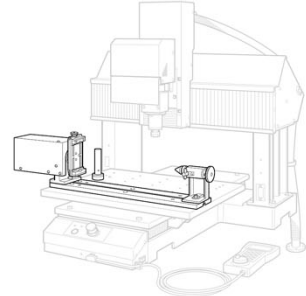

MODEL A PRO II

ROTARY AXIS UNIT

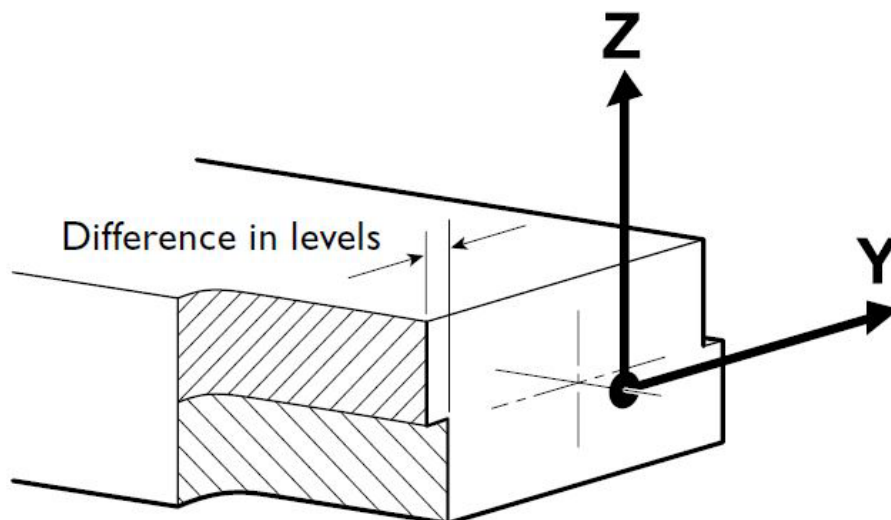
ZCL-540



Advanced Calibration

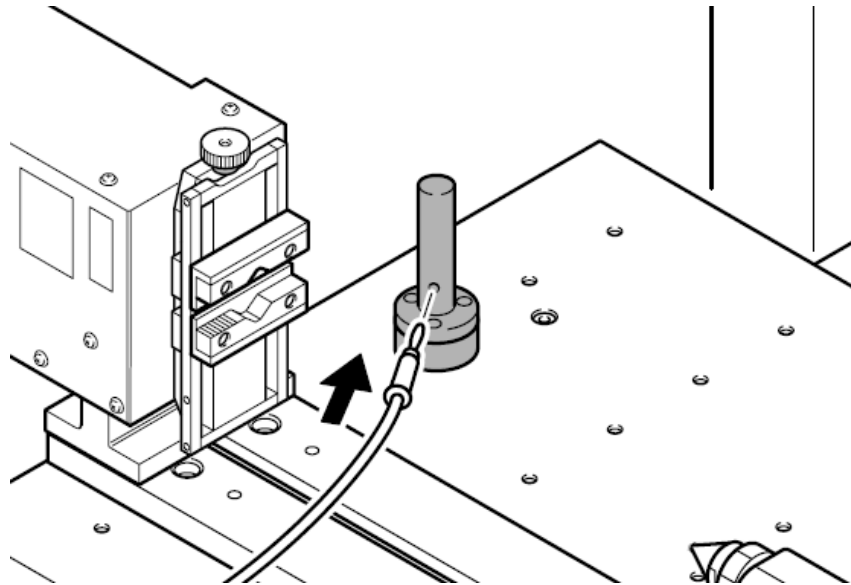
The purpose of this document is to assist users of the Roland MDX-540 fine tune the accuracy of their machine when using the 4th-axis option (ZCL-540) – The following steps will assist users who observe any shifts or offsets when performing double sided milling. We will cover two sections:

- **Section 1** - Setting Origins
- **Section 2** – Manual Adjustments

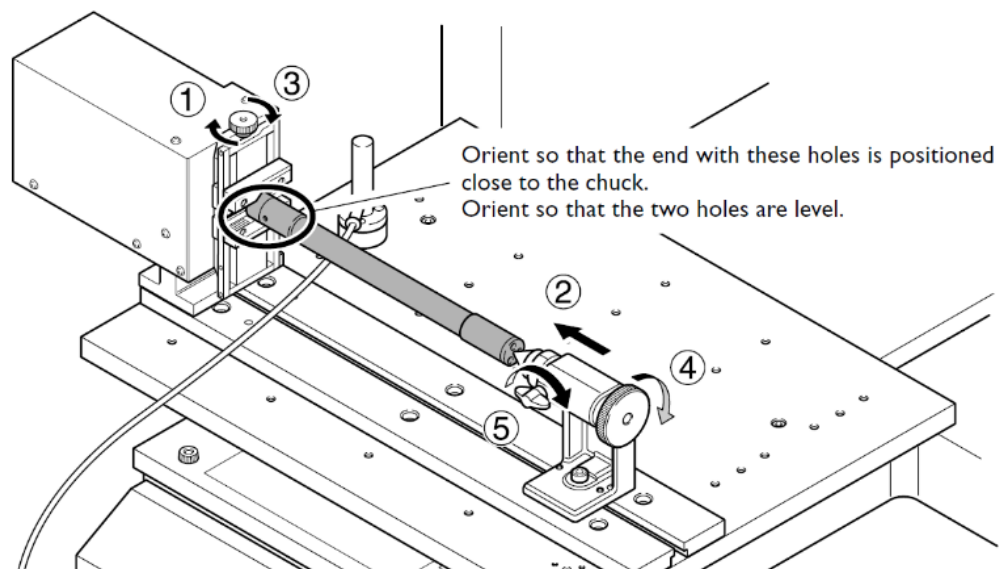


Section 1

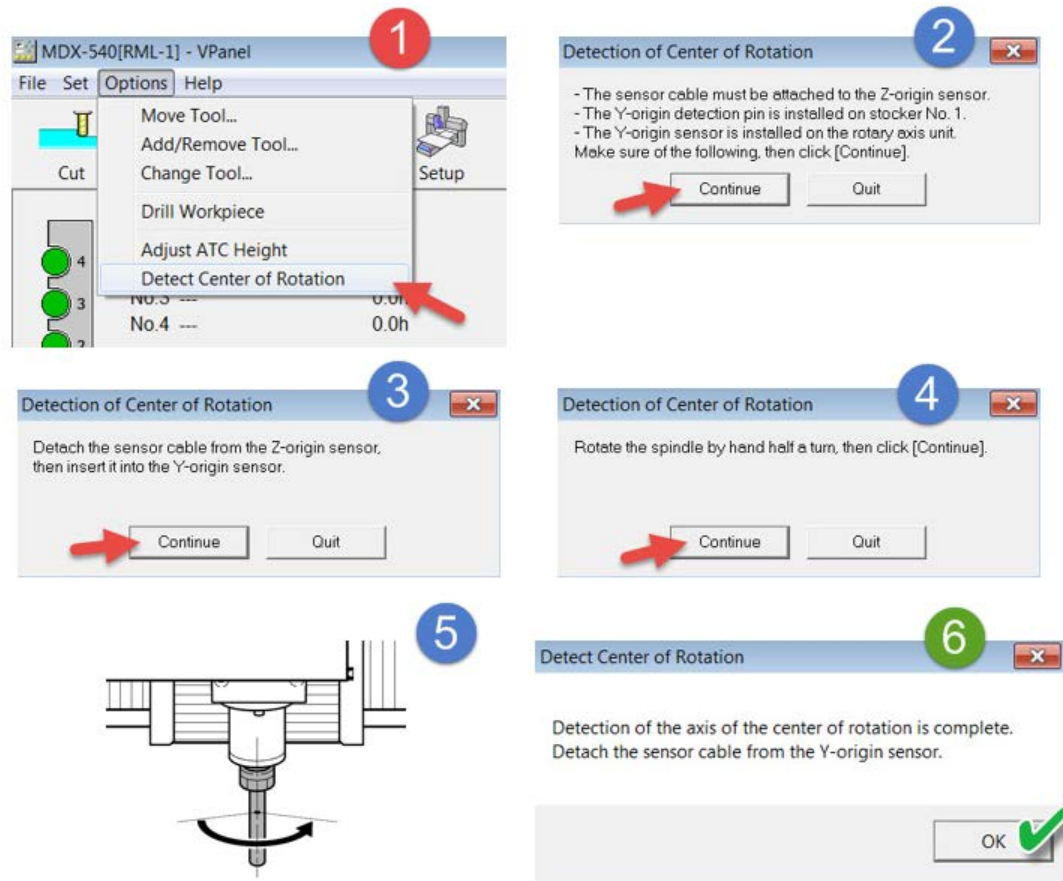
- Make sure to have your [ZCL-540 user manual](#) handy.
- Begin the Y-origin sensor detection process. (pg 43-46)
 - Connect the sensor cable to the Z-origin sensor. (pg 43)



