**Occurrence 1: FD01 Feeder Motor Failure**

On a typical production day, the FD01 feeder motor suddenly stopped working after a few hours of continuous operation. Initially, there was a slight increase in motor temperature, followed by a gradual rise in vibration levels. Despite the cooling system being activated, the motor failed to return to its normal operating temperature. This led to an emergency stop of the production line to investigate the issue. Upon further inspection, the maintenance team found that the motor’s internal bearings had worn out due to inadequate lubrication. Although the automatic lubrication system was functioning, it had been dispensing less lubricant than required due to a clogged filter. The root cause of this failure was a blockage in the lubrication system, which led to excessive friction and overheating, ultimately causing the motor to seize. To prevent future occurrences, the lubrication system filter was replaced, and regular checks of the system were scheduled to ensure consistent lubrication flow.

**Occurrence 2: CT01 Cutting Motor Blade Jam**

During the production of Product B, operators noticed that the CT01 cutting motor was struggling to maintain the cutting speed, and the machine’s performance gradually deteriorated. Shortly after, an alarm was triggered due to high motor current, and the cutting blades jammed, forcing the production line to halt. Upon investigation, the team discovered that a buildup of debris from the cutting process had clogged the motor’s blade compartment, restricting the blade’s movement. While the motor itself was in good condition, the blockage caused additional strain, leading to the motor drawing excessive current in an attempt to overcome the resistance. The root cause was identified as inadequate cleaning of the motor’s dust collection system, which had allowed debris to accumulate over time. To resolve the issue, the blade compartment was cleared, and the dust collection system was overhauled. Moving forward, routine cleaning and inspections were implemented to prevent a recurrence.

**Occurrence 3: GL01 Glue Pump Failure**

During a shift change, the operators observed that the glue application process was inconsistent, with the glue lines being thinner than usual. A warning for fluctuating glue pump pressure was logged shortly after, and the GL01 glue motor eventually stopped due to low pump pressure. Upon investigating, the maintenance team found that the glue pump’s internal diaphragm had developed a small tear, which caused fluctuations in pressure and reduced glue flow. The tear occurred due to the pump operating under high pressure for an extended period, which exceeded its rated capacity. The root cause of this failure was a mismatch between the pump’s specifications and the operating conditions, leading to wear and tear beyond its design limits. To resolve the issue, the pump was replaced with a model better suited to the production requirements, and the operating pressure was recalibrated to stay within safe limits.

**Occurrence 4: SH01 Shaping Motor Belt Slippage**

During the production of Product A, the SH01 shaping motor began producing unusual noise, and its output quality deteriorated. Soon after, the motor’s belt tension warning was triggered, indicating a problem. Operators quickly shut down the motor to prevent further damage. Upon inspecting the motor, the maintenance team discovered that the motor’s drive belt had become worn and loose, leading to slippage during operation. The worn belt could no longer maintain the proper tension, causing the shaping motor to operate inefficiently. The root cause of the failure was a combination of belt wear due to extended use and misalignment of the motor pulleys, which put additional strain on the belt. The belt was replaced, and the pulley system was realigned to restore proper tension. To avoid similar failures, routine belt inspections and pulley alignment checks were added to the maintenance schedule.

**Occurrence 5: IN01 Inspection Sensor Calibration Error**

During a scheduled quality check, the inspection sensor (IN01) flagged several products as defective, despite visual inspections indicating that the products met the required specifications. Operators attempted to recalibrate the sensor, but the issue persisted, causing significant delays in production. Further analysis revealed that the sensor’s light source had started to flicker intermittently, reducing its accuracy in detecting defects. Upon investigating, the maintenance team found that the sensor’s light-emitting diode (LED) was near the end of its lifespan and was no longer producing a consistent light output. The root cause of this issue was the failure to replace the sensor’s LED at the end of its recommended service life, leading to inaccurate readings. After replacing the light source, the sensor was recalibrated, and production resumed with no further issues. A new preventive maintenance task was introduced to regularly replace the sensor’s LED to avoid future calibration errors.

