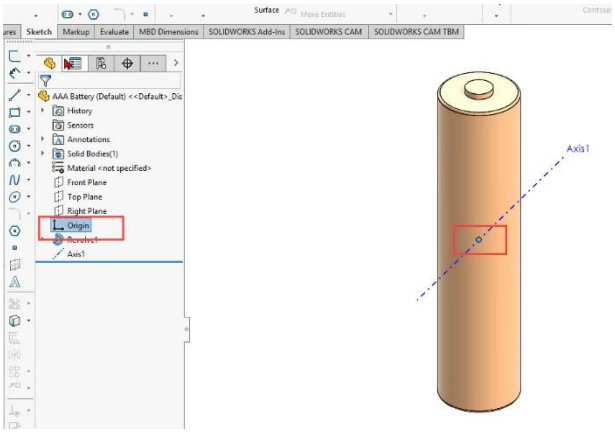
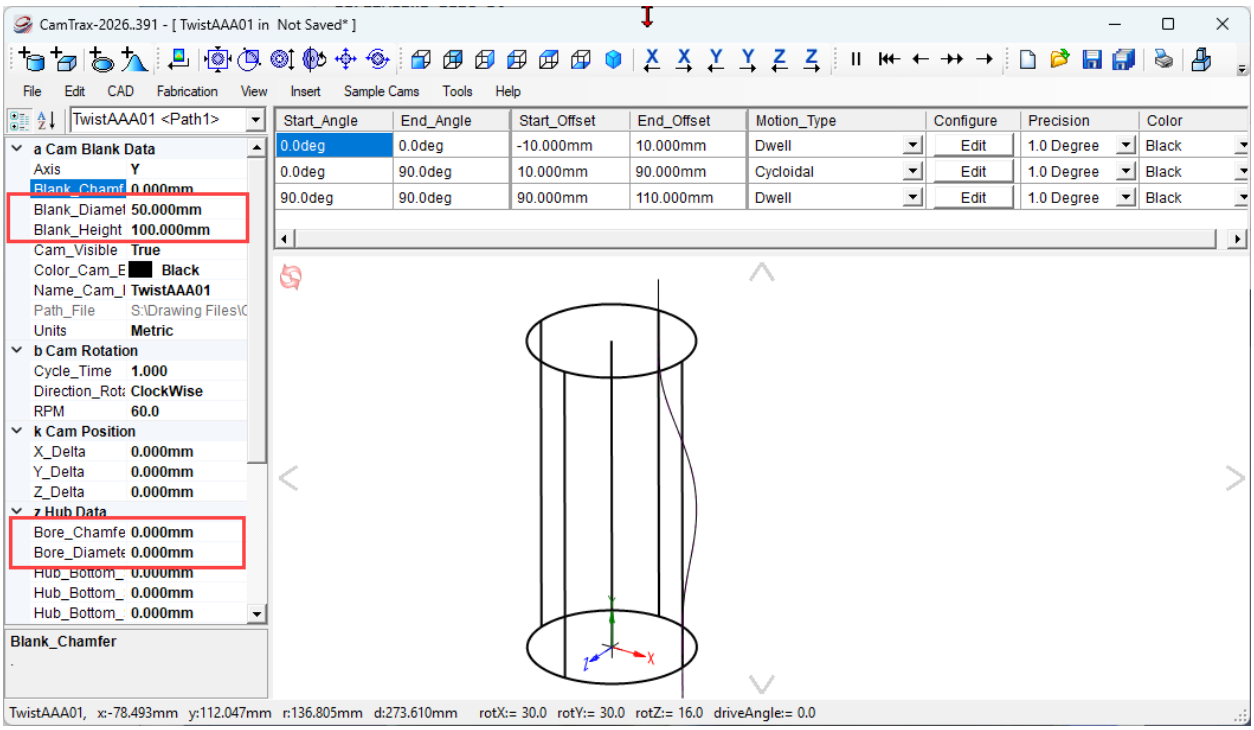
Creating a Twist-Trax

This example is using a AAA Battery with a straight section at both ends and a 90 twist.

Origin is at the center of the battery.



