



# SHAN INDUSTRIES

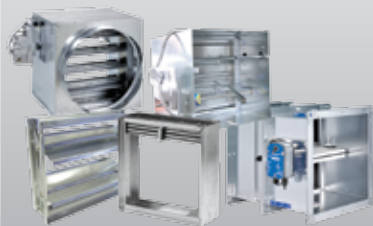
OEM OF HVAC & AIR DISTRIBUTION EQUIPMENT



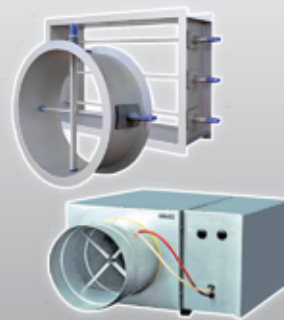
Air Devices



VCD, Fire & Smoke Damper



VAV & Air Flow Stations



Industrial Fans



## UNI-AIR

We care the AIR...

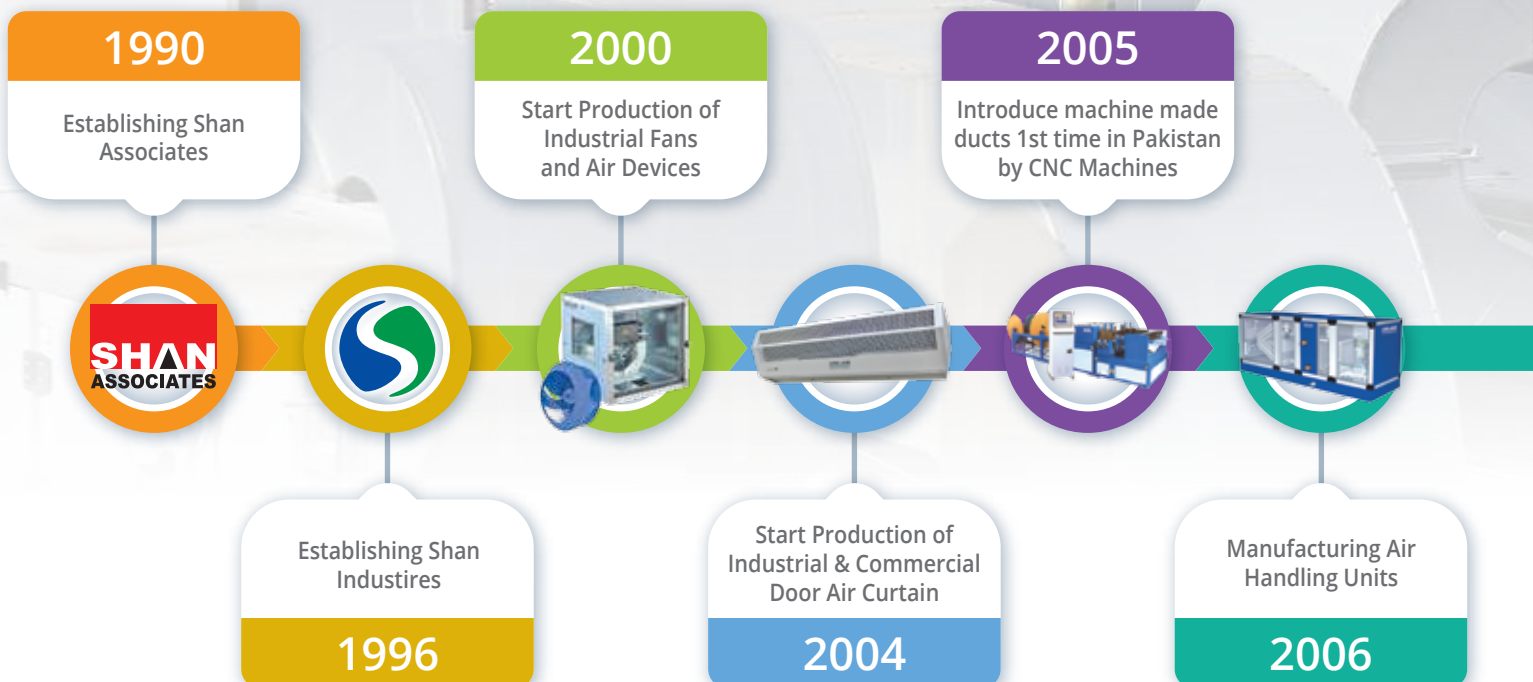


Air Handling Unit

## SHAN ASSOCIATES

Shan Associates is a MEP engineers of contracting Division of SHAN GROUP which was established in 1990 with the objectives of providing HVACR Project execution services. It is managed by well experienced and qualified team with state of the art software, equipment's tools & instruments and working actively in following sectors;

- |                               |                                 |
|-------------------------------|---------------------------------|
| <b>A</b> Pharmaceuticals      | <b>G</b> Hotel & Restaurants    |
| <b>B</b> Commercial Buildings | <b>H</b> Tanneries              |
| <b>C</b> Banks                | <b>I</b> Textile & Garments     |
| <b>D</b> Food Industries      | <b>J</b> Educational Institutes |
| <b>E</b> Tobacco Companies    | <b>K</b> Energy & Power         |
| <b>F</b> Hospitals            |                                 |





