

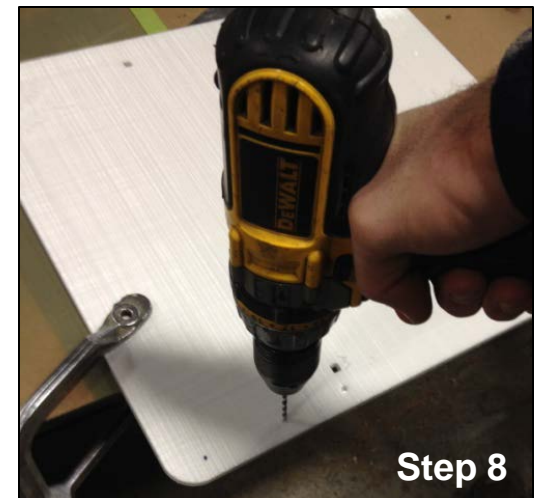
Panel Modification Instructions

The following information is provided to enable the user of Hardwire ballistic panels to modify the panels as needed for the application.

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Panel Modifications – Hole Drilling

1. Determine where holes need to be located on the Peel-N-Stick panel by test fitting the panel in the location it will be installed.
2. Mark the installation surface with light pencil to give you a frame of reference for where the panel will be located. Scribe a light line where the panel's bottom and side edges meet the installation surface.
3. Move the panel away from the installation surface. Locate the light pencil marks that represent where the bottom and side edge of the Peel-N-Stick panel will go.
4. Using a tape measure, measure from the bottom reference mark on the installation surface up to each hole location. Record the measurement so the hole location can be transferred to the Peel-N-Stick panel.
5. Using a tape measure, measure from the side reference mark on the installation surface over to each hole location. Record the measurement along with those recorded in Step 4.
6. Mark your hole location on the Peel-N-Stick panel by measuring the same bottom and side edge used to scribe reference marks onto the installation surface.
7. Determine the hole size required on the panel and select a sufficient drill bit. Drill bits typically used on steel and aluminum work fine with this material.
8. Drill all the hole locations using a standard compact drill.



Panel Modifications – Trimming

If needed, panels can be trimmed using a table saw. A circular saw blade specifically made to cut plastic materials must be used for cutting.



Recommended saw blade: <http://www.amanatool.com/circular-saw-blades/non-melt-lb86401.html>

Panel Modifications – Cutouts

1. If you need to cut a section of the panel out, determine the size and location of the cutout.
2. Once the size and location of the cutout is determined, mark the outline of the cutout onto the Peel-N-Stick panel using a framing square and permanent marker.
3. Install a straight trimming bit with top mounted bearing onto any standard woodworking router.
 - (Bosch tool number 85680MC is used in this example)
 - Recommended Straight trimming bit specs: 2 flute, 1/2" Diameter, 1/4" shank.
 - Smaller Diameter straight trimming bits may be used as well.
4. In order to obtain straight cuts, a straight edge must be used to guide the router while cutting. A framing square can be used as a straight edge after a few simple measurements. (Note: Wood with a straight cut edge can be substituted for the framing square used in this example; plywood strips, MDF, and 2x4's are all acceptable.)
5. If using a square-based router, measure the length of its base. If using a round-based router, measure the diameter of its base.
6. Take the router base size and subtract the diameter of the straight trimming bit you selected. This tells you how far your straight edge guide needs to be from your desired cutout.



Panel Modifications – Cutouts Continued

6. Now, offset the cutout geometry by the distance you just calculated.
7. Clamp the panel to a table and drill a clearance hole into which the router bit will be inserted. Do this inside the cutout area.
8. With the panel still clamped to the table, align the framing square with one of the offset lines (from Step 6). Clamp the framing square to the panel so it is secure.
9. Insert the router bit into the clearance hole. Cut the first side of the cutout away by running the router base down the edge of the framing square.
 - **Note:** This step should be done slowly and cautiously. Use the framing square to guide the base of the router. Stop frequently to clear cut material. Always keep a visual on the cutout marks to ensure you don't overcut the material.
10. Repeat Steps 8 and 9 for the other sides until your cutout is complete.

