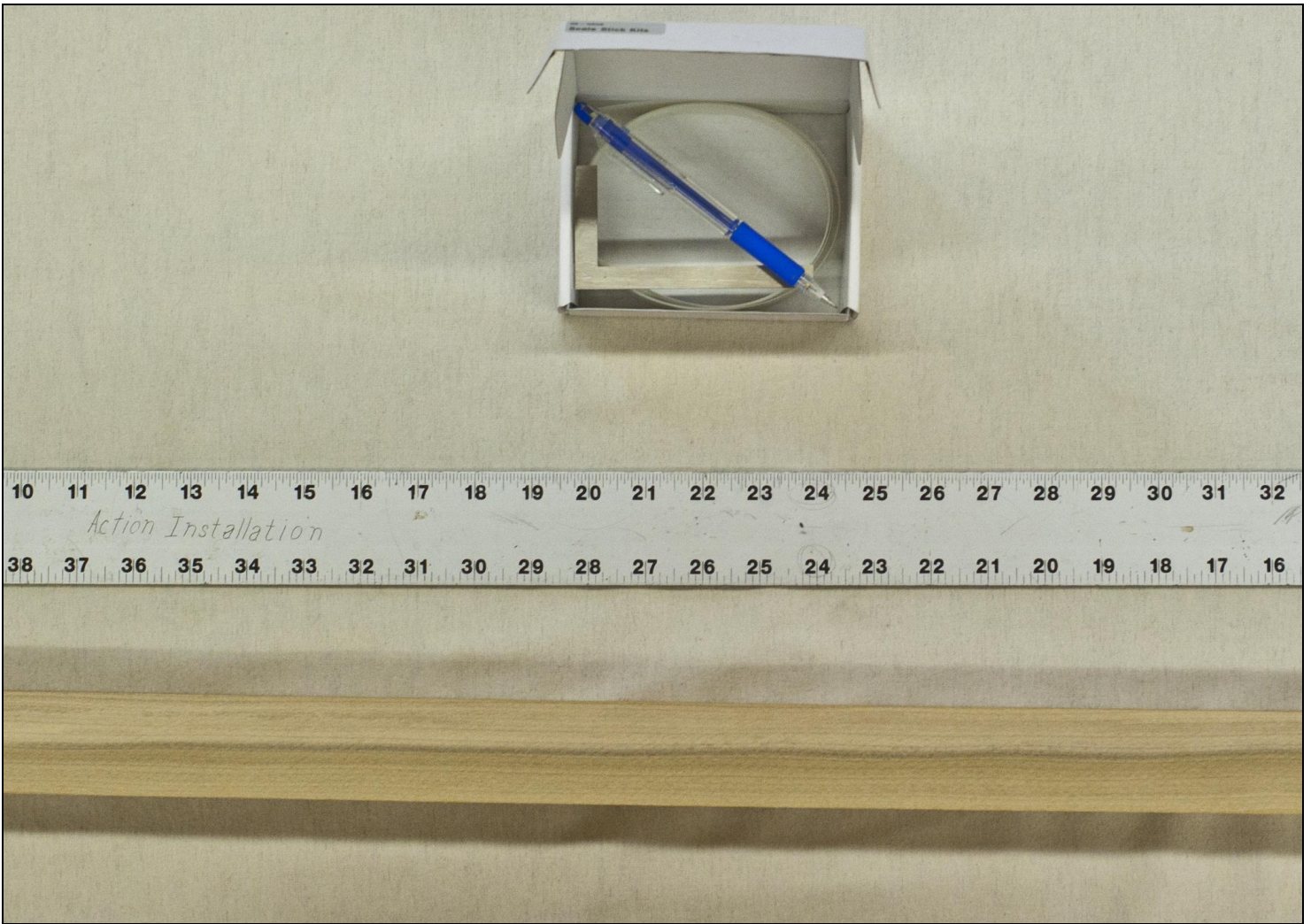


## Create a damper action scale stick from the back of the keys



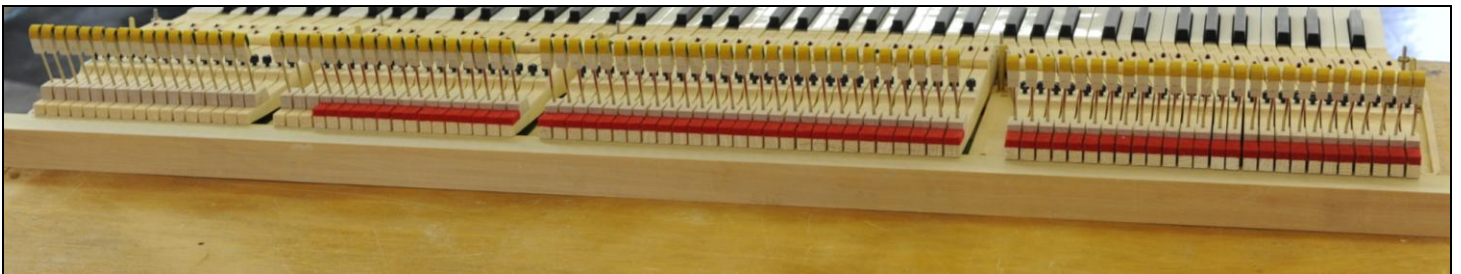
The procedure to make a scale stick from the ends of the keys is pretty straight forward. Remember, this method is useful only for a damper action and would not be appropriate for a top action.



You will need the following tools.