## SHAN INDUSTRIES

Shan Industries established in 1996 to support Shan Associates with 1st CNC Duct Manufacturing Plant & Machineries (First time in Pakistan)

Our product range are as under :

- |  |                                       |
|--|---------------------------------------|
| <b>A</b> Machine Made Duct (TDC & TDF) | <b>H</b> Air Handling & Package Unit  |
| <b>B</b> Fire & Smoke Ducting          | <b>I</b> VAV, CAV & Venturi Valve     |
| <b>C</b> VCD & Fire Dampers (UL/FM)    | <b>J</b> Louvers & Access Door        |
| <b>D</b> Sound Attenuators             | <b>K</b> Air Flow Station             |
| <b>E</b> Grill & Diffusers (all types) | <b>L</b> Filter & Hepa Housing        |
| <b>F</b> Door Air Curtain              | <b>M</b> Perforated Diffuser & Grille |
| <b>G</b> Industrial Fans               | <b>N</b> Sand Trap Louver             |

2008

Established  
Pre-Insulated  
Duct Facilities



2013

Start Mfg. of VAV, CAV,  
Venturi Valve



2018

Start Mfg. Fire Standard  
Classified Ducting System



Achieve ISO-9001-2008 &  
OHSAS 18001 Certification

2012



Established Spiral Duct  
Manufacturing Plant

2014

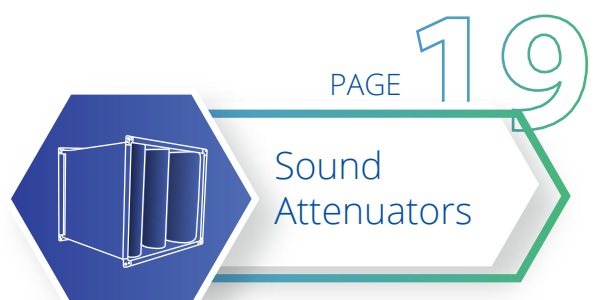
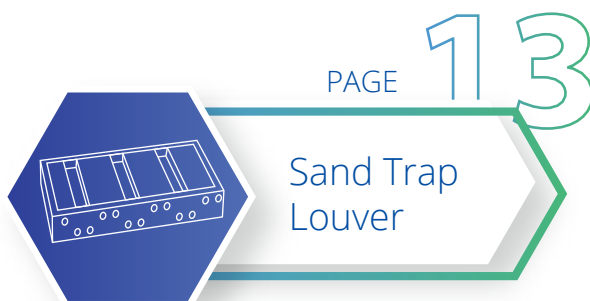
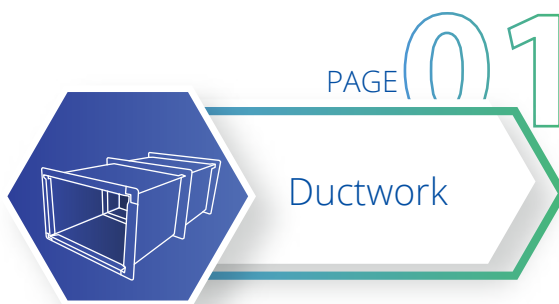


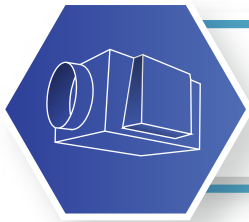
Duct Insulation CNC  
Cutting Machine

2020



# CONTENTS

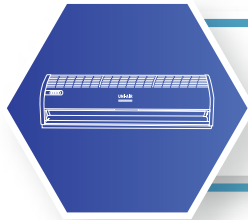




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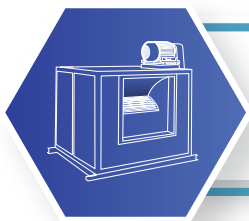
Air Regulating  
Boxes



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Door  
Air Curtain



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Industrial Fans



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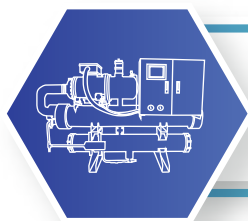
Air Handling  
Units



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Packaged  
AC Unit



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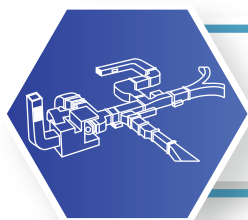
Chillers



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TAB &  
Commissioning  
Services



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Our Projects

## CEO Message of Shan Group



Mr. Ahmad Rizwan

Over the 30 years Shan Group has dedicated itself to improve the quality of its products and services by adopting new technologies. Shan group entered HVAC field in the year of 1990 and has gained the trust of its valuable customers with innovative range of products and dedication towards quality.

