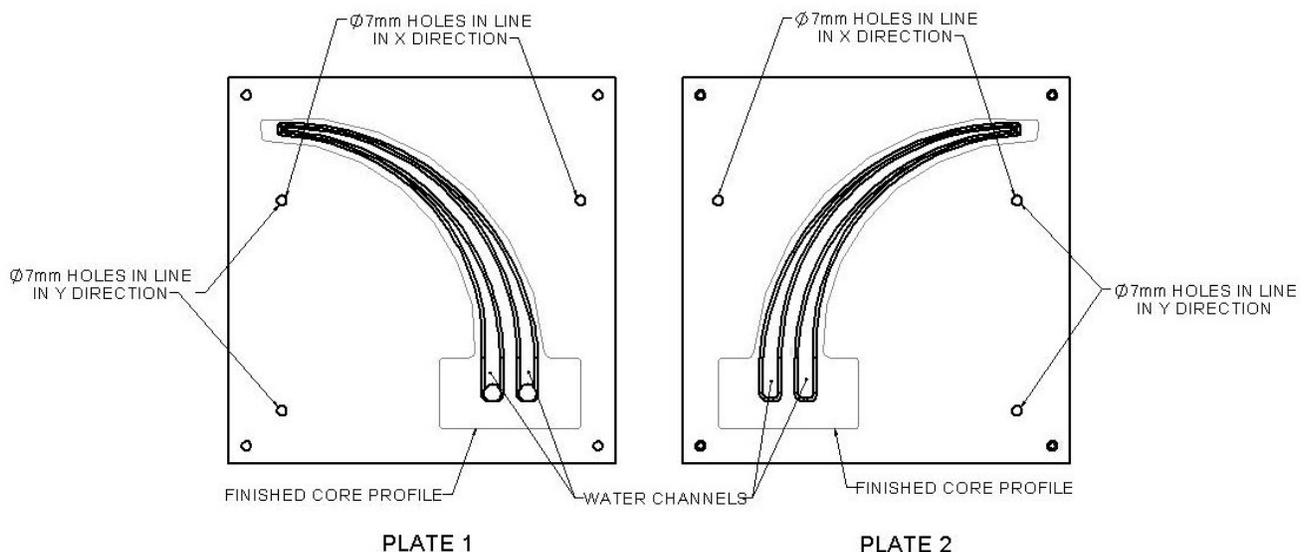


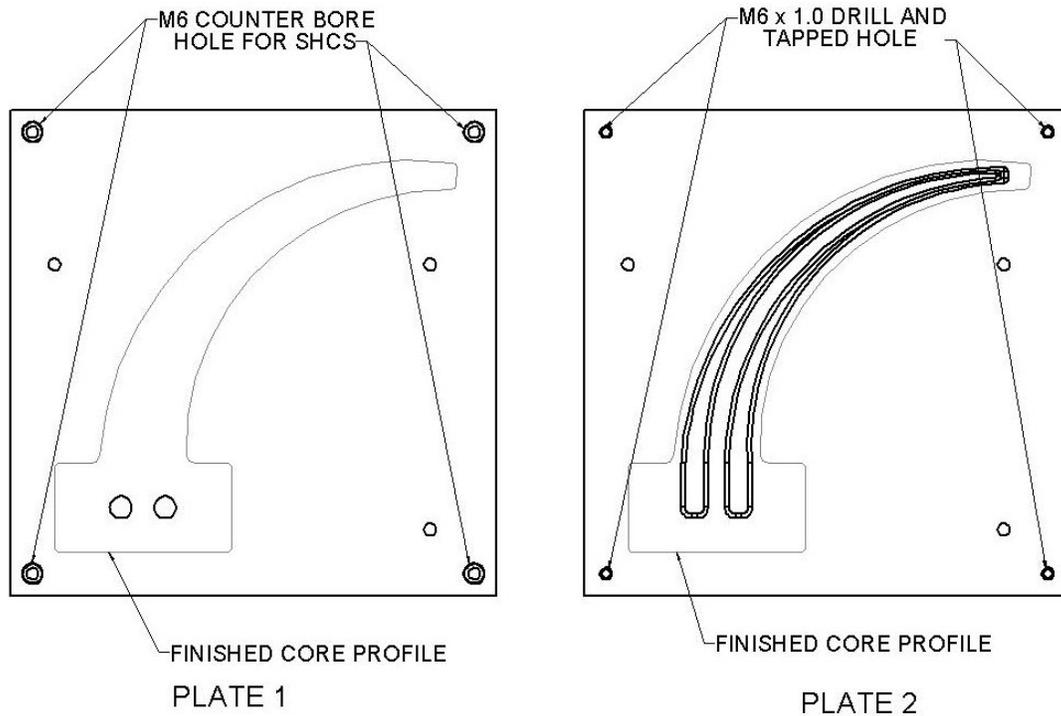
General Preparation for Fusing (Vacuum Brazing) Cores by Polyshot

