



## The J.L. Smith Flute Station™

The Flute Station was designed as a versatile, flexible, and expandable center for performing bodywork on flutes effortlessly. We have kept the cost low, affording every technician an opportunity to get into the system with the Flute Station Mandrel, adding on to it as time goes on.

To understand the system, read through the instructions and review the guide selection. Contact us if you have further questions.



### **227054 Flute Station-Small Kit**

Allows for all functions, but will not allow more than one tool mounted at a time.



### **227053 Flute Station-Full Kit**

Allows the user to mount multiple tools and take advantage of the turret. (Vice not included)

## Flute Station Tone Hole & Body Mandrel

Item #227050

### **Includes:**

- Mandrel with sleeve
- 2 sets of balls (2 each of 4 sizes)
- Ball adjusting wrench (allen key/magnet combination)



### **Purpose:**

This tool is designed to do several things:

1. Lift flute tone holes to remove low spots ("dips").
2. Raise dented-in posts (requires #227056 Post Raising Wrench).
3. Serve as a body mandrel for dent work.
4. Hold attachments such as the 227061 Tenon Roller and Mandrel.

## Directions:

1. Carefully examine all the tone holes for flatness. This must be done with a precision flatness gauge such as our 227051 Lighted Tone Hole Gauge.
2. Carefully mark or map the low spots. This can be done in a drawing, or by marking on the tone hole with a felt marker. These marks can be removed easily later with rubbing alcohol.
3. Determining the size of the dipped area and select an appropriate size ball holding it with the magnet tool. Set the body over the corresponding ball hole. Set the ball into the hole.

**Note:** If the low spot is large, use a smaller ball. The smaller the ball, the more power it has to move a tone hole very easily so be careful not apply any more power than needed. The mandrel has four holes for the four different size balls. The ball height in the indentation is what raises the tone hole. The height is set with the adjusting set screws. Use the enclosed wrench to adjust these.

**Warning:** Before sliding the flute body onto the mandrel, make sure that the adjusting screws don't protrude from the bottom of the mandrel. Protruding screws will damage the flute body.

When determining the height of the ball, start low. If the ball sticks up too high above the mandrel, it will push the chimney outward instead of up. Once the ball height is set, move the "dipped" area of the tone hole body back and forth lengthwise over the ball, rather than rotate the body around the mandrel.

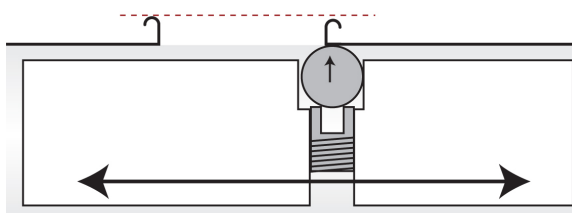
Check your work

frequently - you don't

want to make a "dip" into a high spot! The 227051 Lighted Tone Hole Flatness Gauge is terrific for this.

The plastic sleeve is provided so that you may use the mandrel in a vice without damaging it. If you get vice marks on the tool, those could damage the bore of the flute. This sleeve is also used when you use the mandrel with either of the Flute Station stanchions, which are available.

Using the mandrel for removing body dents, orient the ball slots towards the side rather than up. This will give a surface to tap, burnish and roll against for dent removal.



## Flute Station Headjoint Madrel

Item # 227055

### Purpose:

This madrel is sized to support the flute headjoint when using the burnishing column and roller to remove dents.



### Directions:

1. Remove the headcork if necessary to reach all dented areas.
2. Install the mandrel in the stanchion and set the Burnishing column in position with the roller. Lower the roller until contact is made.
3. Moving the dented area of the headjoint back and forth under the roller, apply the necessary pressure to lift the dent.
4. Reduce the pressure using the same motion to blend the repaired area.

**Note:** *this madrel is not tapered as with a traditional headjoint mandrel. This supports the head at the area of dent removal anywhere along its length.*

## Flute Station Post Raising Wrench

Item # 227056

### Purpose:

To raise a flute body post or rib that has been pushed in.



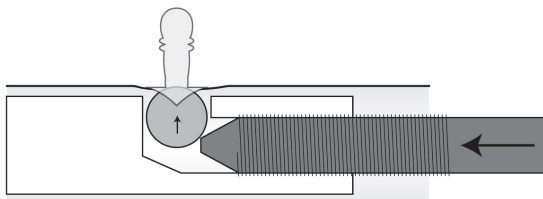
### Directions:

1. Line up the center of the last hole in the Tone Hole Mandrel with the dented in post. Set the mandrel so that the body will press against the mandrel's sleeve as a stop. Tighten the mandrel in this location with the hole straight up. Do this regardless if you are using a vice or the Flute Station Stanchion. This helps ensure that the body doesn't move while you are lifting the post and so that you are certain the center of the ball lines up with the post.

2. Set the largest ball in the hole. The ball will sit down in the hole so that the body will slide over it.

3. Put the body onto the mandrel, post up.

4. Screw in the wrench until it raises the post. Once



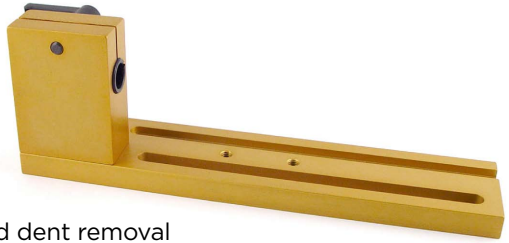
the wrench is applying pressure to the ball, watch the post carefully as it is lifted into the right elevation. Be careful to not over lift the post.

