ASK THE EXPERTS: Setup and Data Collection on Bently Nevada™ Proximity Probes

QUESTION: My compressor has Bently Nevada™ proximity probes and accelerometers permanently installed, but I have no way to view the dynamic data. Can I use the Windrock analyzer to record the data? What can it tell me?

Yes, you can use the Windrock analyzer to record the data. The equipment that you will need will be:

-   Windrock 6320 Portable Analyzer
-   An accurate TDC marker or phase angle
-   A method of determining crankangle
-   Portable or static proximity probes

If a Bently Nevada™ panel is installed on the unit, the Prox Trigger can be used instead of an encoder for a TDC pulse by using a BNC-to-BNC cable. Attach the Bently Nevada™ key shaft phaser output to the trigger module. A BNC-to-lemo voltage prox interface cable is needed for each proximeter on which you want to take simultaneous measurements. Keep in mind that the sensor point setup needs to be correct. Bently systems often use a 100mv per mil sensor instead of the 200mv per mil sensor.
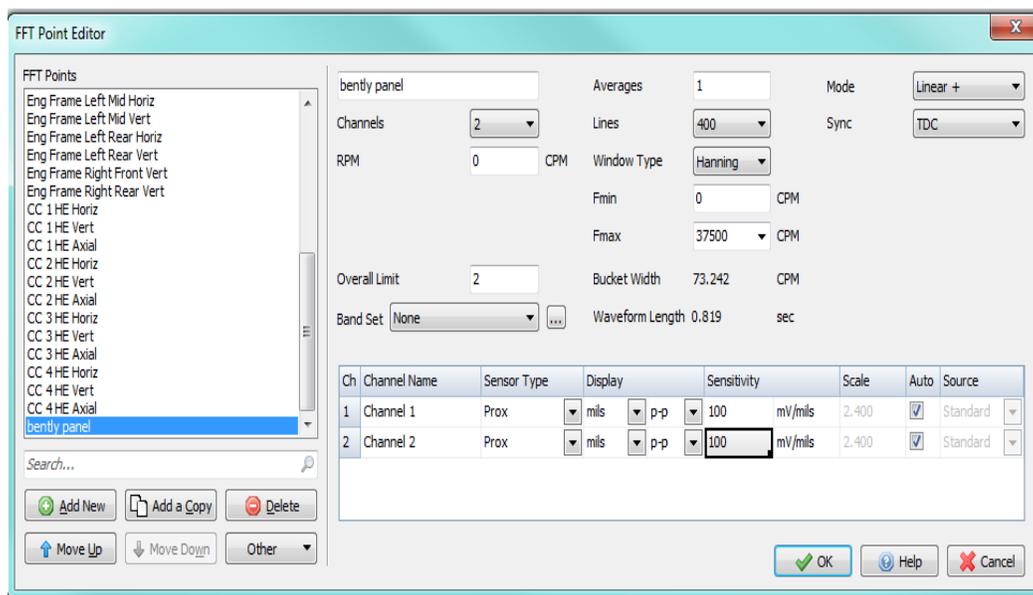
You will adjust the trigger level on the prox trigger module. On a running machine, adjust the setting until you have a steady flashing light that corresponds to the running speed. If you are setting up on a non-running machine in preparation for a startup test, adjust the knob until the light is steady and then proceed to turn the knob back counterclockwise until the light just goes out.

After these methods of setup are utilized, you can now directly connect the Windrock 6320 using the encoder cable or the wireless transmitter.

The information will give you a measurement of the following:

Rod run-out is the max peak-to-peak movement of the rod during the stroke. This is the most useful information and lets you know there is wear in either the piston rider band or the crosshead shoe.
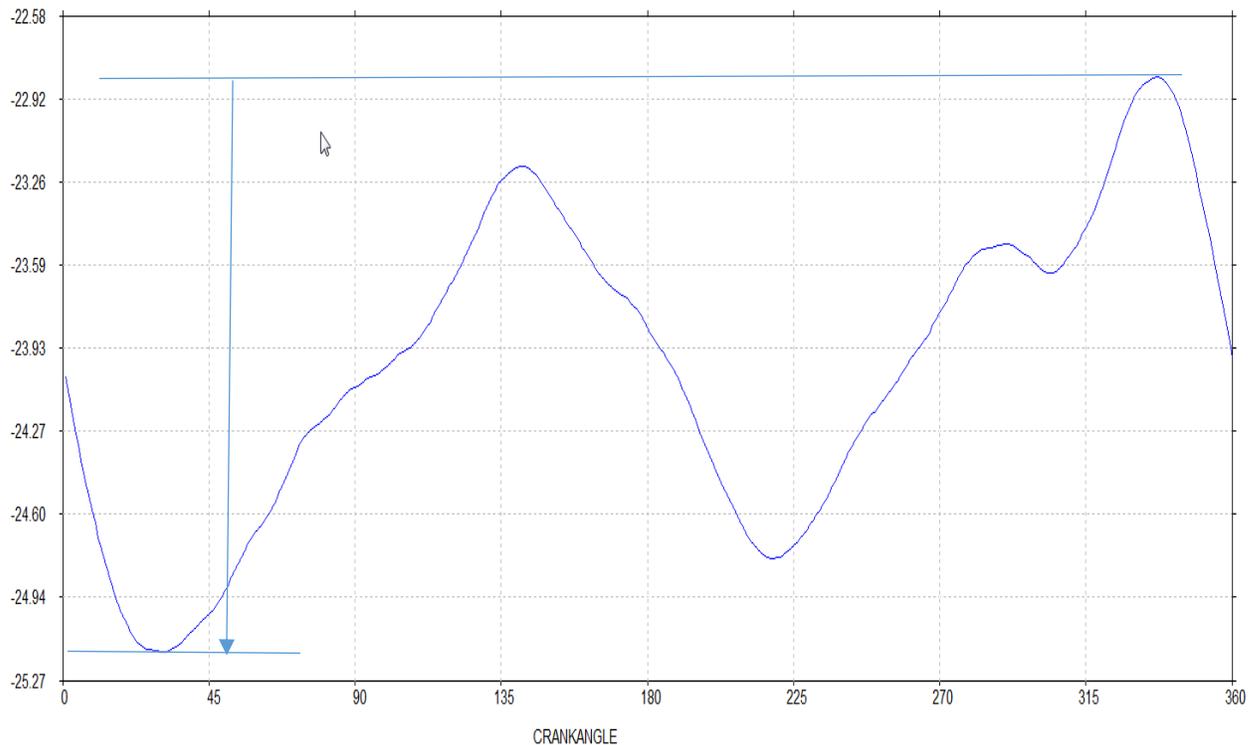
1> Cyl 1 vert runout top, R=1, LS=1, C=3

Rod drop is the average rod position relative to the packing. This measurement can be trended over time to get a measurement of piston rider band wear.

Rod alignment is the difference of rod position at TDC and BDC of the stroke. This measurement shows a mechanical misalignment of the cylinder bore relative to the crosshead bore.

The difference between the max and min is the rod run out.

The average value of the curve is the rod drop.

