Router Table Insert

Any cutting must be done at a speed much slower than a typical wood cutting operation. It is the heat generated by the cutting that leads to melting of the work piece. Sanding must also be done at a slow speed.

Feed rate must also be reduced. I have been pleased with the 'machinability' of plexiglass, but learned quickly the stuff mentioned above. *Too aggressive a cut can produce chipping.*

Router bits can range in size from over 3" in diameter to very small, say 1/32". Commercial router plates deal with this with inserts. Likely as not they have a set of larger inserts that are not a "standard" size or mounting method.

Once you get to the smaller size openings, around 1-1/2" you can buy brass inserts in sets to cover your needs. These are made to fit one of two standards.

Other methods exist on a manufactures whim, either the router maker or the table maker can force their design on you.

The second type of inserts are called guide bushing or template guides. They are designed to help guide the cut, offset from the bit by predetermined distances. Once again they come into play on the smaller size openings. Again two standards exist as well as manufactures designs.

In the case of plain inserts you need to only be as accurate as the bit clears the edge of the hole. Guide bushings however need to be concentric with the axis of the router, and this needs to be quite close. If you build to use the guide bushings the placement for the inserts will be fine.

Since the router mounts to the table insert you should start with the location of the router shaft and then determine the location of the mounting holes..... yes you can do it the "other way" but it is a lot harder to get the alignment right. If going with standard sizes they make kits that make the process a lot easier.

Once you are sure what you want you have to make a plan to follow. Drilling in the proper sequence and stock mounting are areas to focus on.

Here is what I would do.

- If you decide to use a circle cutter first drill the hole for the pilot bit.
- Then mount that pilot bit in my router and using it to center my router on the plate mark the location of the screw holes to hold the router to the plate.
- Then drill those holes and mount the router if all goes well I would then go ahead and drill out the center hole to fit the inserts.

You could also do this if you have a bit that will make a hole large enough for the insert.

- First using a small drill bit drill your initial hole.
- Then chuck that drill bit in the router and use it to position the router.
- Mark and drill the screw holes to connect the router to the plate.
- Mount the router with the bit large enough to make the insert hole.
- Slowly lower the router/bit onto the plate allowing it to cut the material.
- You want a flat bottom plunge hole cutter the size of the insert hole to make this cut.