**Occurrence 6: PK01 Conveyor Belt Misalignment**

During the packaging process, operators noticed that several packages were not aligned correctly on the conveyor belt, leading to improper labeling. A warning for conveyor belt misalignment was logged shortly after. Upon inspection, the maintenance team found that the belt had shifted out of alignment due to excessive lateral force from one of the rollers. The roller had become worn out over time, causing it to apply uneven pressure on the belt. The root cause of this issue was the failure to replace the worn-out roller, which eventually caused the conveyor belt to drift off its intended path. The roller was replaced, and the belt was realigned to ensure smooth operation. To prevent similar occurrences in the future, regular inspections of the rollers were added to the maintenance schedule, along with immediate replacement of any worn-out parts.

**Occurrence 7: CT01 Dust Collection System Overload**

During a high-volume production cycle, operators noticed that the cutting motor (CT01) was struggling to maintain efficiency. Shortly after, a warning was triggered for the dust collection system, indicating a clog. The system was designed to handle debris generated during the cutting process, but in this case, the collection chamber was overloaded with fine dust, reducing airflow and causing the motor to work harder. The root cause of the failure was a failure to regularly empty the dust collection bin, which caused a blockage in the airflow channels. As a result, the motor overheated and slowed down due to excess load. To resolve the issue, the dust collection system was cleaned, and a new procedure was implemented to regularly monitor and empty the bin to prevent future overloads.

**Occurrence 8: SH01 Motor Bearing Failure**

During normal operations, the SH01 shaping motor began making loud grinding noises, followed by a significant drop in performance. A warning for motor vibration was triggered, and upon shutdown and inspection, it was found that the motor's bearings had worn out prematurely. The root cause was determined to be poor lubrication caused by a malfunctioning automatic lubrication system, which had not been applying sufficient oil to the motor's bearings. The motor was running at high speed without adequate lubrication, causing the bearings to overheat and degrade. To resolve the issue, the bearings were replaced, and the lubrication system was repaired and recalibrated to ensure consistent oil application. A more frequent manual inspection of the lubrication levels was also introduced as part of the preventive maintenance routine.

**Occurrence 9: GL01 Glue Nozzle Clogging**

In the middle of a production shift, operators observed that the glue lines were not consistently applied to the products. A warning for partial clogging of the glue nozzle (GL01) was triggered, which resulted in uneven glue application. Upon investigation, it was discovered that residual glue had solidified inside the nozzle due to inconsistent cleaning practices between shifts. The root cause was a combination of using glue that thickens quickly and a failure to follow the nozzle cleaning procedure at the end of each shift. The clog was cleared by cleaning the nozzle, and to prevent future issues, a new cleaning protocol was implemented to ensure the nozzle is fully flushed at the end of every shift to prevent glue buildup.

**Occurrence 10: PK01 Label Printer Alignment Failure**

During a packaging run, operators noticed that labels were being printed incorrectly, with the text misaligned on the packaging. A warning for misalignment in the PK01 label printer was logged, halting production to avoid further defective products. Upon investigation, it was discovered that the sensor guiding the label placement had shifted out of position, causing the printer to apply labels inaccurately. The root cause was loose mounting hardware on the sensor, which allowed it to move slightly during normal operation. After re-securing the sensor and realigning the printer, the labeling resumed correctly. As a preventive measure, regular checks of the sensor's mounting were added to ensure it remains fixed in the correct position.

**Occurrence 11: IN01 Sensor Overheating**

During a prolonged production shift, the inspection sensor (IN01) began providing inaccurate readings, rejecting products that met quality standards. The sensor also displayed intermittent calibration errors. Upon inspection, it was found that the sensor was overheating due to inadequate ventilation in its housing. The cooling fan inside the sensor’s casing had failed due to dust buildup, which caused the temperature inside the sensor to rise beyond operational limits. The root cause was the failure to clean and maintain the sensor’s cooling fan, allowing dust to block airflow. The fan was cleaned, and the sensor returned to normal operation. To prevent future overheating, regular cleaning of the sensor housing and fans was added to the maintenance checklist.

