

1.10.44. DYNAMIC WHEEL SET DEFECT INSPECTION BY APPLYING ULTRASONIC TECHNOLOGY

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As one of the key components of the railway transportation, the status of the railway wheel sets are essential, especially in the field of heavy load and high speed application. Normally, ultrasonic or magnetic particle testing is executed on the wheel sets detecting when the train is stopped for maintenance or after the wheel sets are disassembled from the train. A method for dynamic wheel sets defect inspection by applying ultrasonic technology is described in this paper. The defects in wheel rim and straight-shaped wheel disk can be detected when the train is passing by with a low speed of 5km/h typically. The inspection tracks are specially designed to make the tape line area of tread be available for inspection. The ultrasonic probes are arrayed between the supporting track and the guiding track. The testing results showed that $\Phi 3$ mm side drill hole in wheel rim and wheel disk can be found out at the passing speed of 3 ~ 10 km/h. Now, the system is applied in Wuhan depot, China for Harmony Locomotive wheel sets defect inspection and near 200 wheel sets are inspected each day.