



Threading Internal Threads using MASSO Conversational Wizard

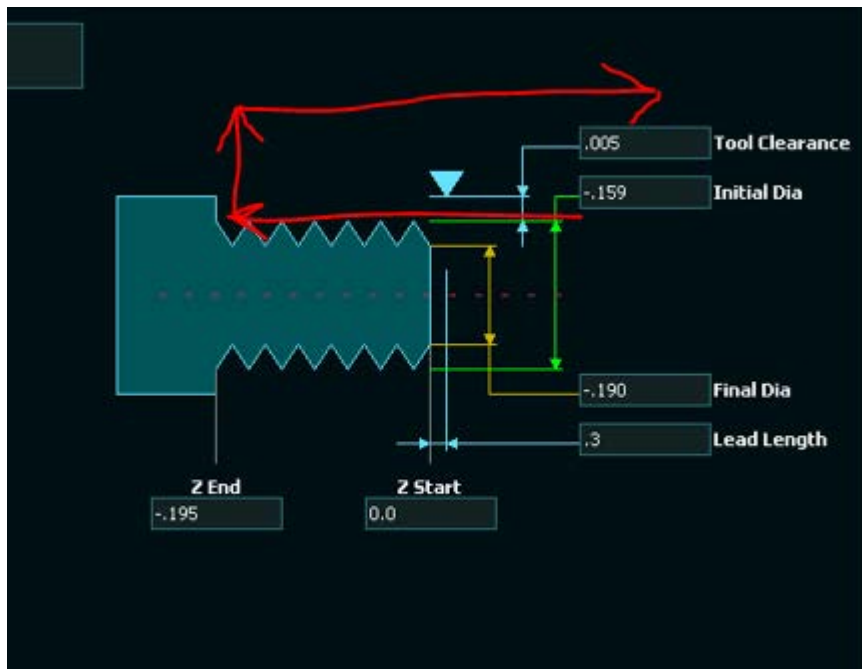
1. The MASSO wizard is set up for cutting external (OD) threads. All of the input settings and the graphic are for external threads.

2. To cut an internal (ID) thread you use the OD threading cycle that will generate the tool path (movement) that you want for the ID thread.

Example:

A. We are going to cut a 10-32 Right Hand ID thread.

B. If you look at the thread wizard screen shot below, the tool path that we want for a RH ID thread will be generated by a backside threading tool.



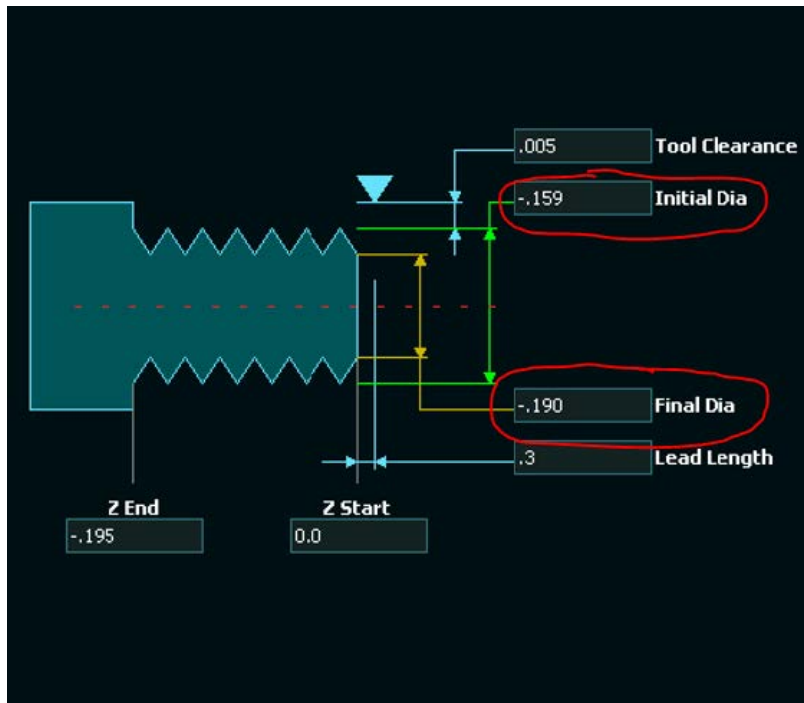
C. First you describe your tool on the tool offset page as a backside tool (even though it will be cutting the threads on the front side of the centerline of the part).

D. Then touch off your tool on the backside of the part on a known diameter and teach the part centerline (X0.00).

E. Now we insert the thread values and this is where the changes happen.

1. On an OD thread the “Initial Diameter” would be the OD of the part to be threaded. On an ID thread this value will be the hole size before you thread the part. In this case we are using a #21 drill that measures .159. However, you will use the Negative value for this diameter because you are cutting the thread on the Negative side of the centerline (when using a backside tool as your description of this tool). Therefore, it will be (-.159)

2. On an OD thread the “Final Diameter” will be the minor diameter of the thread. On an ID thread the final diameter will be equal to the “Major Diameter” of an OD thread of the same size. The OD of a 10-32 screw is .190. You will insert (-.190) for the reasons stated previously.



F. For the “Infeed” enter (29). This will make the threading tool move in at a 29-degree angle for each successive threading cut which will keep the actual cutting surface smaller and use the lead edge of the threading tool to remove most of the material.

Note: If you chose to enter (0) for the Infeed, each successive cut will cut more material and it will be cutting on both sides of the threading tool. This is much harder on the tool and it will cause more cutter flex (and possible breakage). Make your “Tool Clearance as little as possible so the backside of your threading tool will not crash into the backside of the hole.

TITLE 10-32 ID

Tool No	6
Spindle Spin Up Delay	1000

Spindle Direction CW CCW

Thread Director Right Hand Left Hand

Depth of cut	.001
Spindle RPM	400
Pitch	.03125
Infeed Angle	29

The diagram shows the same 10-32 ID thread setup as the previous image, but with a 29-degree infeed angle. The parameters are:

- Tool Clearance:** .005
- Initial Dia:** -.159
- Final Dia:** -.190
- Lead Length:** .3
- Z End:** -.195
- Z Start:** 0.0

G. The threading cycle will stop at the “Z-End” depth so you can bring your thread tool within .010-.015 of a shoulder safely. Note: This will be the end of your threading bar, not the centerline of the threading bar point