We are continuously striving to sustain and build upon the remarkable success which we have enjoyed since starting our operations. Our focus then and now is to move ahead with changing technologies; working proactively with our customers to find and provide the best solutions and applications duly backed by quality after sales service to assure 'sustainable' long-term relationships.

Our innovative approaches to manufacture HVAC & allied equipment by highly skilled professionals is the main pillar of delivering quality products and dedicatedly provide after sales services in professional manner. All of our customers get equal professional and quality services. Whatever your business needs may be, our goal is to provide exceptional services to create customer delight.

Our future planning to introduce pipe welding and fabrications shop in our new factory at Korangi Creek Industrial Park, Karachi-Pakistan.

## VISION

To be recognized as the most professional team of HVAC for its consistent quality services and products by adopting modern technologies and assuring customer satisfaction.

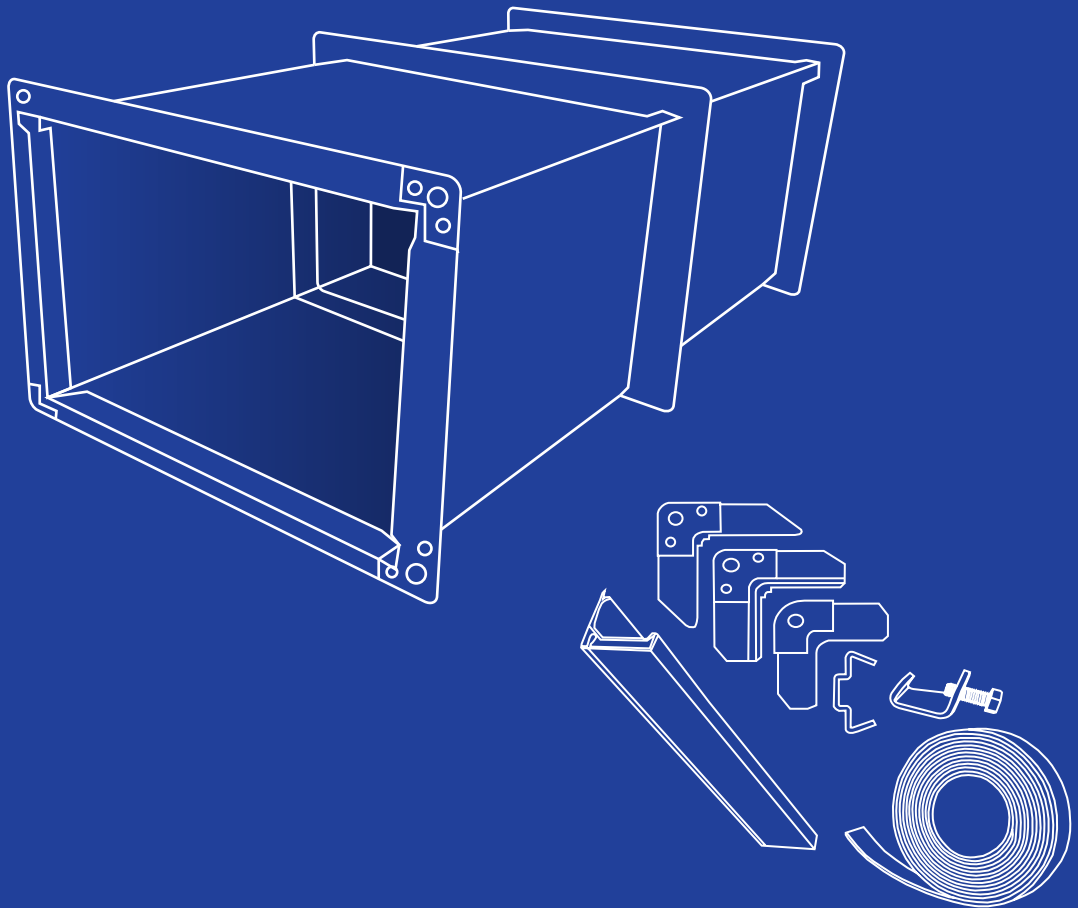


Over the 30 years of services, our mission is to provide customer satisfaction through the quality products and services we deliver.

## MISSION

# 01 | Ductwork

Rectangular Ductwork  
.....  
Spiral & Round Seamed Ductwork



**UNI-AIR**



# Rectangular Ductwork

## Rectangular Machine Made Ducting System

Shan Industries proud to be the Pakistan's first machine made HVAC duct manufacturer. We have following complete range of machine made ducting according to international standard classification.