**Occurrence 12: FD01 Feeder Speed Fluctuation**

During a production run, the feeder motor (FD01) experienced irregular speed fluctuations, causing an uneven feed rate for the materials. The production line slowed down as the feeder was unable to maintain the set RPM. Upon investigation, the cause was traced to a faulty speed controller, which was intermittently malfunctioning due to a loose electrical connection. The root cause was determined to be improper installation during a previous repair, where the connection was not securely fastened. After tightening the electrical connections and replacing the speed controller, the motor resumed normal operation. As a preventive measure, electrical connection checks were added to the routine maintenance protocol.

**Occurrence 13: CT01 Blade Overheating**

In the middle of a high-speed cutting operation, the CT01 cutting motor issued a warning for blade overheating. The motor was automatically slowed down to prevent further damage, but production was affected as cutting speed was reduced. After the motor cooled down, maintenance found that the blade had become dull due to extended use and was generating excessive heat due to the increased resistance during cutting. The root cause of this failure was delayed blade replacement, as the blade had exceeded its recommended lifespan without being replaced. The dull blade caused excess friction, leading to overheating. The blade was replaced, and the motor returned to normal speed. To avoid future overheating, a blade replacement schedule was implemented based on usage hours rather than waiting for a failure warning.

**Occurrence 14: PK01 Conveyor Belt Motor Overload**

During a heavy production run, the PK01 conveyor belt motor began slowing down and eventually stopped due to an overload warning. Upon investigation, it was found that excess weight on the conveyor belt had caused the motor to exceed its load capacity. The root cause was improper distribution of products on the belt, where an uneven load distribution caused strain on one side of the motor. This led to a motor overload and stoppage. To resolve the issue, the products were evenly distributed across the belt, and the motor was restarted. Additionally, new load distribution guidelines were implemented to prevent uneven loading on the conveyor in the future.

**Occurrence 15: GL01 Glue Temperature Instability**

During glue application for Product C, operators noticed that the glue was not setting properly. A warning was triggered for fluctuating glue temperature in the GL01 motor. Upon inspection, it was found that the glue heater had malfunctioned, causing the glue temperature to drop below optimal levels. The root cause was a faulty temperature sensor in the heating element, which had been sending incorrect signals to the heater, causing it to switch off intermittently. The sensor was replaced, and the glue temperature returned to normal. As a preventive measure, a more frequent inspection of temperature sensors was implemented to detect and replace faulty sensors before they affect production.

**Occurrence 16: SH01 Belt Fraying**

Operators reported that the SH01 shaping motor was running slower than usual, and the shaping process was not consistent. A visual inspection revealed that the drive belt was fraying along the edges, causing it to slip on the motor pulley. The root cause was the belt’s prolonged use without replacement, which had weakened the belt’s structural integrity. The fraying reduced the belt’s ability to grip the pulley effectively, leading to slippage and reduced performance. The belt was replaced with a new one, and the motor resumed normal operation. To prevent similar failures, a belt replacement schedule based on usage time was introduced to ensure timely replacement before excessive wear occurred.

**Occurrence 17: IN01 Inspection Sensor Misread Due to Light Interference**

During a quality check, the inspection sensor (IN01) began rejecting products incorrectly. Upon further analysis, it was determined that the sensor was misreading the product dimensions due to inconsistent light conditions in the factory. An external light source had been installed near the inspection area, causing glare and interference with the sensor’s reading capabilities. The root cause of the sensor’s misread was the uncontrolled lighting environment, which affected its ability to accurately detect defects. The external light was repositioned to reduce interference, and additional shielding was added around the sensor to ensure consistent lighting. As a preventive measure, guidelines were established for controlling lighting near sensitive inspection equipment.

