DO'S

1)Before starting the AHU, please check the Voltage, 3 phases, Ampere Meters are correct

2)Before starting the AHU, please check the Belts are on the Pulley Grooves and are in tight position

3)Before starting the AHU, please check the AHU Inlet Dampers are in Open Position.

4)Before starting the AHU, please Clean inside area of AHU (Remove debris etc).

5)Start the AHU for 10 seconds and Stop. Check the Belts rotation, Blower rotation and Motor rotation (Anti clock wise is the correct one).

6)Always close the Service door and start the AHU. Glass Inspection door is there for Visual inspection.

7) Panel Board Connection for AHU's are to be separately Provided.

8)Separate individual MCCB's are to be provided for each AHU.

9)RYB connections in the MCCB and AHU Motors are to be same. Otherwise Motor will rotate in Reverse Direction.

10)MCCB Rating must be 2 times the AHU Motor Capacity. (15 HP Motor = 30 Amps MCCB)

11)Check that only STAR-DELTA connections are in the Panel Board.

12)Check the Leakage randomly on Ducts joints and apply sealant if any leakage is there.

13)Once the AHU is ON and Running condition, check the Current Amps are within the range. If any abnormal reading are found, check with the Test results enclosed in the Manuals or Factory Test reports attached in the Manuals.

14)Check Flexible canvass connections for any wear and tear or for any leakages.

15)Due to heavy rains are some other reason, water may enter into the ducts and to inside the AHU, from Terrace duct, check the AHU before starting at that time.

16)Clean the SS Mesh provided on the Terrace duct randomly, if any Duct particles are blocking the SS mesh. This will reduce the Performance capacity of AHU.

17)In side the STP area, all Grills and Dampers are to be cleaned Randomly to avoid the blockage.

18)Provide full protection of AHU area with Frame work and locking system to avoid entry of un authorizes persons in to AHU plant room area.

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 groves.

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 in 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 operations 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 Antiolockwise 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.

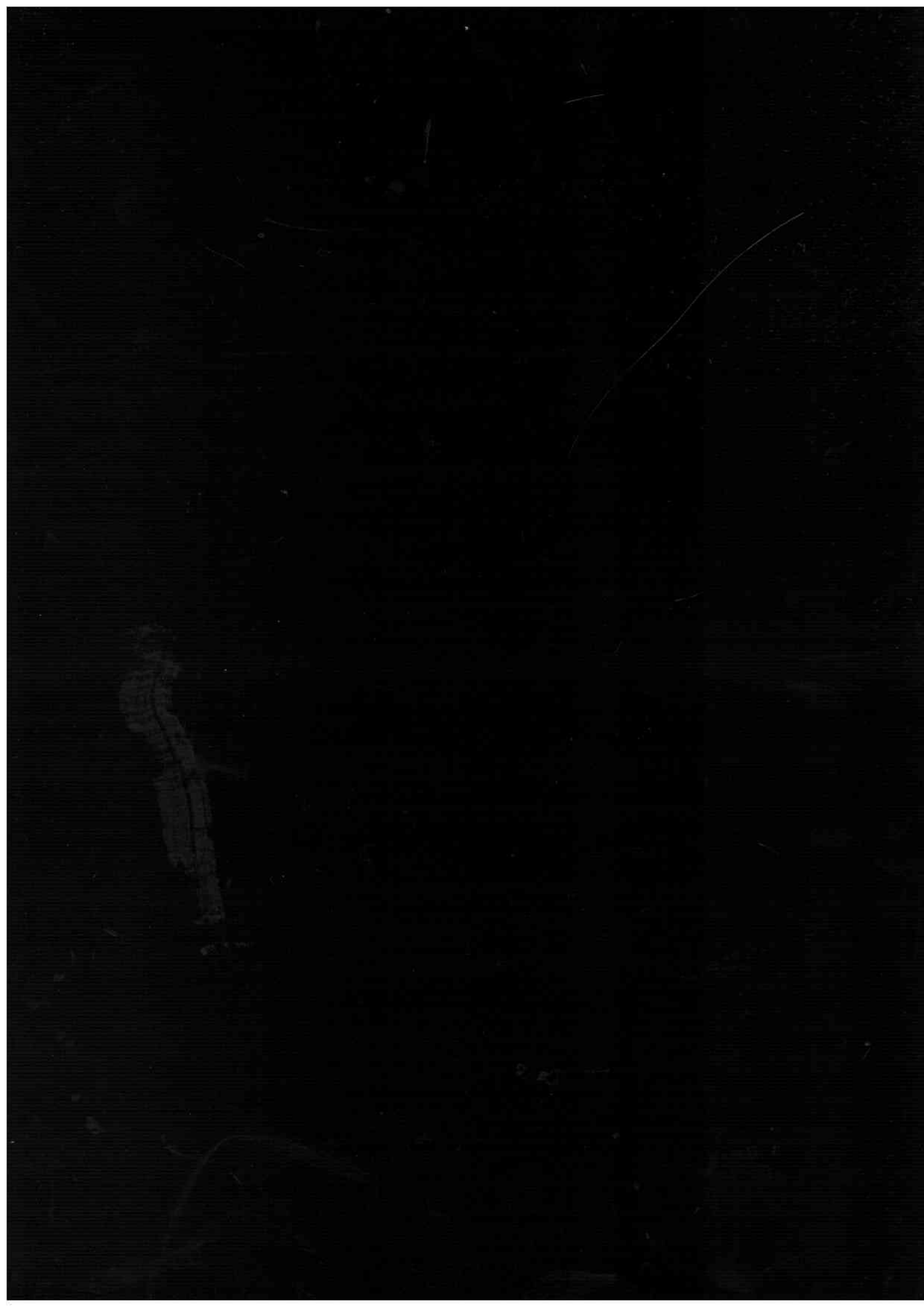
6)Adjust the Aluminium Grills for required airflow by adjusting the damper provided in the Grill.