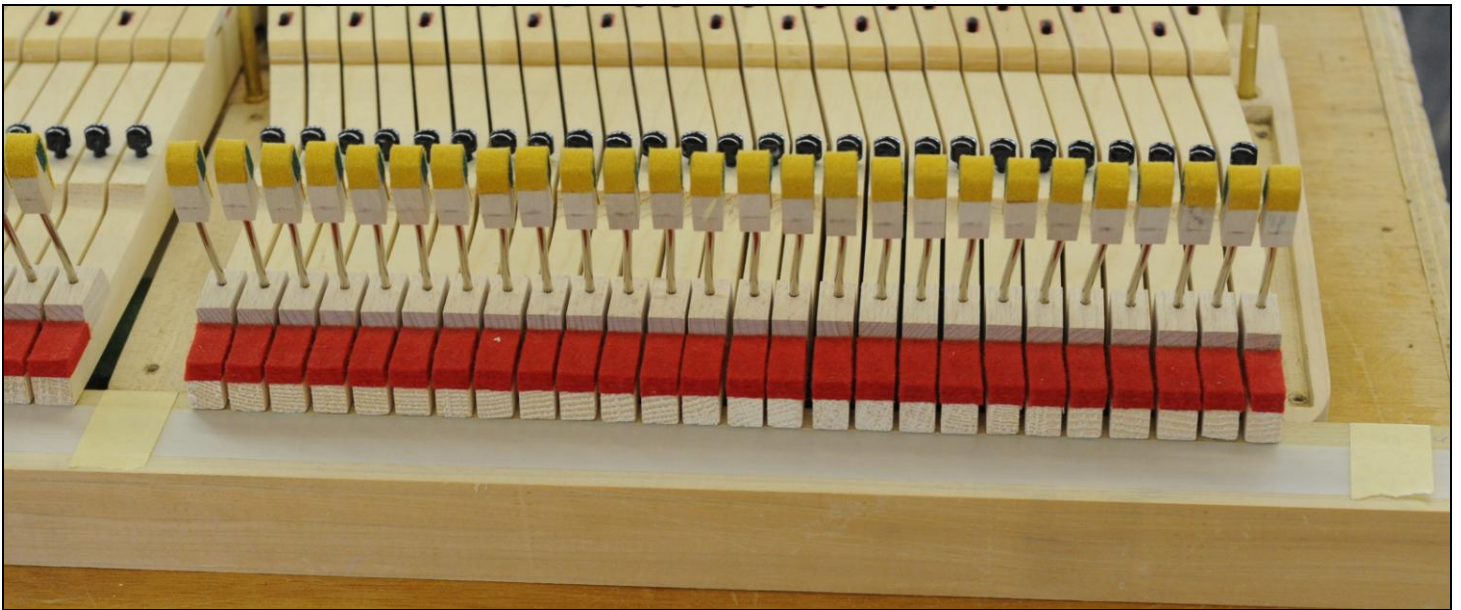
- WNG Scale Stick Kit
- 25mm wide Mylar strips
- Small square
- Mechanical pencil for Mylar

Block of wood (for back of keys)  
Long straight edge



Block the ends of the keys so that the balance point of the key is slightly above the balance rail.

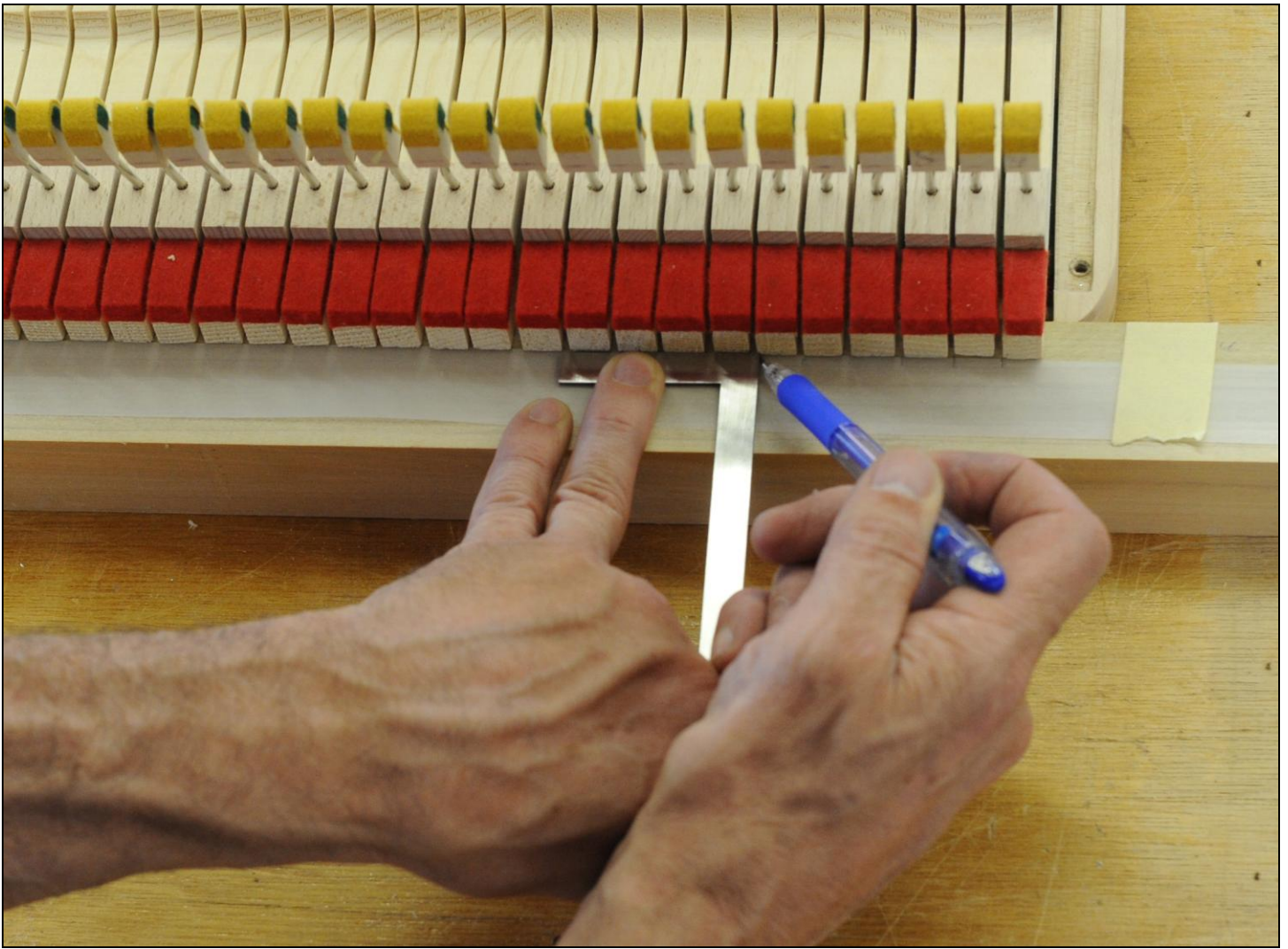
Prior to taking a scale stick from the back of the keys make sure that the spacing of the keys is correct.



