

1. Engine Inspection using Windrock Technology

Diagnostics:

Following diagnostics will be performed on Engine by using Windrock 6320 Analyzer:

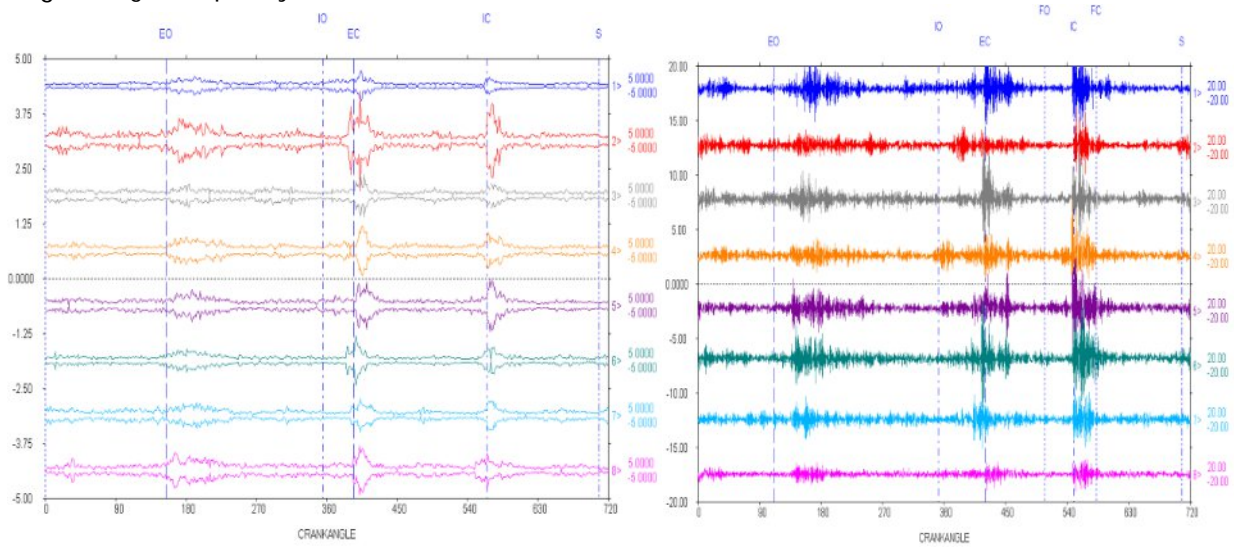
- Leaking valves and rings, Worn or Scored Liners
- Defective Fuel Injection valves
- Ignition System deficiencies
- Intake/Exhaust Port or Bridge Wear
- Worn or defective valve train Components
- Turbo charger Defects
- Damaged Bearings Identifications
- Damaged Connecting Rods and wrist pins
- Jacket Water and lube oil pump faults
- Excessive Frame Vibration
- Foundation or Grout Damage
- Engine Oil Test
- Peak Firing Pressure Imbalance (If Pressure Indicators Kiene valves are available)
- Horsepower Discrepancies (If Pressure Indicators Kiene valves are available)
- Infrared Temperature Readings of each cylinders

PURPOSE:

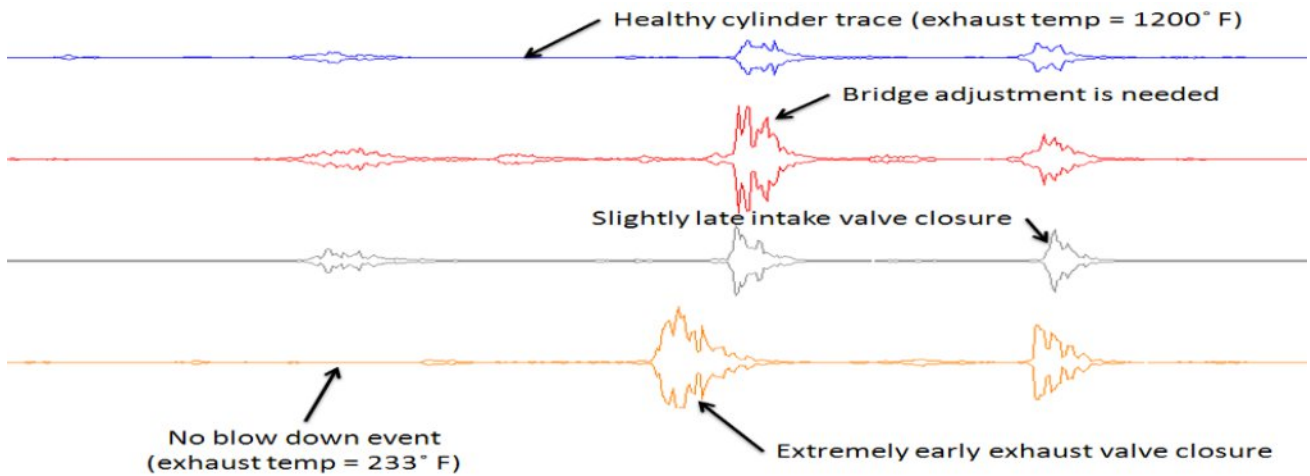
The purpose of Windrock inspection includes,

- Evaluate performance
- Maximize Machine Efficiency
- Maximize Valve Life
- Maximize Throughput to Horsepower Ratio
- Research and Development
- Economic Evaluation
- Evaluate mechanical condition On-Condition Maintenance
- Insure Reliability and Safety
- Evaluate PM program
- Reduction of Maintenance Costs
- Less Downtime and Lost Production
- Attempt to "Warrant" no Catastrophic Breakdown between Analyses.