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 th aluminium panels.

OPERATION SAFETY :

Air handling units are safe because they are built in accordance with good engineering practice. Nevertheless, the units could represent a hazard if they are used, by an untrained staff, improperly or not in conformity with general provisions.

The more common hazards are:

- Danger to operator's safety.
- Damages to the unit.
- possibility to compromise the efficiency of unit work.

BELT TENSION :

The belts must be correctly tensioned to ensure good contact with the pulley. If insufficiently tensioned, the belts may slip, and if excessively tensioned, the motor and fan bearings may be overloaded. When correctly tensioned, the belt deflection L will be 15 mm per meter of distance between center. The deflection should be measured preferable by means of tensiometer.

MEASURES OF THE USER/OPERATOR, OBSERVATION OF THE SIGNPOSTS (WARNINGS) Signposts are placed on the unit, showing:

1) Prohibition to repair or adjust during motion .
2) Obligation to turn off the power before opening the access door
3) Warning of coming into contact with electrical parts.

BEHAVIOUR IN CASE OF DAMAGES If it is necessary to make maintenance, the fan must be switch off, isolated and allowed to rundown.

THE HIDDEN DANGER :

In addition to the dangers of rotating machinery, fans present another potential danger by virtue of their ability to draw in loose material. Solid objects passing through a fan represent potentially dangerous projectiles. Solid objects can cause fan failure by physically damaging the impeller blades. Whatever there is the possibility of solid objects being drawn into a remote intake, the intake shall be guarded at all this times. In the event the guard is removed for any reason, the fan must be disconnected and locked out. Where fans are installed over an occupied area, safety guards should be provided to prevent dropped objects from entering this area during installation and maintenance. Access doors to a fan or duct system should not be opened with the fan in operation or coasting to a stop. Power shall be locked out prior to access into a fan or ductwork. Even when locked out electrically, fans may cause injury or damage if the impeller is subject to "wind milling". The impeller should be secured to physically restrict rotational movement. On the downstream (or pressure) side of the system, realising the door with the system in operation may result in an explosive opening. On the upstream (or suction) side the inflow may be sufficient to draw in tools and clothing, etc, and create a danger. The access door in air handling unit is always locked out by a special lock and to open the door it is necessary a key so it is impossible to open it by chance. The stroboscopic effect of certain lights in combination with certain fan speeds may cause a rotating assembly to appear stopped.

AIR MANAGEMENT SYSTEMS

Creating the right climate

Introduction

Our Company is promoted and managed by young, dynamic and well-qualified group of technocrats having vast experience to design, manufacture and supply Air Management Systems for various heating, ventilation and air-conditioning applications.

Urjas products are manufactured in compliance with superior industrial and global standards. Our products have finely tuned value engineered computer aided cost effective designs coupled with human ingenuity. We apply latest technical achievements in the industry with proven solutions to create products which always give you trouble free performance and is recognized in the market. We use optimum quality raw materials of highest quality standards keeping in view the specific requirements of the customers.