**Occurrence 18: PK01 Packaging Jam**

During peak production, operators reported that the packaging machine (PK01) had stopped due to a jam. A warning for motor overload was logged as the packaging material had become tangled in the conveyor rollers, causing a backup and overload of the motor. The root cause was improper loading of packaging material, where an incorrectly placed roll of packaging film caused tension to build up in the machine. The jam was cleared by resetting the film, and operators were trained on proper loading techniques to prevent similar jams in the future. Additionally, an automated sensor was installed to detect improper film tension and alert operators before a jam could occur.

**Occurrence 19: FD01 Feeder Motor Stalling Due to Overload**

During the production of a heavier batch of material, the FD01 feeder motor began stalling intermittently. Operators noticed that the motor couldn’t maintain the expected RPM under the increased load. Upon inspection, it was found that the feeder was handling material that exceeded its design capacity, causing the motor to struggle. The root cause was an incorrect material type loaded into the feeder system, which was too dense for the motor’s capacity. The motor overheated from repeated stalls. To resolve the issue, the proper material was loaded, and operational guidelines were updated to prevent overloading.

**Occurrence 20: CT01 Cutting Motor Power Surge**

During a power fluctuation, the CT01 cutting motor received a surge in voltage, which caused it to run erratically and eventually trip the system’s safety relay. Upon further investigation, the electrical team found that the power surge bypassed the motor’s voltage stabilizer due to a malfunction in the surge protection unit. The root cause was determined to be a failure in the surge protection device, which allowed a power spike to damage the motor controller. The surge protection was replaced, and additional voltage monitoring was implemented to safeguard against future fluctuations.

**Occurrence 21: SH01 Motor Overheating Due to Fan Failure**

During a continuous 12-hour production shift, the SH01 shaping motor triggered an overheating alarm. The motor’s internal temperature continued to rise, despite the cooling fan running at full capacity. Upon further inspection, it was found that the motor's cooling fan was not effectively dissipating heat due to dust accumulation in the fan blades. The root cause was inadequate airflow caused by dust clogging the fan and surrounding vents. The fan was cleaned, and a more frequent maintenance schedule was introduced to avoid overheating due to poor airflow.

**Occurrence 22: GL01 Glue Reservoir Leak**

During glue application for Product B, operators noticed that the glue levels in the GL01 reservoir were dropping rapidly, despite the normal rate of glue consumption. Upon inspection, a slow leak was discovered at the bottom of the glue reservoir. The root cause of the failure was wear and tear in the reservoir’s seal, which had degraded over time due to exposure to high temperatures. The seal was replaced, and a regular inspection of reservoir seals was added to prevent similar leaks from going unnoticed.

**Occurrence 23: FD01 Feeder Motor Gearbox Failure**

The FD01 feeder motor experienced a sudden drop in output speed, followed by unusual grinding noises from the motor. Upon inspection, it was found that the gearbox attached to the motor had failed, with broken teeth found in the internal gears. The root cause was metal fatigue due to prolonged use of the gearbox beyond its service life, which caused the gears to eventually fail under load. The gearbox was replaced, and preventive maintenance schedules were revised to ensure gearbox components are regularly inspected and replaced before failure.

**Occurrence 24: CT01 Blade Warping**

During a high-speed production run, operators noticed that the cuts from the CT01 cutting motor were uneven. After stopping the machine, it was found that the cutting blades had warped, leading to inconsistent cutting angles. The root cause was overheating during extended cutting sessions, which caused the metal blades to lose their rigidity. The blades were replaced with a more heat-resistant alloy, and the cutting motor’s operational temperature was monitored to prevent blade warping during long production runs.

**Occurrence 25: SH01 Belt Slipping Due to Oil Contamination**

During a shaping operation, the SH01 motor’s belt began slipping on the pulleys, reducing the machine’s output efficiency. After an inspection, it was discovered that the belt had become contaminated with oil from a nearby lubrication system that had leaked. The root cause of the failure was a loose fitting on the lubrication line that allowed oil to drip onto the motor belt, causing slippage. The leak was repaired, the belt was cleaned, and spill prevention measures were added to avoid contamination of critical components.

