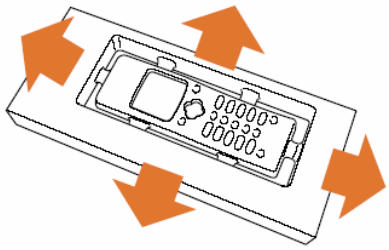
Support Tabs

When performing multiple surface cutting, it is necessary to include supports to hold the object during milling. Modela Player 4 does not have the ability to add supports, so the 3D file must include supports before importing. The type of support tabs to be used will be determined by the part to be made and the process used. The types more commonly used are cylindrical supports and rectangular supports.

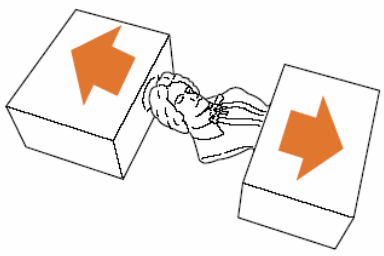
General Guide Lines

The type of surface cutting will determine the location of the supports, all around the part or just the ends.

< Two-surface cutting >

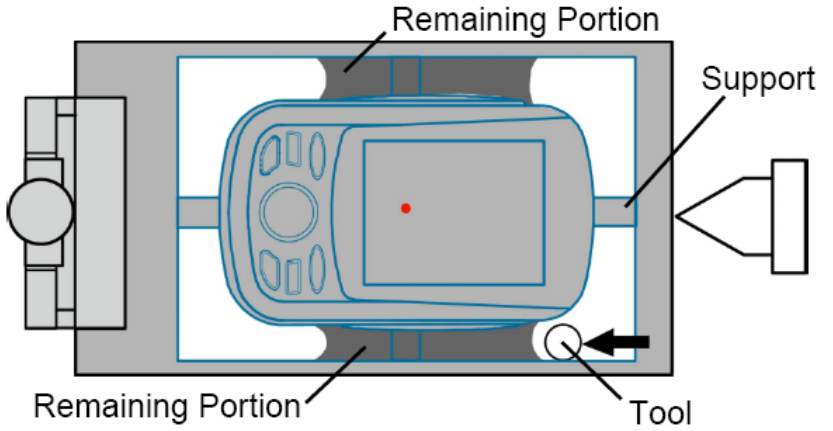


< Four-surface cutting >

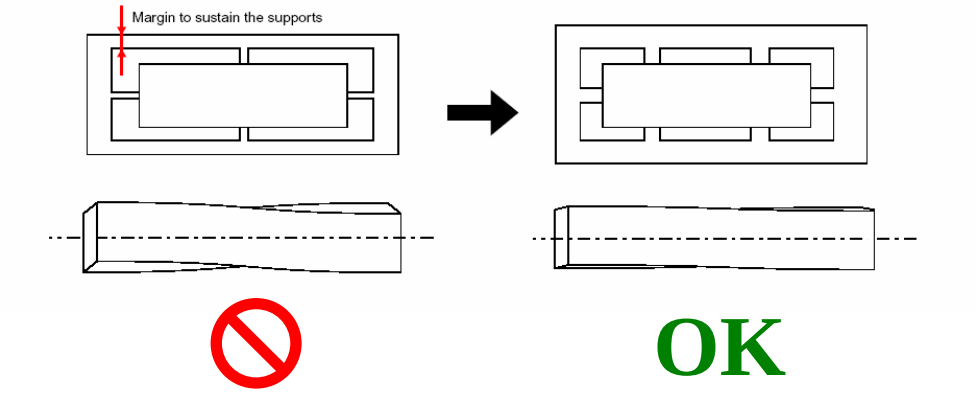


The length of the supports need to be long enough to clear the largest tool used as to not leave any uncut material. The support length must be longer than the tool diameter plus cutting parameters within Model Player 4.

