For CNC Routing:

- We use Up Cut Spiral Tools as our go to cutting tool
    - LMT Onsrud 67-215
        - Tri-Flute with a 2-1/8" cut depth in a ½" diameter
        - With integral Chip Breaker staggard cutting edges
- For smoothing edges, and can also plunge cut LMT Onsrud 66-943ALTIN which is an End Mill style tool and rasp like appearance with a 2-1/8" cut depth in a ½" diameter These wear out 3 times as fast and do not clear the cut slot well
- Speed
    - 18,000 Max rpm, 15,000 Normal RPM
    - Max cutting speed for programming, we do not go over 600 inches per minute which the operator can override up to 720 inches per minute with their speed dial
    - Max cut speed for a full penetration cut is typically 300 inches per minute, but if the tool screams you need to slow down, and you can speed up to just below the whine you get from pushing the tool too fast (This is where the art is)
    - If cutting parts
        - Be wary of taking multiple passes, or the panel can pringle up on you and the panel can pull up from the spoil board
        - Never cut all the way through until after the full board has been cut for all parts
            - This keeps small parts from shifting from the force imbibed from the cutting pressure
            - Leave 0.070" to 0.080" for a last pass once the board is fully cut
                - Cutting this last bit of material does not put much pressure on the panel and even small parts will still hold down ok
                    - If your parts are so small that they come loose on the final cut; hand cut these either with a razor knife or a palm router with a countertop edging tool with integral bearing
                - An added benefit of cutting this way the second pass helps to clear most of the cut debris from the first pass out of the cut slot
- If hand sanding is desired to remove rough edges use 40 grit VSM round disk paper on an orbital sander in either a 5 inch or 6 inch size. The VSM paper holds up the best, even better than 3M.
- Some helpful notes
    - They make combination Composite Panel cutters which combine both an up cut and down cut into the same tool: These work… But if your piece thickness is less than the height of the up cut portion, they are of no value, and can actually pull your part off of the spoil board as the angle of attack on the cutter is fairly high

Some sanding notes:

- We use 60, 36 and 24 grit paper depending on the customer needs or application
    - 90% of our panels are finished with 36 grit paper
    - 24 grit is super aggressive and spun fast enough does little to roughen the board so when we use this we slow the sanding drum down to 60% of normal speed to provide a super rough surface for better bonding