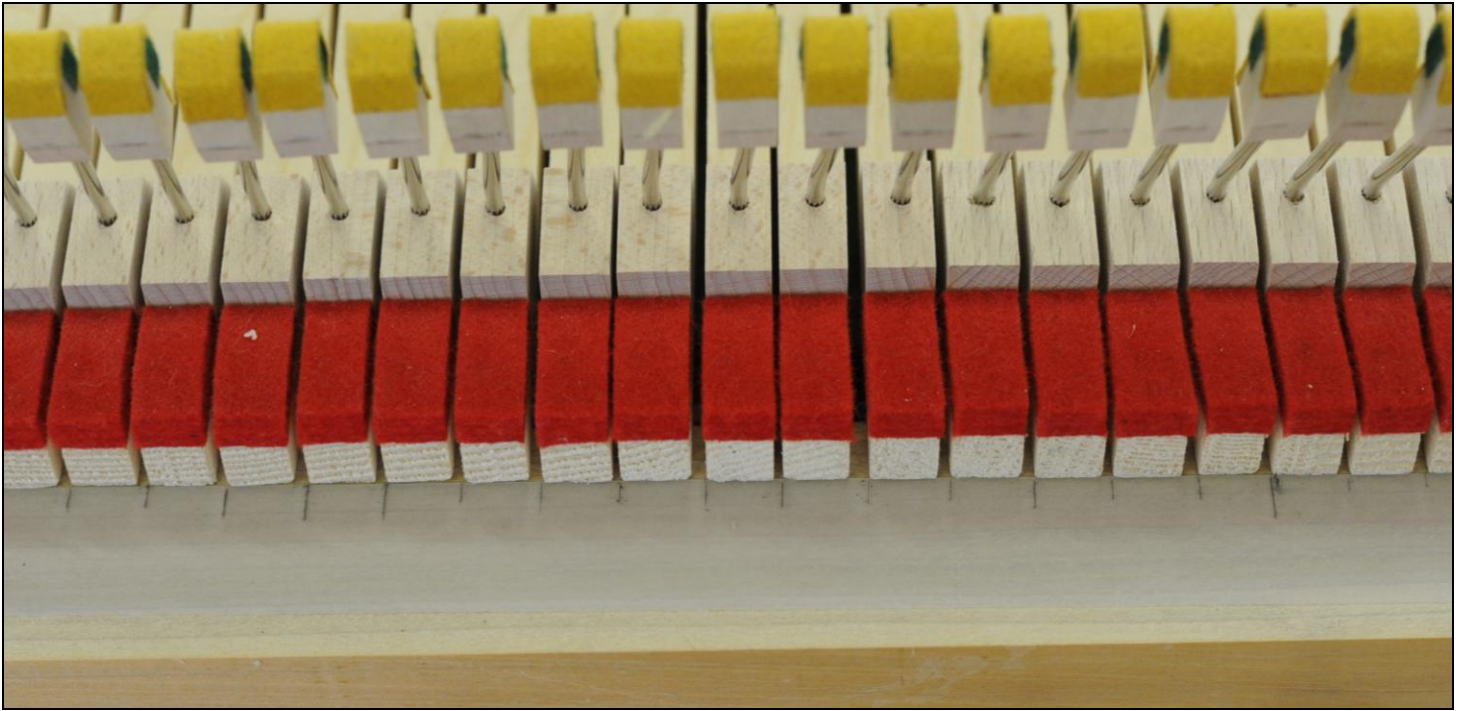
The WNG scale stick kit has several strips of Mylar for the purpose of making a scale stick. Mylar is useful because it is translucent, easily written on and dimensionally stable.

In addition, a Mylar strip is easily rolled up and mailed. A 1500mm long (about 60") stick of wood would be much more difficult (and expensive) to ship to WNG than a rolled up strip of Mylar.

Use masking tape to tape the strip of Mylar to the block. The edge of the Mylar should be against the end of the keys.



