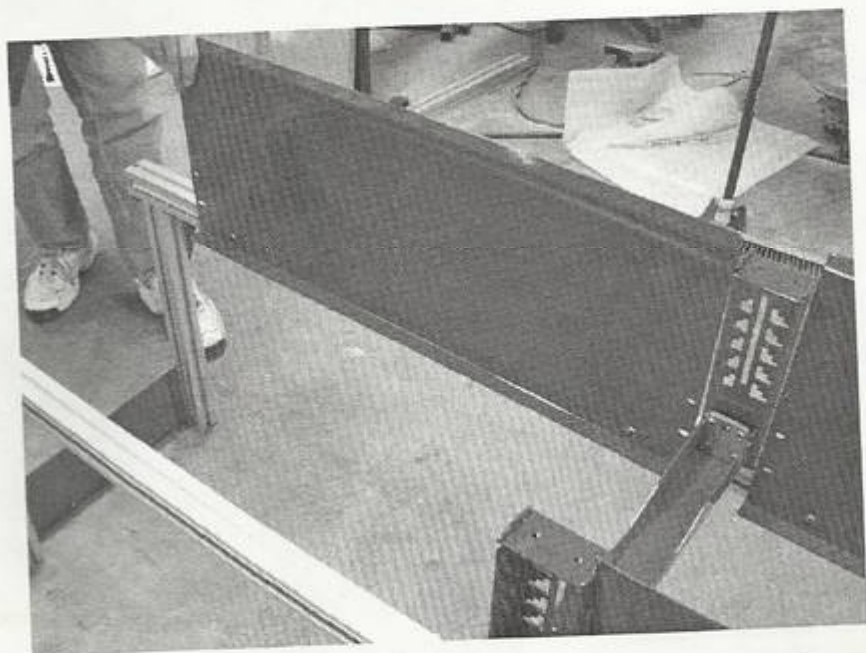
The center support brackets and rail legs are positioned next to the panels.

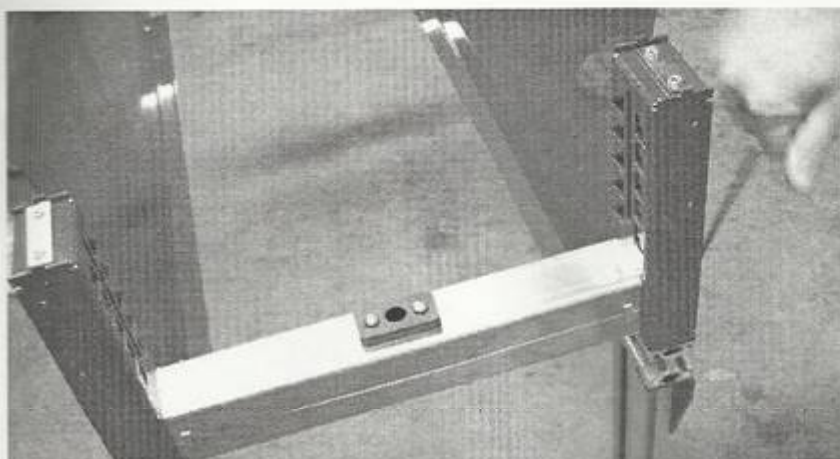
Note the 90° bends on the inside of the machine.





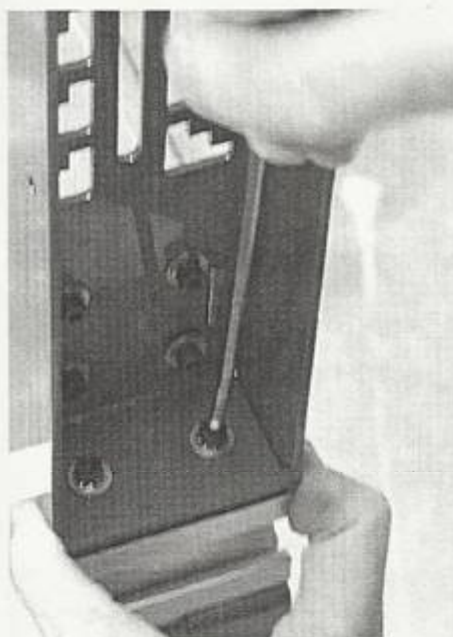
**Note:** It will be necessary to alternate the rail legs and the side panels.



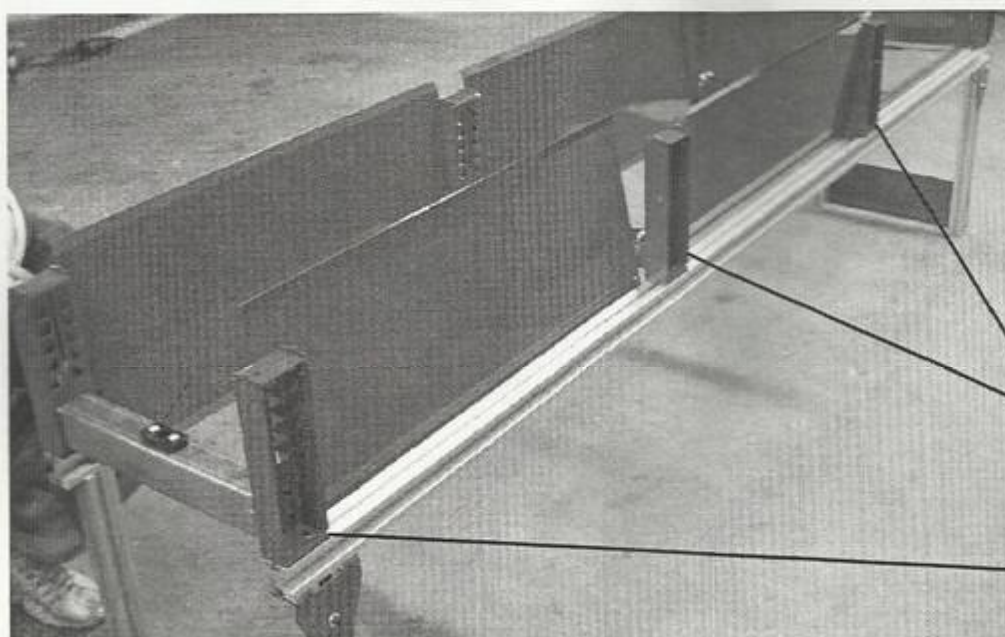


With the panels and the center support brackets installed, mount the rail leg bases onto the ends of the aluminum rails.

**Note that the sides of the rail legs should mount flush with the ends of the rails.**



Secure the rail legs to the extruded aluminum rails using the 10-32 x 3/4" capscrews and washers (#10 flat & #10 star).

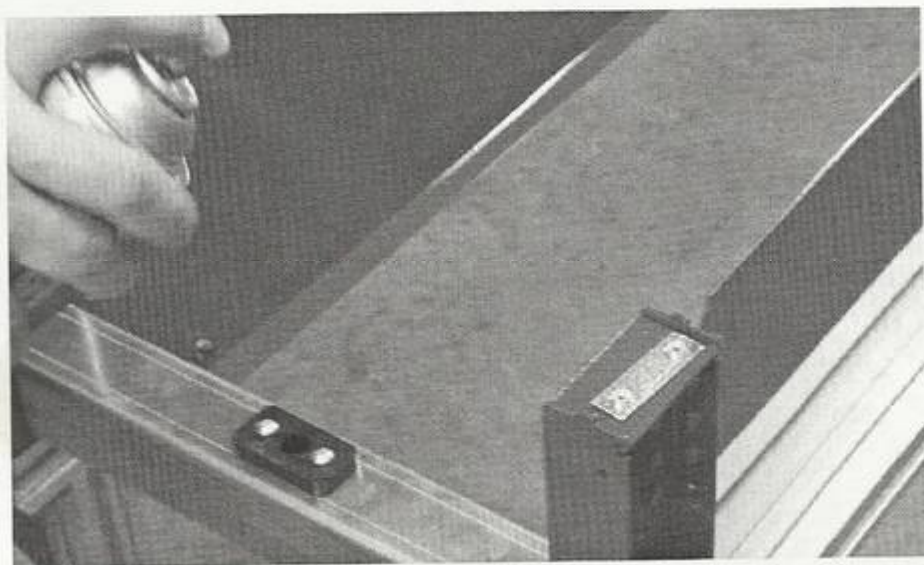
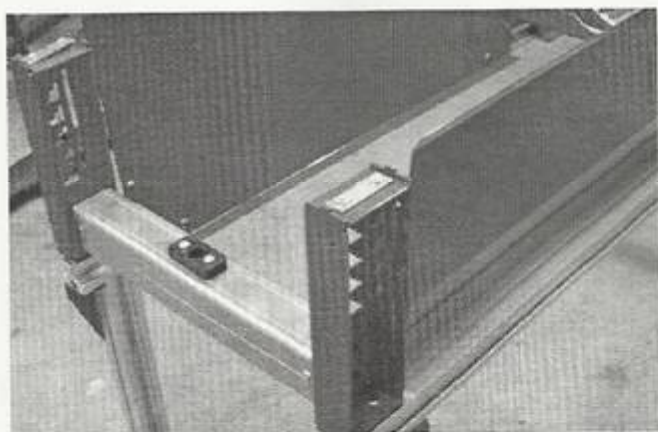
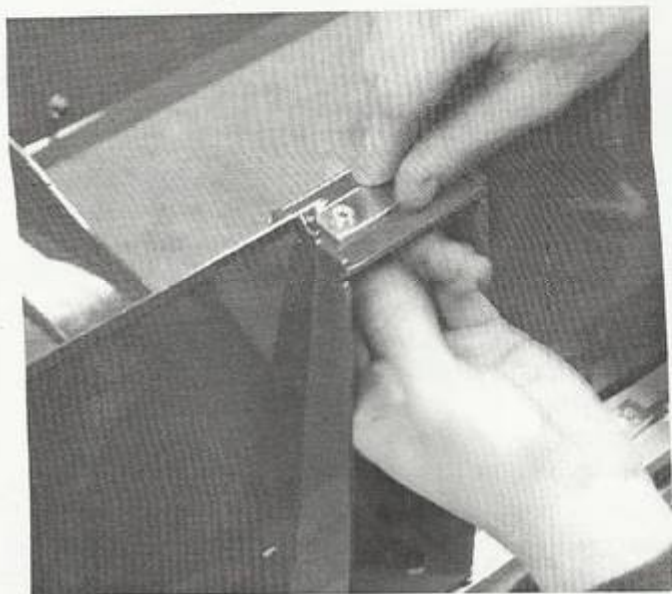


At this point the assembly should appear as the photo to the left.

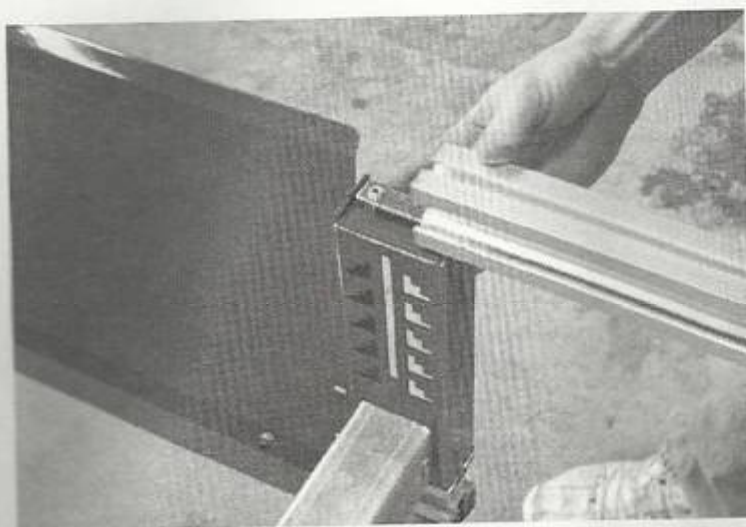
Center support brackets.

End support brackets

Mount the double locking plates to the tops of the (8) rail legs with the cap-screws and washers provided.



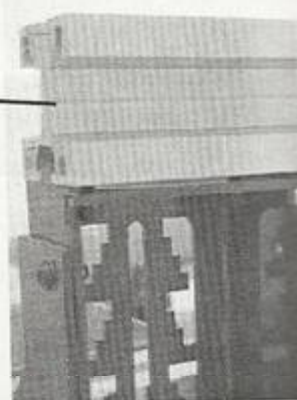
The top bed rails will slide easier onto the rail legs if you apply the dynaglide lubricant to the tops of the rail legs.



Slide one of the remaining rails onto each side of the machine. Note the thin channel should receive the long narrow locking plates, and the angled bend in the panels should slide into the wide channel of the aluminum rails.

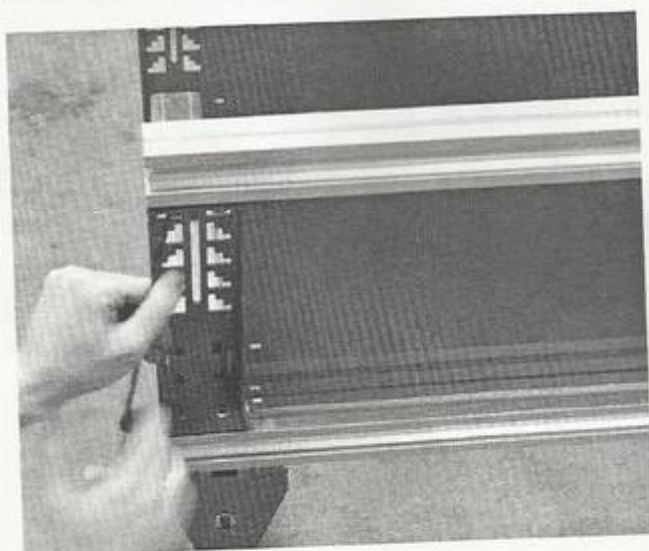
Wide channel  
with score mark

**Note:** The thin channel of the extruded aluminum rail faces up and down, it locks onto the tabs of the rail legs. When positioning these two rails on the rail legs, position them such that the wide channel with the score mark down the middle, faces to the outside of the machine. This channel is slightly wider than the channel on the opposite side and will be more accepting of the bushings on the carrier tray.

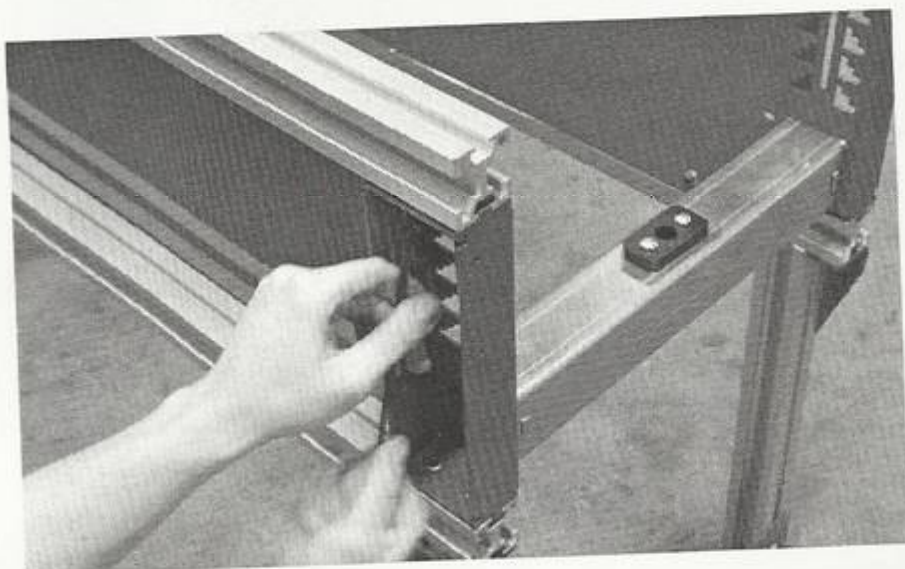


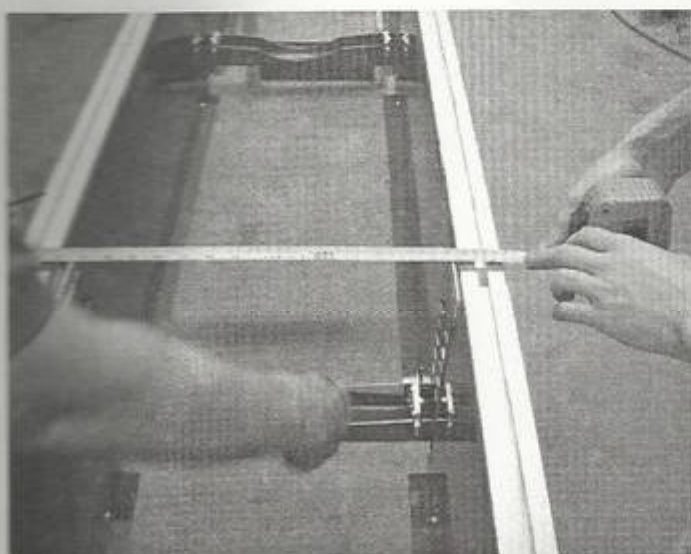


It is best if you lift the bottom of the panels into the rail channel as you lock them into place.



Secure the rails into place with the cap-screws. Note that the rail ends should mount flush with the outside edge of the rail legs.

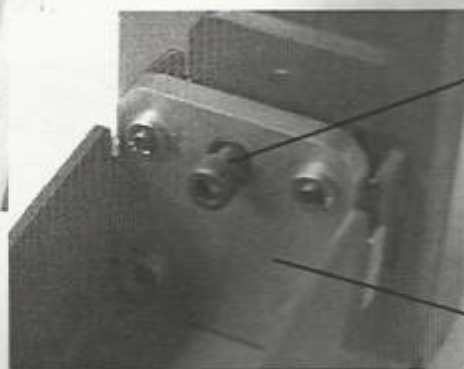




It is best if you measure the width of the two rails at each end and then work the center of the rails to correspond with the measurement on each end.



The 1/4-20 capscrew is used to adjust the rails in or out so that they can be straight or parallel with each other. Make this adjustment on all (4) center support brackets. Once the adjustment has been made, secure the (2) top capscrews to the base end plates.



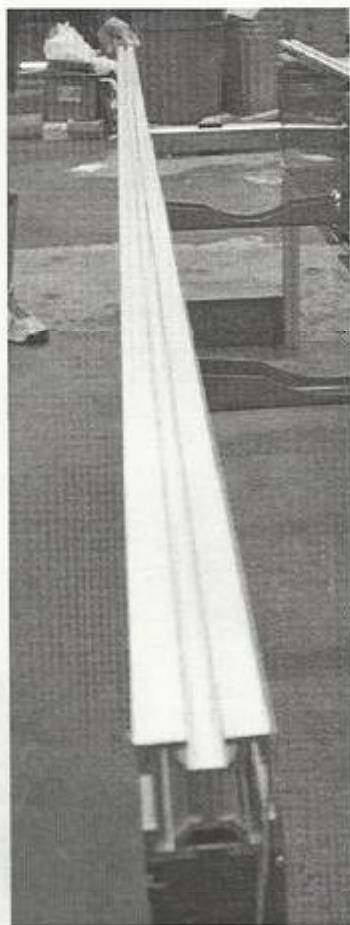
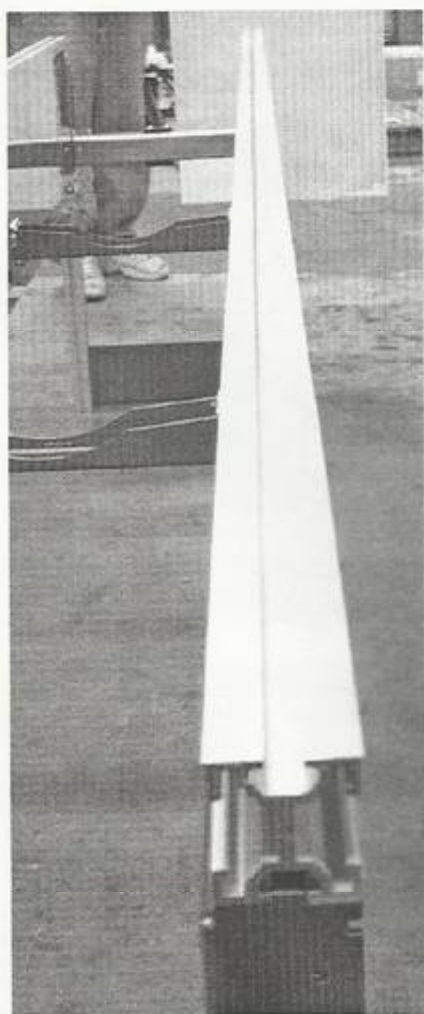
Adjusting  
1/4-20  
capscrew

Base end  
plate

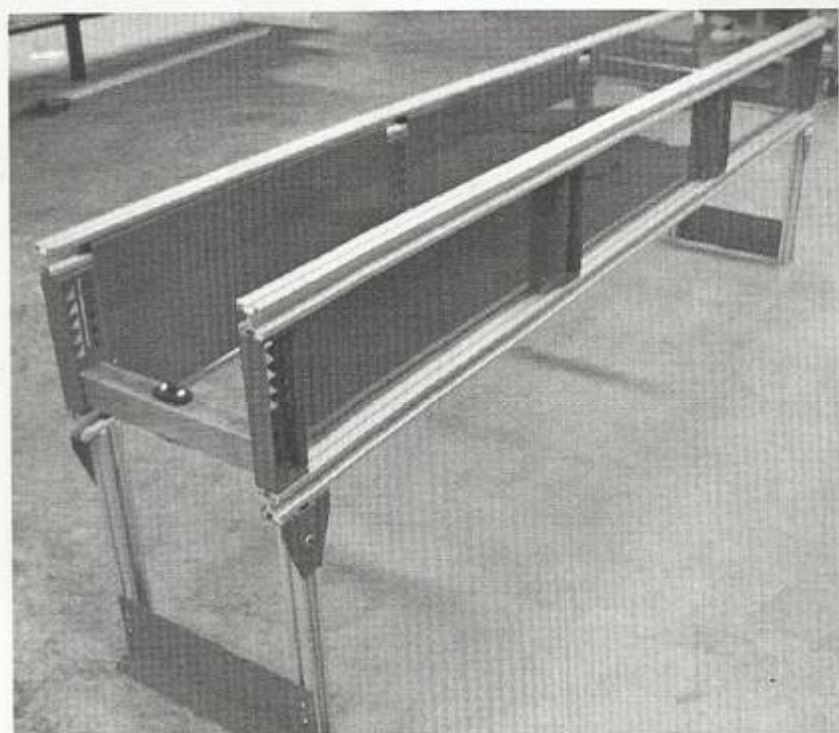


You may have to work back and forth to complete the adjustment.

The end panels mount to the side panels.

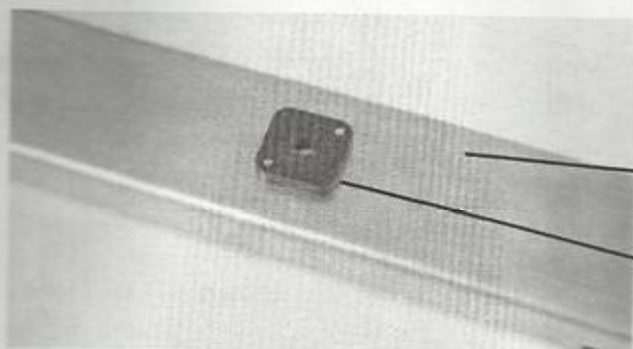


By using a string attached at each end you can identify if the rail is laid out straight.



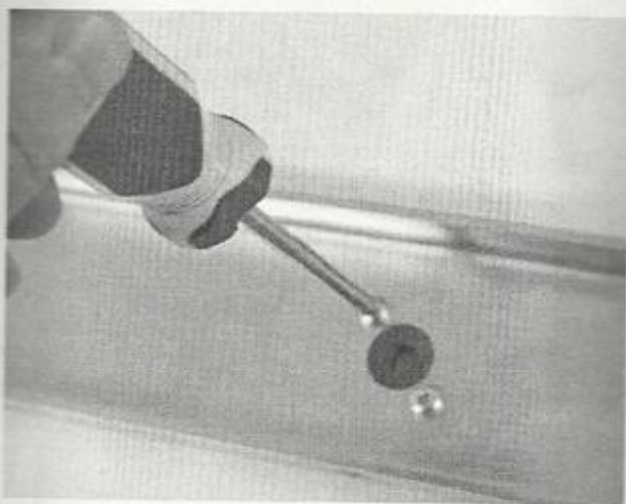
The model 1800 bed assembly should appear as the photo to the left.

## Models 1200/1800 Elevation Base



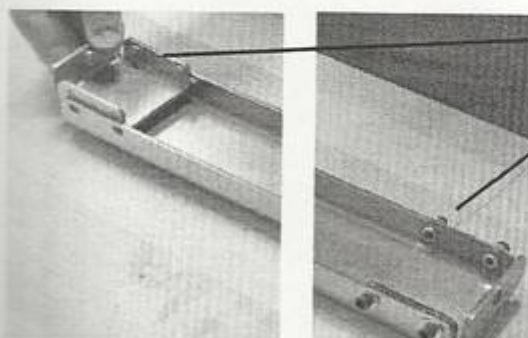
elevation base

flanged bearing



Locate the (2) elevation bases from the box.

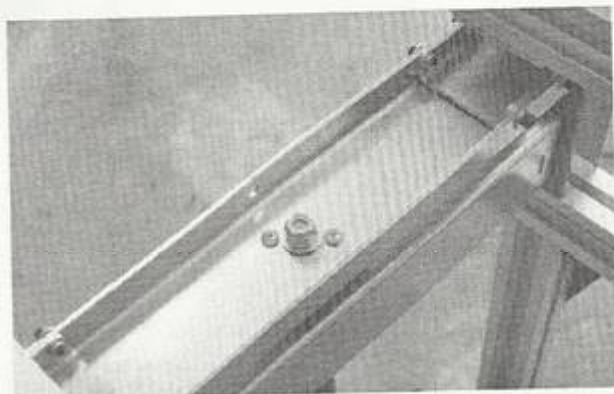
Use the (4) 10-32 x 3/8" panhead screws to secure the (2) flange bearings to the center hole of the (2) elevation bases.



Mount the (4) elevation pivot brackets to the ends of the elevation base using the (16) 10 - 32 x 1/2" capscrews and washers (#10 star & #10 flat).

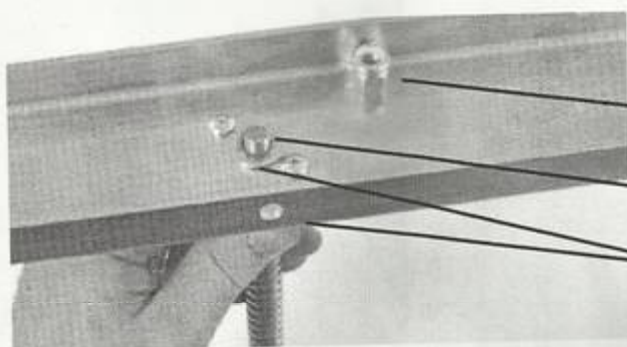
**Note:** At this point leave the brackets loose on the elevation base. These brackets will be secured after they have been attached to the machine.

The elevation adjusting screw mounts to the elevation base with the nut on the threaded end.



You can now slide the elevation base between the red rail legs and attach the elevation screw through the flanged delrin bearing.

Mount the (4) elevation pivot brackets to the ends of the elevation base using the (16) 10 - 32 x 1/2" capscrews and washers (#10 star & #10 flat).

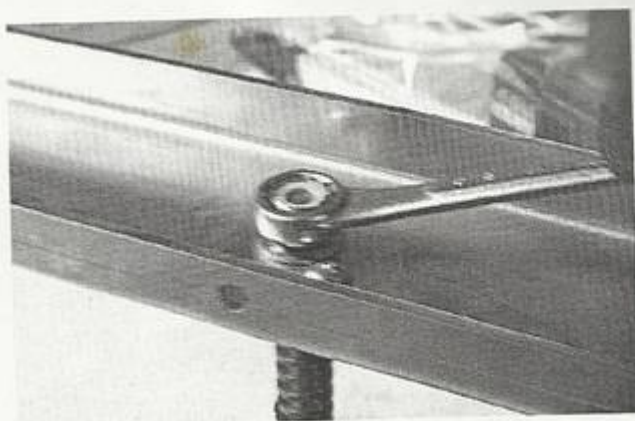


**Note:** At this point leave the brackets loose on the elevation base. These brackets will be secured after they have been attached to the machine.

Nut

Threaded End

2 Washers (1 underneath, 1 on top)



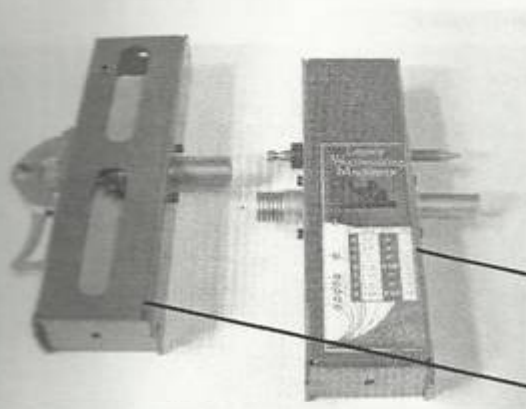
The elevation adjusting screw mounts to the elevation base with the nut and washer on the threaded end.



At this point it will be helpful to swing the elevation base out of the way and lubricate the insides of the red rail legs. The dynaglide lubricant or other dry lube is recommended.

## Models 1200/1800 Adjustable Bed

Locate the Headstock and Tailstock.



Headstock

Tailstock



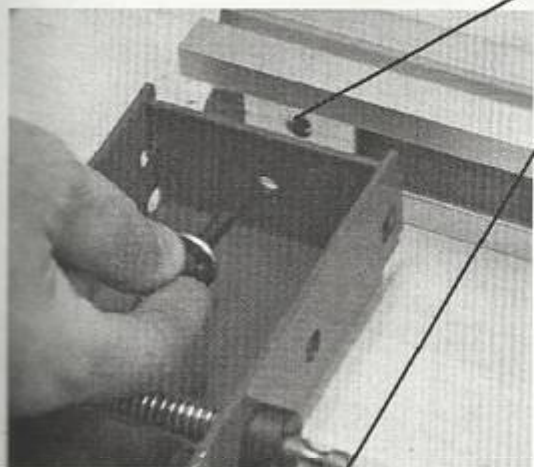
### Headstock/Tailstock Hardware

- 4 - locking plates
- 4 - 1/4-20 cap screws
- 4 - washers

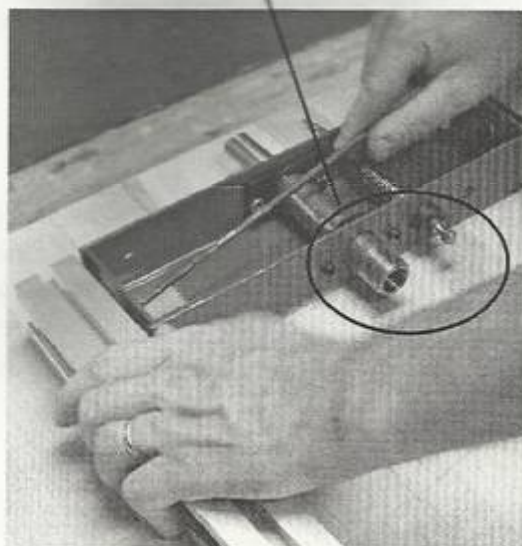
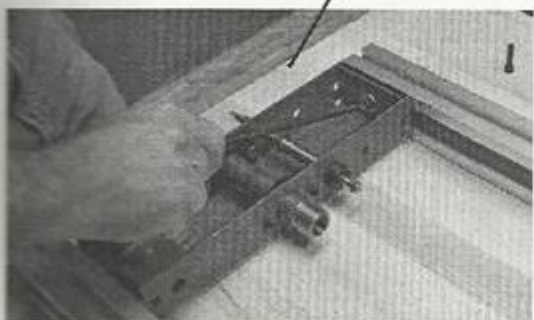
Slide the (4) 1/4-20 x 1 locking plates into the wide channels of the (2) remaining extruded aluminum rails.



Turn the headstock face down and lock it into place on one end of each of the aluminum rails using the (4) 1/4-20 x 1" cap screws and washers.

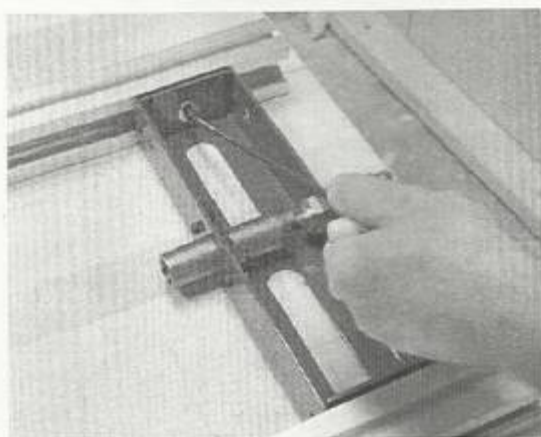


Note the position of the headstock with the threaded shaft and the locking collar facing into the center of the rails.



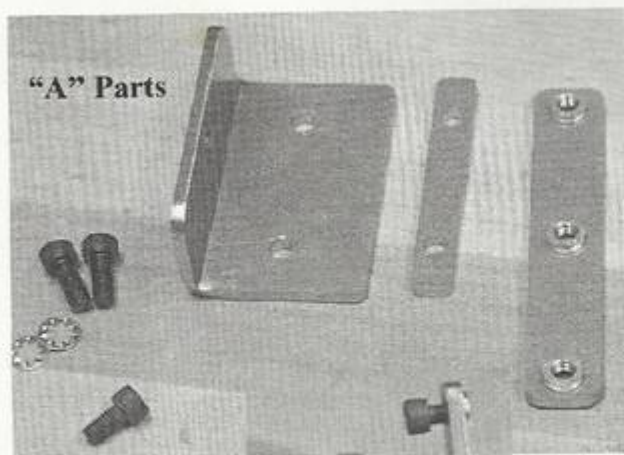


It may be necessary to file the flanges of the tailstock to insure that the tailstock slides freely along the length of the rails.



Once you are satisfied that the tailstock will slide freely, mount the tailstock to the rails at the opposite end of the headstock.

Notice that the headstock and tailstock have been attached to the rails upside down. This position will allow the capscrews to insert into the locking plates with easier accessibility.



**Assembled  
"A" Parts**

Note the round hole in the center of the flange.



## Elevation Brackets

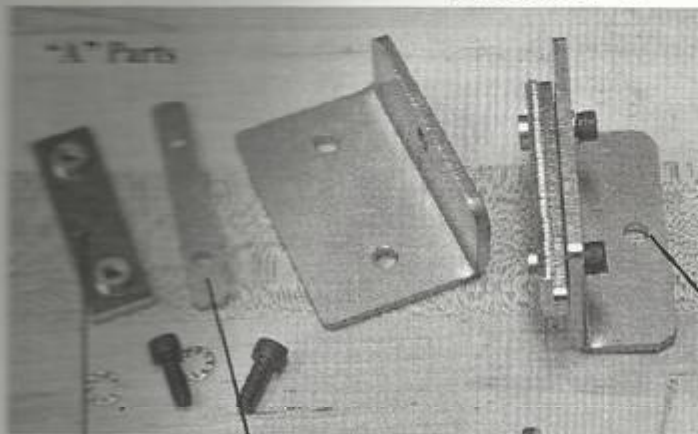
Two "A" elevation brackets (pictured left) (one right and one left) are used on the headstock end of the adjustable bed rails and two are used on the tailstock end.

**Note:** The two elevation brackets with an extra long locking plate with 3 holes for capscrews will be used on the headstock end.

Assemble the elevation brackets as shown.

The four "A" elevation brackets have a round hole in the center of the flange. Whereas, the two "B" elevation brackets have PEM hardware pressed into the round hole in the center of the flange.

### Assembled "A"



Two "A" elevation brackets are used on the tailstock end of the adjustable bed rails. **Note: These elevation brackets have 2 holes in the locking plates.**

1/4" hole

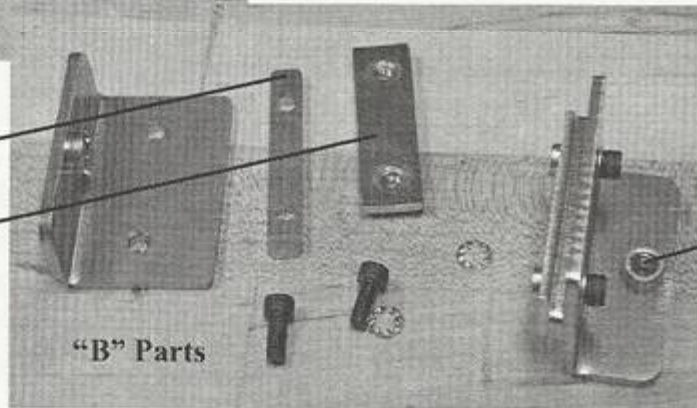
Spacer

Locking Plate

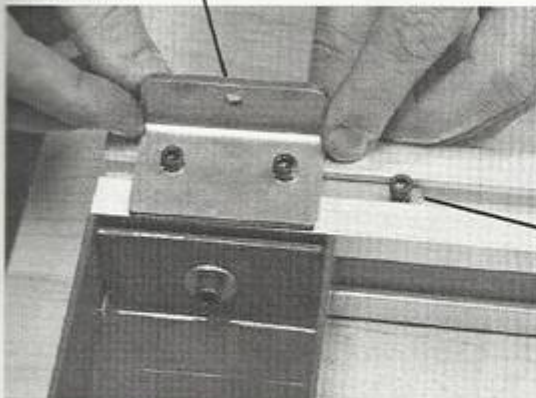
"B" Parts

### Assembled "B"

1/4" PEM Hardware



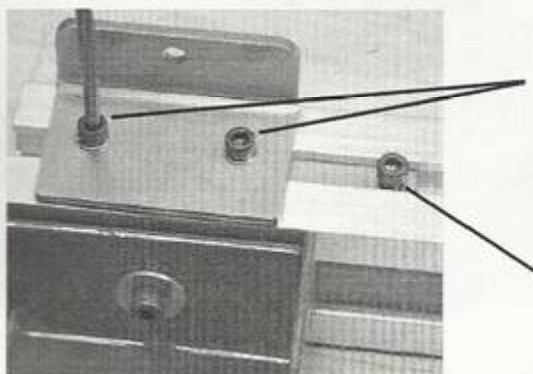
**Note: It may be helpful to file over the outside edges of the bracket. Filing will aid in a smooth movement of the elevation base.**



The two "B" elevation brackets (pictured above) will be positioned on the center support brackets in the middle of the machine.

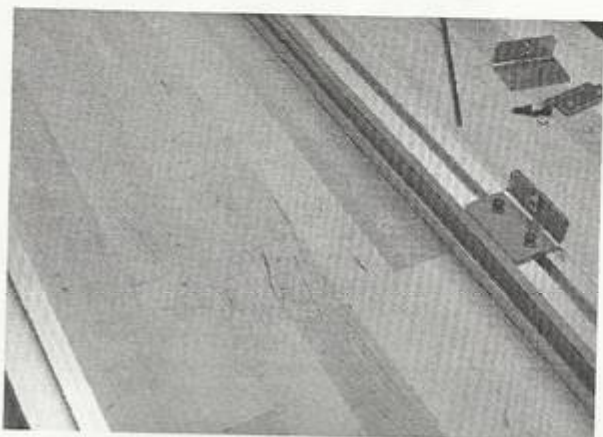
With the assembly still positioned upside down, slide the "A" elevation brackets into the channel on the headstock end as shown. Note the position of the flange to the outside.

**Note: These are the (2) "A" elevation brackets with the extra long locking plates (3 holes).**



**Note: With the 2 capscrews securely tightened to the bracket, spacer, and locking plate; the bracket will still slide freely in the channel.**

The third capscrew will eventually be tightened into the channel to keep the bracket from sliding freely. **DO NOT** secure at this time (see page 42).



Mount the "B" elevation brackets to the center locking plate (located in the middle of the rails).

**Note:** The "B" elevation bracket is the one with the PEM hardware pressed into the center hole on the flange (page 39).

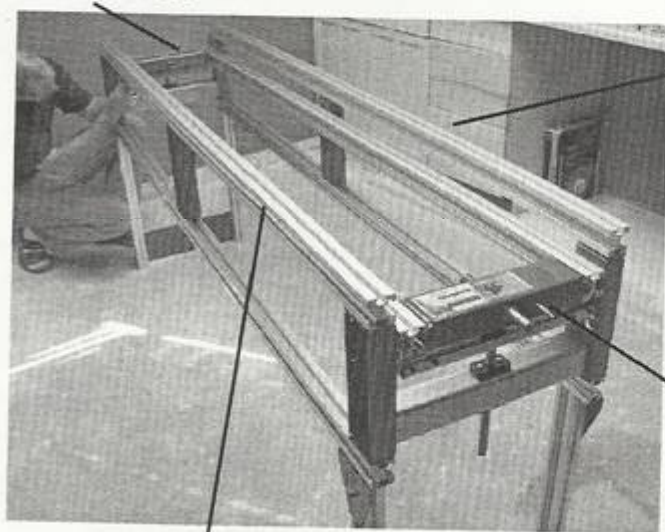


With the elevation brackets attached to the adjustable bed rails (headstock/tailstock assembly), you are now ready to slide the adjustable bed into place between the 4 rail legs of the machine. (Note: Photos used are of model 1200. Model 1800 is the same procedure.)

**Note** which side of the machine is the back side (the side away from the operator will be the side with the 4 extra locking plates for the template support brackets).

The headstock end of the machine should be to the right side as the operator faces the front of the machine.

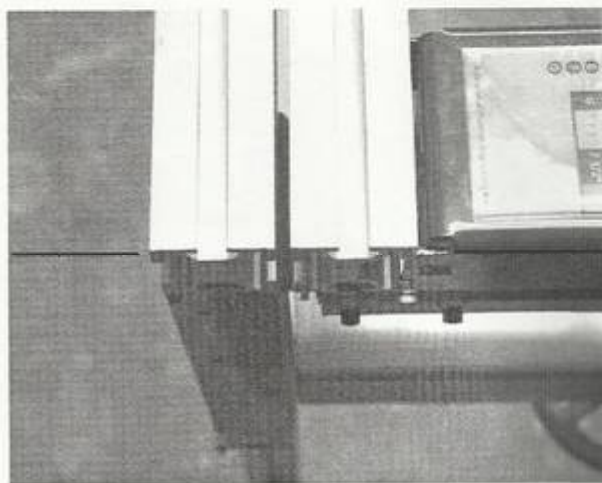
Tailstock end



Back side or  
template follower side

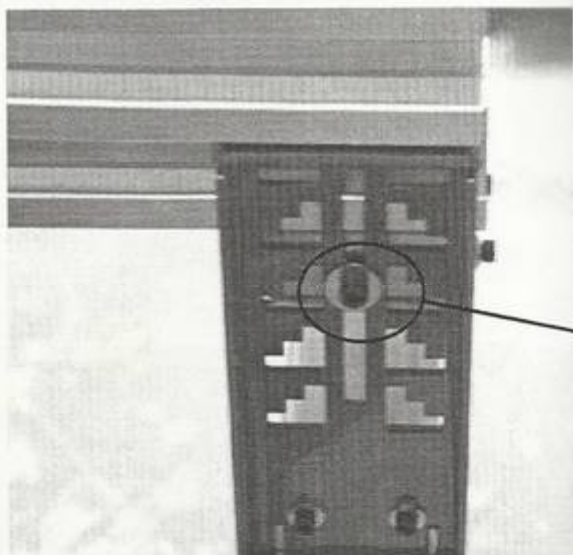
Headstock end

Front side or  
operator side



As the adjustable bed is placed into the machine, align the ends of each of the rails flush with each other.

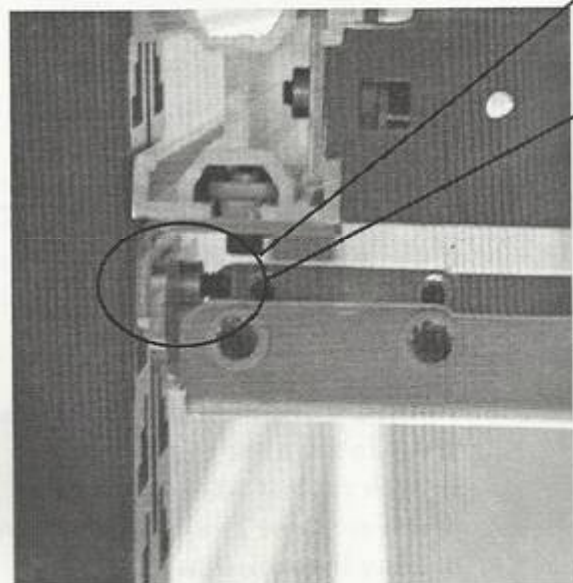
**Rails aligned straight**



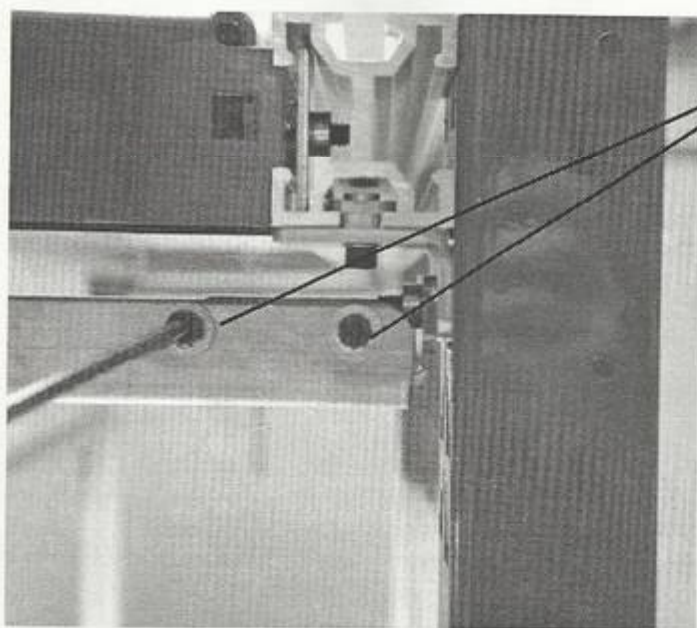
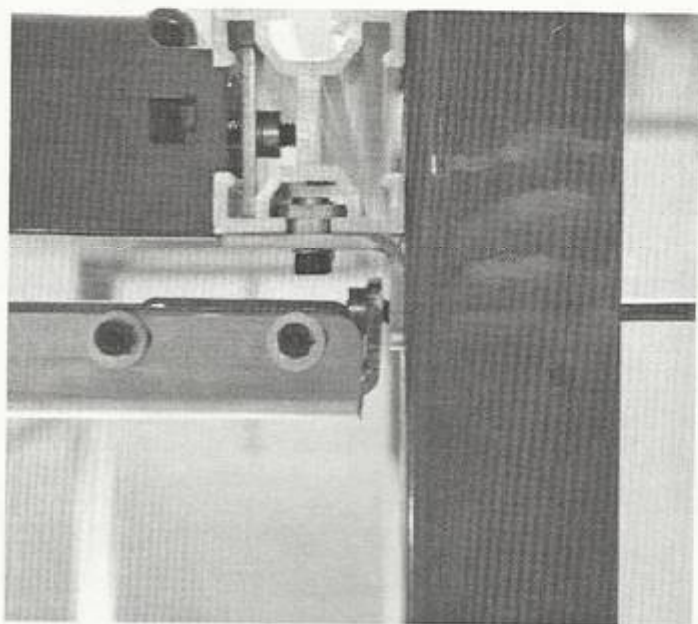
Use the (4) 1/4-20 x 7/8" capscrews through the center slot to lock the elevation brackets to the red rail legs.

Top: View from front side

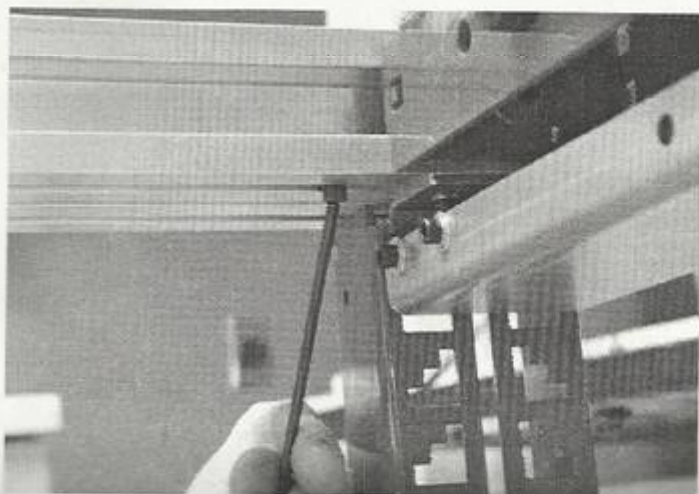
Bottom: View from back side



It may be necessary to lift the adjustable bed up in order to align the holes with the screw.

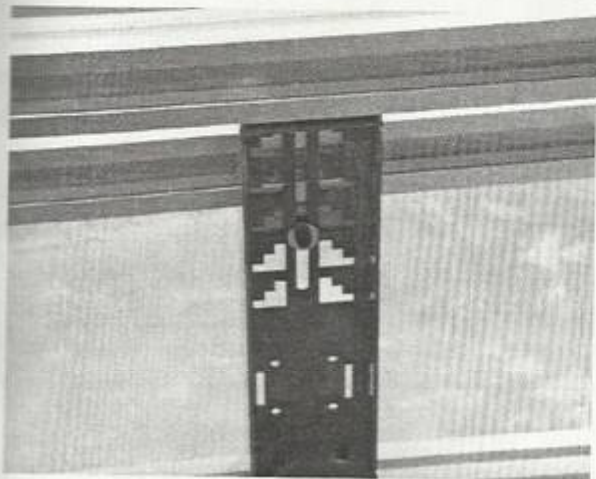


With the elevation brackets secured tightly to the rail legs, lock the (4) capscrows on each of the four elava-tion bases into place.



Once the elevation brackets have been attached to the rail legs on the head-stock end - secure the (2) capscrows into the channel of the aluminum rail.

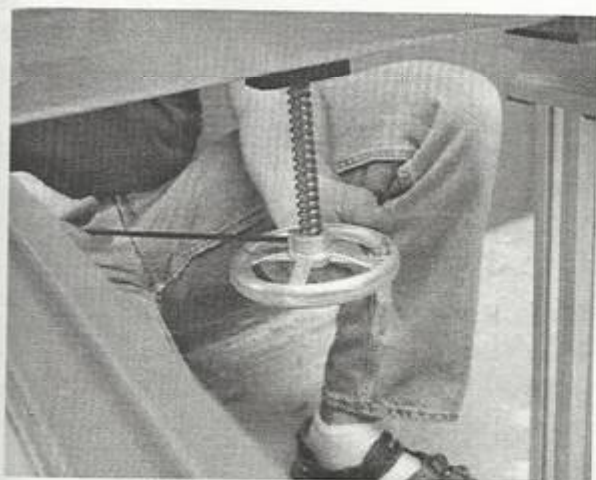
**NOTE:** It may be necessary to adjust the bed rails side-to-side in order to align the gears properly. In such cases it will be necessary to release these 2 capscrows before making the adjustment.



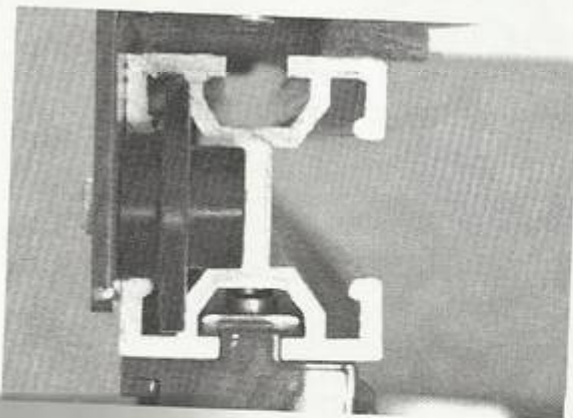
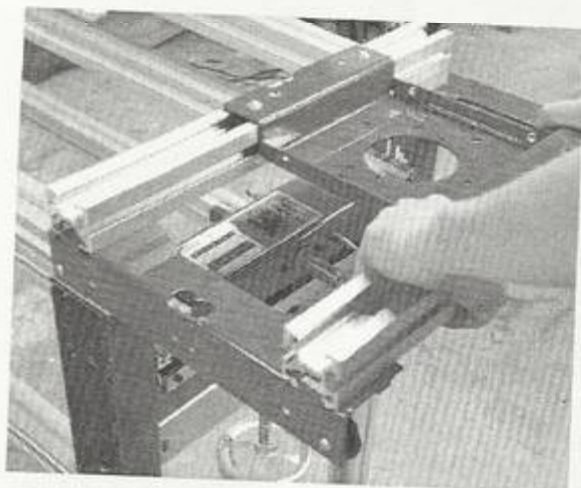
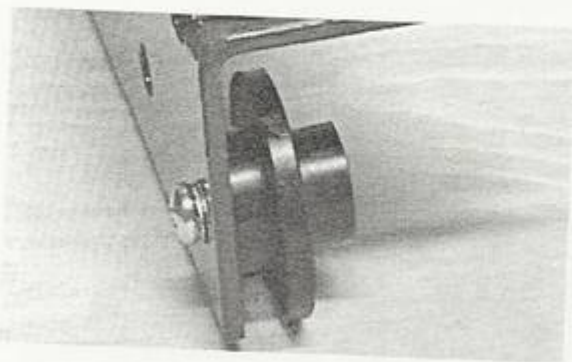
Secure the center support rail legs to the center elevation brackets (the cap-screw into the hardware).