**Occurrence 26: GL01 Glue Hardening in Pipes**

During the start of a new production cycle, operators found that no glue was being dispensed despite the GL01 motor operating normally. After investigation, it was discovered that glue had solidified inside the piping system due to prolonged downtime without cleaning. The root cause was a failure to flush the system during an extended production stop, which allowed glue to harden within the pipes. The pipes were cleared and flushed, and a procedure was introduced to regularly clean the piping system during long downtimes.

**Occurrence 27: PK01 Label Printer Software Malfunction**

During a batch of Product C, the PK01 label printer began printing incorrect labels with distorted text. The issue was traced to a software malfunction that caused the printer to misinterpret label design files. The root cause was an untested software update that had introduced a bug in the label formatting algorithm. The previous version of the software was reinstalled, and the printer resumed normal operation. A more rigorous testing procedure for software updates was implemented to avoid future software-induced malfunctions.

**Occurrence 28: FD01 Feeder Belt Misalignment**

Operators reported that material feeding from the FD01 motor was inconsistent, with frequent blockages. Upon inspection, it was found that the feeder belt had become misaligned, causing the material to skew to one side and jam. The root cause was a misalignment in the belt tracking system due to uneven wear on the belt rollers. The rollers were replaced, and the belt tracking system was realigned. To prevent future occurrences, periodic inspections of belt alignment were scheduled.

**Occurrence 29: CT01 Motor Bearing Seizure**

During a cutting operation, the CT01 motor suddenly stopped working, and operators found that the motor could no longer turn. Upon disassembling the motor, the maintenance team found that one of the motor bearings had seized due to debris entering the bearing housing. The root cause was a damaged bearing seal, which allowed fine particles to enter and cause the bearing to lock up. The bearing was replaced, and the seal was upgraded to a more durable material to prevent debris ingress.

**Occurrence 30: SH01 Motor Coupling Failure**

In the middle of a production cycle, the SH01 shaping motor failed to transmit power to the shaping mechanism, causing an unexpected halt. Upon inspection, it was found that the motor coupling had sheared off, disconnecting the motor from the drive shaft. The root cause of this failure was excessive torque applied to the coupling due to a sudden surge in load, which exceeded the coupling’s design tolerance. The coupling was replaced with a higher torque-rated model, and load monitoring was improved to avoid sudden surges.

**Occurrence 31: GL01 Glue Viscosity Out of Tolerance**

During the production of Product D, operators noticed that the glue application was inconsistent, with some products receiving too much glue and others too little. A viscosity check revealed that the glue had thickened beyond the acceptable range. The root cause was improper storage of glue, where it had been exposed to fluctuating temperatures that caused it to thicken. The batch of glue was discarded, and stricter storage temperature controls were put in place to maintain glue quality.

**Occurrence 32: PK01 Conveyor Belt Overheating**

The PK01 conveyor belt motor began emitting a burning smell during a prolonged production run. Operators immediately stopped the conveyor and found that the motor had overheated due to excessive friction. Upon further inspection, it was discovered that one of the conveyor rollers had become jammed, causing the belt to rub against a stationary surface. The root cause was a lack of lubrication on the roller bearings, which caused the roller to seize. The bearings were lubricated, and additional checks were scheduled to ensure all rollers remain properly lubricated.

**Occurrence 33: IN01 Camera Malfunction Due to Light Flicker**

During a quality inspection, the IN01 sensor began rejecting a large number of products without any visible defects. Operators observed that the light source used for inspection was flickering intermittently, which confused the sensor. Upon inspection, it was found that the power supply to the light source was unstable, causing the flickering. The root cause was a faulty power supply unit that needed replacement. After replacing the power supply, the light source stabilized, and the sensor resumed normal operation.