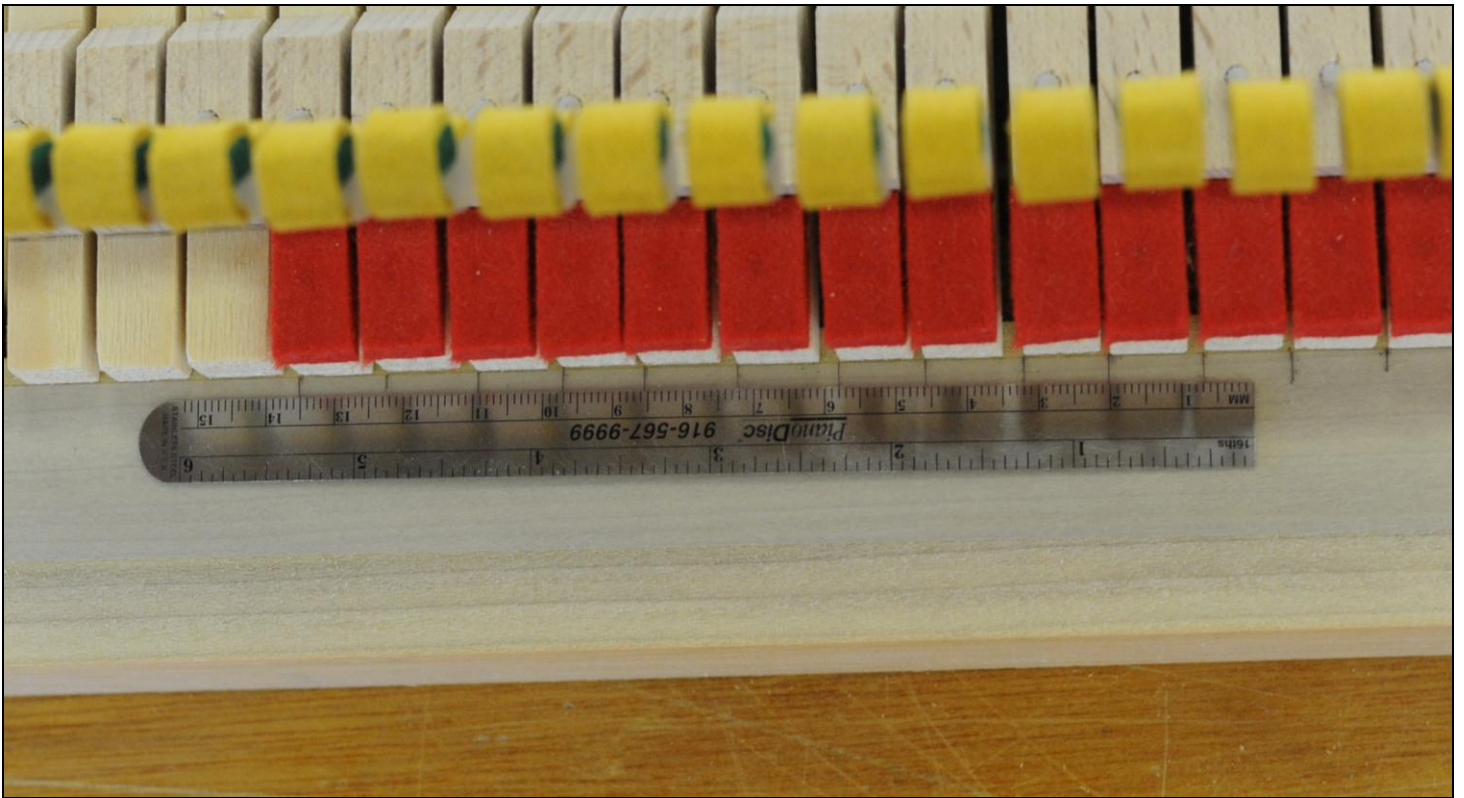
Make a mark on the Mylar at the treble edge of each key with a damper. By marking the treble side of the key you take into account all the various errors that can occur.



Because keys change when they are cut, the spacing at the ends of the keys does not necessarily reflect the capstan spacing nor is it necessarily even. When you make a scale stick from the ends of the keys your scale stick will reflect these errors.

In the fixed lever designs, because they are not easily moved sideways, you have no choice but to go with this unevenness.

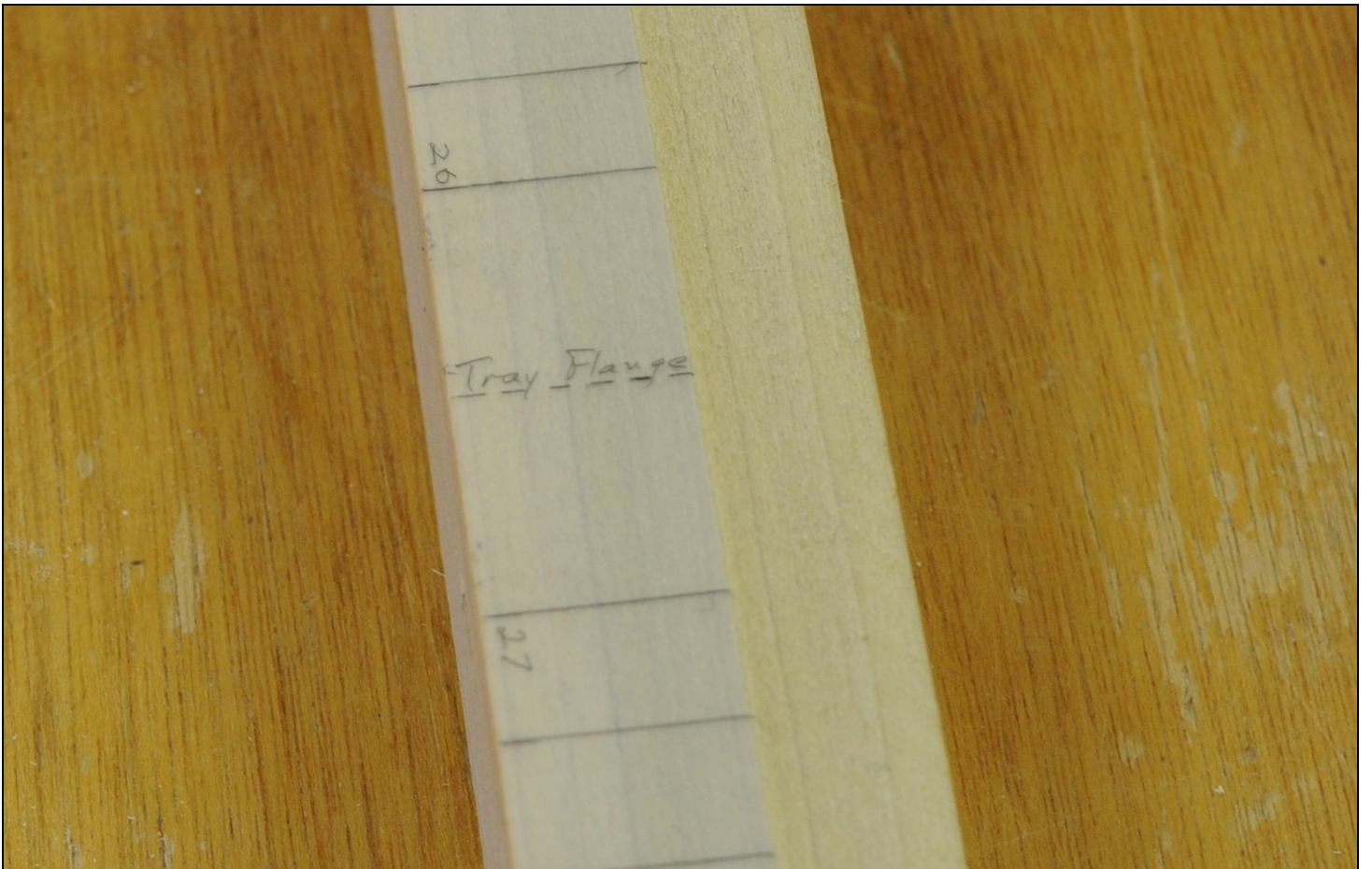
On the WNG damper action however, because the bendable spoons can be bent side to side to match the keys the most sensible choice would be to even out the note spacing on most pianos.