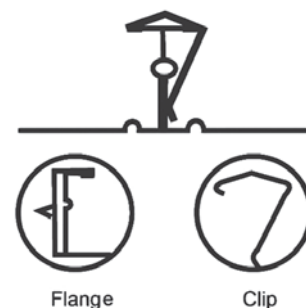


Classification According to	Specifications
Application	Supply Air Duct Return Air Duct Fresh Air Duct Exhaust Air Duct
Pressure Class ( as per DW-144 )	Low Pressure Medium Pressure High Pressure
Material	Galvanized Sheet Aluminum Stainless Steel
Shape	Rectangular Round Oval

## Duct Transverse Joint System

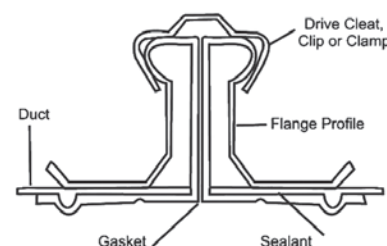
### TDF System

"Transverse Duct Flange" is the integral part of the duct which is roll formed onto the duct during the manufacturing process. We've separate plant for TDF system capable of producing 34mm wide flange practicing the standard of HVCA and SMACNA. Gasket, Connecting Clip and corner with 4 nuts/bolts are used to connect the duct with the next duct piece. This connection is recognized for low leakage, less production and installation time.



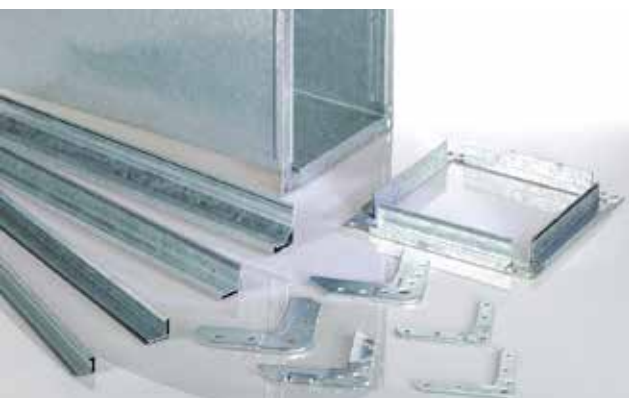
### TDC System

"Transverse Duct Connector" is flange inserted on duct. It is similar with angle iron flange. It is preferred for strong structure for duct. The selection of size of the TDC Flange is according to the pressure class and size of the duct. Gasket Connecting Cleat or Clamp, corner with 4 nuts/bolts are used to connect the duct with the next duct piece. This connection is also recognized for low leakage, less production and installation time.



## Rectangular Machine Made Ducting System

### TDC Duct Jointing System



#### Flange Profiles

Model	Gauge (mm)
115L	0.8
120.2L	0.7
130.2L	0.9
130.3L	0.8
141	1.25
141.2L	1.00

BS EN 101142:2000 steel grade and coating

#### Corner Pieces

Model	Gauge (mm)
214	2.3
215	2.3
224	2.5
225 or 226	2.5
233 or 236	3.0
245	4.95

Hot rolled steel BS EN 10111:1998

#### Cleats / Clips

Model	Gauge (mm)
505	1.2
506	1.2
507	1.2
508	1.2
509	1.2

BS EN 10142:2000 steel grade and coating

#### DW/TMI TEST RESULTS

Flange	Corner	J1	J2	J3	J4	J5	J6
115L	215	✓	✓				
12.2L	225		✓				
130.2L / 130.3L	233			✓	✓	✓	
141	245						✓

#### Gaskets

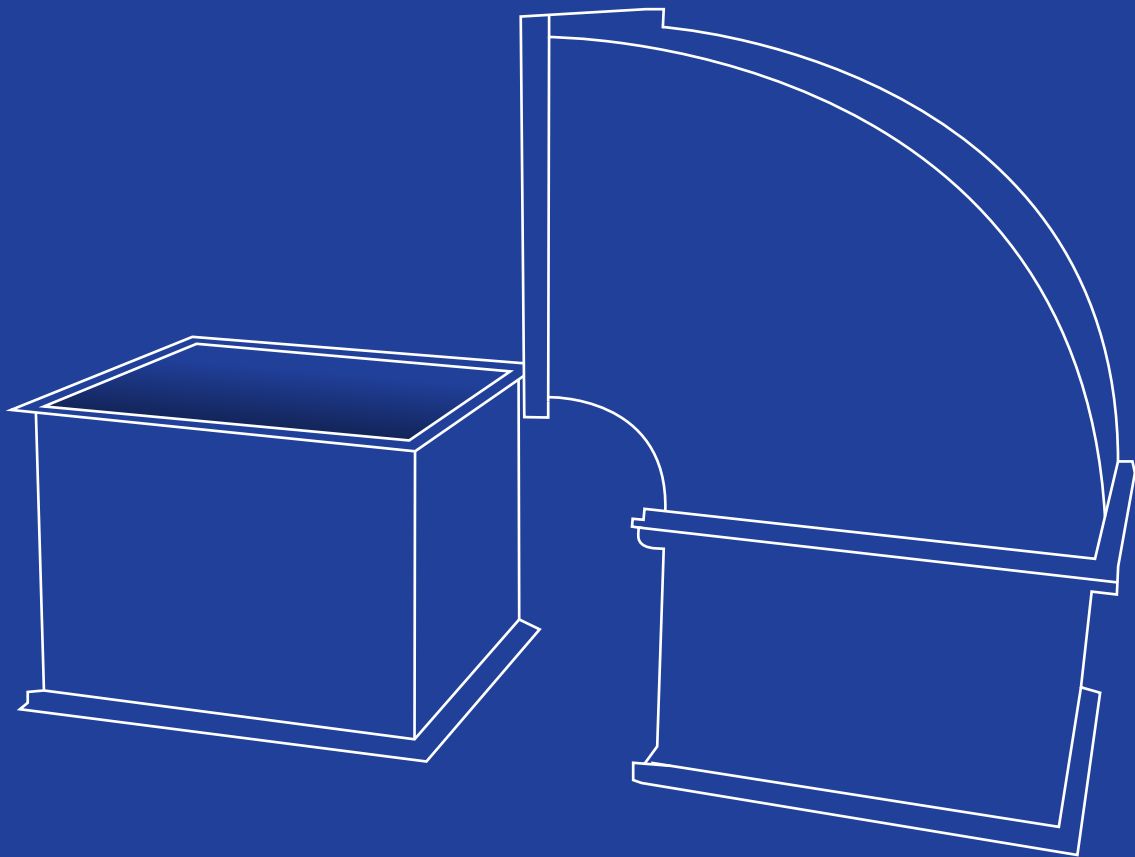
A cross linked Medium Density P.V.C closed cell foam combined with a high grab sensitive adhesive to give good all round sealing properties.