Locate two of the elevation adjusting handwheels.



Attach the elevation adjusting handwheels to the ends of the elevation screws.



## Mounting the Carrier Tray

The carrier tray has two bushings on each side. Locate the side which has the bushings milled with a step to them. These bushings will be on the front or operator side of the machine.

**Note:** These bushings are milled to tight tolerances. It may be necessary to remove the bushings and file the side flanges. This will loosen the tray, allowing it to slide freely in the channel.

Slide the carrier tray onto the outside extruded aluminum rails. The front bushings are milled to a similar shape as the rails.

The round bushings will slip into the backside.

Once mounted to the rails the carrier tray should slide freely on the rails. The movement will have some drag to it, however, this movement will be made smoother by using the dynaglide lubricant (or other product of your choosing) on the rails.

**Note:** Lubricating the rails should take place after the measuring scales have been mounted to the machine.

**IF YOU PURCHASED THE UPPER DUST CONTROL (STANDARD ON 1200 & 1800).** With the carrier tray mounted to the rails, and before proceeding with the next step in the assembly (Mounting the Y-axis Screw Supports), - turn to page 81 of this manual and mount the (2) vinyl dust shields to the sides of the carrier tray (as seen below).



Vinyl Shields

**Note:** For carrier tray adjustment see page 85.

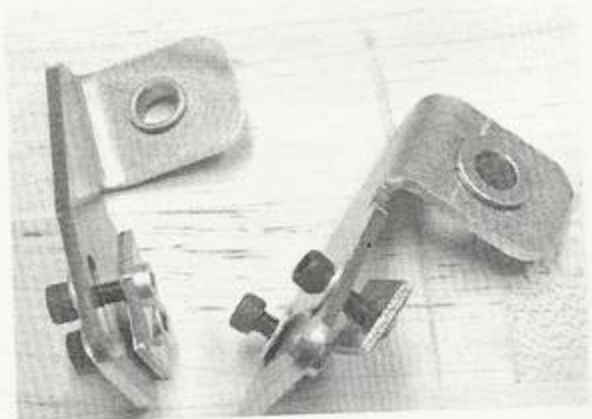


**NOTE:** If you purchased the z-axis upgrade, remove the router tray and slide the z-axis onto the carriage at this time.

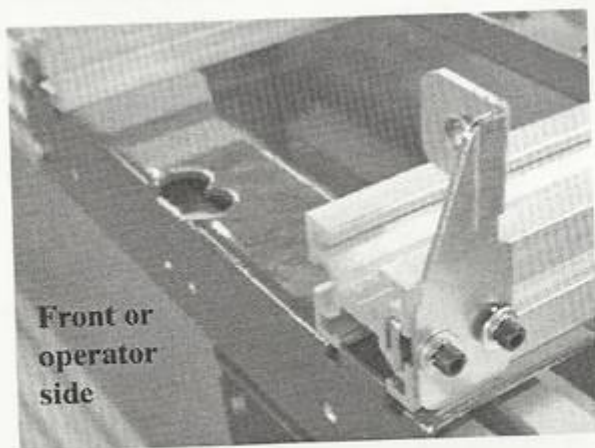


## Mounting the Y-axis Screw

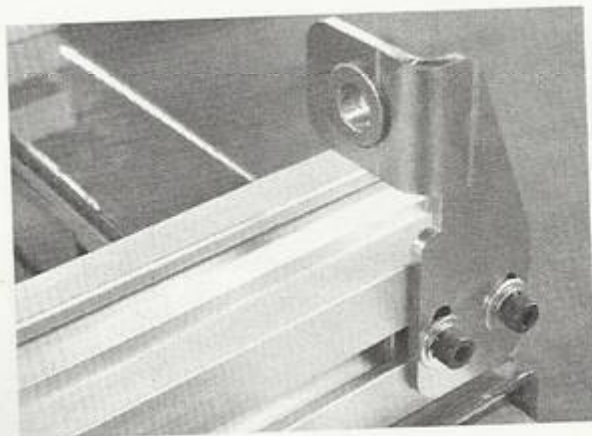
Assemble the (2) y-axis screw supports as pictured below.



Assembled y-axis screw supports



One of the screw supports will mount to the front right corner of the carrier tray as pictured to the left.



The second screw support mounts to the back-right corner of the carrier tray (opposite end of the rail).

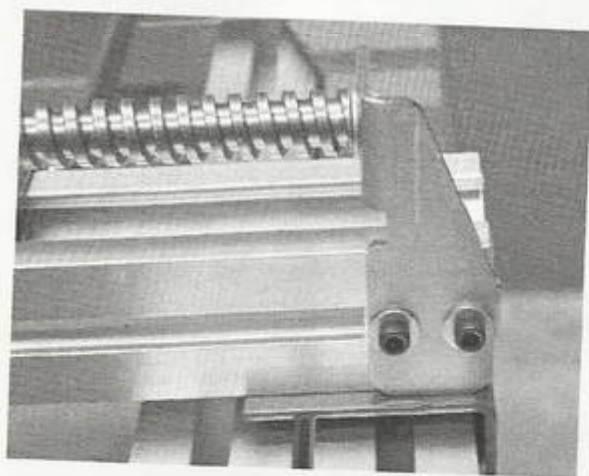
**Note the orientation of the bent flanges facing towards each other.**



Slide the 2 locking shaft collars onto the short y-axis screw.

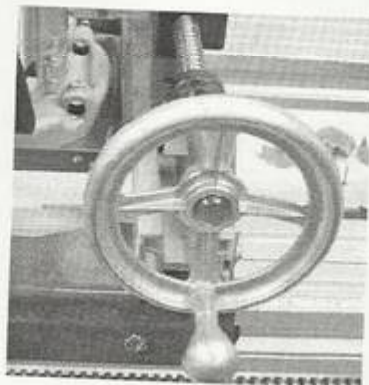
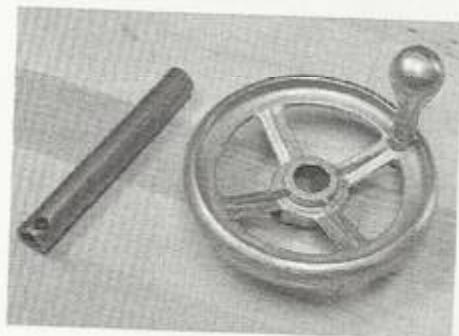


Use the grease packet to lubricate the ends of the shaft.



Slide the shaft ends into the y-axis screw support brackets.

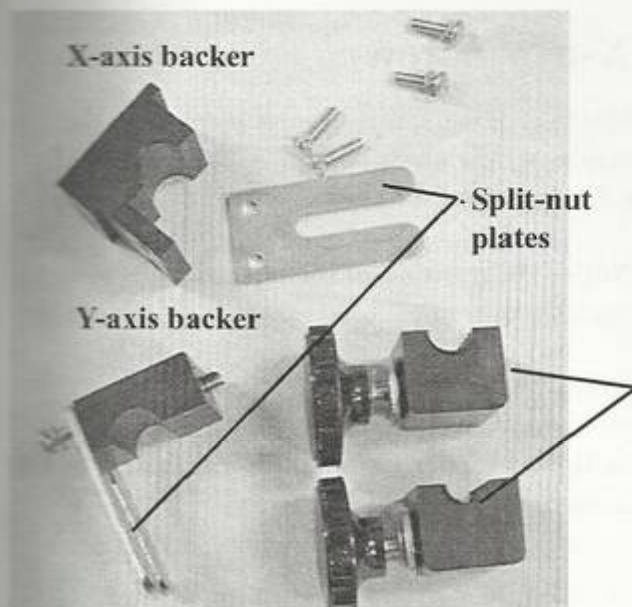
**NOTE:** The longest milled end of the shaft should be positioned to the front or operator side of the machine.



### Y-axis Handwheel

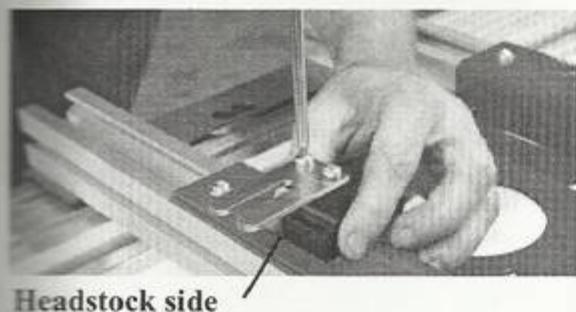
Locate the y-axis handwheel and shaft, and mount it to the end of the y-axis screw. Use the allen wrench provided (page 1) to mount the extension shaft to the y-axis screw.

## X & Y-axis Split-nuts

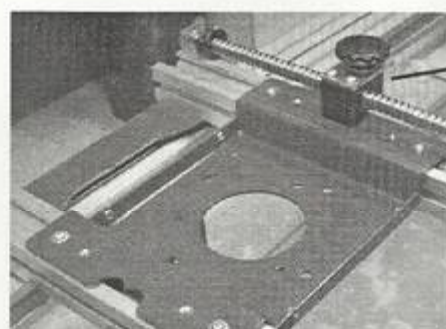


Assemble the threaded split-nuts as pictured to the left.

Threaded split-nuts

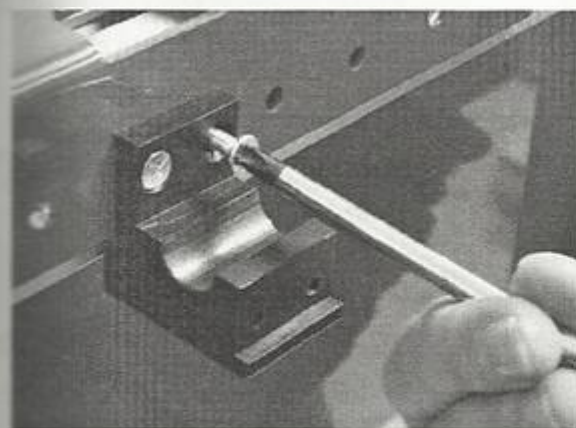


Mount the y-axis backer to the headstock side on the top of the carrier tray.



Headstock side

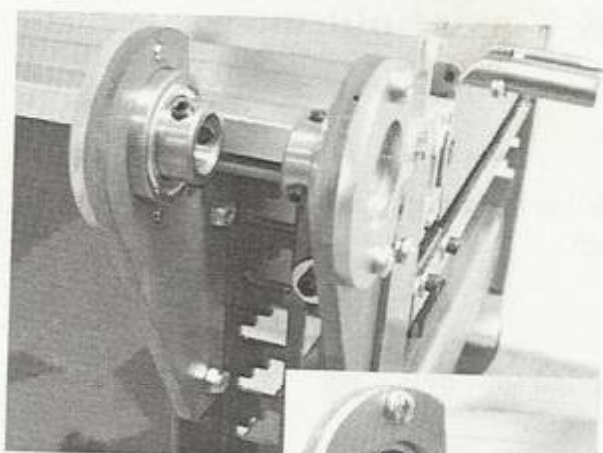
Tailstock side



The x-axis backer mounts to the side of the carrier tray and is positioned so that the half-round groove will receive the x-axis lead screw.



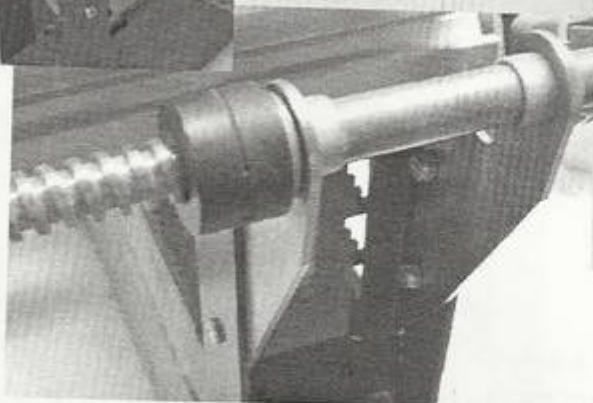
Mount one of the plates to the front of the backer.



**Model 1200 &  
1800 Support  
brackets**



**Model 900 support brackets**



## X-axis Screw

Mount 2 of the x-axis support brackets to the inside of the right front rail leg with the 10-32 x 5/8" panhead screws and nylock nuts.

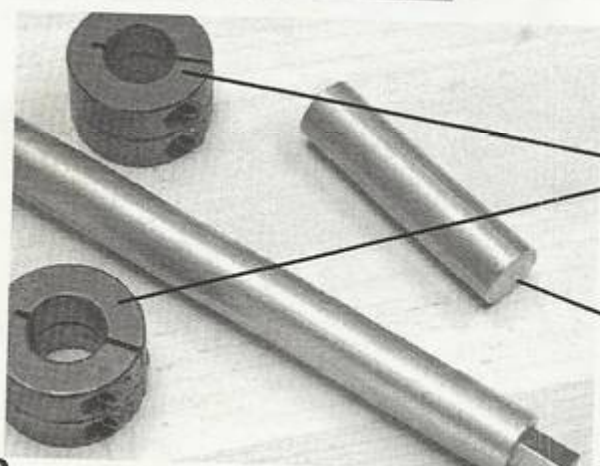
**Notice the position of the bushings opposing each other.**

**Note:** These screw support brackets are mounted loosely to the rail legs. They will be tightly secured after the x-axis screw has been mounted.

The remaining x-axis support bracket mounts to the inside of the rail leg on the left front corner (opposite the 2 support brackets mounted on the headstock end).

**Note:** Model 900 support brackets are constructed differently. They will mount the same as the models 1200 & 1800, but will appear as the support brackets in the photo to the left.

Locate the termination shaft, the drive shaft, and the (2) double shaft collars.

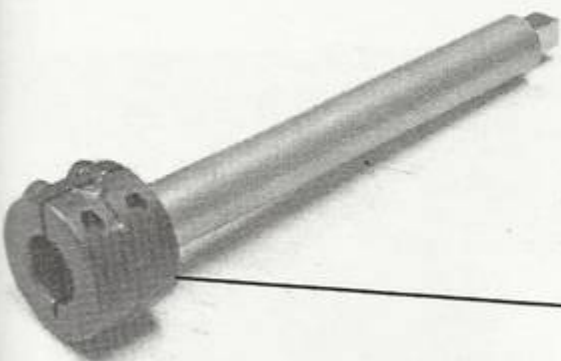


**Double shaft collars**

**Termination Shaft**

**Drive Shaft**

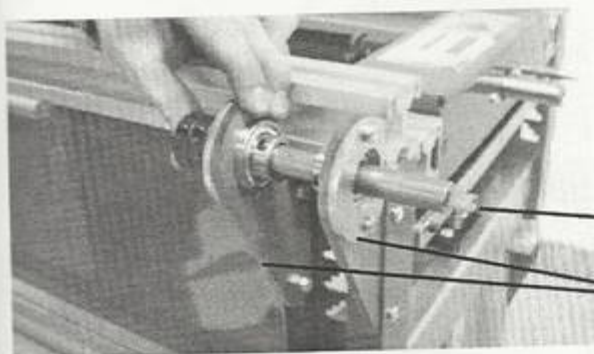
Attach one of the double shaft collars onto the end of the drive shaft.\*



Notice that the shaft goes into one shaft collar only. Leaving the second collar free to receive the long acme lead screw.

Double Shaft collar

The long drive shaft with it's accompanying double shaft collar will slide into the two screw support brackets located at the headstock end of the machine.

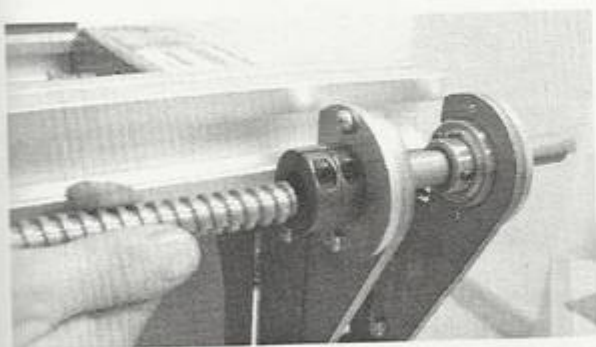


Drive Shaft

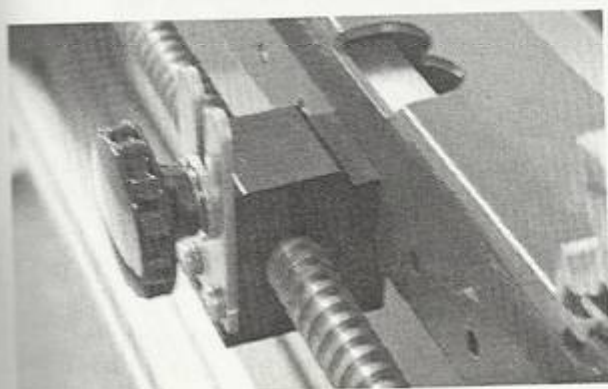
Screw Support Brackets



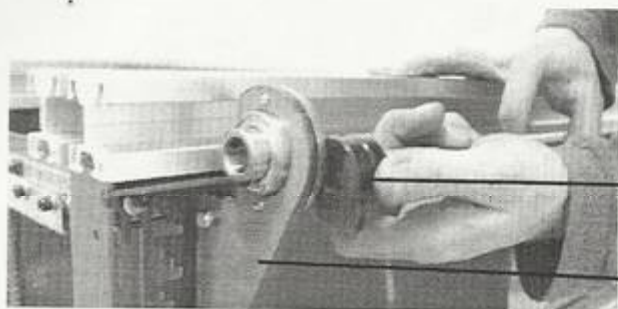
Slide the 2 locking shaft collars onto the long x-axis screw. These collars should be spread apart so they are positioned on either side of the carrier tray.



Insert the long acme screw into the double shaft collar on the headstock end and lock the shaft collar firmly onto the acme screw.



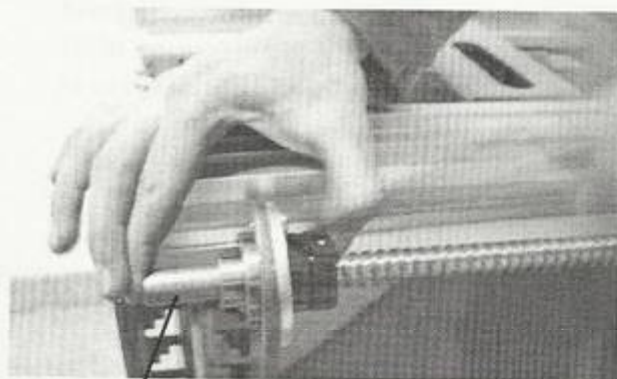
Lock the threaded split-nut onto the long acme screw.



Position the second double shaft collar onto the shaft at the tailstock end.

**Double Shaft collar**

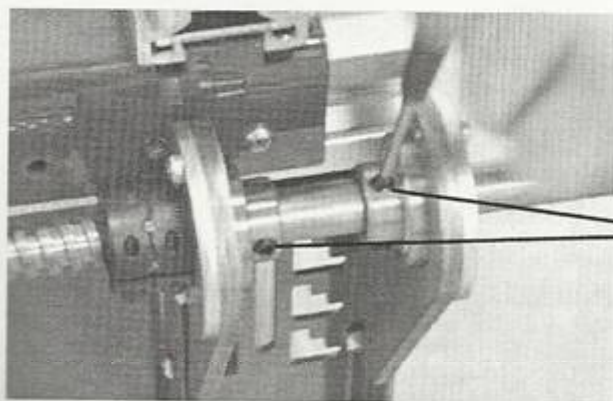
**Screw Support Assembly**



The short termination shaft slides into the single screw support assembly located at the tailstock end of the machine, and locks into place.

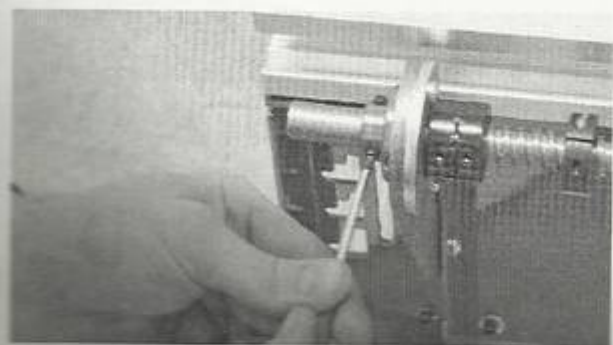
**Note:** The double shaft collar should lock firmly onto each shaft (termination shaft and lead screw) while it is positioned snugly against the screw support assembly.

**Termination shaft**

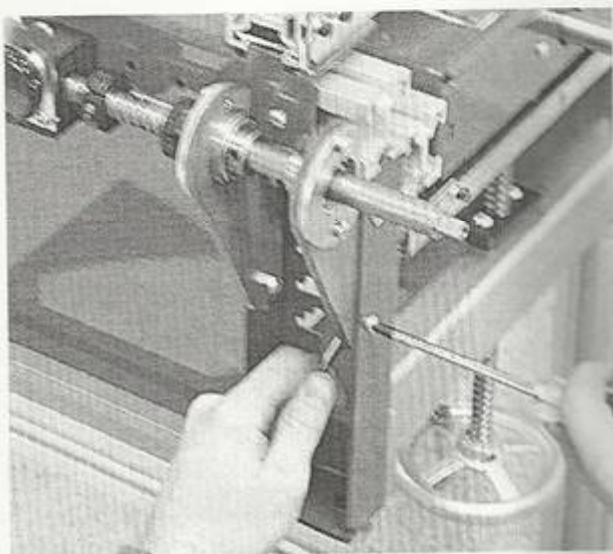


Now lock the collars from the bearings onto the drive shaft.

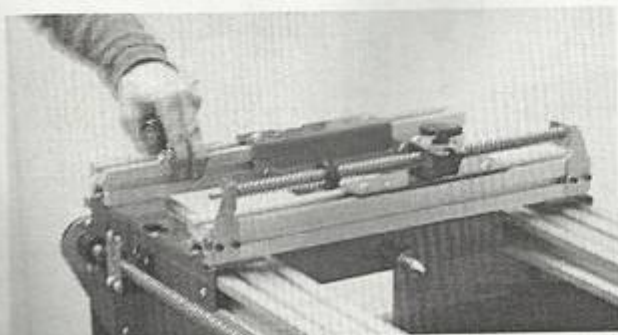
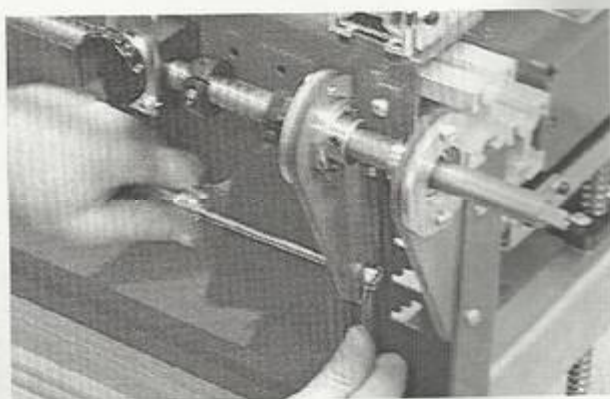
**Note:** There are (4) allen head screws to be tightened. Two on each collar.



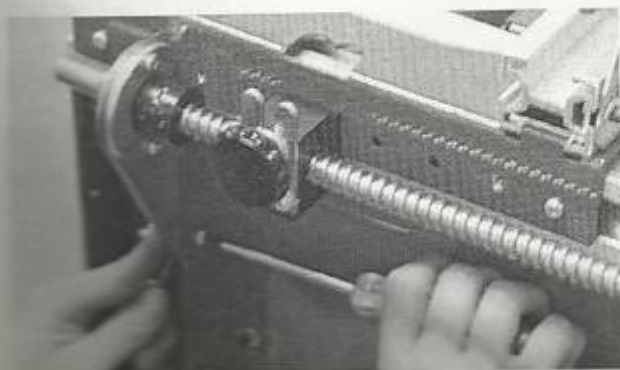
Lock the collar from the bearing onto the termination shaft at the tailstock end.



Once the collars have been locked into place, pull the router tray to the headstock end, lock the split-nut onto the x-axis screw, and tighten the panhead screws which hold the screw support brackets.

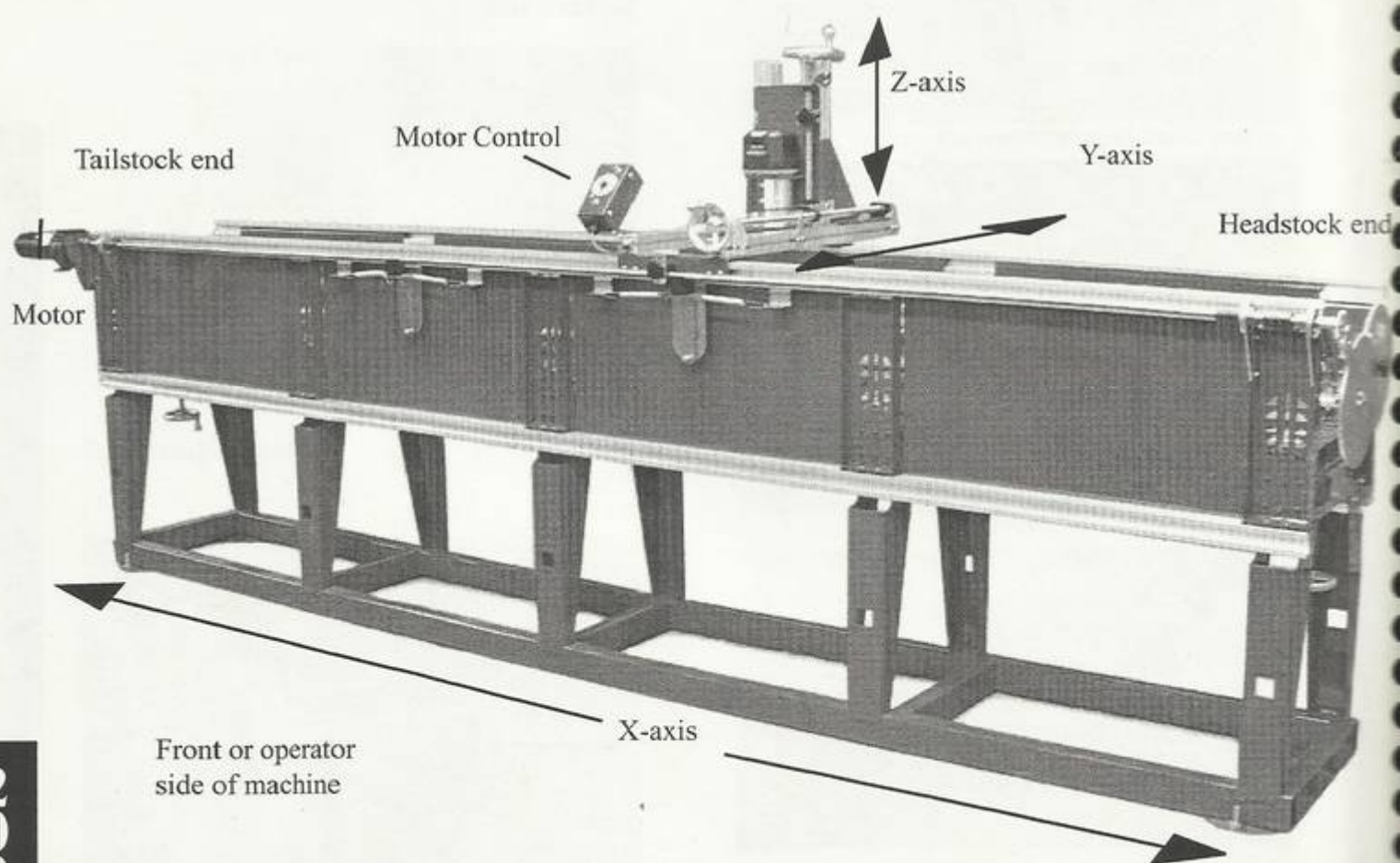


Slide the router carrier to the opposite end and repeat this procedure on the tailstock end.



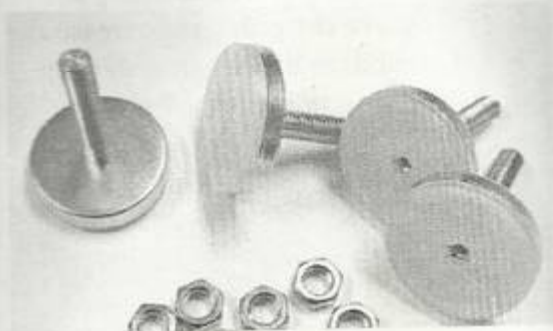
# Assembly Instructions

## Legacy Model 2000

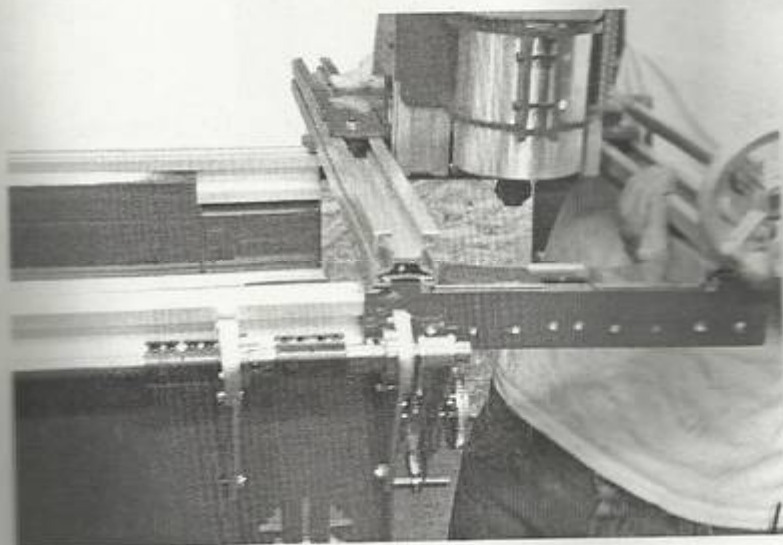
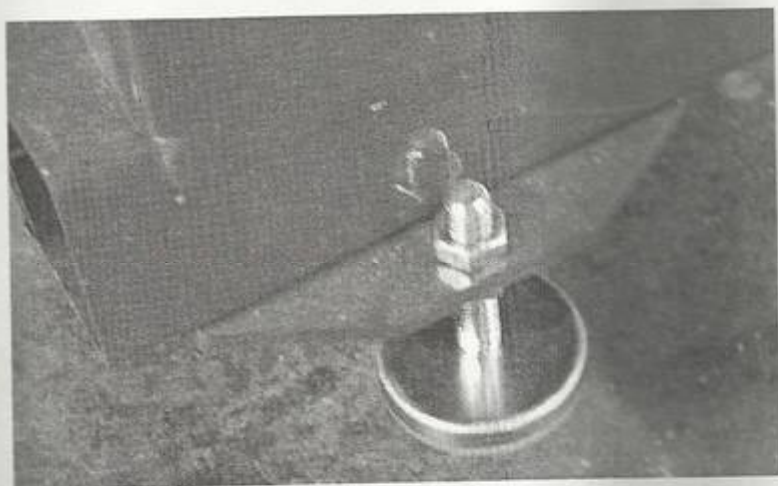


2000

# Assembly Instructions: Model 2000

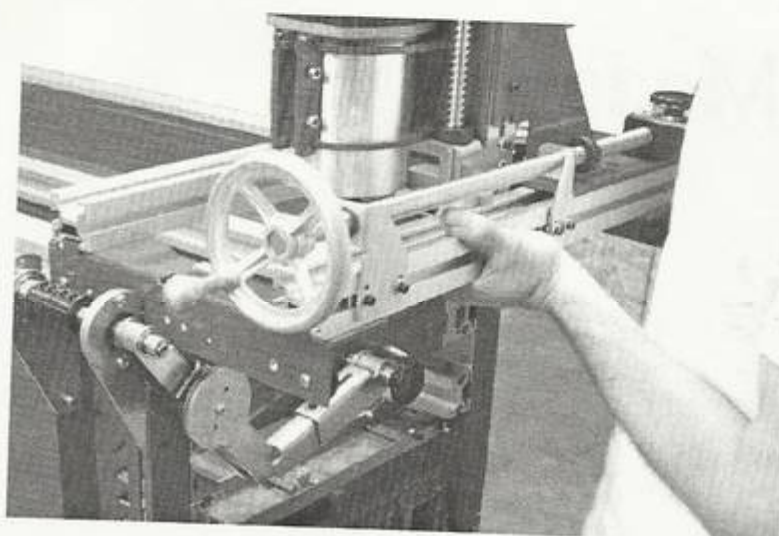


The (4) leveling pads mount to the bottom of the base using the 1/2" nuts provided.



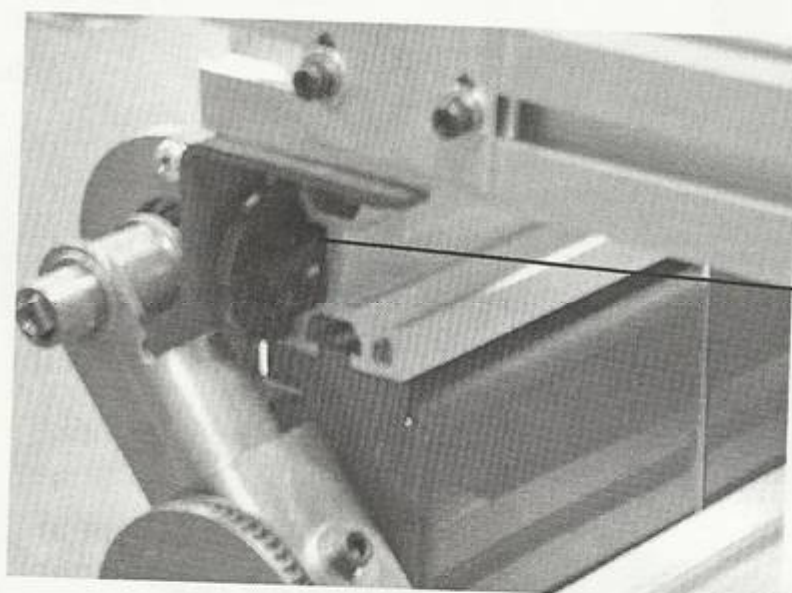
## Mounting the Carrier Tray

The cutting head is mounted to a carrier tray which slides along the length of the top outside rails.



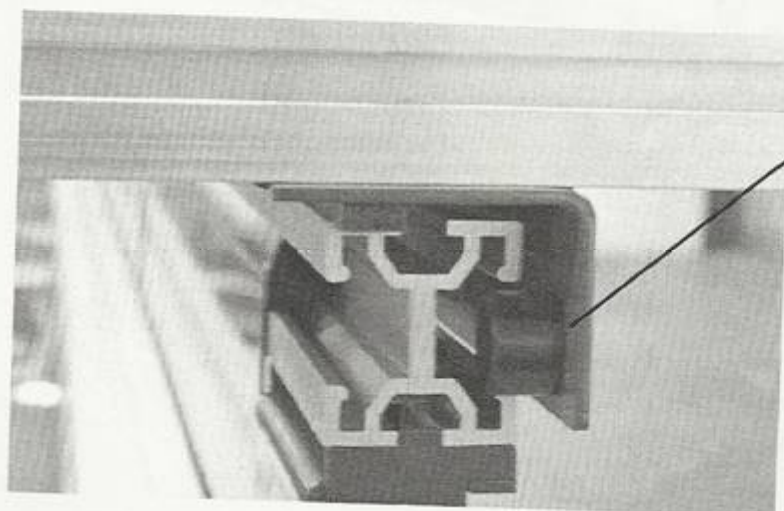
Slide the carrier tray onto the rails from the headstock end.

(Note: It will be necessary to remove the gears and release the pivot arm linkage in order for the tray to slide uninhibited.)



The bushings will slide into the outside channel.

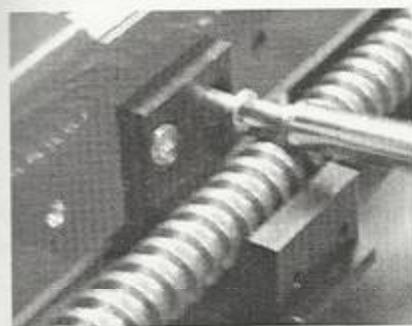
Shaped bushing slides into the channel on the front side of the machine.



Round bushing slides into the channel on the back side of the machine.

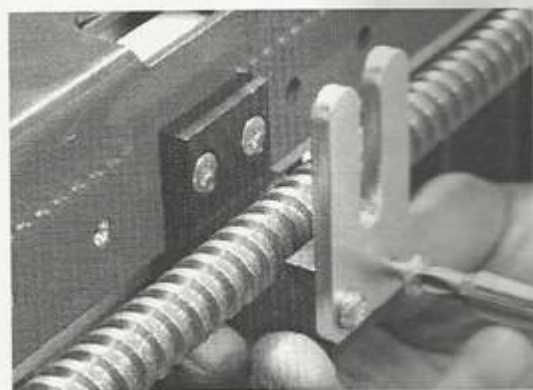


Carrier tray mounted on the rails of the machine.



## Mounting the X-axis Split-nut

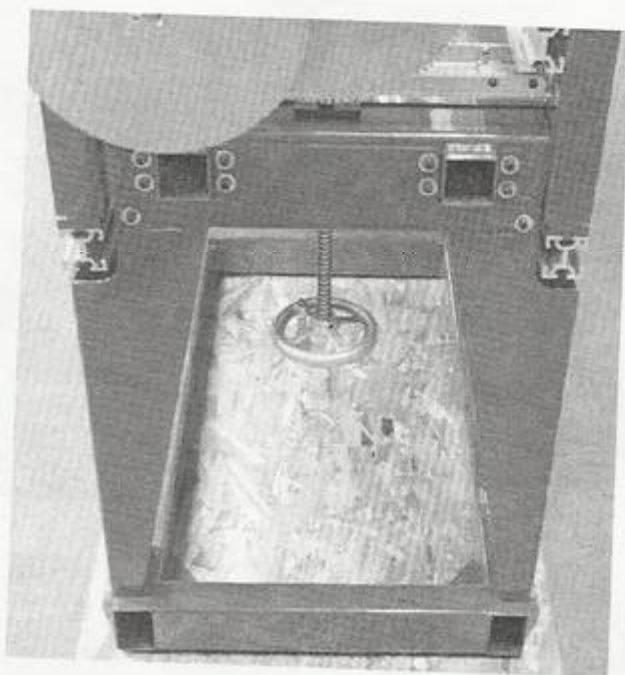
Once the carrier tray has been mounted to the rails, you can then mount the split-nut backer to the carrier tray using the 2 flathead countersink screws.



The metal fork then mounts to the split-nut backer.

The threaded half of the split-nut mounts to the lead screw, and locks into place with the large locking knob.

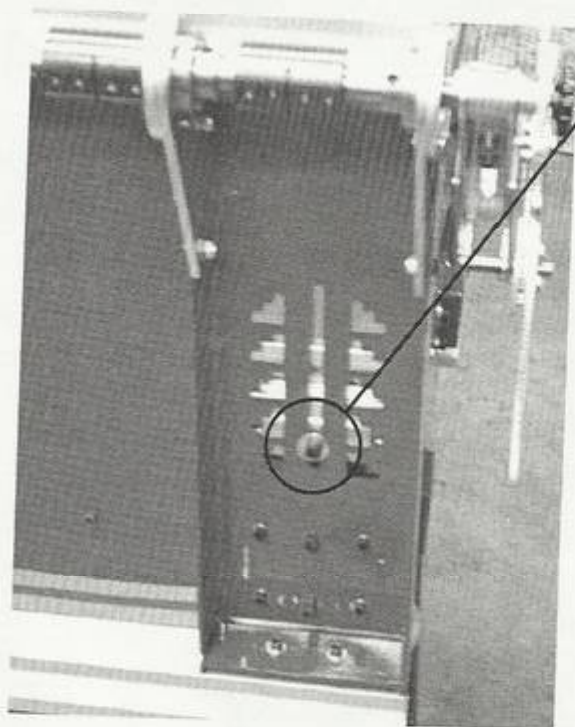




## Elevation Adjustment

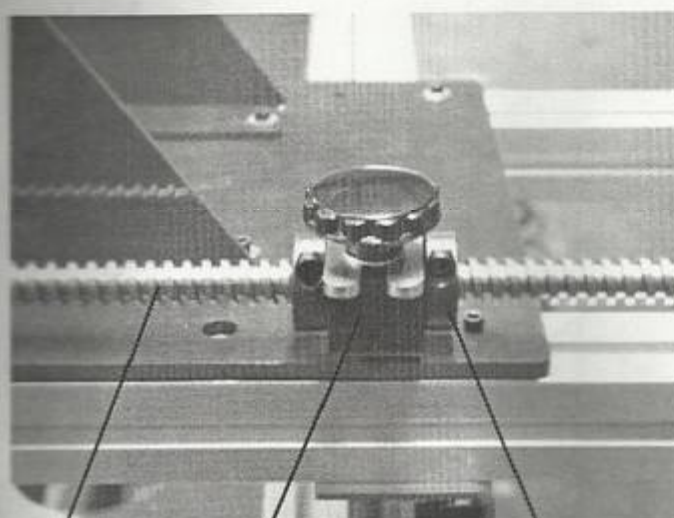
Each end of the machine has an elevation adjusting handwheel which facilitates an adjustment for the bed (headstock and tailstock).

**Note:** Adjustments to the bed need to be made without the workpiece installed. Adjusting the bed with the workpiece installed may flex the bed rails and may cause distortion in the part.



Be sure to release the 10 cap screws (one in each rail leg) before making any adjustment to the bed. Once the adjustment has been made you will want to secure the bed rails with the cap screws.



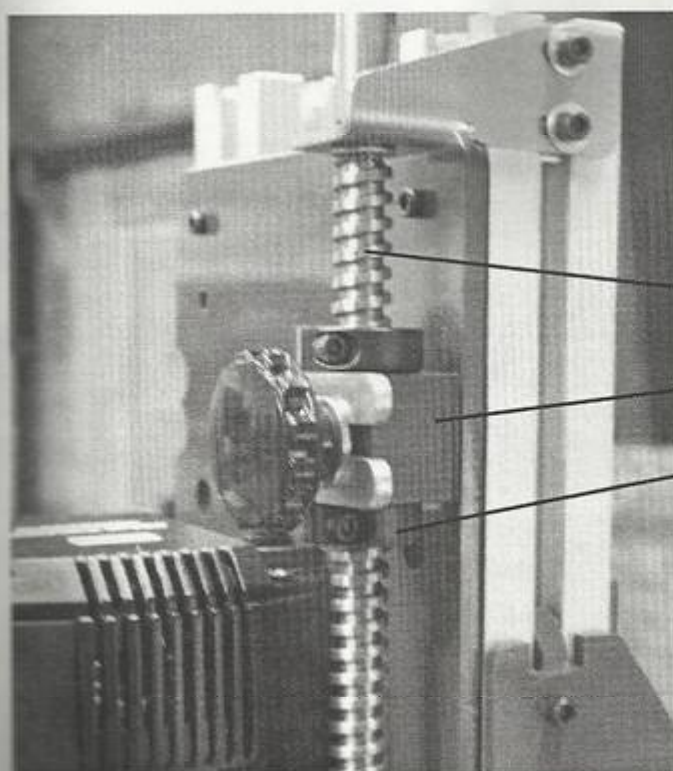


Y-axis screw      Split-nut      Locking collars

## Locking Collars

The machine has been shipped with the y-axis (left), and the z-axis (right) locked into place with the split-nut and the locking collars.

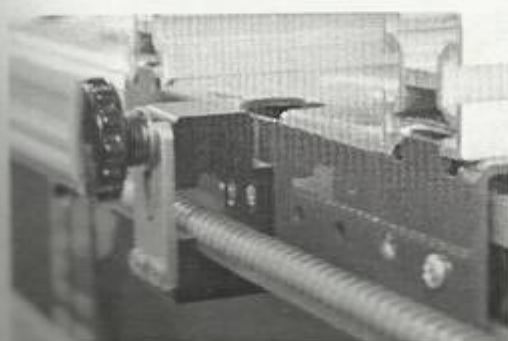
In order to move the router back and forth, or up and down, you will need to release the locking collars.



Z-axis screw

Split-nut

Locking collars



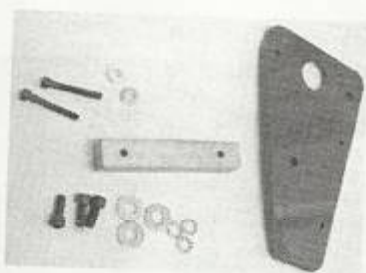
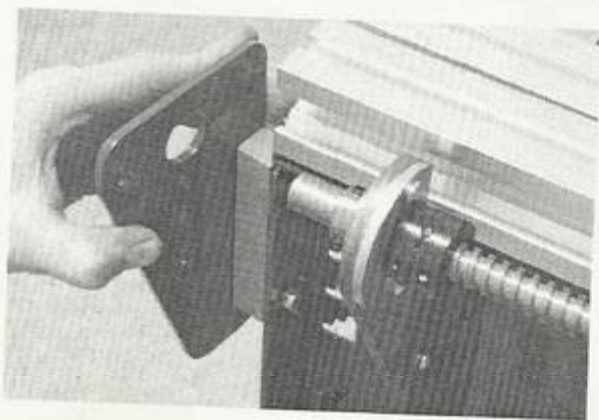
The split-nuts can be locked out of the way (when not using the drive screws) by locking the knob onto the metal fork.



## Mounting the Drive Motor (Standard on 1800 & 2000 - Accessory for 900 & 1200)

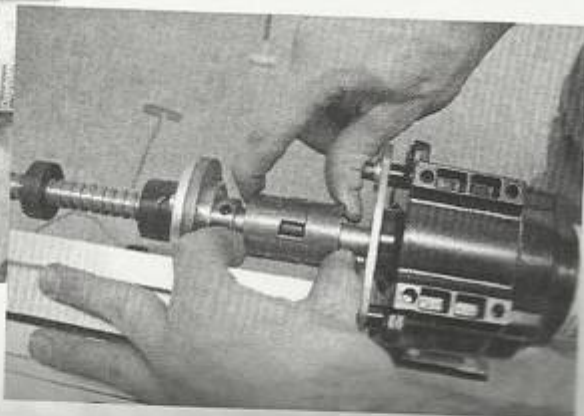
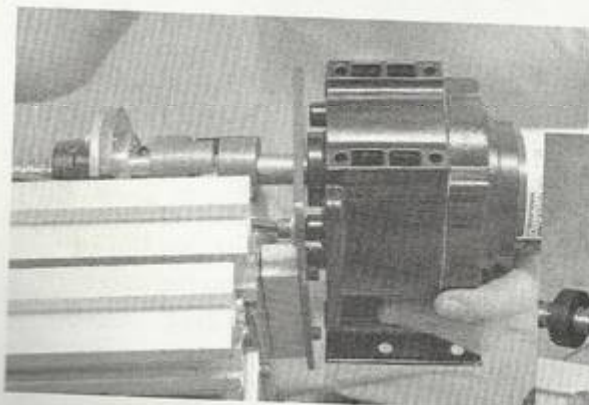
The motor is a variable speed DC gearbox motor and mounts to the opposite end of the gears on the x-axis lead screw.

The red mounting plate attaches to the outside of the rail leg. Use the spacer bar and capscrews provided.



Use the (3) 1/4-20 capscrews to secure the motor to the mounting plate. With the motor mounted to the plate, align the two halves of the spider coupler.

The spider couplers will slide together with the rubber spacer positioned between them.

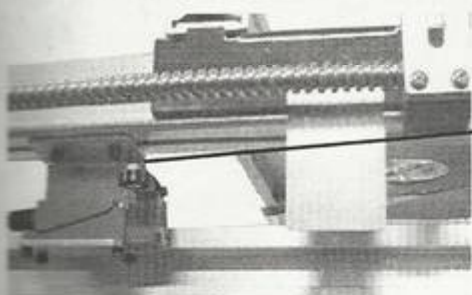




The back side of the carrier tray will receive the trip plate. the trip plate will "trip" the electronic limit switches used as stops when the linear drive motor is in operation.



The electronic limit switches mount on the back side of the machine. They are adjustable on either side of the router and are used as stops for the router.



Note: The limit switches for the model 900 mount to the underside of the top outside rail, on the front or operator side of the machine.



The motor control junction box mounts to the rail on the back side of the machine.

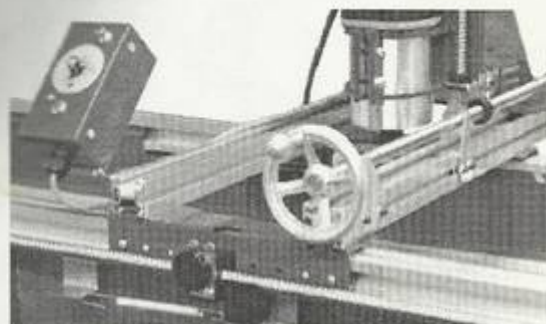


**Over ride switch**  
(over rides the limit switches)

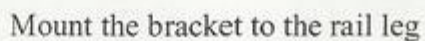
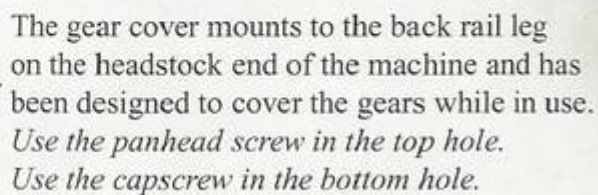
**Speed control**

**Directional control**

The motor control box mounts to the top of the carrier tray. Tuck the wires into the channel feeding to the back side of the machine.

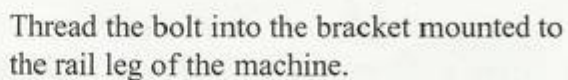
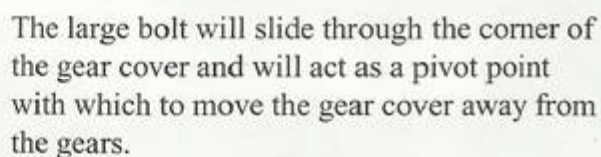


900-112000-1800-2000



**Note: The holes on the bracket are slotted. The mounting screws should be positioned to the back of the slots.**

### Back rail leg on headstock end



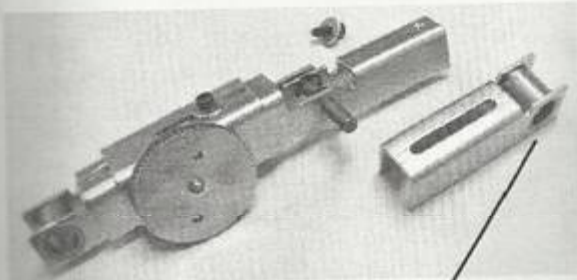
## Models 900/1200/1800/2000

### Mounting the Gear System

Use the grease packet to lubricate the brass bushings of the pivot arm linkage.



Remove the capscrew on one end and disassemble the linkage to this point.



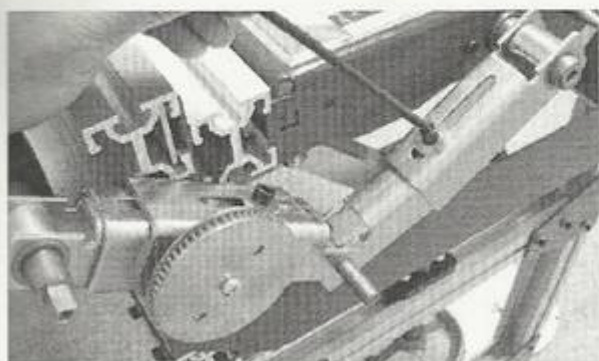
**Note:** If you purchased the Dynaglide lubricant, spray the spindle shaft, drive shaft, and pivot arm linkage now.

Slide the short unassembled section of the linkage onto the spindle shaft of the headstock.



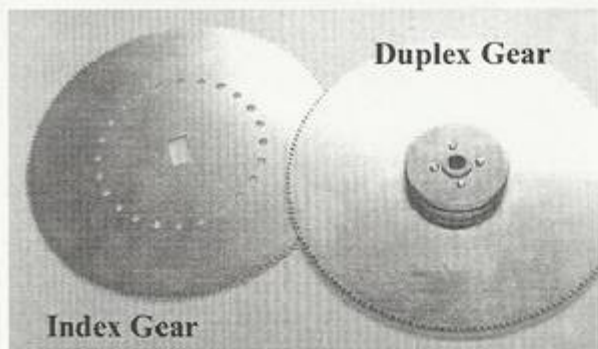
Slide the remaining section of the linkage onto the drive shaft located on the end of the long drive screw.