- 1) Preferred plate material for cores is AISI H-13, 420 SS tool steel for the plate fusion process. The fused assemblies will be soft after the fusion process (approximately 30 RC) and will require a final hardening process. This can be done by the customer's local heat treat facility or by Polyshot.
- 2) When ordering and machining steel, grain structure of each plate must be in the same direction and marked for identification. This orientation must be maintained through steps including fusing.
- 3) Each plate that makes up the core must be a minimum thickness of 20.5mm +/- .05. Plates must be Blanchard or surface ground top and bottom, flat within .13mm and must have enough stock in length and width to finish outer profile. Maximum width and length of plates are 365mm x 510mm. Finished core shapes etc. will be machined after the plate fusion process by the customer.
- 4) When designing the core, a minimum of (2) 7mm +/- .013mm diameter holes in known locations for pickup of the plate and impression features and dowel positions for the process are required. These holes should be as far apart as possible in the plate and should be inline in the X or Y coordinate direction (Reference Drawing #1 below). The dowel holes should be a loose fit (.101mm clearance between holes and dowels) and the parts should fall apart when lifted with the dowels installed. The dowel material is not important.



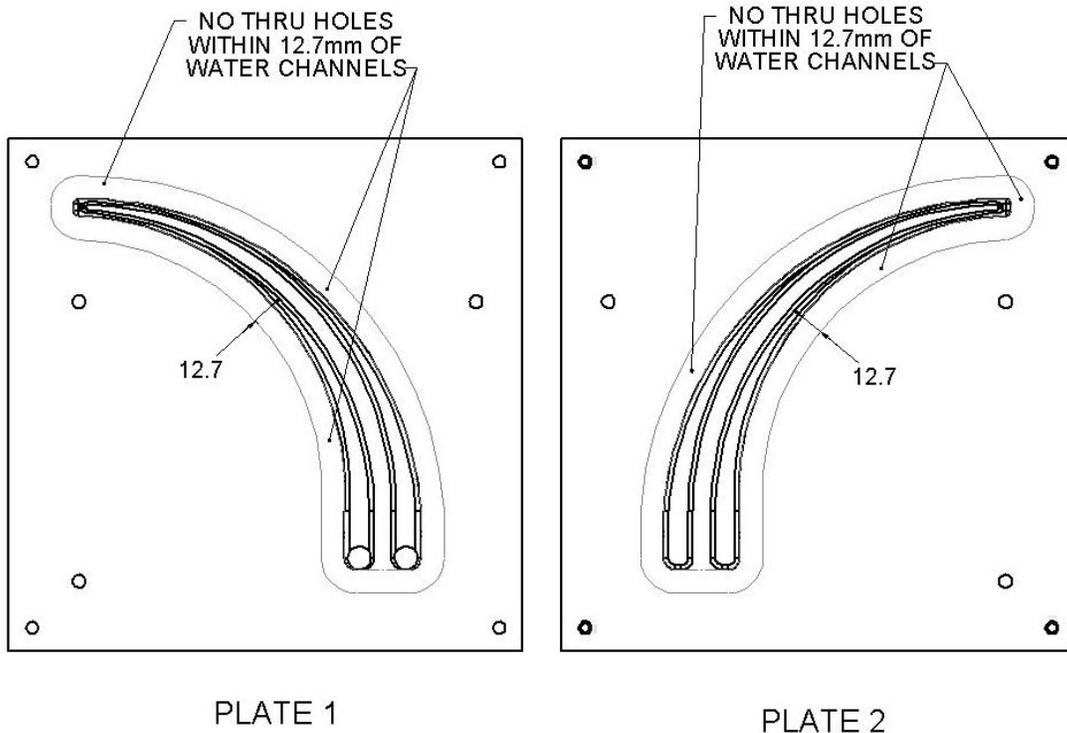
Drawing #1

5) One core plate will have M6 tapped holes thru for handling during our process. The other plate will have a counter bore for a M6 SHCS in the same locations as the drilled and tapped holes in the corresponding plate. A minimum of 2 sets of these holes are required (Reference Drawing #2 below). Note! There are applications where screw holes are not required. Please consult Polyspot if your application has screw hold limitations or the geometry of your parts does not warrant handling screw holes.



Drawing #2

6) Drill any necessary holes in the cores. There cannot be any thru holes on the fusing surfaces within 12.7 mm of water channel (Reference Drawing #3 below). If thru holes are needed with this area



Drawing #3

7) For water channels, machine finished to final width. Depth of channels should be machined deep enough to allow for grind stock. Typically, this surface is ground and 0.13mm-.26mm of stock is removed. Polyshot will grind stock prior to plate fusion.

12) Plates will be shipped as fused, ready for finish work and final heat treat by the customer.

Note! Every fused project is different and there are many times the general guide lines provided here can and should be modified. Please consult Polyshot Engineering department with any questions you may have about your particular project.