

Improved PM Example

Compare this ideal example to the PM Optimization criteria.

EQUIPMENT	Automatic Hgt Broach
PM NUMBER	M6MHGTPM
FREQUENCY	180 Days
TITLE	Perform Mechanical 6 Month PM on Hgt Broach
LOCATION	H-Line Autoline
CRAFT	Mechanic
ESTIMATED M/H	8 hrs
TOOLS / MATERIALS	<ol style="list-style-type: none">1. Mechanic toolbox2. Machinist Level3. BIJUR Lubrication Filter: part no. xxxx4. Clean shop towels5. Tonna V-68 oil6. Flywheel Bearings xxxx7. Grease for flywheel bearings8. Valvata 680 oil9. Lincoln lubricator grease
PERSONAL PROTECTIVE EQUIPMENT	<ol style="list-style-type: none">1. Safety glasses w/side protection

DESCRIPTION

1. LOCKOUT / TAGOUT equipment in accordance with plant policies and procedures and test LOCKOUT / TAGOUT.
2. Use a machinist level and verify the Broach is sitting level. Inspect the foundation anchors for any signs of becoming loose or movement. Verify all anchor bolts are secure and no leveling shims are missing. Correct foundation discrepancies if noted during inspection.
3. Inspection of the connecting rod pin and bushing. Nominal size of bushing is 1.288 OD x .750 ID. Remove connecting rod pin from bushing for inspection.
 - Visually inspect the pin for signs of galling, bending, or other physical damage.
 - Visually inspect the bushing ID for roundness, burs, galling, or other signs of damage.
 - Replace pin and bushing if any deformity is noted from visual inspection.
4. Remove the BIJUR Lubricator. Replace filter. Inspect the BIJUR Lubricator oil for signs of sediment or other contamination. If contamination is found, drain oil from reservoir and clean. Use clean shop towels to wipe reservoir clean. Inspect O-ring seals for cuts or deformation and replace if damage is noted on O-ring. If damage is found, inspect the O-ring seal seats for root cause. Refill lubrication unit with Tonna V-68 oil.
5. Inspect both rack gears in the feed assembly for signs of wear or damage. If gear tooth wear shows signs of material loss, uneven wear patterns, or burs, then schedule corrective action to replace gears.

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6. Inspect the brake / clutch plates for signs of grooves or uneven wear caused by disc wear. Verify disc thickness is within manufactures tolerance for use (Insert here tolerance for disc thickness). Inspect brake / clutch pin and operating mechanisms for looseness or mechanical slop. Mechanical connection to clutch should be firm and provide positive operation. Schedule corrective action to replace or repair brake / clutch.
7. Replace flywheel bearings. Repack bearing with grease (Grease type spec.) and set to preload clearance of (added from manufacture's specification).
8. Inspect the clutch gap clearance and verify gap is .050 inch. Make clutch adjustments if required to obtain correct gap measurement.
9. Inspect the flywheel drive belts for signs of nicks, cuts, or other belt damage. Measure belt tension per manufacture's specification. (Insert tension deflection or belt frequency meter measurement.) Adjust belt tension as required per specification. Replace belt if damaged or correct tension is not possible.
10. Inspect the load conveyor bearings, rollers, and drive components. Verify all bearings are rotate freely without drag or binding.

Inspect all rollers for breaks, cracks, or damage that would create problems during operation.

Inspect each drive component in the conveyor for proper point lubrications, check that set screws on gears / pulleys are tight, and motor / gearbox drives couplings are tight with no signs of oil leaks or metal wear debris.

Replace identified worn components as possible. Scheduled corrective actions for items that will require more time to repair.

11. Use ultrasonic listening tool and inspect all pneumatic cylinders for blow by. Note cylinders that are leaking and schedule replacement corrective actions. (Create inspection list of cylinders in Broach to document each cylinder was inspected.)
12. Use ultrasonic listening tool to inspect all pneumatic control valves and fitting connectors for leakage. Inspect tubing for nicks, cuts, or rub holes. Replace or repair leaks as found. Schedule corrective actions if further repairs are needed.
13. Replace the Load Conveyor belt. Measure and record distance between sheaves after belt is installed. Note in machine log book and belt length so belt stretch can be tracked over time. Belt length measurement: inches (or mm?)
14. Inspect the oil level in the bullgear reservoir sight glass. If oil is lower than the low limit indication, add Valvata 680 oil to reservoir to bring level to within operation run level.

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15. Inspect the crankshaft and jackshaft grease lubrication lines. Verify all lines and hoses are in good condition. Inspect for signs of grease leaking or wear rubs on lines. Replace lines where leaks are found and create corrective actions for additional repairs.
16. Verify all machine safety guards are in place and secure. Replace missing or damaged fasteners. Do not remove LOCKOUT / TAGOUT until all machine safety is in place.
17. Inspect all bushings in the equalized lift cylinders and pivot points. Replace any bushings that are loose or showing signs of mechanical wear. Verify all pivot points move smoothly without slop or binding.
18. Inspect the tightness of the shoulder bolt between the yoke and equalizer lift cylinder. Verify the bolt is tight and the assembly operates smoothly without binding.
19. Remove the Lincoln lubricator and remove old grease. Clean the grease reservoir and the inner ejection tube using clean shop towels.

Reload lubricator with new grease (Grease spec?) and replace lubricator unit.

Verify grease is flowing freely through distribution blocks. Clean distribution blocks and lines as required to ensure grease flows to lubrication points.

20. Notify the P.E.T. that the ram needs to be adjusted all the way UP. After the ram has been adjusted to the UP position, insert the ram safety pin.

CAUTION: Apply LOCKOUT / TAGOUT for personal safety while working on potential energy sources.

Remove the adjustor, wedge end plates, and forks inside the ram. Clean all dirt and debris from removed components and replace.

Clear LOCKOUT / TAGOUT for ram after completing task.

21. Remove LOCKOUT / TAGOUT and return equipment to normal operation.

Notify P.E.T. that the task is complete and that machine set-up can begin. Record all activities and corrective actions in work order.