

# Olde Window Restorers

## Invisible Balance Prep and Installation

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### Invisible Balance Preparation of sash

Begin by marking the position of the balance by centering between the top and bottom of the glass.

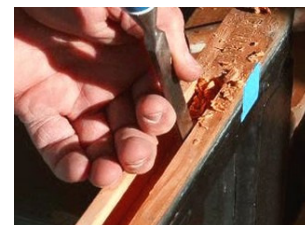
The slot required for mounting is 9/16 wide by 1" deep.

*Method 1:* The slots can be cut with a simple template and a plunge router. (Preferred method) *The online video demonstrates the plunge router with template method.*

*Method 2:* They can also be cut with a dado blade on a table saw in about 3 passes with each pass being about 1/4" deep.

*Method 3:* They can also be made using an electric drill and a forstner bit to cut out most of the stock and clean out with a chisel.

If you use a dado blade on a table saw, you will need to clean out the ramp left by the blade. The easiest way I found was to use a Forstner bit to remove most of the stock and clean out with a sharp chisel.



Test the completed slot for the correct depth. You want to have it just deep enough so that the metal is not above the edge of the sash. When your slots are all cut, install the balance with the tab/cord fastener at the bottom of the sash. Mount with #8 x 1/2" pan head screws.

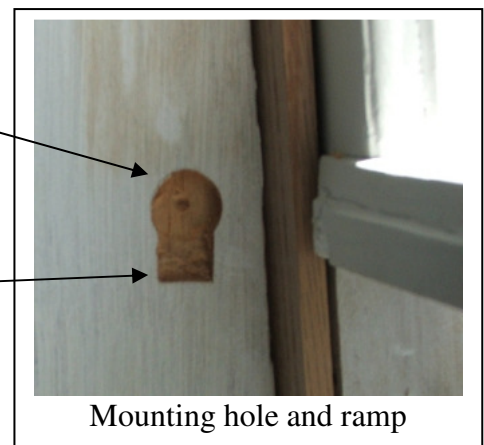
When the slots are cut and the balances secured in the slot, it is time to mount in the window frame.

### Preparing the window jamb:

- Using a flat bottomed bit (Forstner), make a 1/2" diameter hole about 1/4" deep on the jamb. Position the hole in the center of where the sash will travel and adjacent the meeting rail but not above.

Using a 1/2" chisel, make ramp into the bottom side of the hole to accommodate the mounting tab.

Repeat the process on the opposite jamb.



Mounting hole and ramp

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At this point it is very helpful to have a third hand and I find that small rubber padded spring clamps by Irwin or others does the job.



## Attaching the balances:

- Pull each Dacron cord to nearly its full length and use a small clamp to hold the cord. Clamp both cords as shown. The clamp shown is an Irwin available at many hardware stores. Any similar clamp should do the job.
- Using a #6 by 3/4 " pan head screw, fasten each tab into its mounting hole. Check to be sure that the tab is not protruding into the path of the sash.
- Gently release the clamps from the cords. The spring tension will now be supporting the sash.
- Ease the sash in place taking care not to bind the cord between the sash and jamb. With the sash in place, ease the sash up to make sure the cord is properly aligned on the sides of the sash. Reinstall the trim stop.



Cord extended and clamped

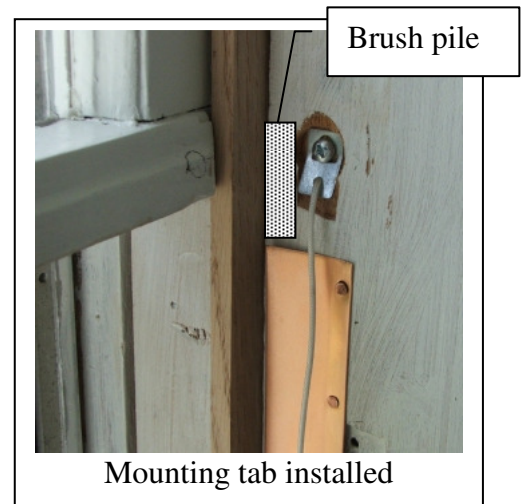
Note: If using spring bronze as in the photo below, there will be a gap left of about 1 1/2" to the top of the lower sash. I use a self adhering piece of brush pile to fill the gap.

**Caution:** The sash travel must be restricted to not allow the sash to go higher than the end of the balances. If they are allowed to be raised beyond this point, it can break the tab and/or cord. To prevent this happening I mount a short wood stop on the jamb at the top of the max allowed travel. I bevel the top edge to make it more esthetically pleasing.

*To install on upper sash follow the basic procedures with the following change:*

Find the point on the jamb where the tab would be with the tab pulled up 2-3 inches insuring there is tension on the cord that will keep the sash in the up position. This will be 4-5 inches above the bottom of the upper sash. Make recess and ramp as above. This will allow full travel of the upper sash. If weather stripping the jamb, you can cut out a portion of the bronze on the interior as you would for a pulley. This will provide a continuous seal for the upper sash.

- Once installed they should give you many years of carefree service.



Mounting tab installed