Temperature range -40°C to +70°C



# 03 | Fire-rated Ductwork

Rectangular Ductwork  
.....  
Spiral & Round Seamed Ductwork

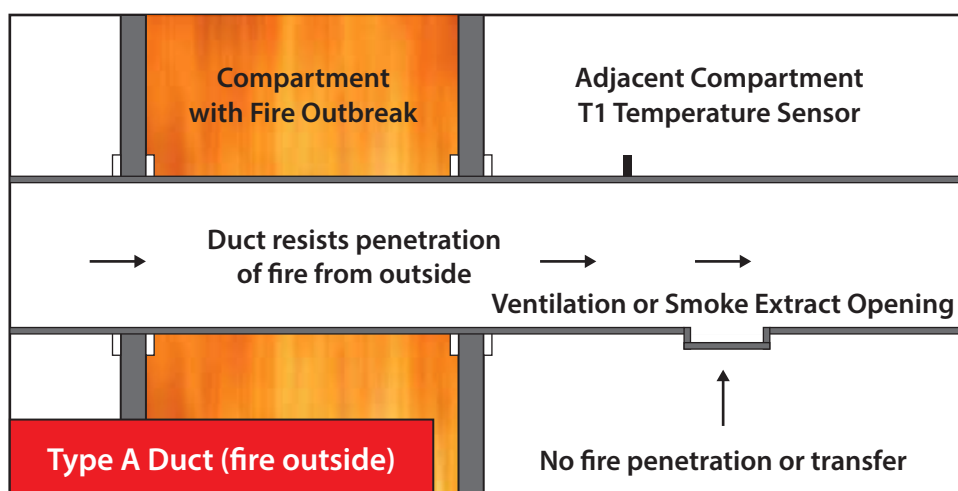


## Fire Rated Ductwork

### TEST TYPE A

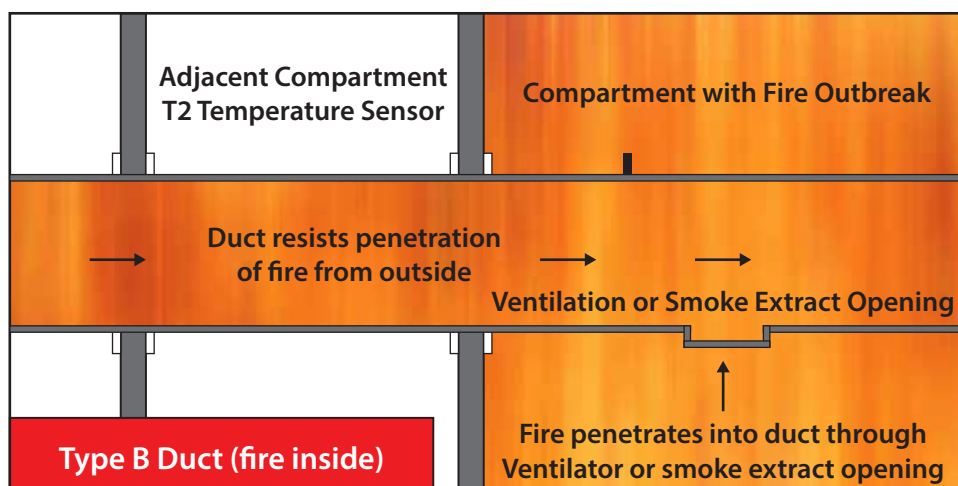
Type A testing involves fire outside the duct. The test furnace is raised to operating temperatures of 1000°C with the specimen suspended within. The duct passes through the dedicated penetration seal where various measurements and observations are used to determine its suitability and performance.

