

DON'T s

- 1) Do not Switch ON the AHU, if the Voltages in all 3 phases are equal.
- 2) Do not switch ON the AHU, if the Belts are loose on the Pulley Grooves.
- 3) Do not switch ON the AHU, if the Inlet Dampers are in Closed Position.
- 4) Do not Switch ON the both AHU's at a time.
- 5) Do not Switch One the AHU, when Inspection / Service door is OPEN position. Because of High Speed Suction of Person in to the AHU and damage may happen.
- 6) Always close the Service door and start the AHU. Glass Inspection door is there for Visual inspection.
- 7) Do not Switch ON the AHU, when all Grills and Dampers are in closed Position.
- 8) Do not Switch ON the AHU, when Ducts or Canvass connection are in OPEN position or doing some servicing work.
- 9) Always arrange 2 persons at the AHU for any Maintenance.
- 10) On the Terrace floor while servicing the Duct follow Safety rules and always keep 2 persons in that area, as the ducts are vertical from Terrace to Basement and without any Access door in between.
- 11) For cleaning the ducts, switch OFF the AHU before 1 hour and do the cleaning.(Because of Foul smell gases which is very Harmful to Human beings).
- 12) Do not allow any unauthorized persons in to AHU plant room area.
- 13) Do not use any chemicals for cleaning the ducts, dampers, Grills and AHU's. Use only purified water.
- 14) If any items are to be replaced with new ones, do not use any local and non standard material/spare parts for replacing. Use only approved makes as mentioned in the Manuals.
- 15) Do not keep any Hazardous items(like chemicals, paints, etc) inside the AHU Plant room.
- 16) Do not Run any water lines above the AHU's. Any leakage from them, will cause damage to AHU, electrical items and Motor burning etc.

OPERATION OF THE SYSTEM

Before starting the STP Exhaust system the following Procedure Shall be adopted.

1) Check all the Grills and Dampers provided in the ducts are fully open. If they are in closed position Motor will get overloaded, because of insufficient suction air to it.

2) Check the AHU inlet Damper is in Full Open and Locked position (Marking are there on it).

3) Check the AHU Outlet Damper is in Full Open and Locked position (Marking are there on it).

All dampers must be checked for free movement prior to proceeding further. Manually operated dampers can be adjusted to obtain the required airflow, by loosening the Nut and then turning the control lever. The Nut must be tightened after setting up at the desired location on locking quadrant

4) Check the Canvass connections are provided with Nuts and Bolts.

5) Check the Voltages (all 3 Phases) readings are correct. (415 V).

6) Check the Cable terminals are all in their respective positions. Like RYB of Motor with RYB in the Panel.

7) Manually check the Belts are in position in the V grooves.

START UP CHECK LIST

There is possibility of collection of debris such as duct/insulation materials, tapes etc used during installation of the system. Hence it must be ensured that all the sections of the unit are thoroughly cleaned. In case units are supplied with peraluman panels, polythene protective film must be peeled off and it must be ensured that no traces of film is left loose within the unit.

Ensure all electrical wiring is carried out to local standards and all components are provided with safety, protecting and isolating devices.

Fan start up 1) Screw out security nuts of ant vibration mounts. 2) Lock out the primary and secondary power sources. 3) A complete inspection shall be made of all the ductwork and the interior of the fan. Make certain there is no foreign material which can be drawn into or blown through the fan or ductwork. Eyes should be protected against undetected foreign material through the use of safety goggles or other appropriate means. 4) Make sure the foundation or mounting arrangement and the duct connection are adequately designed in accordance with recognised acceptable engineering practises and with the fan manufacturer's recommendations. 5) Check and tighten all hold-down (securing) bolts. 6) Check the fan assembly and bearings for proper grounding to prevent static electricity discharge. 7) Spin the impeller to determine whether it rotates freely and is not grossly out of balance. 8) Inspect impeller for proper rotation for the fan design. 9) Check all set screws and tighten, if necessary. 10) Check belt drive or coupling alignment; use recommended belt tension. 11) Check the belt drive for proper sheave selection and make sure they are not reversed (excessive speeds could develop). 12) Properly secure all safety guards. 13) Secure all access door to the fan and ductwork. 14) Momentarily energise the fan to check the direction of rotation. 15) Switch on the electrical supply and allow the fan to reach full speed

- Adjust dampers position to obtain the rated air volume.
- In case fans are supplied with variable pitch pulley (up to 7.5 kW), adjust the same to the desired position.
- Ensure that the air volume are within the specified limits.
- Check the motor current and ensure the same is within the rated (name plate) data. After eight hours of satisfactory operation, the fan should be shut down to check the following items and adjust, if necessary (lock-out power).

