



AIR HANDLING UNIT

OPERATION & INSTALLATION MANUAL

ABSOLAIR LIMITED

Supplier of industrial/commercial air movement and air handling equipment

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CONSTRUCTION

Framework

Pentapost units are rigidly constructed using an extruded 30mm x 30mm x 3mm aluminium profile frame joined by cast aluminium corner joints. The frame has a satin anodised finish.

Strength, square ness and rigidity are ensured through an interference fit between post and frame, and riveting. Additional strength is provided by intermediate extruded aluminium mullions spaced to give set panel dimensions for maximum strength. Mullions are bolted to the frame using jig fixtures to ensure a precision fit, minimising air leakage before final sealing.

The pentapost unit profile is designed for double skinned cladding panels to fit into the frame recess forming a flush external finish between panel and frame.

Composite units are built with component sections, arranged in sequence according to individual installation specifications. The sections are normally of constant cross section throughout the unit length.

Panels

Cladding panels are 25mm, fabricated with a 1.0mm thick galvanised mild steel inner skin, and 0.7mm thick plastisol coated mild steel outer skin, and enclosing 60 kg³/m density rockwool material for acoustic and thermal insulation. Where appropriate for the panel dimensions and unit internal air pressure, panels are adequately stiffened to avoid distortion and drumming.

A flexible sealant is applied between cladding panels and unit frame, and the panels riveted to the frame from inside the unit giving clean external finish.

Access

Units are constructed to provide means for access for maintenance, and as required on individual installations to enable major components to be removed.

Unit access doors and panels have same construction as the unit cladding panels.

Lift-off doors are fitted where access is provided for maintenance or removal of fans (lockable), filters, and coils - on the component section itself, and on any adjacent empty unit sections provided for access to the component.

Removable panels are used for access to coils and gas fittings. These panels are fitted using propriety M6 fittings. Individual panel dimensions are limited to handleable sizes and weights as defined by current practice and regulation.

All access door and panel fittings are selected and installed to maintain an airtight seal after repeated use.

Weatherproofing

All units can be supplied suitable for outside installations. Weatherproofed units, unless specified, are supplied complete with a flat, plastic coated weather roof, but alternatively can be offered with pitched roof or sloped roof. Intakes, if not suitable for ducting, are fitted with louvres with birdmesh guards.

CONSTRUCTION CONTD.

Baseframe

Unit baseframes are manufactured from 2mm galvanised folded steel or painted RSC steel and treated as required for indoor or outdoor installation.

Where supplied for delivery and installation as a composite unit, all sections are factory mounted on a single continuous base running the full length of the unit. Cross channels are fitted wherever it is calculated that stress levels demand additional support of equipment.

Where the unit is to be supplied in sections each section will have its own base frame. These cannot be used as a point support for the whole unit, but should in turn, onsite, be mounted on a single continuous baseframe or block over the full length of the unit.

When air handling-unit is installed on a floor, ensure that the floor is level. When a unit is suspended, ensure that the fixings are isolated to minimize sound and vibration transmission. Example: If a unit is fixed directly to a wooden ceiling, it can act as a resonance box.

Whilst all units are fitted with anti-vibration mounts where necessary, we recommend that the complete unit is isolated with additional mounts or pads. Always use flexible connections between the unit and the ductwork.

All units are produced in accordance with the following standards and guidelines.

Low voltage guideline: 73/23/EEG / 93/68/EEG
Industrial standard: EN 60204/1

If not falling under the above industrial norm, the below mentioned norms will apply:

Fan with motor: HD 280 (IEC 342-1)
future: EN 60335-2-80 (IEC 335-2-80) (up to 250 V/AC or DC) Above 250V up to 480V the standard 335-1 is applicable.

Air handling units: EN 60335-2-30 (IEC 335/2/30)

Study for your own safety the general specifications closely

HEATER BATTERIES (L.P.H.W.)

These heater batteries are usually constructed from 0.5" or 0.625" outside dia seamless pipe. The pipe is of Copper tube with a wall thickness of nominally 0.5mm. The copper tubes have 0.16mm aluminium fins fixed by a punch method to the pipes. The fin spacing is dependant on the coil size and heat exchange required. The copper tubes are braised one end into copper headers, which have the coil flow, and return tubes, with BSP threads also braised into the headers. The remaining end of the copper tube is braised into return U's this means that flow and return are from one end only. The casing holding the tubes is manufactured from formed galvanized steel end plates. All batteries are tested to 24 bar before dispatch to ensure no damage or braising frailties are present.