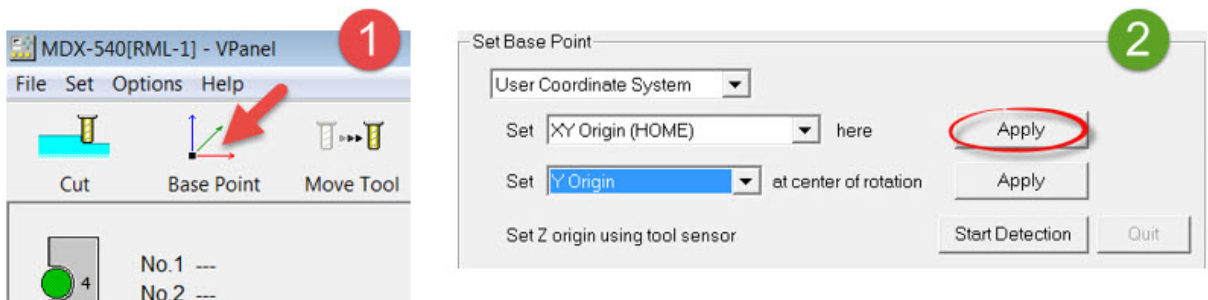
- Install Y-origin sensor bar. (pg 44)



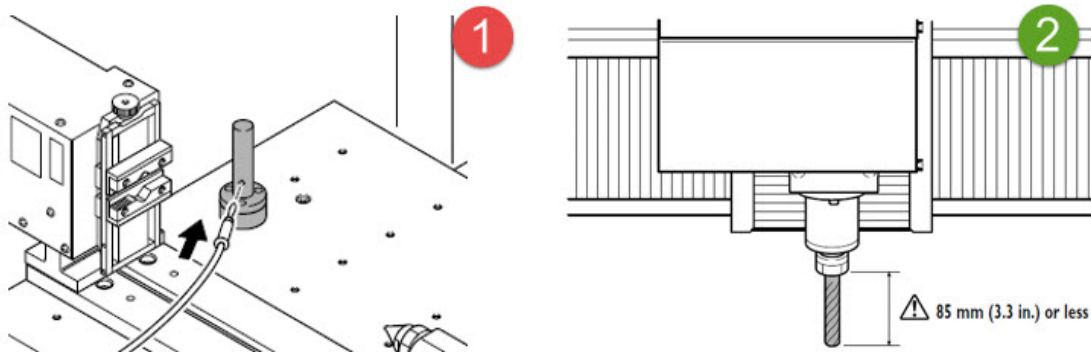
- Begin the “Detect Center of Rotation” process. (pg 45-46)



