

Radial Fan Operation And Care

There are many uses for radial or centrifugal fans. Air enters radial allow the fan's shaft and exits the fan perpendicularly after centrifugal force is used to compress and pressurize the air. These fans have several components, motor, fan, shaft support through bearings, drive belts and pulleys and possibly dampers.

Task	PM/ PdM	Type of Inspection	Discussion	Proactive Visual Counter Measure
Cleaning and Inspection	PM	Visual (Not Running)	Work is to be performed safely. Clean the housing of all dirt, debris, product and grease. Observe for any cracks, holes, corrosion or areas that will leak. Inspect the mounting bolts to see if they are loose or damaged. Inspect the base for damage, erosion or cracking. Assure drain valve is not plugged and allowing flow of condensation from the system.	Properly torque fasteners and match mark. Cracking in housing or base may indicate a vibration issue such as harmonics with surrounding equipment.
Cleaning and Inspection Internal	PM	Visual (Not Running)	Internal inspection is performed under LOTO conditions. Remove all build up from inside fan on blades, housing and internal surfaces. Look for cracks, abrasion, erosion, corrosion, damage, stain patterns and weight location from last balancing.	
Monitoring Temp	PdM	Infrared (Running)	Check the temperature of bearings, sheave belts, and motor. Any substantial change in temperature can indicate: damage wheel, bearing damage, overloaded, shaft alignment or damage, excessive belt tension, incorrect speed, packing not correct.	Set up a route showing proper operating temps and abnormal operating temps.
Noise/ Vibration	PM/ PdM	Visual/ Feel/ Measure (Running)	Listen for unusual noises or vibration as the fan starts up, operates and shuts down. If a noise exists, try to determine the source such as from the bearings, due to misalignment, improper grease method, imbalance due to build up on fan, loose lock down bolts, soft foot or damage foundation, damage or loose damper, fan rotation, or possible damage to the fan (missing balancing weight). For critical equipment vibration analysis is recommended so adjustments can be made before a failure has occurred.	Put an arrow on the fan housing to show proper rotation. Motors are replaceable. Always indicate rotation on the fan housing that is a permanent part of the system.