Heating sections can be designed with one or more row coils, depending on the heating capacity required. The coil must be connected so that the water circulates in the opposite direction to the airflow.

When fitting the flow and return pipe work, hold the pipe work on the unit when tightening the couplings to avoid the pipe work in the coil being twisted resulting in leakage.

If the unit isn't equipped with a filter ensure that the coil is cleaned every 6 months. If there is a dusty environment this may need to be done more frequently.

Where heating sections are fitted with a detachable panel, please ensure that the **electrical supply is isolated** before removal, as the coils are using hot water it is advisable to check that the supply boiler is turned off during maintenance and the thermostat is not in a "demand" mode to avoid burns.

If you are working with heating delivered by a steam coil, then the coil will be fixed at a specific angle to prevent mixing from steam and water.

It is also possible to have heating by direct gas or oil fired heat exchangers. The exchanger is covered by a 10 year depreciating warranty.

The initial commissioning must be carried out by the burner manufacturing or by an approved installer. An annual maintenance should be carried out. The exchanger has cleaning heads on the burner side and it is important to check that the burner is firing correctly and the nozzle is not worn.

MEDIUM PRESSURE AND HIGH PRESSURE HOT WATER

These are of the same construction as previously mentioned for LPHW coil units except that the wall thickness of the copper tube is increased to a nominal 0.9m. The coil is tested to 24 Bar.

STEAM HEATING BATTERIES

The general construction of the steam coil is the same as for the LPHW coil, except for the header which runs horizontally across the coil and has two distinctive Headers. One at the bottom for return and one at the top for supply. The reason for this is to allow any condensate within the coil to be drained away before any pressure build up causes any major reasons.

COOLING BATTERIES (C.W & D.X)

The construction of the cooling coil is generally the same construction as for the LPHW batteries except that the casing is manufactured to allow for the inclusion of a galvanized drip tray under the coils to collect any condensate that will form on the coils surface. The drain connection can be provided to exit the casing from either side of the unit, and must be fitted with an appropriate sized trap (see page 14). The coil can be supplied with a moisture eliminator if the cooling rate is increasing the humidity level to a very high state. These can be fitted to reduce the amount of carry off in the air.

The cooling section can be fitted with a 4 or more row coil, depending on the capacity required. The connections must always be made in the opposite direction to airflow. There are arrows to indicate this. When connecting the couplings please hold the coil connections on the unit to avoid them being twisted and possibly cause leakage.

Cooling coils for direct expansion using various gases can also be supplied. In this case the hole for fitting of the expansion valve is left to the discretion of the installer.

A pipe entry is also fitted on the drain tray on the underside of the coil. You must always fit a suitable drainage system and ensure that there is a sufficient slope on the pipe work to prevent reverse flow.

If the unit isn't equipped with a filter, ensure that the coil is cleaned every 6 months. If there is a dusty environment this may need to be done more frequently.

Where cooling sections are fitted with a detachable panel, please ensure that the **electrical supply is isolated** before removal.

Please also ensure that the chiller or condensing units are not operating during maintenance.

COILS – ANNUAL INSPECTION

- Check coil connections on steam and water coils for leaks. Rectify if necessary.
- Carry out a refrigerant leak check on Direct Expansions coils.
- Inspect coil fin surfaces for dirt, lint and other foreign matter. Any foreign material should be removed by careful brushing with a soft brush, by vacuuming or in excessive cases by washing down the coil, to ensure maximum operating efficiency.

If there is a particularly heavy accumulation of foreign material, then more frequent replacement or cleaning of filters may be indicated or there may be air bypassing the filters.

- Check the drain pan and drain line on cooling coils and ensure that condensate is being properly drained and that there are no restrictions in the drain lines. Clean with a suitable biocide to prevent bacterial growth.
- Check operation of stem traps and clean out strainers.

FILTER SECTION

The filter section is provided with a special purpose holding rail for filter insertion. This rail is specifically designed to hold the filter that is incorporated in the unit.

The type of filters are generally of a throw away type. Also available are aluminium framed filters with washable media.

These are only available for panel filters and not for bags. The filter sections are always fitted with access panels to allow easy removal of the filters. The filters can be supplied at a reduced width arrangement if there is a space removal program on sliding filters.

When required to fit a high grade of filtration we would suggest that a pre filter of lower grade is fitted, this allows for larger particles to be taken out of the air before entering the higher grade filters giving the bag filters a longer life.