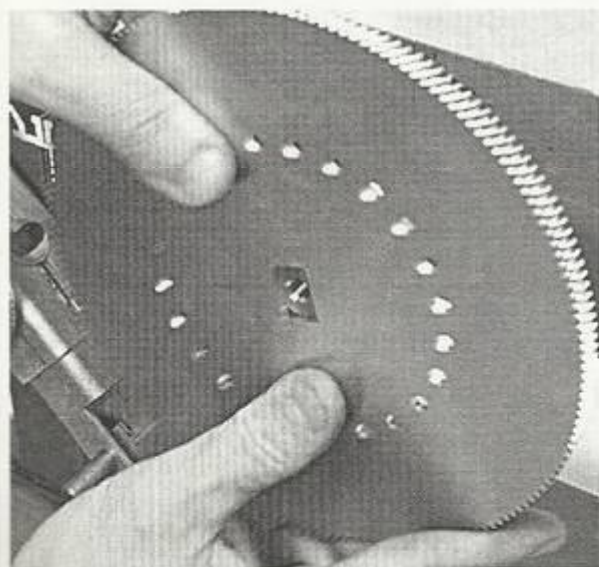


Slide the two pieces of the linkage together and attach them with the 1/4 - 20 cap screw and washer.

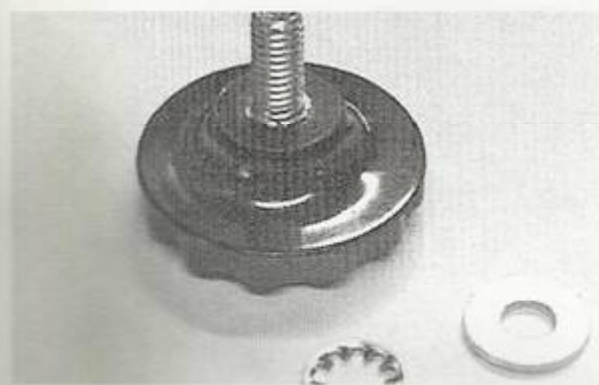
The large ball end wrench is used to rejoin the linkage



The standard gear set is comprised of an index gear with a rectangular center hole (left), and a duplex gear with a round center hole (right).

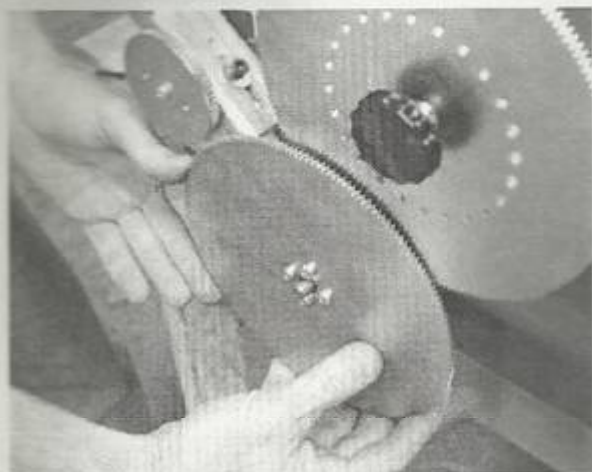


Mount the index gear to the end of the spindle shaft. The index gear has 24 positions for indexing (dividing), and a rectangular shaped hole in the center which mounts to the rectangular shaped end of the spindle shaft



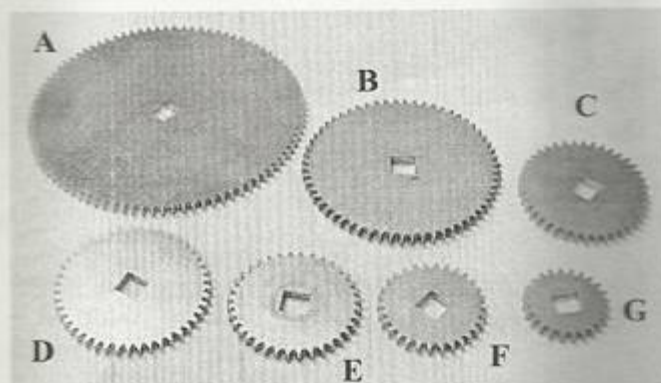
## Spindle Shaft Locking Knob

Secure the gear with the locking knob.



Slide the duplex gear onto the round post and make sure the gears are aligned and fully engaged before locking the gears together.

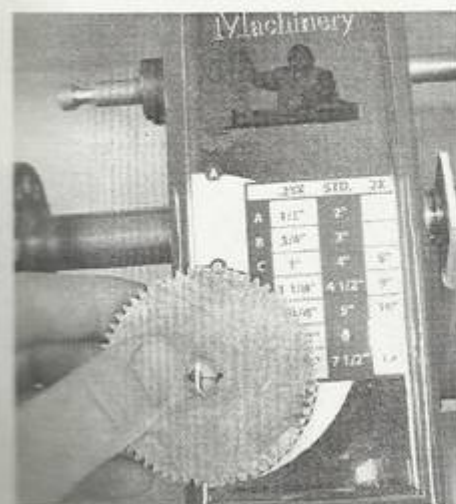
**Note:** The duplex gear has two gears bolted together and has a round hole that will slide onto the round post. The small gear always fits to the inside. The small gear will mesh with the index gear. The large duplex gear will mesh with the directional gear.



This machine comes with 7 drive gears:

- "A" drive gear
- "B" drive gear
- "C" drive gear
- "D" drive gear
- "E" drive gear
- "F" drive gear
- "G" drive gear

These drive gears will control the pitch when milling spirals. Note: These gears are obsolete if you have the 4X gear set.



### Gear Chart

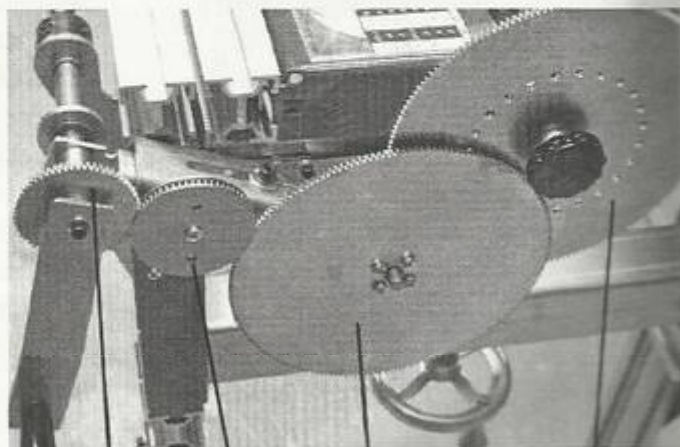
The gear chart is positioned on the headstock and allows for ease of use of the drive gears, or pitch gears. Place the gear on the decal. The corresponding semi-circle is marked with a letter; A - G. These letters are located on the chart in the column to the far left. The letter reflects the pitch obtained by each of the gears and its corresponding gear set (Standard, .25X reduction, or 2X multiplier).

i.e. The "B" drive gear (pictured) will always create a 3" spiral pitch when used with the standard gear set. The same gear when used with the .25x gear reduction set will always create a 3/4" pitch.

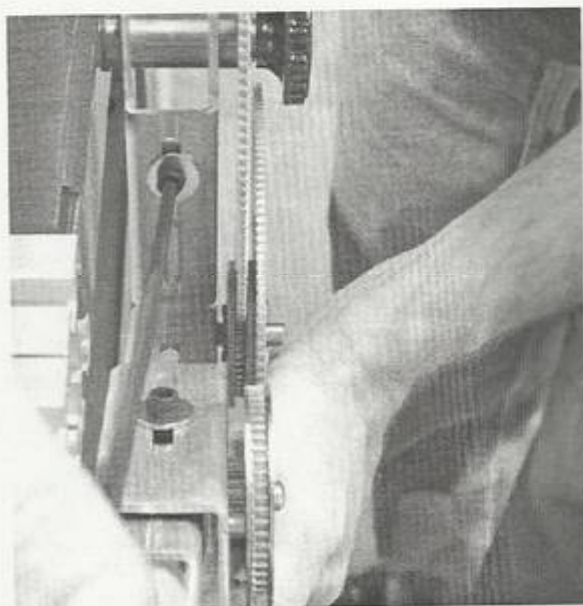
**NOTE:** When creating a 4" and a 6" pitch you must use the standard gear set. The 4" and 6" pitch cannot be achieved using the 2X gear multiplier. This chart is NOT USED with the 4X gear set.

A black and white photograph of a metal bracket. It consists of a vertical rod attached to a horizontal arm. The arm has a circular hole near the rod and a small rectangular notch at the end. The bracket is shown against a light, textured background.

The small ball end wrench is used to secure the handle into place.

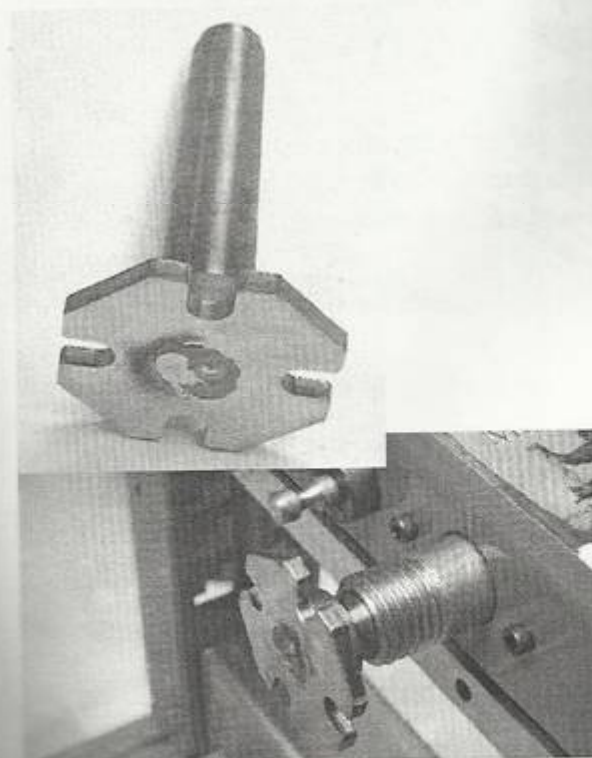


### Completed Gear Assembly



Tuck the gears together and use the large ball end wrench to tighten the capscrews.

**Note:** The position of the index gear (located on the end of the spindle shaft) is fixed. Any adjustment to the gear alignment must be made by sliding the adjustable bed backward or forward as needed. This requires releasing the two capscrews on the elevation brackets (see page 53).



## Models 900/1200/1800/2000

### Headstock Drive Center

The headstock drive center is a #2 MT and slides into the drive shaft. Because of the taper the drive center must be seated firmly into the drive shaft. This is accomplished by tapping the drive center with a mallet.

The drive shaft has 1" x 8 tpi milled onto the outside. This has been provided to allow for the use of lathing devices such as 4-jaw chucks.

If it becomes necessary to remove the drive center (i.e. to use a 4-jaw chuck), remove the locking knob from the end of the drive shaft and insert one of the ball end wrenches into the hole. Tapping the end of the wrench with a hammer should free the drive center from the shaft.





## Models 900/1200/1800/2000 Mounting the Router

The router base has been pre-drilled to accept the 3 1/4 hp Porter-Cable #7539 and the 2 hp Porter-Cable #7529 (4 large holes), and also the 2 hp Makita #1061 (3 small holes). Other plunge routers can be mounted to the machine, however, it will be necessary to drill your own hole pattern.

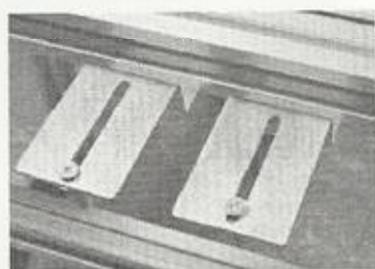
You will need to remove the plastic base which is affixed to your router before mounting the router to the carrier tray. If the pre-drilled hole pattern does not match your router, use the plastic base from your router as a template for drilling new holes.



The 4 grommets (located in the miscellaneous hardware package) have been provided to be used with the Porter-Cable router. Be sure and tighten the screws firmly through the grommets.



The router is fastened to the base from underneath using the screws that came with your router.

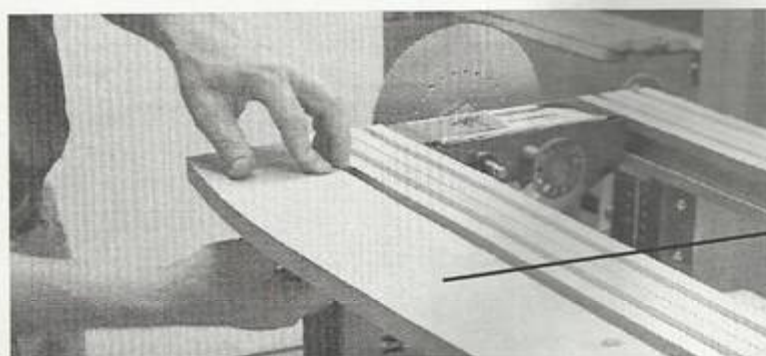


## Template Follower

### Template Support Brackets

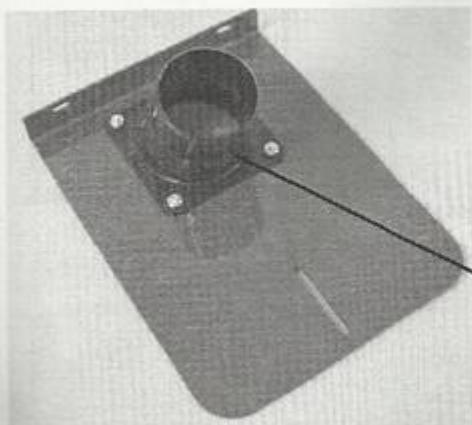
The two support brackets mount to the underside of the extruded aluminum rail with the 2 long narrow locking plates which were previously installed (see page 19 for model 900, page 37 for models 1200 & 1800).

The support brackets are used to hold the template to the side of the router. The 1/2" diameter brass stylus attaches to the center slot and follows the pattern.



The template (of your choosing) mounts to the template support brackets using the flathead screws and wing-nuts provided.

**Note:** This is a sample template and is not included with your machine.



### Carrier Tray Follower Plate

The large opening in the follower plate has been provided to accommodate a dust port.

The follower plate then attaches to the back side of the router carrier tray with the capscrews provided.

The brass stylus will mount inside the adjustable slot and is used to follow along the template.

**Note:** When following a template the y-axis split-nut must be open to allow the template follower to move freely along the template.



## Measuring Scales

### Y-Axis Scale

To insure proper alignment of the scales, it will be necessary to align the tip of a router bit with the tip of the dead center in the tailstock.

Bottom view showing the router bit aligned with the tip of the dead center.

Top view showing the router bit aligned with the tip of the dead center, and the 0" mark aligned with the pointer.

### X-Axis Scale

Mount a hub on the end of a piece of material and place it between centers in the machine.

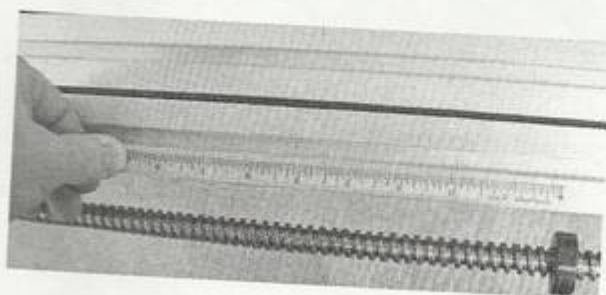
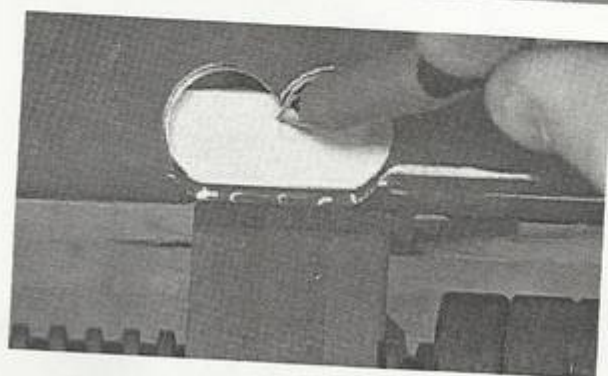
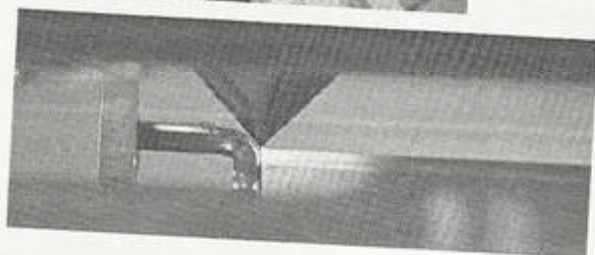
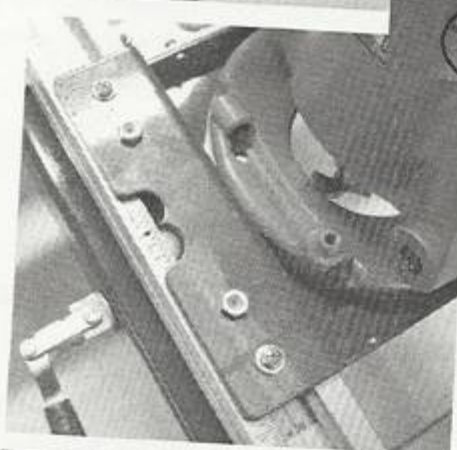
With the tip of the router bit positioned on the end of the workpiece, mark where the pointer falls on the x-axis. This mark will be the 0" mark along the x-axis.

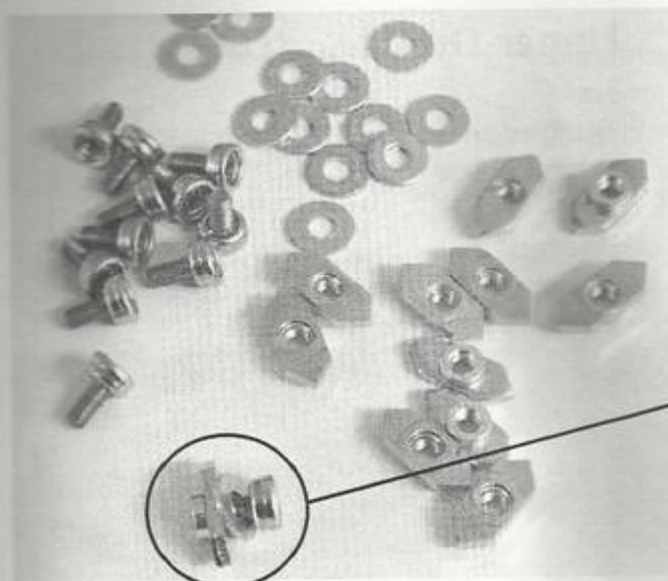
The pointer on the x-axis of the carrier tray corresponds with the placement of the cut along the length of the workpiece.

Note: It may be necessary to lower the adjustable bed rails by 1/2" in order for the carrier tray to slide over the headstock.

Using a lathe chuck will cause the 0" mark to change. We suggest mounting the most frequently used headstock mechanism before aligning the x-axis scale.

The scale placed along the x-axis rails.





## Dust Control Bag

Standard on the model 1200 and an accessory for the model 900.

The dust control bag for the model 1200 consists of :

- (16) Insert style locking plates
- (16) Washers
- (16) Screwstuds
- (1) Bag

Assemble the 16 screwstuds, washers and locking plates as shown.

The dust control bag for the model 900 consists of :

- (4) Insert style locking plates
- (4) Washers
- (4) Screwstuds
- (1) Bag

The locking plate slips inside the thin channel underneath the top outside rails in 12 positions - six on each side. (One near the headstock end, one at the opposite end, and one on either side of the center rail leg, and the other four to match the position on the bag.)

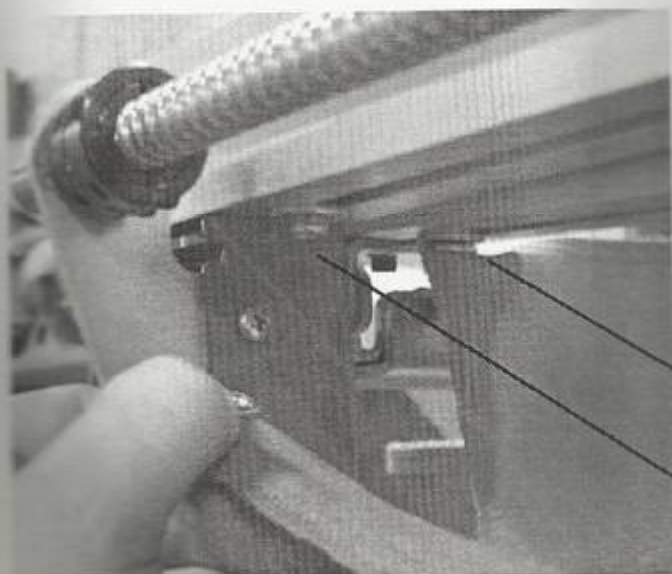
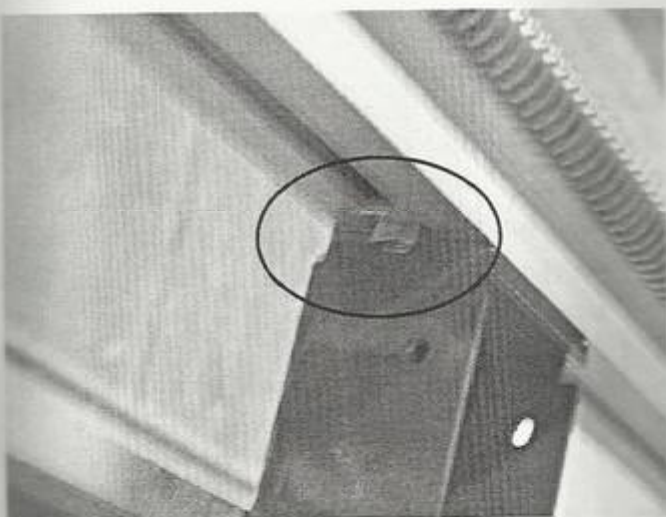
The remaining four screwstuds will be placed on the ends of the adjustable bed rails (inside rails).

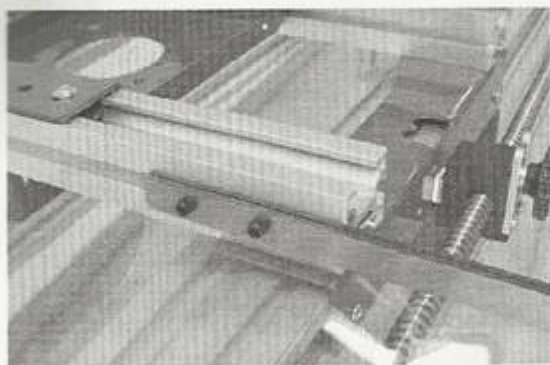
The bag snaps to the screwstuds on the rails.

**NOTE:** To avoid tearing the snaps from the bag, use a flat-head screw driver to remove the snaps.

**Inside Rail**

**Outside Rail**





## Upper Dust Control

Standard on the model 1200 and an accessory for the model 900.

The two vinyl shields mount to the side rails of the carrier tray. Slide the locking plate inside the channel of the extruded aluminum rail.

Once the vinyl shields have been mounted into the channel of the rail, you can mount the y-axis screw supports (page 56).

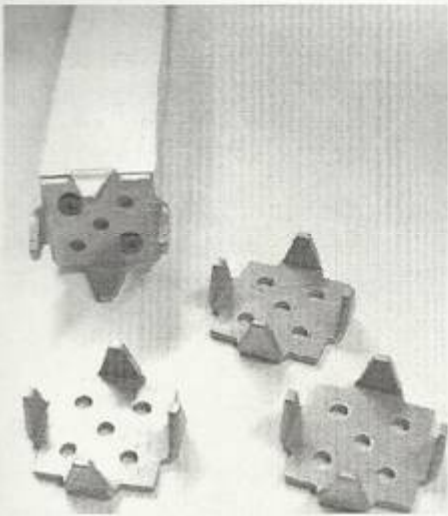
A 3" diameter opening in the template follower corresponds with the dust port which can be used to attach a vacuum.

## Miscellaneous Items

### Mounting Hubs - All Models

There are 4 mounting hubs which accompany each machine. They mount to the end of the workpiece with screws. These hubs then mount into the drive center located on the head-stock end of the machine.

Additional mounting hubs can be purchased.



### Spindle Shaft Handle - All Models

The spindle shaft handle has a rectangular shape hole and fits on the end of the spindle shaft (Note: The spindle shaft holds the index gear). This handle is used when rotating the stock directly, such as milling stock round.



### X, Y, Z Hardware Package - All Models

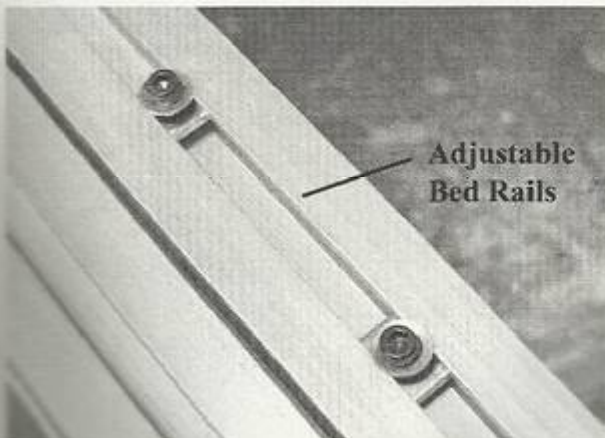
The X, Y, Z Table Hardware package consists of:

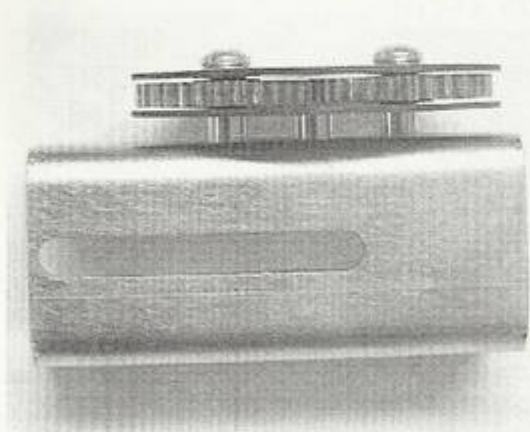
- 4 - small locking plates
- 4 - flathead screws

This hardware slides into the top, narrow channel of the adjustable bed rails. These locking plates allow you to secure a flat milling table to the machine.

### Spare Hardware Package - All Models

Spare hardware is available should you need to replace lost or missing pieces.





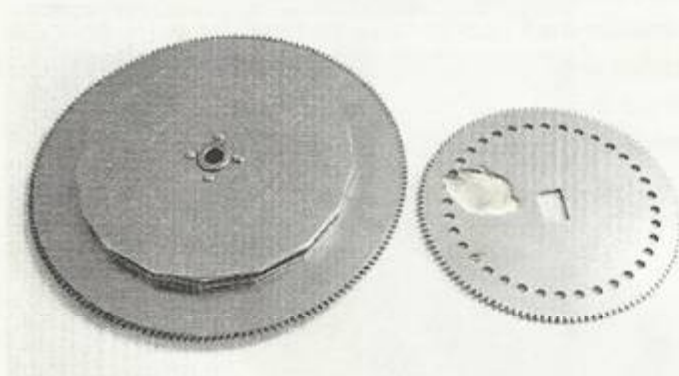
## Right-hand Directional Assembly

The models 1200/1800/2000 come standard with a left and right-hand spiral drive. The left-hand drive was already attached to the pivot arm linkage and has a single gear inside the sleeve.

A right-hand spiral can be achieved by installing the right-hand directional assembly. As seen in the photo (left), the right-hand directional gear has two gears inside the sleeve.

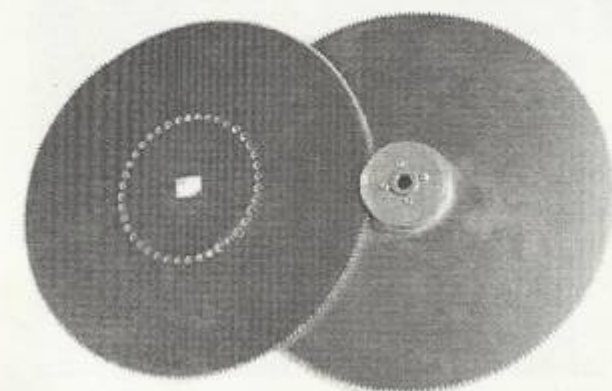
### ACCESSORY

The model 900 comes standard with a left-hand directional gear. The right-hand direction is an option that can be added at any time.



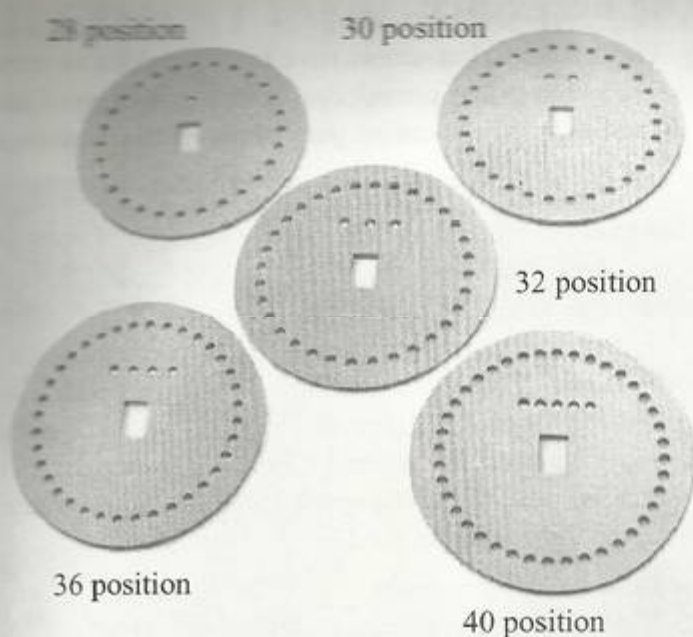
## .25X Gear Reduction

Adds 7 additional gear pitches to the spiral drive. Create 1/2", 3/4", 1", 1 1/8", 1 1/4", 1 1/2", 1 7/8" spiral pitch. Used as a set for smaller diameter (less than 2") stock and for creating spiral writing pens.



## 2X Gear Multiplier

Adds 5 additional gear pitches to the spiral drive. Create 8", 9", 10", 12", 15" spiral pitch. Used as a set for larger diameter stock.



## Index Plates

Five different plates includes

28 position

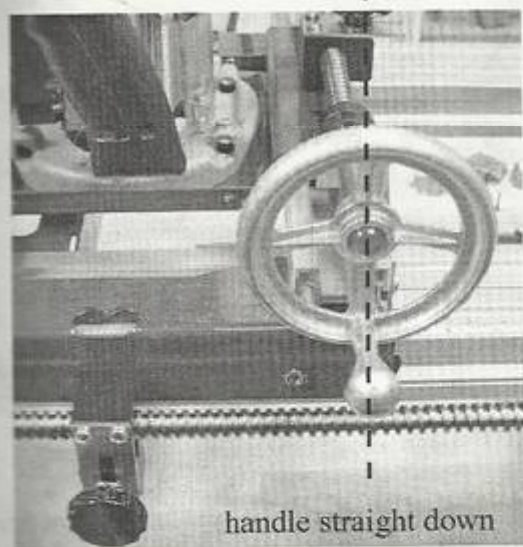
30 position

32 position

36 position

40 position

Available as a set or individually



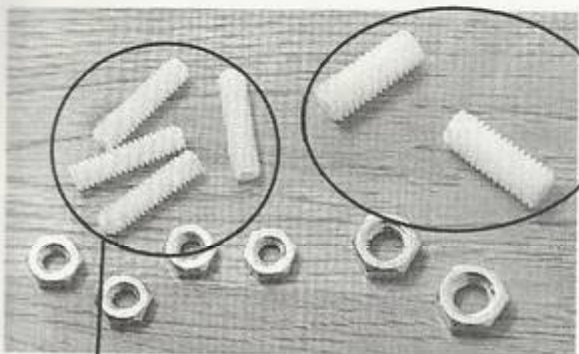
## Adjustment - All Models

The handwheel (left) on the short (y-axis) screw has been adjusted so that when the router is placed at the 0" mark on the y-axis scale (centered over the workpiece), the handle on the handwheel is positioned straight down. Although this is not absolutely necessary for the operation of the machine - you may find it helpful.

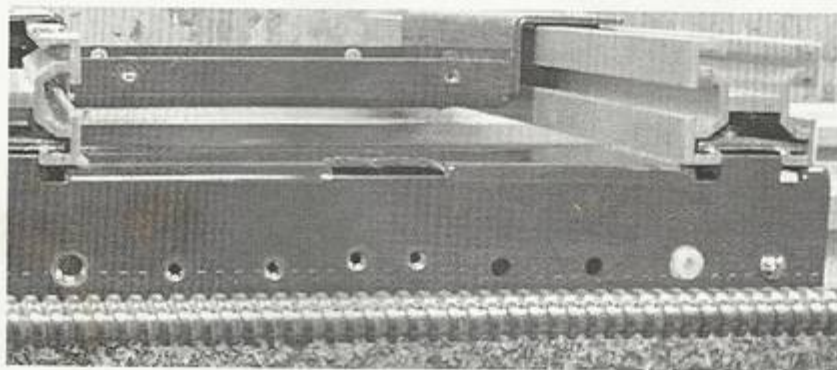
When the split-nut is locked on to the leadscrew, one full rotation of the handle will move the router 1/4" and four turns will move the router 1", and so on.

## OPTIONAL PARTS - May not be necessary

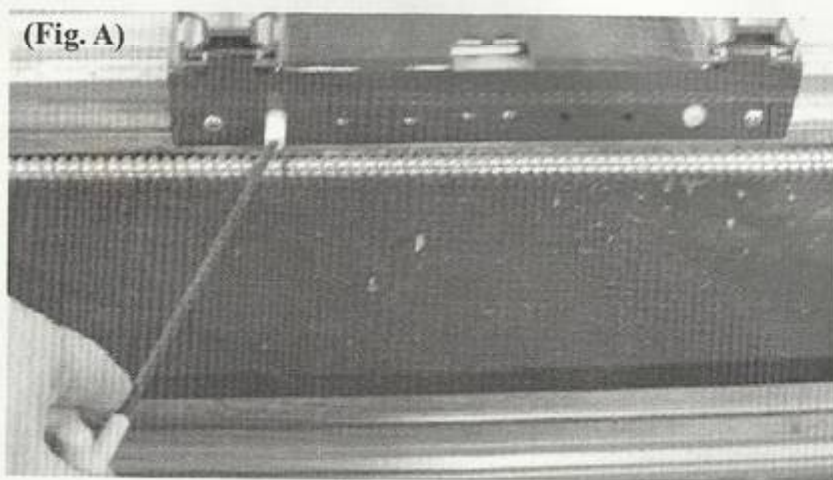
**NOTE: Tolerances in aluminum rails may vary.** The 2 large nylon screws have been provided to mount to the side of the carrier tray, while the 4 small nylon screws have been provided to mount to the top of the carrier tray. These items are optional, and should only be used if there is excess play between the bushings of the carrier tray and the extruded aluminum rails.



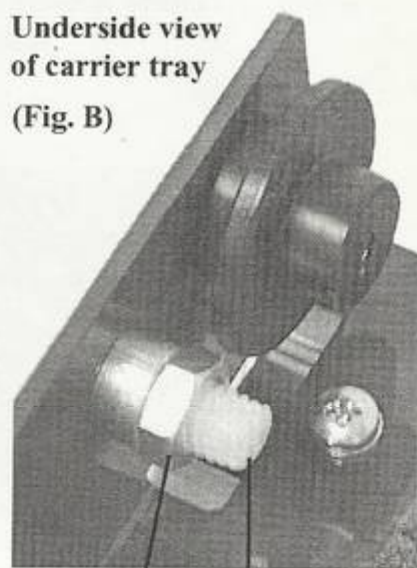
● **X-axis movement or side of carrier tray:** If you determine that these pieces are necessary to remove play from the carrier tray, thread the nylon screws into the existing PEM hardware located on the carrier tray (Fig. A), until the screw reaches the inside of the extruded aluminum rail. Once this has been adjusted to achieve the proper tension, it will be necessary to remove the carrier tray, and lock the nut provided (Fig. B). This will insure that the nylon screw does not vibrate loose as the machine is being used.



(Fig. A)



Underside view  
of carrier tray  
(Fig. B)

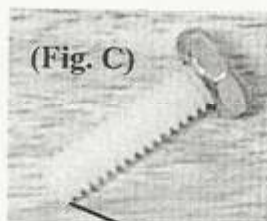


Nut  
Nylon screw

● **Y-axis movement or top of carrier tray:**

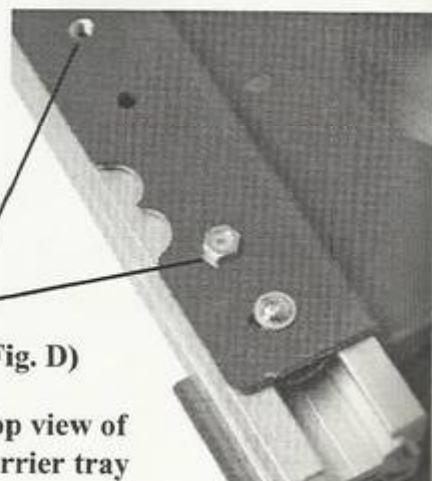
If you determine that the 4 small screws are necessary on the top of the carrier tray, thread the nylon screws onto the nut until the nut is on the end (Fig. C). Thread this piece into the PEM hardware on the top of the carrier tray (Fig. D). Adjust for proper tension. Repeat this procedure in the three remaining holes with the PEM hardware. **Note: Two of the holes are on the side with the y-axis screw. It may be necessary to remove the lead screw to install the tension screws.**

(Fig. C)



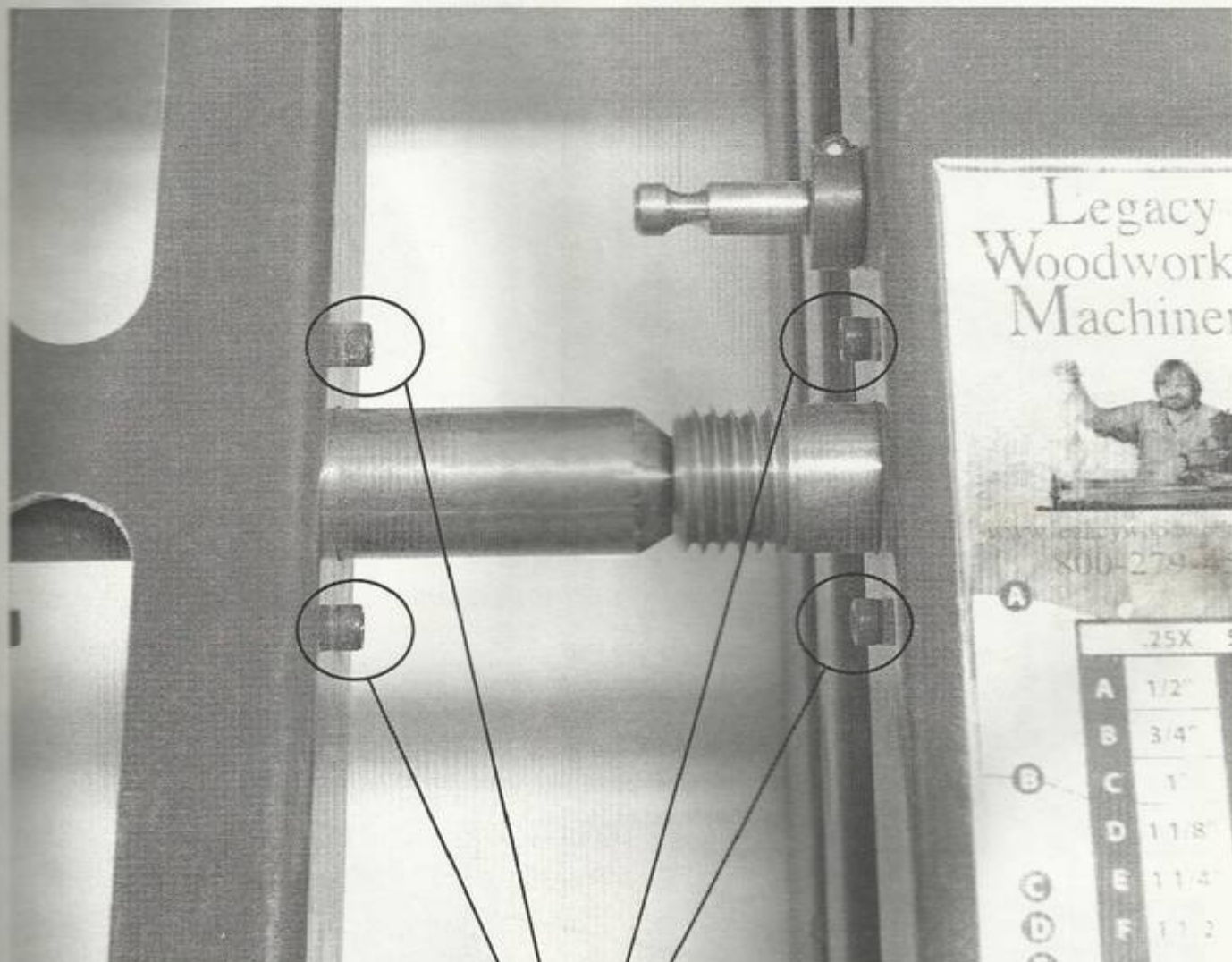
(Fig. D)

Top view of  
carrier tray

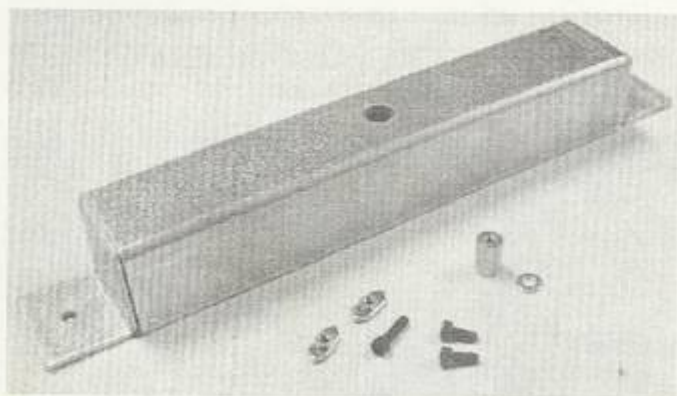


## ADJUSTMENT - May not be necessary

You may want to check to see that the headstock and tailstock are in alignment with each other (photo below).

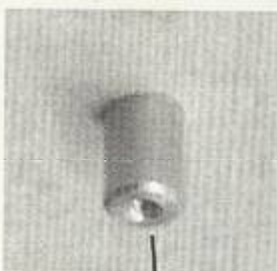


If necessary, adjustments can be easily made by releasing one set of capscrews (on either the headstock or the tailstock). With the capscrews loosened you will be able to fine tune the shafts into perfect alignment.

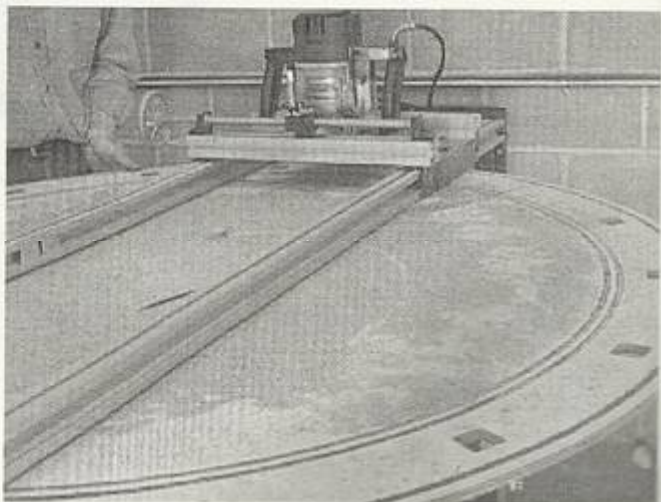
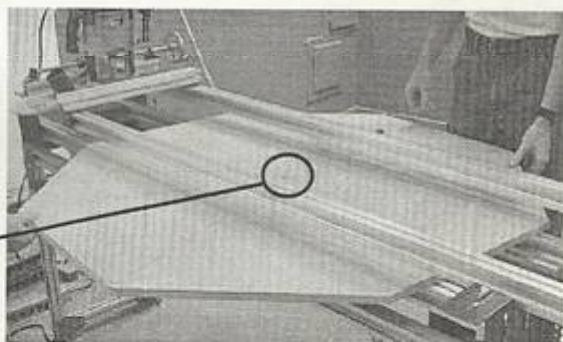
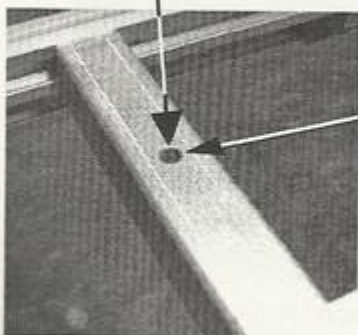


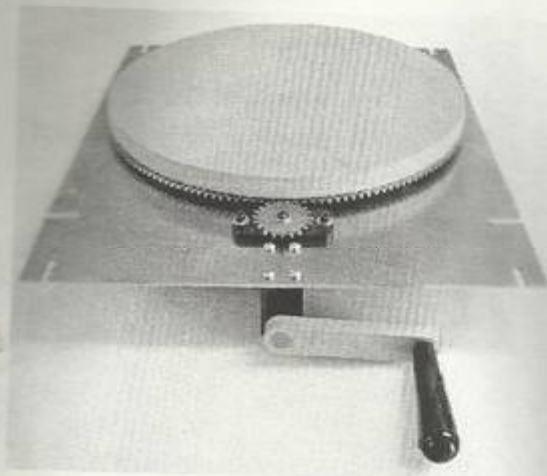
## Circle Cutting Center

Mounts to the underside of the adjustable bed rails and creates a pivot point using a 1/2" brass stylus. Turn large diameter table tops, arches, frames, mouldings, etc.



The brass stylus attaches to the center of a rotating table (such as 3/4" mdf). The stylus then drops into the center hole of the circle cutting center. The workpiece fits above the adjustable bed rails and under the fixed rails.





## Rotary Indexing Table

Attaches to the adjustable bed rails. Create round and indexed rosettes, bowls, platters, escutcheons, etc.

The rotary indexing table has been designed with indexing capabilities such that one full rotation of the handle results in 8 indexed or divided sections. One-half rotation of the handle results in 16 evenly spaced cuts, and one-quarter turn equals 32 evenly spaced cuts.

One full turn = 8 evenly spaced cuts.

1/2 turn = 16 evenly spaced cuts.

1/4 turn = 32 evenly spaced cuts.



Indexing or dividing is best achieved with the handle located in straight up or straight down position.

An alternative method of indexing is to divide the 160 teeth located on the large gear.

Examples:

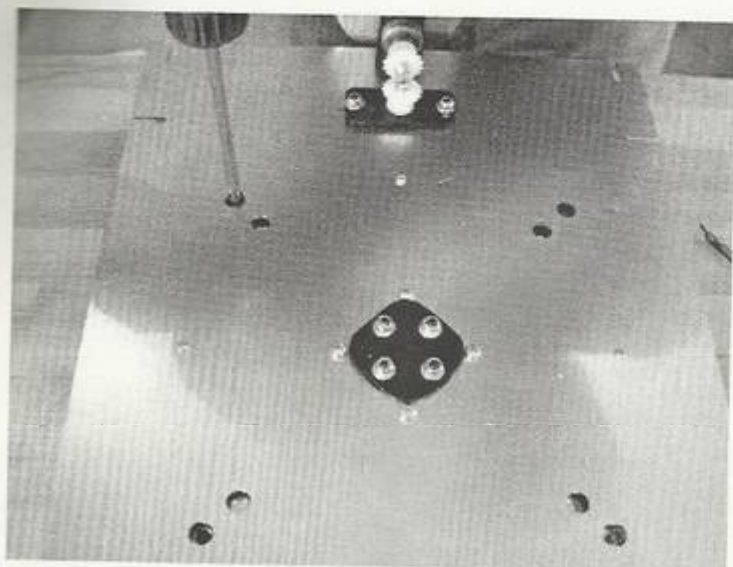
Ten evenly spaced cuts can be achieved by dividing,

160 teeth by 10 spaced cuts = 16 teeth.

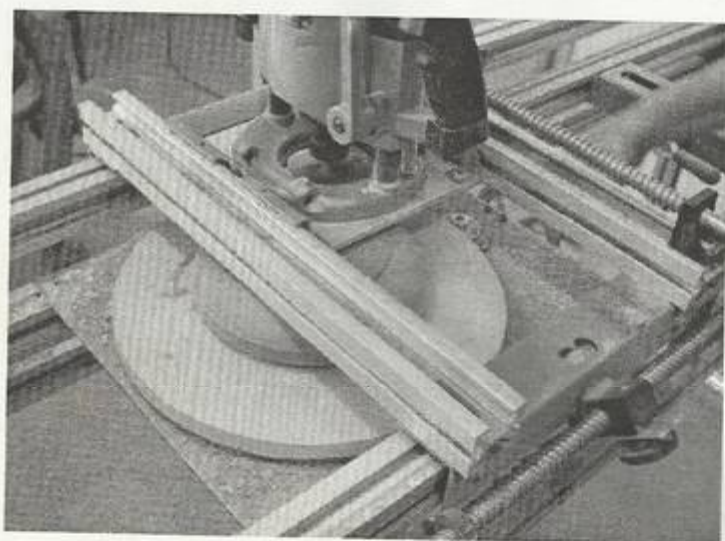
Five evenly spaced cuts can be achieved by dividing,

160 teeth by 5 spaced cuts = 32 teeth.





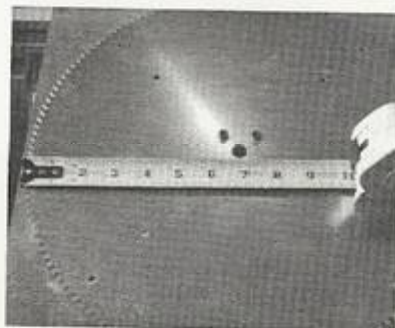
From the underside of the rotary table use four, 3/4" screws to mount the mdf table to the top gear.



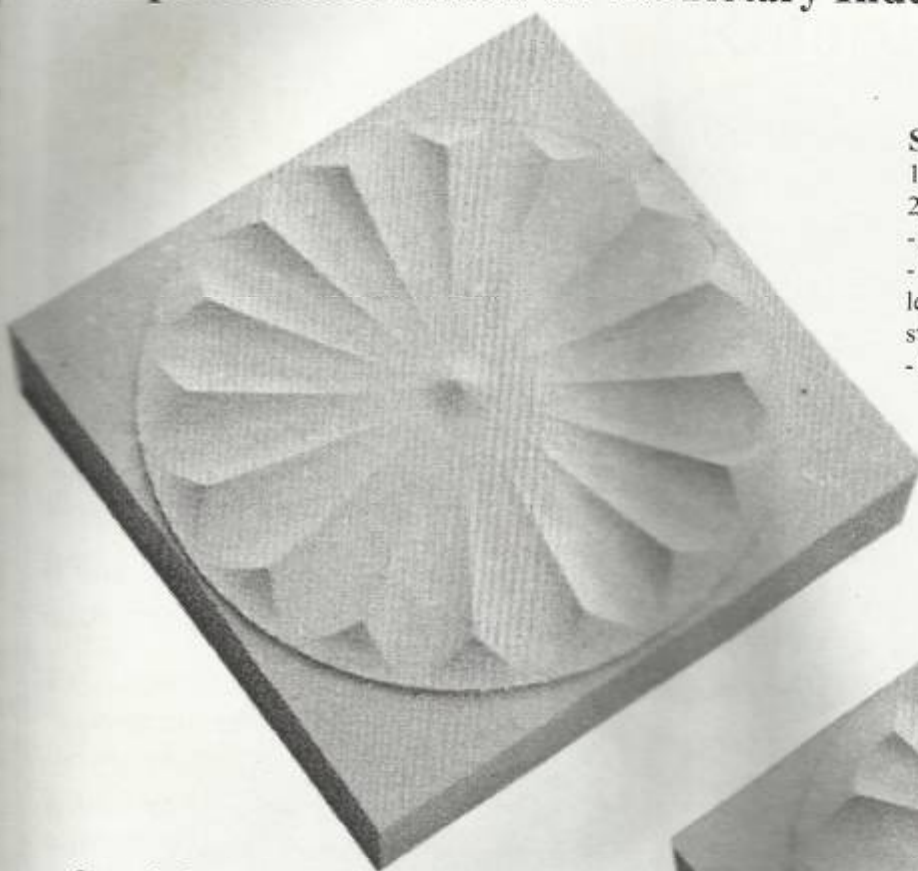
Mount the rotary table to the inside rails (adjustable bed rails).



To identify the center of the rotary table place a router bit with a point into the router and place the point of the bit over the top of the screw on the small gear (Note: Center on the large gear is located at 6 3/4" from the outside edge).



