
Restroom Exhaust Fan Belt Replacement and Motor Lubrication

1.0 Maintenance Objective & Frequency

The objective of this procedure is to replace the drive belt and lubricate the motor bearings on a restroom exhaust fan to maintain proper airflow, prevent belt slippage or breakage, and extend motor life. This PM is to be performed every 6 months (semi-annually) or at 2,000 operating hours, whichever comes first.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** Disconnect the exhaust fan from its dedicated circuit breaker or disconnect switch. Apply a personal lock and tag.
- **Mechanical Isolation:** Ensure the fan wheel has come to a complete stop before accessing the drive components.
- **PPE:** Safety glasses, cut-resistant gloves, and hearing protection (if fan is in a noisy area).
- **Confined Space:** If the fan is in a ceiling plenum or tight space, follow confined space entry procedures if applicable.

3.0 Required Tools, Parts & Lubricants

- Replacement drive belt (match OEM part number or measure belt cross-section and length)
- Motor bearing grease (NLGI Grade 2, high-temperature, e.g., Mobil Polyrex EM or equivalent)
- Grease gun with compatible coupler
- Adjustable wrench or socket set (typically 10mm, 13mm, or 1/2 inch)
- Allen key set (for set screws on pulleys)
- Belt tension gauge (e.g., Gates Krikit or equivalent)
- Rags and cleaning solvent
- Flashlight

4.0 Step-by-Step Maintenance Procedure

1. Perform LOTO: Isolate electrical power to the fan at the breaker or disconnect switch. Lock and tag out. Verify zero energy by attempting to start the fan.
2. Remove the access panel or grille covering the fan drive assembly. Use appropriate tools to avoid damaging fasteners.
3. Inspect the existing belt for signs of wear, cracking, glazing, or fraying. Note the belt part number or measure its length and cross-section for replacement.
4. Loosen the motor mounting bolts (typically two or four bolts) using an adjustable wrench or socket. Do not remove bolts completely; just loosen enough to slide the motor toward the fan wheel.
5. Slide the motor toward the fan wheel to relieve belt tension. Remove the old belt from the pulleys.
6. Clean the pulley grooves with a rag and solvent to remove any belt debris or grease buildup. Inspect pulleys for wear or damage; replace if grooves are worn or chipped.

7. Install the new belt onto the pulleys without forcing or prying. Ensure the belt is seated properly in the grooves.
8. Slide the motor away from the fan wheel to tension the belt. Tighten the motor mounting bolts to the manufacturer's torque specification (typically 20-30 Nm for small motors).
9. Check belt tension using a belt tension gauge. For a standard V-belt, deflection should be approximately 1/64 inch per inch of belt span (e.g., 1/4 inch deflection for a 16-inch span). Adjust motor position as needed.
10. Lubricate the motor bearings: Locate the grease fittings (zerk fittings) on the motor. Wipe fittings clean, then apply 2-3 pumps of grease using a grease gun. Do not over-grease, as this can cause bearing overheating.
11. Rotate the fan wheel by hand to ensure the belt tracks correctly and there is no binding. Check that all fasteners are tight.
12. Reinstall the access panel or grille. Remove LOTO devices and restore power.

5.0 Verification & Return to Service

1. Turn on the fan and listen for unusual noises (squealing, rubbing, or grinding). Verify smooth operation.
2. Measure airflow at the exhaust grille using an anemometer (if available) to confirm adequate ventilation. Compare to baseline readings.
3. Check for any vibration or excessive heat after 5 minutes of operation. If abnormal, shut down and re-inspect belt tension and pulley alignment.
4. Sign off on the PM work order in ServiceGrid, noting belt part number, grease used, and any observations.

Regulatory Disclaimer: This document is a generic maintenance template provided for educational and informational purposes only. It does not constitute professional engineering or reliability advice. The end-user assumes all liability for validating all step sequences, torque specs, and LOTO protocols against specific machinery OEM manuals before deployment to a live production floor.