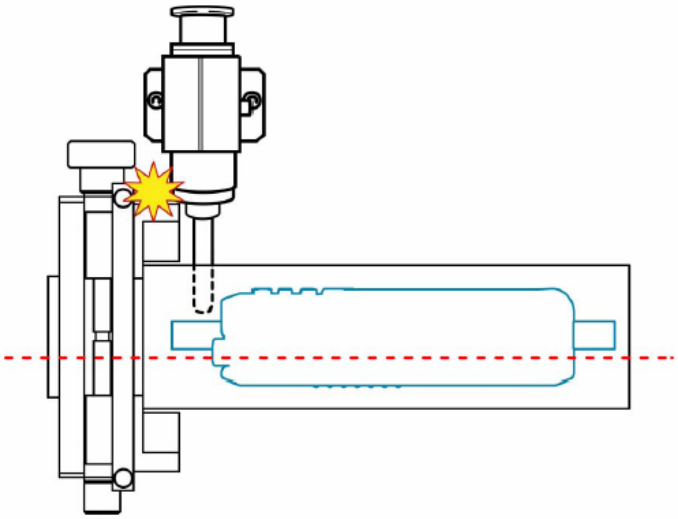
Support Length ≥ Tool diameter + Path Spacing + Fine Margin

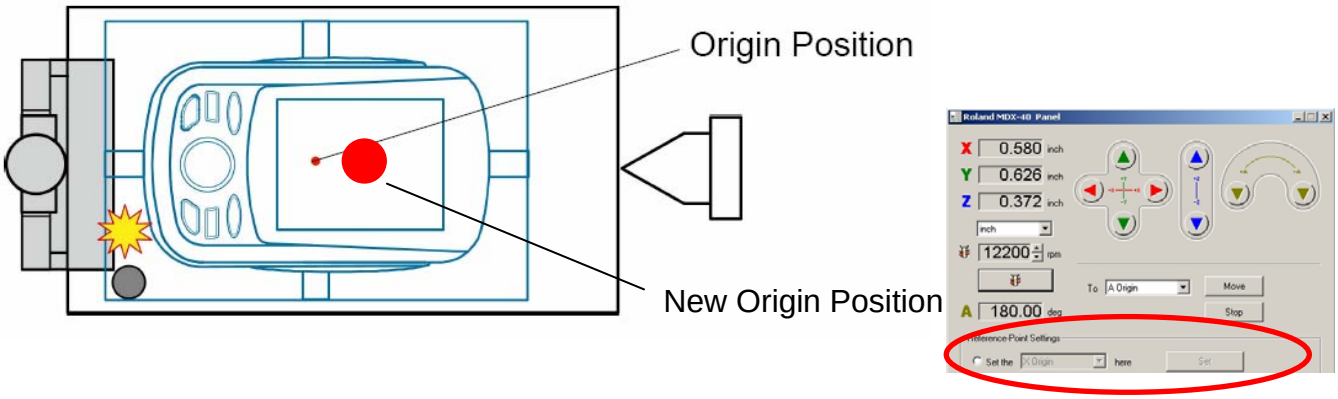


The material stock also shouldn't be so thin that it will bend during rotation or milling. It is best to leave more support material to firmly hold the part.