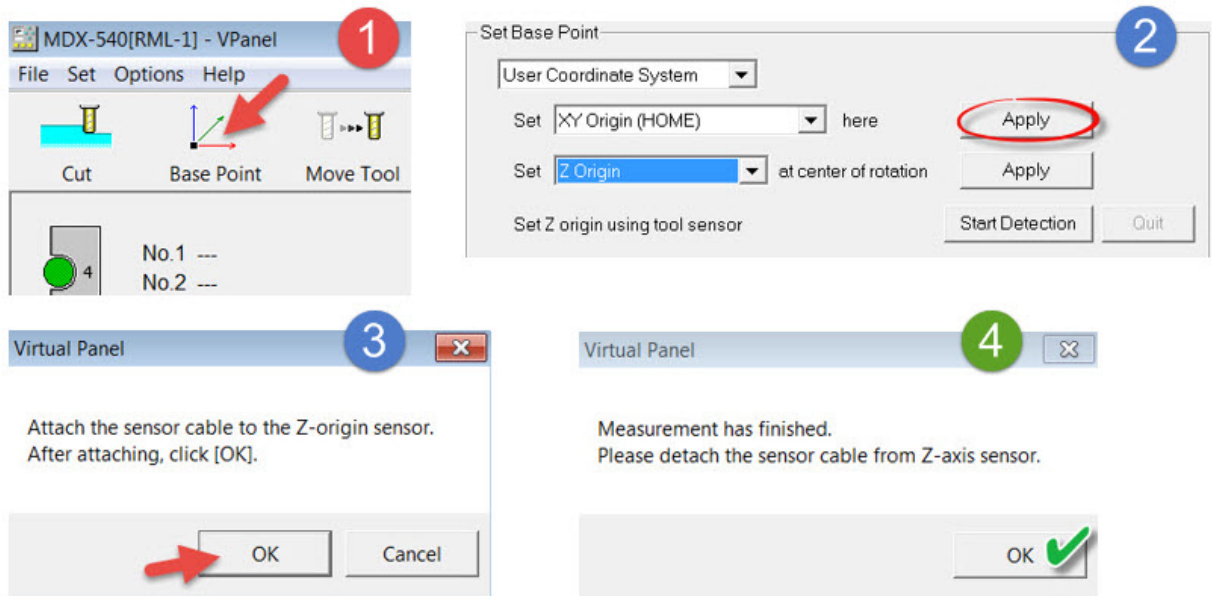
- Set your Y and Z origins at the center of the A axis. (pg 47-49)
 - Open Base Point settings and use the “Set ____ at center of rotation” drop down menu to set the Y-origin. (pg 47)



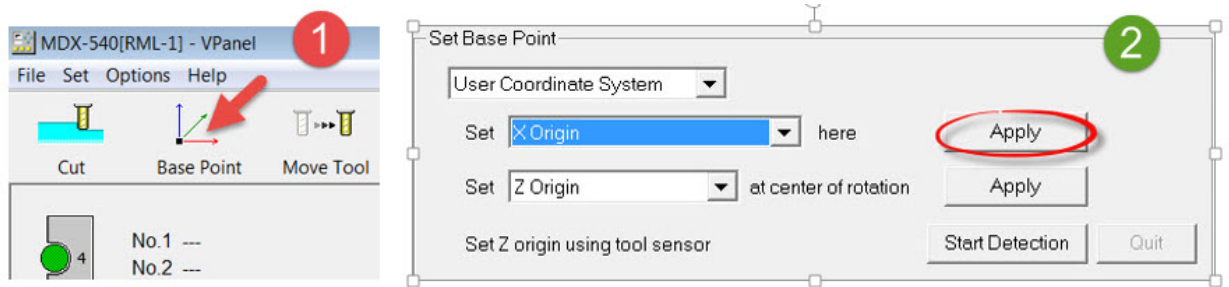
- Connect the sensor cable to the Z-origin sensor and install a tool. (pg 48)



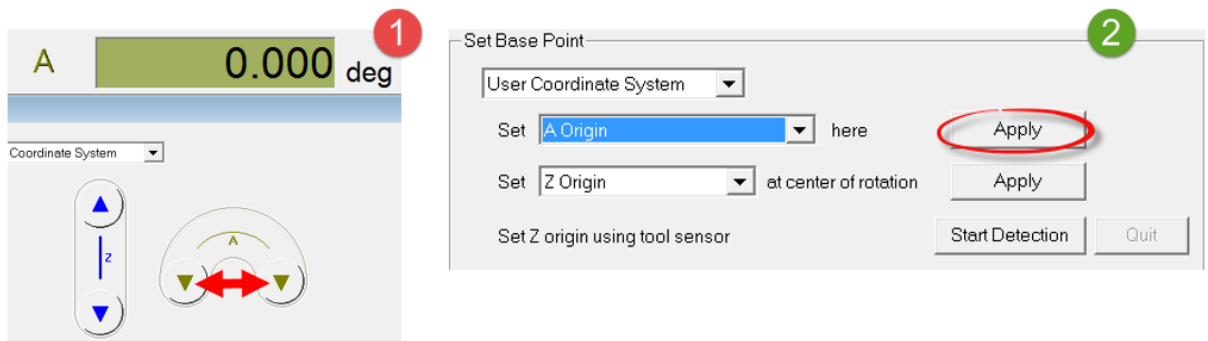
- Open Base Point settings and use the “Set ___ at center of rotation” drop down menu to set the Z-origin. (pg 49)



