



## I-360™ Tip Offset Calibration



### Objectives

The objective of these procedures is to establish the tip offset of each stylus used for measurement on the I-360™. These procedures will calibrate the I-360™ for use in both vertical and horizontal positions. Styluses of multiple lengths can also be calibrated with the IntelliProbe 360™ with these procedures.

### Tools Needed

- Tracker3™ or Radian™ Laser Tracker system with control box, gimbal and stand
- Spherically Mounted Retroreflector (SMR)
- I-360™
- Stylus attachments for horizontal and vertical positions
- Stylus adapter
- Drift nest
- Epoxy

## Procedures

1. Set up the reference point by placing the drift nest on a level surface and affixing it to the surface with epoxy.
2. Follow the procedures in the User Manual to setup the laser tracker system, the parameter (PRM) file, and to perform an Index Search.
3. Once the initial setup has been completed, open the accompanying software for the I-360™.
4. Attach the stylus to the vertical position on the probe.
5. Refer to your I-360™ Software Manual to perform a virtual level.
6. Once the virtual level is complete, click on the I-Probe Offset Calibration button.
7. In the window that appears, select the correct stylus position and stylus length from the list of options. If necessary, a new stylus type can be created by clicking Add Stylus. In the window that appears, modify the stylus length, name and position before clicking OK.

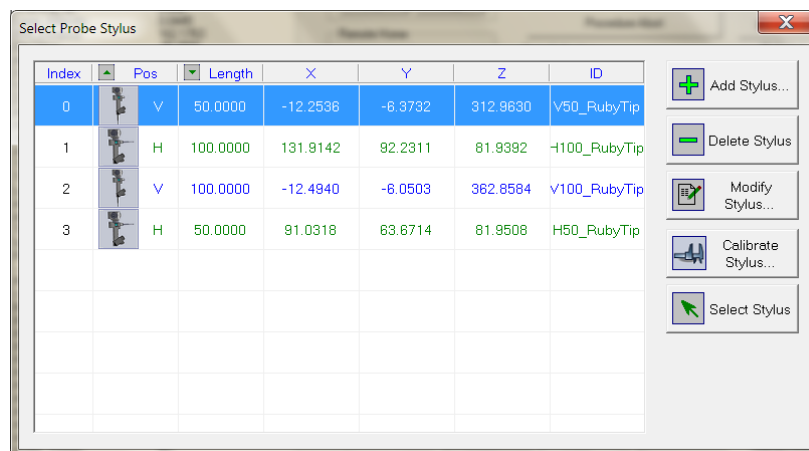


Figure 2

8. Click Calibrate Stylus to open the calibration window.
9. In the I-Probe Stylus Offset Calibration window, change the Calibration Station Number to 8 which will correspond to the number of points that will be measured to calibrate the stylus.

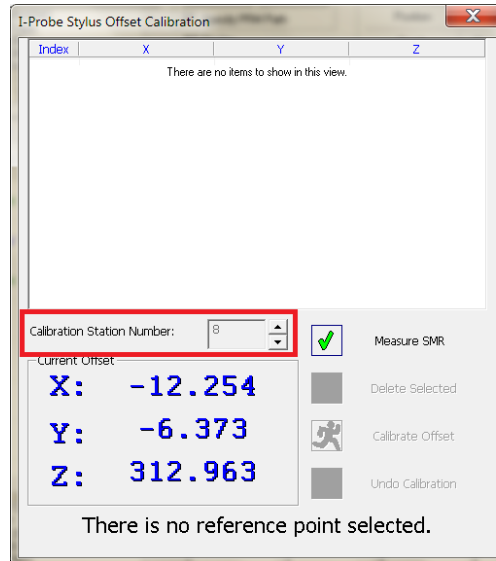


Figure 3

10. To establish the measurement of the reference point, capture the beam emitted from the laser tracker with the SMR and place the SMR on the drift nest.
11. Briefly block the beam captured by the SMR with your hand. Remove your hand to allow the SMR to recapture the beam.
12. Two readings should show up on the I-Probe Stylus Offset Calibration window. Select one of them and click Calibrate SMR.
13. Take the SMR away and use the retroreflector on the probe to capture the beam from the laser tracker.
14. Place the stylus adapter onto the drift nest.
15. Insert the tip of the stylus into the probe holder. Remember to keep the retroreflector pointed at the laser tracker at all times during measurement.

16. Hold the probe in place and press the trigger on the probe to measure the first point.
17. Rotate the probe about the yaw axis by 45 degrees and take another measurement. Repeat this step until eight points have been measured from a complete 360 degree rotation.



18. Close the I-Probe Stylus Offset Calibration window, remove the stylus from the vertical position and attach another stylus to the horizontal position.
19. Repeat steps 5-13 for all probe options.
20. Hold the probe in your right hand to take measurements for the front sight. Remember to keep the retroreflector pointed at the laser tracker at all times during measurement.
21. Insert the stylus tip into the stylus adapter and rotate the probe as far as possible in the adapter.
22. Press the trigger on the probe to take a measurement of the first point.



23. Rotate the probe backward by approximately 30 degrees to take another measurement. Repeat this step until 4 points have been measured.



24. Reverse the orientation of the probe by holding it in your left hand to take measurements in the back sight.
25. Repeat steps 20-22 until another 4 points have been measured.
26. Once all steps have been completed, the probe will be fully calibrated and will be ready to use for measurement.