1> Cyl 2 vert runout top, R=1, LS=1, C=3
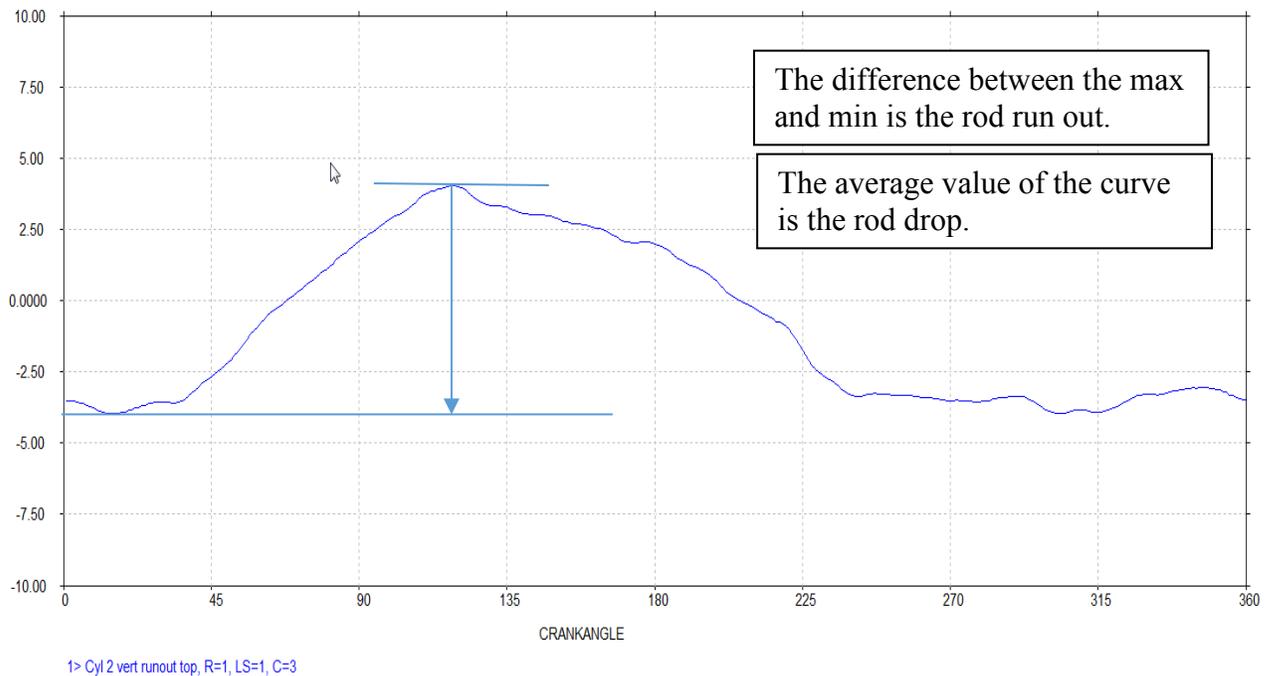
Rod wear is the thinning of the rod due to the friction caused as it moves in and out of the packing case**.** Some users take top and bottom data which can be used to measure rod wear that occurs as the rod moves in/out of the packing case. This require two probes mounted in the vertical axis; with one measuring the top gap and the second measuring the bottom gap. The software then takes the difference of these two waveforms to form a map of the rod diameter over the length of the rod.
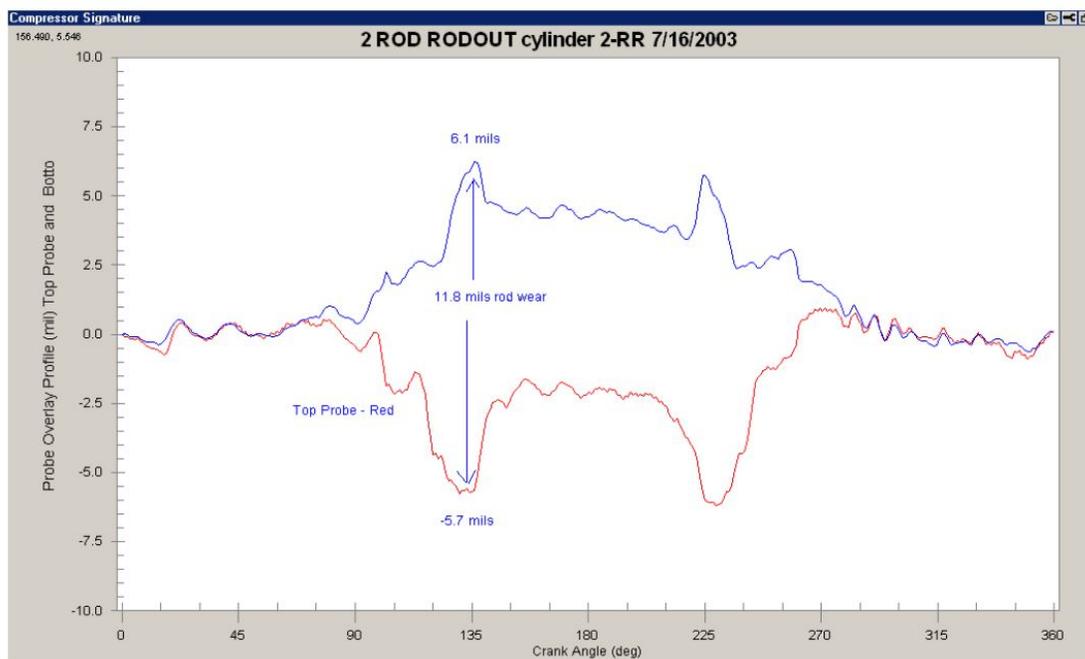
In addition to information about the rod, data can also be taken from proximity probes and accelerometers mounted to the crankshaft. Windrock MD software has features to analyze this data by looking at time waveforms, FFTs and orbit plots. We will cover that topic in the future. If you need help interpreting the rod or bearing curves or data, please contact Windrock for training or technical service options.

If you have additional questions about setup and data collection on Bently Nevada™ Proximity Probes or would like information about another topic, please email **sales@windrock.com**.