**Occurrence 34: FD01 Feeder Motor Chain Wear**

During a routine inspection of the FD01 feeder motor, the chain connecting the motor to the feeder system was found to be excessively worn, with visible elongation in the chain links. The motor was still functioning, but the worn chain was close to breaking. The root cause was a lack of regular tension adjustments, which allowed the chain to stretch under load. The chain was replaced, and a chain tension adjustment schedule was introduced to ensure the chain remains properly aligned and tensioned.

**Occurrence 35: CT01 Cutting Blade Misalignment**

Operators noticed that the cuts made by the CT01 motor were skewed, resulting in uneven product dimensions. After stopping the motor, it was found that the cutting blade had shifted slightly out of alignment. The root cause was found to be improper mounting of the blade during a previous maintenance cycle, where the mounting bolts were not fully tightened. The blade was realigned and secured, and a new procedure was implemented to double-check all critical mounting points after any maintenance.

**Occurrence 36: SH01 Pulley Cracking**

During a shaping operation, the SH01 motor began making unusual noises, and operators found that the shaping process was slower than usual. Upon inspection, a crack was discovered in the motor’s drive pulley, which had caused uneven power transmission. The root cause was material fatigue in the pulley, which had developed cracks after long-term use under high load. The pulley was replaced with a stronger alloy, and routine inspections were introduced to check for cracks in high-stress components.

**Occurrence 37: GL01 Glue Flow Obstruction**

Operators reported that the glue application was inconsistent, with reduced flow from the GL01 glue motor. After disassembling the glue dispenser, it was found that a small piece of hardened glue had lodged in the dispensing nozzle, partially blocking the flow. The root cause was insufficient flushing of the glue system after a previous production run, which allowed glue to harden inside the nozzle. The blockage was cleared, and a more thorough cleaning procedure was implemented to prevent residual glue from hardening.

**Occurrence 38: PK01 Label Printer Ribbon Jam**

The PK01 label printer stopped printing mid-production, with a ribbon jam warning displayed on the console. Upon inspection, it was found that the label printer ribbon had become tangled inside the printer mechanism due to improper tensioning. The root cause was incorrect installation of the ribbon, where the tension adjustment was not properly set, allowing the ribbon to bunch up. The ribbon was reinstalled correctly, and operator training was updated to ensure proper ribbon tensioning during setup.

**Occurrence 39: FD01 Feeder Motor Cooling Failure**

During a high-speed feed operation, the FD01 feeder motor issued a high-temperature warning. Despite the motor cooling fan running, the motor temperature continued to rise. Upon investigation, it was found that the cooling fan’s intake was blocked by dust, preventing it from drawing in air. The root cause was poor maintenance of the cooling system, which allowed dust to accumulate in the intake vents. The fan was cleaned, and additional cleaning procedures were put in place to ensure the cooling system remains clear.

**Occurrence 40: CT01 Blade Vibration Due to Uneven Wear**

Operators noticed that the CT01 motor was vibrating excessively during cutting operations. Upon closer inspection, it was found that one of the cutting blades was more worn on one side than the other, causing an imbalance. The root cause was uneven distribution of cutting loads during previous production runs, which caused one side of the blade to wear faster than the other. The blade was replaced, and cutting procedures were adjusted to ensure even distribution of cutting forces across the blade.

**Scenario 41: FD01 Feeder Motor Chain Slipping**

During a high-volume production run, the FD01 feeder motor began losing torque, causing inconsistent material feed. Upon inspection, it was found that the feeder chain had slipped off the sprocket. The root cause was wear on the sprocket teeth, which had become rounded over time, reducing their ability to hold the chain in place. The sprocket was replaced, and a preventive replacement schedule was implemented for worn components before complete failure.

**Scenario 42: CT01 Cutting Blade Overheating Due to Coolant Failure**

During a high-speed cutting operation, the CT01 motor issued a temperature warning for the blades. Upon inspection, it was discovered that the cutting coolant system had failed, leading to excessive friction and overheating. The root cause was a clogged coolant line that prevented proper flow to the blades. The coolant system was cleaned, and new filters were installed. Regular coolant line inspections were added to the maintenance schedule to ensure adequate cooling.