## Small Block Stanchion With Base

Item # 227057

### Purpose:

The stanchion holds the tone hole mandrel or headjoint mandrel. The 1" hole can be sleeved to hold any smaller size mandrel as well. We can make sleeves for you on request. The burnishing column can be added for tenon fitting and dent removal and other functions.



### Directions:

The base and stanchion are not assembled when shipping. Assemble the stanchion to the base securely, and use as required. See Photo.

## Flute Station Bench

Item # 227058

### Purpose:

The same as included with the Small Block Stanchion. Available separately to add on to the Big Block stanchion with Turret. Holds either type block stanchion. Mount the burnishing column to increase its capabilities.



### Directions:

Assemble the stanchion to the base securely, and attach the turret to the center of the base.

## Big Block Stanchion With Turret

Item # 227059

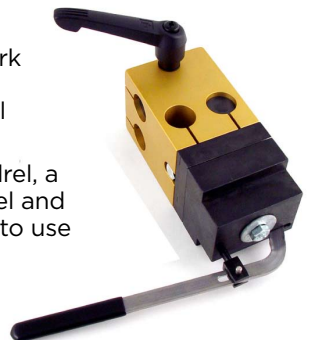
### Purpose:

Holds four different tools (plus an additional hole for a bench peg) allowing for a complete flute work station. The turret allows you to mount the tool in a vice, and turn the tool to orient the required tool towards yourself while locking it in place.

Most users will mount a tone hole and body mandrel, a headjoint dent mandrel, a headjoint fitting mandrel and a tenon shrinker. Add the station base if you wish to use the burnishing column for greatest versatility.

### Directions:

1. Install tools as desired. Use the metal blank slugs to fill empty stanchion holes when you need to snug another tool adjacent in



the turret. This gives something to tighten against without distorting the block.

2. Mount turret base in a vice with the handle towards you.



3. Press down gently on the handle to loosen the locating pin in the turret.
4. Turn the block to the tool that you need.
5. Release the handle to loosen the locating pin which will secure the turret so that you may use the tool.

## Flute Station Burnishing Column

Item # 227060

### Purpose:

Attaches to the base allowing the user to burnish body creases and dents, close to toneholes (to take high points down), refit tenons, and roll out dents.

### Directions:

1. Bearing in mind possible deflections of the tool, the burnishing column and the opposing tool or body joint as close the stanchion (support) as possible.
2. Secure the bolt that holds the column in place.
3. Insert the desired tool in the column securing it with the pin.
4. With any tool installed, use the least amount of pressure to do the job.
5. Often is best to start with little pressure to round the area, then apply more pressure to burnish, lastly reduce pressure to blend.

The Burnishing Column is furnished with a dent roller that works on the body and headjoint and two burnishing heads—one plastic, one metal. The burnishing heads should be examined and polished as needed prior to each use. The burnishing heads can take down areas next to tone holes which help restore the shape of a hole. They can also be used to remove small sharp dents and dents around holes, ribs and rings (tight spots).



# Tenon Roller And Mandrel

Item # 227061

## Purpose:

To re-round and expand headjoint and footjoint tenons.

## Directions:

1. Screw mandrel into the end of the Tone Hole Mandrel.
2. The roller mounts to the burnishing column.
3. Move the body mandrel close to the stanchion to reduce deflection when rolling the tenon. This way the power of the burnishing roller goes into the work rather than deflecting the mandrel.
4. After setting the mandrel, locate the burnishing column so that the roller is over the metal (not the plastic) on the mandrel.
5. The roller is narrower than the length of the headjoint tenon. So, when fitting a headjoint, make several overlapping passes. Do not use a spiral motion (caused by pushing or puller) when fitting the head. Keep the headjoint in one location only, turning it around. Under pressure go around the headjoint completely in one spot, then remove the pressure, move the tenon to another spot and repeat until the head is fitted.



# .750" Sleeve

Item # 227062

## Purpose:

Additional sleeve holds 3/4" tools in the stanchions.



# Flute Station Selection Guide

To do  
this  
task:  
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You'll need:

	227050 Tone Hole Rod Package	227060 Burnishing Column Package	227057 Small Block Stanchion With Base	227059 Big Block Stanchion With Turret	227058 Base (Optional for use w/ 227059)	227061 Tenon Roller and Mandrel	227062 3/4" Sleeve	201019 Flute Body Bench Peg	227055 Headjoint Rod	227056 Post Raising Wrench
Raising Tone Holes	need									
Raising Posts	need									need
Burnishing Around Tone Holes	need	need	need this →	or this						
Rerounding and Expanding Tenons	need	need	need this →	or this	need					
Removing Body Dents	need	need	need this →	or this						
Removing Headjoint Dents	need	need	need this →	or this	need				need	
Mount ing Multiple Tools				need	option		option			
Holding While Hand Polishing				need	option			need		

Enjoy!



*Jeff*





**100% Lifetime Guarantee!**

J.L. Smith brand tools are guaranteed for life against breakage or defects. Just return any defective tool to us and we'll repair or replace it free of charge.

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