- Set your X and A axis origins. (pg 50- 51)
 - Move your tool to the right of your work piece along the X-axis and set your X-origin using the “Set ___ here” drop down menu. (pg 50)

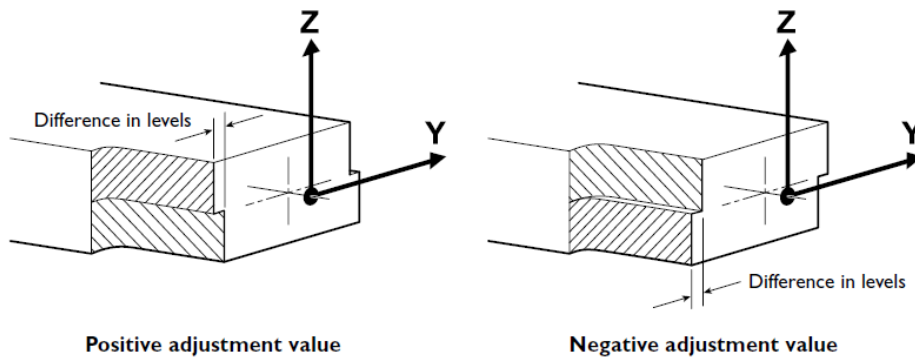


- Move you're Axis to a zero degree position and use the “Set ___ here” drop down menu to set the A-origin. (pg 51)



Section 2

- Once you have milled out your part using double index milling, check the “seam” of the part to find any adjustment values. (pg 53)



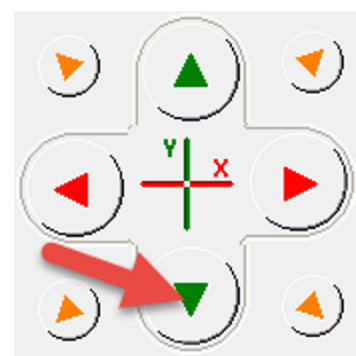
- Observe what direction this shift occurs to determine what type of adjustment value you will use. For example, if the “top” of the part looks like it shifted upwards the Y direction, then your adjustment value will be negative. (pg 53)

- Divide your adjustment value by two and use “Set Base Point” in VPanel to correct your Y origin position. For example, if you had a measured adjustment value of 2mm then you would change the location of your Y origin by 1mm only. (pg 53)