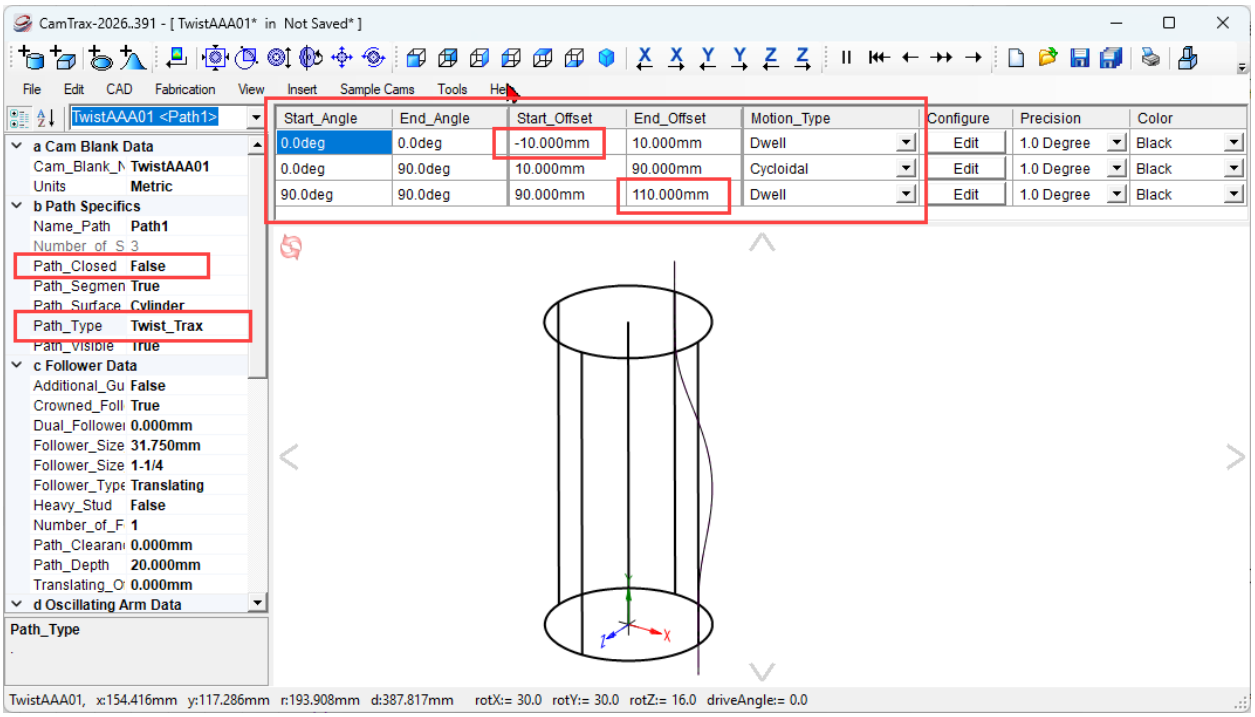
Setting up the base revolve:



Setting up the path.

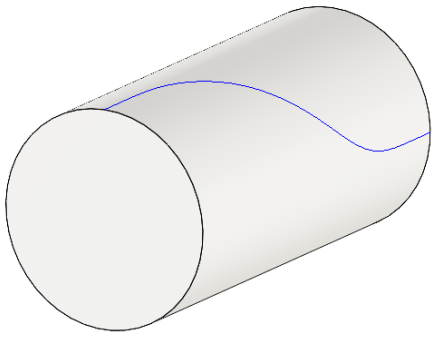
We recommend overshooting the cam blank, note the -10.00mm and 110.00mm.

Use only Dwell and Cycloidal motion types.

