

normally driven direct and run at a motor speed of 3,450 rpm. Saws should be equipped with heavy-duty, production-type fences, be well-guarded and have sawdust removal systems. Kick-plate switches and electro-mechanical or frictionless electronic motor brakes should be provided for safety purposes.

Programmable horizontal and vertical panel saws with a movable fence can be used to cut Acrylic sheet to size in high-production operations.

Saw blades should be equipped with carbide-tipped teeth of the triple-chip style. This tooth style is also called square and advance. Triple-chip-style teeth are designed so that alternate teeth start and finish the cut. The slight chamfering of the square tooth corners minimizes chipping. Carbide-tipped blades give cuts of superior quality, cut faster, and require fewer blade changes because of dulling. However, such blades must be returned to the factory for resharping.

For best results with continuous cast sheet, circular saw blades should be the largest diameter possible and contain 60 carbide-tipped teeth with a triple-chip tooth design. Teeth should be shaped with a 5 degree to 10 degree positive rake angle and have sharp cutting edges with adequate clearance.

To obtain the optimum cut from carbide-tipped blades, the saw and stabilizer discs must fit the arbor closely with a clearance of about 0.001 inch, and must run true. Loose bearings, bent arbors, or misaligned or burred stabilizers will vibrate and cause cuts of poor quality and shorten blade life. For maximum service life, carbide-tipped blades used for cutting Acrylic sheet should not be used to cut any dissimilar materials.

To minimize blade wobble, which results in the generation of heat and possible melting of the plastic, the use of a single- or double-mounted, precision-ground, hardened-steel stiffener with a diameter 4 inches less than the saw blade and a blade with additional radial/side tooth clearance is highly recommended. Where the quantity of the Acrylic sheet to be cut does not warrant the purchase of carbide-tipped blades, high-speed steel blades designed to cut Acrylic sheet may

be used instead. These blades are made of alloy steel and are tempered to permit filing. The teeth should have a positive rake angle of 0 degrees to 10 degrees and should be of uniform height and shape. When cutting 0.150 inch or thinner sheet, the blade should be hollow ground rather than set. Teeth of uneven height will cause chipping of the Acrylic sheet and will place undue cutting strains on a few teeth. This may cause the saw blade to crack. The saw blades should be machine filed or ground.

For cutting very small quantities of Acrylic sheet, standard hollow ground, fine-tooth blades used for cross cutting wood or ply-tooth

FIGURE 2 - Cutting Board for PLEXIGLAS Sheet