Our manufacturing facility is state-of-the-art manufacturing facility equipped with all required machinery, specialized tools and skilled manpower. This ensures total control of all manufacturing operations to deliver the best quality product with personal care and committed deliveries without failure everytime.

The aim of our operations is to earn the position of being the "One-Stop-Shop" of Air Management Systems and become a leading manufacturer by offering our products to the customer who is our partner in progress.

Our products are being looked at on an end-to-end basis right from design, engineering, manufacturing, following the path of sales to servicing and in the end total care over our products to create a good indoor climate.

Our corporate vision is to provide comfort to our customers by delivering a world class product which is created by maintaining highest quality levels at every stage and prompt after sales service at the door steps.

Our product range consists of :

1. Horizontal Air Handling Units
2. Vertical Air Handling Units
3. Ceiling Suspended Air Handling Units
4. Ventilation Units
5. Energy Recovery Units
6. Fan Coil Units

SUPPLY / RETURN AIR, FRESH AIR AND EXHAUST AIR LINEAR GRILLS

All are made in Extruded Aluminium construction. These are manufactured by mechanical assembly to ensure rigidity and maintain appearance.

Available in 0°, 15°, 30° deflection angle. Made from high grade aluminium extrusion for maximum strength, corrosion resistance, rigidity & dimensional stability. (to maintain straight line appearance)

Outer frame flange width is 20 mm to 30 mm depending upon the requirement.

Inside profiles are aerofoil high quality aluminium bars with 0°, 15°, 30° deflection angle.

Available in 1 way throw or 2 way throw (not for 0°).

Inside bars spacing is 14 mm, 16 mm etc depending upon the requirement.. Inside horizontal bars are fixed to rigid vertical frame with 10 mm

aluminium pipes and taped aluminium rods for fixing screws to flange. For joining two linear grills GI alignment strips are supplied as standard. (For a continuous unbroken appearance like single continuous grill)

Gasket is provided on the back side of the Grill flange frame to avoid any leakages (Optional)

All are Powder coated with approved colours & RAL colour codes.

Powder coating thickness is maintained in between 70 to 90 Microns.

Grill width are 50 mm to any size depending upon the requirement.

Standard horizontal length is 1 meter.

Installation of the Grill can be either Spring clips or duct mounting using

concealed brackets / screws.

MANUAL VOLUME CONTROL DAMPERS

Dampers are available in 16 gage/18g/20gauge. G.I. Multi blade constructed in superior quality Galvanized Steel and are mounted on self-lubricating Nylon or Brass Bushings.

Damper Blades are in 3V Groove Blades. Standard Depth of Damper is 150 mm.(100 mm is Optional) and standard flange height is 25 mm to 40 mm depending upon the duct size.

Dampers are smoothly operated with Bakelite knob / GI handle fitted on quadrant. Quadrant are marked with OPEN/CLOSE position, so that exact position of Blade can be known.

Handle locking position is shown on the quadrant to know the exact position of the damper blade.

All joints are welded, grinded smoothly and protected by Zinc rich spray paint coating. (Powder Coating is Optional)

Blade stoppers are provided with 15 mm to 20 mm 18 gauge GI sheet angle. Blade linkages are provided with either parallel operation or opposed blade operation.

Standard dampers are available with un drilled holes on the flanges. Dampers without flanges are available as option for fixing in the walls etc.

Motorised Dampers are also available with Spring return electronic Actuator.

Dampers are provided with 12.5mm / 16mm Dia shaft and self lubricated Bronze bushes with aluminium jam seal (Compression type) to make Damper low leakage operation.

Dampers are designed for different purposes like Ventilation, heating, Cooling, Air conditioning and Clean rooms & Dehumidification etc.

MANUAL GI COLLAR DAMPERS

Dampers are available in 20 gage/2gauge. G.I. Multi blade constructed in superior quality Galvanized Steel and are mounted on linkage.

Damper Blades are in 3V Groove Blades. Standard Depth of Damper is 100 mm.Plastic bushes are provided for smooth operation.

Dampers are smoothly operated with Coated Screw fitted on vertical linkage strip. With this Screw the air volume can be regulated from the face opening at individual Grill/Diffuser.

All joints are welded, grinded smoothly and protected by Black matt spray paint coating. (Powder Coating is Optional)

Blade linkages are provided with either parallel operation or opposed blade operation.

Standard dampers are available with un drilled holes on the sides of dampers.

Dampers are designed for different purposes like Ventilation, heating,

Cooling, Air conditioning and Clean rooms & Dehumidification etc.