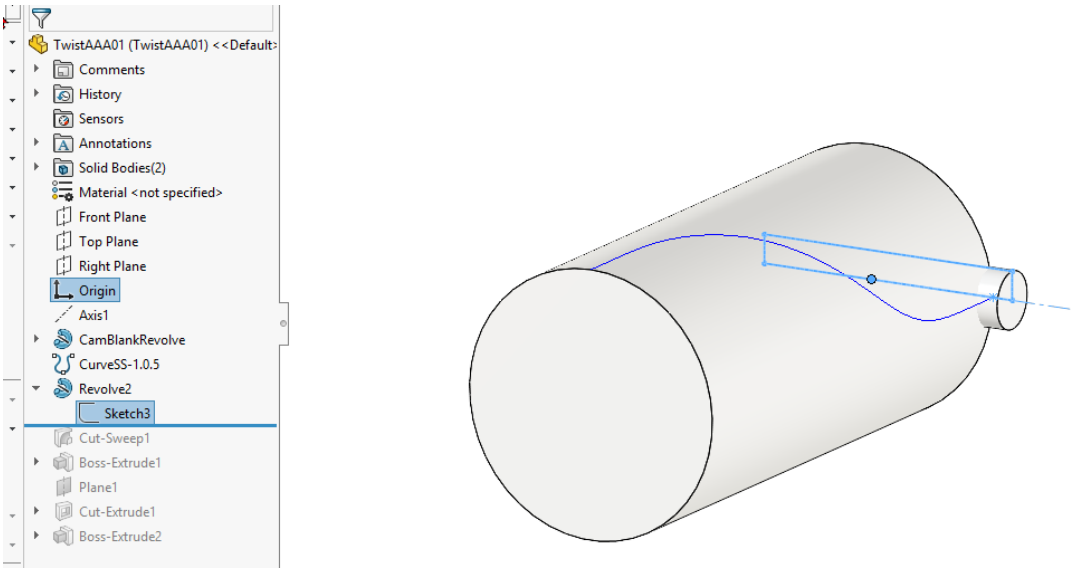


Use the CamTrax64 menu CAD>Quick Create>Single Surface to create the model in SOLIDWORKS.

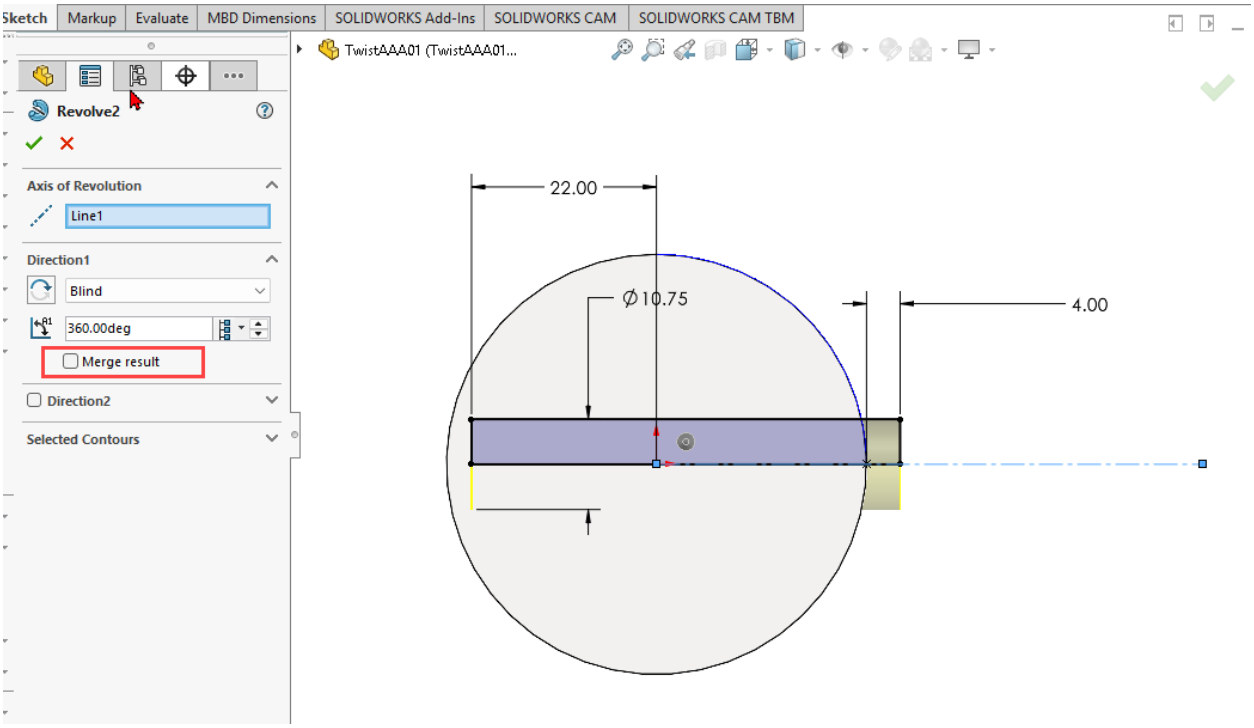
CamTrax will create the blank and the path curve only.



Using SOLIDWORKS, create a solid that will be used for the cut. Keep this feature as simple as possible. For example, add fillets in the corners after the cut rather than fillet radii to the sketch. Any arcs must be tangent. Additional sketches and sweep-cuts can be done, if required.



