

## **OPERATIONS SEQUENCE: GRAND PIANO PLATING FOR PLATES WITH THREADED PERIMETER BOLT HOLES**

1. All of the old perimeter bolt holes and nose bolt holes should be plugged.  
Determine the correct string height for this installation by considering the following rule:  
String height = distance from keybed to hammer flange center + distance of hammer bore.
2. The nose bolt is installed at an estimated height. Lower the plate into the piano allowing it to temporarily rest on the nose bolt shoulder and/or block spacers around the perimeter. The plate may be resting on some of the blocks or all. The object is to avoid damage and allow accessibility for more precise setting.
3. Position the plate for correct string height at #88. The plate may need to be blocked up, or clamped down. The pin block to inner rim contact may need to be shimmed. There should be minimum positive bearing on the speaking length side of the bridge. We use a gauge that orients the bottom of the v-bar to be on a level with the top of the bridge. (Therefore the top of the string at the v-bar is level with the bottom of the string at the bridge.) When the correct plate height is secured, insert a perimeter bolt at the high treble location.
4. Position the plate for correct string height at #1, with the same considerations for pin block to inner rim contact.
5. Prepare to position the plate for correct height and string orientation at each end of both bridges. At this point check to be sure that the nose bolt is not too high. If there is a slight gap between nose bolt shoulder and plate bottom it is OK at this point. (Check with a feeler gauge or mirror.) Use blocks to raise or clamps to lower the plate as necessary.
6. Use test strings from agraffes to test for height. A string secured in the agraffe and then lowered onto the bridge should be observed to be bisecting the hitch pin at the moment it makes contact with the front edge of the bridge. This leaves room for the string to be adjusted higher or lower on the hitch pin at the final bearing set.
7. When the plate is at the correct height, insert a perimeter bolt near the bridge end locations. (When a perimeter bolt is engaged in both the threaded plate and the inner rim, then the plate height is fixed at that position.) Be sure that any blocks used to prop up the plate height are removable. Perimeter bolts are fully secured when the lock washer underneath the bolt head is closed. Any further rotation results in stripping threads.
8. Use the test string procedure again in the middle of the treble bridge. Insert the remaining perimeter bolts.

9. Insert the screws securing the pin block to the inner rim.
10. At this point, the plate / pin block assembly is resting on the inner rim at the front, and suspended above the soundboard by engagement with the perimeter bolts.
11. Turn up the nose bolt so that the shoulder contacts the bottom surface of the plate but does not flex it upwards. The purpose of the nose bolt cap is to prevent the upward flexing of the plate as string tension is added.
12. A plate with acujust hitch pins installed in this manner is now in a condition where the down bearing of the strings on the bridge can be further refined during the stringing and chipping operations.