1

Machine Coordinate System

X	130.000 mm
Y	185.070 mm
Z	-79.590 mm
A	180.900 deg



3

Machine Coordinate System

X	130.000 mm
Y	184.070 mm
Z	-79.590 mm
A	180.900 deg

4

Set Base Point

User Coordinate System

Set Y Origin here **Apply**

Set Y Origin at center of rotation **Apply**

Set Z origin using tool sensor **Start Detection** **Quit**

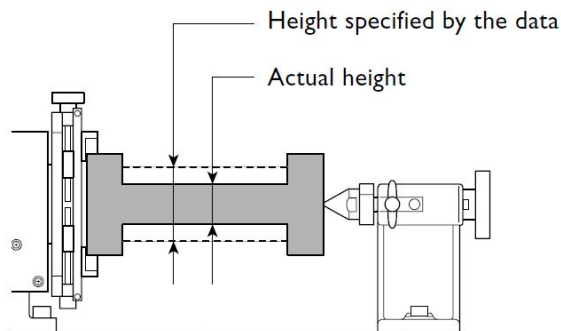
Set at next machine coordinate

☐ X: 208.500

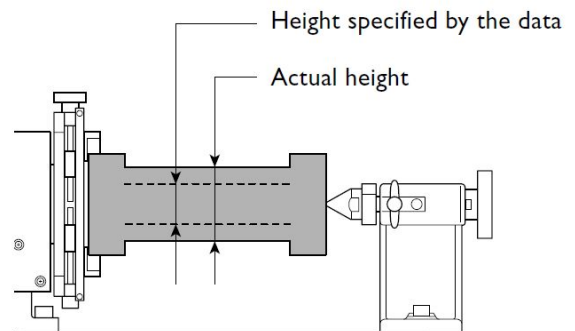
☐ Y: -0.140

☐ Z: 0.330 **Apply**

- Check your part in the Z direction for any similar adjustment values. (pg 53)

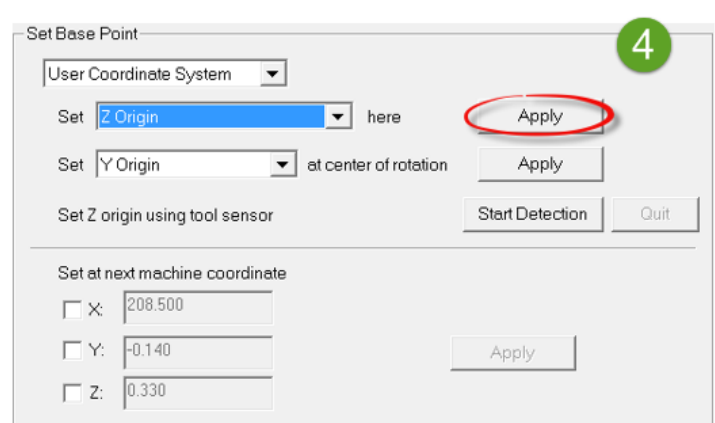
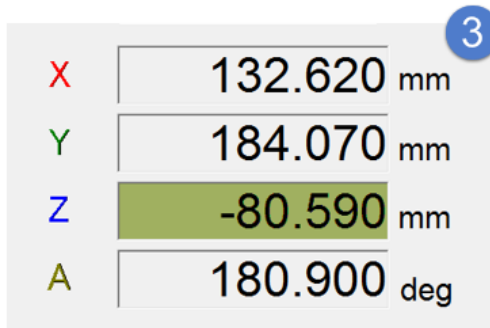
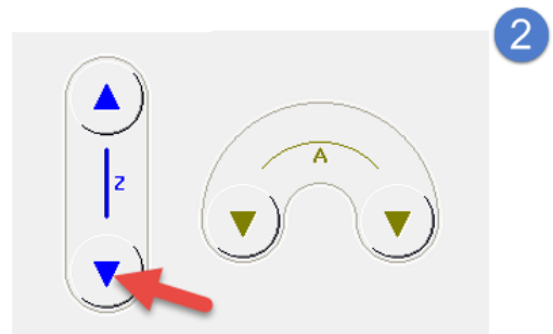
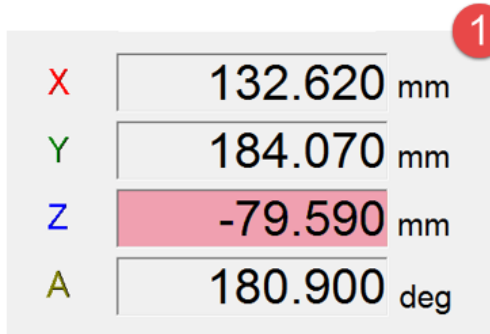


Positive adjustment value



Negative adjustment value

- Divide your Z adjustment value by two and use “Set Base Point” in VPanel to correct your Z origin position. Again, if you measure an offset of 2mm, your adjustment will be 1mm. (pg 53)



- Re-cut your part under these new origin settings to double check that your adjustments were correct. If you continue to have issues return to Section 2 and repeat the calibration process. You can also visit our product support page to download a 20mm cubic test file ([ZCL-540_Calibration_Cube](#)) to help with this process.

