

Step	Activity	Details
1. Preparation	- Notify hospital & OT supervisor- Power down AHU- Wear PPE- Seal OT ducts	Ensure safe and contamination-free environment before maintenance starts.
2. Initial Inspection	- Check filters, coils, fans, drain pans- Record observations	Identify parts needing cleaning or replacement.
3. Filter Replacement	- Remove used filters (pre, secondary, HEPA)- Dispose per biohazard rules- Install certified new filters	Use filters meeting $\geq 99.97\%$ efficiency @ $0.3\mu\text{m}$ for OT use.
4. Internal Cleaning	- Disinfect internal housing- Clean coils (non-corrosive agents)- Clean drain pan	Ensure all surfaces and parts are sanitized and functioning.
5. Fan & Motor Maintenance	- Clean fan blades- Lubricate bearings- Inspect motor for faults	Maintain mechanical integrity and airflow efficiency.
6. Duct Cleaning	- Inspect ducts- Clean using HEPA vacuum system (if needed)	Remove dust and microbial buildup in OT ducts.
7. Reassembly & Testing	- Reinstall parts- Power up AHU- Test airflow, temp, humidity- DOP test for HEPA	Verify full system performance and sterile air quality.
8. Final Documentation	- Log activities and test results- Report to maintenance/infection control- Schedule next cleaning	Ensure traceability and compliance with hospital standards.