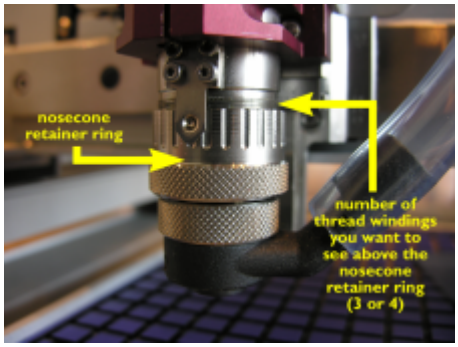
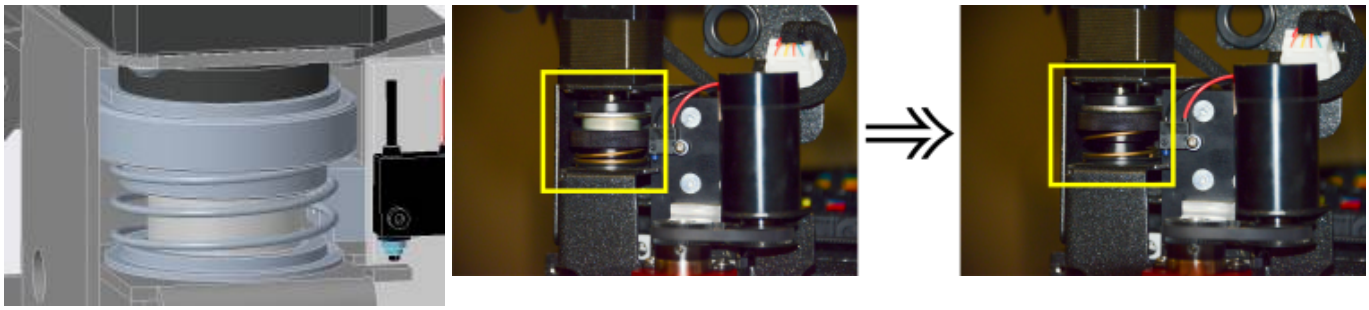
How to use the depth regulator nose

In the previous section you have learnt how to use the depth regulator ring. Take a close look again at the two following pictures:



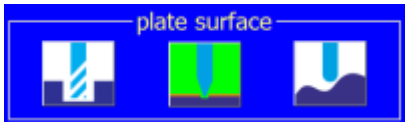


If you want to engrave using the nosecone, always make sure that the nosecone retainer ring is approximately in the position as indicated in the above picture on the left. At the same time make sure the black knurled spring pressure ring is screwed in the up position, as shown in the picture on the left).

There are two possible ways of working with the depth regulator nose: using the “Auto Z control” function, which is by far the easiest and the most popular way, and the manual way.

To switch between the two, you need to check the “Plate surface” option on your virtual keypad, using the “auto” button.

First method: Auto Z



With the “Auto Z” option active, the spindle will move down at the first vector in the job file at a certain speed, which we call the **“Auto Seek Feed”** and is expressed in mm/sec. When the integrated proximity switch is engaged, the Z-down move will stop and the spindle will move up a certain distance. This upward movement is called the **“Z lift after setting surface”**. We will start by explaining how to set these two parameters.

Setting the "Auto Seek Feed" and the "Z lift after surface setting":

1. Right click on the “?” in the top bar of the pendent window, then choose “preferences”. In the window which opens click on the “Job” tab. In the “surfacing” section you will be able to change these two variables. (see image below).



1. In the dialog window, accessible through the shift and the keys the “I/O” page lets you verify if the proximity switch, used for the auto Z control works as should. To do this, move the spindle down, using the button, until the nosecone at the bottom almost touches the engraving material. Then push the and the keys, click on the “I/O” tab and push the spindle gently

upwards. The moment the internal proximity switch is activated, this will be visible in the “inputs” section. The “Probe” led will change from grey to green, as shown in the above image.

2. To return to the main screen, click on the “save” button. After having done so you might have to re-home the machine.

Engraving

1. Now launch your engraving job. At the first cutter down movement, the nosecone will first touch the engraving material, the Z motor still continues rotating, untiltil internally the probe proximity switch is engaged. This tells the controller to stop moving the Z-axis, and to start engraving the vector.

2. At the end of the engraved vector, the spindle moves up to the “probe lift” distance and from there on the controller knows which distance the spindle should be moved down at every character or vector to be engraved.

This method has the big advantage that changes in material thickness do not require a different spindle or Z-axis setting. The Z-down moves will always automatically adapt to the material thickness.

Second method



The second method to work with the depth regulator nose does not involve the use of the Auto Z control mechanism. In this case the “plate surface” box has to highlight the “set” option, as in the image on the left.

If you use this method, make sure that your engraving job contains a depth of at least 1 mm and maximum 2 mm for everything you want to engrave. This is to allow for the spring to do its work and compensate for eventual differences is material thickness.

You proceed as follows:

1. Make sure your cutter is set properly and that the cutter tip sticks out a little through the nosecone, enough to give you the desired engraving depth.
2. Remove the cutter from the engraving spindle.
3. Use the jog ARROWS to position your spindle somewhere above your engraving material.
4. Make sure the black knurled spring pressure ring is screwed in the up position (see the images on top of this page).
5. Click the “set material surface” key on your keypad. The following window will open :



6. Click the “Probe” key  to begin the surfacing routine. Keep pressing this key  and the Z-axis will move down slowly until the spindle touches the material. It will then move up above the material surface. Doing this, the machine knows exactly at what level the material surface is. The Z-up and the Z-down distances are executed from that level. The Z-up moves can then be set really tight, just enough to move the cutter out of the material to move to the next character.
7. Put the cutter back into the spindle and tighten it by hand.
8. You are ready to run your engraving job.

Continue to the use of the spindle pressure spring.
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