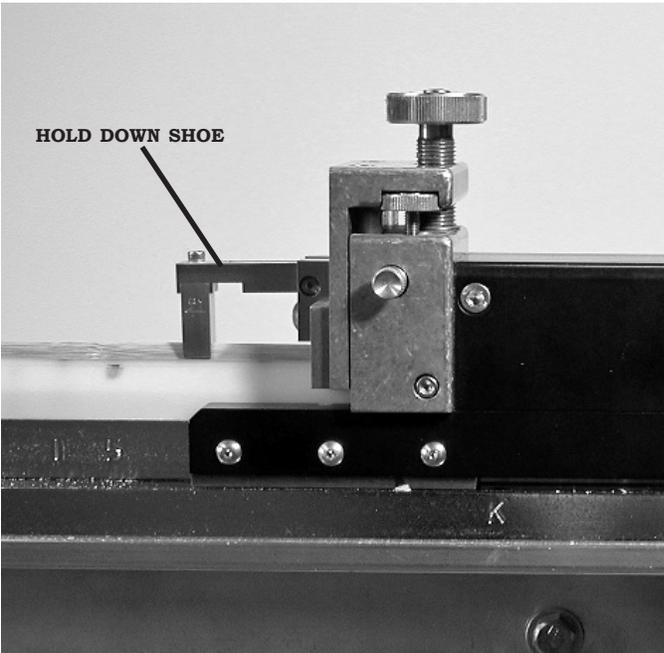


# HOLD DOWN SHOE

## General Description



HOLD DOWN SHOE (photo 1.)

The hold-down shoe is designed to keep the bamboo strips in alignment with the cutter head and carbide inserts when milling. It prevents any side-to-side wiggling of the strips during cutting, reduces chances of a miscut at a node, and helps alignment of all strips including the difficult to cut quad strips. The shoe should be used on both tip and butt strips once they have been milled enough to bevel an apex on them so that the shoe will ride along smoothly.

The entire assembly is made from stainless steel to prevent rusting in humid climates. The hold-down shoe assembly mounts with a button-head screw, which is supplied, into the hole located at the center of the cutter heads.

The attaching holes on the pivot arm are slotted .030" side-to-side so that the shoes can be easily centered on the cutters. The pivot arm holding the shoe is spring-loaded so that it will always keep contact with the bamboo. The shoe keeps the strip centered on the cutter head. The use of the hold down shoe is automatic and has proven to be very trouble free in operation.

The hold-down shoes have slotted angles of 61 ½ degrees, 73 ½ degrees, or 91 ½ degrees, depending on whether the shoe in question is for a 6-, 5-, or 4-strip rod.

The shoes will hold even the smallest tip. Since the shoe rides ahead of the cutters on all of the cuts, including the final cleanup cut, it won't affect the accuracy of your milling. The pivot arm is designed so that it hits on the bottom of the hold-down body, limiting the arm's vertical travel and preventing the shoe from dropping down too far when the shoe drops off the end of the bamboo strip and anvil.

## Mounting & Operating Instructions

Before mounting the assembly make sure the hold-down shoe is not attached to the pivot arm. Run the cutter head assembly up near the top of its travel. Mount the hold-down body and pivot arm on the Hand Mill plane and hold it down snugly while centering it on the button head fastener. With a finish anvil that has been tapered mounted on the adjustable bed, set the Hand Mill plane on the base/bed assembly.

Take the hold-down shoe with the correct angle for the strips you are milling and mount it loosely in one of the front pivot arm slots using the 6-32 screw. The pivot arm has two positions for locating hold-down shoes. The front one is about 1.80" from the cutters, while the second slot is about 1.40". Some users prefer using the shoe in the front position while others preferred the rear one. Experimentation using the shoe in both slots will determine which one you prefer. As the slotted angle cut into the bottom of the shoe is rounded upward in the front, it is essential that this portion of the groove be mounted forward. An arrow is marked on the shoe indicating the way it must travel when correctly mounted.

The mounting holes for the shoe, located in the pivot arm, are slotted about .030". This allows the shoe to be mounted with some side-to-side adjustment. First, slide the entire plane with the cutter head assembly attached toward the tip end of your anvil stopping within a few inches of the end. Then run the cutter assembly gently down until the apex of the shoe's angle just touches the top of the anvil. Inspect closely to ensure that this apex aligns and is centered perfectly on the top of the anvil. If it is not, move the shoe toward one side or the other of the slotted hole in the pivot arm until the alignment is correct. It's important that the center alignment with the top of the anvil is nearly perfect. Tighten the shoe into the pivot arm making sure that it remains centered on the anvil. The shoe assembly should now be aligned with the anvil, and all bamboo strips that you cut should remain centered directly under the cutter head as well.

You should not experience any difficulty with chips or shavings building up between the shoe and cutter head since there is sufficient clearance for them to disperse.

Once you start cutting strips you should pay close attention to how your strips are cutting to be sure that you are getting approximately equal cuts on both sides of the strips. The slender area at the end of tip strips seems to be particularly vulnerable to shoe mis-alignment, as an off-center shoe can cause the strip to roll off to one side of the anvil. From my experience, with some slight right or left adjustment of the shoe it can be centered easily so that you get equal cuts on your strips. Even though the shoe usually remains locked in place a regular check for proper alignment is appropriate.

During milling of the strips, the shoe should automatically settle onto the bamboo strip with each pass of the cutter head. The entire assembly adjusts itself automatically to the depth of cuts as you move the cutter head down.

## **Maintenance**

The tolerances between the pivot arm, mounting block, and shoulder bolt are very close in order to reduce side-to-side play of the hold-down shoe. Even though I am not aware of any user experiencing tightness of these parts preventing the proper movement of the pivot arm it may be possible. This would most likely be from accumulated bamboo shavings or other debris. If this occurs, disassemble the pivot arm and mounting block and clean with denatured alcohol or some other mild solvent. If you feel that a lubricant would be helpful use a dry product such as powdered graphite. **DON'T EVER USE OIL OR GREASE.**

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