In this test no fire passes through the duct. The duct is tested for leakage, integrity and the rise in temperature where the duct is insulated. The temperature is measured by up to 80 thermocouples inside the ducting. This determines the kitchen extract insulation value.



### TEST TYPE B

Type B involves fire inside the duct. There is an opening in the duct within the furnace which allows the fire to pass through the duct unimpeded. A fan connected to the duct extracts hot furnace gas at a velocity of 3 m/s at up to 500pa negative pressure exposing the internal skin to the full fire conditions. The duct is tested for leakage, integrity and the rise in temperature where the duct is insulated. For this Type B test up to 80 thermocouples are mounted outside the furnace determining the smoke insulation value.



05

# Air Terminal Devices

Rectangular Ceiling Diffuser

Circular Ceiling Diffuser

Spout Nozzle

Nozzles Group

Exhaust Air Disc Valve

Swirl Diffuser

Drum Nozzle

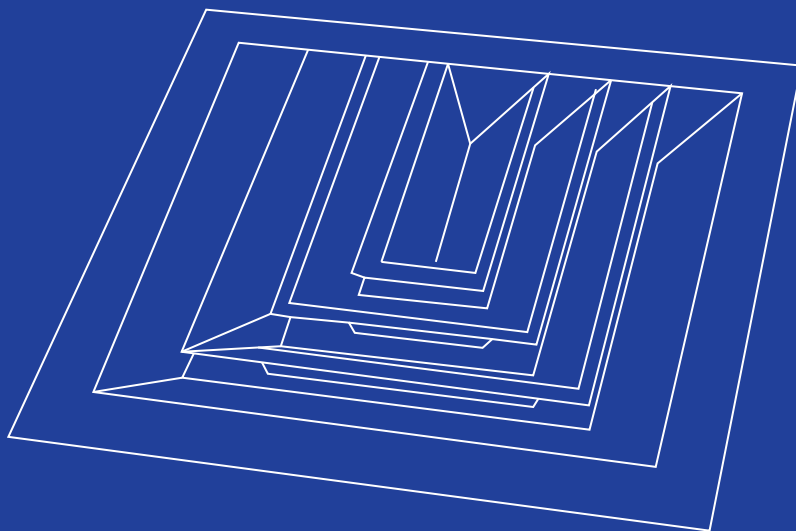
Floor Diffuser

Grille & Register

Louvers

Linear Bar Grille & Register

Linear Slot Diffuser



## Air Terminal Devices

### | Rectangular Ceiling Diffusers



#### Multi Pattern Ceiling Diffuser

Uni-Air Multi pattern ceiling diffuser are used to control the air direction having, 1,2,3 & 4 way air flow patterns for all air distribution equipment. Ceiling Diffuser is supplied with opposed blades damper to facilitate precise air volume control.

#### Panel Ceiling Diffuser

Uni-Air Panel Ceiling Diffuser having 1,2,3 & 4 way air flow patterns but playing up as decorative accents, their appearance are important as their performance. These are architectural as well as engineering product.

#### Perforated Ceiling Diffuser

Uni-Air Perforated Ceiling Diffuser having, 1,2,3 & 4 way air flow patterns for all air distribution equipment. These can be supplied with or without opposed blade damper according to requirement. Its designed especially for installation where a smooth air flow as well as symmetrical air diffuser is required to meet with a certain HVAC application.

#### Plaque Diffuser

Uni-Air Square Plaque Diffuser design delivers both architectural appeal and engineering performance criteria. The plaque diffusers feature a 4-way horizontal ceiling pattern effective for cooling applications where a clean ceiling appearance is required.

### | Circular Ceiling Diffuser



#### Round Ceiling Diffuser

Uni-Air Round Ceiling Diffuser are intended for application in airconditioning and ventilation systems in civil & industrial zones. Suitable for heating, cooling and ventilation systems. Provides horizontal or vertical air pattern and longer throw.

#### Adjustable Blade Circular Swirl Diffuser

Uni-Air Diffuser is designed for air conditioning of rooms with floor to ceiling heights of 3m to 12m high induction requirements. It is suitable for large temperature difference between supply and room air.

#### Jet Nozzle Diffuser

Uni-Air Jet diffusers are designed for those premises where a long throw is needed with large free area and low pressure loss such as theater, auditorium, museum and halls, Jet diffusers are also ideal for industrial application where extensive duct work is not required.



### | Jet Nozzle

Uni-Air Spout Nozzle are applied in the supply of cold warm air in room where long throw, distance and low noise operating are required. It can be used in concert halls, theaters, museum and other advanced premises.



### | Nozzles Group

The nozzles are used for throwing air to long distances. The nozzles can rotate (+/-)22.5° about their axis to any direction. The nozzles group are produced as group of 1,2 or 3 rows.



### | Exhaust Air Disc Valve

Uni-Air Disc valves are designed for ceiling or wall applications of supply & return air. These types of diffusers have adjustable disc within the circular frame and are suitable for supply & return air. The air flow is adjusted by turning the disc.