Units can be supplied with several different types of filters and in different configurations in accordance with customer requirements.

Flat filters or bag filters are available. The flat filters are supplied in three configurations depending on the air volume. For bag filters we have three categories depending on classification and filter quality.

All flat filters conform to the EU3/EU4 classifications whilst bag filters are available from EU3 to EU7 standards or up to EU10 for special applications.

Both flat or bag filters must be replaced when needed, to avoid problems with the installation. It is difficult to provide specific times for replacement. It is entirely dependent on the application, for instance in a spray booth compared with a furniture room.

We do advise that with a new building the filters are replaced after the first few weeks. this is because there is always a lot of dust from the construction.

Please ensure that the **electrical supply is isolated** before removing the access panel.

FILTER SECTION – PERIODIC INSPECTION

- To ensure unit operates at maximum efficiency, filters must be maintained on a regular basis.

The length of time between the replacement of throw away filters or the cleaning of permanent type filters will be dependent upon the condition of the air. A six month cycle is common, but more frequent servicing may be required in certain environments.

FAN SECTION

Ziehl-Abegg – centrifugal impellers without scroll in the series RH. available in sizes 225 to 1120, and the series ER. and GR. (type designation see rating plate) are not ready to use products, but designed as components for air-conditioning, air supply and air extraction installations. They may only be operated when they are installed as intended, and when safety is ensured by safety equipment according to DIN EN ISO 13857 (DIN EN ISO 12 100) or by other protection measures.

SAFETY INSTRUCTIONS

- The impellers are intended only for the transportation of air of mixtures that are similar to air. Usage in potentially explosive areas for the transportation of gas, mist, vapors or their mixtures is not permissible. The transportation of solid materials or similar materials in a transport media is not permissible.
- Only operate the fan according to the intended application, and only up to the **maximum permissible speed** given in the information on the fan/impeller rating plate. Exceeding the maximum permissible speed, leads, as a result of the high kinetic energy (mass x rotation rate), to a hazard situation. **The impeller can disintegrate – lethal hazard!** The maximum permissible operating data given on the rating plate are valid from air density $\rho=1.2 \text{ kg/m}^3$.
- In case of speed control through a frequency converter, it must be ensured that the max. permissible speed cannot be exceeded due to any frequency converter malfunction.
- In a fan system, consisting of motor, frequency inverter and impeller, impermissibly high vibrations can occur in narrowly limited speed ranges. Continuous duty is not permissible under these conditions. **The impeller could burst – danger of death!**
- Mounting, electrical connection and commissioning may only be carried out by trained specialized personnel who observe the **relevant regulations!**
- When using motors without temperature monitors, it is imperative to use a motor circuit breaker.
- Observe the installation and safety information for the various fan types. Non-observation or misuse can lead to physical injury or damage to the fan installation.
- If the fan is installed for free- running intake or exhaust, please check to see whether the safety standards of **DIN EN ISO 13857** are observed. Objects sucked in can be thrown out by centrifugal force and lead to damage or severe injury.
- Pay special attention that there is sufficiently dimensioned safety clearance on the inlet side, as clothes, limbs, or in the case of larger fans, even people can be sucked in due to the fan's suction power.
- It is not possible to exclude a residual risk due to incorrect use, malfunction or force majeure. The designer or constructor of the installation must take suitable safety measures in accordance with DIN EN 12100, e.g. protection devices, in order to prevent hazardous situations arising.

FAN SECTION CONTD.

ELECTRICAL CONNECTION

- May only be undertaken by technically trained personnel (DIN EN 50 110, IEC 364).
- Ensure that attention is paid to the motor manufacturer's safety and commissioning information and the circuit diagrams in the motor terminal box.
- Connect fan only to electrical circuits that can be disconnected with an all-pole isolating switch.
- Before making the electrical motor connections, compare the connection specifications with the specifications on the motor identification plate.

SETTING UP THE UNIT

- Observe the safety information!
- Ensure adequate clearance on suction and pressure sides.
- Modifications/conversions to the fan undertaken by the operator are not permissible – safety hazard.
- Dismantling and attaching components to the fan or impeller results in expiration of the warranty! Exception: the terminal-box cover may be opened so that technically trained qualified-persons (DIN EN 50110, IEC 364) can attach the connection cable. Suitable threaded cable-connections may be attached to the terminal box.

