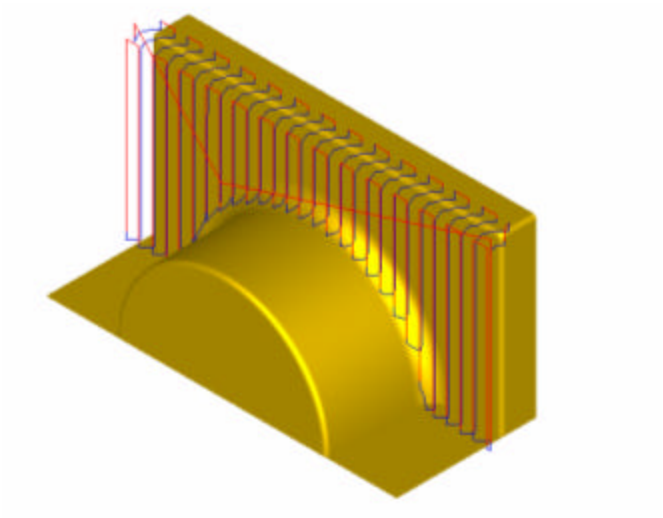
PROSPECTOR™

*The Gold Standard In Toolmaking*

# A Method for Machining Filleted Areas

When machining filleted areas, in most cases, either a Lace or a Z-Planar with No Clear cutting strategy is used, resulting in a cutter path that usually needs to be trimmed. See diagram below.

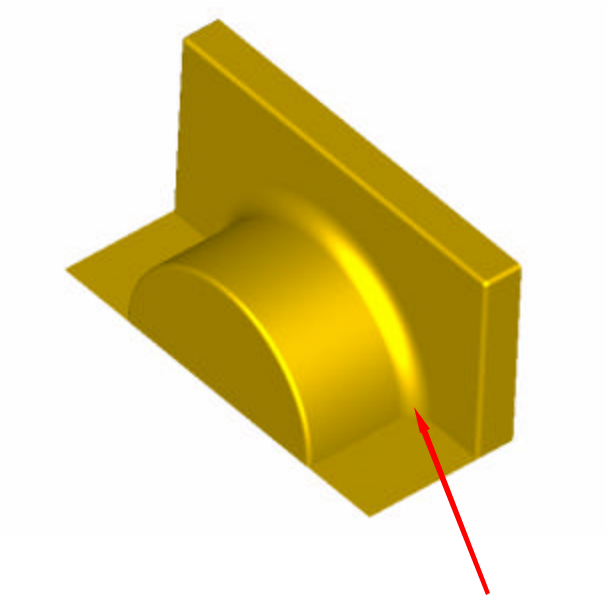


In the above diagram, the lace cuts on the vertical wall are not necessary, and thus would need to be trimmed out.

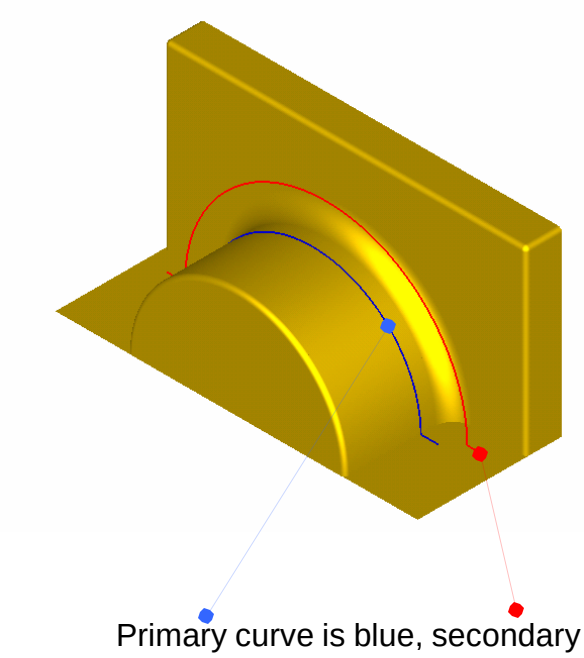
As an alternative to Lace or Z-Planar with No Clear, you can use the Radial cutting strategy in Prospector to machine filleted areas. Using Radial can save you time since you won't have to trim the resulting cutter path, and will give you more accurate results too.

The following are steps and an example to show you how to use the Radial cutting strategy in Prospector to machine filleted areas.

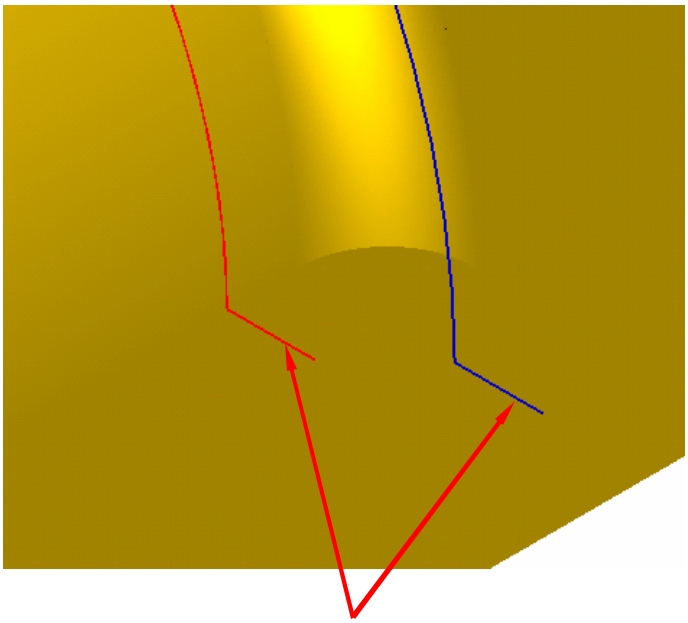
The following is a diagram of a part with a filleted area.




