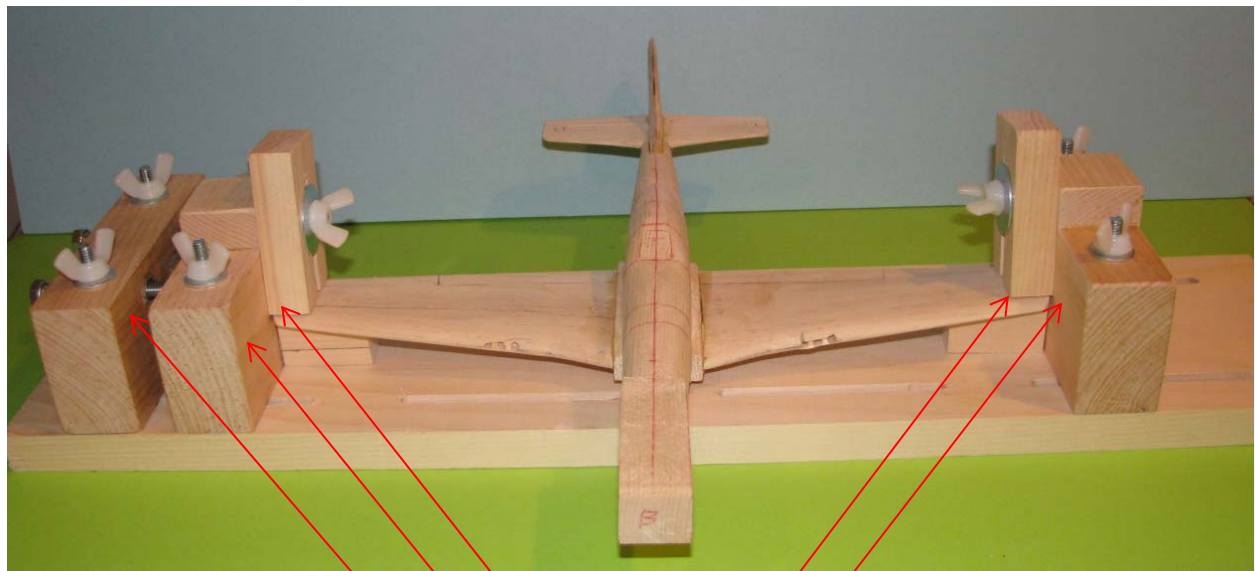


Plans for Wing Clamp

When the model scale and the wing dihedral angle are large, the modeler may decide to cut and finish each wing separately and stub the wing into the fuselage. In these instances, in order to obtain maximum strength at the glued joints, it is best to apply a lateral (sideways) clamping force while the glue is drying.

The homemade wing clamp in Figure 1 below provides a lateral clamping force along with a vertical restraint to keep the wings from bowing up when the lateral force is applied. Temporary blocks are cut and installed under the wing to ensure the correct dihedral is maintained while the glue dries. The lateral force is created by tightening the 4 bolts in the jacking post once the assembly has been positioned in the wing clamp with the clamping posts and vertical clamps adjusted to suit.