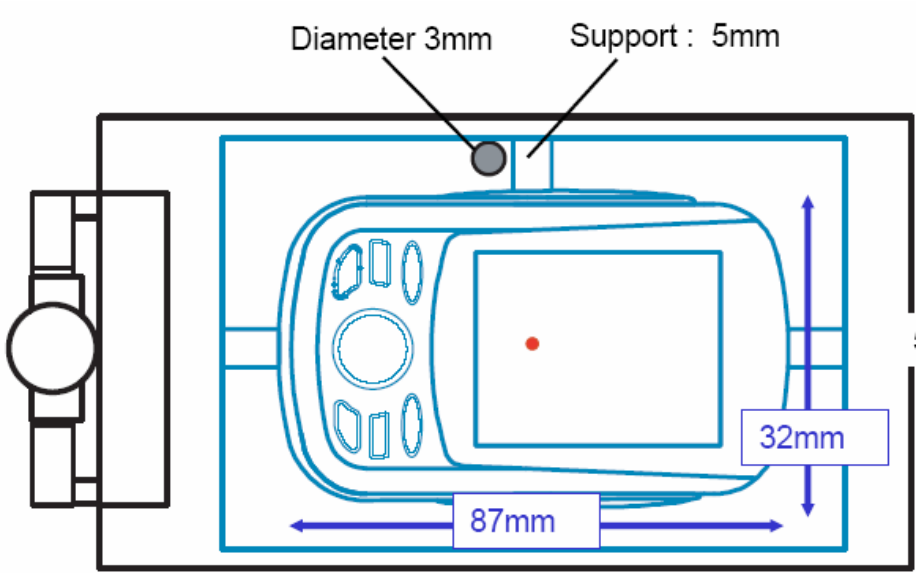
Sufficient material should also be located on the ends to avoid contact between the spindle and the clamping device.

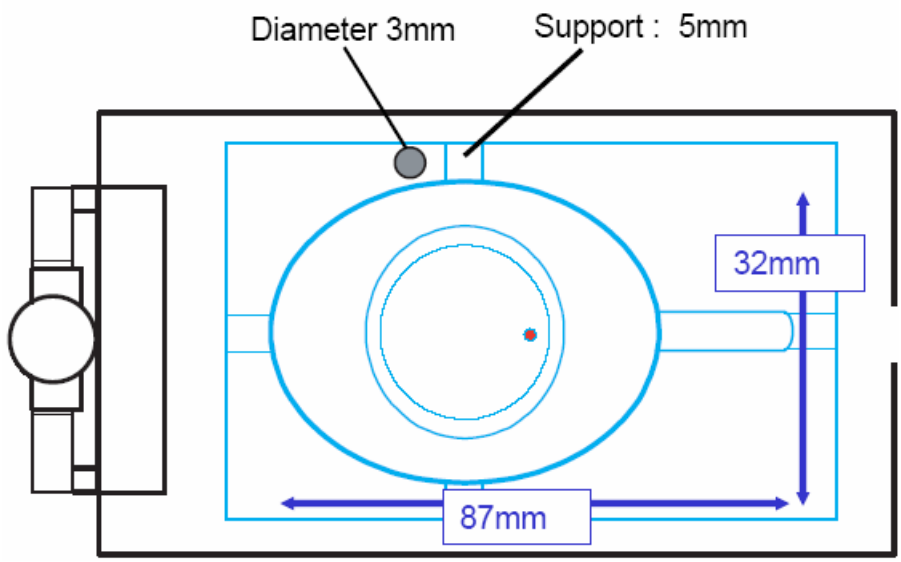




To avoid a tool and clamp collision, move the origin position away from the clamp. This is accomplished on the modeling machine. Simply move the X-Origin away from the clamps, depending on how much clearance is needed, and set the X-origin at the new location.