## Sample Rosettes milled on the Rotary Indexing Table

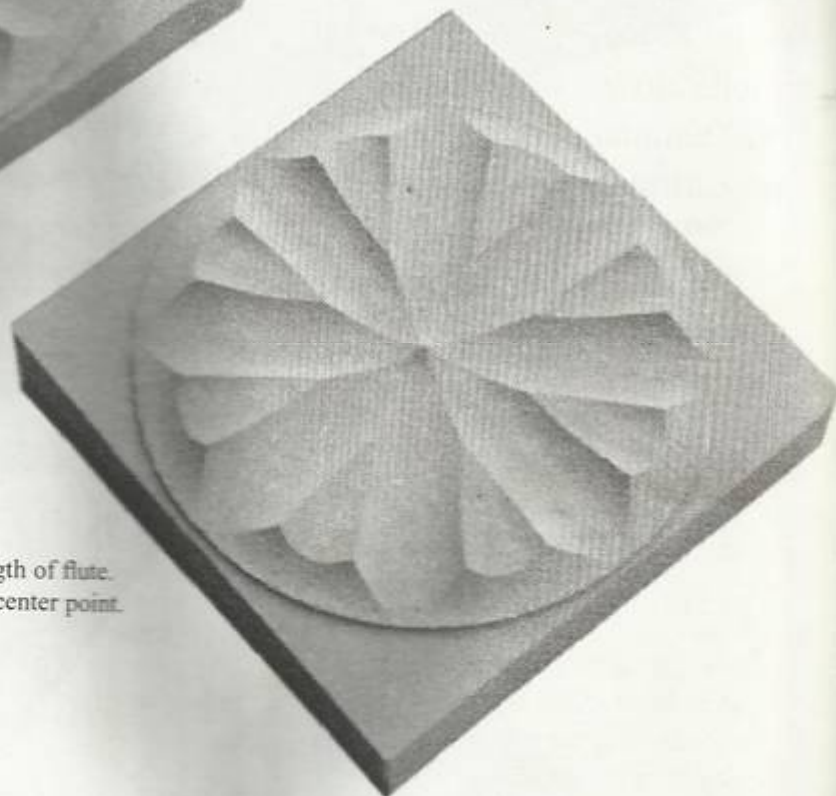


### Sample 1 -

16 flutes

2 router bits - core box, surface planer

- Cut round using core box bit.
- Cut flutes using core box bit. Use stops to control length of flute. Cut is made into center of piece with stop set to create center point.
- Surface outside corners using surface planing bit.

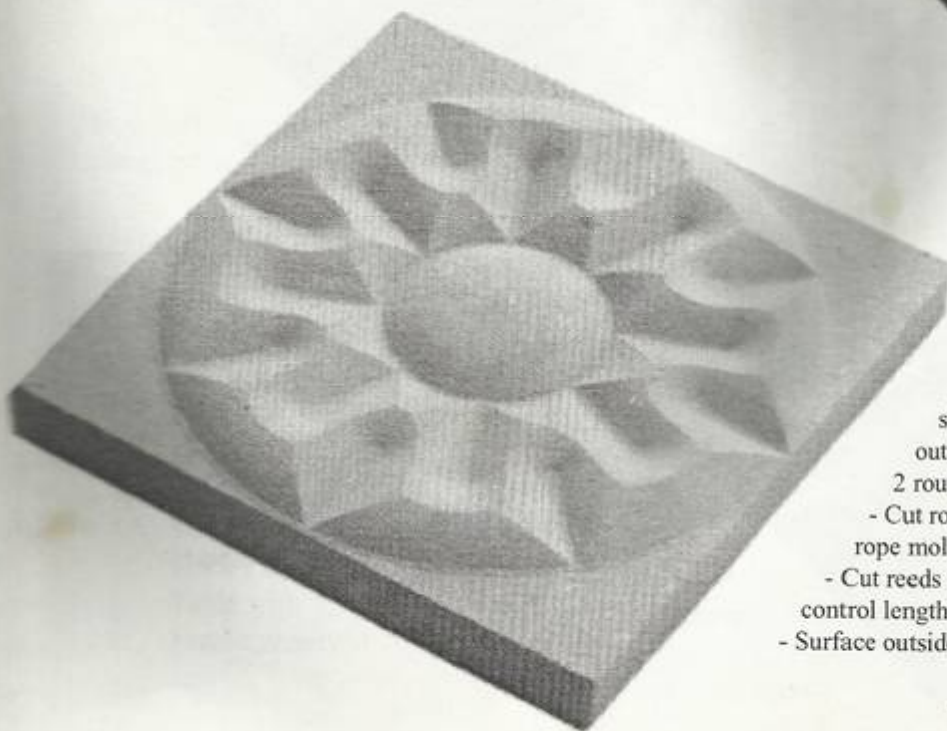


### Sample 2 -

16 flutes - 8 flutes low plunge depth (full rotation of handle), followed by 8 flutes high plunge depth (offset & full rotation of handle)

2 router bits - core box, surface planer

- Cut round using core box bit.
- Cut flutes using core box bit. Use stops to control length of flute. Cut is made into center of piece with stop set to create center point. Stops are not necessary on high cuts.
- Surface outside corners using surface planing bit.



### Sample 3 -

16 reeds - 8 reeds cut from inside to outside followed by 8 offset reeds cut from outside to inside

2 router bits - rope molding, surface planer

- Cut round and center button using rope molding bit.
- Cut reeds using rope molding bit. Use stops to control length of reeds.
- Surface outside corners using surface planing bit.



#### Sample 4 -

16 flutes

3 router bits - core box, rope moulding, surface planer

- Cut round and center button using rope molding bit.

- Cut flutes using core box bit. Use stops to control length of flute.

- Surface outside corners using surface planing bit

#### Sample 5 -

16 flutes

2 router bits - rope moulding, surface planer

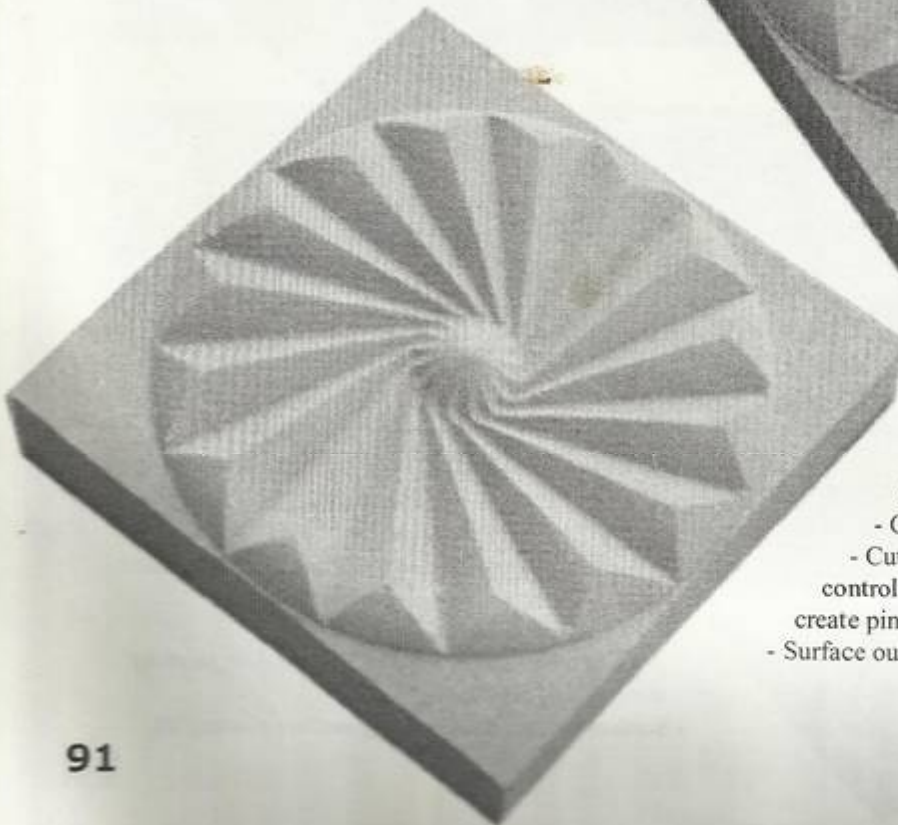
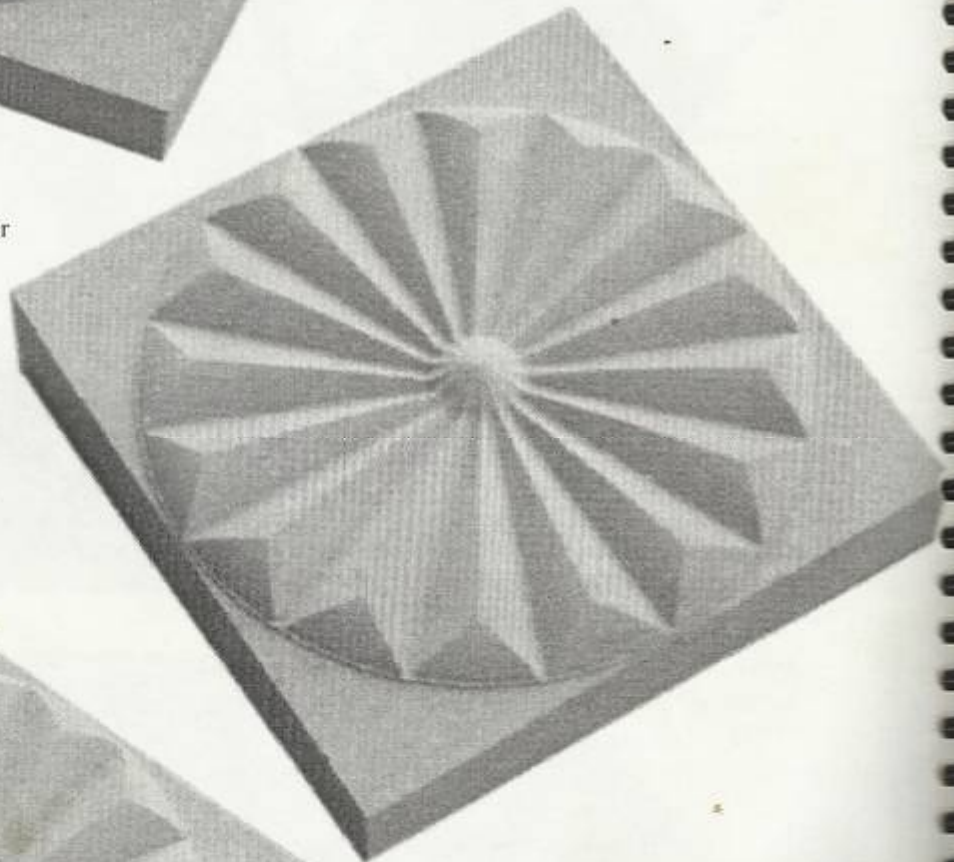
- Cut round using rope molding bit.

- Cut reeds using rope molding bit.

Use stops to control length of reeds.

Cut is made in center of workpiece.

- Surface outside corners using surface planing bit.



#### Sample 6 -

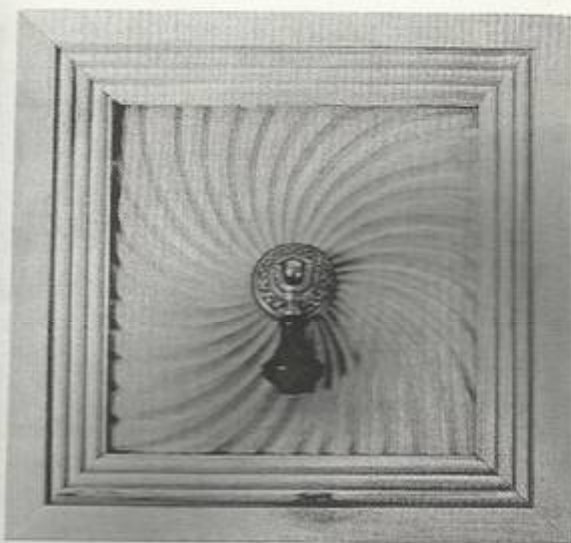
16 flutes

2 router bits - rope moulding, surface planer

- Cut round using rope molding bit.

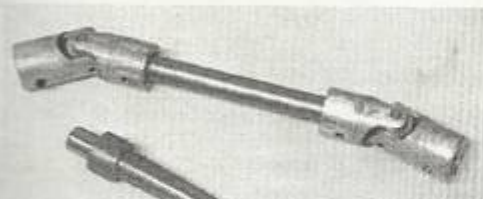
- Cut reeds using rope molding bit. Use stops to control length of flute. Cut is offset from center to create pinwheel effect.

- Surface outside corners using surface planing bit.

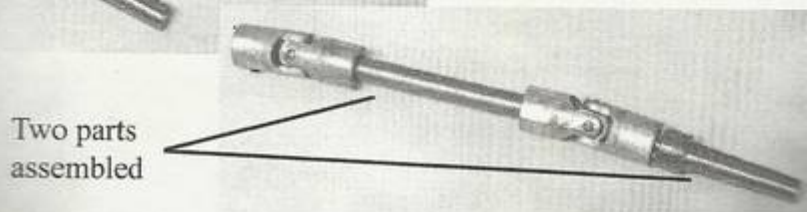


What can you do with this shaft? **3** distinct advantages

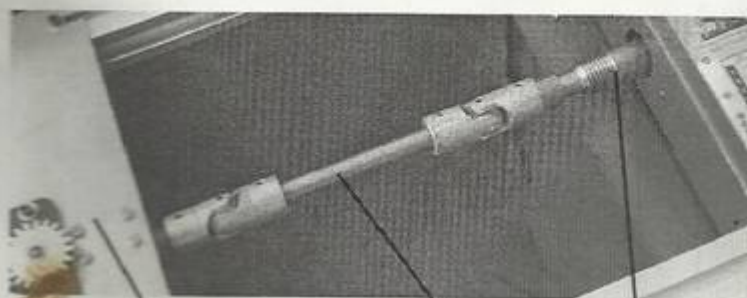
- 1 Continuous rotation of stock when used in combination with the linear drive motor (bowls, platters, etc.).
- 2 Adds accurate and versatile indexing capability (based off of indexing plates, shown below right).
- 3 Twisted volutes (as shown above).



Two parts as shipped:  
1 - rotary shaft  
1 - #2 MT drive shaft



Two parts assembled



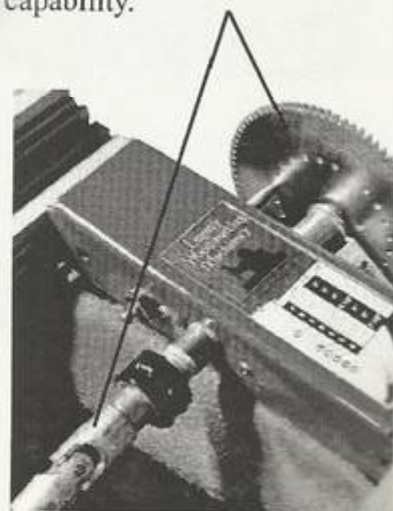
Rotary Indexing Table with handle removed  
Rotary Shaft  
Drive Center

## Rotary Indexing Shaft

This new shaft allows you to tie your rotary indexing table to the gears on the headstock of the machine. Obviously with the gears engaged and tied to the rotary table, and with the x-axis split-nut locked onto the lead screw, two movements will take place "in sync" with each other. 1 The rotary table will rotate, while 2 the router moves along the length, thereby creating an arched flute or reed on the panel. Successive cuts are made by moving the router over a predetermined distance (i.e. 3/4", 1" etc.) on the x-axis, and repeating the process.

The standard rotary indexing table has been designed with indexing capabilities such that one full rotation of the handle results in 8 divided sections. One-half rotation of the handle results in 16 evenly spaced cuts, and one-quarter turn equals 32 evenly spaced cuts.

With this rotary indexing shaft linked to the index head of the machine, you are now able to achieve even greater indexing capability.



# Creating Volute Designs

This particular design (left) was created using a 1" diameter rope molding bit. The gears were set up with a 1/2" pitch using the .25x gear reduction set. The router was set at 0" on the y-axis and locked into place at 22" on the x-axis. A stop was set at 18" (the center of the rotary table). The table is rotated through the gears until it reaches the center (18"). The router was lifted up, the x-axis split-nut is opened, and the carrier-tray is slid back to 22" where it is locked into place. The process is then repeated. Figure A shows the first two cuts, figure B the first 6 cuts, and figure C the completed piece.

The design shown in the right column was created using a 2" pitch (standard gear set), and a 1" diameter rope molding bit. The router was set at 0" on the y-axis and locked into place at 22" on the x-axis. A stop was set at 18" (the center of the rotary table). The table is rotated through the gears until it reaches the center (18"). The router was lifted up, the x-axis split-nut is opened, and the carrier-tray is slid to 23" (1" offset) where it is locked into place. The process is then repeated (always returning to 23"). Figure D shows the first six cuts, figure E the first 18 cuts, and figure F the completed piece totaling 64 cuts. Figure G is the same procedure with a 2" offset, giving it a wider reed.



Fig. A

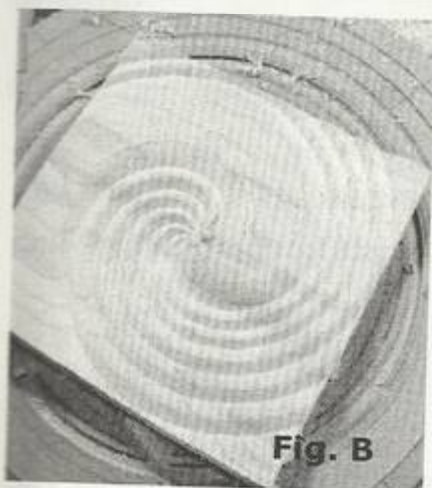


Fig. B



Fig. C

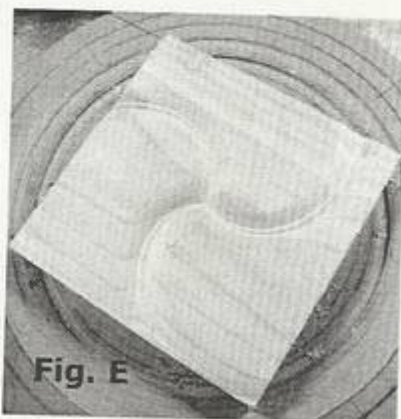


Fig. E

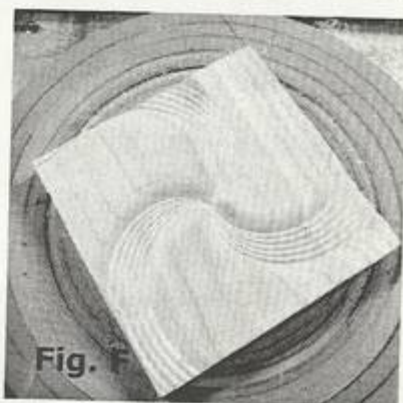


Fig. F

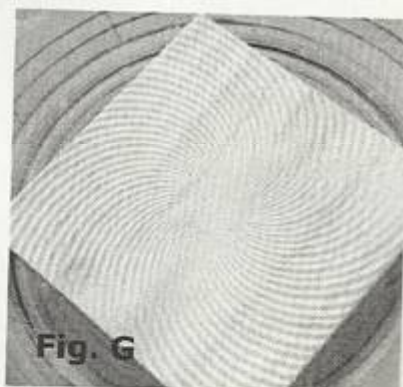


Fig. G

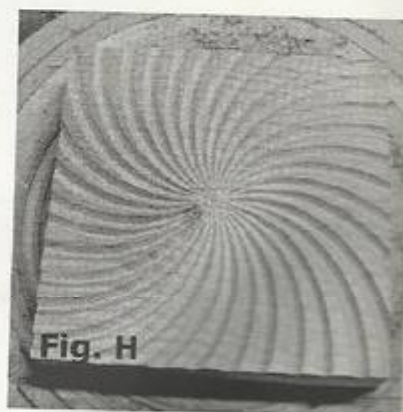


Fig. H

# Chip Carved Panels



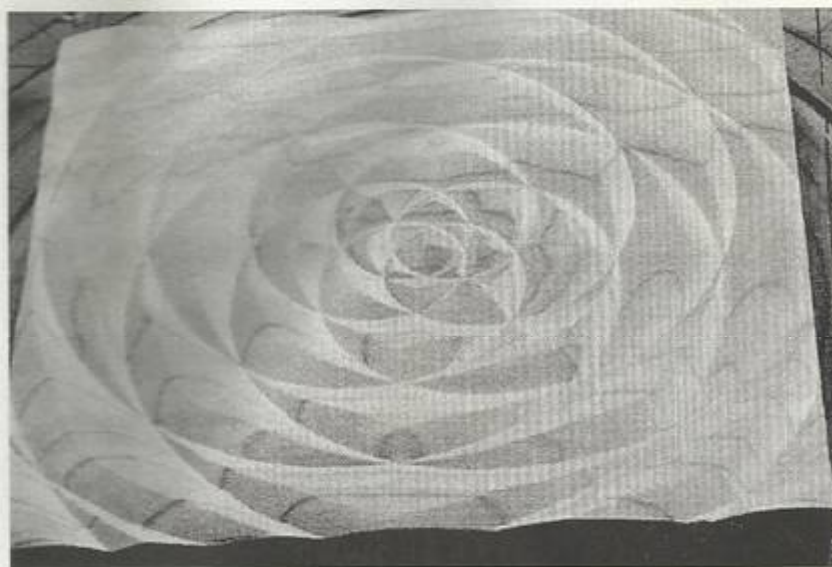
The panel pictured below (bottom right) is the same setup as the panel in figure C (previous page). The cuts are made using a 1" diameter rope molding bit. The gears were set up with a 1/2" pitch using the .25x gear reduction set. The router was set at 0" on the y-axis and locked into place at 24" on the x-axis.

Instead of stopping in the center of the material (at 18"), the cut is not complete until the router comes out of the material on the adjacent side. In this case the router is stopped at 12" on the x-axis.

The router is then moved 2" along the x-axis (to 10") and the process is repeated for the second cut. This cut is made going back the other direction. (The first cut was made from the tailstock towards the headstock. The second cut is made from headstock to tailstock after the 2" offset is made.) The router is stopped at 24" on the x-axis.

The third cut is offset 1" along the x-axis (to 25"), and then made from tailstock to headstock. The router is stopped at 12" on the x-axis.

The fourth and final cut is offset 2" (from 12" to 10" on the x-axis) and then made from the headstock to the tailstock.

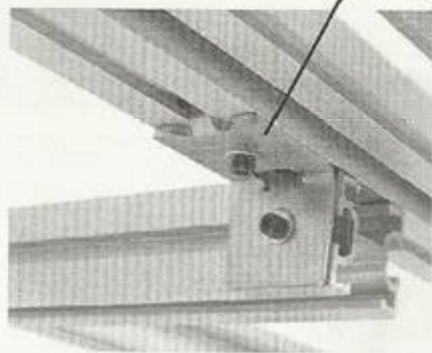


## Thin Stock Support

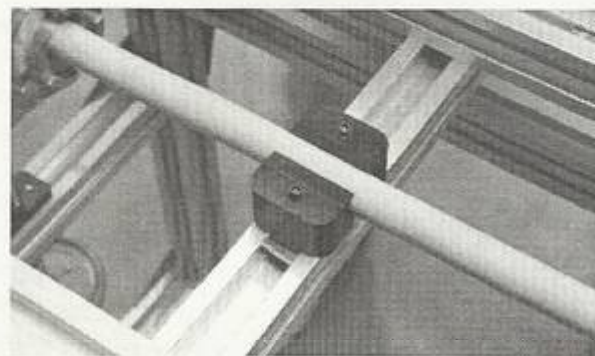
Mounts to the underside of the adjustable bed rails and supports material while milling thin stock between 5/8" and 1 7/8" thick.

Small square locking plate.

Insert style locking plate



**Fig. B**



The thin-stock Support mounts to the underside of the adjustable bed rails (inside rails) with two 90 degree mounting brackets. These brackets are bent the same direction and are intended to be mounted on opposing sides of the rail. Tighten the capscrew **A** into the bed rail first, and then capscrew **B** to the support rail.

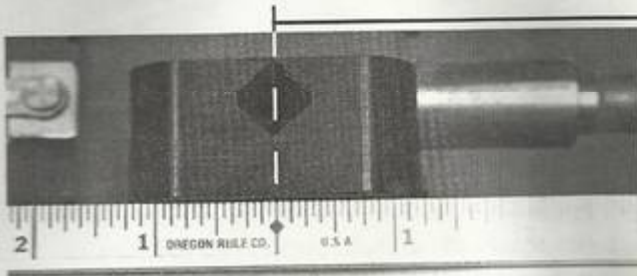
(NOTE: When it becomes necessary to remove the thin-stock support from the machine, *release capscrew A, once capscrew B is locked into place it should never be released* - this will insure that the rail and the scale are always positioned correctly on the machine).

With the support mounted to the rails, slide the tail-stock dead center next to the Thin-stock Support.

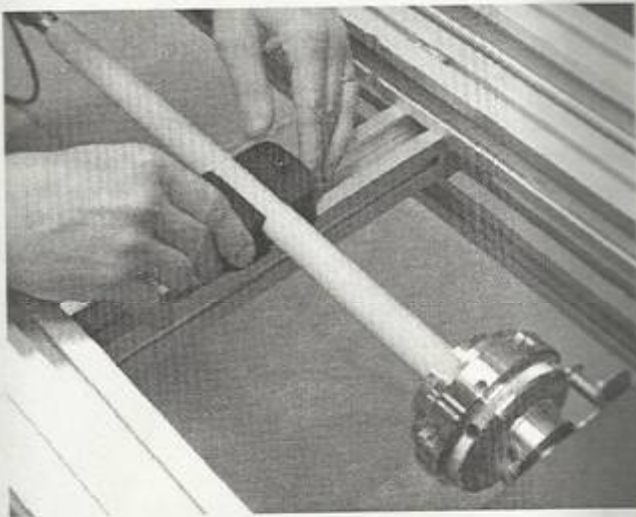
Tighten the thin-stock support blocks around the point of the dead center.

Once the support is centered around the dead center of the tail-stock, you are ready to identify the center of the thin-stock support.

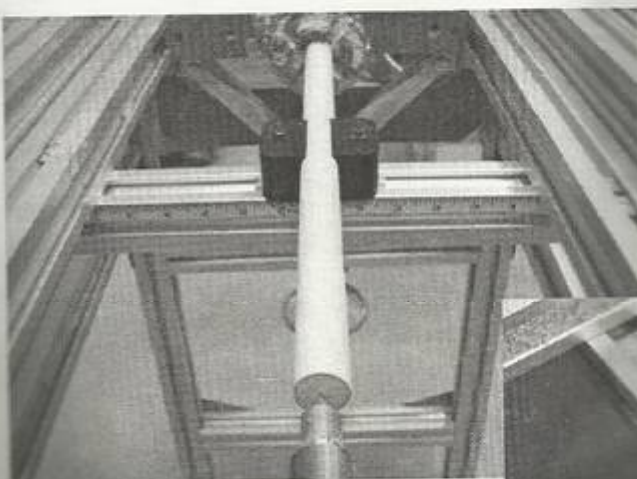
With the support locked into place around the dead center of the tail-stock, remove the support (capscrew A) and attach the enclosed center scale to the rail of the support.



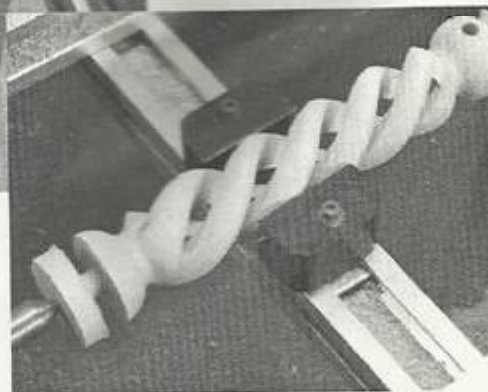
(NOTE: The 0" mark is aligned with the center of the 2 support blocks).



Once the scale has been affixed, mount the support back onto the rails, (the support should always be mounted the same direction as original setup, i.e. scale on the tailstock side) and tighten the jaws of the support around the piece to be milled.



Use the edge of the support blocks aligned with the scale to insure the workpiece is centered, this will insure that any bow in the material has been adjusted for. The thin-stock support is now ready for milling.



Using the thin-stock support when milling the hollow spiral helps to minimize the inherent chatter or bounce as the piece becomes less stable.

# Thin-stock Follower

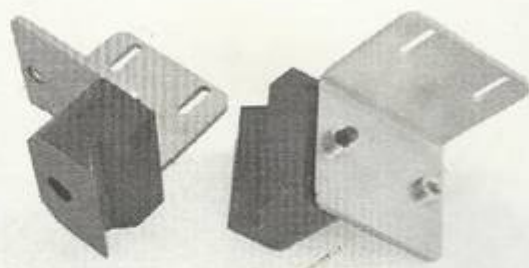
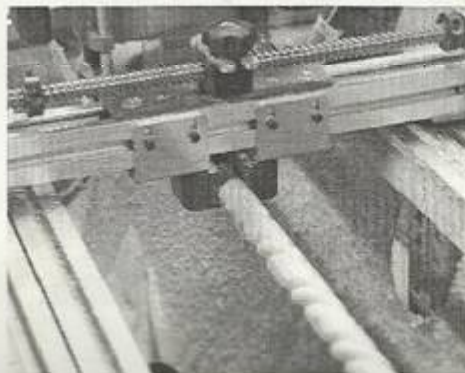


The thin-stock follower mounts to the router carriage using the long narrow locking plates. Note: The vinyl dust shields need to be removed to mount the follower.



A section 7" long must be milled round before the thin-stock follower can be attached. (This 7" area allows for the distance of the outside rail of the carrier tray to the router bit.)

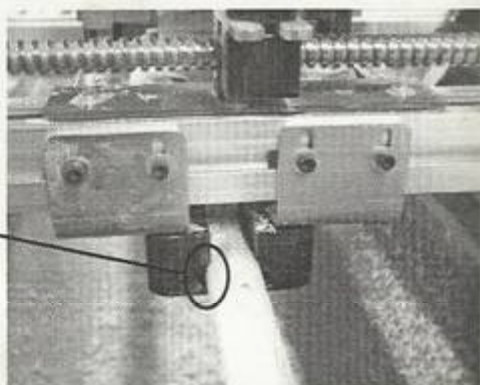
Once the stock has been milled round, the spiral designs can be easily added.



## Points to remember:

- Can only be used on straight round pieces (no tapers or curves).
- Adjustable bed must be set level.
- Check to insure that support blocks are touching the material on both corners of the blocks.
- Recommend support following behind the cutter when milling stock round.
- Recommend support be positioned ahead of the cutter when milling spirals.

The thin-stock follower blocks are slid up against the material, and adjusted to allow the corners to touch the material.



A 5' long piece of soft pine milled to a 1" diameter round using the thin-stock follower.

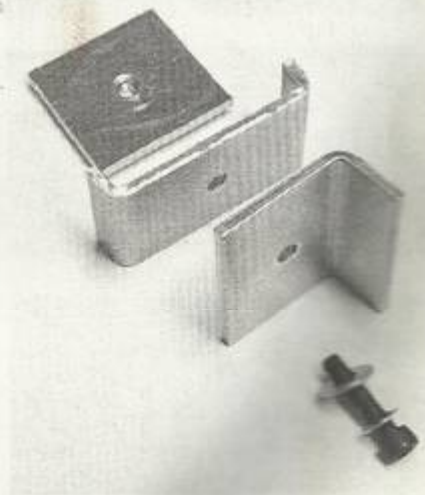
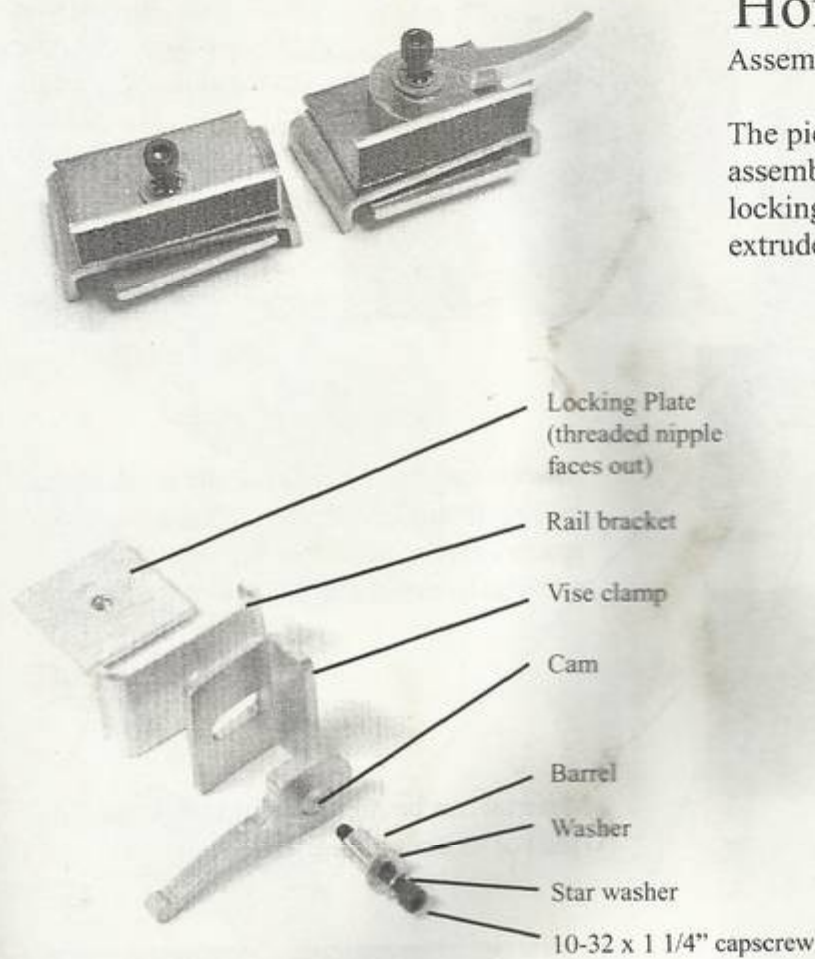


## Horizontal Bench Vise

Assemble the camlocks as pictured.

The pictures below show the proper order of assembly. Note that the threaded nipple on the locking plate faces out and will slide inside the extruded rails.

The adhesive backed sandpaper will act as a grip to hold the material securely.



**Fig. A**

Small square locking plate.

Insert style locking plate

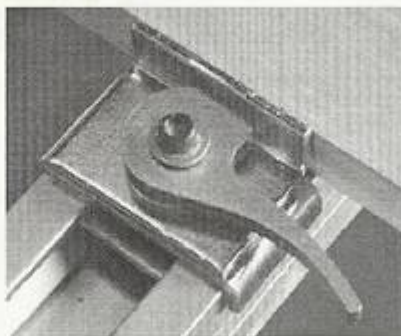
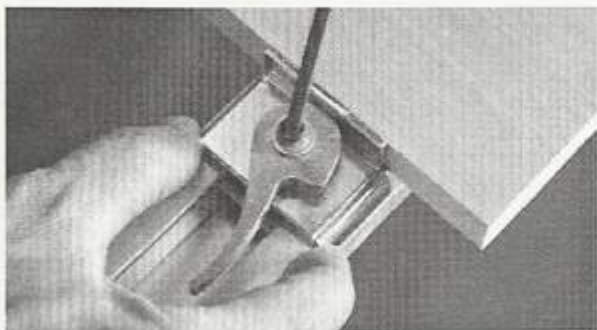


**Fig. B**

**NOTE:** The camlocks are also used on the vertical bench vises. If you purchased the vertical vises assemble the camlocks the same way.

The horizontal bench vise has been designed to mount to either the top (Fig. A) or the underside (Fig. B) of the adjustable bed rails (headstock & tailstock).

Mounting to the adjustable bed rails allows for milling thicker dimension material as well as the ability to mill tapered stock or tapered flutes.



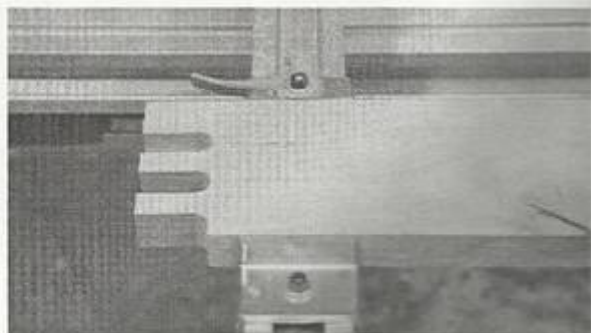
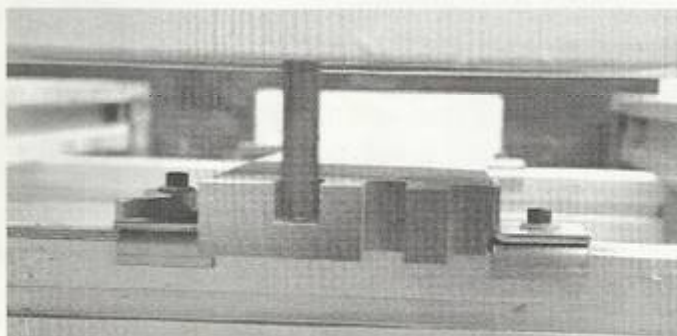
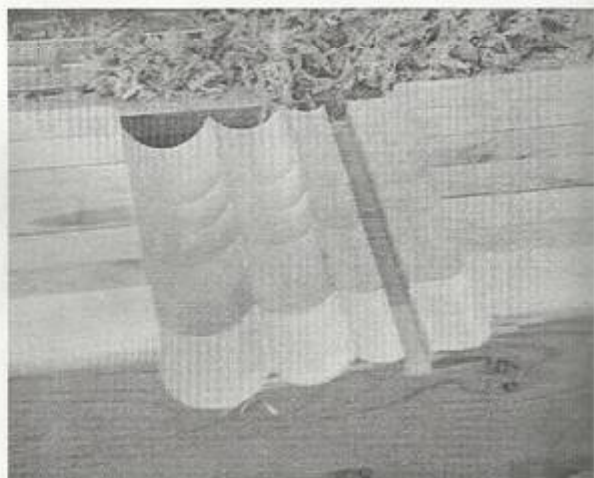
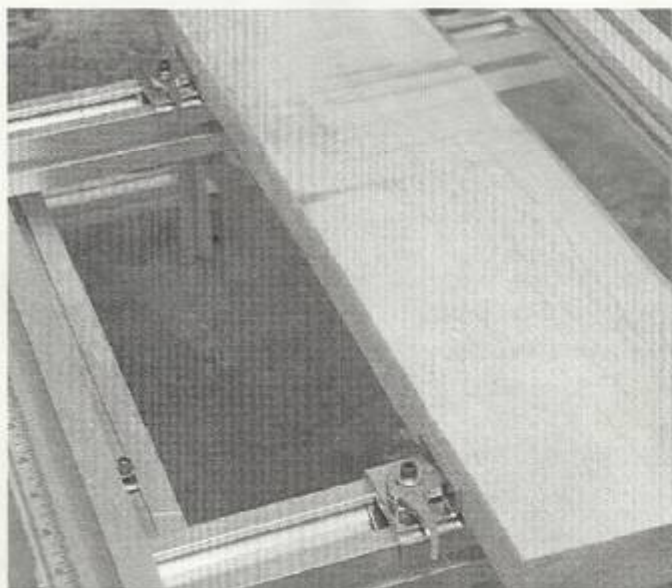
The material locked into the vise with the camlock in the closed position.



Spacers can be used to raise the stock when milling thinner dimension material, or wood spacers can be placed on the side of the material to avoid running into the clamps.



Material can be mounted into the vises flat (left) or mounted on edge (below).

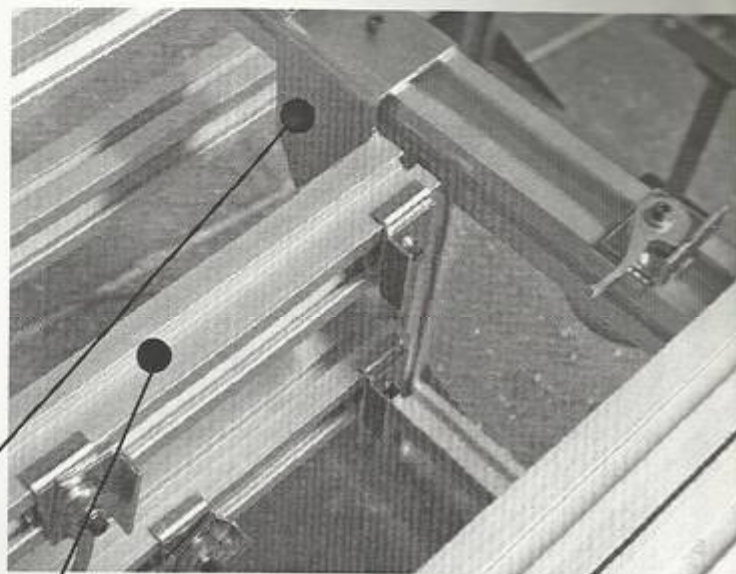


## Vertical Bench Vise

Mounts to the horizontal bench vise and allows for vertical clamping of material. Create mortise, tenons, dovetails, finger joints, etc. on the ends of material. Maximum length 9" on bench top. Requires a hole to accommodate longer length. For camlock assembly see Horizontal Bench Vise.



**Fig. A**

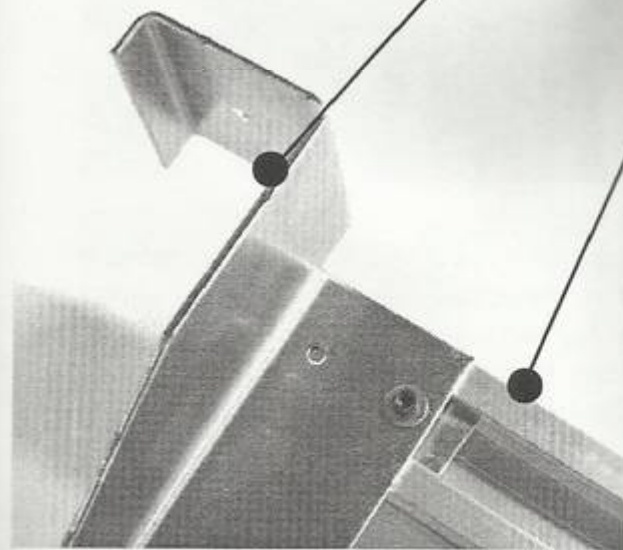


**NOTE:** It is necessary to have purchased the horizontal bench vise in order to use the vertical bench vise.

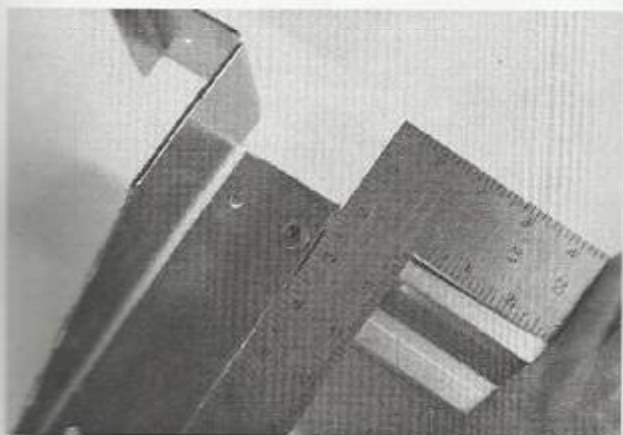
Figure A shows the horizontal bench vise mounted to the underside of the fixed rail (Carrier Tray Rail).

Two mounting brackets are provided. Mount the brackets to the channel of the extrusion opposite the side of the camlocks with the locking plates provided. Note that the bend faces out.

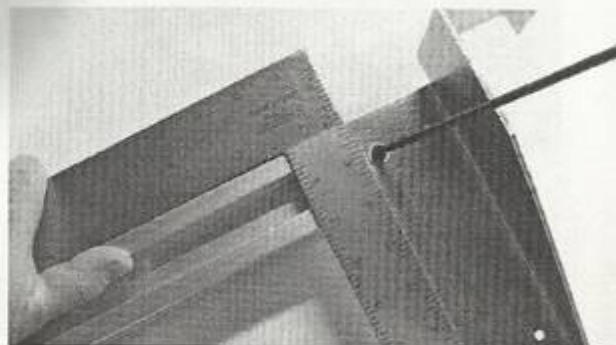
Square up the brackets with the rail. You will also want to position the bracket edge so that it is flush with the edge of the rail. Once the brackets are squared to the top rail, mount the second piece to the bottom rail

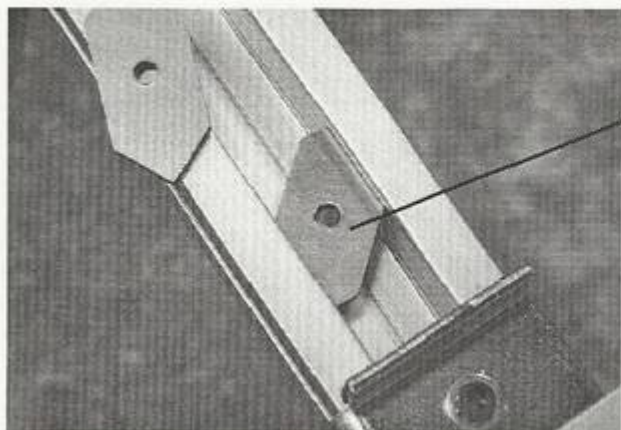


**Left End**

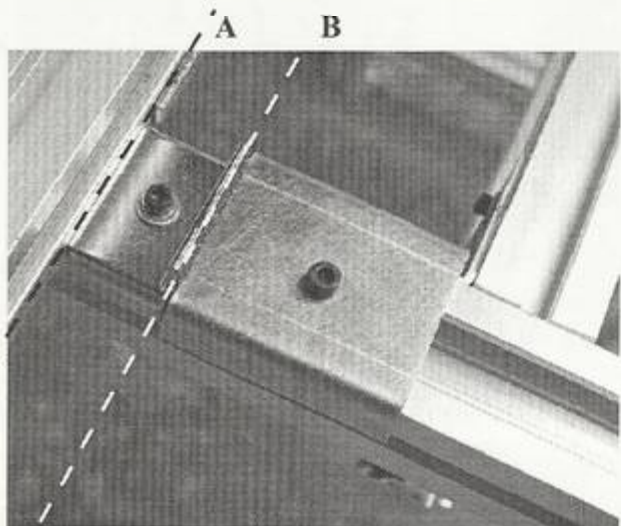


**Right End**

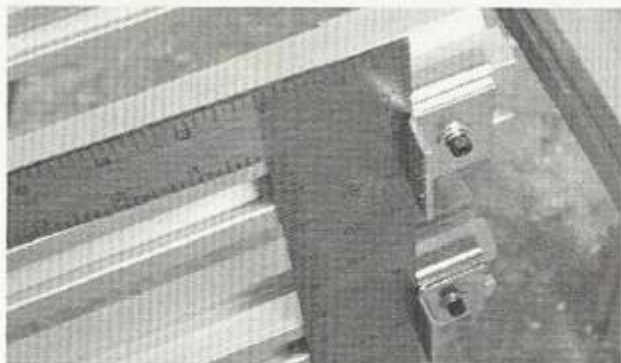




Use the insert style (diamond shaped) locking plates provided to mount the vertical vise to the rails of the horizontal vise. Notice the position of the locking plate inside the channel.

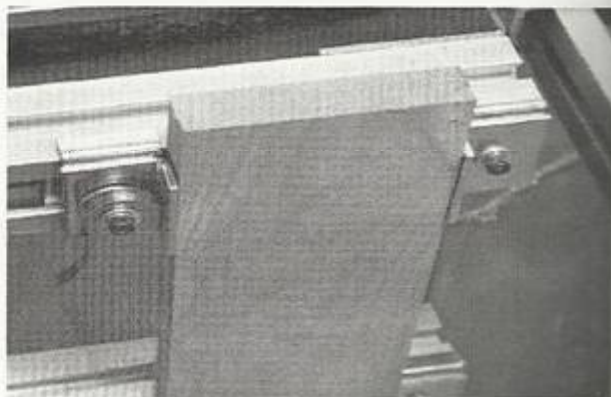
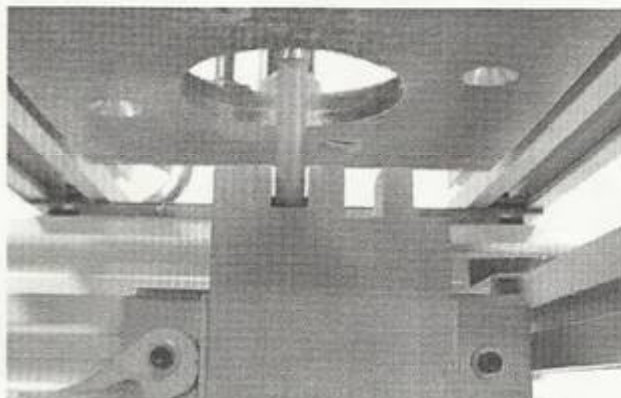


To insure that the vertical vise is positioned parallel with the router, lock the grip of the horizontal bench vise against the edge of the rail (line A). Then position the bracket of the vertical vise against the grip (line B).



Once the vertical vise is mounted to the rails of the horizontal vise, use a square to align the top and bottom grips and lock them into place. These grips should not need any further adjustment.

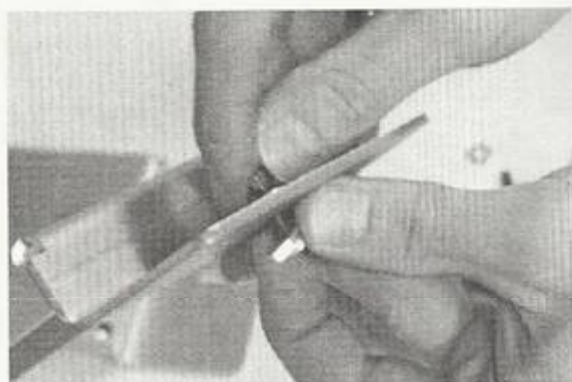
The material locked into the vise with the camlock in the closed position.



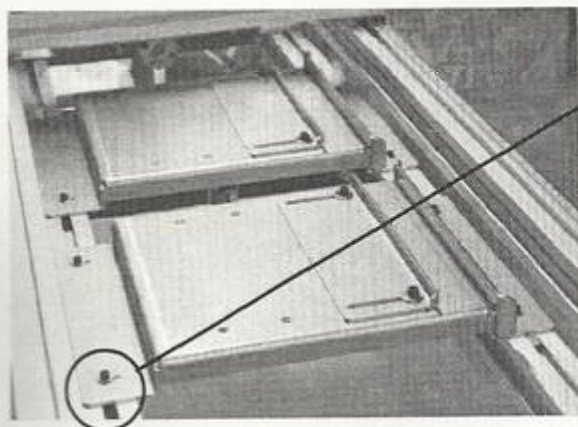
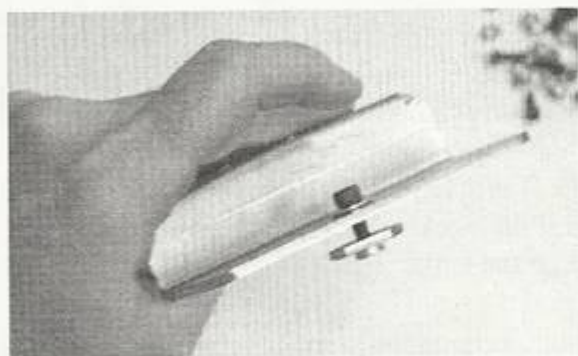
## Linear Molding Table Assembly



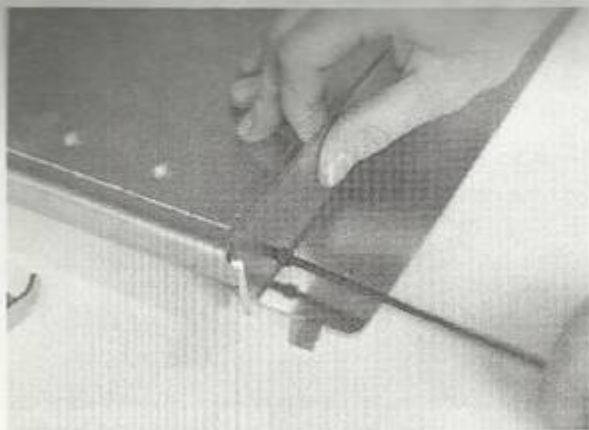
The (12) locking plates, capscrews and washers will be used to mount the plates to the adjustable bed rails.