Figure 1
Model in Wing Clamp



Vertical clamps

Clamping posts

Jacking post

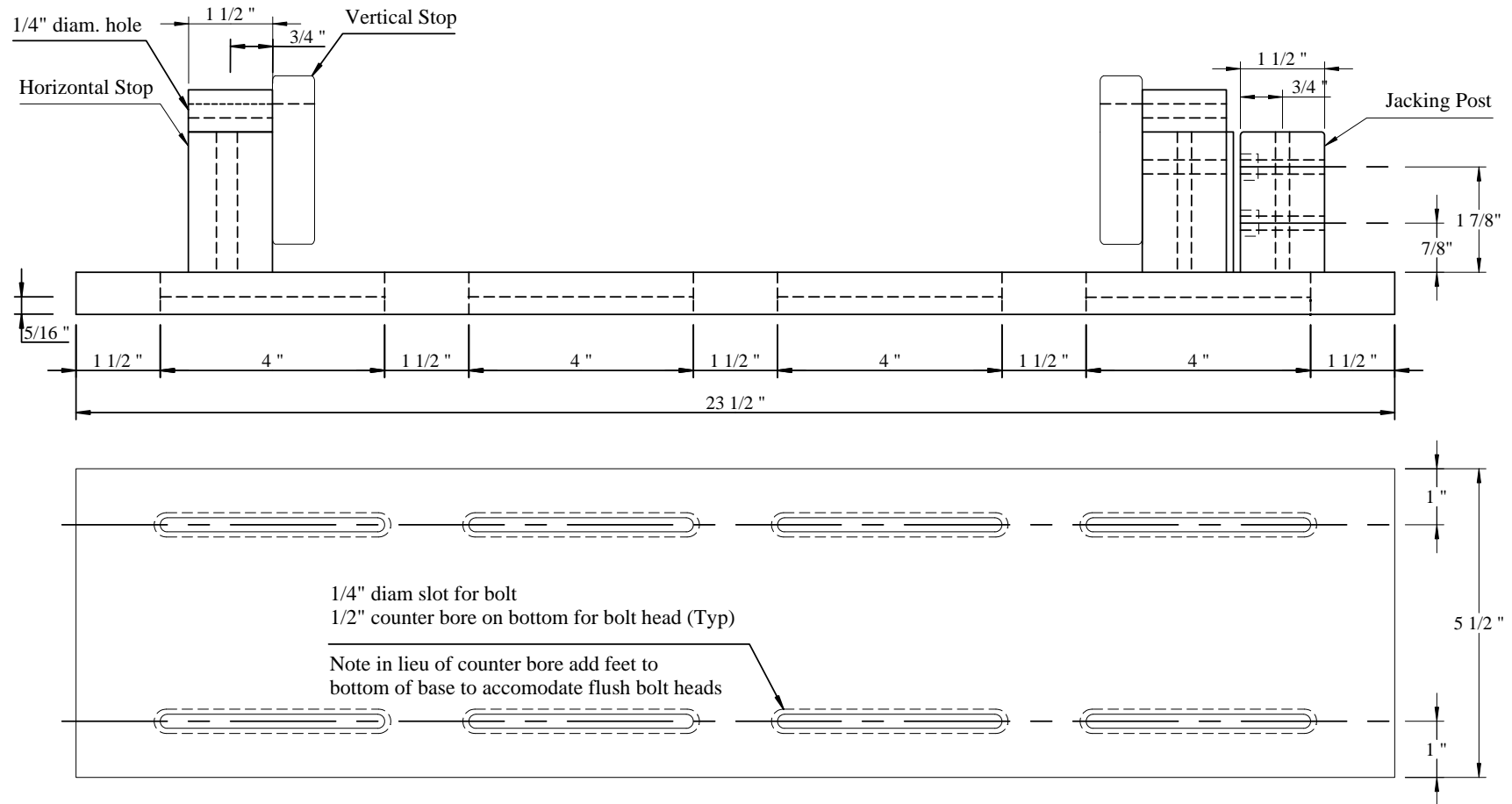
Directions for Use

1. Tighten the vertical screws in the jacking post to prevent it from moving
2. Back the jacking screws out so they project approximately 1/4 inch beyond the face of the jacking post
3. Position the left clamping post so it is touching the jacking screws but leave the vertical screws loose to allow movement when the jack screws are tightened
4. Position the fuselage and wing assembly in the clamp
5. Install temporary blocks under the wings to establish dihedral angle
6. Push the right clamping post so the assembly is located between the clamping posts with no space.
7. Tighten the vertical bolts in the right clamping post.
8. Lower the vertical clamps so they are touching the wing and tighten the bolt which holds them in place
9. Tighten the jacking bolts evenly using a diagonal pattern (i.e. lower left, upper right, upper left, lower right). Note - the tightening should occur in several small increments to prevent misalignment of the wings.
10. When tightening of the jacking bolts is complete
 - Tighten vertical screws in left clamping post
 - Check that the bottom of the fuselage is touching the base.
 - Ensure the underside of the wing is in contact with the temporary blocks
 - Check the position of the vertical clamps to ensure they are still touching the wings. Adjust if required.
11. Perform final alignment checks
 - Check to ensure wings are aligned with each other (i.e. leading and trailing edges contact the fuselage at the same location)
 - Check to ensure the horizontal stabilizer is symmetrical with the wings