OPERATING CONDITIONS

- Do not operate the fan in an explosive atmosphere. – Danger of sparking – danger of explosion.
- Observe the motor manufacturer's instructions.
- Do not exceed the maximum operating speed (fan/impeller rating plate), see the safety notes. The maximum permissible operational revolution speed applies for sustained operation S1. Increased switching repetitions only permissible with gentle step-up by means of frequency converter or with operation without frequency converter by means of Y/D circuit. Do not operate the fan in the resonance range of the impeller – risk of fatigue fracture. When changing speed, pass rapidly through the resonance range.
- When operating with a frequency inverter, ensure that the function "**overmodulation**" on the frequency inverter does not lead to an increase in the resonance oscillations. It is mandatory that the overmodulation is switched off.
- A-rated sound power levels of over 80 dB(A) are possible, see product catalogue.

FAN SECTION CONTD.

START-UP

- Check before first-time start-up:
 - Account has been taken of the motor manufacturer's information?
 - Installation and electrical connection have been properly completed?
 - All leftover installation materials and other foreign materials have been removed from the fan cavity.
 - Is the motor protection correctly set? With a Y/ Δ connection, switch-on current should be set at 58% of the rated value, if the phase current is fed through the motor protection. I.e. do not connect the motor protection in the mains lead before the switch gear, but between motor terminals U1, V1, W1.
 - Does the type of rotor balance (of the motor and impeller) DIN ISO 8821 match each other?
- The fan should be checked for mechanical vibration after installation. If the amount of vibration is larger than 2.8 mm/s, (measured at the motor end plate where the impeller is mounted), the motor/impeller unit must be examined by a specialist and, if necessary, rebalanced.
- Commissioning is only permissible when all the safety instructions (DIN EN 50 110, IEC 364) have been checked, the impeller is outside the radius of operation (DIN EN ISO 13857) (safety distances to prevent hazard zones being reached) and hazards are excluded.
 - Check the current consumption! **If the current is higher than that stated on the motor rating plate, the fan must be disconnected immediately.**
 - Check the direction of rotation (the rotation direction arrow is on the impeller base plate or on the fan housing).
 - Watch out for smooth, vibration free motion.
 - Determine the resonance range of the impeller. If the resonance range lies in the operating range, adjust the frequency inverter so that the resonance range is quickly run through. Strong vibrations cause by irregular running (imbalance; over modulation frequency inverter), for instance due to shipping damage improper handling or operation in the resonance range, can lead to failure.
- Frequently start-up a shutdown of the impeller must be avoided (please ask the supplier).
- When operating with a frequency inverter, check to see whether the function "**overmodulating**" on the frequency inverter leads to an impermissible increase of the resonance oscillations in the operating range (speed range). It is mandatory that the overmodulation is switched off.
- After **approximately 1 hour of running time, check the tightening torque of the screws for the value required.**

FAN SECTION CONTD.

REPAIRS AND MAINTENANCE

- The system constructor must enable easy access for cleaning and inspection work.
- Check the fan for mechanical oscillations in accordance with ISO 14694.
Recommendation: every six months. The max. permissible vibration severity is 2.8mm/s (measured on the end shield of the impeller side of the motor bearing or according to the special service agreement with the customer).
- Depending on the use and the medium in which it operates, the impeller housing is subject to normal wear. Deposits on the impeller can lead to imbalance and hence damage (risk of fatigue fracture).
 - The impeller can disintegrate – lethal hazard!
 - Observe the motor manufacturer's instructions concerning maintenance and service.
- Allow maintenance work to be carried out by trained specialists only.

For all repair and maintenance work:

- Observe the safety and labor regulations (DIN EN 50 110, IEC 364).
- The fan impeller stops!
- Open the electrical circuit and secure against being switched back on.
- When operating by means of frequency converter, ensure that the waiting time is maintained after safety disconnection – see manufacturer's operating instructions regarding capacitor discharge time.
- Verify the absence of voltage.
- No maintenance working at running fan!
- Keep the airways out of the fan free-danger because of objects dropping out!
- Do not deform the blades – out-of balance!
- Take note of abnormal noise!
- Replacement of bearings in accordance with the motor manufacturer's instructions. If required ask for our operating instructions.
- After dismantling and reinstalling and impeller, the entire rotating unit must be rebalanced in accordance with DIN ISO 1940-1.
- Please contact our service department about any other damage (e.g. winding damage).
- Check the impeller, in particular the weld-seams, for possible cracks.