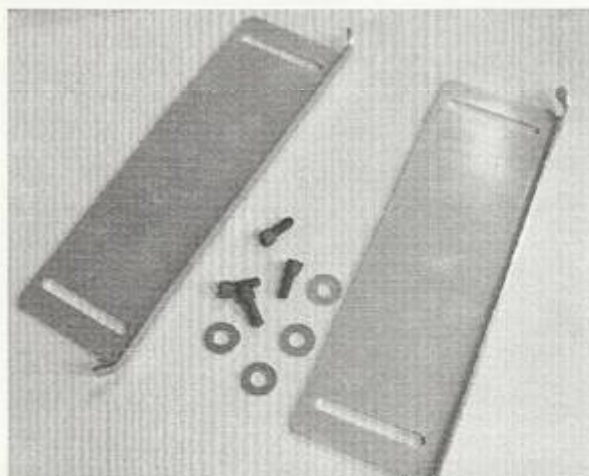
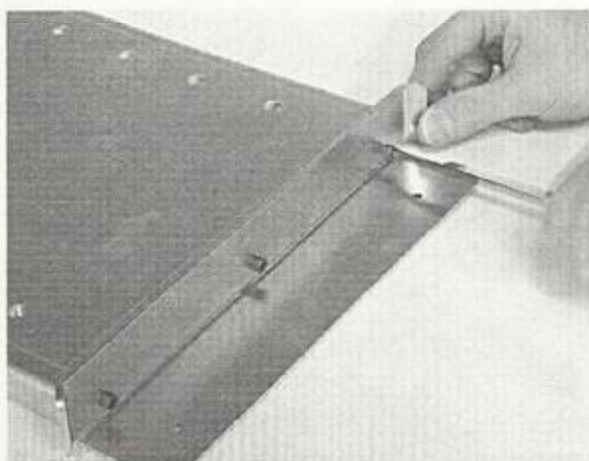
Thread the locking plate on to the tip of the capscrew as shown



The locking plates slip inside the narrow channel of the adjustable bed rail and lock the table into place.

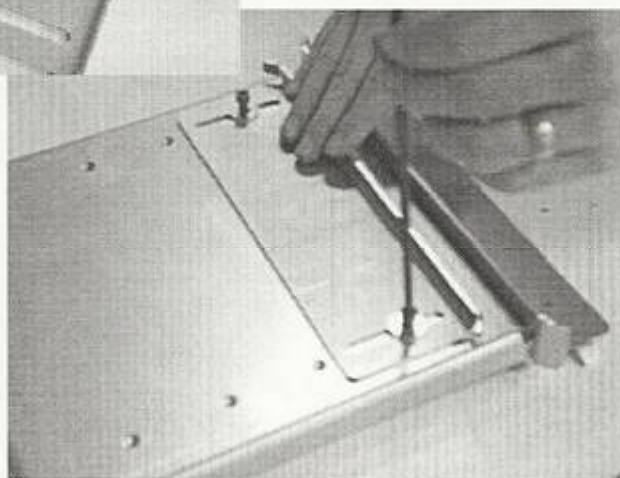


Use the (6) 10-32 x 5/8" capscrews to secure the (2) fences to the side of the (2) tables. Note: Use the side with the PEM hardware mounted into place.

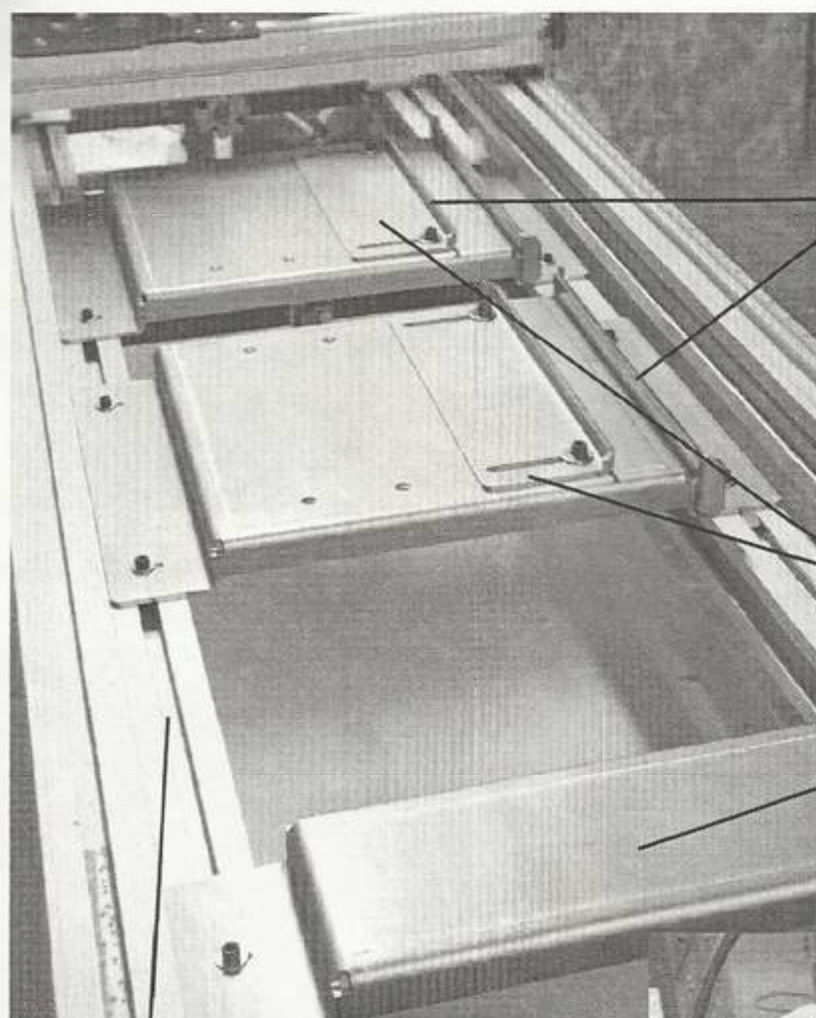


The (2) adjustable fences mount to the top of the (2) tables using the (4) 1/4-20 x 5/8" capscrews and washers.

These fences have been designed to slide up against the workpiece; guiding the material through the table.



## Mounting the Linear Molding Table

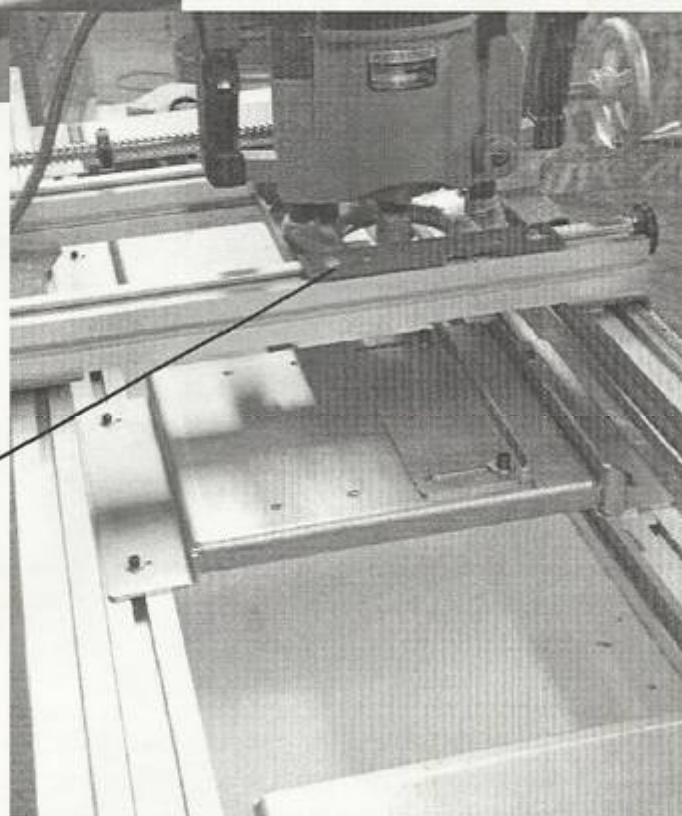


Outside Fences

Adjustable Fences

Outfeed Table  
(one positioned on each  
end to support material)

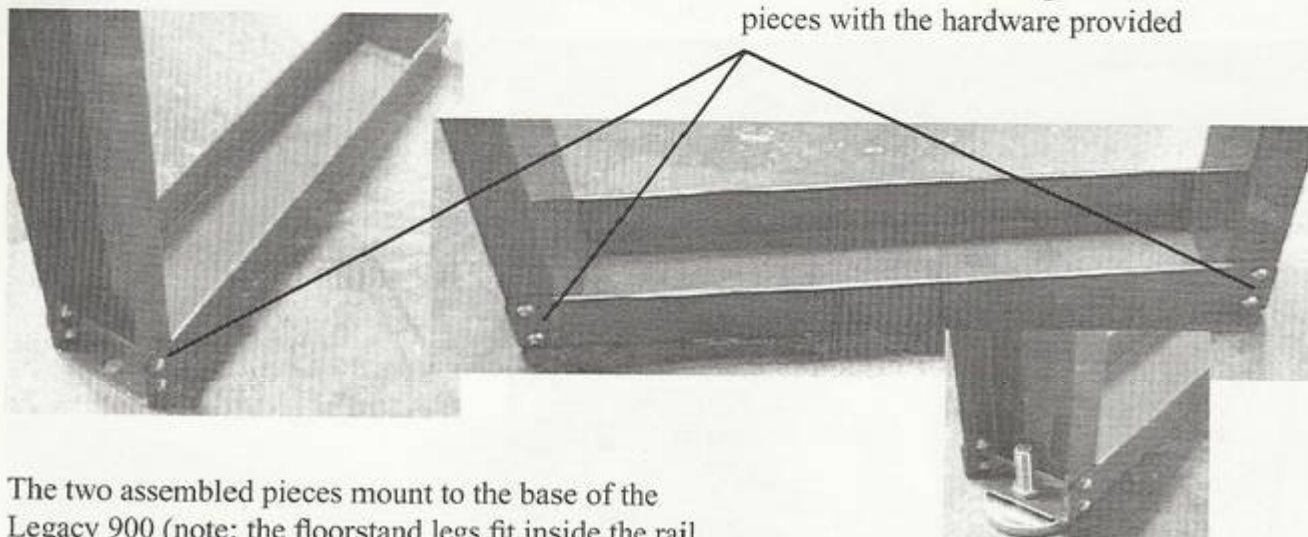
Mounts to adjustable bed rail



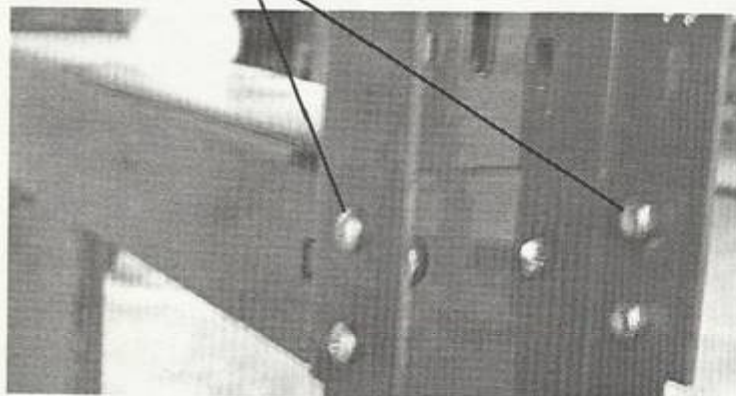
Router bit positioned between tables

## Mounting the 900 Floorstand

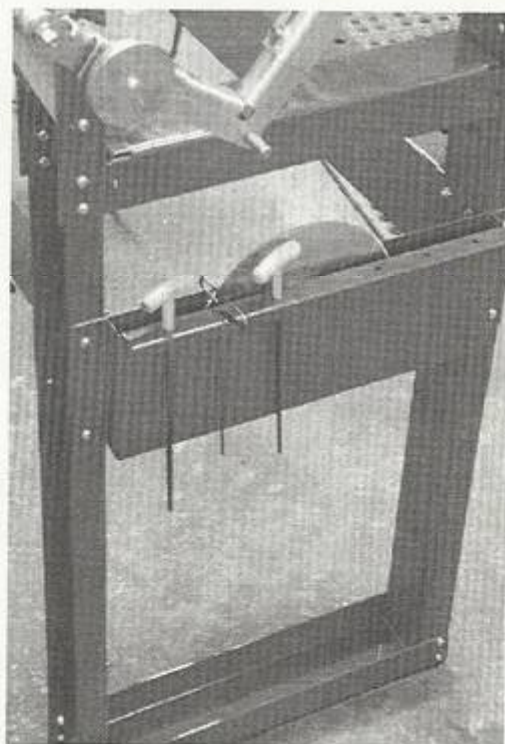
Mount the floorstand legs to the base pieces with the hardware provided



The two assembled pieces mount to the base of the Legacy 900 (note: the floorstand legs fit inside the rail legs as shown).

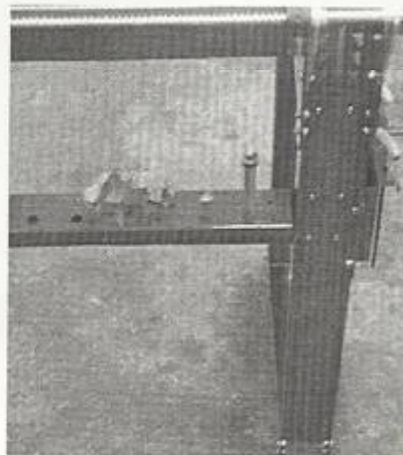


The tool holder mounts on the end of the floorstand.



Completed assembly

If you purchased the optional tool holder and casters, assemble the two parts to the tool holder and mount it to the front of the machine. The casters will mount to the floorstand base in lieu of the leveling pads.



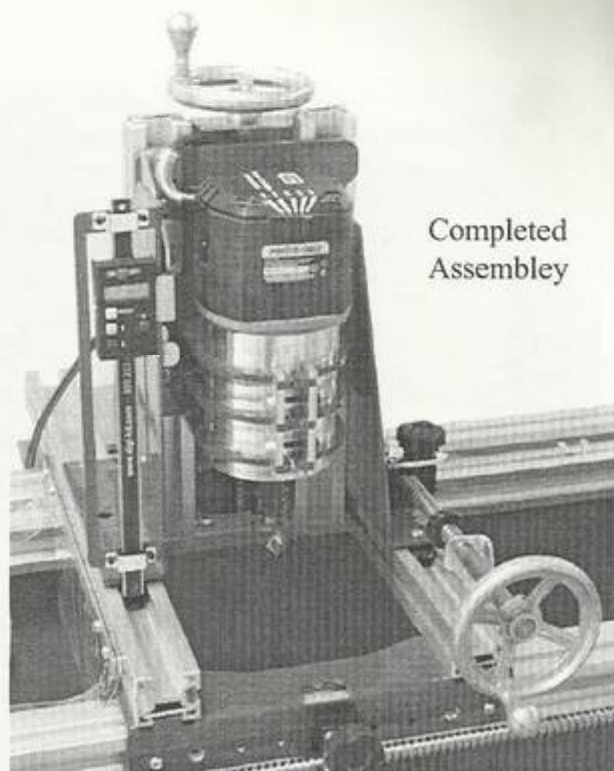
# Z-Axis Carriage Assembly

## *What you should know.*

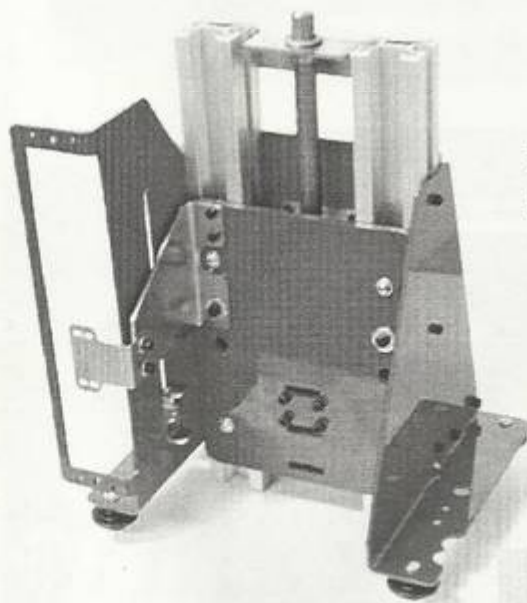
- You must rebuild your existing router carriage.
- You must replace the two pieces of extrusion on your carriage with longer extrusion provided in the upgrade.
- The y-axis lead screw is removed from the existing carriage and mounted to the longer extruded rail on the rebuilt carriage.
- The standard upgrade package comes with router mounting clamp plates that fit the Porter Cable 7518 router. Other clamp plates are available and must be requested at the time of order.

## Parts:

- 1 - Pre-assembled Router Carriage
- 1 - Digital Readout
- 1 - Router Mounting Hardware
- 1 - Z-axis Handwheel
- 1 - Y-axis Scale
- 2 - Extruded Aluminum Rails



Completed Assembly

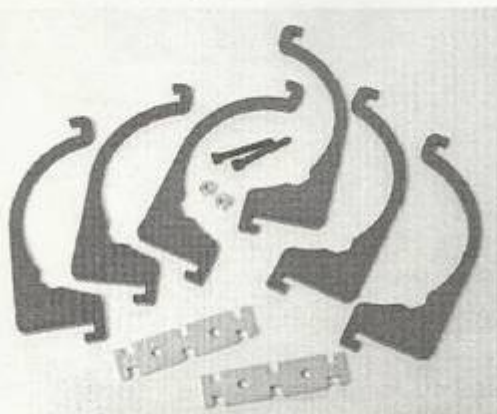


Pre-assembled Router Carriage

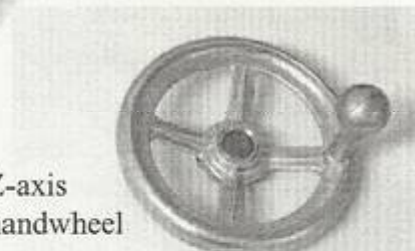


Digital mounting hardware

Router mounting hardware



Digital readout



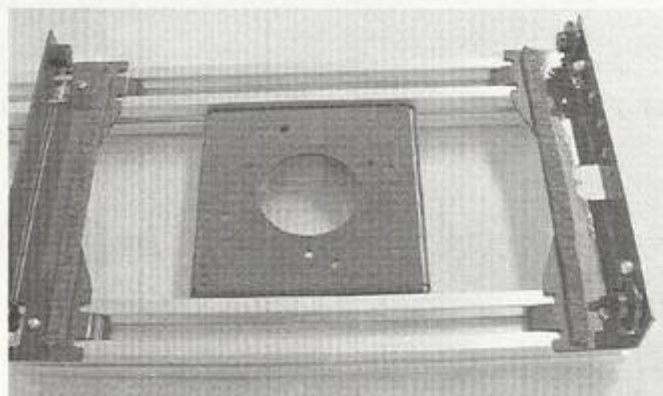
Z-axis handwheel



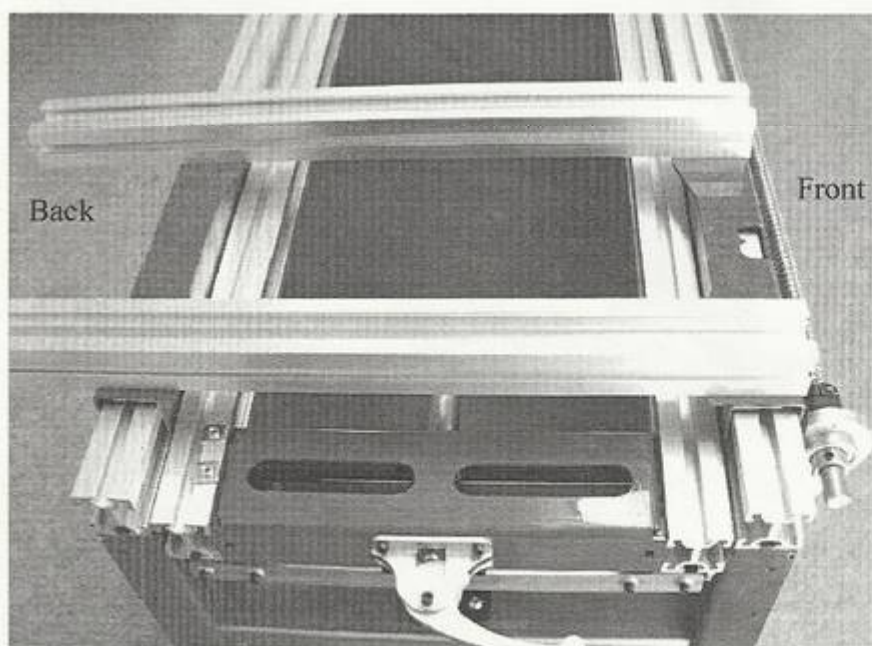
Y-axis scale



Adhesive-backed felt pads have been provided to help minimize woodchips under the carrier brackets.

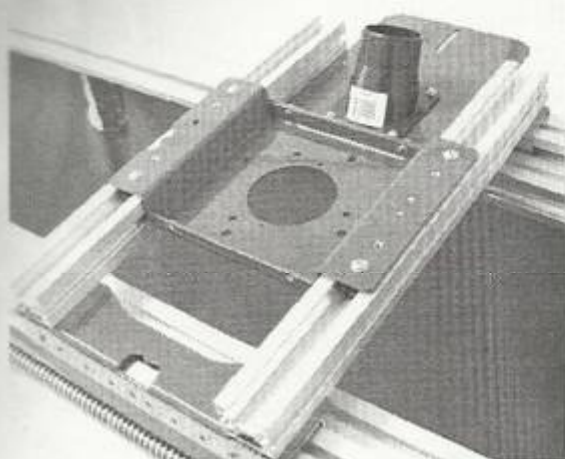


Mount these felt strips to the underside of the carrier as shown.

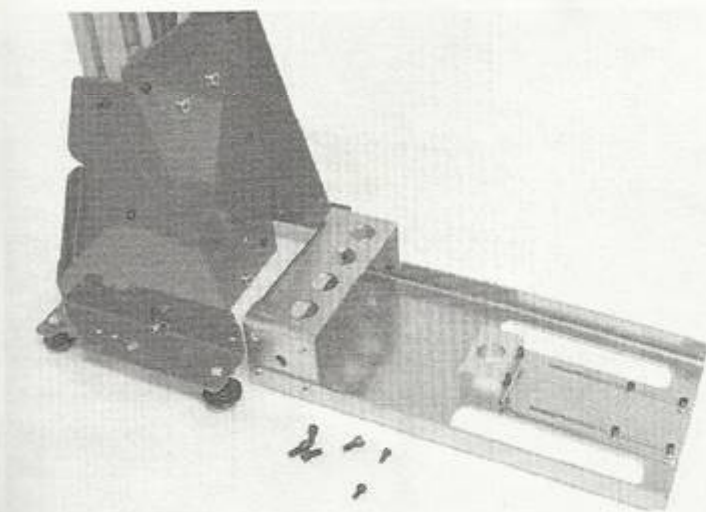
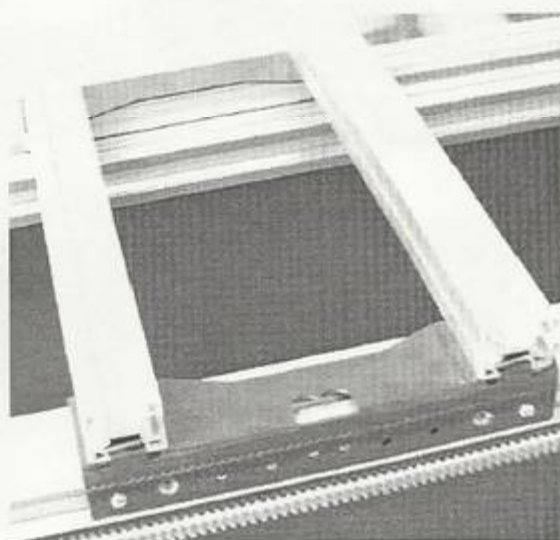


Slide the carriage assembly onto the rails with the front of the tray on the same side as the lead screw.

Note: The rails should hang out the back side of the machine.

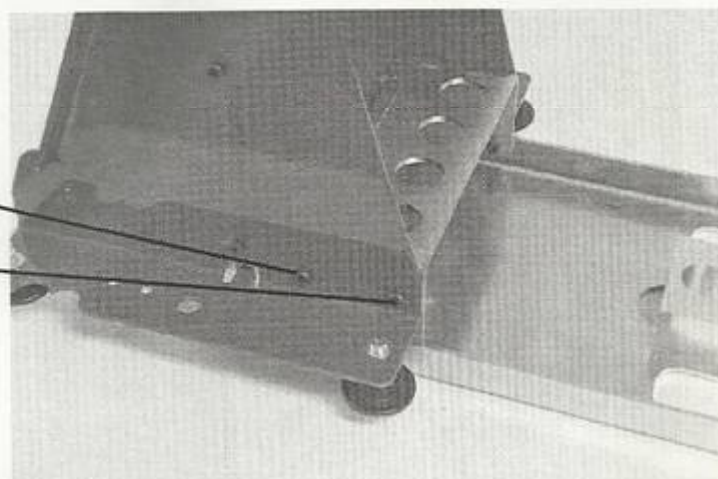


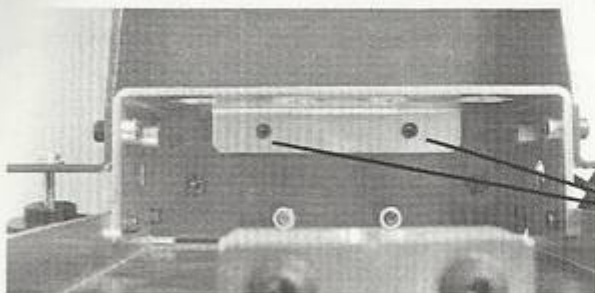
If you purchased the z-axis carriage as an upgrades to your existing plunge router carriage, it will be necessary to remove the red tray and slide on the the new



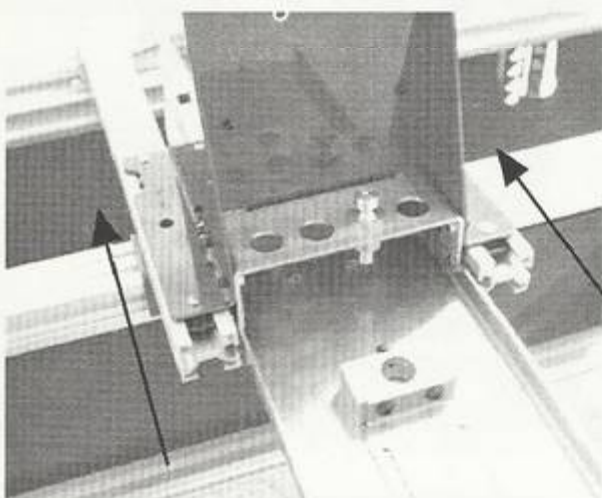
The template follower plate will need to be mounted to the back side of the z-axis.

The (4) 1/4 - 20 capscrews will be used to attach the plate from the sides (2 screws on each side).

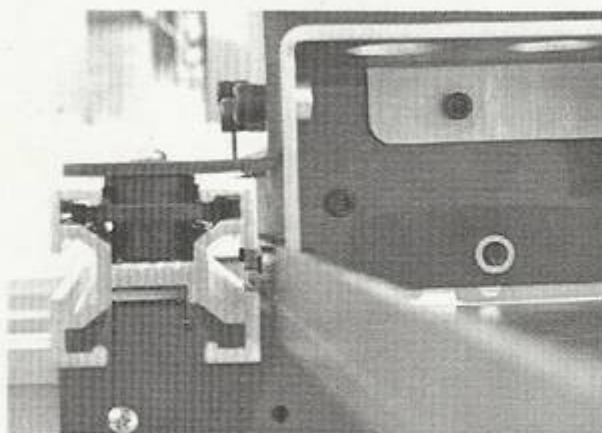




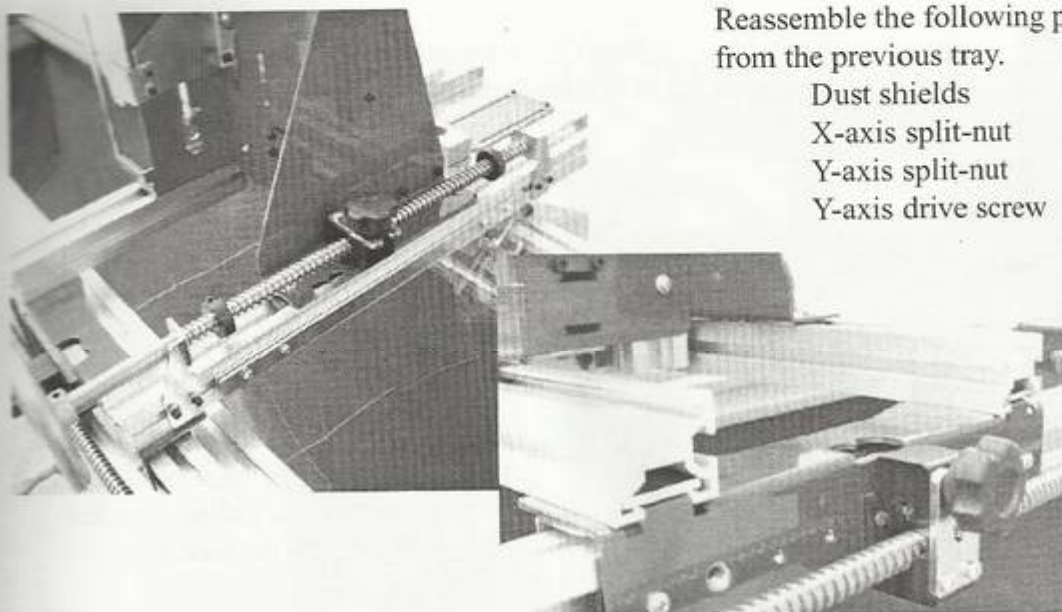
The (2) 10 - 32 capscrews will be used to attach the plate from the end.



The z-axis router assembly slides onto the rails of the carriage. This is best accomplished from the back side of the machine.



The bushings slide inside the channel as shown.



Reassemble the following parts which were removed from the previous tray.

- Dust shields
- X-axis split-nut
- Y-axis split-nut
- Y-axis drive screw

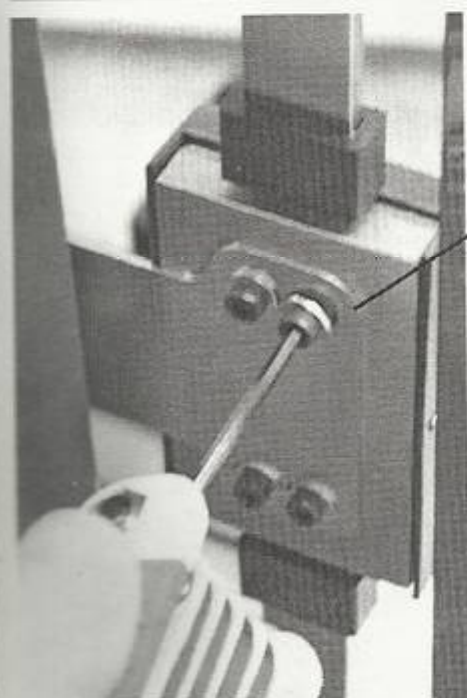


Adhere the foam pieces inside the two mounting brackets and on the front of the z-axis carriage (top and bottom).

Mount the digital scale to the assembly using the 4 smallest cap screws and washers provided.



Use the two metal brackets to secure the scale at the top and the bottom.



Rear view



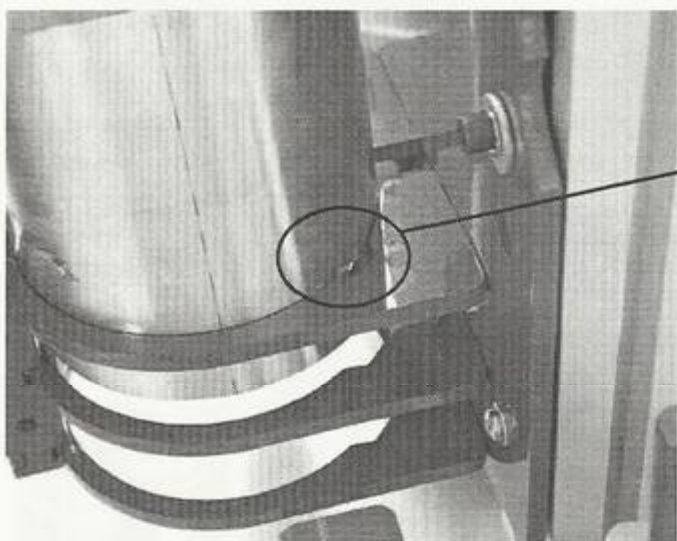
Front view





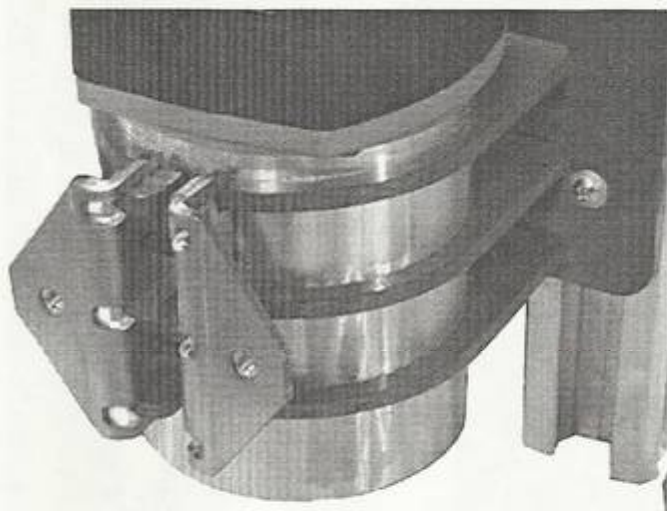
Insert the six motor mounting bands into the front of the main assembly.

Use the 2 side bars to secure the mounting bands into place. Once the motor has been positioned into place, these bands will be pulled together with the capscrews to secure the motor.

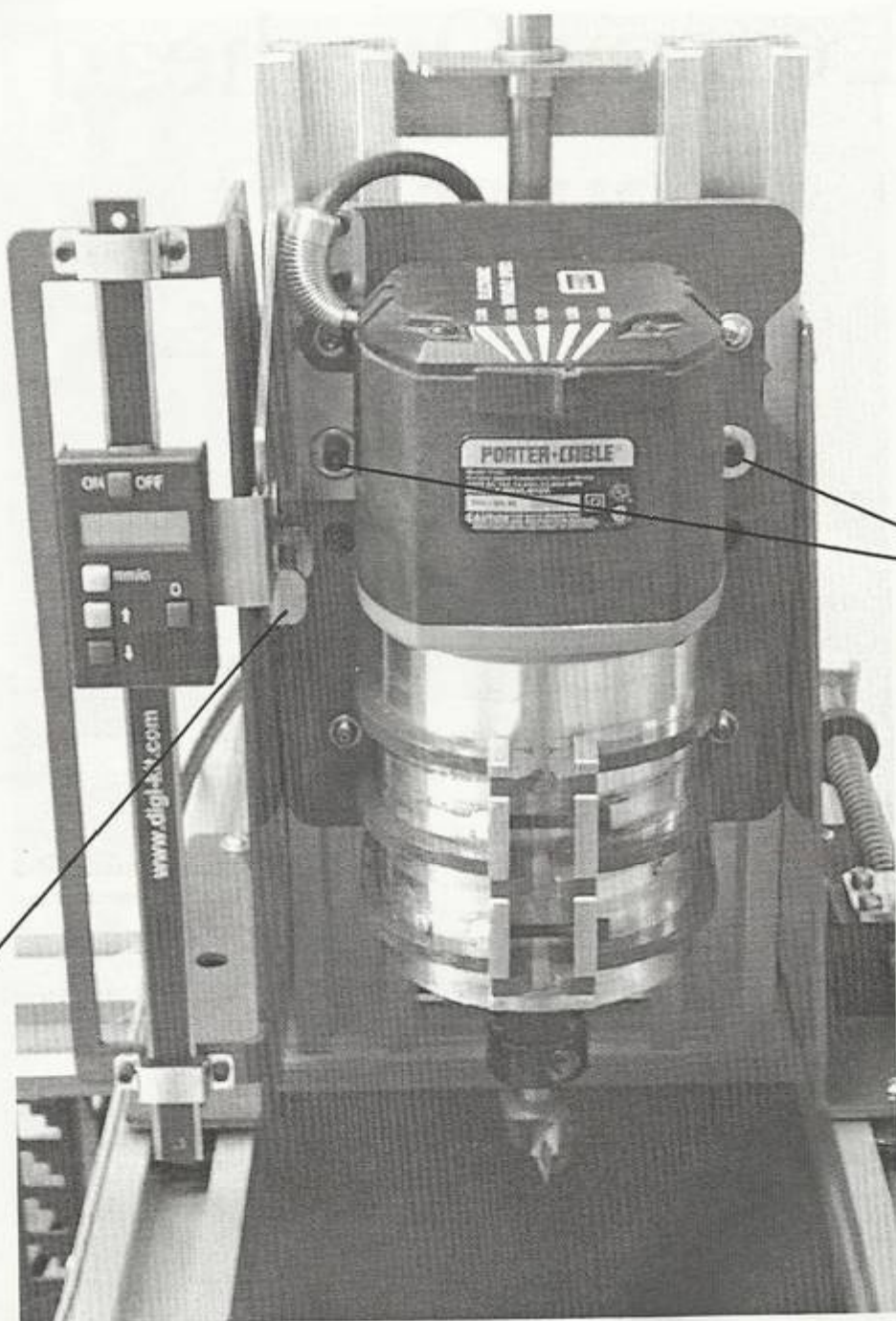


Insert the router from the top.

You will need to rotate the router so that the studs on the housing go through the notch in the mounting bands or between the bands in the front and in the back.



Adjustable  
Stop



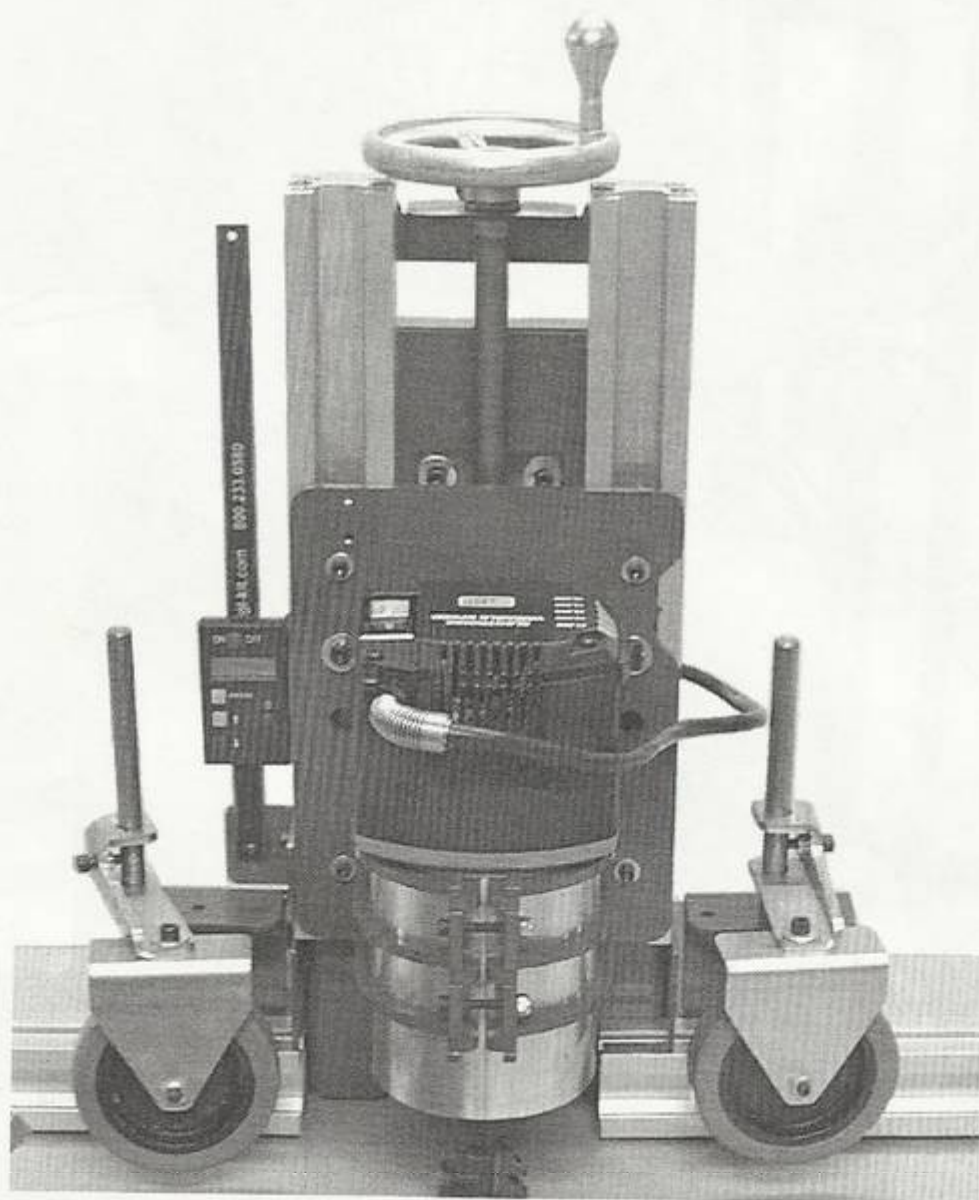
Positive Stops  
(when locked  
into place the  
router will not  
move up or  
down).

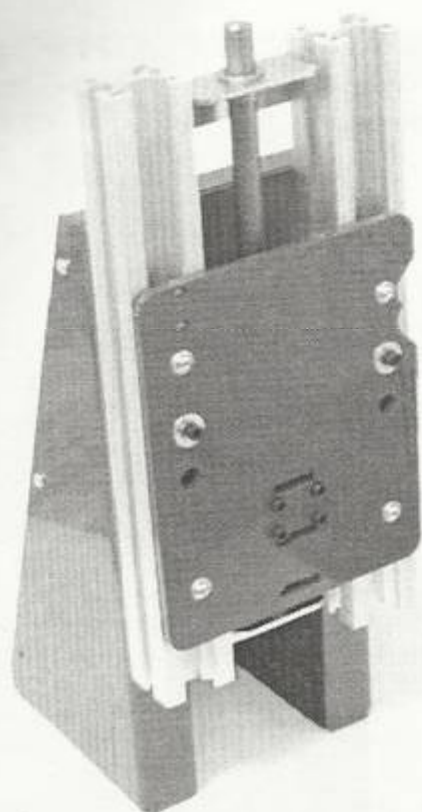


Once the router has been positioned as shown, tighten the capscrews and nylock nuts so that the router is secured to the assembly.

Mount the handwheel to the top of the z-axis screw.

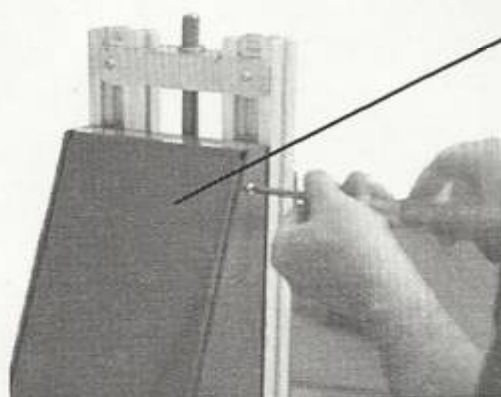
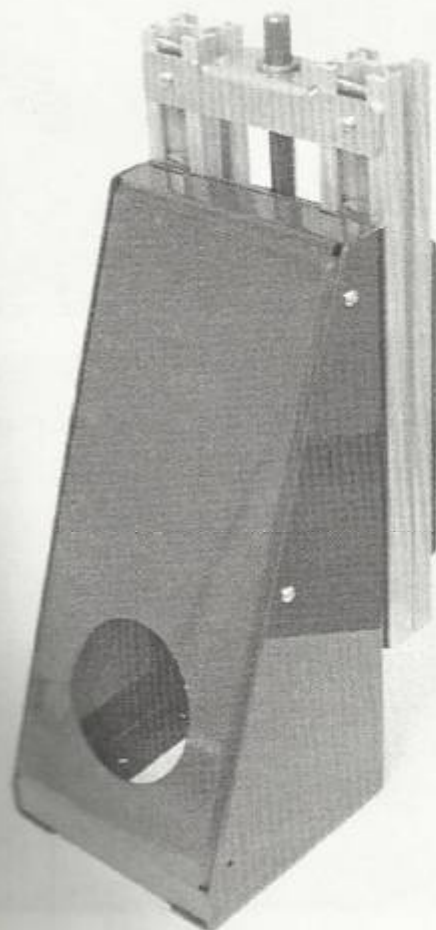
# Legacy Overhead Router Lift





Main Assembly - Front

Main Assembly - Rear

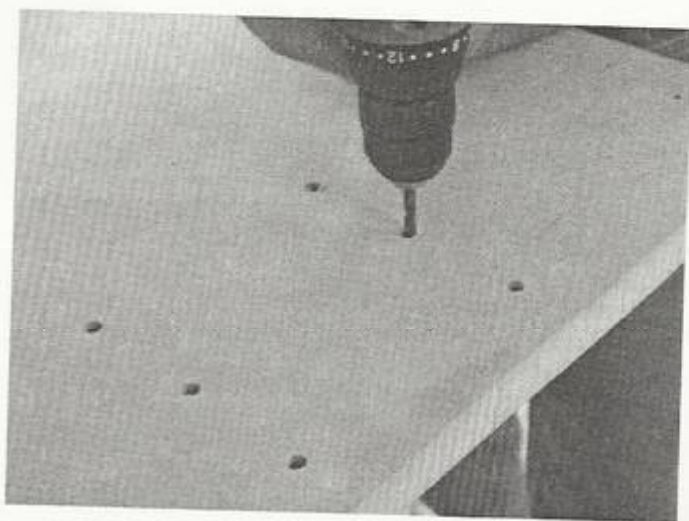


Start by removing the back dust control cover of the main assembly.

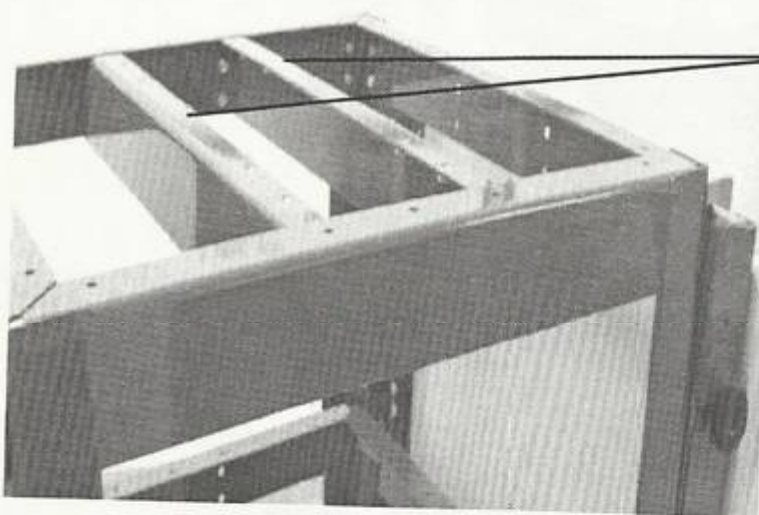
This will allow easier access to the mounting holes.



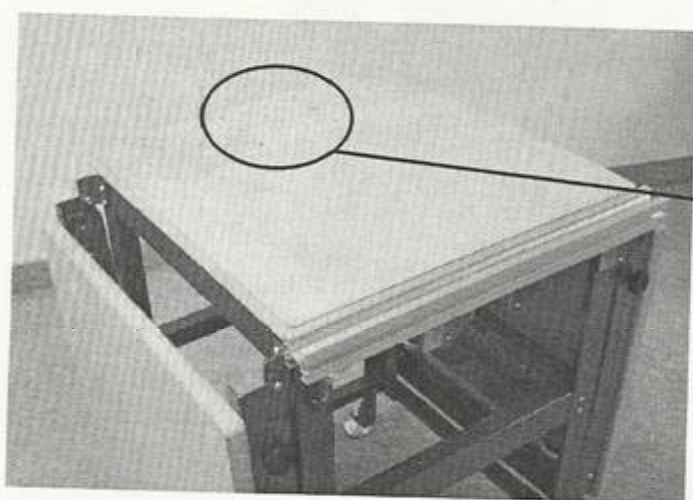
Left: Cover removed from main assembly



If you purchased the 1 1/8" MDF tops from Legacy, continue drilling the 6 holes with a 5/16" drill bit.



These two support brackets are only necessary if you purchased the Overhead Router Lift and the Workstation together.

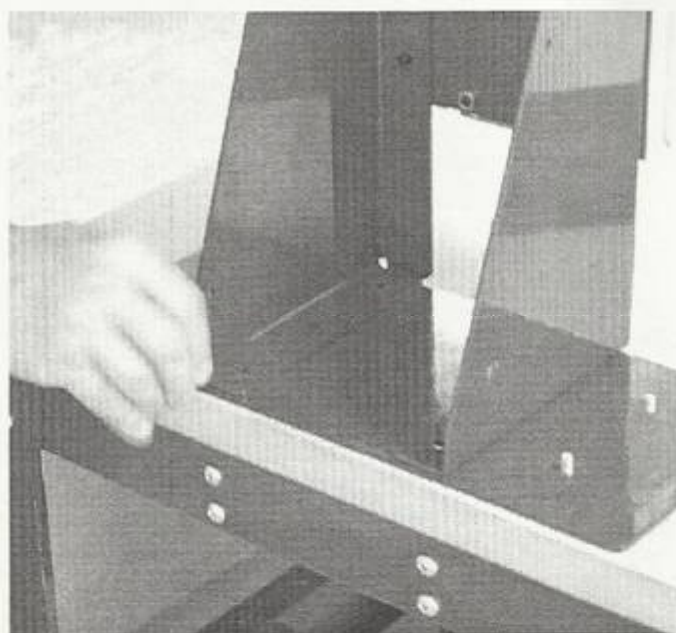


Place the table top on the workstation with the 6 mounting holes opposite the rail (to the back of the workstation).

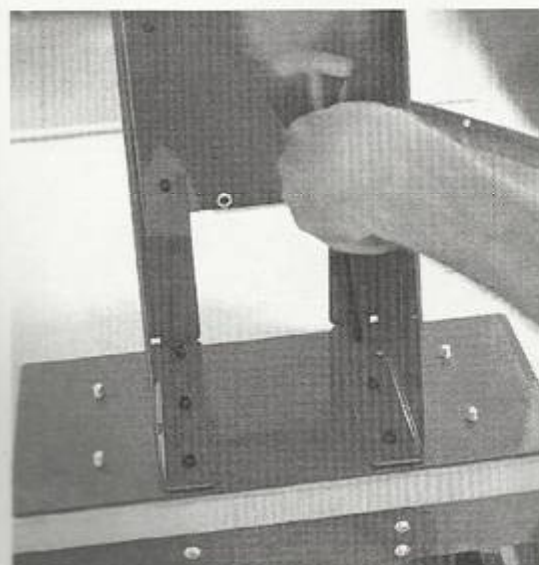
These 6 holes will be used to secure the overhead router assembly to the workstation.



Place the mounting plate so that the holes align with the pre-drilled holes in the table top.

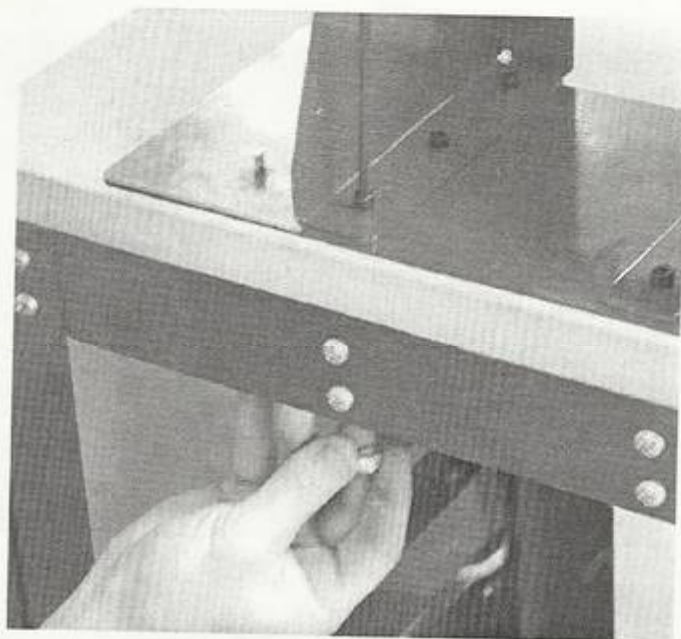


The main assembly (with the back removed) is then placed on top of the mounting plate.

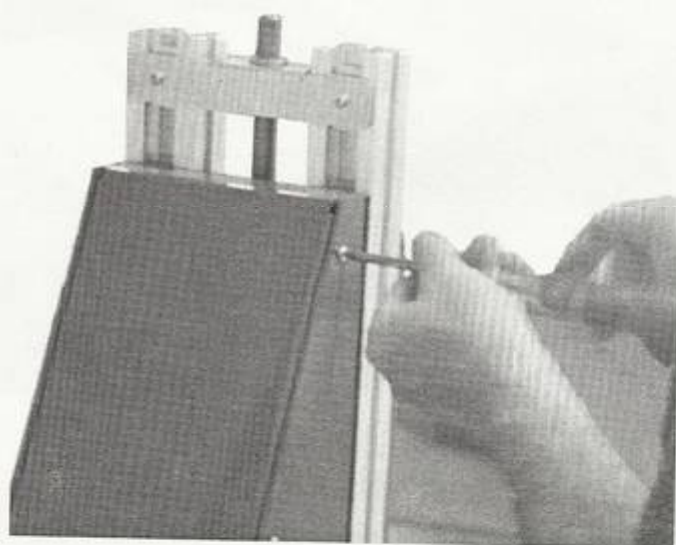


The assembly and the mounting plate are secured to the top with the 6 capscrews.

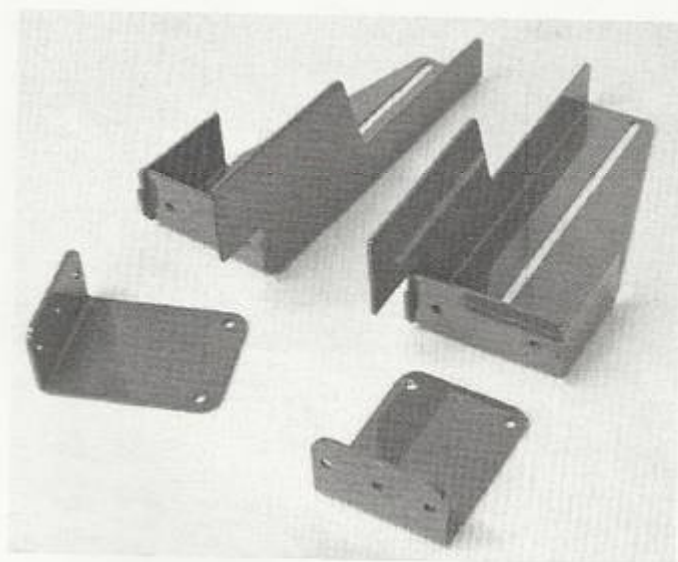
(Note: The 4 inside screws will thread into the hardware which has been pressed into the previously mounted support bars)



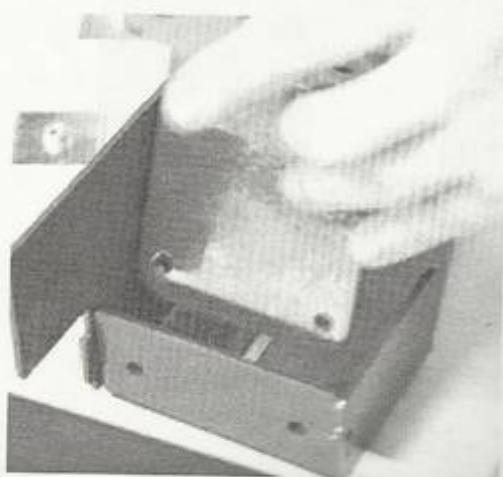
The two outside cap screws are secured to the outside support rail with the 2 locknuts provided.

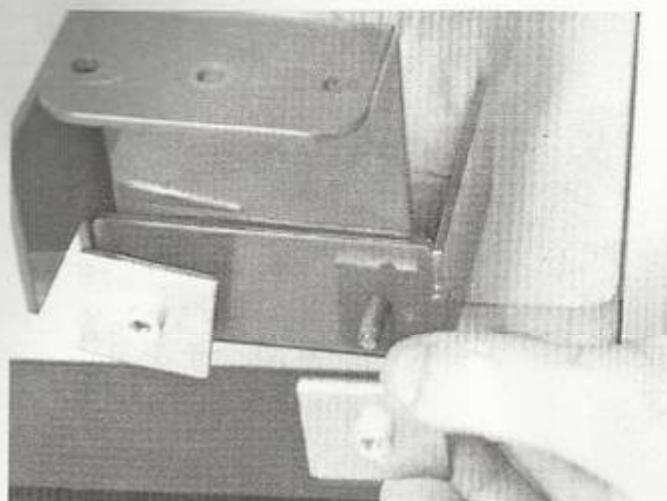


Once the main assembly has been secured to the table top, replace the back dust control cover.

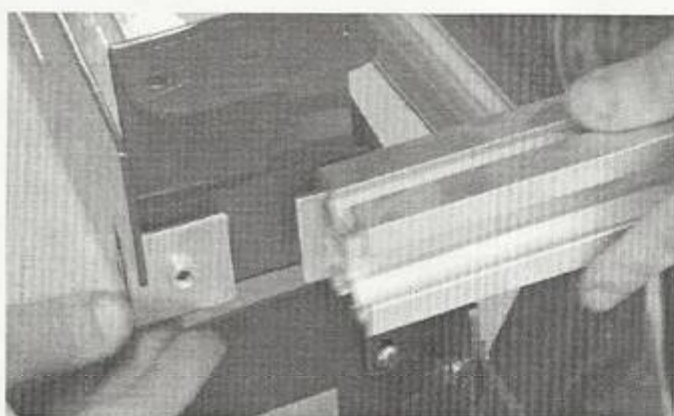


Locate the adjustable fence parts as shown to the left.





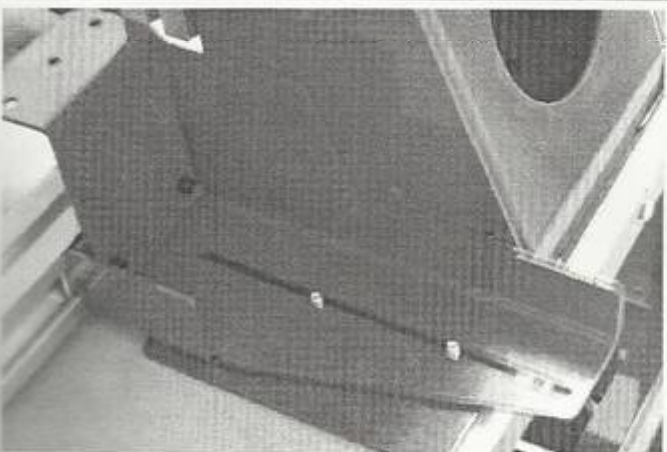
Use the capscrews and locking plates to assemble the parts as shown.



Leave the locking plates loose enough to slide the short extruded aluminum rails onto the locking plates.

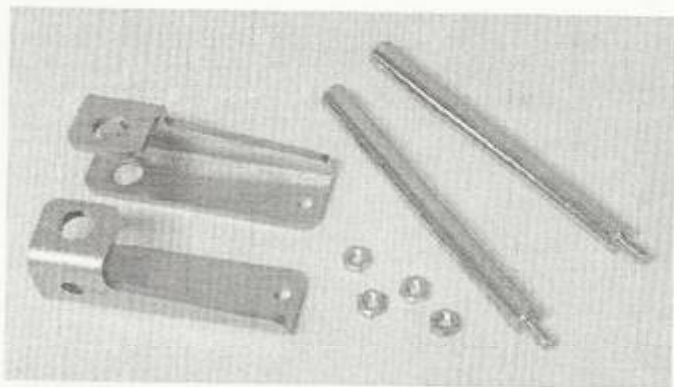


This assembly is then placed next to the main assembly, and on top of the mounting base. Use the locking knobs to secure the assembly into place.

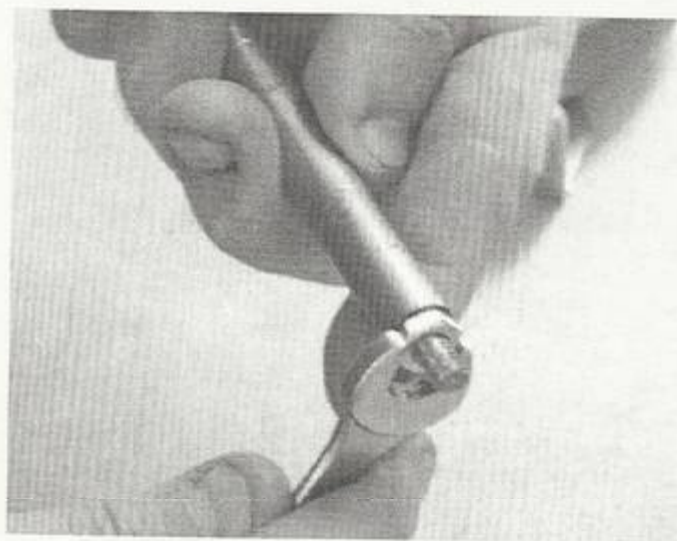


Repeat this process for the opposite side.

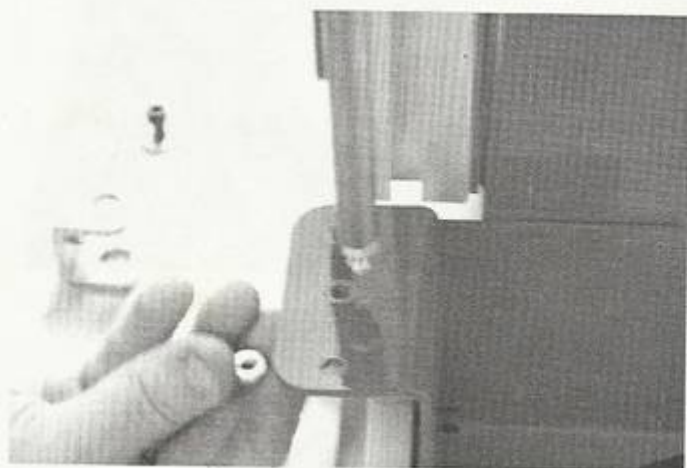




Locate the (2) mounting posts and the (4) 1/4 - 20 jam nuts.

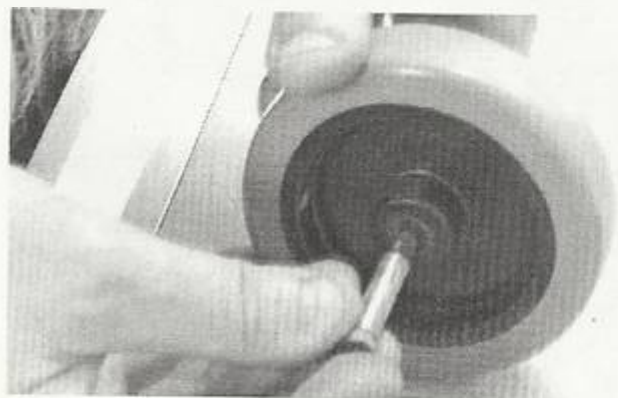


Thread one of the 1/4 - 20 jam nuts on the end of each post.

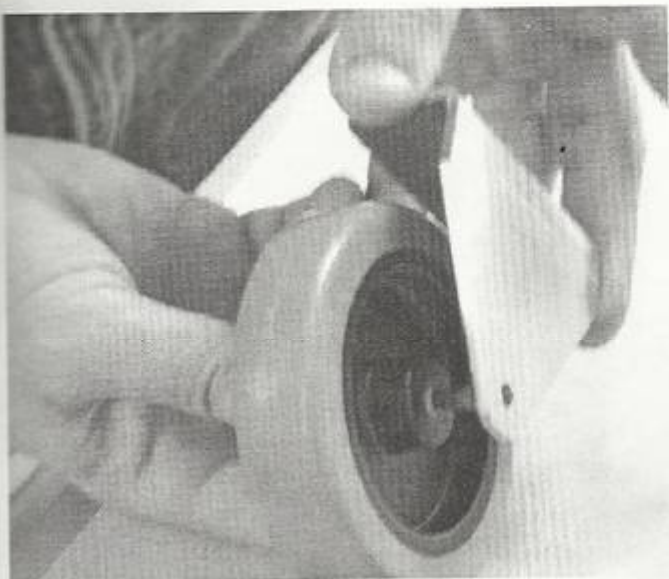


The posts are then place into the center hole of the 90° bend of the adjustable fences (located just above the extruded aluminum rail).

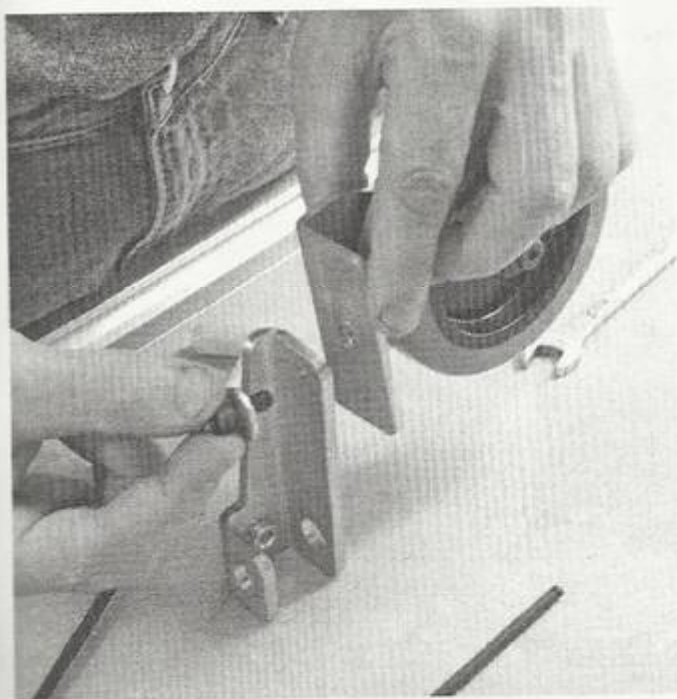
**Note:** One is placed on each side of the main assembly.



Slip the axel post through the wheels.



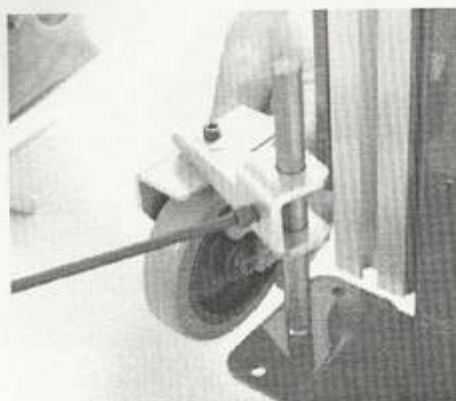
The axel post slips through the mounting bracket and is held into place with a 1/4 - 20 jam nut.

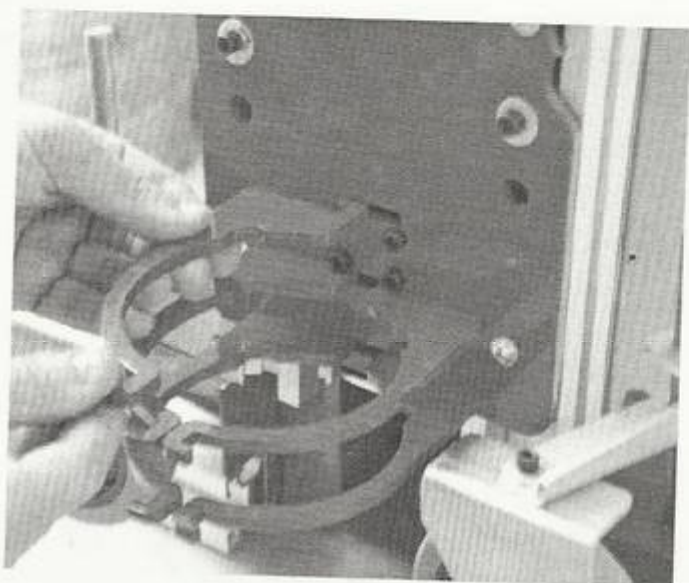


The capscrew and washer is used to secure the mounting bracket to the pivoting bracket.

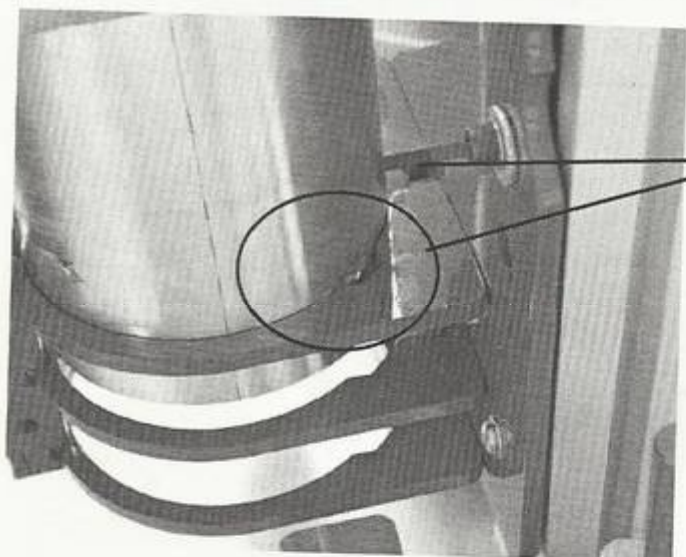


The pivoting bracket has a capscrew threaded through the PEM hardware, and is used to secure the assembly to the post. Adjustments to the height and position of the hold down wheel are made at this point.



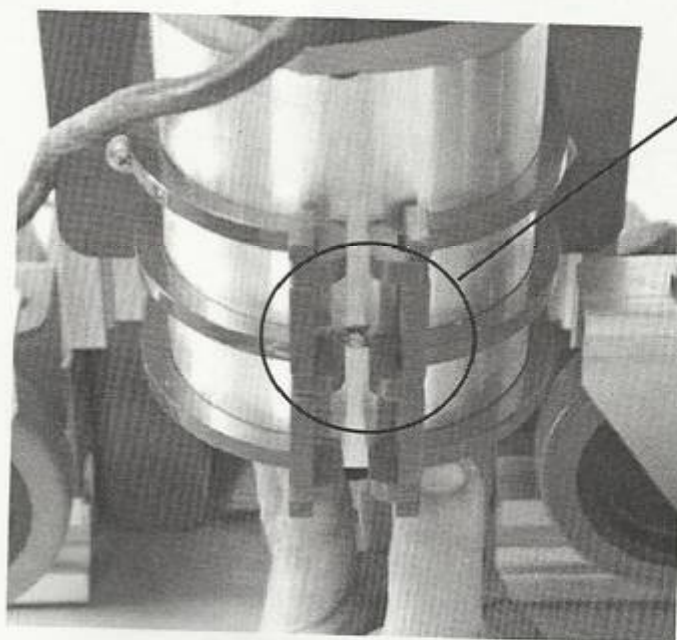


Insert the six motor mounting bands into the front of the main assembly.



Insert the router from the top.

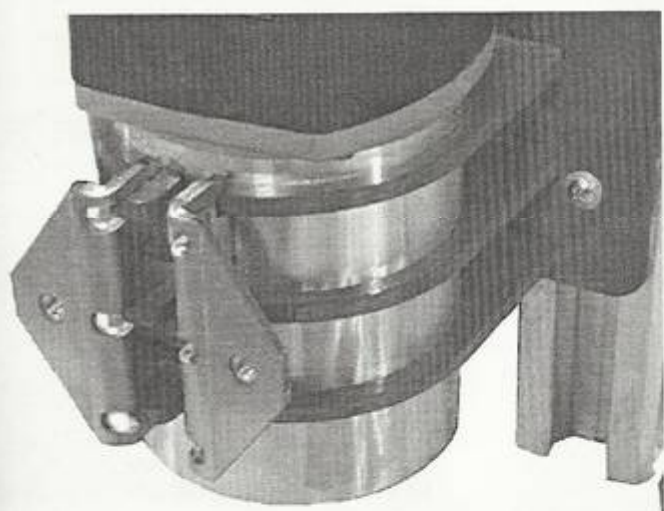
You will need to rotate the router so that the studs on the housing go through the notch in the mounting bands or between the bands in the front and in the back.



The stud on the motor housing being slid down through the open channel in the front.



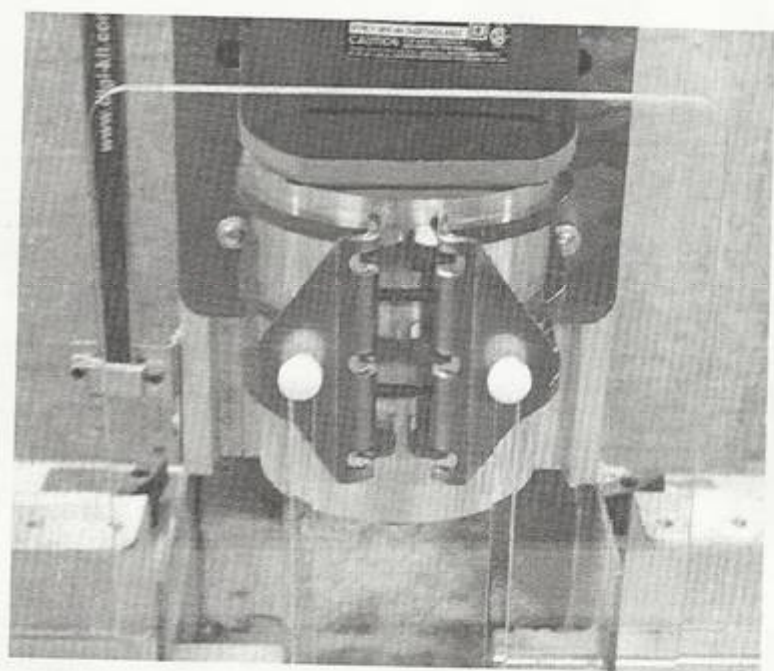
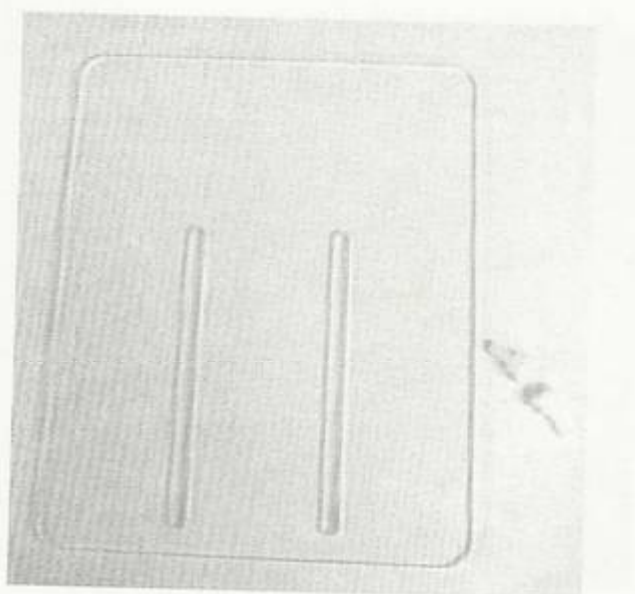
Notice the orientation of the motor with the variable speed adjustment to the front and the power switch to the back.



The two brackets will use two long capscrews to secure the motor mounting bands. Once these bands are secure, the motor should be fixed into place.



The handwheel is locked onto the top of the z-axis screw.



# Mounting the Digital Scale

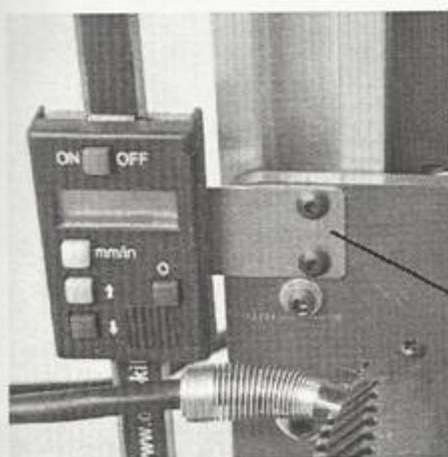
Top and Bottom Mounting Plates

Metal Anchors

Center Mounting Plate

Adhere the foam pieces inside the two mounting brackets and on the front of the z-axis carriage (top and bottom).

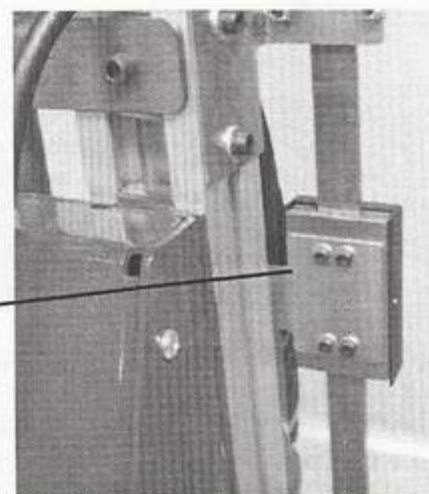
Front view



Attach the center mounting plate to the front of the router base using the 2 panhead screws.

Mount the digital scale to the assembly using the 4 smallest cap screws and washers provided.

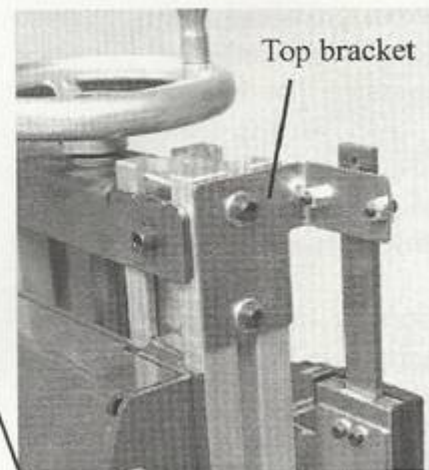
Rear view



Adhere the foam pieces to the top & bottom mounting plates.

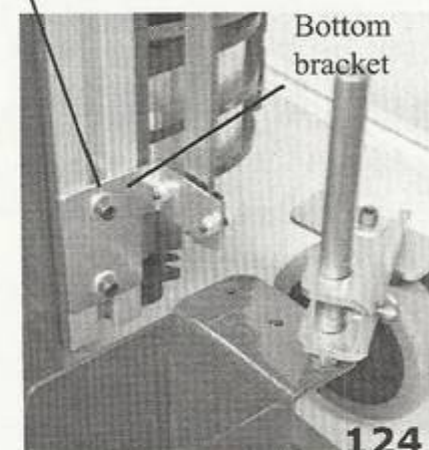
Attach the top mounting bracket to the thin channel of the extruded aluminum rail. The bottom mounting bracket is mounted to the opposite end of the extrusion.

Top bracket



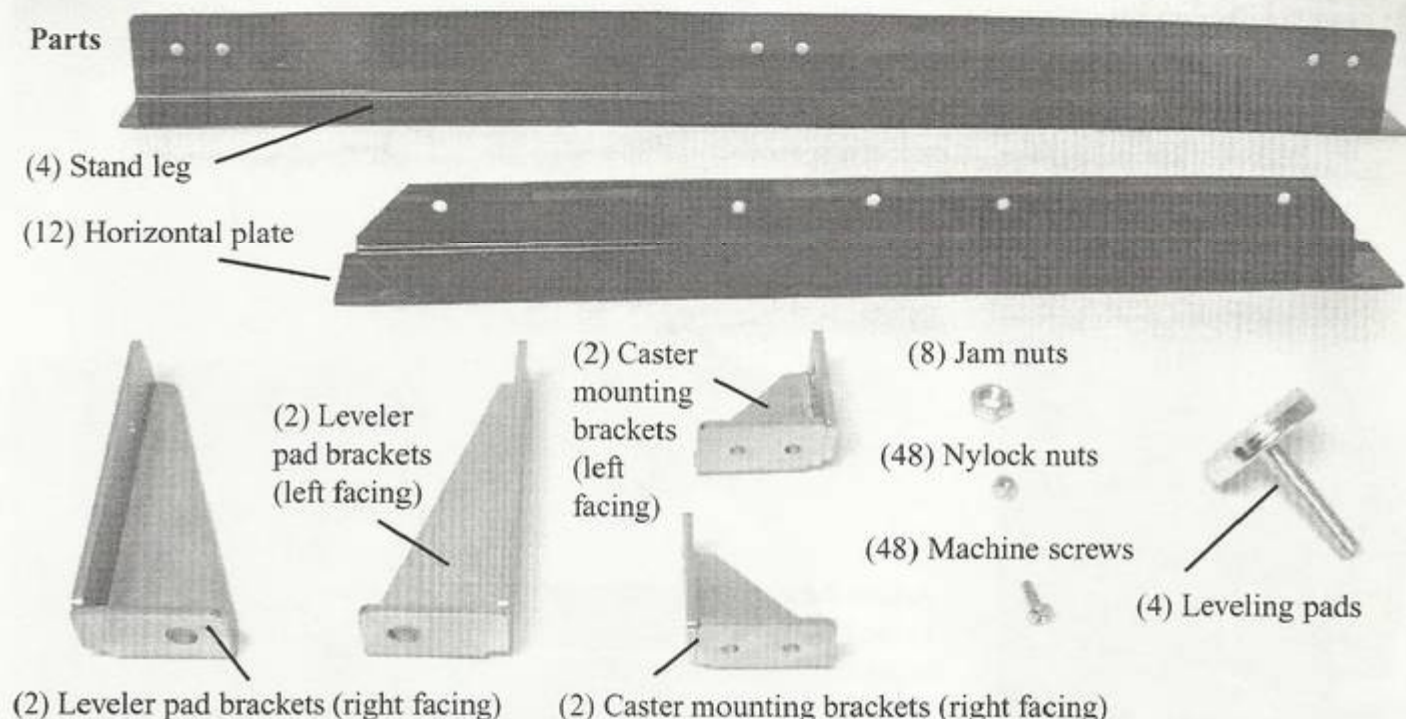
Secure the digital scale to the mounting brackets (top and bottom) with the metal anchors provided.

Bottom bracket



# Workstation Assembly

## Parts



**Tools required for assembly:** Phillips head screw driver (We suggest a power screw driver or cordless drill) and 7/16" box end wrench.

**Front and back panel assembly:** Assemble 2 legs and 3 horizontal plates (as shown right) with 12 machine screws and 12 nylock nuts. Use a framing square to insure that the parts are assembled squarely. Repeat this process for a second panel.

Using 4 horizontal plates (2 on each side), and starting at the top, join the front and back panels together, leaving the screws and nuts slightly loose.

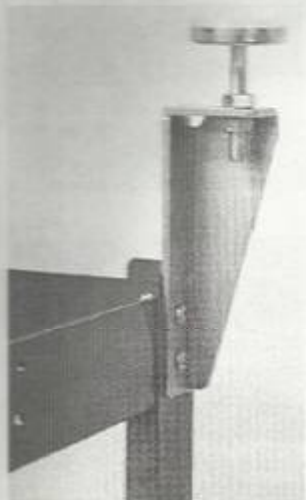
Turn the workstation upside down onto a flat surface and attach the 2 remaining horizontal plates and 4 leveler pad brackets, again leave the screws and nuts slightly loose.

Once again use a framing square to align the frame and tighten all of the hardware.

Turn the workstation right side up on a level surface and adjust and tighten the jam nuts to level.

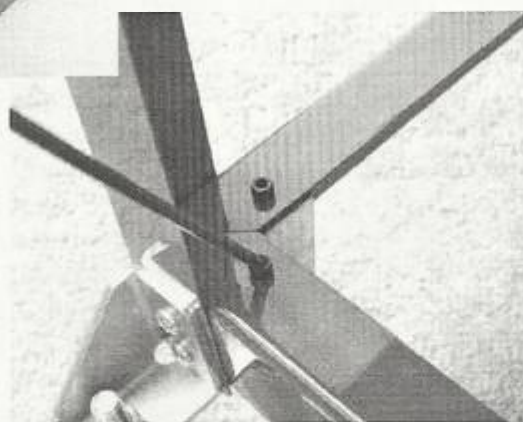
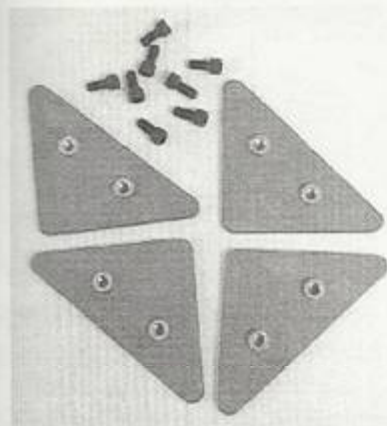


Mount the foot brackets to the bottom



Thread one jam nut onto each leveling pad post. Insert the post into the foot mounting bracket and thread the second jam nut onto the leveling pad post. (Note: If you purchased the optional locking casters, use the casters in lieu of the leveling pads).

The 4 triangular stabilizing plates have been provided to add strength to the bottom cross rails. These pieces should be secured tightly with the (8) 1/4-20 capscrews provided.



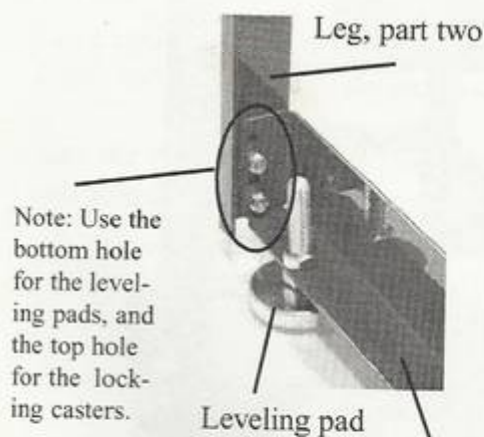
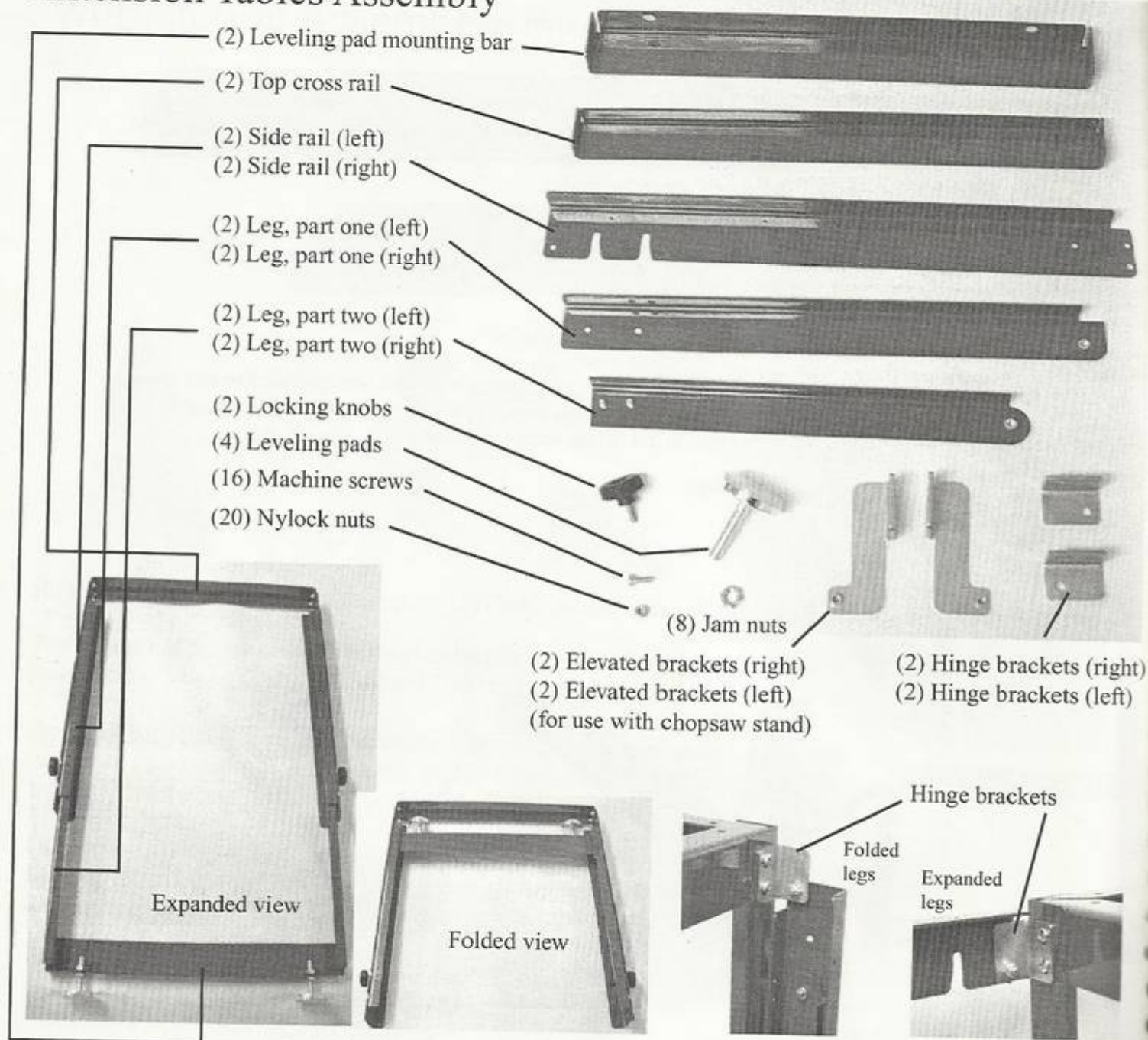
Workstation top (not included):  
We recommend using 1 1/8" thick  
MDF, cut to 23" x 23".

Note: 1 1/8" thick will be necessary  
if you are mounting the Legacy  
Overhead Router Lift to the work-  
station, otherwise the top could be  
3/4" material.

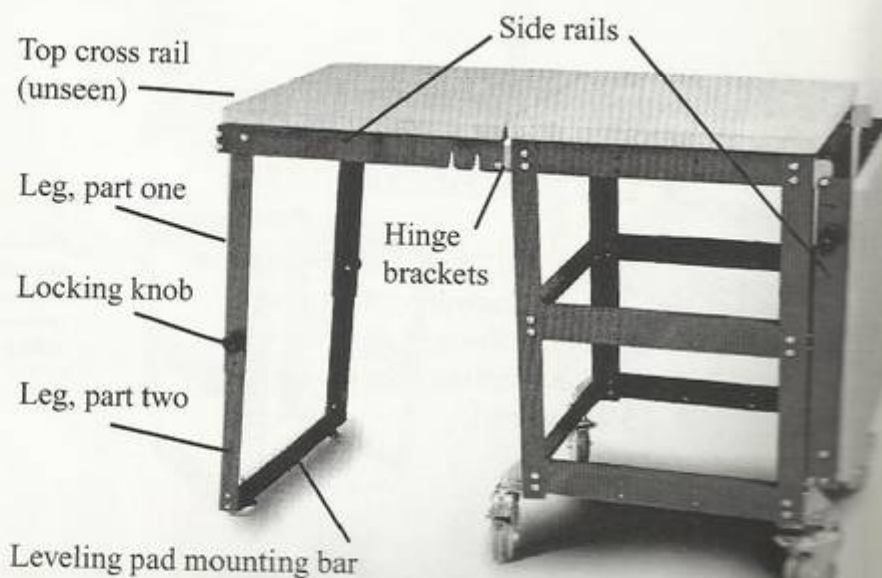
*Completed  
assembly  
shown with  
optional  
locking  
casters*



# Extension Tables Assembly



**127** Leveling pad mounting bar



# Workstation for Downdraft Table Assembly

## Parts

(4) Stand leg

(12) Horizontal plate

(2) Leveler  
pad brackets  
(left facing)

(2) Caster  
mounting  
brackets  
(left  
facing)

(8) Jam nuts

(48) Nylock nuts

(48) Machine screws

(4) Leveling pads

(2) Leveler pad brackets (right facing)

(2) Caster mounting brackets (right facing)

**Tools required for assembly:** Phillips head screw driver (We suggest a power screw driver or cordless drill) and 7/16" box end wrench.

**STEP 1:** Front and back panel assembly: Assemble 2 legs and 3 horizontal plates (as shown right) with 12 machine screws and 12 nylock nuts. Use a framing square to insure that the parts are assembled squarely. Repeat this process for a second panel.

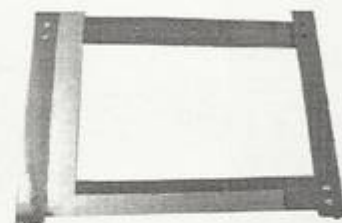
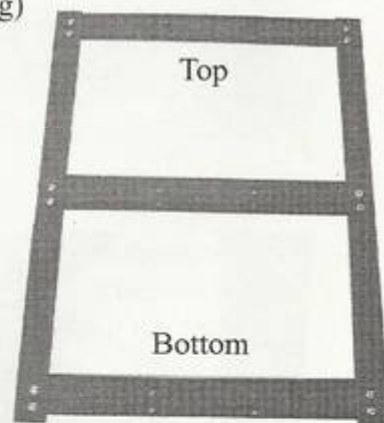
**STEP 2:** Using 3 horizontal plates (leave one side open - see photo on top of page 2), and starting at the top, join the front and back panels together, leaving the screws and nuts slightly loose.

**STEP 3:** Turn the workstation upside down onto a flat surface (this procedure will help to insure that the top has a flat and level surface) and attach the 2 remaining horizontal plates and 4 leveler pad brackets, again leave the screws and nuts slightly loose.

**STEP 4:** Once again use a framing square to align the frame and tighten all of the hardware.

**STEP 5:** Leveling Pads: Thread one jam nut onto each leveling pad post. Insert the post into the mounting bracket and thread the second jam nut onto the leveling pad post. (Note: If you purchased the optional locking casters, use the casters in lieu of the leveling pads).

**STEP 6:** Turn the workstation right side up on a level surface and adjust and tighten the jam nuts to level.



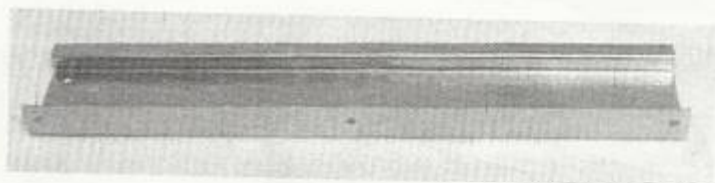
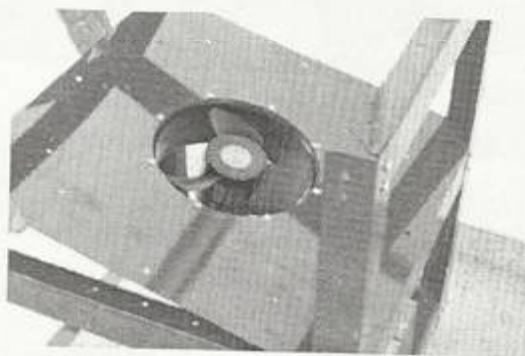
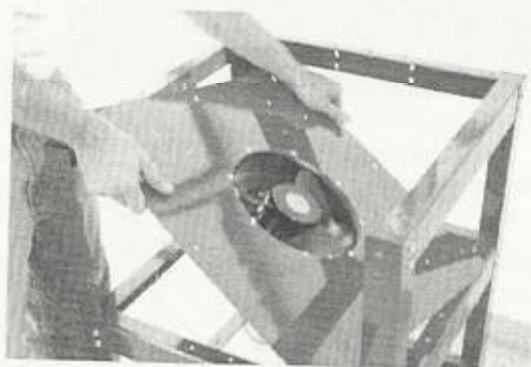
Assemble the workstation to this point (leaving one of the top cross pieces off).



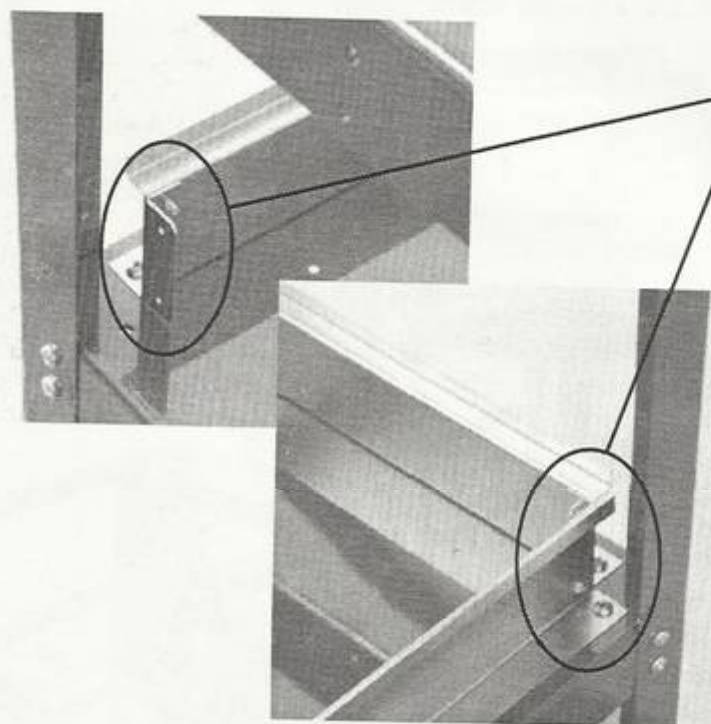
Assembly shown with optional locking casters

## Downdraft Table Assembly

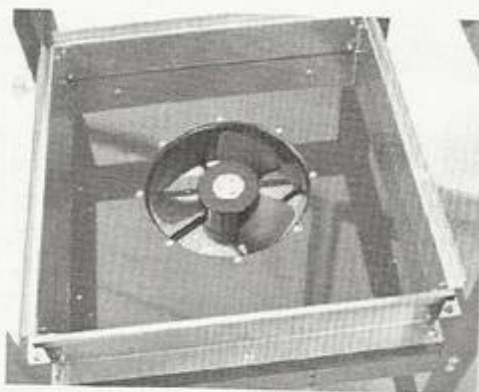
Slide the pre-assembled fan plate inside the frame and rest it upon the center support pieces.

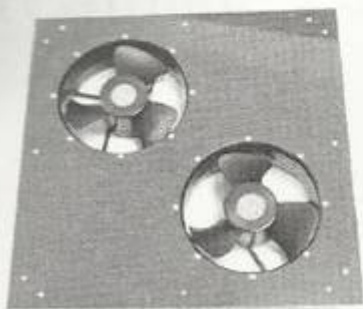


Locate the 4 filter mounts and secure them to the fan plate with the hardware provided.

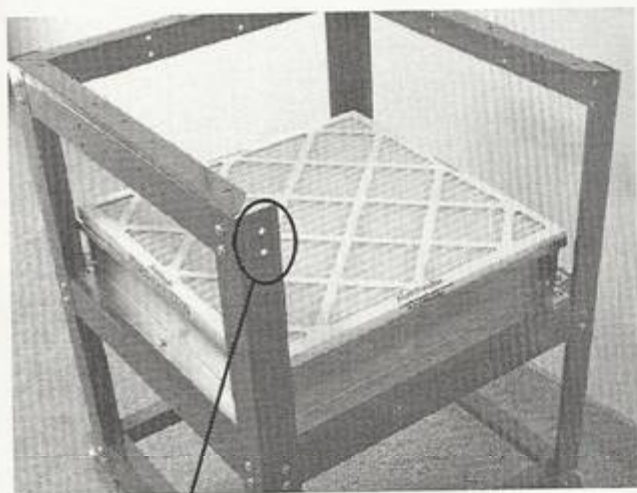


The 4 corner support brackets should be secured to the ends of the filter mounts.

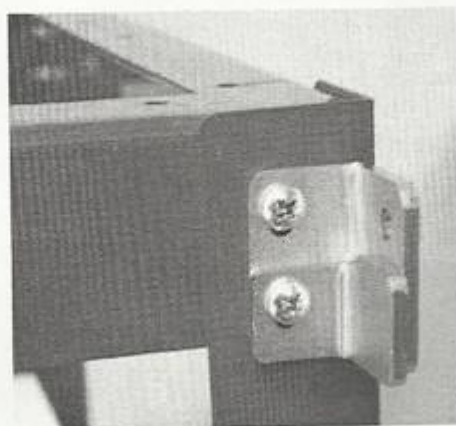
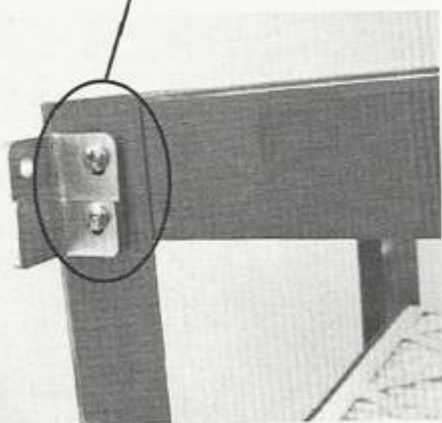




NOTE: If you purchased the double fan system your part will appear as shown to the left.

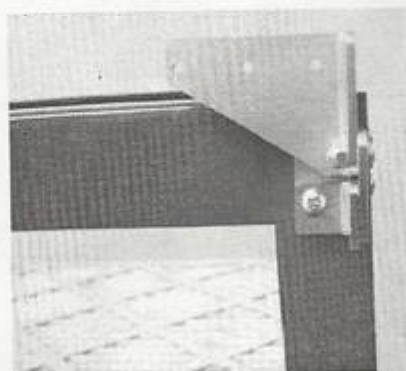
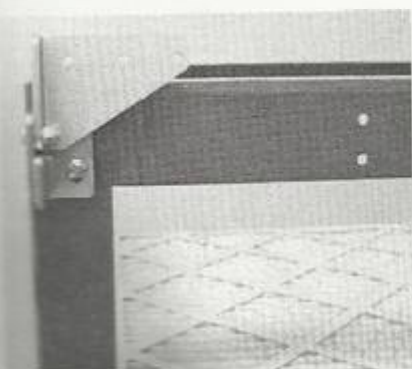


The filter is then placed on top of the filter mounts.



The final top crosspiece can now be mounted to the top of the frame.

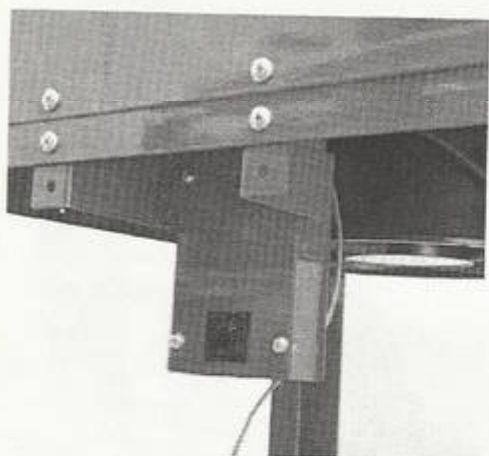
While doing this however, it will be necessary to mount the hinge hardware through the same holes.



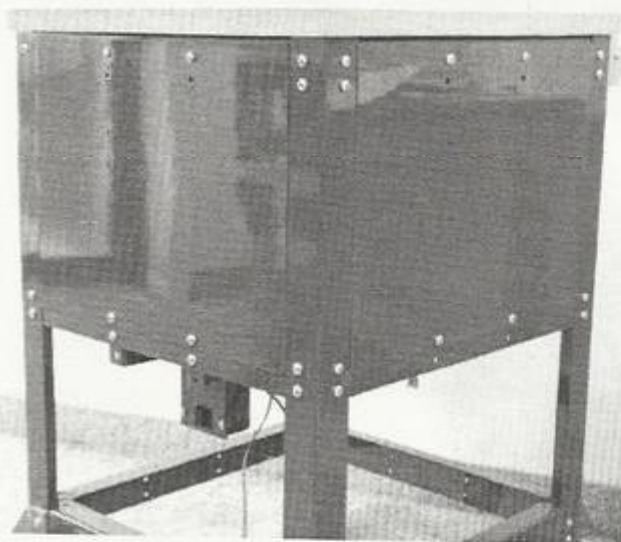
The hinge brackets mount to the hardware. These brackets should be left a little loose so the down-draft top can hinge up and down.