You will need to build two curves, one as the primary curve, and one as the secondary curve. These curves can be developed by your CAD room programmers or within Prospector. In the example below, the primary curve is blue, and the secondary curve is red.

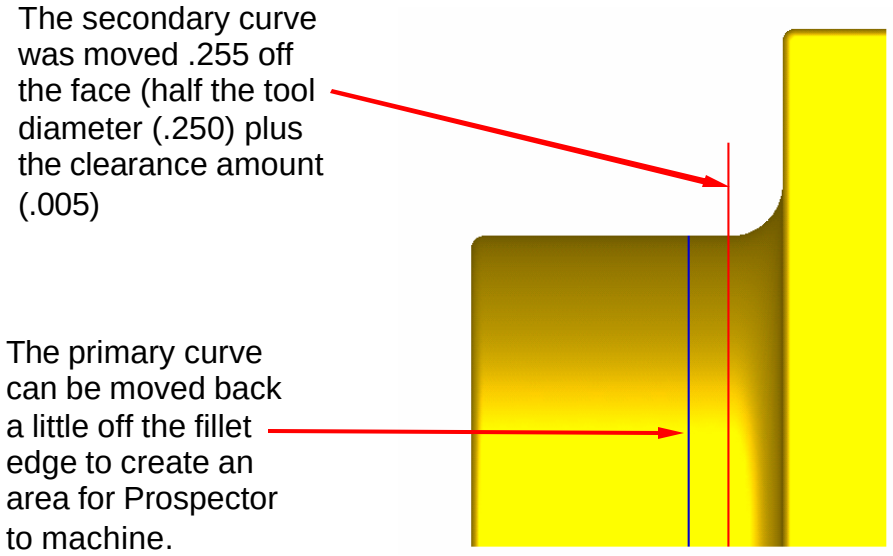


You will need When building the curves, add short extensions to the ends of each curve.



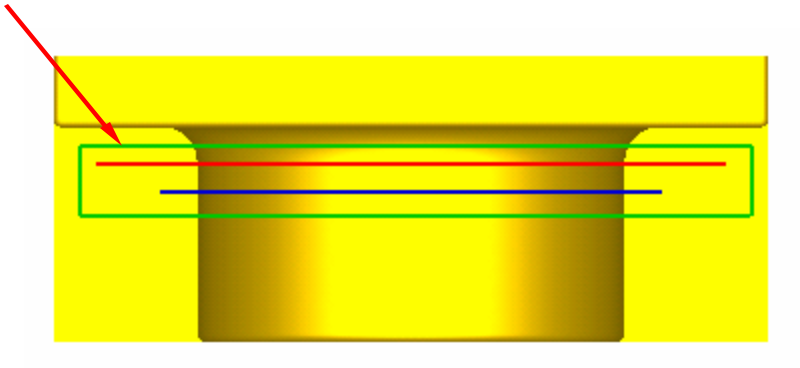
Add small extensions (in the example above they are .250 long).

Position the secondary curve off the face at a distance of half the tool diameter (or the radius of the tool) plus a clearance amount. The clearance amount must be used so that Prospector will not machine all the way up the face.

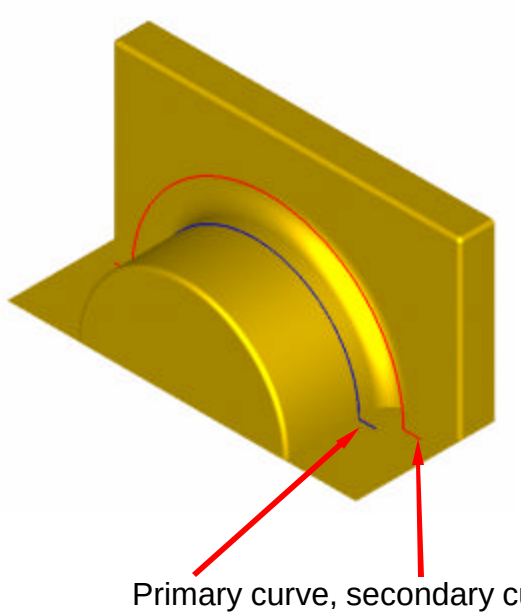



Note that the diameter of the secondary curve is larger than the fillet. This gives Prospector a stopping point when machining up the face.

When you build the cutter containment boundary (window), make sure to enclose both curves.



On the Radial dialog page pick the blue curve as the primary and the red curve as the secondary. Set the cut direction to be: Primary to Secondary.



Primary curve, secondary curve.

The resulting cutter path should look like the following: