

O & M INSTRUCTION

PRODUCT GROUP 1908 - AIR HANDLING UNIT

SUMMARY for	
CUSTOMER	
SITE LOCATION	
SPARES LIST	ORDER REFERENCES:
	CUSTOMER REFERENCE: PFL-LA-0208033.9
TECHNICAL PERFORMANCE	17 m
Fan	
Motor	
Drive Gear	
Drive Belts*	
Prefilter**	

KEY

Items marked * Recommend hold one se of these as spares on site
 Items marked ** Recommend these are changed every three months
 Items marked *** Recommend these are changed as required, probably 6 monthly.

If we are on service contract with yourselves after three months we will test the activated carbons and provide of when we anticipate these requiring to be changed based on the available adsorption (life remaining) based at the time of test.



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Ref: Y

Safety

It is recommended that industrial gloves, overalls, eye protection and nuisance dust masks are utilised when changing filters which have been subjected to natural air, as opposed to air drawn from processes, where full risk assessments should be performed prior to changing. For some filters, an assessment regarding manual handling will need to be made.

Changing of filters should be carried out by experienced or trained personnel, in accordance with safety requirements as defined by the "Control of Substances Hazardous to Health (COSHH) Regulations. ie. Someone who fully understands the design, operation and implications of the product and its use.

ENSURE THE UNIT IS ELECTRICALLY ISOLATED BEFORE ANY WORK IS PERFORMED–this includes the control circuits as valves/dampers/motors may open / close without warning.

General

Inspection and maintenance at six monthly intervals.

Direct Driven Fans

1. Motors have sealed bearings and require no further lubrication.
2. Check motors for overheating.
3. Check motor bearings for wear.
4. Check general condition of motor including electrical connections.
5. Check security of fan impellers on motor shafts.
6. Remove any build up of dust on fan impellers.

Belt Driven Fans

1. Motors have sealed bearings and require no further lubrication.
2. Check motors for overheating.
3. Check motor bearings for wear, replace if wear is excessive.
4. Check general condition of motors including electrical wiring, insulation and earth cable connections.
5. Check pulley alignment, correct where necessary.
6. Check belt tension and adjust as necessary.

Fan and mounting Assemblies

1. Check that all bolts, nuts, screws and fasteners are secure and all components are damage free.
2. Check for damage to casing and impellers.
3. Check wear on Vee belts and pulleys, replace when necessary. Do not mix old and new belts, use the correct type.
4. Clean impeller to ensure against build up of dirt on the blades which will cause imbalance.
5. Fans are fitted with 'Sealed for life' ball bearings and should be inspected for wear and replaced when wear is excessive. No maintenance is required, any attempt to add grease could result in:
 - a. Pressurising or bursting the seals
 - b. Overpacking causing 'churning' of the grease leading to overheating and grease breakdown.

6. Check for flexible connectors for deterioration and that they provide an airtight connection.

Filters Panel and Bag Type

Disposable Type

1. Regular checks should be made for dust build-up on filter media by either:
 - a. Check Manometer Reading
 - b. Visual check
2. Replace filters if necessary.

Washable Type

1. As 1.a) and b) above
2. Wash and refit.
3. During commissioning period and also in areas where dust build-up is high filters should be checked and/or replaced, or washed more frequently to maintain maximum plant performance.

Coils- Heating LPHW and Steam

1. Face of coil should be checked during routine maintenance of plant.
2. Coil fins should be straightened with a comb if necessary.
3. Check return bend and headers etc. for leaks.
4. Check exterior connections for leaks.
5. Brush clean coil face area and remove dust.

Heating – Electric

1. Heating elements – of either coil or sheathed type check for any sign of damage or overheating.
2. Check electrical connection and if these are the spade terminal type ensure a tight fit, if stud and nut type these should also be checked for tightness.
3. Check insulators for damage.
4. Frayed or overheated cables should be replaced.
5. Dust or any other airborne matter should be carefully removed from heater and whole of section cleaned.

Chilled Water and DX Cooling Coils

1. As for heating LPHW and steam coils 1-5.
2. Clean drain pan and check there is no obstruction to drain pipe.
3. Refill 'U' traps.

General

1. All parts of the plant should be checked and cleaned periodically.
2. This would mean complete isolation from system i.e. Electrical Water Services etc.
3. Spindles on dampers check for ease of operation and lubricate where necessary.
4. Linkage arms checked for wear and ease of operation, that the length of travel by thrust motor is correct and no strain is caused.
5. Mixing and Access sections should be thoroughly cleaned.
6. Anti-vibration mountings inspected.
7. Flexible connections inspected for wear and securing bands checked to tightness.
8. Access door sealing strip checked for air leakage and replaced if necessary.

9. Drain pans are clean and there is no obstruction to drain pipe and traps are full.
10. Check that all ancillary equipment i.e. valves, motors, dampers associated with unit are in working order.

Disposal of Air Filters Including Personal Protective Equipment

- Filters and PPE have been damaged prior to use can be disposed of as normal industrial waste.
- Filters and PPE soiled with exterior air can be disposed of as normal industrial waste.
- Filters and PPE soiled by process air, bacterial, toxic and/or radioactive matter must be disposed of as Hazardous Waste in accordance with local regulations of the site and Environmental Health. Legislation prohibits removal of this waste from the site location.

CONDENSATE DRAIN DETAILS

All cooling coils have a BSP threaded male connection from the drain pan under the cooling coil as standard.

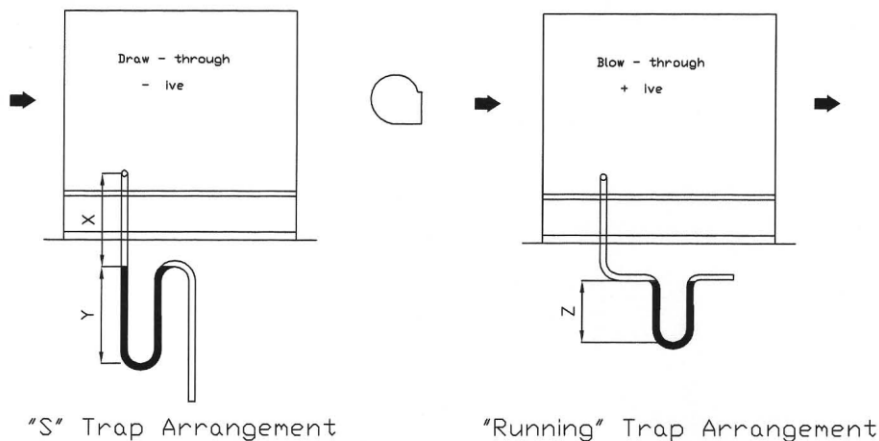
These should be fitted with a cleanable trap immediately adjacent to the connection to allow draining from the drain pan tray under the coil.

The trap must always be fully charged with water, so this must become part of the maintenance procedure. A range of Borosilicate traps are available, which allow the operator to visually ensure the trap is charged. It also incorporates a dosing position, for the adding of bactericides or similar preventative maintenance for bacteria growth.

If the trap is not fully charged then air will pass through the trap and prevent water passing into it, which will eventually cause the drain pan to overflow into the AHU, this is the same for both negative and positively pressured AHU's

We would recommend the use of Tunnel dishes (funnels) or similar air break devices, from each trap to the drain.

The arrangement should be as illustrated below.



“X” = Maximum suction pressure, mm wg + 50mm

“Y” = Maximum suction pressure, mm wg

“Z” = Maximum discharge pressure, mm wg + 50mm

Note:

- a) Maximum suction pressure
= sum of all pressure drops (Pa) across all components up to and including the coil or humidifier plus the external resistance before the unit.
- b) Maximum discharge pressure
= sum of all pressure drops (Pa) across all components from the coil or humidifier plus the external resistance after the unit.
- c) All filter pressure drops must be calculated in the dirty condition.
- d) 1mm of water gauge pressure = 10 Pa

For further information please contact Airclean Ltd
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