
ROUTING

Many routers are available for use in the fabrication process. The router should have a minimum of one horse-power and a no load speed of about 20,000 RPM. Routers are normally used with a single or double fluted bit, but may consist of one to four flutes. Router bits can be carbide tipped, high-speed steel, solid carbide, or diamond tipped. They may be one piece piloted, non-piloted, straight cutting, multiple part, forming or speciality bits."

Hand Routing: A hand router is generally used when making a prototype or a replacement part, by using a precut template pattern clamped to the Plaskolite mirror, the hand held router may be smoothly guided around the pattern. Move clamps whenever necessary."

Circle Routing: A circle router would be used when a 360° piece of Plaskolite mirror is needed."

Pin Routing: Pin routers are very flexible. A double-backed tape or vacuum holds the mirror in place. Using the mounted overarm router to hold the cutter over a guide pin in the table, feed the mirror and pattern into the cutter and rotate 360° to form finished product."

Contour Routing: By using a contour jig on a pin routing machine, multiple parts can be manufactured. Cut the desired pattern on the base of the jig to follow the base guide pin. To secure several Plaskolite mirrors at one time, clamps should be mounted on the top of the work. Be sure to raise and lower clamp holders as necessary when the jig is rotated."

Computerized Numerical Control (CNC) Routing: CNC routers are used in the manufacture of high volume production. This type of router is designed for maximum use of the Plaskolite mirror. Mirrors may be designed for stacking which eliminates much of the waste normally produced."

Direction of Travel: This router is designed to rotate counterclockwise for external cuts, and clockwise for routing the inside edges of the Plaskolite mirror. When properly fed in the direction necessary, a smooth cut will result.

When operating a router, several precautions are necessary to avoid mistakes to the Plaskolite mirror or the tool in use. First routers are designed with a small diameter and must be operated at high speeds. Avoid vibrations, even the slightest vibration can cause crazing and fractures in the Plaskolite mirror during routing. Second, watch RPM speeds, higher RPM rates allow for faster feeding of the Plaskolite mirror, resulting in a smoother finish. Recommended RPM speeds are 18,000 to 28,000 RPM. Third, for maximum production, operate the feed rate just below chipping speed. Do not overload the motor. Fourth, maintaining a sharp cutter is very important to avoid chipping and decreased production. Finally, use a 1/2" or larger diameter cutter whenever possible, this larger diameter provides a better surface with less tendency to chip."

**CAUTION:* A cool air mist should be in contact with the blades of all cutting devices before and during penetration of the plastic.