CLEANING

- Regular inspection, and cleaning is necessary to prevent imbalance due to ingress of dirt.
 - Clean the fan's flow area.
- Watch out for vibration free motion.
- Maintenance interval in accordance with the degree of contamination of the impeller.
- You can clean the entire fan with a moist cloth.
- Do not use any aggressive, paint solvent cleaning agents when cleaning.
- **Never use a high-pressure cleaner or water-spray for cleaning – particularly when the ventilator is running.**
- If water enters the motor:
 - Dry off the motor winding before using it again.
 - Replace motor ball bearings.
- **Wet cleaning under voltage may lead to an electric shock –danger to life!**

Full manufacturer's O&M's available upon request.

HEAT RECOVERY UNITS (when supplied)

Heat recovery units are fitted with a diagonal flow plate exchanger which can operate up to 150°C. For some applications a coated exchanger can be supplied at extra price.

The exchanger is user friendly and requires little maintenance especially if fitted with filters on the supply side. However please check that the **electrical supply is isolated** before removing the access panel.

If a filter is not fitted please inspect every six months, or sooner in a dusty environment.

The exchanger is fitted with a drain pipe on the base. You must fit a suitable drainage system and ensure that the piping has a down slope away from the unit to avoid reverse flow back to the drain tray.

HEAT RECOVERY MODULES – PERIODIC INSPECTION

Inspect at the same time as filter inspection/renewal.

Remove any large debris from surface of block.

Hoover or water spray clean.

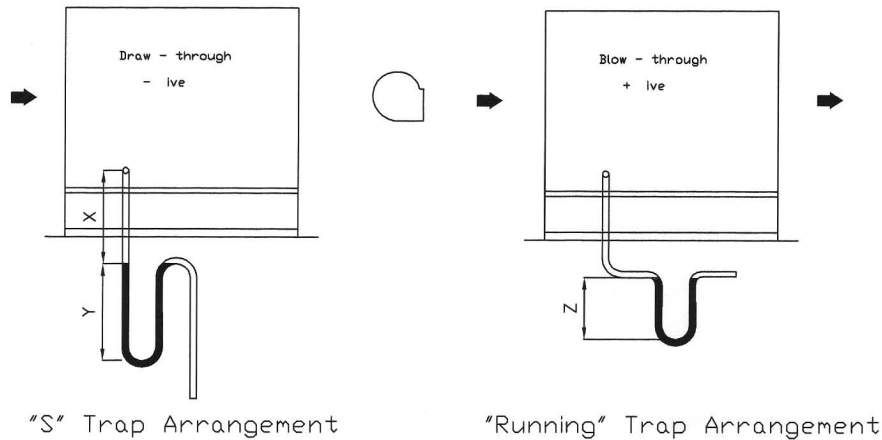
FACE AND BYPASS DAMPERS – ANNUAL INSPECTION

Check operation and setting of damper blades and operating mechanism to ensure free movement. Lubricate where necessary in accordance with the manufacturer's recommendations.

CONDENSATE DRAIN DETAILS

All cooling coils, recuperator and humidifier modules have a minimum of one BSP male condensate drain connection as standard. These should be fitted with a cleanable trap immediately adjacent to the connection to prevent flooding of the drain tray. (Draw through unit) or air loss (blow through unit)

The arrangement should be as illustrated below.



- "X" = Maximum suction pressure, mm + 50mm
"Y" = Maximum suction pressure, mm
"Z" = Maximum discharge pressure, mm + 50mm

Note:

- 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.
- Maximum discharge pressure
= sum of all pressure drops (Pa) across all components from the coil or humidifier plus the external resistance after the unit.
- All filter pressure drops must be calculated in the dirty condition.
- $\text{Pa } 9.80665 = \text{mm}$

ELECTRIC HEATERS

CONNECTIONS TO MAINS

1. The electric heater is designed to operate on single phase, two phase or three phase alternating current. See the further wiring diagram for the particular heater and the electrical data on the rating plate, placed on the lid of the heater.
2. The heater must be connected to the mains supply with fixed installed round cables. Appropriate cable glands must be used to retain the electrical protection class. The standard design is IP43. IP55 design can be manufactured if required, in which case this is specified on the rating plate. The IP55 design is delivered with factory mounted cable glands.
3. It must not be possible to supply power to the heater unless the associated fan has been started in advance or started at the same time. Furthermore, it must not be possible to switch off the associated fan unless power supply to the heater has been turned off in advance. We recommend that the heater is being turned off, at least 3 minutes in advance, i.e. an after-blow time of at least 3 minutes, before the fan is stopped. This is to ensure that the overheat protection is not activated by the after-heat. The air speed through the heater must be at least 2.5m/s.
4. An all phase switch must be included in the fixed installation.
5. The installation must be carried out by an authorized electrician.
6. The heater is equipped with, at least, two overheating cut-outs (of which, one is manual reset), to prevent overheating when the airflow is too low or in case of a fault in the system. The overheating cut-outs shall be included in the control circuits for the heater.
7. A drawing must be attached inside the fuse box or wall of the service room. The drawing shows the rating of the heater and its location in the building, together with information about the measures taken if the overheating cut-outs is activated.
8. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

