



## Performance Based Objectives – Predictive Maintenance

PBO No.	Performance Based Objective
PR-1	<p>Practice advanced predictive maintenance safety by:</p> <ul style="list-style-type: none"> <li>- Identifying common predictive maintenance safety guidelines</li> <li>- Identifying the potential hazard of pinch points</li> <li>- Explaining the proper procedure for lockout, tagout, and blockout</li> <li>- Identifying the PPE required and/or not appropriate for predictive maintenance</li> <li>- Identifying the potential of burn hazards</li> <li>- Identifying the potential hazards resulting from taking readings while equipment is operating</li> <li>- Demonstrating the proper use of hand tools</li> </ul>
PR-2	<p>Explain vibration analysis by being able to:</p> <ul style="list-style-type: none"> <li>- Describe the basic concept of vibration analysis</li> <li>- Define the vibration cycle</li> <li>- Define vibration displacement</li> <li>- Define vibration velocity</li> <li>- Define acceleration</li> <li>- Define vibration phase</li> <li>- Describe broadband analysis</li> <li>- Describe narrowband analysis</li> <li>- Describe signature analysis</li> <li>- Explain routes, measurements, and record-keeping</li> <li>- Demonstrate vibration analysis, interpret the results and describe appropriate corrective actions</li> </ul>
PR-3	<p>Explain shaft alignment by:</p> <ul style="list-style-type: none"> <li>- Describing and demonstrating the basic concepts of shaft alignment</li> <li>- Explaining and demonstrating the process of base preparation and soft foot</li> <li>- Explaining and demonstrating the process of rough alignment</li> <li>- Explaining and demonstrating the process of rim and face</li> <li>- Explaining and demonstrating the process of reverse dial</li> <li>- Describing and demonstrating the technique of laser alignment</li> </ul>
PR-4	<p>Explain balancing by:</p> <ul style="list-style-type: none"> <li>- Describing the concepts of balancing</li> <li>- Describing static unbalance</li> <li>- Describing uncouple unbalance</li> <li>- Describing quasi-static and dynamic unbalance</li> <li>- Explaining the problems resulting from imbalance</li> <li>- Describing natural frequency</li> <li>- Describing in-place balancing</li> <li>- Describing the operation of a balancing machine</li> <li>- Listing and describing the different equipment used in the balancing process</li> </ul>
PR-5	<p>Describe online and offline motor current analysis by:</p> <ul style="list-style-type: none"> <li>- Describing and demonstrating the function and use of a motor current analyzer</li> </ul>





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	<ul style="list-style-type: none"> <li>- Explaining the concept of phase orientation</li> <li>- Explaining the concepts of polarization index, rotary influence, dielectric installation, meg test, and step voltage</li> <li>- Interpreting the results and describe the appropriate corrective action</li> </ul>
PR-6	<p>Explain infrared thermography by doing the following:</p> <ul style="list-style-type: none"> <li>- Describe the operation of an infrared thermography camera and equipment</li> <li>- Describe the operation of portable temperature-indicating devices</li> <li>- Describe the operation of stationary temperature-indicating devices</li> <li>- Interpret the results and describe the appropriate corrective action</li> <li>- Demonstrate the process of infrared Thermography and analysis.</li> </ul>
PR-7	<p>Explain ultrasonic analysis by:</p> <ul style="list-style-type: none"> <li>- Describe the basic concepts of ultrasonic analysis</li> <li>- Describe the different flaws that can be detected by ultrasonic analysis</li> <li>- Demonstrate the application of Ultrasonic Analysis</li> <li>- Interpret the results and describe the appropriate corrective action</li> </ul>
PR-8	<p>Describe maintenance databases by:</p> <ul style="list-style-type: none"> <li>- Describing the basic function of maintenance logbooks (book or electronic file).</li> <li>- Explaining the concept of a preventive maintenance system</li> <li>- Describing the process of a computerized maintenance management system</li> <li>- Describing the four steps of preventive maintenance</li> <li>- Explaining the concept of a predictive maintenance schedule</li> <li>- Describing the different monitoring types used in predictive maintenance</li> </ul>
PR-9	<p>Describe predictive maintenance troubleshooting basics by doing the following:</p> <ul style="list-style-type: none"> <li>- Describe the relationship between predictive maintenance and troubleshooting</li> <li>- Explain the concept of troubleshooting</li> <li>- Describe the process of predictive maintenance troubleshooting</li> <li>- Describe the resources available to predictive maintenance troubleshooting</li> <li>- Describe predictive maintenance troubleshooting problems</li> </ul>

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