**Occurrence 43: SH01 Motor Torque Loss Due to Shaft Misalignment**

While shaping products, the SH01 motor lost torque and was unable to maintain its usual speed. Maintenance discovered that the drive shaft had become misaligned due to loose mounting bolts, causing inefficient power transfer. The root cause was improper torque applied to the bolts during a previous repair. The bolts were retightened, and the motor shaft was realigned. A post-repair checklist was introduced to ensure all components are properly secured after maintenance.

**Occurrence 44: GL01 Glue Pump Airlock**

During a glue application, operators noticed that no glue was being dispensed, even though the motor was running. Investigation revealed that an air bubble had formed in the glue pump, preventing glue from flowing. The root cause was improper priming of the pump after the last glue refill, allowing air to enter the system. The airlock was cleared, and a proper pump priming procedure was added to prevent air from entering the system during refills.

**Occurrence 45: PK01 Conveyor Belt Tension Loss**

The PK01 conveyor belt started moving sluggishly and slipping during operation. Upon inspection, it was found that the belt tension had decreased significantly due to stretching over time. The root cause was normal wear and tear on the belt material, which led to elongation. The belt was replaced, and a tension adjustment schedule was implemented to prevent belt slippage.

**Occurrence 46: FD01 Motor Controller Overload**

The FD01 feeder motor stopped suddenly during a production run, and an overload warning was triggered. Investigation showed that the motor controller had overheated due to prolonged operation at maximum load. The root cause was insufficient cooling for the controller, which was exacerbated by high ambient temperatures in the control room. Additional ventilation was installed in the control room to improve airflow and reduce the risk of future controller overloads.

**Occurrence 47: CT01 Blade Imbalance Due to Improper Mounting**

After replacing the cutting blades on the CT01 motor, operators noticed significant vibration during cutting operations. The maintenance team discovered that the blades had been improperly mounted, leading to an imbalance. The root cause was operator error during blade installation. The blades were remounted correctly, and operator training was updated to ensure proper blade mounting procedures.

**Occurrence 48: SH01 Motor Overcurrent Trip**

During a shaping operation, the SH01 motor tripped due to an overcurrent condition. After further inspection, it was found that the motor’s load exceeded its rated capacity due to an obstruction in the shaping mechanism, which caused the motor to work harder. The root cause was a small piece of material that had become lodged in the shaping tool, increasing the load on the motor. The obstruction was cleared, and the motor resumed normal operation. A regular cleaning routine was introduced to prevent foreign objects from entering the shaping mechanism.

**Occurrence 49: GL01 Glue Pump Cavitation**

Operators noticed a loud noise from the GL01 glue pump during operation, followed by a decrease in glue output. Upon inspection, it was found that cavitation was occurring inside the pump due to excessive speed. The root cause was an incorrect speed setting on the pump controller, which caused air pockets to form inside the pump, reducing efficiency. The speed was adjusted to the correct level, and the pump returned to normal operation. The operating parameters for the glue pump were recalibrated to prevent future cavitation.

**Occurrence 50: PK01 Label Misprinting Due to Sensor Malfunction**

During a packaging run, the PK01 label printer began misprinting labels with incorrect positioning. Upon investigation, it was found that the label alignment sensor had failed, causing the printer to misalign the labels. The root cause was a faulty sensor that had reached the end of its operational life. The sensor was replaced, and periodic sensor checks were added to the maintenance routine to catch similar failures before they affect production.

**Occurrence 51: FD01 Motor Vibration Due to Loose Mounts**

During a routine inspection, excessive vibration was detected in the FD01 feeder motor. After investigation, it was found that the motor’s mounting bolts had loosened over time, allowing the motor to vibrate more than usual. The root cause was insufficient torque applied to the mounting bolts during installation. The bolts were retightened to the correct torque specifications, and a new procedure for checking and tightening mounting bolts was implemented.