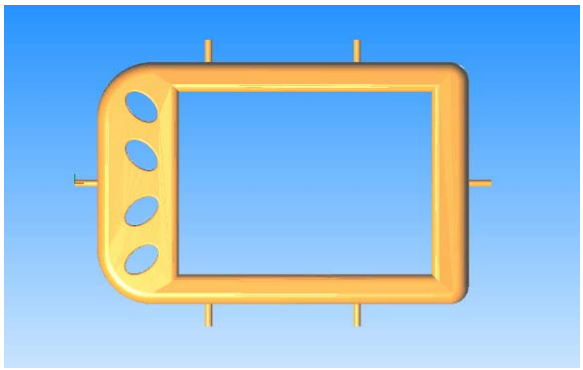
Support Tab Examples

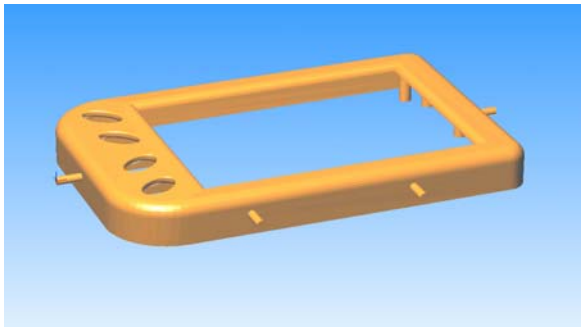




Support Tab Examples

Larger parts will require larger supports where as smaller parts will require smaller supports.





This PDA front cover is small and thin, thus requiring several smaller supports to ensure that it does not move during milling.

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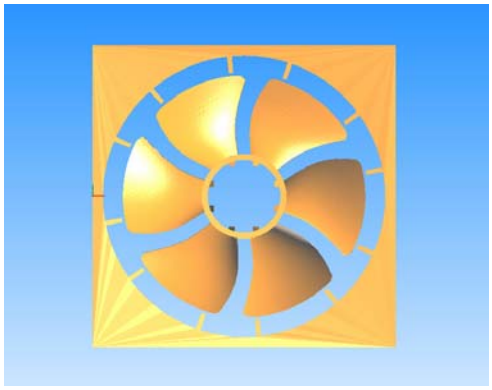
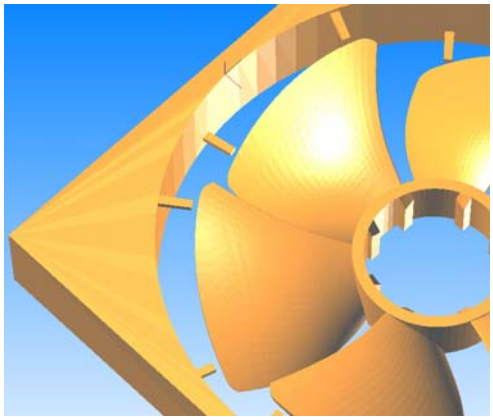
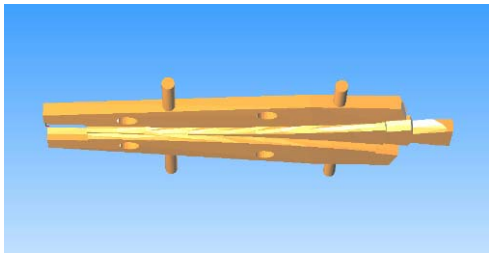




Several supports were used in this example to hold the fan blades during milling.



Small thin part being can be held from only the sides if needed.