- 1) All set screws and hold-down bolts
- 2) Drive coupling alignment
- 3) Belt drive alignment
- 4) Bearing housing temperature
- 5) Belt drive tension

After twenty-four hours of satisfactory operation the fan should be shut down (locked out) and the drive belt tension should be readjusted to recommended tension.

STARTING AND RUNNING THE SYSTEM

USE OF THE UNIT :

The unit can be started up only by means of proper safety devices. The installer is obliged to install the unit according to installation plans and conditions. Only authorized persons must operate on the unit. The staff in charge is obliged to signal immediately to the user any changes that may compromise safety. For this reason it is necessary to inspect for eventual anomalies or damages at least once a week. The user or operator never must dismount and deactivate safety devices; if these would be removed for extra maintenance, at the end of operation they must be reinstalled. For all operations of extra maintenance, the power source must be locked out.

- 1) Start the AHU for 10 to 15 seconds and Stop. Now check the Blower/Belts Rotation. As per Design Anticlockwise direction is correct. Glass Inspection door is provided in the AHU panel for Viewing it. No need of opening the Access Door.
- 2) Now Start and Run the AHU. See that Stand by AHU Damper is always in closed Position.
- 3) Check the Voltages and Current AMPS reading provided in the Panel Board. Compare the reading are within the specified limits.
- 4) Check the Air flow by touching the Canvass connection provided at AHU Outlets and in the Ducts.
- 5) Check that Air is going from STP to AHU wide Grills. Put a paper at the Grill you will observe sucking of Air in to Grill.
- 6) Adjust the Aluminium Grills for required airflow by adjusting the damper provided in the Grill.
- 7) Branch Ducts are provided with Volume control dampers with handles for adjusting the Air for that particular area.
- 8) Check the Terrace duct outlet (On Roof) for proper exhaust. Check the SS mesh provided in that is not Blocked by any dust particles, papers covers etc. Clean it if any. This will give you proper exhaust of air flow from STP . Load on the Motor will also come down.
- 9) All duct joints are sealed with Sealant for any kind of leakages. Check by chance any leakages are there. If observed so, stop the AHU and apply the sealant to joints.
- 10) Periodically Run the working AHU and Stand by AHU alternatively. (Do not run the both AHU's at a time. Because the Duct system is designed for One AHU capacity only.)

MAINTENANCE

ONCE IN A WEEK :

- Check Inside area of AHU condition at weekly intervals. Clean, wash if necessary.

ONCE IN A MONTH

- Check fan belt tension and adjust if necessary.
- Check the condition of access door hinges and lubricate if necessary.
- Check the fan motor running current.
- Check function controls and their effect on A.H. Unit components.
- Check fan and motor bearings.
- Check the operation of dampers.
- Check the AHU door panel frame for proper sealing.
- Check the access doors for easy operation and proper locking.
- Check motor and fan bearing lubrication.

Impeller removal for some reason,

For some reason, if it is required to take the impeller out for cleaning, following procedure is recommended:

- Loosen motor mounting bolts and remove the motor.
- Remove belts and bearings.
- Loosen the fan fixing screw and withdraw the shaft.
- Unbolt the flexible connection on fan discharge.
- Turn the fan assembly by 90.
- Take out the impeller from the fan discharge opening. Handle carefully while cleaning, to avoid any damage to blades.

CLEANING OF DOUBLED SKIN PANELS.

All panels are double skinned and they can be easily detached from the framework by removing screw with simple hand tools. They can be cleaned or washed. However it must be ensured that they are completely dry prior to re fixing. Do not drop any heavy weights or sharp edge tools etc. It might damage the plasticized finish or puncture the aluminium panels.