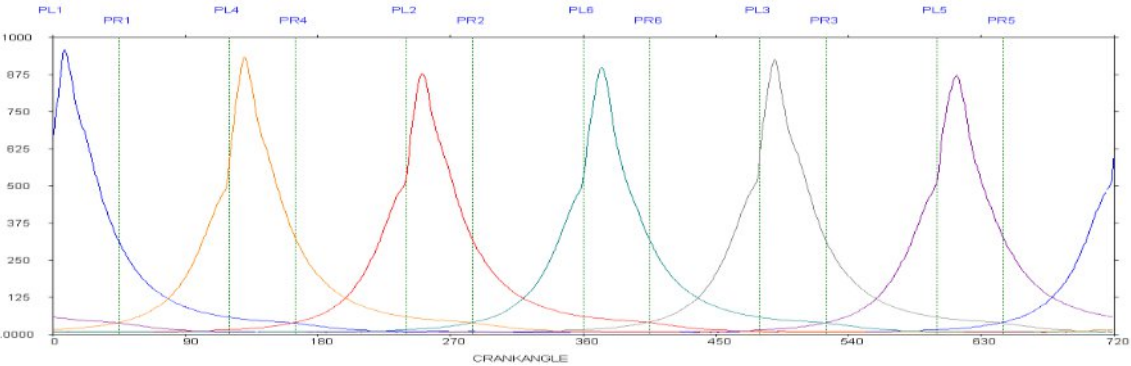
Engine High Frequency Vibration and Raw Vibration Traces:



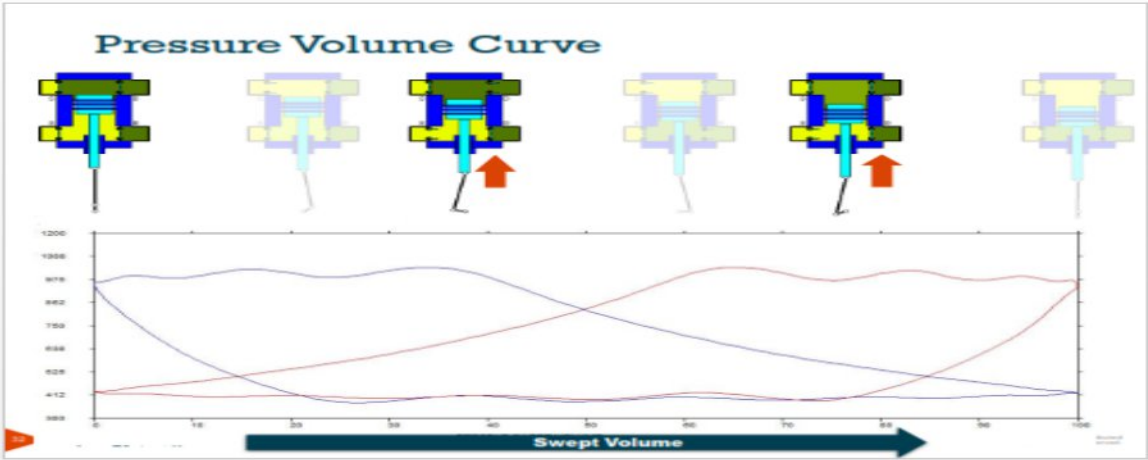
Engine Ultrasonic Traces Examples:



Example of Engine Pressure Trace:



Example of Compressor Pressure Trace:



2. Reciprocating Compressors Inspection using Windrock Technology

Diagnostics

Following diagnostics will be performed on Compressors by using Windrock 6320 Analyzer:

- Damaged Bearings Identification
- Piston ring/riders condition
- Compressor' Suction and Discharge Valves malfunction
- Damaged Connecting Rods and wrist pins
- Cross Head and packing defects
- Pressure Volume Curves, Flow balance, Performance Report (If Pressure Indicators Kiene valves are available)
- Excessive Frame Vibration
- Foundation or Grout damage
- Infrared Temperature Readings

Purpose

The purpose of Windrock inspection includes,

- Evaluate performance
- Maximize Machine Efficiency
- Maximize Valve Life
- Maximize Throughput to Horsepower Ratio
- Research and Development
- Economic Evaluation
- Evaluate mechanical condition On-Condition Maintenance
- Insure Reliability and Safety
- Evaluate PM program
- Reduction of Maintenance Costs
- Less Downtime and Lost Production
- Attempt to "Warrant" no Catastrophic Breakdown between Analyses