

Software Compensation of Spindle.

Equipment.

Rough and finish diamond tools, long and short test parts to cut. (12mm and 30mm)

Purpose.

To fine set or verify horizontal alignment of the spindle.

Tolerance.

Maximum allowable form error of 0.5 μ m.

Method.

1. Ensure the machine is setup to cut correct form radius and center height, on the short part.
2. After cutting the short part, store the current blank length in PMAC
 - 2.1. Exit the machine control program. (Press CTRL and F1)
 - 2.2. Load PMAC. (Select PMAC EXECUTIVE and press enter).
 - 2.3. Type **P778** and press the ENTER key. The number returned will be the current blank length.
 - 2.4. Type **P777=value** where value equals the value returned by P778, and press the ENTER key.
 - 2.5. Exit PMAC. (Press the ESCAPE key, followed by the Y key.)
 - 2.6. Restart the machine control program. (Select MACHINE LENS and press enter)
3. Cut the same surface into the long part and evaluate for X center.
4. Exit the machine control program. (Press CTRL and F1)
5. Load PMAC. (Select PMAC EXECUTIVE and press enter).
6. After PMAC has loaded, type **P778** and press the ENTER key. The number returned will be the current blank length, type **P777** and press the ENTER key. The number returned will be the previous blank length
7. Calculate the angular error in seconds, using the follow equation.

8.
$$\text{Angular_Error} = \text{ArcTan}\left(\frac{\text{X_Error}}{\text{P778} - \text{P777}}\right) \times 3600$$
9. Type **P1020=Angular_Error/3600** where Angular_Error equals the actual calculated value from the above equation, and press the ENTER key.
10. Repeat from step 1, for verification, and correct as necessary.
11. Edit the 50MID.PMC file to enter the correct values for P777 and P1020. Then save to disk and down load to PMAC.