At minimum, you need to ensure that the spacing between note centers is at least 12.2mm.

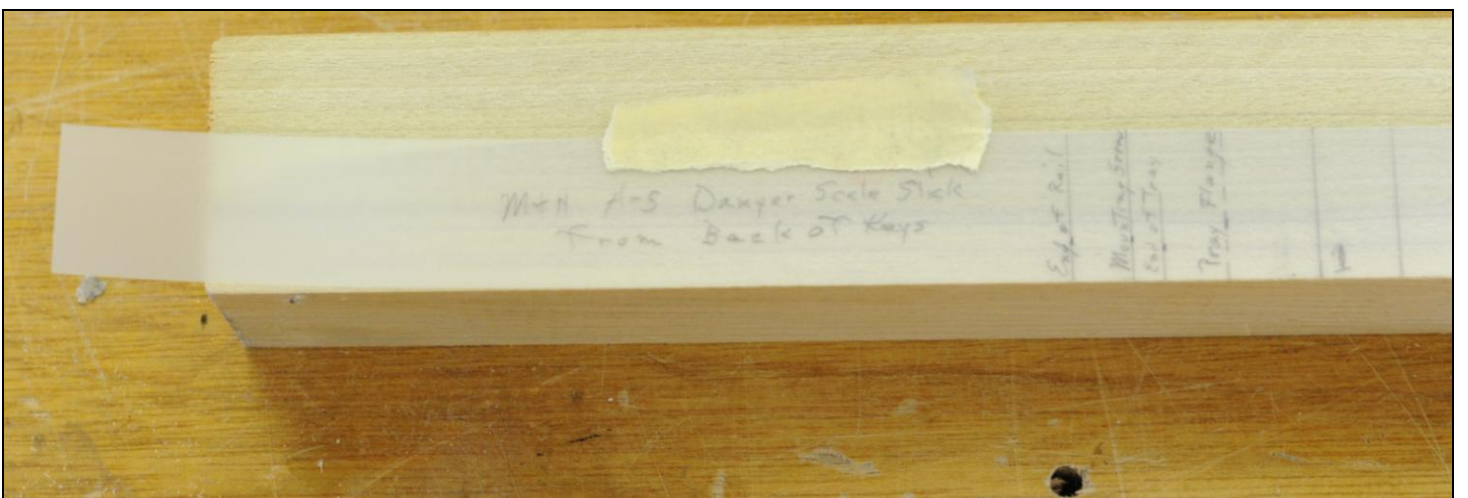
If, for whatever reason, some are closer than 12.2mm then you must correct this problem.

If the overall spacing in a given section is closer than 12.2mm then you will not be able to use the WNG damper action.