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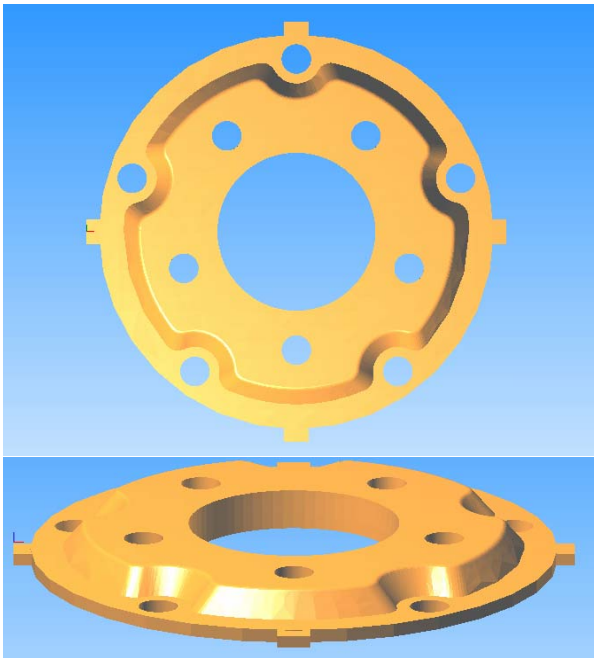
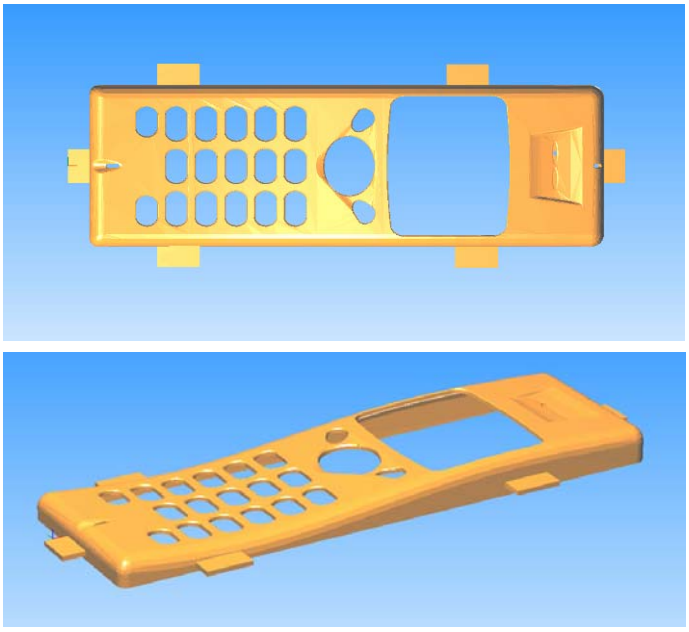


If the part is fairly thin, wide, rectangular supports help ensure sufficient support to hold the part.



Another example of wide, rectangular supports helping hold a thin part.

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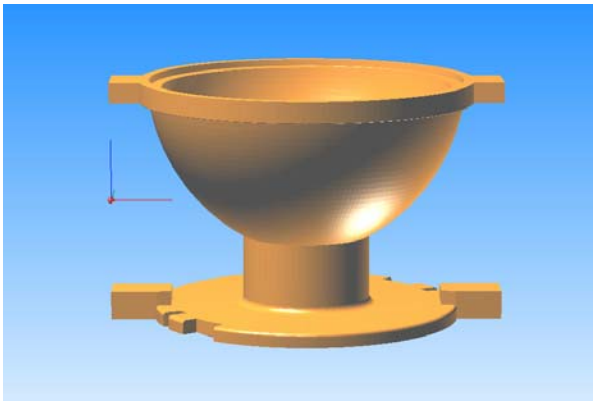
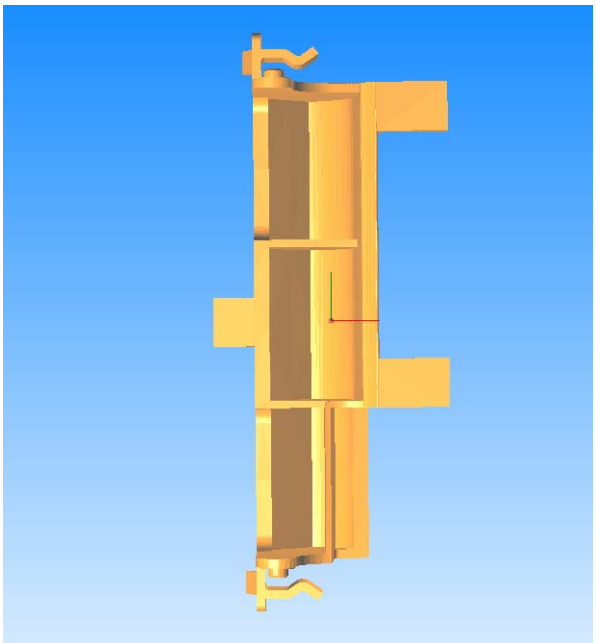


When the part is going to be milled from multiple surfaces, holding the part from the ends will allow you to mill the part from 4 or more sides.



