

Rod Motion for RTwin

Compressor Fault Detection Software

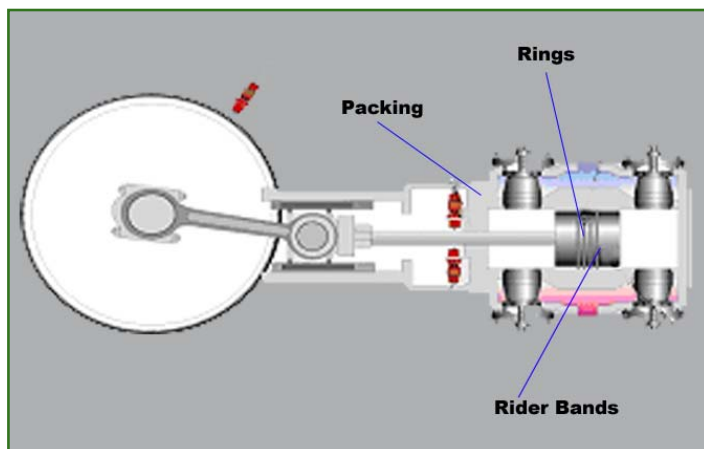
A powerful asset management tool for detecting critical compressor running gear faults.

Rod motion studies make possible the detection of compressor faults related to the compressors running gear, such as crosshead, rings and rider bands, rod packing and compressor rod condition.

Rod Motion vs. Rod Drop

Knowing the rate the rod is dropping relative to a fixed point has been the traditional method used by compressor operators for many years. This method adequately detects the distance the rod moves relative to the proximity probe over time, thus giving the operator a sense of the amount and rate of wear of the rider bands and rings, i.e. 010 over six months.

Rod Motion in RTwin is significantly more powerful in that not only can this technique detect rod drop relative to a single proximity probe, it allows the operator to detect other common compressor faults that a single fixed reading does not provide.



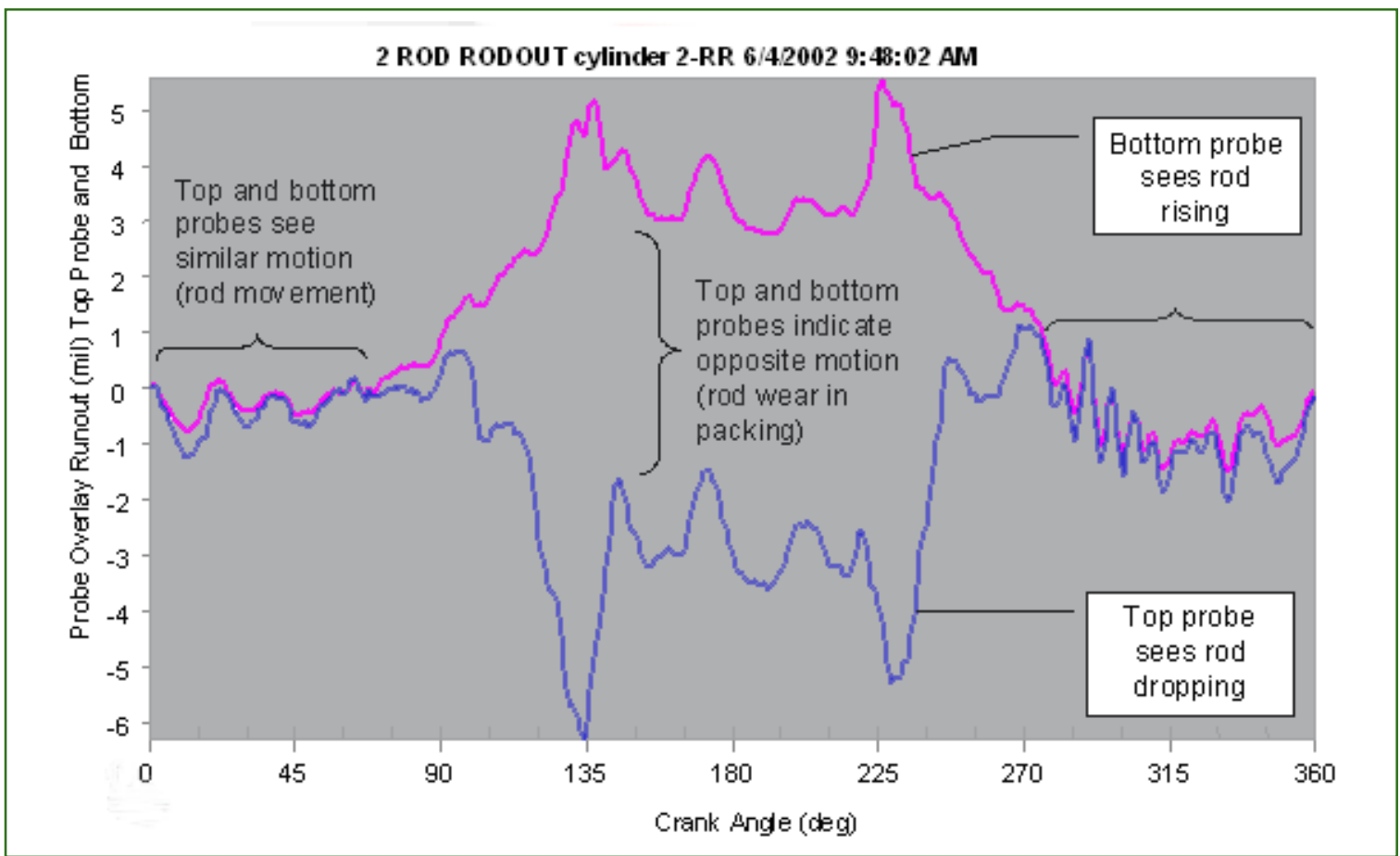
What Will it Detect?

- **Rider band wear:** The riders center the piston in the piston bore and as the riders wear, the center line of the piston relative to the center line of the bore changes. This causes the running gear to move at an ever increasing slope over time.
- **Bent rod:** A bent rod would become closer and farther away from a fixed point through the stroke. Rod motion allows the analyst to not only detect the bent rod, but to pinpoint the location of the bend and the resulting impact. Because we use two probes, the rod taper will show non-symmetrical wear.
- **Crosshead problems:** As the crosshead shoes wear, the running gear center line relative to the center line of the compressor cylinder bore changes. This causes the running gear to move at an ever increasing slope over time.

What Will it Detect?

- **Rod wear:** Grooves and wear marks on the rod are detectable throughout the stroke but are noticeable at the packing reversal point on the rod.
- **Connecting rod bearing deterioration:** The crosshead is driven by the connecting rod and if the bearing clearance is excessive the rod drives the crosshead inconsistently making the rod move side to side or up and down at symmetrical points during the stroke.
- **Loose or broken compressor support components:** As the compressor support structure becomes loose the alignment of the compressor relative to the centerline of the compressor frame changes. This misalignment is evident in the traces. Also, as the components become loose the compressor is moving, causing the rod to oscillate throughout the stroke.
- **Cylinder wear:** As the cylinder wears the piston moves in relation to the cylinder bore causing the piston and rod motion to be non linear during all or parts of the stroke.

Sample of Rod Load Plot



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