

Polycarbonate Installation Guide

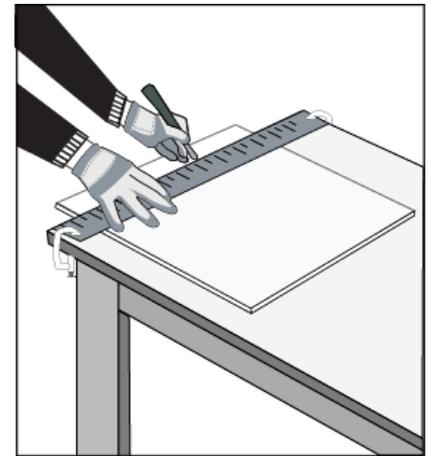
Cutting

There are two recommended methods for cutting polycarbonate sheets. With each of these methods, the masking should be left on throughout the fabrication process in order to protect the sheets. Make safety a priority. Always wear protective eyewear and gloves!

1. Scoring:

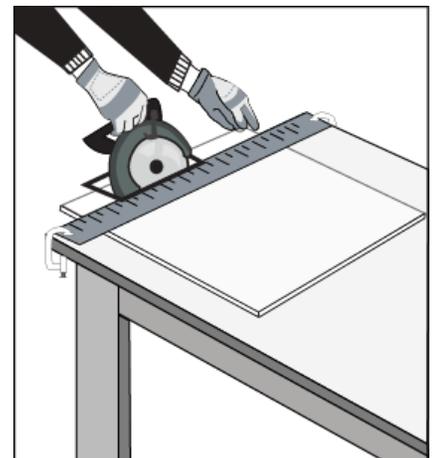
- a. Lay the polycarbonate sheet on a flat, clean surface. Measure and mark the location of the desired cut with a ruler. Using clamps, secure a straight edge along this mark as a cutting guide.
- b. Using the straight edge as a cutting guide, carefully score the desired cut with a plastic cutting tool. Repeat scoring technique until halfway through the sheet.
- c. Unclamp the straight edge. Position the sheet so that the score line is directly over the edge of a work table. Re-clamp the straight edge in place.
- d. Using the edge of a table or workbench, gently 'snap' the sheet along the score line with downward pressure for a clean break.

** This method is not recommended for thicker sheets or long cuts.*



2. Sawing

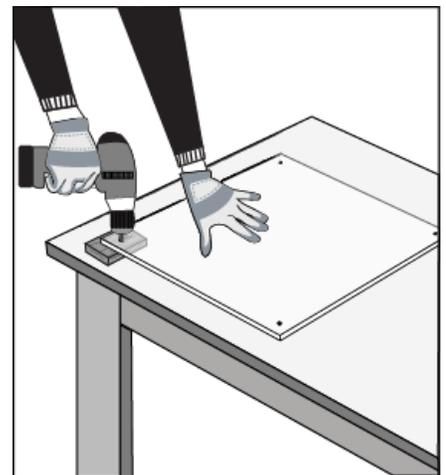
- a. Table and circular saws work well for straight cuts. Use a band, scroll, or jig saw for cutting shapes or curves. Regardless of the saw type, it is important to use a blade designed specifically for cutting plastic sheets to reduce chipping.
- b. Measure and mark the location of the desired cut with a ruler. Using a straight edge, score the cut line with a plastic cutting tool. Using c-clamps, secure the sheet firmly to a flat surface with the marked cut line hanging at least 1/2" beyond the worktable edge.



- c. Align the saw with the marked line. With the saw running full speed, start the cut. Proceed along the cut line at a moderate speed. Note: Cutting too slow may overheat and melt the plastic. To keep the temperature down, blow compressed air or an atomized spray of a water-soluble coolant on the blade while cutting.
- d. Continue the cut to the end of the sheet, letting the 'off-cut' fall to the ground. Do not force the saw along the cut line. This may chip or gouge the plastic.

Drilling

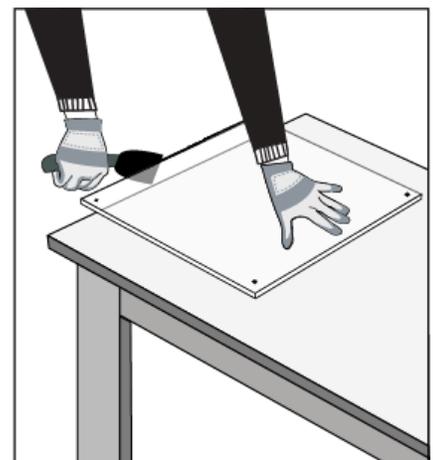
1. A drill press with a plastic-specific drill bit is the best choice for drilling polycarbonate sheets. A standard drill bit may be used if it is modified to 'scrape' instead of 'cutting' the plastic.
2. When drilling holes, enter the sheet at a slow feed rate. Increase to a steady rate. The proper feed will produce smooth, continuous spiral chips. Exit slowly to avoid chipping the sheet. Note: to reduce heat buildup, 'peck feeding' may be necessary. (Drill a short distance. Retract from hole to clear debris and let cool. Repeat 'in-and-out' motion until hole is created.)
3. Place plywood under the sheet to help eliminate chipping as the bit passes through.



Finishing

1. Scraping

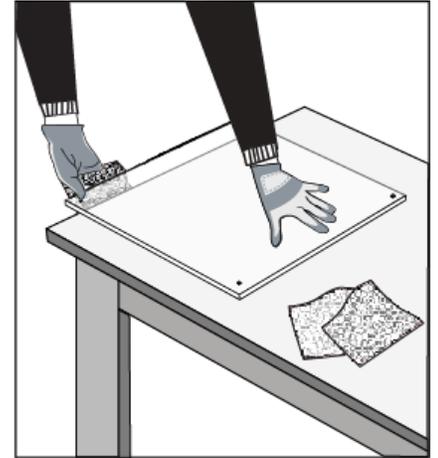
To remove sharp edges or large marks on the edge of the polycarbonate sheet, use a metal scraper with a clear, sharp, flat edge. Scrape at an angle and in only one direction to avoid creating unwanted grooves. This type of finishing works well to remove larger imperfections.



2. *Sanding*

Sanding works well to remove any machine marks or small scratches from the edge of the polycarbonate sheet. Finish quality is determined by the grade of sandpaper used. If marks or scratches are deep, start with a course paper and move to medium grit. Finish with a fine grit paper for a smooth satin finish.

With light pressure and a circular motion, hand sand an area slightly larger than the mark or scratch to prevent low spots. Use plenty of water with both wet and dry papers. Power sanders may be used. Operate at slower speeds with lower pressure. Always test on a scrap piece first!



3. *Polishing*

Buffing the edge of a polycarbonate sheet creates a polished finish. Various commercial buffing compounds may be used. Ones for polishing softer metals (brass or silver) are recommended. Make sure there are no cleaning solvents in the buffing compound. (Follow manufacturer's directions for use.)

For best results, a power buffing tool is recommended. (Hand buffing is extremely tedious.) To polish the polycarbonate sheet, move the buffing wheel gently back and forth across the edge until a smooth, even finish is achieved. The larger the wheel, the better. Use a cushion type buffing wheel. (Soft or fine composition). Do not apply too much pressure. To prevent heat buildup, keep the buffing wheel moving constantly.

