

PAINT SHOP

Paint

| Shop | A Rank Equipment | Sub Equipment | Failure Mode | Thermal | Current | Vibration | Ultrasound | Other Sensing Technology |
|-------|-------------------|-----------------------|-----------------------------------|--|--|---|---|--|
| Paint | Booth | Supply / Exhaust Fans | Pillow Block Bearing Failure | Use Sensor on bearing to detect bearing temperature due to Friction heat | Use motor current sensor to detect current raise due to friction | Use Sensor on bearing to detect vibration (axle, radius) due to bearing damage | Use Sensor on bearing to detect noise due to bearing damage | |
| | | | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | Use motor current sensor to detect current raise due to friction | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | Use Sensor on motor to detect noise due to bearing damage | |
| | | | Imbalance | | | Use Sensor on bearing to detect vibration (axle, radius) due to blade imbalance | | |
| | Conveyor / Drives | Friction Drive | Motor, Gearbox, or Bearing Damage | | Use motor current sensor to detect current raise due to friction | | | Use logic to monitor cylinder stroke timing to identify leak |
| | | | Brake System Failure | | | | | Use brake monitor to monitor brake coil pull voltage |
| | | Rack & Pinon | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | |
| | | Power & Free | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | |
| | | | Chain Stretch | | | | | Use laser based sensor to measure chain stretch |
| | | | Take-Up Wheel Bearing Failure | Use Sensor on bearing to detect bearing temperature due to Friction heat | | Use Sensor on bearing to detect vibration (axle, radius) due to bearing damage | | |
| | | | Rail Wear | | | | | Use 3D laser camera to measure the wear |
| | | Slat Conveyor | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | Use motor current sensor to detect current raise due to friction | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | Kawasaki Software PdM |
| | | Oven/Booth Chain | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | Use motor current sensor to detect current raise due to friction | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | |

PAINT SHOP (CONT.)

| Shop | A Rank Equipment | Sub Equipment | Failure Mode | Thermal | Current | Vibration | Ultrasound | Other Sensing Technology |
|-------|------------------|----------------------|-----------------------------------|--|---|--|------------|---|
| Paint | Robots | Servo Brakes | Brake failure | | | | | Use brake monitor to monitor brake coil pull voltage (Kawasaki) |
| | | Motor | Motor or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | Kawasaki Software PdM |
| | Ovens | Circ / Comb Fans | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | |
| | Lifter | Main Lifter | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | Use motor current sensor to detect current raise due to friction | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | |
| | | Sub Lifter | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | Use motor current sensor to detect current raise due to friction | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | |
| | RTO | Inlet / Outlet Valve | Hydraulic Cylinders | | | | | Use logic to monitor cylinder stroke timing to identify leak |
| | | Comb / ID Fan | Motor, Gearbox, or Bearing Damage | Use Sensor on motor to detect bearing temperature due to Friction heat | Use motor current sensor to detect rising current due to friction | Use Sensor on motor to detect vibration (axle, radius) due to bearing damage | | |