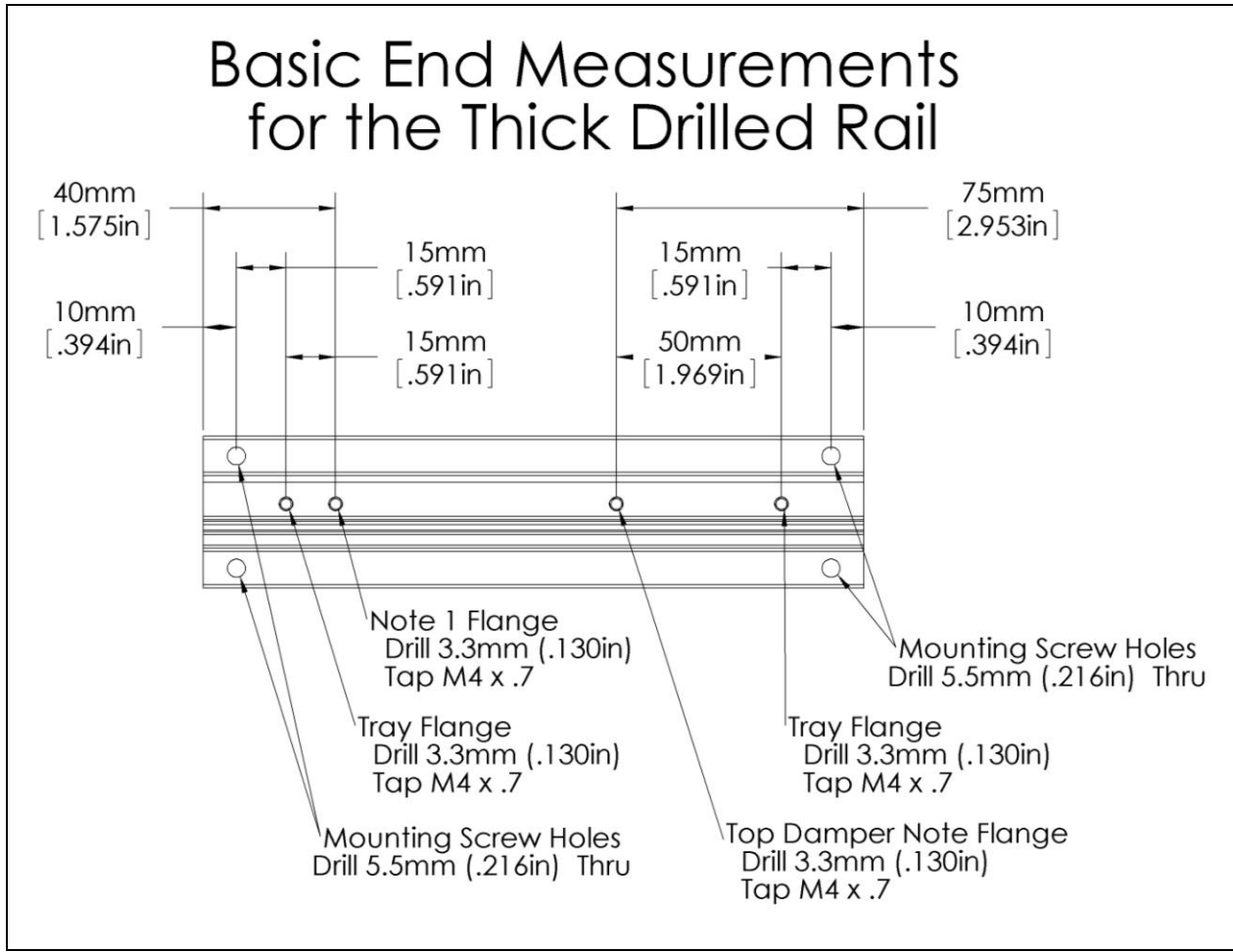


While you can orient the scale stick any way you wish, the convention is that the bass, or bracket 1, or note 1, is on your left while the numbers are oriented so you can read them.

Write the note numbers at the end of each section on the Mylar scale stick. Write the numbers just inside the note lines.