**Occurrence 52: CT01 Blade Dulling Due to Material Hardness**

During a cutting operation, the CT01 motor began cutting slower than usual, and the blade appeared to be dulling faster than expected. After further investigation, it was found that a batch of material harder than the motor’s usual specification had been loaded into the system, causing the blades to wear down more quickly. The root cause was a miscommunication between the material supplier and the production team, leading to the use of non-standard material. The correct material was reloaded, and communication protocols were updated to prevent future material mismatches.

**Occurrence 53: SH01 Belt Tension Sensor Failure**

Operators noticed that the SH01 motor’s belt was becoming slack, despite the belt tension warning sensor showing normal readings. Upon inspection, it was found that the belt tension sensor had failed and was providing inaccurate data. The root cause was corrosion in the sensor’s wiring, which caused false readings. The sensor and wiring were replaced, and additional protective measures were taken to prevent moisture buildup around the sensor.

**Occurrence 54: GL01 Glue Pump Seizing Due to Foreign Object**

During glue application, the GL01 motor began making a grinding noise and stopped dispensing glue. After dismantling the pump, it was found that a small piece of debris had entered the pump, causing the gears to seize. The root cause was a failure to properly filter the glue before it entered the pump. The debris was removed, and a fine-mesh filter was installed in the glue line to prevent foreign objects from entering the pump in the future.

**Occurrence 55: PK01 Conveyor Jam Due to Package Overload**

The PK01 conveyor motor tripped during a large packaging run, and operators found that the conveyor had jammed. Upon inspection, it was discovered that too many packages had been placed on the conveyor at once, exceeding the motor’s capacity. The root cause was an operator error in overloading the conveyor. To prevent future jams, load limits were established for the conveyor, and additional training was provided to operators on proper loading procedures.

**Occurrence 56: FD01 Feeder Motor Electrical Short**

During operation, the FD01 motor suddenly stopped, and an electrical burning smell was detected. Upon investigation, it was found that one of the motor’s electrical connections had shorted due to insulation breakdown. The root cause was old wiring that had deteriorated over time. The damaged wiring was replaced, and the rest of the motor’s electrical system was inspected for further signs of wear. A more frequent electrical inspection schedule was introduced to catch worn wiring before it fails.

**Occurrence 57: CT01 Blade Vibration Due to Poor Material Feed**

During a cutting operation, the CT01 motor experienced significant vibration, and the cuts became jagged. Upon investigation, it was found that the material was being fed into the blades unevenly, causing the motor to work harder on one side. The root cause was a misalignment in the material feeder system that caused the material to shift to one side during feeding. The feeder was realigned, and the motor resumed normal operation. Regular feeder alignment checks were added to the maintenance schedule.

**Occurrence 58: SH01 Belt Snapping Due to Overload**

During a shaping operation, the SH01 motor’s belt snapped, causing an immediate halt in production. Upon inspection, it was discovered that the motor had been running under an overload condition for an extended period, which placed excessive strain on the belt. The root cause was an incorrect setting on the motor controller, which allowed the motor to exceed its rated load capacity. The controller was recalibrated, and a stronger belt was installed. Load monitoring was improved to ensure the motor operates within safe limits.

**Occurrence 59: GL01 Glue Level Sensor Failure**

During a glue application, the GL01 motor continued running despite the glue reservoir being empty. The operators discovered that the glue level sensor had failed to detect the low glue level. The root cause was a malfunction in the sensor’s float mechanism, which had become stuck due to glue residue. The sensor was cleaned and recalibrated, and regular cleaning of the sensor was added to the maintenance routine to prevent future malfunctions.

**Occurrence 60: PK01 Label Printer Ribbon Breakage**

During a labeling run, the ribbon in the PK01 label printer snapped, halting the labeling process. Upon inspection, it was found that the ribbon tension was too high, causing the ribbon to stretch and eventually break. The root cause was an incorrect tension setting on the ribbon feed system. The tension was adjusted to the proper level, and operator training was updated to ensure correct tension settings are used during ribbon installation.