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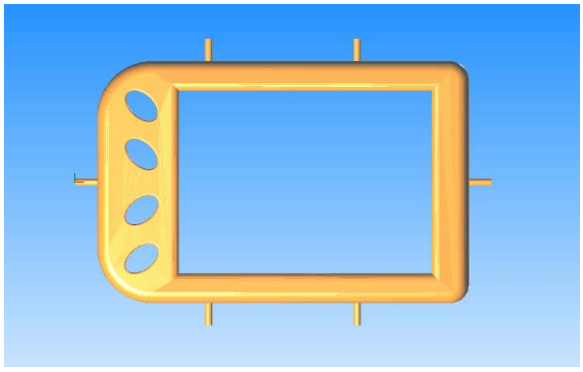
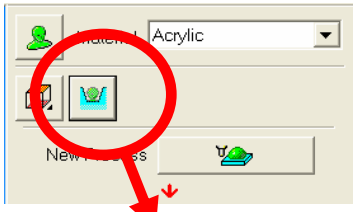
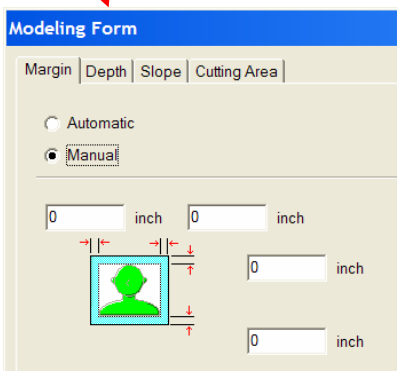
Support Tabs and Modela Player 4



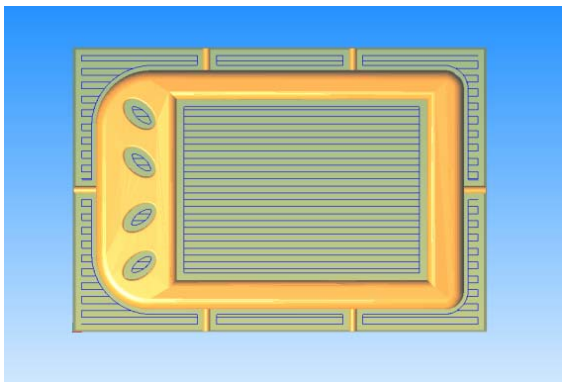
A part with supports on all 4 sides will require that all margins be set to 0.0”.





In Modela Player 4, click on the “Modeling Form” Botton.

Set the margins to “Manual” and enter 0 for all margins.



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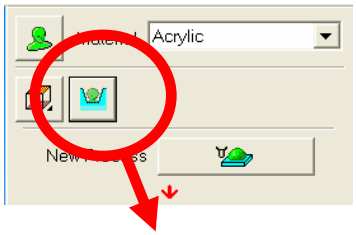
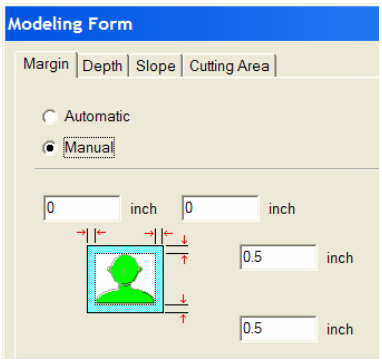
A part with supports on 2 sides will require that only 2 margins be set to 0 inches.



In Modela Player 4, click on the “Modeling Form” Botton.



Set the margins to “Manual” and enter 0 for all sides with tabs. Enter a margin on the non support tab side large enough to clear the tool diameter. In this example, the tool used was a 0.250” dia. tool and the margins set were 0.5” to give the tool enough area to mill the part.

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