### | Swirl Diffuser

Uni-Air Square and Round Supply Air Swirl Diffusers with Galvanized Steel, Stainless Steel and Aluminium Construction, made easy to reflect & adjust the air direction. Blade type swirl diffusers are available in fixed and adjustable version for the application of ceiling height greater than 3.8 m.



### | Drum Nozzle

Uni-Air Drum nozzles are designed for handling large air volume and long throws, according the difference for supply air (cold/warm) to adjust the direction of air stream. Drum nozzles are designed with adjustable blade in drum body to provide hot or cold air flow to any place.



### | Floor Diffuser

Uni-Air Floor Diffuser are generally used in under floor air distribution application where the cavity beneath a raised access flooring system is pressurized and serves as a supply air plenum.



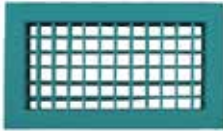
## Air Terminal Devices

### | Grilles & Registers



#### Single Deflection Grille & Register

Uni-Air Single Deflection Grille is composed of single set of deflecting blades, the blades are mounted either horizontally or vertically, to fulfill the required pattern of air.



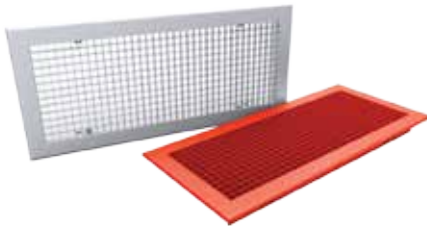
#### Double Deflection Grille & Register

Uni-Air Double Deflection Grille is composed of two set of deflecting blades mounted in two adjacent planes. The two sets of deflecting blades are mounted in such a way that one set is vertically mounted and the other set is horizontally mounted.



#### Non Vision Grille

Non vision grille allow air movement between two conditioned spaces while preventing vision or installing at doors for air crossing.



#### Egg Crate Grille

Egg crate grilles are either ceiling mounted or wall mounted air terminal devices used as exhaust air grilles for domestic and industrial applications.



#### Hinged Type Fresh Air Grille

Hinged type fresh air grille is composed of a return grille and egg crate grille or fixed blade grille which is fixed to a frame that contains a filter by means of steel hinges.

### | Louvers



#### Air Louvers

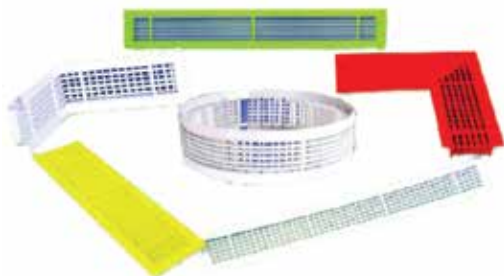
Uni-Air Louvers provide unusual architectural style and appeal to exterior and interior elevation for both Fresh Air Intake and Exhaust air systems. Frames and Blades are of extruded aluminium alloy with polyester powder coated in white color as standard or other colors on demand.



#### Gravity Louvers

Uni-Air Gravity Louvers are designed to prevent backflow and to equalize the pressure across the system. Each gravity shutter is carefully designed to equalize the pressure in areas like compressor room, fan room or an exhaust system with that of the atmosphere aided by gravity. These devices are employed at the end of an exhaust duct where it opens up when the exhaust fan is turned ON, closes down when the fan is turned OFF.

### | Linear Bar Grilles & Register



#### Single Deflection Linear Grille

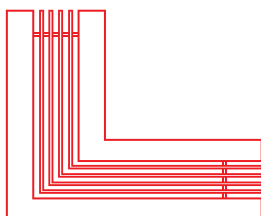
Single deflection linear grille is a wall mounted grille, used as an exhaust or return grille in cooling, heating or air ventilation.

#### Double Deflection Linear Grille

Double deflection linear grille is a wall mounted supply grille, used in cooling, heating or air ventilation.

#### Crown Shape Linear Bar Grille

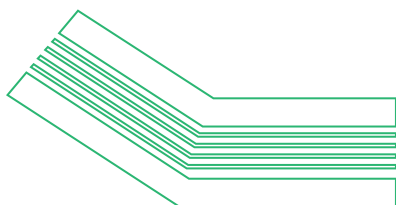
Crown linear bar grille is a short radius linear grille, especially manufactured to suite the crown head or bottom of circular columns with a minimum radius at 250mm.



#### Mitered Linear Bar Grille

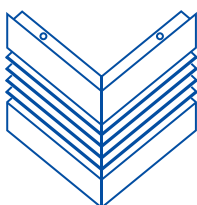
##### 900 Horizontal

Standard 900 horizontal mitered corner available for floor, sill and ceiling applications in 0°, 15°-1 way throw and 15°-2 way throw without damper.