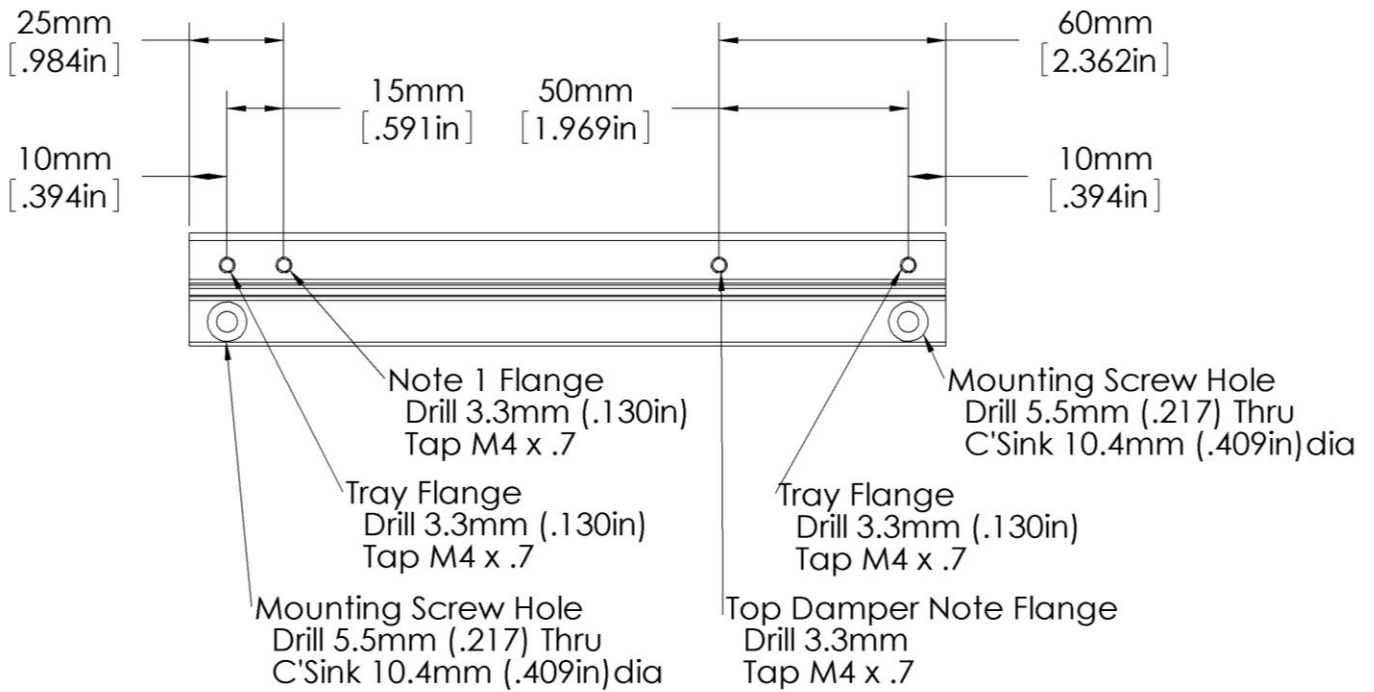


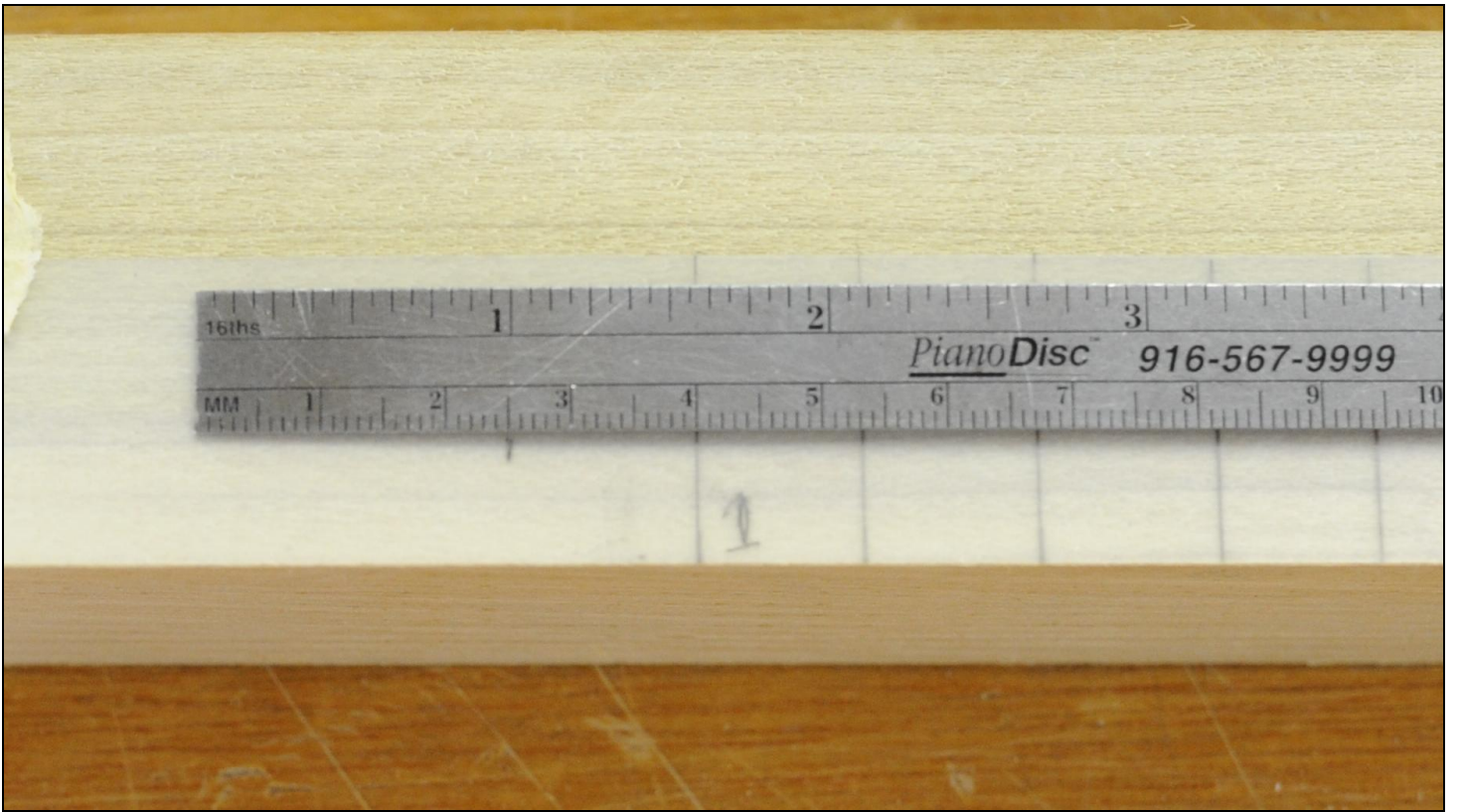
Just to the left of the #1 bracket write the name and model of the piano, the serial number and the date on the scale stick.