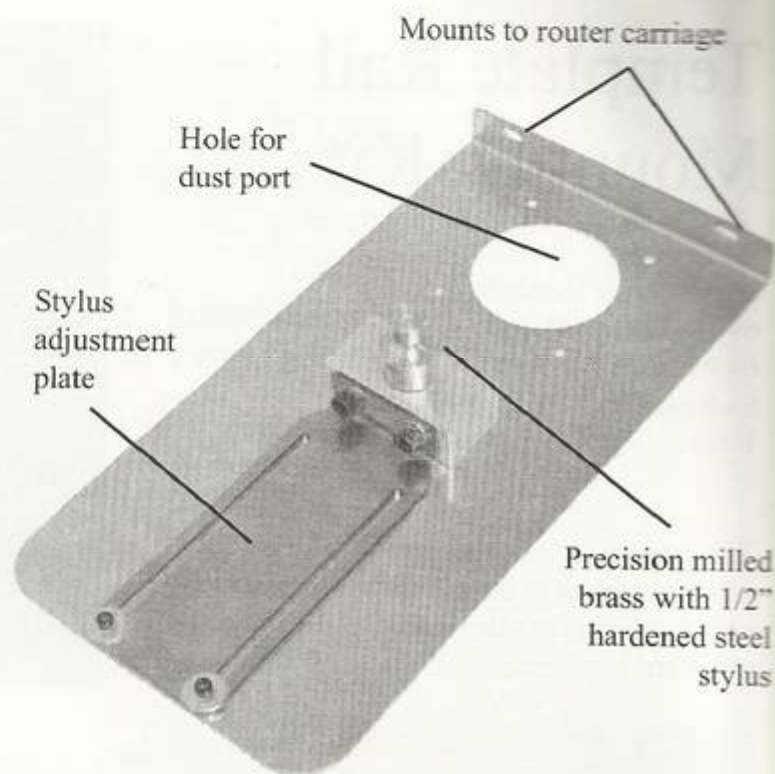
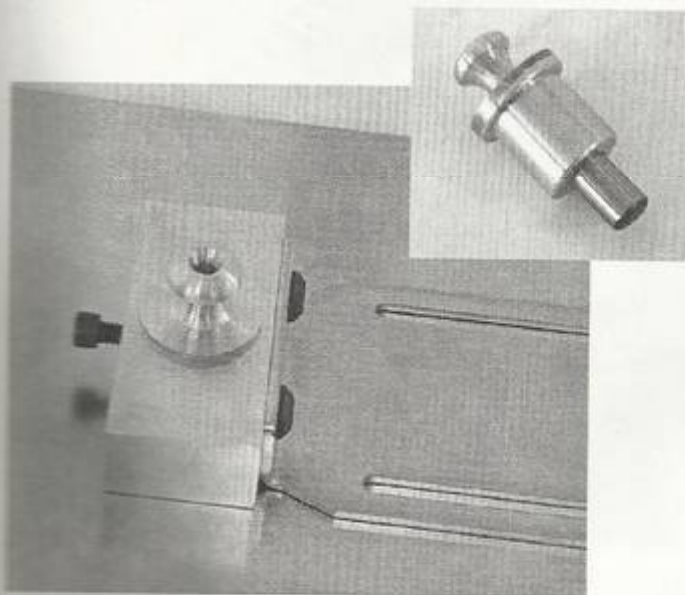
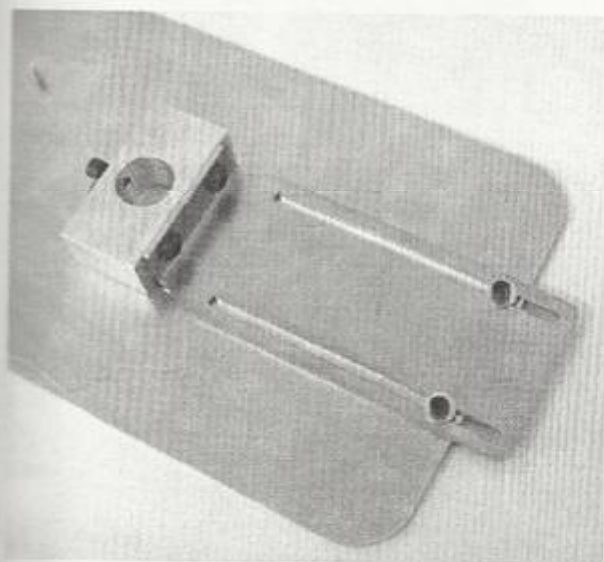
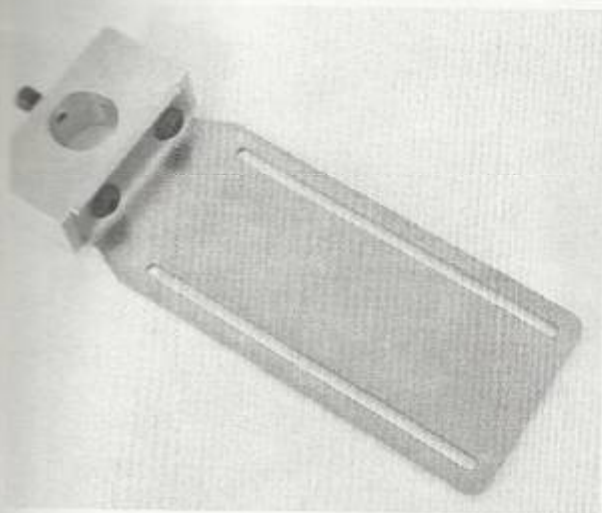
The MDF top is secured to the brackets as shown.



Mount the fan switch to the bottom hole of the front center cross piece and join the wires together with the fan.



# Template Follower

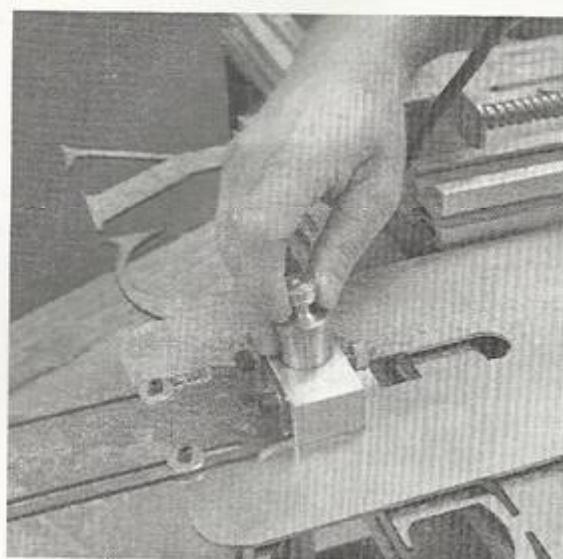


Mount the aluminum stylus block to the stylus adjustment plate with the two panhead screws.

A 1/4-20 capscrew is threaded into the hole on the back side.

The two 10-32 capcrews and washers are used to mount the flange plate to the follower plate.

The stylus fits into the large round hole of the aluminum block. The 1/4-20 capscrew is provided to add tension to the stylus while following a pattern.

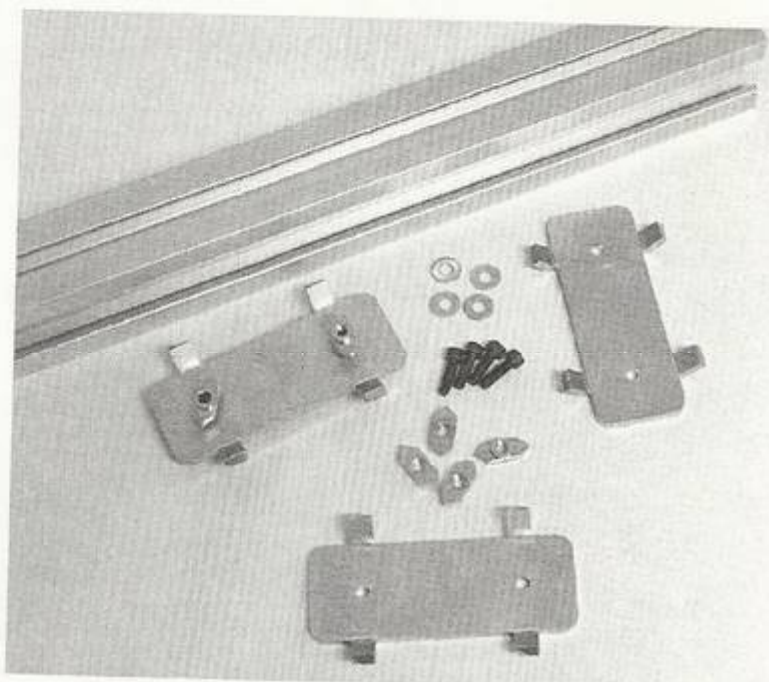


Stylus can easily be changed out to match various diameters of router bits.

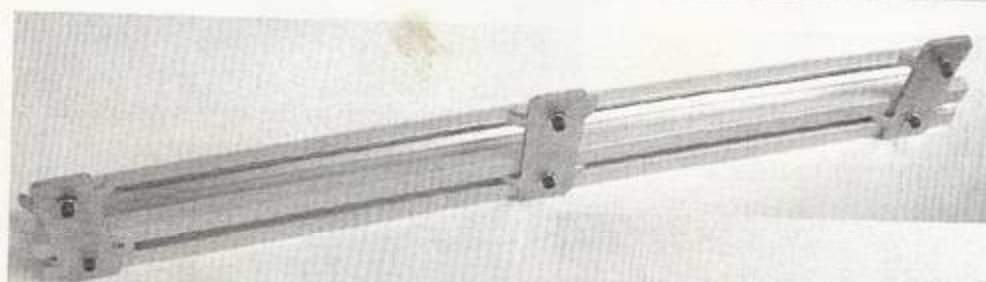
# Template Rail Mounting Kit

- 3 - Mounting Brackets
- 6 - 10-32 Capscrews
- 6 - #10 Flat Washers
- 6 - Insert Style Locking Plates
- 1 - Extruded Aluminum Mounting Rail

The capscrews, washers, and locking plates will be attached to the mounting brackets and used to mount the aluminum rail to the back rail of the machine.

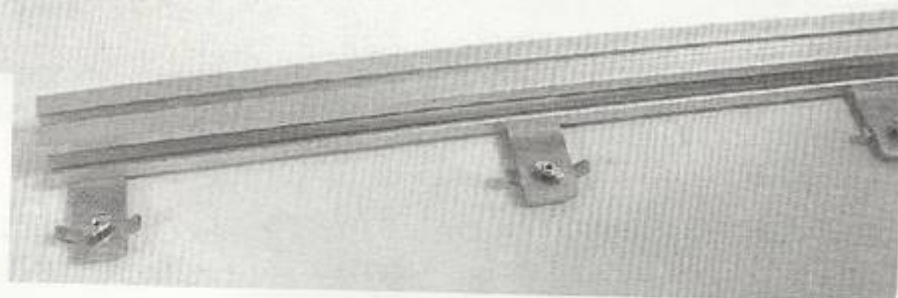


Top View

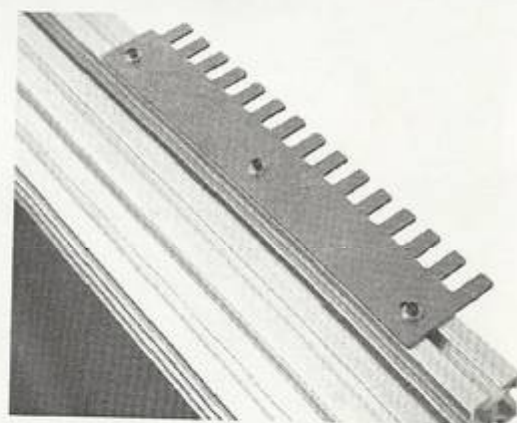
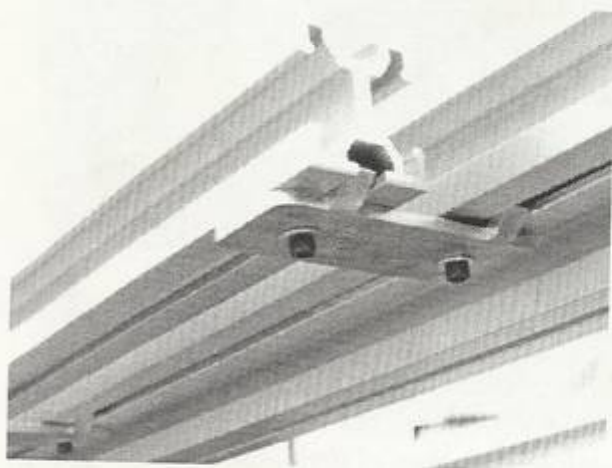


Bottom View

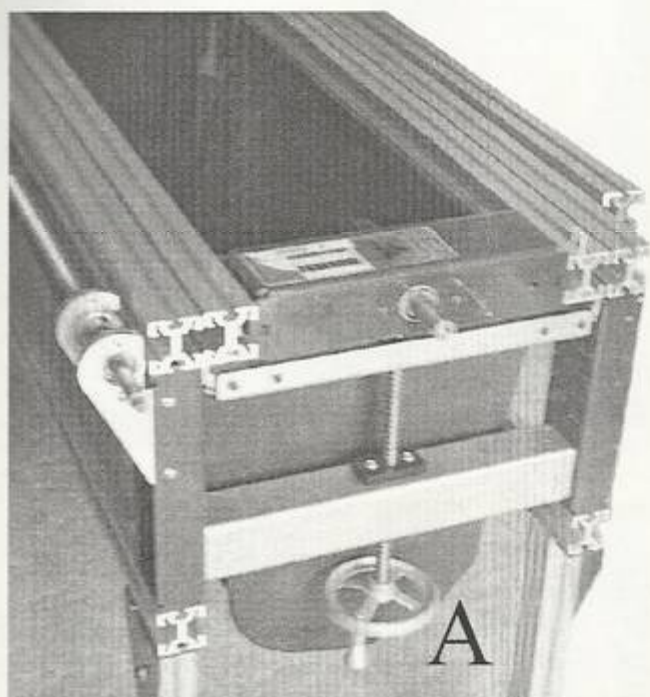
Mount the free end of the bracket to the outside, back rail of the machine. Notice that the tabs are slid inside the channel of the rail. These tabs will assist in keeping the rails parallel.



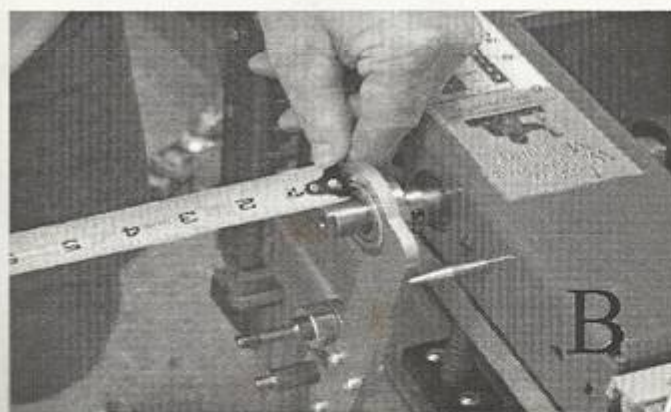
The templates then mount to the aluminum mounting rail.



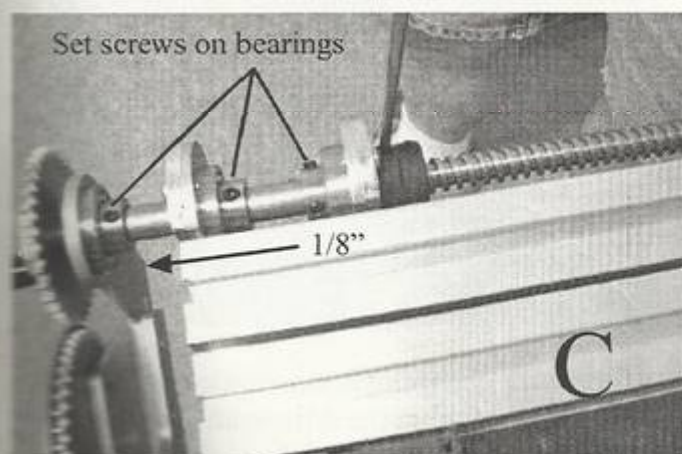
## 4x Gear Upgrade



**A** Remove the index gear, pivot arm, and any drive gears on your system.

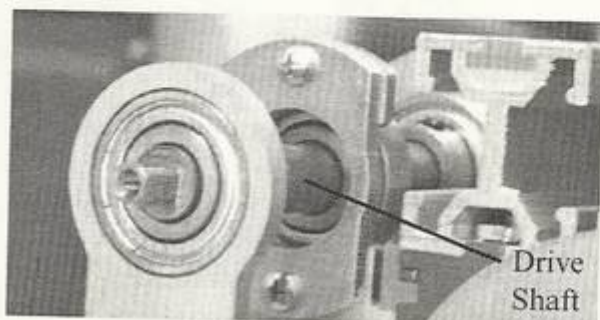


**B** Slide gear linkage assembly 1, over the spindle shaft, and measure  $11/16$ " from the face of the pivot arm section and the end of the spindle shaft. Tighten the set screws.



**C** Loosen the set screws on the bearings, if you have them, and the closest half of the  $5/8$  double locking collar that connects the drive shaft and the drive screw. Move the shaft  $1/8$  inch forward and retighten all screws and the locking collar.

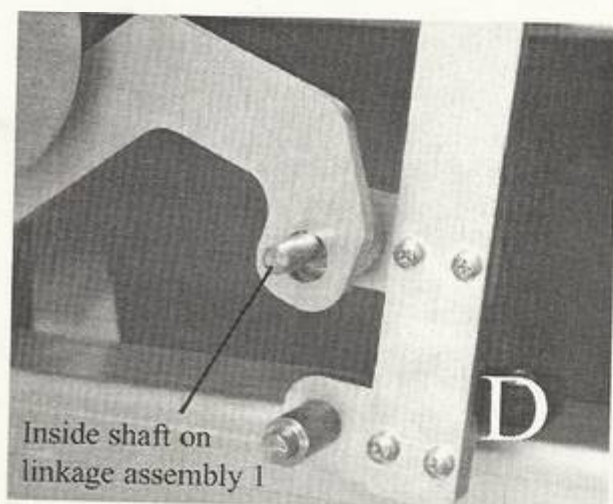
Note: Because the set screws leave small indentations in the shaft it may be necessary to put a large gear on the shaft and tap gently with a hammer to break the shaft free.



Drive  
Shaft

**D** Slide gear linkage assembly 2, over the drive shaft and the inside shaft on linkage assembly 1.

You are now ready to install the gears.



Inside shaft on  
linkage assembly 1

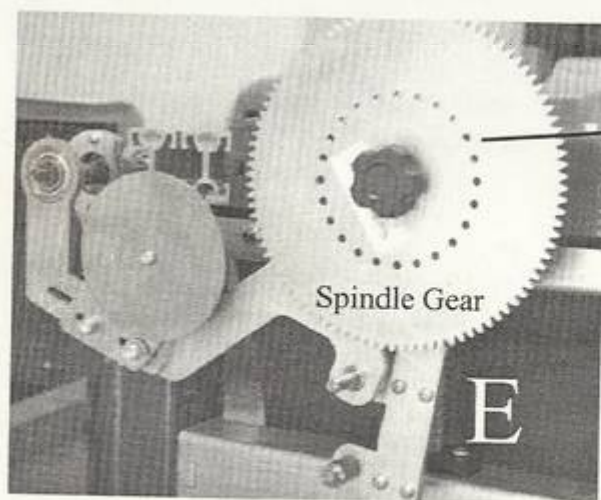
#### General information:

There are 4 different type of gears in your 4X gear drive system.

11 different quick change gears,

9 different pairs of reduction gears marked A1-A3, B1-B3, and C1-C3

1 spindle gear which may or may not have the index holes shown.

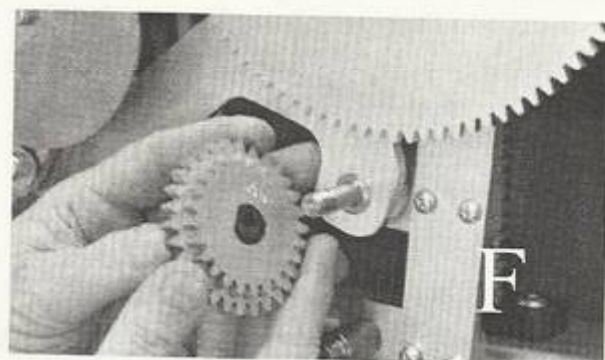


Spindle Gear

**E** Place the spindle gear on the end of the spindle shaft and secure with the hand knob. You will always use this spindle gear regardless of the set of pitches you wish to set your system up for.

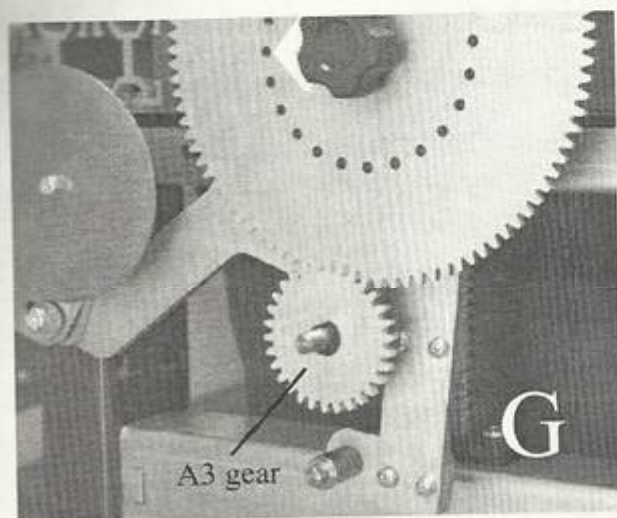
**F** Choose the pitch you wish to set up from one of three different groups A, B, or C.

The A set of gears will give you a pitch range from 1.5" using the largest quick change gear (60 tooth) to 7.5" using the smallest quick change gear (12 tooth). This set will be used for most small diameter projects like balisters and small turnings. Stock diameters from 1 to 4 inches.



F

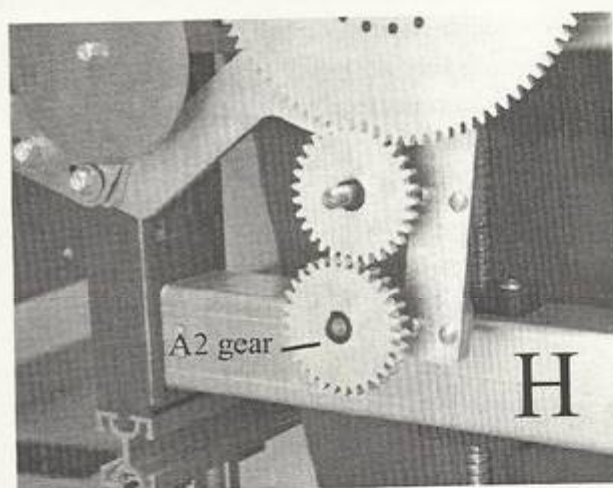
Note: The quick change gear is a single gear that is positioned on the end of the drive shaft. The drive shaft is positioned at the end of the x-axis (long) lead screw.



The B set will give you a pitch range from 6" to 30". This set will be most useful for large diameter projects like table bases, columns, etc. Stock diameters from 4 to 11 inches.

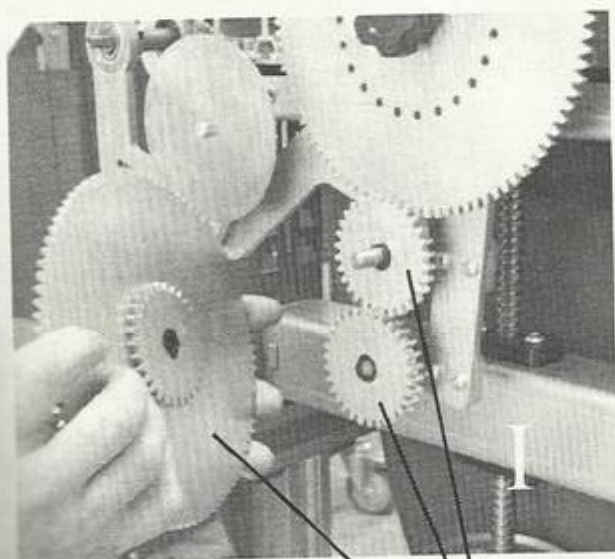
The C set will give you a pitch range from 24" to 120". These can be used for speciality applications like a gothic twisted column or walking staffs.

Now that you have chosen a range of pitches to work from we will move on to the next step. In this example we will use the A set.



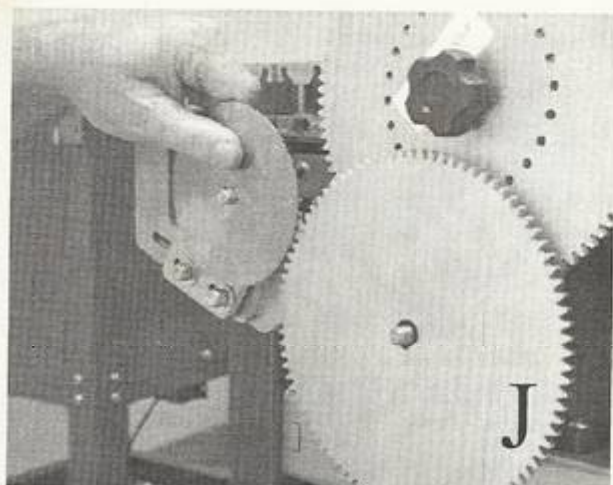
**G** If you selected pitches in the A group range take the reduction gear marked A3 and install it as shown in picture F. small gear towards the mill on the threaded post shown. Rotate the gear until the teeth mesh and the gear set will move to the base of the shaft.

**H** Next pick up the reduction set marked A2. This set is made up of two identical gears so it doesn't matter which way you place it on the second, nonthreaded, post. If you were using the B set you would install it with the small gear towards the mill. Rotate the gear until the teeth mesh and the reduction set will move to the base of the second shaft.

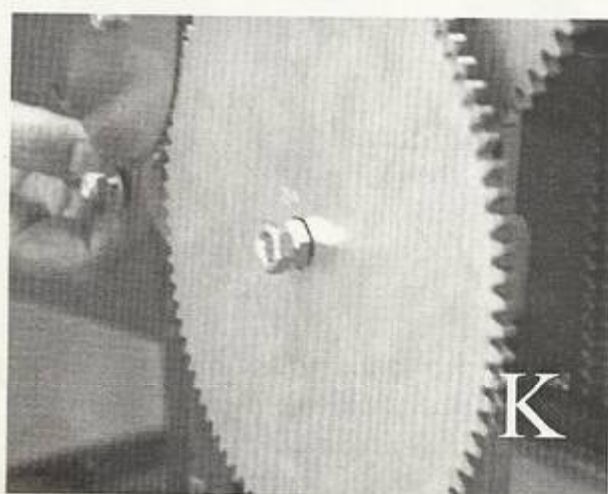


**I** Next you will install the set marked A1. Place this reduction set on the first threaded post with the small gear towards the mill. Rotate the gear until the small gear meshes with the front gear on reduction set A2.

A3 Gear  
A2 Gear  
A1 Gear

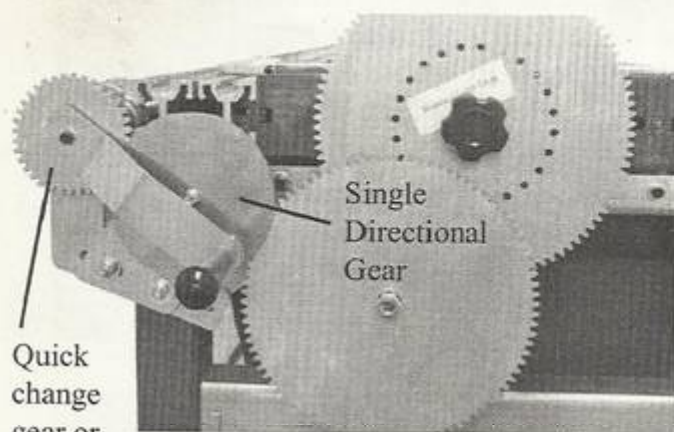


**J** Then slide the direction gear towards the large gear and mesh these gears.



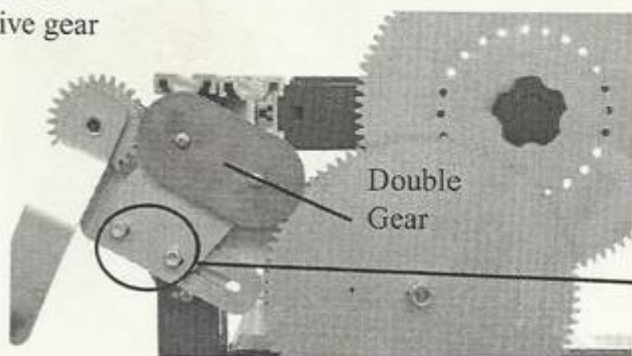
**K** Install the correct quick change gear, spacer, and handle to give you the final pitch you desire and slide the assembly together making sure all gears are aligned. Make any correction necessary to the shaft position or the second section of the gear linkage and tighten the set screw on the 5/8" bearing.

You are now ready to mill with your new improved 4X gear reduction system.



**NOTE:** A left and right-hand direction gear are a part of this system. These gears control the direction of the spiral.

The single gear (pictured left) will send the spiral on a left-hand turn.



The double gear (pictured left) will send the spiral on a right-hand turn.

This gear can be changed by releasing the two lock nuts positioned on the bottom.

## Gear Chart - 4X Gear Package

| Quick Change Gear             | Group A      | Group B    | Group C    |
|-------------------------------|--------------|------------|------------|
| 12 tooth -<br>1" diameter     | 7.5" pitch   | 30" pitch  | 120" pitch |
| 15 tooth -<br>1.25" diameter  | 6" pitch     | 24" pitch  | 96" pitch  |
| 18 tooth -<br>1.5" diameter   | 5" pitch     | 20" pitch  | 80" pitch  |
| 20 tooth -<br>1.625" diameter | 4.5" pitch   | 18" pitch  | 72" pitch  |
| 24 tooth -<br>2" diameter     | 3.75" pitch  | 15" pitch  | 60" pitch  |
| 30 tooth -<br>2.5" diameter   | 3" pitch     | 12" pitch  | 48" pitch  |
| 36 tooth -<br>3" diameter     | 2.5" pitch   | 10" pitch  | 40" pitch  |
| 40 tooth -<br>3.375" diameter | 2.25" pitch  | 9" pitch   | 36" pitch  |
| 45 tooth -<br>3.75" diameter  | 2" pitch     | 8" pitch   | 32" pitch  |
| 48 tooth -<br>4" diameter     | 1.875" pitch | 7.5" pitch | 30" pitch  |
| 60 tooth -<br>5" diameter     | 1.5" pitch   | 6" pitch   | 24" pitch  |

Note: The Quick Change Gear is always mounted to the end of the drive shaft at the end of the x-axis (long) lead screw. This gear is used in conjunction with either of the three gear packages labeled A, B, or C.

# Basic Operation

## GETTING STARTED

### Movements of the Router

#### The router is moved in three basic directions.

1. The router moves *back and forth along the length* of the workpiece (x-axis). This movement can be made either with the lead screw or manually sliding the router.
2. The router moves *across the workpiece* (y-axis). This movement can be made either with the lead screw or manually sliding the router.
3. The router moves *up and down* on the workpiece (z-axis). This is the plunge of the router and is generally a "fixed" axis. The plunge depth of the router must be set by using the adjustable plunge bar on the router.

### Combining Movements of the Router

#### The router is moved in three basic directions.

The x-axis and the y-axis can be **combined to create curved or contoured profiles** (i.e. Queen Anne, cabriolet, goose neck). To combine these two movements for creating contoured profiles you must:

1. Use the stylus to follow a two-dimensional pattern (usually cut out of 3/4" mdf).
2. Leave the y-axis split-nut open to slide freely back and forth.
3. Cut from the side of the workpiece.

The x-axis and the rotation of the workpiece can be **combined to create spirals** (i.e. rope, barley twist, pineapple). To combine these two movements for creating spirals you must:

1. Have the gears engaged.
2. Lock the x and y-axis split-nuts onto the lead screws.

The x-axis and the rotation of the workpiece can be **combined to create contoured spirals**. To combine these two movements for creating spirals you must:

1. Follow a two-dimensional pattern (usually cut out of 3/4" mdf).
2. Leave the y-axis split-nut open to slide freely back and forth.
3. Cut from the side of the workpiece.
4. Have the gears engaged.
5. Lock the x-axis split-nut onto the lead screw.

### Positioning the workpiece

The workpiece is mounted between centers (between the headstock and the tailstock) like a lathe.

1. The workpiece is set level, or the workpiece is set on an angle. You must choose one or the other.
2. The workpiece is rotated round, or the workpiece is locked into place (indexed). You must choose one or the other.

- or -

The workpiece is mounted flat underneath the router like an inverted router table.

1. Use a 3/4" mdf tabletop attached to the rails.
2. Use the Legacy horizontal bench vise.
3. Use the Legacy linear milling table.

### When starting a project ask yourself the following questions:

- **Is my piece going to be straight or tapered?**  
If straight - set the bed level. If tapered - set the bed on an angle.
- **Is my piece going to be round, square, or multi-sided?**  
If round - Use the gears, spindle shaft handle, or motor to rotate the stock.  
If square or multi-sided - use the indexing head to lock the material into place.
- **Is my piece going to have spirals?**  
Determine the direction of the spiral - left or right.  
Determine the diameter and design of the router bit.  
Determine the number of starts (cuts or beads)
- **Is my piece going to have a contoured shape?**  
If so, then create a pattern of the desired shape  
The material must be cut from the side
- **Is my piece going to have reeds or flutes?**  
Determine how many reeds/flutes on the piece.  
Use the indexing head.

## Milling stock to round

Milling stock to round is fast and easy on the Legacy. This operation can be achieved in one of three ways.

1. Rotating the stock with the spindle shaft handle and advancing the router with the handle on the end of the drive shaft.
2. Rotating the stock with the spindle shaft handle and sliding the router along the length of the workpiece.
3. Using the linear drive motor and the .25x gear reduction set with a 1/2" gear pitch.

**Stock Preparation:** If the desired end result is round, it is best to cut the corners of the material off on the table saw, resulting in an 8-sided workpiece. If the part you are creating has a square section on it you will want to mill the round sections directly on the machine.

**Preferred router bit:** 1 1/4" Bottom Cleaning or Surface Planing Bit. (Note: Standard bottom cleaning router bits have a 1° taper. That is to say that the surface of the bit tapers 1° from the center of the bit to the outside corner. Magnates bit #2704 - 1 1/4" bottom cleaning bit has been designed without this 1° taper. The bit is completely flat across the bottom, thereby rendering it more preferable when milling stock to round.)



**Plunge Depth:** Determined by setting the bottom of the bit on the surface of the material.

**Y-axis Position:** The cleanest cut is achieved by positioning the router bit 1/2" off center on the y-axis (short axis). As a general rule this position is 1/2" off center, to the back side.

**Rotation of workpiece:** It is best to **rotate the stock in a counter clockwise direction**. This allows the workpiece to rotate into the bottom of the router bit as opposed to rotating into the side of the bit. This rotation presumes that the operator is bringing the router bit in from the back side (side opposite the operator) of the machine.

**Advancing the router:** Because the thread on the long (x-axis) lead screw is a right-hand thread, the router will always advance down the length of the workpiece when the drive shaft handle is rotated in a counter clockwise direction. This presumes that the operator is milling from the headstock to the tailstock.

# Using the indexing system

The indexing system is used to:

1. Create multiple sided pieces, i.e. 4-sided, 6-sided, 8-sided, etc.
2. Create evenly spaced reeds and flutes around the circumference of the part.
3. Create joinery, i.e. mortises, dadoes, dovetail slots, etc. evenly spaced around the circumference or at  $90^\circ$ .

**Standard Positions:** The standard 24 position indexing head allows for equal divisions of 24, 12, 8, 6, 4, 3, and 2 positions. This equates to  $15^\circ$ ,  $30^\circ$ ,  $45^\circ$ ,  $60^\circ$ ,  $90^\circ$ ,  $120^\circ$ , and  $180^\circ$  increments or  $15^\circ$  per hole.

**Additional Indexing Positions:** Five additional indexing plates are available. These plates are designed to offer the following positions:

- 28 positions (adding 28, 14, 7 positions) =  $12.85^\circ$  per hole
- 30 positions (adding 30, 15, 10, 5 positions) =  $12^\circ$  per hole
- 32 positions (adding 32, 16 positions) =  $11.5^\circ$  per hole
- 36 positions (adding 36, 18, 9 positions) =  $10^\circ$  per hole
- 40 positions (adding 40, 20 positions) =  $9^\circ$  per hole

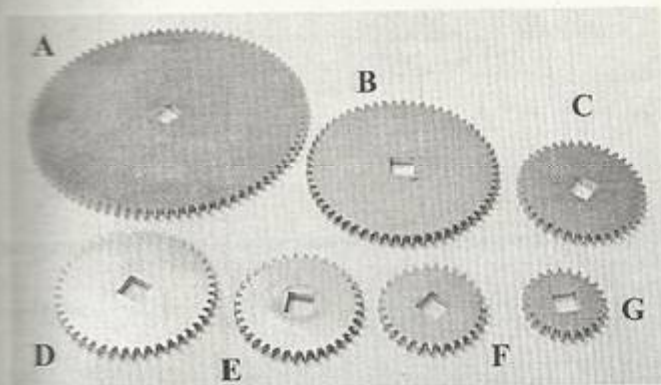
Total indexing: 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 18, 20, 24, 28, 30, 32, 36, and 40 positions.

**Using the Indexing System:** The indexing plates mount to the end of the spindle shaft (rectangular post). The hole positions align with the indexing pin which is mounted in the headstock. This indexing pin is spring loaded and is locked out of the way with a locking collar. To access the pin use the small t-handle allen wrench provided. Release the collar and lock it on the end of the index pin, allowing the pin to move freely into the holes on the index plate. This will lock the material into place.

To reposition the workpiece, release the pin with your left hand and move the index gear with your right hand. Note: releasing the capscrews on the pivot arm linkage will make the index gear more accessible.



# Using the spiral drive



The Legacy comes with 7 drive gears. When using the **standard gear set** these drive gears will give you the following pitches:

- "A" drive gear - 2" pitch
- "B" drive gear - 3" pitch
- "C" drive gear - 4" pitch
- "D" drive gear - 4 1/2" pitch
- "E" drive gear - 5" pitch
- "F" drive gear - 6" pitch
- "G" drive gear - 7 1/2" pitch

**Pitch** is defined as the **distance of linear travel for one complete rotation of the workpiece.**

To determine which gear pitch to use, we use the formula:

$$(\text{Number of starts/cuts}) \times (\text{diameter of the router bit}) = \text{PITCH}$$

**example:** 3 starts/cuts  $\times$  1 1/2" diameter router bit = 4 1/2" pitch

To achieve a 4 1/2" pitch (distance of linear travel) we would use the "D" drive gear.



**Gear Chart:** The gear chart is positioned on the headstock and allows for ease of use of the drive gears, or pitch gears. Place the gear on the decal. The corresponding semi-circle is marked with a letter; A - G (also pictured above). These letters are located on the chart in the column to the far left. The letter reflects the pitch obtained by each of the gears and its corresponding gear set (Standard, .25X reduction, or 2X multiplier).

i.e. The "B" drive gear (pictured left) will always create a 3" spiral pitch when used with the standard gear set. The same gear when used with the .25x gear reduction set will always create a 3/4" pitch.

**NOTE:** When creating a 4" and a 6" pitch you must use the standard gear set. The 4" and 6" pitch cannot be achieved using the 2X gear multiplier.

**This gear chart DOES NOT apply to the 4X gear package.**

**.25X Gear Reduction:** The .25X gear reduction set multiplies the 7 standard drive gears by .25 times, thereby changing the distance of the pitch. For instance the "A" drive gear when using the standard gear set will always produce a 2" distance of travel. When the standard gear set is replaced by the .25X reduction set, the "A" drive gear will always produce a 1/2" distance of travel, i.e.  $2" \times .25 = 1/2"$ .

**2X Gear Multiplier:** The 2X gear multiplier set multiplies the 7 standard drive gears by 2 times, thereby changing the distance of the pitch. For instance the "G" drive gear when using the standard gear set will always produce a 7 1/2" distance of travel. When the standard gear set is replaced by the 2X multiplier, the "G" drive gear will always produce a 15" distance of travel, i.e.  $7 1/2" \times 2 = 15"$ .

**Directional Gears:** The model 900 comes standard with a left-hand directional gear. The models 1200, 1800, & 2000 have both left and right-hand directions as standard features. The left-hand drive has a single gear in the sleeve, and the right-hand drive has two gears in the sleeve.

# Spiral Drive - Pitch

The chart below lists all possible scenarios for pitch, number of starts, and diameter of router bits. The dimensions across the top are the available diameters of router bits. The column down the left side indicates all of the pitches available on the Legacy. The number of starts can be located by following the bit diameter down, and matching the pitch across the chart.

*example:* to achieve 5 starts using the 1 1/2" diameter router bit, we would need to use the 7 1/2" pitch on the Standard Gear Set.

| Router Bit Diameters           |      |      |      |      |      |    |        |    |        |    |
|--------------------------------|------|------|------|------|------|----|--------|----|--------|----|
| Pitch                          | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/2" | 2" | 2 1/2" | 3" |
| <b>.25X GEAR REDUCTION SET</b> |      |      |      |      |      |    |        |    |        |    |
| 1/2"                           | 4    | 2    |      | 1    |      |    |        |    |        |    |
| 3/4"                           | 6    | 3    | 2    |      | 1    |    |        |    |        |    |
| 1"                             | 8    | 4    |      | 2    |      | 1  |        |    |        |    |
| 1 1/8"                         | 9    |      |      |      |      |    |        |    |        |    |
| 1 1/4"                         | 10   | 5    | 3    |      |      |    |        |    |        |    |
| 1 1/2"                         | 12   | 6    | 4    | 3    | 2    |    | 1      |    |        |    |
| 1 7/8"                         | 15   |      |      |      |      |    |        |    |        |    |
| <b>STANDARD GEAR SET</b>       |      |      |      |      |      |    |        |    |        |    |
| 2"                             | 16   | 8    |      | 4    |      | 2  |        | 1  |        |    |
| 3"                             | 24   | 12   | 8    | 6    | 4    | 3  | 2      |    |        | 1  |
| 4"                             | 32   | 16   |      | 8    |      | 4  |        | 2  |        |    |
| 4 1/2"                         | 36   | 18   | 12   | 9    | 6    |    | 3      |    |        |    |
| 5"                             | 40   | 20   |      | 10   |      | 5  |        |    | 2      |    |
| 6"                             | 48   | 24   | 16   | 12   | 8    | 6  | 4      | 3  |        | 2  |
| 7 1/2"                         | 60   | 30   | 20   | 15   | 10   |    | 5      |    | 3      |    |
| <b>2X GEAR MULTIPLIER SET</b>  |      |      |      |      |      |    |        |    |        |    |
| 8"                             | 64   | 32   |      | 16   |      | 8  |        | 4  |        |    |
| 9"                             | 72   | 36   | 24   | 18   | 12   | 9  | 6      |    |        | 3  |
| 10"                            | 80   | 40   |      | 20   |      | 4  |        | 5  | 4      |    |
| 12"                            | 96   | 48   | 32   | 24   | 16   | 12 | 8      | 6  |        |    |
| 15"                            | 120  | 60   | 40   | 30   | 20   | 15 | 10     |    | 6      | 5  |

Pitch = diameter of router bit x the number of starts

Pitch is the distance of linear travel for one complete rotation of the stock.

Diameter of the router bit is the width of the cutter.

Number of starts is the number of cuts made to complete the part.

## Molding Table

A nice alternative to a shaper, you can now use your Legacy to create custom moldings of any length by feeding your stock underneath the router. Table can even be used to duplicate moldings and casings which are hard to find or no longer available. Works well with the Legacy Design kit

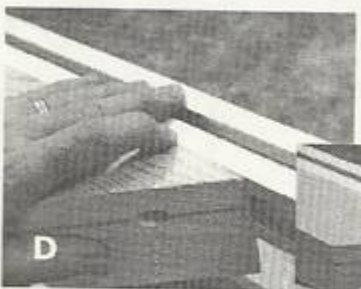
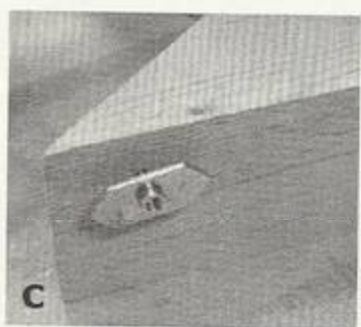
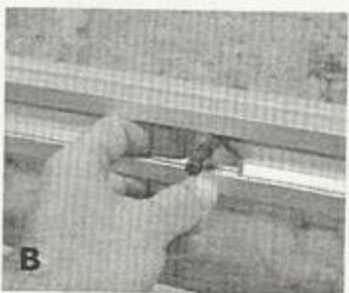
2 - Infeed/outfeed tables (12" wide).  
2 - Support tables (4" wide).  
Adjustable fence up to 7 1/2" wide.  
Adjustable bed up to 3 1/2" thick.



End view of a  
4 1/2" wide molding.  
Created using  
3 router bits;  
- 1" classic plunge,  
- 2" core box,  
and a  
- 1 1/4" bottom clean-  
ing bit.

These moldings can be  
milled to whatever  
lengths are required,  
and up to 7 1/2" wide  
and 3 1/2" thick.

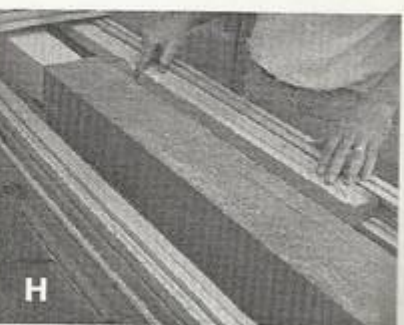
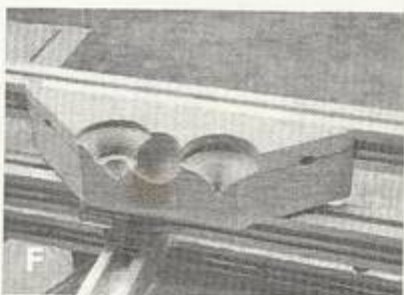
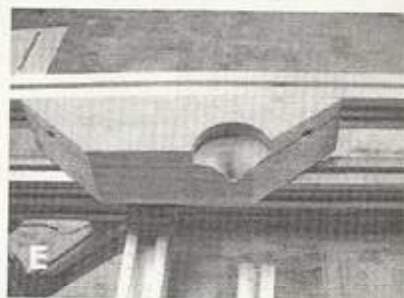
## Using the insert-style locking plates to create a storyboard



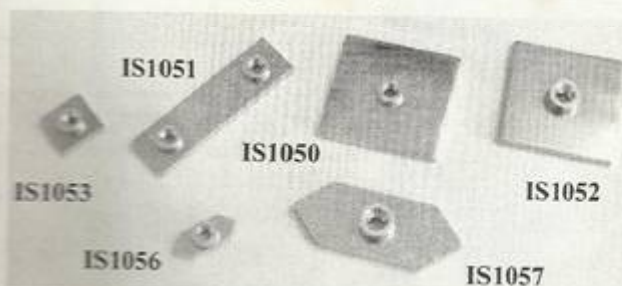
The insert-style locking plates have been designed for easy installation into the channels of the extruded rails. Whereas the square locking plates slide into the channel from the end and are essentially permanent, the insert-style are easily placed into the channel from the front (Fig A). As you thread the screw into the plate, the plate rotates in the channel (Fig B) and locks down.

Locking plates can be used in a variety of ways; the most obvious being to attach various accessories (i.e. horizontal and vertical vises) to the Legacy. One technique you may not have considered is to mount a board to the rails of the machine and create a "storyboard" (Fig H) which can be used as a reference for duplicating parts. When you make the cuts on the part and your satisfied with the position you can then make the corresponding cut on the storyboard (Fig E-G). Using storyboards is an easy way to go back after a period of time and guaranty the part will be a perfect match. Storyboards record the bit used, the position of the cut, and the exact plunge depth of the cut.

To create the storyboard, use the locking plates to mount a blank piece of material to the rails of the machine (Fig D) (the material pictured is thicker than is generally necessary). As a general rule it is best to mount the storyboard to the adjustable bed rail (Fig H). Since the adjustable rail is always in sync with the head and tailstock (and subsequently the part), it doesn't matter where the bed is set. When the storyboard is mounted to the fixed rail (Fig D-F), the only way to duplicate the piece in the future is if the bed is set back to the original position. When mounting the storyboard to the fixed rail it must be mounted on the side. When mounting to the adjustable rail it can be mounted on either the top or the side of the rail. In any case, take care to mount the storyboard in a manner which will be easy to remember and duplicate (Fig D - the storyboard is flush with the rail).



Available locking plates (does not include capscrews)



IS1053 - (Small - Single hole) 10-32 x 1 narrow - \$1.20 each

IS1051 - (Double hole) 10-32 x 2 narrow - \$1.50 each

IS1050 - (Large - Single hole) 10-32 x 1 wide - \$1.30 each

IS1052 - (Large - Single hole) 1/4-20 x 1 wide - \$1.50 each

IS1056 - (Small 10-32) Insert style .625 lock plate - \$1.20 each

IS1057 - (Large 1/4-20) Insert style 1/5 lock plate - \$1.50 each

Assortment pack - 4 of each locking plate (24 total) - \$28.00

# Legacy Design Kit

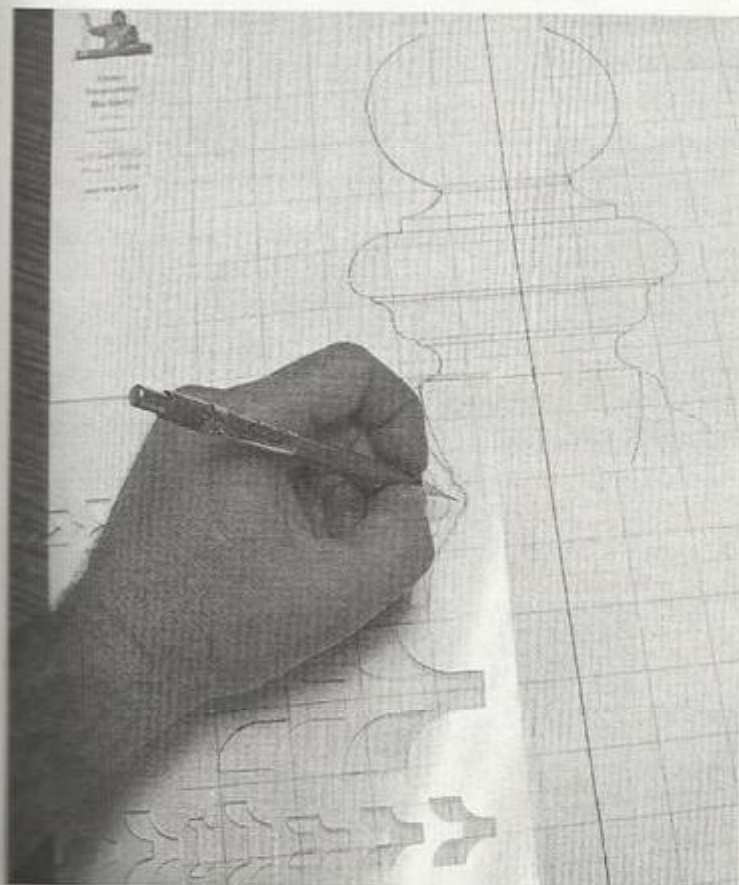
## TECHNIQUE

**C**reating turnings on the Legacy has several distinct advantages over a lathe. Including speed, ease of use, and repeatability, not to mention router bit profiles are; (to borrow an old computer term) WYSIWYG (what-you-see, is-what-you-get). Not only can you see the profile of the cut, but by matching up router bit profiles (right) you can design the piece before you ever make a cut. To make the design process easier Legacy has a *NEW* Design Kit available.

The *Legacy Design Kit* consists of:

- 3 - clear acrylic templates containing 107 router bit profiles (27 design styles)
- 3 - Router bit keys for easy identification of bits
- 1 - 11" x 39", 50 page DesignPad (Spindle Layout)
- 1 - 13" round DesignPad (Determining divisions for reeding & fluting)
- 12 Sample Designs
- How-to video tape includes:
  - Designing Turnings
  - Designing Mouldings
  - Designing Spirals
  - Designing for Indexing
  - Designing Contours

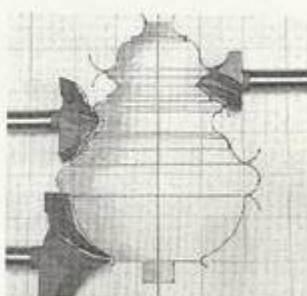
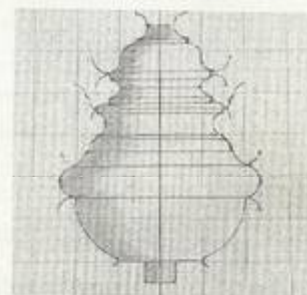
***Eliminates guesswork, saves time & money!***



This design kit allows you to lay out the shape of the piece before making any cuts.

Use the router bit templates positioned next to each other to determine the position of the design along the length as well as the desired depth of the cut.

Once the design has been decided, purchase the necessary bits to complete the project.



***"The design kit removed all of the anxiety for my next project. My customer liked what he saw, and I can now finish the job with a greater degree of confidence."***

Harry Tippetts  
Hobble Creek Mills  
Hobble Creek Canyon, UT

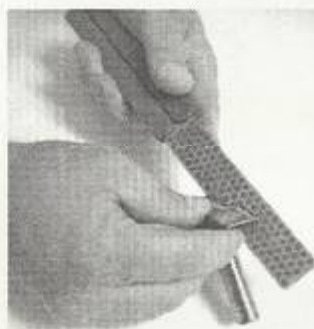
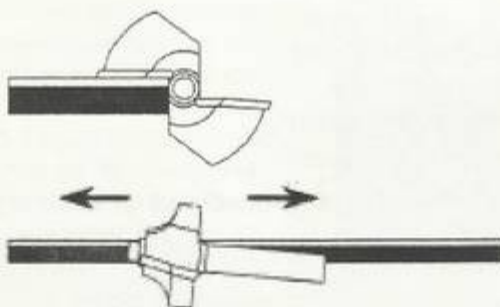
# Honing router bits for a sharper edge and a longer life



One of the big misconceptions that woodworkers have is that bits need to be sent out to a sharpener to have a new edge ground on them. This kind of sharpening is not only costly but tends to shorten the life of the router bits. After two or three grindings the router bit has lost its original profile and subsequently has to be replaced. An inexpensive and effective alternative is to hone your bits as needed on a diamond whetstone from DMT®.

