

Refer to the contract-specific Shop Drawing for details on substructure type.

1. Set the first tube on the ground or prep work surface with one of the 4" walls touching the surface. Mark the top-left corner of the tube with "TL" to create a starting point for the panel-interference jigs (Daktronics part number 0M-4103843). Use the jigs to ensure the screws do not land in a KEEP-OUT zone.

- a. Hand-bend the top three bracket tabs on the jigs (if not already bent). Refer to **Figure 1**.

- b. Align the top-left ("TL") corner of the tube face with the top-left corner of the first jig at START.

- c. Use a marker to mark the outline of the KEEP-OUT slots and fill in the three 1/8" vertical slots. Refer to **Figure 2**.

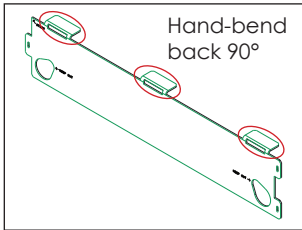


Figure 1: Hand-Bend Bracket Tabs

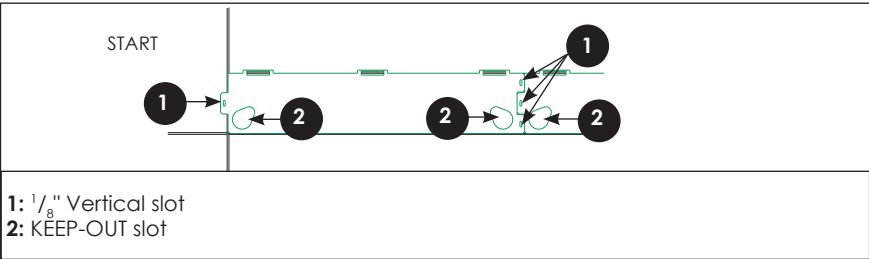


Figure 2: Panel-Interference Jig

- d. Place another jig to the right of the first jig and piece them together.

- e. Remove the left jig and continue down the tube, using as many jigs as supplied/necessary. Refer to **Figure 3**.

2. Mark the wall for tube placement. Refer to **Figure 4**. A horizontal line represents the bottom of a tube, and a vertical line represents the end of a tube or the side of a display.

The tube will be undersized by 1/4" at each end of the display. Refer to the contract-specific Shop Drawing for site-specific dimensions.

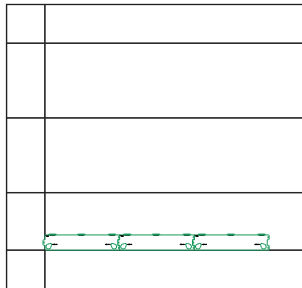


Figure 3: Use Jigs



Figure 4: Mark Tube Locations

3. Find and mark the stud on the wall closest to the vertical tube edge line along the horizontal tube line within 16" from the edge of the tube. Continue down the horizontal tube line, marking stud locations at 32" increments.

4. Measure the distance from the vertical tube line on the wall to the edges of the first stud. Use this measurement with the marked-up tube and to mark the tube mounting locations on the tube. Continue down the tube, marking the tube mounting locations at 32" increments.

5. Mark new tube mounting locations at 16" increments on both sides of the stud if a stud location directly overlaps with a KEEP OUT slot. Refer to **Figure 5**.

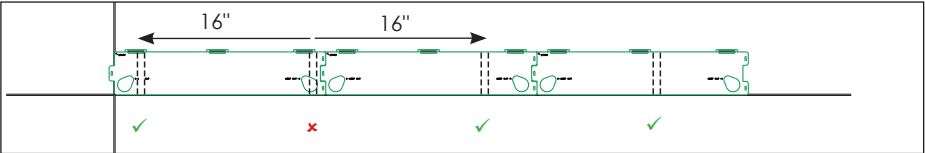


Figure 5: Move Studs at Interference Locations

6. Drill four 0.266" (~17/64") clearance holes through the front and rear walls of the tube at each marked stud location. Refer to **Figure 6**.

7. Place the marked-up bottom tube on the wall so the bottom horizontal line aligns with the bottom of the tube, the vertical line aligns with its respective edge, and "TL" is in the top-left corner. Refer to **Figure 7**. Use a level (digital is recommended) to fine-tune the tube position, which has a ±1/4" tolerance in all directions.

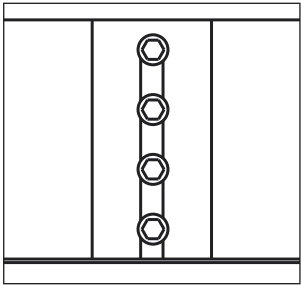


Figure 6: Clearance Holes

8. Screw the supplied hardware into the wall as shown on the contract-specific Shop Drawing. Start with one screw per stud mounting location, but do not fully tighten down. Continue to level and add shims to make the tube plumb and straight. When the tube is level, plumb, and straight, add the remaining self-drilling screws. Repeat this for all stud locations along the bottom row of tube(s).

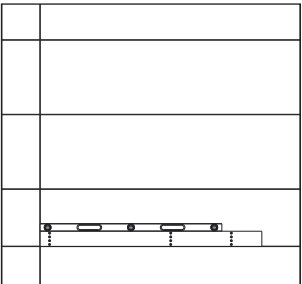


Figure 7: Place Tube

9. For all subsequent rows, repeat the stud attachment pattern from the bottom row. Refer to **Figure 8**. Verify the tube is horizontally level and the tubes are plumb and level to each other by a tolerance of ±1/4" in the X-axis and by +1/4"-1/2" in the Y-axis. Y-axis tolerance for the top tube is ±1/4" to prevent the tube from extending above the top of the display.

10. Use a level to ensure the tube faces are plumb to the wall and flat to each other within 1/4". Refer to **Figure 9**. If the tubes need Z-axis adjustment, add shims between the wall and the tube to adjust up to 1/2" maximum. Refer to **Figure 10**. Ensure the shims bear the full height of the tube as shown in **Figure 11**. Tighten down the hardware.

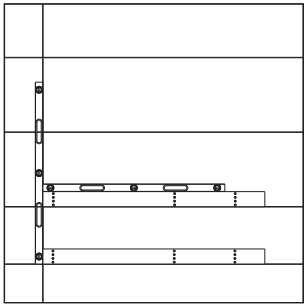


Figure 8: Repeat Stud Attachment Pattern

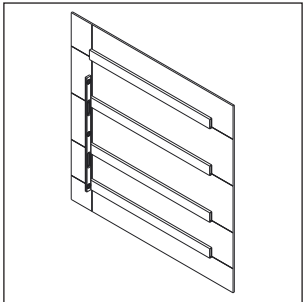


Figure 9: Ensure Plumb & Flat Tube Faces



Figure 10: Shim

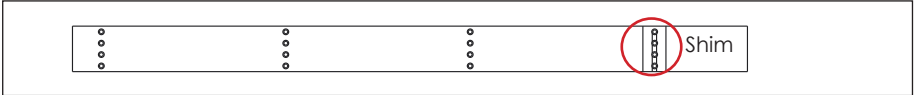


Figure 11: Add Shims between Wall & Tube