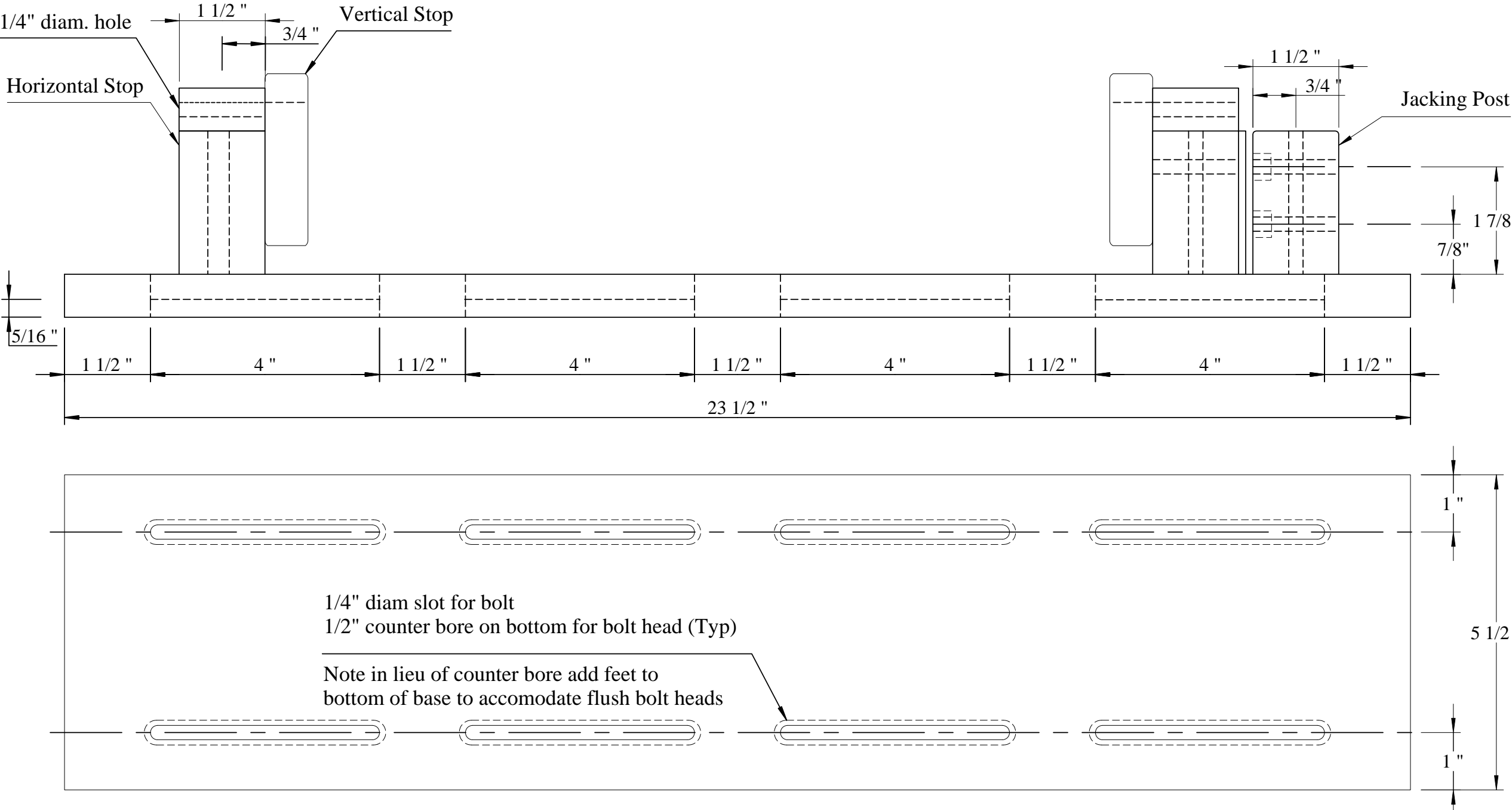
Additional Notes

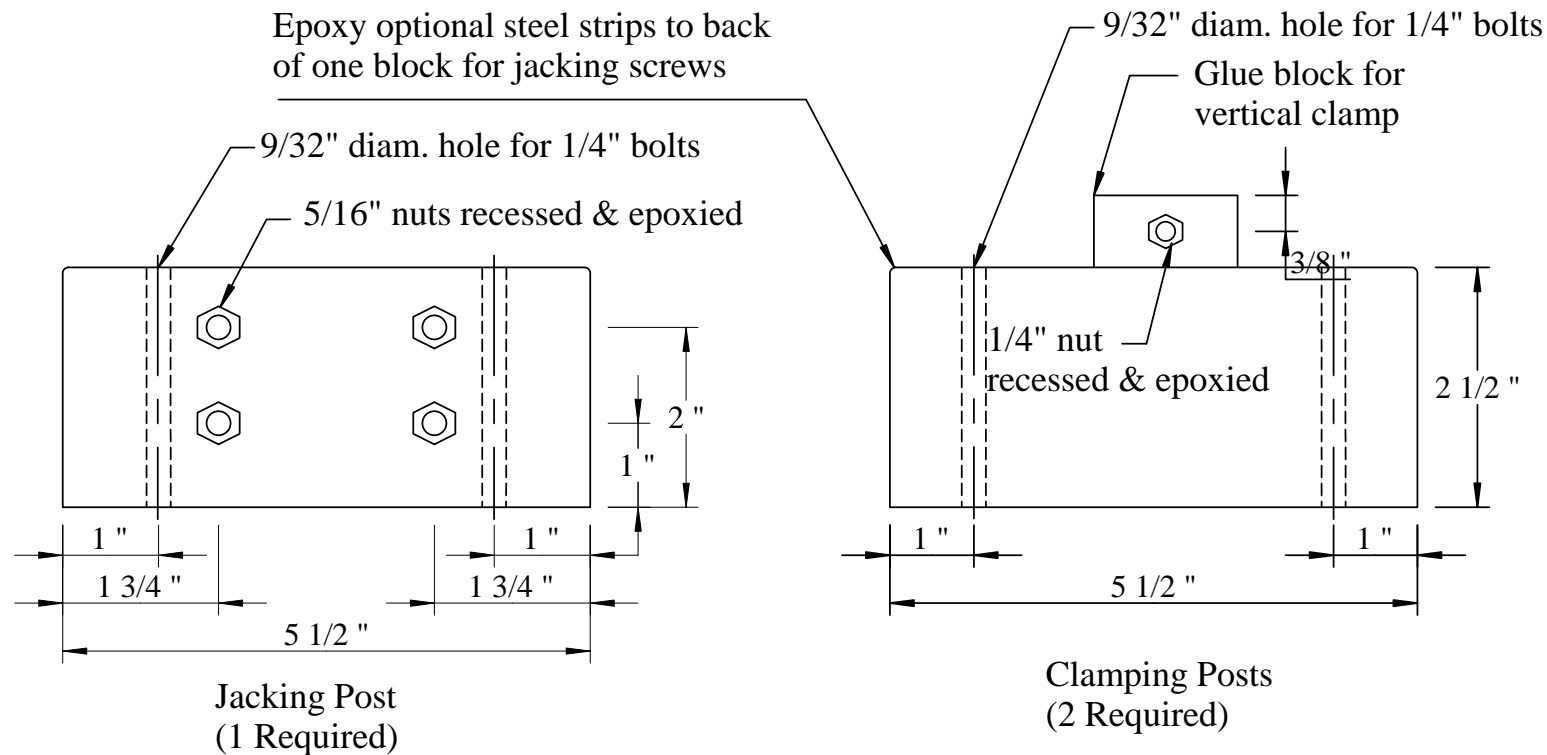
- Pictures have been included as attachments in the PDF for better visualization if required
- Nylon wing nuts are larger than metallic wing nuts and are easier to finger tighten
- The base plans are included in two different scales to accommodate different paper sizes

Wing Fastening Clamp



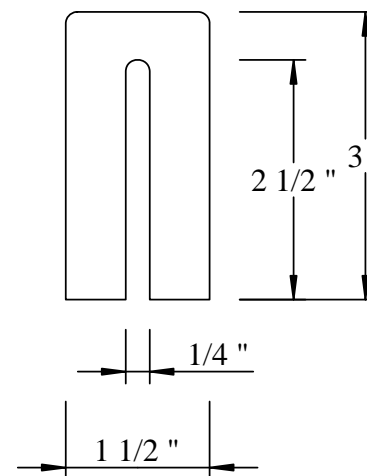
Wing Fastening Clamp





Bill of Material

- 3 - 1-1/2" T x 3" W x 5-1/2" L (posts)
- 1 - 3/4" T x 5-1/2" W x 24" L board (base)
- 2 - 3/4" T x 1-1/2" W x 1-1/2" L (block for vertical clamp)
- 2 - 3/4" T x 1-1/2" W x 3" L (vertical clamps)
- 4 - 5/16" d x 3" long bolts (jacking bolts)
- 4 - 5/16" nuts
- 6 - 1/4" d x 3-1/2" long carriage bolts (post bolts) *
- 2 - 1/4" d x 3" long bolts (vertical clamp)
- 8 - 1/4" flat washers
- 8 - 1/4" wing nuts or regular nuts
- 2 - 1/8" T x 3/4" W x 2-1/2" L steel strip (optional)



Vertical Clamp
(2 Required)

* Use 4" carriage bolts if feet installed in lieu of counter bore