FITTING

1. The access opening to a room must be equipped with a fixed mesh or intake air device which makes it impossible to touch the heating elements, if meshes are not fixed to the heater already.
2. A warning sign must be attached to the air outlet, stating that the air outlet must not be covered.
3. The heater may be insulated in accordance with valid regulations for ventilation ducting. However, the insulation must be incombustible. The insulation must not cover the lid, since the rating plate must be visible, and the lid must be removable.
4. The distance from the heater metal casing to any wood or combustible material must NOT be less than 100mm for heaters having the maximum allowed output air temperature specified to $\leq 120^{\circ}\text{C}$.
5. The maximum ambient temperature allowed is 40°C .
6. The heater is designed for a specific maximum allowed output air temperature. The maximum allowed output air temperature is specified on the ratings plate, placed on the lid of the heater.

OVERHEATING

If overheating cut-outs with manual reset has been activated, the following should be observed:

1. Only authorized electricians are allowed to remove the lid.
2. The mains supply voltage must be switched off.
3. Investigate carefully the reason for the activation of the cut-out.
4. When the fault has been eliminated, the cut-out can be reset.

CONNECTION EXAMPLES

The heater is equipped with thermal protections (over heating cut-outs). The heater design, the scope of use, the maximum allowed outgoing air temperature, etc. affects the nature of the heater thermal protection. Heaters with maximum allowed outgoing air temperature of 50°C, normally has at least one thermal protection with manual reset (set at 120°C) and at least one thermal protection with automatic reset (set at 75°C). The number of thermal protection varies, due to the size of the heater.

TROUBLESHOOTING

Full heating power but no regulation

- The fault is not in the heater. Check the external control/thermostat.

No heating

- Check whether or not there is mains voltage at the heater terminal blocks. If there is no voltage at the terminals, then the fault is not in the heater. Check the external control/thermostat, fuses, switches, etc.
- If there is mains voltage at the terminals, the check whether the thermal protection (the overheating cut-outs_ or the heating elements are open circuit. If thermal protection with manual reset has tripped, then the fault must be investigated and eliminated before the reset action. See "overheating".

GENERAL MAINTENANCE – ANNUAL INSPECTION

- Check casing for excessive ingress or leakage of air through gasketed joints between sections and around inspection doors or covers.
- Check mounting of unit and the satisfactory operation of anti-vibration mounts.
- Check for signs of corrosion and treat as necessary.
- Check that all fresh air dampers shut properly, and fixings are tight.
- Check that all controls are operating satisfactorily.
- Measure motor running currents and ensure overload protection is correctly set.
- Check all motor and fan fixings for integrity.

FAULT FINDING

If the unit does not operate, we recommend that the fault is located very quickly and rectified. It is not possible to write down all causes and consequences, but we have made a list of the common problems.

- 1) **Fan does not operate:** Check electrical supply for phase failure, low voltage, faulty or tripped control equipment. Check motor winding for continuity and insulation resistance to earth. Check that the belts are not over tightened (if applicable).
- 2) **Low air volume:** Check if the dampers in the system are closed or if there are any obstacles in the system, or clogged filters.
- 3) **No heating:** This is often an external problem and could be a defect central-heating boiler.
- 4) **No cooling:** This is often an external problem, which has to be checked to the chiller or condensing unit.
- 5) **Excessive noise:**
 - Impeller is not balanced
 - Bearing(s)
 - electrical hum (can imply a damaged motor caused by over or under loading.)

We advise you to contact your local installer/dealer.

SPARE PARTS

Fans / Motors / Drive Belts
Filters
Base-frames
Dampers
Heat-recovery blocks
Exchangers
Controllers
Electric elements

ADDITIONAL OPTIONS

Additional options:

- Special base frames
- Special RAL colours
- Weatherproofed, etc

Air handling units are easy to extend at a later stage. This can be for example with:

- Filter section
- Cooling section
- Mixing box
- Heat-recovery unit
- Etc