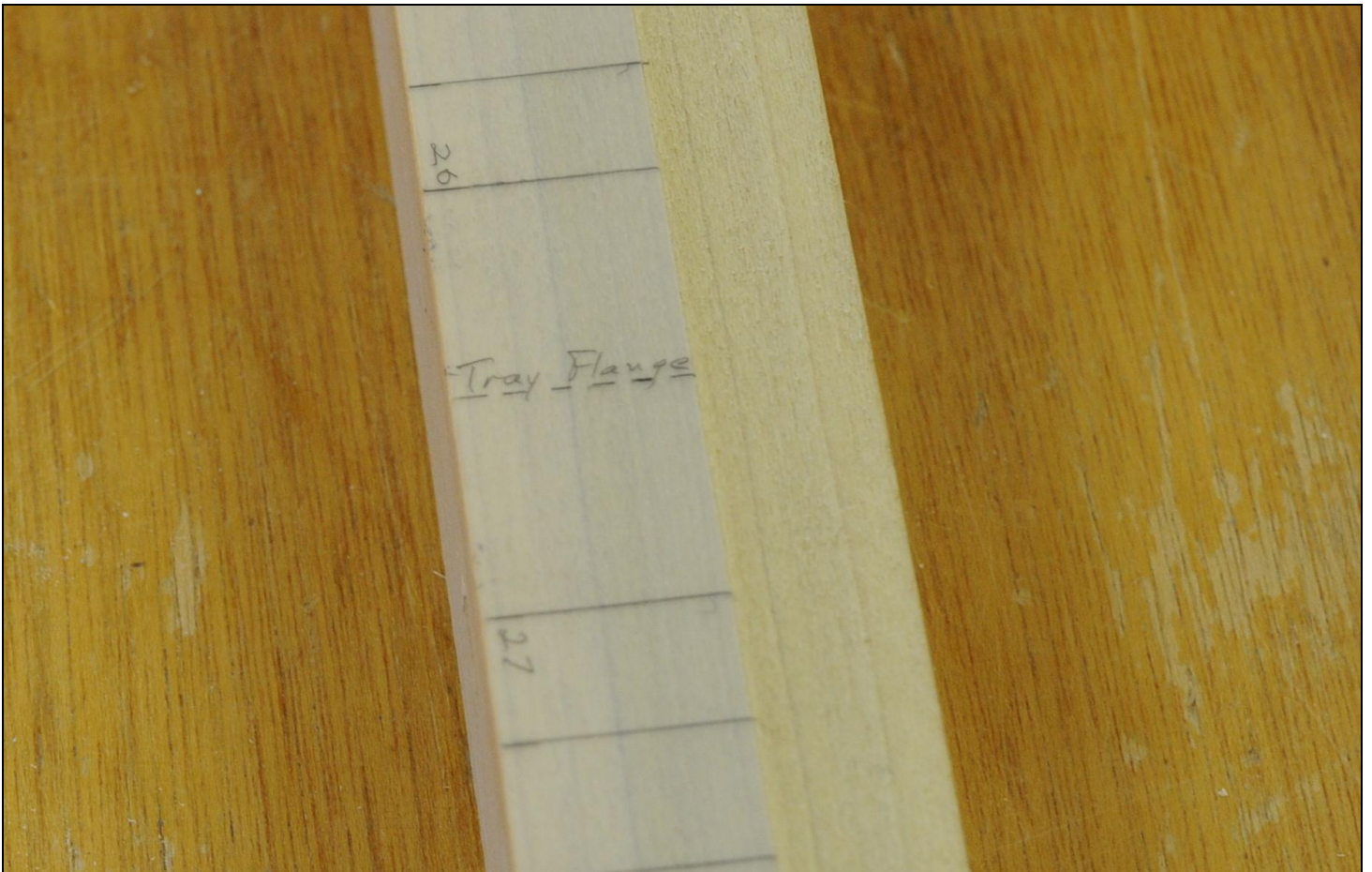


# Basic End Measurements for the Thin Drilled Rail



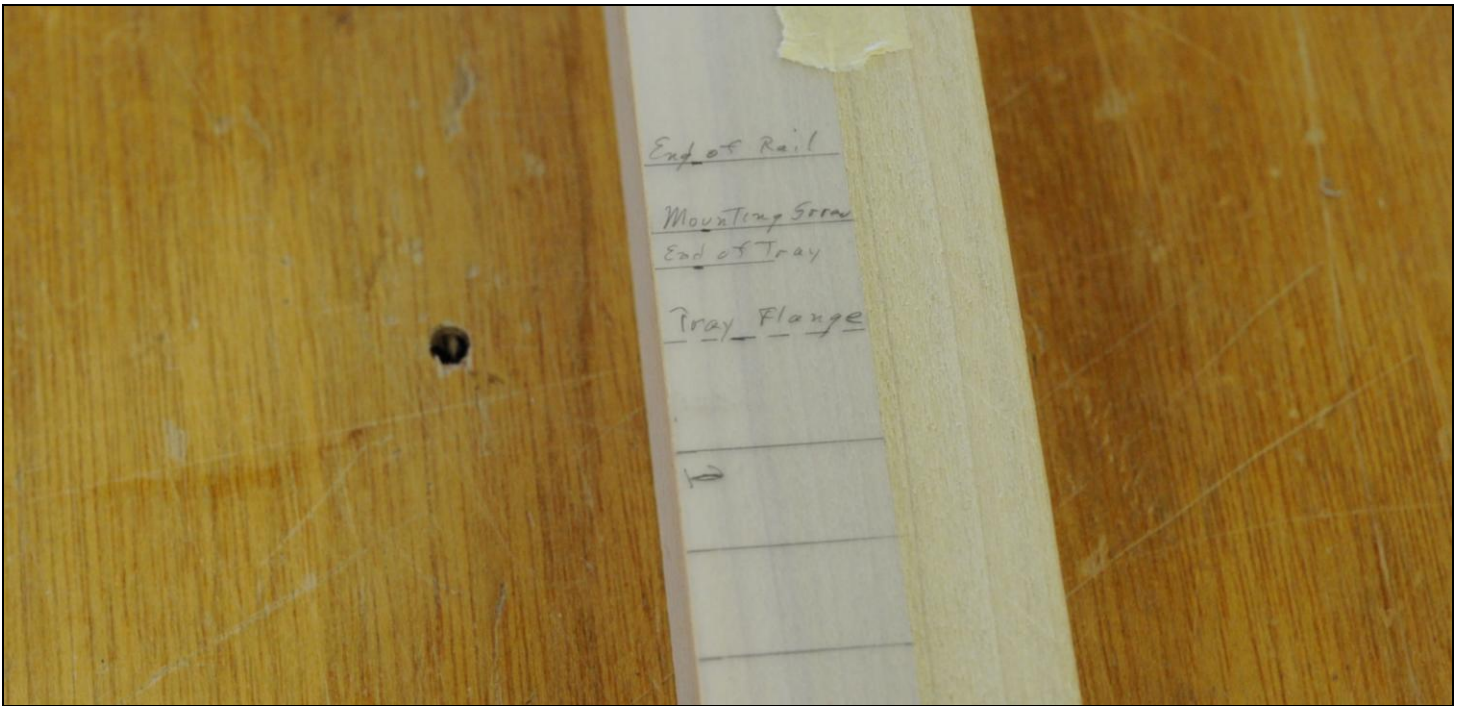


The tray flange in the bass should be 15mm from note 1. In the treble the tray flange should be 50mm.



The method used at WNG is to mark the note centers with straight lines and the brackets or tray flange center lines with dashed lines.

The tray flanges are centered between the notes at the interior breaks.



This scale stick is for a thick rail. The end of the tray is marked 10mm from the tray flange.

See the above drawings for the rest of the dimensions. If you are using a thin rail, then the tray flange, mounting screws, and end of rail all need to reflect the dimensions required for a thin rail. (See page 8 for thin rail dimensions)

Mark both the bass (shown above) and the treble end of the rails.

Now you have created a scale stick from the ends of the keys for a damper action.