## SHARPENING TIPS:

- Always sharpen the flat side, never the profile.
- Use water only for lubrication - no messy oils.
- Glide the bit with light pressure along the stone. As a rule, 5-10 minutes on a conventional oil-stone is equal to about 20 seconds on a Diamond Whetstone.
- Repeat the same number of strokes on the opposite wing of the bit.
- Usually only requires between 5-30 strokes.
- Use the fine side (red) to maintain a sharp edge.
- Use the coarse side (blue) to restore a damaged edge.
- Initially the diamond stone will seem especially rough. It will smooth over time with gentle stroking. You need not exert extra pressure - let the diamonds do the work.
- After use, rinse and store dry.
- When further cleaning is needed on diamond whetstones, use an abrasive cleanser (non-petroleum base) and a scrub brush.



Coarse side (blue) >

< Fine side (red)

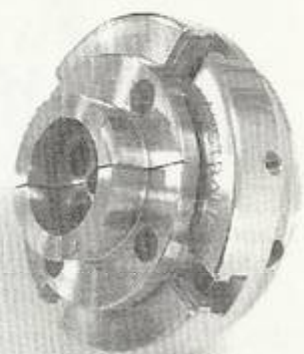


*Once the router bit has been honed to a sharp edge, spray it with DynaGlide lubricant to keep the bit cutting sharper and cooler, thereby extending the life of the bit.*

*Other uses of diamond whetstones include woodworking tools, hunting knives, kitchen cutlery, gardening tools, industrial tools, skis and snowboards. More information on sharpening can be found at: [www.dmtsharp.com](http://www.dmtsharp.com)*

## Using the single locking collar and the 4-jaw chuck

The Legacy method for holding the workpiece between centers utilizes the mounting hubs and drive center. This method is a simple solution and works well. However, if you have multiple parts to make (i.e. ballisters) you may want to switch out the drive center with a 1 x 8tpi 3-jaw, or 4-jaw chuck. A jaw chuck will reduce the number of mounting hubs needed and save the additional time required to mount them to your workpiece. If you decide to use a jaw chuck - these tips may be helpful.



Vicmarc 4-jaw chuck

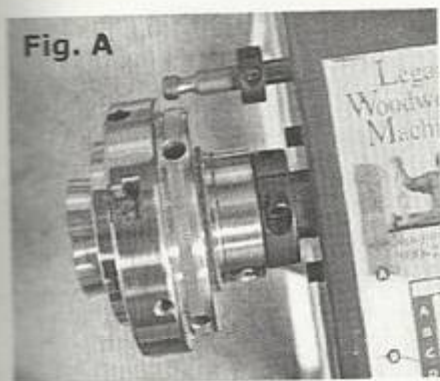


Fig. A

**Round Stock Jaw Capacity:**  
from 1 1/4" - 2 3/4" diameter



In order to secure the chuck tightly to the spindle shaft the threads must bottom out. In order for this to happen on the

Legacy, the jaw chuck will inhibit the use of the indexing pin. To solve this problem it is recommended that a single locking collar (\$6.00) be used to space the jaw chuck away from the headstock (Fig. A). Start by removing the drive center from the spindle shaft (Fig. B). Slide on the single locking collar (Fig. C) and lock it securely around the spindle shaft. The jaw chuck now threads onto the spindle shaft and bottoms out against the locking collar (Fig. A), thereby rendering the indexing pin free to be used.

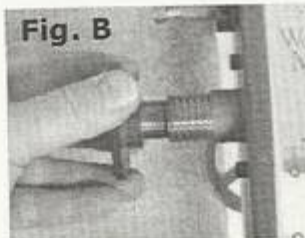


Fig. B



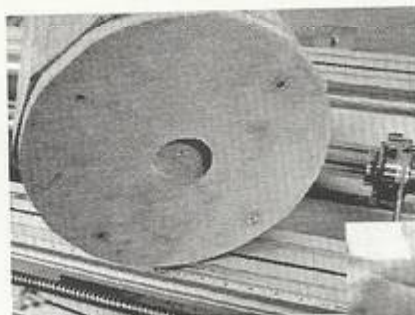
Fig. C

The jaws on the chuck can accommodate various sizes of stock and are designed to close concentrically on the material.

Note: The capacities cited are for the Vicmarc brand 4-jaw chuck (pictured here). Check with your supplier for capacity on other brands.



**Square Stock Jaw Capacity:**  
from 1 3/8" - 2 1/2"



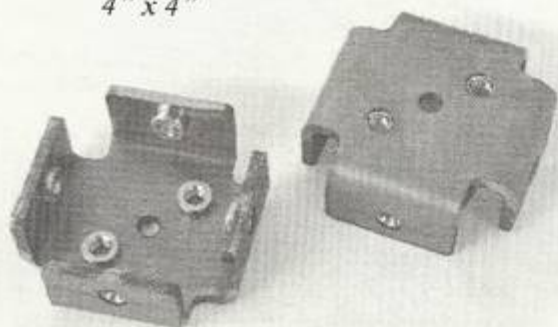
**Open Out Jaw Capacity:**  
from 1 7/8" - 3 1/4" diameter hole



## Pilaster Mounting Dogs

Available in 5 sizes, 2 per set:

- 2" x 2"
- 2 1/2" x 2 1/2"
- 3" x 3"
- 3 1/2" x 3 1/2"
- 4" x 4"

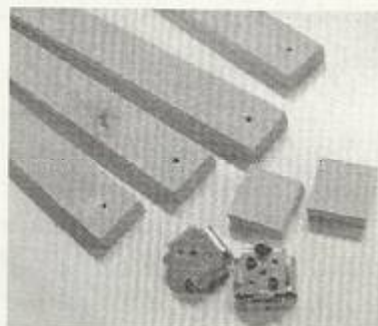


**Fig. A**

These mounts have been designed specifically for use when milling pilasters or quarter sections of columns. Instead of building a jig to mount the stock to - you simply mount your quarter sections to the mounting dogs - one on each end. The mounting hub (Fig. A) mounts to the dog and holds the workpiece into the drive center of the headstock as the parts are milled.



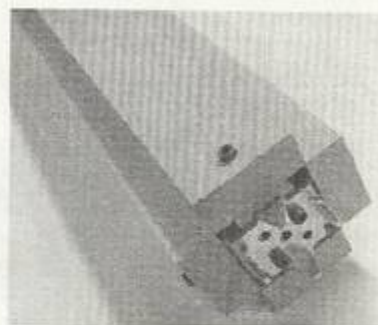
Square blocks are inserted as support pieces in the center.



The 4 pieces with holes drilled on the ends. Two square blocks can be cut as support pieces in the center.



Material is mounted to the hubs.



The material mounted between centers and milled to 4 round pilasters.

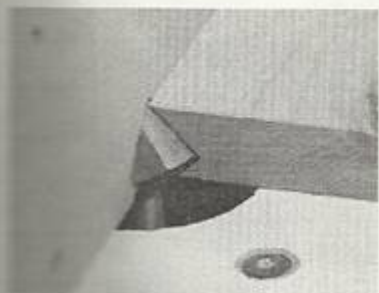
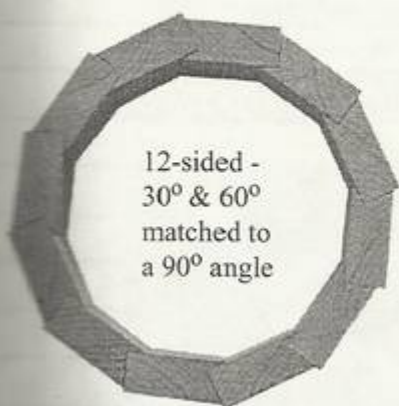
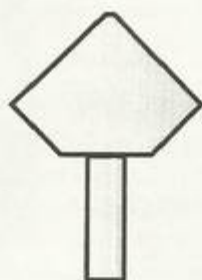
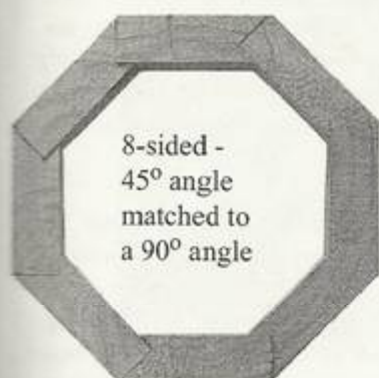


Pilasters, such as the ones pictured on the wainscot to the left are easily created using the pilaster mounting dogs.

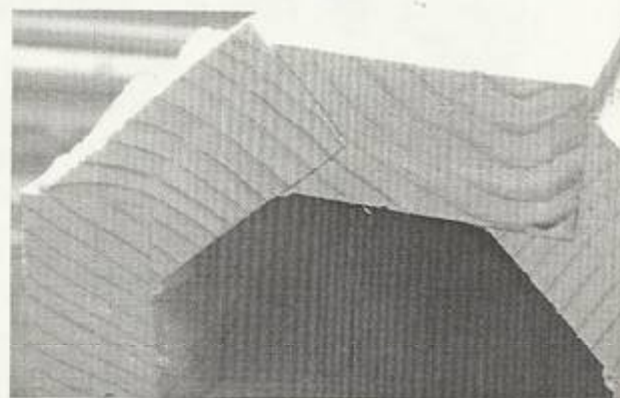
Created by Tracy Anderson

## *Using a Birds Mouth bit to create large diameter columns.*

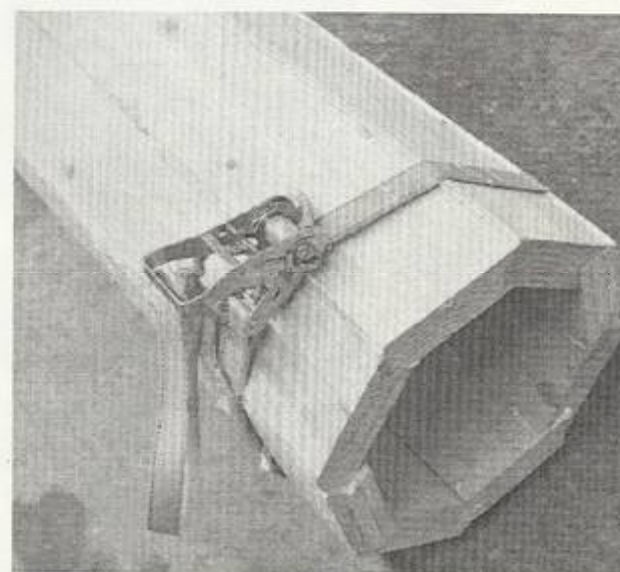
These bits allow you to easily glue-up 8-sided and 12-sided hollow columns. They create a nesting joint that is stronger and easier to glue up than the traditional miter joint. Material thickness can be up to 2" thick allowing for deep cut profiles such as turnings, fluting, and spiraling.



*12-sided & 8-sided  
Bird Mouth Bits  
available for 4/4,  
6/4, and 8/4 stock  
from Magnate at  
800-827-2316*



*A birds mouth joint cuts on one edge of the material and receives the 90° edge of the adjacent board. Strap clamps are then used to hold the material together while the glue dries.*



## Using the double-locking collar

Photo A

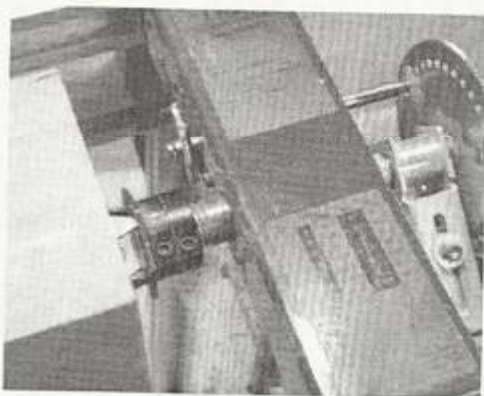


Photo B

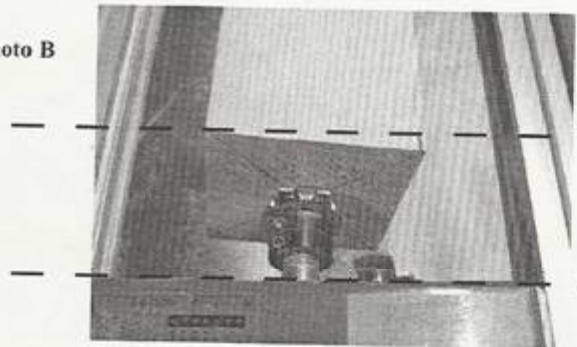


Photo C

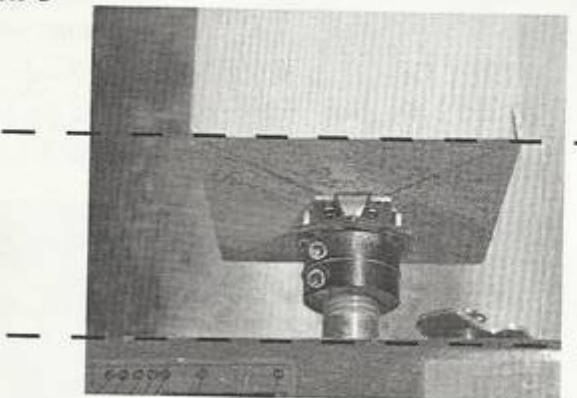
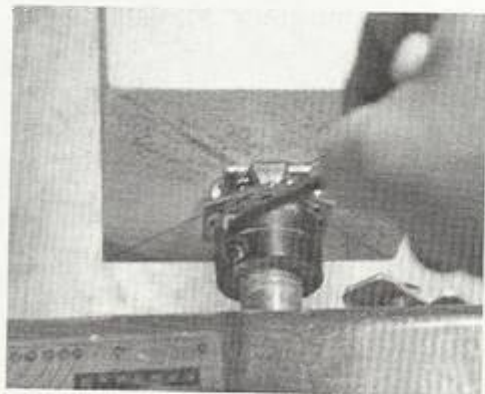


Photo D



**Problem:** It often becomes difficult when using the indexing system (Photo A) to make minor adjustments to the workpiece in order to get it square to the router. This is of particular concern when the stock is larger diameter and it becomes more critical that the workpiece be truer to square. This is also true when the hub is not mounted exactly square to the material (Photo B). In the past the best solution was to release the #2 morse taper on the index drive center, mount the material into the machine, square it up to the router and then remove the material so that you could reset the #2 morse taper.

**Solution:** The double-locking collar (\$19.00) is a great solution to this problem because it means that the #2 morse taper never has to be set, as a result you never have to worry about the drive center slipping. This also works nicely if you wish to take the part back and forth between the Legacy and your lathe.

**How it works:** Two collars are welded together. One collar is threaded (1" x 8tpi) and mounts onto the spindle shaft before it is locked into place. The second collar is plain and locks onto the index drive center. As a result the morse taper on the index drive center never has to be set, and minor adjustments to make the material square to the router are easy.

- 1) Lock the indexing pin into place. (Photo A)
- 2) Release the capscrew on the unthreaded collar.
- 3) Position the workpiece as needed. (Photo C)
- 4) Tighten the capscrew on the locking collar. (Photo D)

**Top Right**  
Double-locking collar threaded onto the spindle shaft.



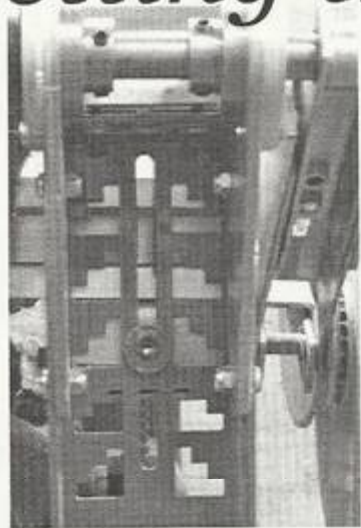
**Bottom Right**  
Index drive center locked on with the double-locking collar.



**Note:** The index drive center (pictured right) is an old design. Current design of the drive center is shown on page 76.

Frequently asked questions concerning bed setup are 1) What are the step patterns on the rail leg for? and, 2) How do I insure that the bed is accurately set to level?

# Setting the Bed to Level

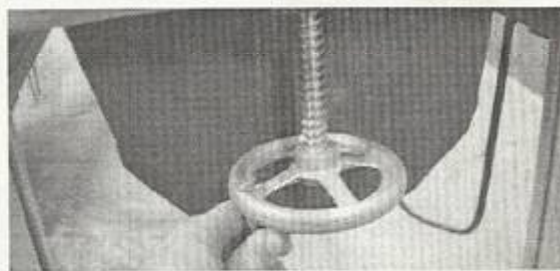
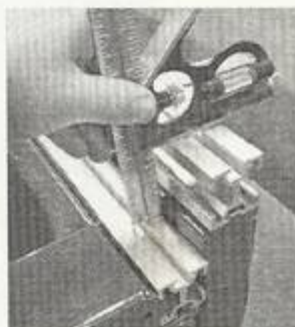


Most Legacy owners will recognize the stair step pattern (above) that is cut into each of the four rail legs located on the machine. Each level represents a 1/4" difference in height and was designed to be used in conjunction with the horizontal, adjustable bed rails. If the bed is to be set level the rail should align with the chosen stair on each rail leg. These patterns are laser cut into the legs and are therefore quite accurate. If however, your project calls for tighter accuracy - you may want to try out this technique.

**step1** Start with one corner of the machine at the desired height and lock the capscrew on the corresponding rail leg (left). **step2**

Using a set of dial calipers or a 90° sliding square - measure from the top of the fixed rail down to the top of the adjustable bed rail.

**step3** Use the same measurement on the opposite corner. Note: It may be necessary to use the handwheel to adjust the unlocked side of the bed. Do not assume that adjusting the bed with the handwheel will insure both sides are level. **step4** This measurement is then used on all points of the rail where the rail leg can lock down the rails.



# Model 900 Taper Chart

Difference in diameter over the length of the tapered section

| Length of Taper   | 0.02  | 0.04 | 0.05  | 0.07  | 0.09   | 0.11   | 0.12   | 0.14  | 0.16   | 0.18   | 0.19   | 0.21  | 0.23   | 0.25   |
|-------------------|-------|------|-------|-------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|
| 2"                |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 4"                |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 6"                |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 8"                |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 10"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 12"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 14"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 16"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 18"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 20"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 22"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 24"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 26"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 28"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 30"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 32"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 34"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 36"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 38"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 40"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 42"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 44"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 46"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| 48"               |       |      |       |       |        |        |        |       |        |        |        |       |        |        |
| Height Difference | 1/4"  | 1/2" | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 1 3/4" | 2"    | 2 1/4" | 2 1/2" | 2 3/4" | 3"    | 3 1/4" | 3 1/2" |
| Angle of Taper    | 0.25° | 0.5° | 0.76° | 1.01° | 1.26°  | 1.51°  | 1.77°  | 2.02° | 2.27°  | 2.52°  | 2.77°  | 3.03° | 3.28°  | 3.53°  |

Select the **length of the desired taper** (not the stock) in the first column and follow the row to the right until you get to the **difference of the large diameter and the small diameter** then follow the column down to find the **Height Difference** from one end of the Adjustable Bed to the other.

*Example:* To mill a tapered section 34" long, that tapers from 4" in diameter to 2" in diameter (a difference of 2"), follow the row to the right of 34 until you get to the number nearest 2". In this case the closest number is 2.1. Now follow that column down to find the Height Difference of 1 3/4" and adjust the bed so that the Headstock end is 1 3/4" higher than the Tailstock end.

**Note:** Each step on the Rail Leg is 1/4".

# Model 1200 Taper Chart

Difference in diameter over the length of the tapered section

| Length of Taper   | 0.01  | 0.02 | 0.04  | 0.05  | 0.06   | 0.07   | 0.09   | 0.1   | 0.11   | 0.12   | 0.14   | 0.15  | 0.16   | 0.17   | 0.18   | 0.2   | 0.21   | 0.22   |
|-------------------|-------|------|-------|-------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|
| 2"                | 0.01  | 0.02 | 0.04  | 0.05  | 0.06   | 0.07   | 0.09   | 0.1   | 0.11   | 0.12   | 0.14   | 0.15  | 0.16   | 0.17   | 0.18   | 0.2   | 0.21   | 0.22   |
| 4"                | 0.02  | 0.05 | 0.07  | 0.1   | 0.12   | 0.15   | 0.17   | 0.2   | 0.22   | 0.25   | 0.27   | 0.3   | 0.32   | 0.35   | 0.37   | 0.39  | 0.42   | 0.44   |
| 6"                | 0.04  | 0.07 | 0.11  | 0.15  | 0.19   | 0.22   | 0.26   | 0.3   | 0.33   | 0.37   | 0.41   | 0.44  | 0.48   | 0.52   | 0.55   | 0.59  | 0.63   | 0.67   |
| 8"                | 0.05  | 0.1  | 0.15  | 0.2   | 0.25   | 0.3    | 0.35   | 0.39  | 0.44   | 0.49   | 0.54   | 0.59  | 0.64   | 0.69   | 0.74   | 0.79  | 0.84   | 0.89   |
| 10"               | 0.06  | 0.12 | 0.19  | 0.25  | 0.31   | 0.37   | 0.43   | 0.49  | 0.56   | 0.62   | 0.68   | 0.74  | 0.8    | 0.86   | 0.92   | 0.99  | 1.05   | 1.11   |
| 12"               | 0.07  | 0.15 | 0.22  | 0.3   | 0.37   | 0.44   | 0.52   | 0.59  | 0.67   | 0.74   | 0.81   | 0.89  | 0.96   | 1.04   | 1.11   | 1.18  | 1.26   | 1.33   |
| 14"               | 0.09  | 0.17 | 0.26  | 0.35  | 0.43   | 0.52   | 0.6    | 0.69  | 0.78   | 0.86   | 0.95   | 1.04  | 1.12   | 1.21   | 1.29   | 1.38  | 1.47   | 1.55   |
| 16"               | 0.1   | 0.2  | 0.3   | 0.4   | 0.49   | 0.59   | 0.69   | 0.79  | 0.89   | 0.99   | 1.09   | 1.18  | 1.28   | 1.38   | 1.48   | 1.58  | 1.68   | 1.78   |
| 18"               | 0.11  | 0.22 | 0.33  | 0.44  | 0.56   | 0.67   | 0.78   | 0.89  | 1      | 1.11   | 1.22   | 1.33  | 1.44   | 1.55   | 1.66   | 1.78  | 1.89   | 2      |
| 20"               | 0.12  | 0.25 | 0.37  | 0.49  | 0.62   | 0.74   | 0.86   | 0.99  | 1.11   | 1.23   | 1.36   | 1.48  | 1.6    | 1.73   | 1.85   | 1.97  | 2.1    | 2.22   |
| 22"               | 0.14  | 0.27 | 0.41  | 0.54  | 0.68   | 0.81   | 0.95   | 1.09  | 1.22   | 1.36   | 1.49   | 1.63  | 1.76   | 1.9    | 2.03   | 2.17  | 2.31   | 2.44   |
| 24"               | 0.15  | 0.3  | 0.44  | 0.59  | 0.74   | 0.89   | 1.04   | 1.18  | 1.33   | 1.48   | 1.63   | 1.78  | 1.92   | 2.07   | 2.22   | 2.37  | 2.52   | 2.66   |
| 26"               | 0.16  | 0.32 | 0.48  | 0.64  | 0.8    | 0.96   | 1.12   | 1.28  | 1.44   | 1.6    | 1.76   | 1.92  | 2.08   | 2.24   | 2.4    | 2.56  | 2.72   | 2.88   |
| 28"               | 0.17  | 0.35 | 0.52  | 0.69  | 0.86   | 1.04   | 1.21   | 1.38  | 1.55   | 1.73   | 1.9    | 2.07  | 2.25   | 2.42   | 2.59   | 2.76  | 2.93   | 3.11   |
| 30"               | 0.19  | 0.37 | 0.56  | 0.74  | 0.93   | 1.11   | 1.3    | 1.48  | 1.67   | 1.85   | 2.04   | 2.22  | 2.41   | 2.59   | 2.77   | 2.96  | 3.14   | 3.33   |
| 32"               | 0.2   | 0.4  | 0.59  | 0.79  | 0.99   | 1.18   | 1.38   | 1.58  | 1.78   | 1.97   | 2.17   | 2.37  | 2.57   | 2.76   | 2.96   | 3.16  | 3.35   | 3.55   |
| 34"               | 0.21  | 0.42 | 0.63  | 0.84  | 1.05   | 1.26   | 1.47   | 1.68  | 1.89   | 2.1    | 2.31   | 2.52  | 2.73   | 2.94   | 3.14   | 3.35  | 3.56   | 3.77   |
| 36"               | 0.22  | 0.44 | 0.67  | 0.89  | 1.11   | 1.33   | 1.56   | 1.78  | 2      | 2.22   | 2.44   | 2.66  | 2.89   | 3.11   | 3.33   | 3.55  | 3.77   | 3.99   |
| 38"               | 0.23  | 0.47 | 0.7   | 0.94  | 1.17   | 1.41   | 1.64   | 1.88  | 2.11   | 2.34   | 2.58   | 2.81  | 3.05   | 3.28   | 3.51   | 3.75  | 3.98   | 4.22   |
| 40"               | 0.25  | 0.49 | 0.74  | 0.99  | 1.23   | 1.48   | 1.73   | 1.97  | 2.22   | 2.47   | 2.71   | 2.96  | 3.21   | 3.45   | 3.7    | 3.95  | 4.19   | 4.44   |
| 42"               | 0.26  | 0.52 | 0.78  | 1.04  | 1.3    | 1.56   | 1.81   | 2.07  | 2.33   | 2.59   | 2.85   | 3.11  | 3.37   | 3.63   | 3.88   | 4.14  | 4.4    | 4.66   |
| 44"               | 0.27  | 0.54 | 0.81  | 1.09  | 1.36   | 1.63   | 1.9    | 2.17  | 2.44   | 2.71   | 2.99   | 3.26  | 3.53   | 3.8    | 4.07   | 4.34  | 4.61   | 4.88   |
| 46"               | 0.28  | 0.57 | 0.85  | 1.14  | 1.42   | 1.7    | 1.99   | 2.27  | 2.55   | 2.84   | 3.12   | 3.41  | 3.69   | 3.97   | 4.25   | 4.54  | 4.82   | 5.1    |
| 48"               | 0.3   | 0.59 | 0.89  | 1.19  | 1.48   | 1.78   | 2.07   | 2.37  | 2.67   | 2.96   | 3.26   | 3.55  | 3.85   | 4.14   | 4.44   | 4.73  | 5.03   | 5.33   |
| Height Difference | 1/4"  | 1/2" | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 1 3/4" | 2"    | 2 1/4" | 2 1/2" | 2 3/4" | 3"    | 3 1/4" | 3 1/2" | 3 3/4" | 4"    | 4 1/4" | 4 1/2" |
| Angle of Taper    | 0.25° | 0.5° | 0.76° | 1.01° | 1.26°  | 1.51°  | 1.77°  | 2.02° | 2.27°  | 2.52°  | 2.77°  | 3.03° | 3.28°  | 3.53°  | 3.78°  | 4.03° | 4.28°  | 4.53°  |

Model 1200 - Taper Chart continued next page

| Length of Taper   | Model 1200 Taper Chart continued                              |      |       |       |        |        |        |       |        |        |        |       |        |        |        |       |        |        |  |
|-------------------|---------------------------------------------------------------|------|-------|-------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|--|
|                   | Difference in diameter over the length of the tapered section |      |       |       |        |        |        |       |        |        |        |       |        |        |        |       |        |        |  |
| 50"               | 0.31                                                          | 0.62 | 0.93  | 1.23  | 1.54   | 1.85   | 2.16   | 2.47  | 2.78   | 3.08   | 3.39   | 3.7   | 4.01   | 4.32   | 4.62   | 4.93  | 5.24   | 5.55   |  |
| 52"               | 0.32                                                          | 0.64 | 0.96  | 1.28  | 1.6    | 1.93   | 2.25   | 2.57  | 2.89   | 3.21   | 3.53   | 3.85  | 4.17   | 4.49   | 4.81   | 5.13  | 5.45   | 5.77   |  |
| 54"               | 0.33                                                          | 0.67 | 1     | 1.33  | 1.67   | 2      | 2.33   | 2.67  | 3      | 3.33   | 3.66   | 4     | 4.33   | 4.66   | 4.99   | 5.33  | 5.66   | 5.99   |  |
| 56"               | 0.35                                                          | 0.69 | 1.04  | 1.38  | 1.73   | 2.07   | 2.42   | 2.76  | 3.11   | 3.46   | 3.8    | 4.15  | 4.49   | 4.83   | 5.18   | 5.52  | 5.87   | 6.21   |  |
| 58"               | 0.36                                                          | 0.72 | 1.07  | 1.43  | 1.79   | 2.15   | 2.51   | 2.86  | 3.22   | 3.58   | 3.94   | 4.29  | 4.65   | 5.01   | 5.36   | 5.72  | 6.08   | 6.43   |  |
| 60"               | 0.37                                                          | 0.74 | 1.11  | 1.48  | 1.85   | 2.22   | 2.59   | 2.96  | 3.33   | 3.7    | 4.07   | 4.44  | 4.81   | 5.18   | 5.55   | 5.92  | 6.29   | 6.66   |  |
| 62"               | 0.38                                                          | 0.77 | 1.15  | 1.53  | 1.91   | 2.3    | 2.68   | 3.06  | 3.44   | 3.83   | 4.21   | 4.59  | 4.97   | 5.35   | 5.73   | 6.12  | 6.5    | 6.88   |  |
| 64"               | 0.4                                                           | 0.79 | 1.19  | 1.58  | 1.98   | 2.37   | 2.76   | 3.16  | 3.55   | 3.95   | 4.34   | 4.74  | 5.13   | 5.53   | 5.92   | 6.31  | 6.71   | 7.1    |  |
| 66"               | 0.41                                                          | 0.81 | 1.22  | 1.63  | 2.04   | 2.44   | 2.85   | 3.26  | 3.67   | 4.07   | 4.48   | 4.89  | 5.29   | 5.7    | 6.1    | 6.51  | 6.92   | 7.32   |  |
| 68"               | 0.42                                                          | 0.84 | 1.26  | 1.68  | 2.1    | 2.52   | 2.94   | 3.36  | 3.78   | 4.2    | 4.61   | 5.03  | 5.45   | 5.87   | 6.29   | 6.71  | 7.13   | 7.54   |  |
| 70"               | 0.43                                                          | 0.86 | 1.3   | 1.73  | 2.16   | 2.59   | 3.02   | 3.46  | 3.89   | 4.32   | 4.75   | 5.18  | 5.61   | 6.04   | 6.47   | 6.91  | 7.34   | 7.77   |  |
| 72"               | 0.44                                                          | 0.89 | 1.33  | 1.78  | 2.22   | 2.67   | 3.11   | 3.55  | 4      | 4.44   | 4.89   | 5.33  | 5.77   | 6.22   | 6.66   | 7.1   | 7.55   | 7.99   |  |
| Height Difference | 1/4"                                                          | 1/2" | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 1 3/4" | 2"    | 2 1/4" | 2 1/2" | 2 3/4" | 3"    | 3 1/4" | 3 1/2" | 3 3/4" | 4"    | 4 1/4" | 4 1/2" |  |
| Angle of Taper    | 0.25°                                                         | 0.5° | 0.76° | 1.01° | 1.26°  | 1.51°  | 1.77°  | 2.02° | 2.27°  | 2.52°  | 2.77°  | 3.03° | 3.28°  | 3.53°  | 3.78°  | 4.03° | 4.28°  | 4.53°  |  |

Select the **length of the desired taper** (not the stock) in the first column and follow the row to the **difference of the large diameter and the small diameter** then follow the column down to find the **Height Difference** from one end of the Adjustable Bed to the other.

*Example:* To mill a tapered section 64" long, that tapers from 8" in diameter to 4 1/2" in diameter (a difference of 3 1/2"), follow the row to the right of 64 until you get to the number nearest 3 1/2". In this case the closest number is 3.55. Now follow that column down to find the Height Difference of 2 1/4" and adjust the bed so that the Headstock end is 2 1/4" higher than the Tailstock end.

**Note:** Each step on the Rail Leg is 1/4".

# Model 1800 Taper Chart

Difference in diameter over the length of the tapered section

| Length of Taper   | 0.01  | 0.02  | 0.03  | 0.04  | 0.05   | 0.06   | 0.07    | 0.08  | 0.09   | 0.1    | 0.11   | 0.12  | 0.13   | 0.14   | 0.15   | 0.16  | 0.17   |
|-------------------|-------|-------|-------|-------|--------|--------|---------|-------|--------|--------|--------|-------|--------|--------|--------|-------|--------|
| 2"                | 0.01  | 0.02  | 0.03  | 0.04  | 0.05   | 0.06   | 0.07    | 0.08  | 0.09   | 0.1    | 0.11   | 0.12  | 0.13   | 0.14   | 0.15   | 0.16  | 0.17   |
| 4"                | 0.02  | 0.04  | 0.06  | 0.08  | 0.1    | 0.11   | 0.13    | 0.15  | 0.17   | 0.19   | 0.21   | 0.23  | 0.25   | 0.27   | 0.29   | 0.32  | 0.34   |
| 6"                | 0.03  | 0.06  | 0.09  | 0.11  | 0.14   | 0.17   | 0.2     | 0.23  | 0.26   | 0.29   | 0.31   | 0.34  | 0.37   | 0.4    | 0.43   | 0.46  | 0.51   |
| 8"                | 0.04  | 0.08  | 0.11  | 0.15  | 0.19   | 0.23   | 0.27    | 0.3   | 0.34   | 0.38   | 0.42   | 0.46  | 0.5    | 0.53   | 0.57   | 0.61  | 0.69   |
| 10"               | 0.05  | 0.1   | 0.14  | 0.19  | 0.24   | 0.29   | 0.33    | 0.38  | 0.43   | 0.48   | 0.52   | 0.57  | 0.62   | 0.67   | 0.71   | 0.76  | 0.86   |
| 12"               | 0.06  | 0.11  | 0.17  | 0.23  | 0.29   | 0.34   | 0.4     | 0.46  | 0.51   | 0.57   | 0.63   | 0.69  | 0.74   | 0.8    | 0.86   | 0.91  | 1.03   |
| 14"               | 0.07  | 0.13  | 0.2   | 0.27  | 0.33   | 0.4    | 0.47    | 0.53  | 0.6    | 0.67   | 0.73   | 0.8   | 0.87   | 0.93   | 1      | 1.07  | 1.2    |
| 16"               | 0.08  | 0.15  | 0.23  | 0.3   | 0.38   | 0.46   | 0.53    | 0.61  | 0.69   | 0.76   | 0.84   | 0.91  | 0.99   | 1.07   | 1.14   | 1.22  | 1.37   |
| 18"               | 0.09  | 0.17  | 0.26  | 0.34  | 0.43   | 0.51   | 0.6     | 0.69  | 0.77   | 0.86   | 0.94   | 1.03  | 1.11   | 1.2    | 1.28   | 1.37  | 1.54   |
| 20"               | 0.1   | 0.19  | 0.29  | 0.38  | 0.48   | 0.57   | 0.67    | 0.76  | 0.86   | 0.95   | 1.05   | 1.14  | 1.24   | 1.33   | 1.43   | 1.52  | 1.71   |
| 22"               | 0.1   | 0.21  | 0.31  | 0.42  | 0.52   | 0.63   | 0.73    | 0.84  | 0.94   | 1.05   | 1.15   | 1.26  | 1.36   | 1.47   | 1.57   | 1.67  | 1.88   |
| 24"               | 0.11  | 0.23  | 0.34  | 0.46  | 0.57   | 0.69   | 0.8     | 0.91  | 1.03   | 1.14   | 1.26   | 1.37  | 1.49   | 1.6    | 1.71   | 1.83  | 2.06   |
| 26"               | 0.12  | 0.25  | 0.37  | 0.5   | 0.62   | 0.74   | 0.87    | 0.99  | 1.11   | 1.24   | 1.36   | 1.49  | 1.61   | 1.73   | 1.86   | 1.98  | 2.23   |
| 28"               | 0.13  | 0.27  | 0.4   | 0.53  | 0.67   | 0.8    | 0.93    | 1.07  | 1.2    | 1.33   | 1.47   | 1.6   | 1.73   | 1.87   | 2      | 2.13  | 2.4    |
| 30"               | 0.14  | 0.29  | 0.43  | 0.57  | 0.71   | 0.86   | 1       | 1.14  | 1.29   | 1.43   | 1.57   | 1.71  | 1.86   | 2      | 2.14   | 2.28  | 2.57   |
| 32"               | 0.15  | 0.3   | 0.46  | 0.61  | 0.76   | 0.91   | 1.07    | 1.22  | 1.37   | 1.52   | 1.68   | 1.83  | 1.98   | 2.13   | 2.28   | 2.44  | 2.74   |
| 34"               | 0.16  | 0.32  | 0.49  | 0.65  | 0.81   | 0.97   | 1.13    | 1.3   | 1.46   | 1.62   | 1.78   | 1.94  | 2.1    | 2.27   | 2.43   | 2.59  | 2.91   |
| 36"               | 0.17  | 0.34  | 0.51  | 0.69  | 0.86   | 1.03   | 1.2     | 1.37  | 1.54   | 1.71   | 1.89   | 2.06  | 2.23   | 2.4    | 2.57   | 2.74  | 3.08   |
| 38"               | 0.18  | 0.36  | 0.54  | 0.72  | 0.9    | 1.09   | 1.27    | 1.45  | 1.63   | 1.81   | 1.99   | 2.17  | 2.35   | 2.53   | 2.71   | 2.89  | 3.25   |
| 40"               | 0.19  | 0.38  | 0.57  | 0.76  | 0.95   | 1.14   | 1.33    | 1.52  | 1.71   | 1.9    | 2.09   | 2.28  | 2.48   | 2.67   | 2.86   | 3.05  | 3.43   |
| 42"               | 0.2   | 0.4   | 0.6   | 0.81  | 1.2    | 1.4    | 1.6     | 1.82  | 2.2    | 2.4    | 2.6    | 2.8   | 3      | 3.2    | 3.4    | 3.6   |        |
| 44"               | 0.21  | 0.42  | 0.63  | 0.84  | 1.05   | 1.26   | 1.47    | 1.68  | 1.89   | 2.09   | 2.3    | 2.51  | 2.72   | 2.93   | 3.14   | 3.35  | 3.77   |
| 46"               | 0.22  | 0.44  | 0.66  | 0.88  | 1.1    | 1.31   | 1.53    | 1.75  | 1.97   | 2.19   | 2.41   | 2.63  | 2.85   | 3.06   | 3.28   | 3.5   | 3.94   |
| 48"               | 0.23  | 0.46  | 0.69  | 0.91  | 1.14   | 1.37   | 1.61.83 |       | 2.06   | 2.29   | 2.51   | 2.74  | 2.97   | 3.2    | 3.43   | 3.65  | 4.11   |
| Height Difference | 1/4"  | 1/2"  | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 1 3/4"  | 2"    | 2 1/4" | 2 1/2" | 2 3/4" | 3"    | 3 1/4" | 3 1/2" | 3 3/4" | 4"    | 4 1/2" |
| Angle of Taper    | 0.14° | 0.27° | 0.41° | 0.55° | 0.68°  | 0.82°  | 0.95°   | 1.09° | 1.23°  | 1.36°  | 1.5°   | 1.64° | 1.77°  | 1.91°  | 2.05°  | 2.18° | 2.45°  |

Model 1800 - Taper Chart continued next page

# Model 1800 Taper Chart continued

| Length of Taper   | Difference in diameter over the length of the tapered section |       |       |       |        |        |        |       |        |        |        |       |        |        |        |       |        |        |      | continued |
|-------------------|---------------------------------------------------------------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|------|-----------|
|                   | 0.24                                                          | 0.25  | 0.26  | 0.27  | 0.28   | 0.29   | 0.3    | 0.3   | 0.31   | 0.32   | 0.33   | 0.34  | 0.35   | 0.36   | 0.37   | 0.38  | 0.39   | 0.4    | 0.41 |           |
| 50"               | 0.48                                                          | 0.5   | 0.51  | 0.53  | 0.55   | 0.57   | 0.59   | 0.61  | 0.63   | 0.65   | 0.67   | 0.69  | 0.7    | 0.72   | 0.74   | 0.76  | 0.78   | 0.8    | 0.82 | 0.84      |
| 52"               | 0.71                                                          | 0.74  | 0.77  | 0.8   | 0.83   | 0.86   | 0.89   | 0.91  | 0.94   | 0.97   | 1      | 1.03  | 1.06   | 1.09   | 1.11   | 1.14  | 1.17   | 1.2    | 1.23 | 1.26      |
| 54"               | 0.95                                                          | 0.99  | 1.03  | 1.07  | 1.1    | 1.14   | 1.18   | 1.22  | 1.26   | 1.3    | 1.33   | 1.37  | 1.41   | 1.45   | 1.49   | 1.52  | 1.56   | 1.6    | 1.64 | 1.68      |
| 56"               | 1.19                                                          | 1.24  | 1.29  | 1.33  | 1.38   | 1.43   | 1.48   | 1.52  | 1.57   | 1.62   | 1.67   | 1.71  | 1.76   | 1.81   | 1.86   | 1.9   | 1.95   | 2      | 2.05 | 2.1       |
| 58"               | 1.43                                                          | 1.49  | 1.54  | 1.6   | 1.66   | 1.71   | 1.77   | 1.83  | 1.89   | 1.94   | 2      | 2.06  | 2.11   | 2.17   | 2.23   | 2.29  | 2.34   | 2.4    | 2.46 | 2.51      |
| 60"               | 1.67                                                          | 1.73  | 1.8   | 1.87  | 1.93   | 2      | 2.07   | 2.13  | 2.2    | 2.27   | 2.33   | 2.4   | 2.47   | 2.53   | 2.6    | 2.67  | 2.73   | 2.8    | 2.87 | 2.93      |
| 62"               | 1.9                                                           | 1.98  | 2.06  | 2.13  | 2.21   | 2.29   | 2.36   | 2.44  | 2.51   | 2.59   | 2.67   | 2.74  | 2.82   | 2.89   | 2.97   | 3     | 3.05   | 3.12   | 3.19 | 3.26      |
| 64"               | 2.14                                                          | 2.23  | 2.31  | 2.4   | 2.49   | 2.57   | 2.66   | 2.74  | 2.83   | 2.91   | 3      | 3.09  | 3.17   | 3.26   | 3.34   | 3.43  | 3.51   | 3.6    | 3.68 | 3.77      |
| 66"               | 2.38                                                          | 2.48  | 2.57  | 2.67  | 2.76   | 2.86   | 2.95   | 3.05  | 3.14   | 3.24   | 3.33   | 3.43  | 3.52   | 3.62   | 3.71   | 3.81  | 3.9    | 4      | 4.09 | 4.19      |
| 68"               | 2.62                                                          | 2.72  | 2.83  | 2.93  | 3.04   | 3.14   | 3.25   | 3.35  | 3.46   | 3.56   | 3.67   | 3.77  | 3.87   | 3.98   | 4.08   | 4.19  | 4.29   | 4.4    | 4.5  | 4.61      |
| 70"               | 2.86                                                          | 2.97  | 3.08  | 3.2   | 3.31   | 3.43   | 3.54   | 3.66  | 3.77   | 3.88   | 4      | 4.11  | 4.23   | 4.34   | 4.46   | 4.57  | 4.68   | 4.8    | 4.91 | 5.03      |
| 72"               | 3.09                                                          | 3.22  | 3.34  | 3.47  | 3.59   | 3.71   | 3.84   | 3.96  | 4.08   | 4.21   | 4.33   | 4.46  | 4.58   | 4.7    | 4.83   | 4.95  | 5.07   | 5.2    | 5.32 | 5.45      |
| 74"               | 3.33                                                          | 3.46  | 3.6   | 3.73  | 3.86   | 4      | 4.13   | 4.26  | 4.4    | 4.53   | 4.66   | 4.8   | 4.93   | 5.06   | 5.2    | 5.33  | 5.46   | 5.6    | 5.73 | 5.86      |
| 76"               | 3.57                                                          | 3.71  | 3.85  | 4     | 4.14   | 4.28   | 4.43   | 4.57  | 4.71   | 4.85   | 5      | 5.14  | 5.28   | 5.43   | 5.57   | 5.71  | 5.85   | 6      | 6.14 | 6.28      |
| 78"               | 3.81                                                          | 3.96  | 4.11  | 4.26  | 4.42   | 4.57   | 4.72   | 4.87  | 5.02   | 5.18   | 5.33   | 5.48  | 5.63   | 5.79   | 5.94   | 6.09  | 6.24   | 6.4    | 6.55 | 6.7       |
| 80"               | 4.04                                                          | 4.21  | 4.37  | 4.53  | 4.69   | 4.85   | 5.01   | 5.18  | 5.34   | 5.5    | 5.66   | 5.82  | 5.99   | 6.15   | 6.31   | 6.47  | 6.63   | 6.79   | 6.96 | 7.12      |
| 82"               | 4.28                                                          | 4.45  | 4.62  | 4.8   | 4.97   | 5.14   | 5.31   | 5.48  | 5.65   | 5.82   | 5.99   | 6.17  | 6.34   | 6.51   | 6.68   | 6.85  | 7.02   | 7.19   | 7.36 | 7.54      |
| 84"               | 4.51                                                          | 4.69  | 4.87  | 5.05  | 5.23   | 5.41   | 5.59   | 5.77  | 5.95   | 6.13   | 6.31   | 6.49  | 6.67   | 6.85   | 7.03   | 7.21  | 7.39   | 7.57   | 7.75 | 7.93      |
| 86"               | 4.75                                                          | 4.93  | 5.11  | 5.29  | 5.47   | 5.65   | 5.83   | 6.01  | 6.19   | 6.37   | 6.55   | 6.73  | 6.91   | 7.09   | 7.27   | 7.45  | 7.63   | 7.81   | 7.99 | 8.17      |
| 88"               | 4.99                                                          | 5.17  | 5.35  | 5.53  | 5.71   | 5.89   | 6.07   | 6.25  | 6.43   | 6.61   | 6.79   | 6.97  | 7.15   | 7.33   | 7.51   | 7.69  | 7.87   | 8.05   | 8.23 | 8.41      |
| 90"               | 5.23                                                          | 5.41  | 5.59  | 5.77  | 5.95   | 6.13   | 6.31   | 6.49  | 6.67   | 6.85   | 7.03   | 7.21  | 7.39   | 7.57   | 7.75   | 7.93  | 8.11   | 8.29   | 8.47 | 8.65      |
| 92"               | 5.47                                                          | 5.65  | 5.83  | 6.01  | 6.19   | 6.37   | 6.55   | 6.73  | 6.91   | 7.09   | 7.27   | 7.45  | 7.63   | 7.81   | 7.99   | 8.17  | 8.35   | 8.53   | 8.71 | 8.89      |
| 94"               | 5.71                                                          | 5.89  | 6.07  | 6.25  | 6.43   | 6.61   | 6.79   | 6.97  | 7.15   | 7.33   | 7.51   | 7.69  | 7.87   | 8.05   | 8.23   | 8.41  | 8.59   | 8.77   | 8.95 | 9.13      |
| 96"               | 5.95                                                          | 6.13  | 6.31  | 6.49  | 6.67   | 6.85   | 7.03   | 7.21  | 7.39   | 7.57   | 7.75   | 7.93  | 8.11   | 8.29   | 8.47   | 8.65  | 8.83   | 9.01   | 9.19 | 9.37      |
| Height Difference | 1/4"                                                          | 1/2"  | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 1 3/4" | 2"    | 2 1/4" | 2 1/2" | 2 3/4" | 3"    | 3 1/4" | 3 1/2" | 3 3/4" | 4"    | 4 1/4" | 4 1/2" |      |           |
| Angle of Taper    | 0.14°                                                         | 0.27° | 0.41° | 0.55° | 0.68°  | 0.82°  | 0.95°  | 1.09° | 1.23°  | 1.36°  | 1.5°   | 1.64° | 1.77°  | 1.91°  | 2.05°  | 2.18° | 2.32°  | 2.45°  |      |           |

# Frequently Requested Parts

Note: This list is not meant to be comprehensive, but is a list of the more frequently requested parts.

|                                                                              |          |
|------------------------------------------------------------------------------|----------|
| <b>IS1043 - Mounting Hubs</b>                                                | \$3.50   |
| <b>Split-nut (threaded half) (specify model #)</b>                           | \$25.00  |
| <b>Locking Plates</b>                                                        |          |
| <b>IS1053</b> - (Small - Single hole) 10-32 x 1 narrow -                     | \$1.20   |
| <b>IS1051</b> - (Double hole) 10-32 x 2 narrow -                             | \$1.50   |
| <b>IS1050</b> - (Large - Single hole) 10-32 x 1 wide -                       | \$1.30   |
| <b>IS1052</b> - (Large - Single hole) 1/4-20 x 1 wide -                      | \$1.50   |
| <b>IS1056</b> - (Small 10-32) Insert style .625 lock plate -                 | \$1.20   |
| <b>IS1057</b> - (Large 1/4-20) Insert style 1/5 lock plate -                 | \$1.50   |
| <b>LLOCKPLATES - Assortment pack</b><br>4 of each locking plate (24 total) - | \$29.00  |
| <b>IH2002 - Shaft Collar</b>                                                 | \$6.00   |
| <b>LDCOLLAR1 - Double Locking Collar</b>                                     | \$19.00  |
| <b>IH20022 - Threaded Single Locking Collar</b>                              | \$8.75   |
| <b>Ball End Wrench</b>                                                       |          |
| <b>IH7001</b> - Hex drive 5/32 (small)                                       | \$5.30   |
| <b>IH7002</b> - Hex drive 3/16 (large)                                       | \$5.30   |
| <b>Measuring Scale</b>                                                       |          |
| <b>IH8003</b> - X-axis Scale (Long) 96" Right-to-Left                        | \$12.00  |
| <b>IH8004</b> - Y-axis Scale (Short) 14" Center Read                         | \$8.00   |
| <b>Index Plates</b>                                                          |          |
| <b>IS1820</b> - 28 Position                                                  | \$9.00   |
| <b>IS1821</b> - 30 Position                                                  | \$9.00   |
| <b>IS1822</b> - 32 Position                                                  | \$9.00   |
| <b>IS1823</b> - 36 Position                                                  | \$9.00   |
| <b>IS1824</b> - 40 Position                                                  | \$9.00   |
| <b>Shop Tools &amp; Supplies</b>                                             |          |
| <b>SS1001 - Dyna-Glide</b>                                                   | \$12.00  |
| <b>SS1031 - Eliminator Chuck - Porter-Cable</b>                              | \$58.00  |
| <b>SS1030 - Eliminator Chuck - Bosch</b>                                     | \$58.00  |
| <b>SS1032 - 1/4" Collett Reducer</b>                                         | \$20.00  |
| <b>SS1041 - Diamond Whetstone</b>                                            | \$39.00  |
| <b>SS1043 - Feeler Gauge</b>                                                 | \$38.00  |
| <b>SS1042 - Dial Calipers 6"</b>                                             | \$58.00  |
| <b>SS10421 - Dial Calipers 12"</b>                                           | \$130.00 |
| <b>SS1022 - Pen Mandrel</b>                                                  | \$29.95  |
| <b>SS1045 - Safety Glasses</b>                                               | \$8.50   |
| <b>SS1010 - Hearing Protection</b>                                           | \$25.00  |
| <b>SS1021 - 4-jaw chuck</b>                                                  | \$159.00 |
| <b>SS1015 - Foot Switch</b>                                                  | \$39.95  |

Prices subject to change without prior notice.

IS1043



Split-nut  
(threaded  
half)



IS1051



IS1050



IS1052



IS1053

IS1056

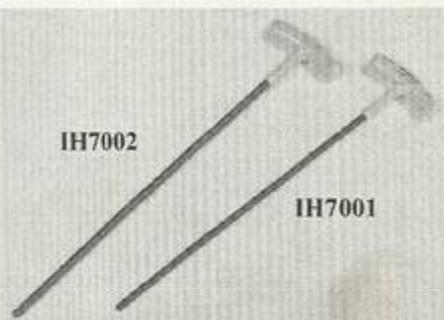


IS1057



LDCOLLAR1

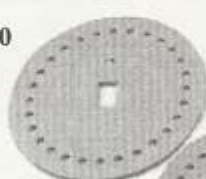
IH7002



IH7001



IS1820



IS1821



IS1822



IS1824



IS1823



Revised 2/06

## WARRANTY

Warranty Policy: One year on mechanical and manufacturing.  
It may be necessary to send some parts into the factory for this warranty to be effective. If your unit was not purchased directly from the manufacture, this warranty will not be valid unless you register with Legacy Woodworking Machinery.

## SHIPMENT INFORMATION

Shipping problems are rare. To avoid problems all equipment is shipped with a signature request. You or a responsible adult must be available to accept delivery. Delivery should be refused on any seriously damaged packages. All shipping problems such as damaged or missing parts must be reported within 5 business days of the receipt of shipment in order for the problem to be treated as a warranty replacement.

## TECHNICAL SUPPORT

The following technical support services are available:  
Video training \* Call 1-800-279-4570 \* [www.legacywoodworking.com](http://www.legacywoodworking.com)



LEGACY WOODWORKING MACHINERY  
1122 South 900 East \* Provo, UT 84606  
[www.legacywoodworking.com](http://www.legacywoodworking.com)