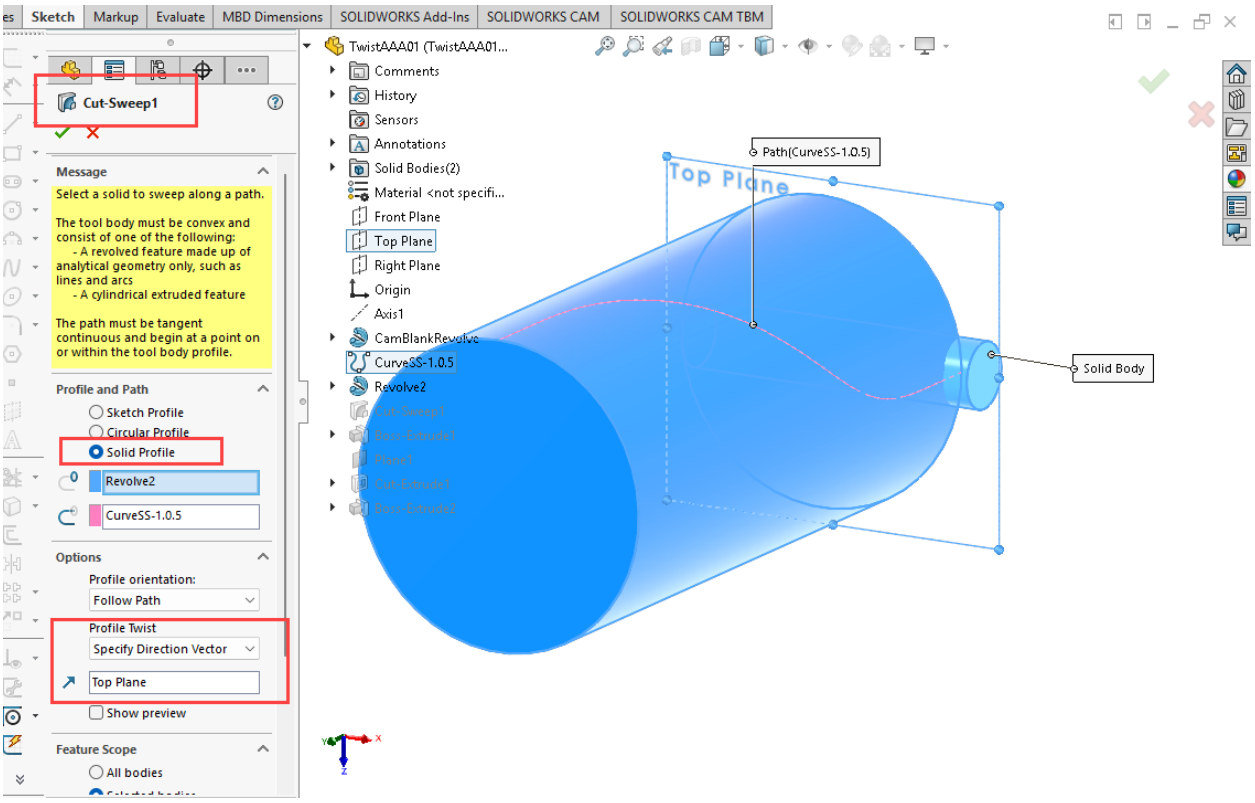
When creating the revolve or extrusion, the sweep-cut solid requires the Merge Results be turned off.



Using the Cut-Sweep command:

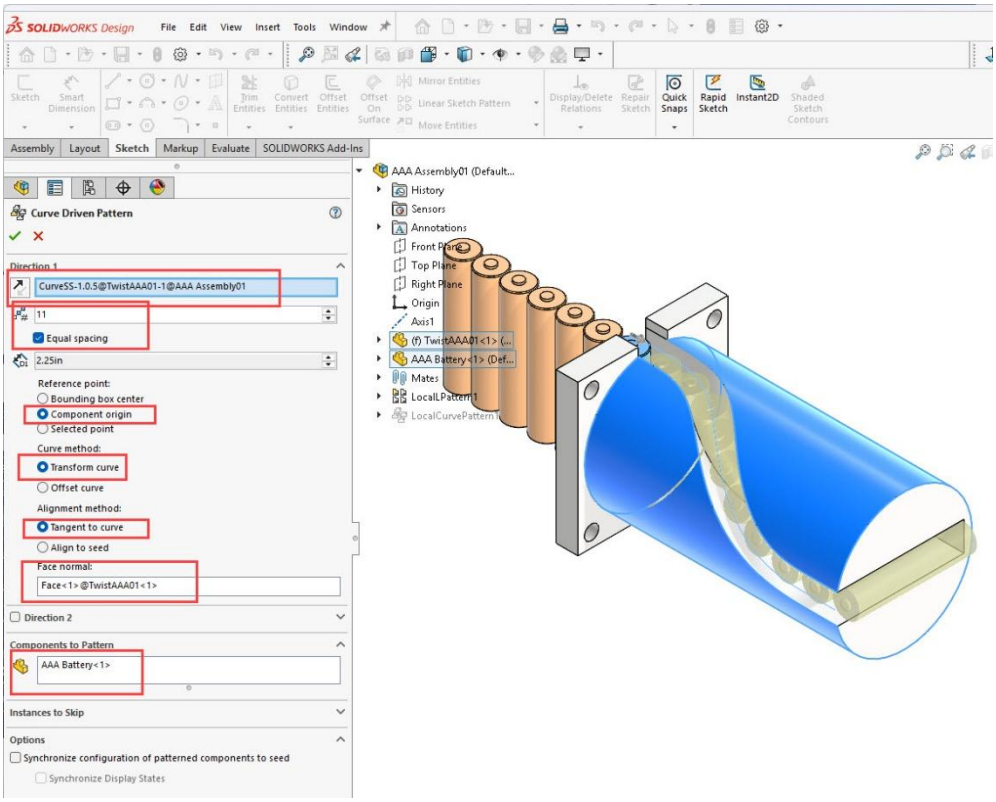
Select Solid Profile

For the Profile Twist, select Specify Direction Vector and the Top Plane (or the revolve sketch plane).

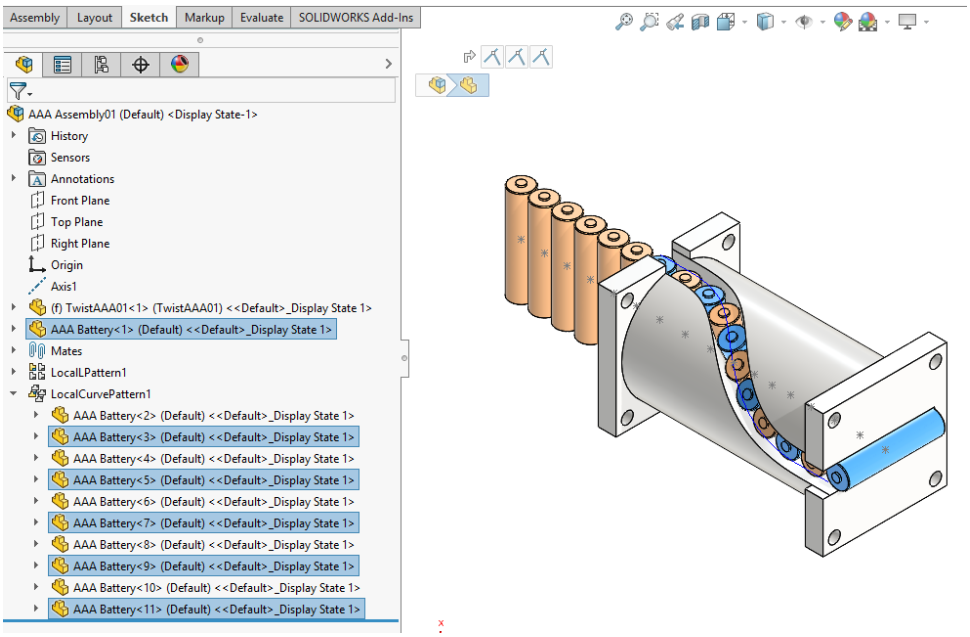


How to pattern the batteries through the twist in an assembly:

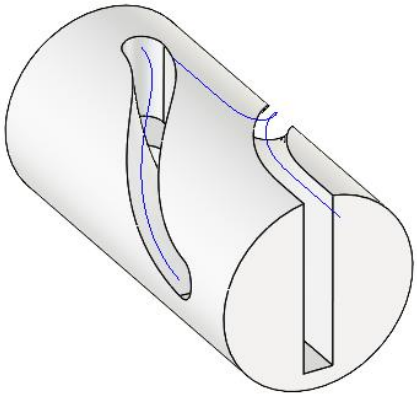
Starting with a single battery that is positioned at the entrance of the Twist-Trax:



Final Twist-Trax with manually added end caps:



Clearance slots can be modeled by adding a second path.

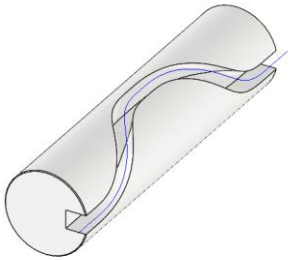


Tips

Keep the cutter revolve sketch as simple as possible. Add any fillets after the sweep-cut.

If overshooting the start, an offset plane may be needed for the cutter revolve sketch. The curve must start within the body of the cutter.

If the path reverses (see below), a small dwell between the curves may be needed for a successful sweep-cut.



A pierce point restraint between the curve and a point on the cutter revolve sketch might be helpful.

If the Sweep-Cut fails, increasing the precision may help.