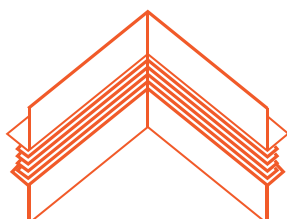
##### 900-1800 Variable Angle

Special horizontal mitered corner selection available for floor, sill and ceiling applications includes an angle greater than 90° and less than 180° available in 0°, 15°-1 way throw without damper.



##### 900 Vertical Outside

Vertical outside mitered corner available for wall application at the junction of two outside walls with a standard angle of 90°. Available in 0°, 15°-1 way throw and 15°-2 way throw without damper.



##### 900 Vertical Inside

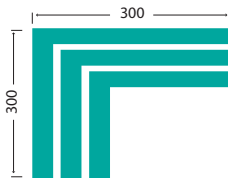
Special horizontal mitered corner selection available for floor, sill and ceiling applications included an angle greater than 90°. and 15°-1 way throw and 15°-2 way throw without damper.

### | Linear Slot Diffusers



#### Supply & Return Air Linear Slot Diffuser

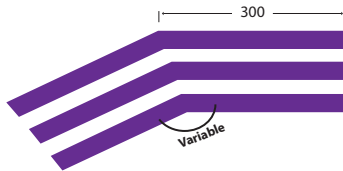
Linear slot diffuser with adjustable blades are designed for ceiling applications. They can be used for supply or exhaust air. They have cylindrical adjustable blades having fixed net areas and are suitable for horizontal and vertical throw. The frame is manufactured from aluminium profile while cylindrical blades from back plastic.



#### Mitered Linear Slot Diffuser

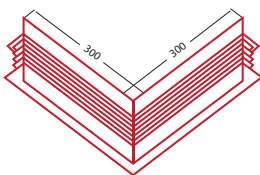
##### 90° Mitered Corner

Special horizontal mitered corners selection available for floor, sill and ceiling applications includes an angle greater than 90° and less than 180°.



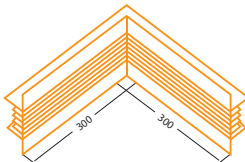
##### Variable Mitered Corner

Special horizontal mitered corners selection available for floor, sill and ceiling applications includes an angle greater than 90° and less than 180°.



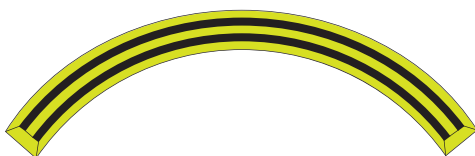
##### Side Wall-Outside Corner

Vertical outside mitered corners available for wall applications at the junction of two outside wall with a standard angle of 90°.



##### Side Wall-Inside Corner

Vertical inside mitered corners available for wall applications at the junction of two outside wall with a standard angle of 90°.



#### Curved Shape Linear Slot Diffuser

Curved shape linear slot diffuser are suitable for installation in ceiling and sills. Supply & return curved linear slot diffusers are available up to a length of 3 meters with a minimum radius of curvature of 1 meter.

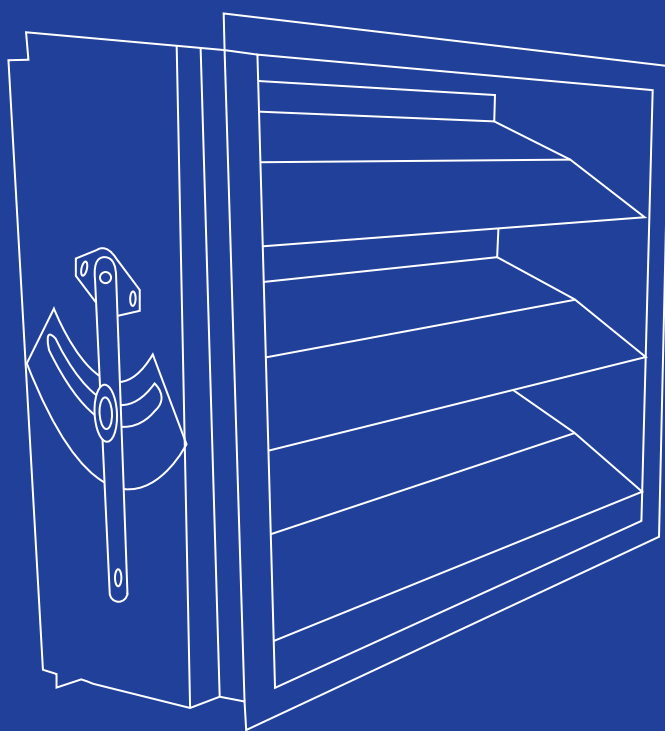


11

# Volume Control Dampers

G.I. 3V Blade Type VCD

Aluminium Aerofoil Blade VCD



**UNI-AIR**

## Volume Control Damper

Volume control dampers are square and rectangular type with both parallel and opposed blade operations and linkage or gear operated option. Low leakage blade construction, is to suit for high performance applications where dampers are subjected to face quiet, efficient, rattle free operation. In general VCD is manufactured for manual operation, motorized operational assembly is optional.

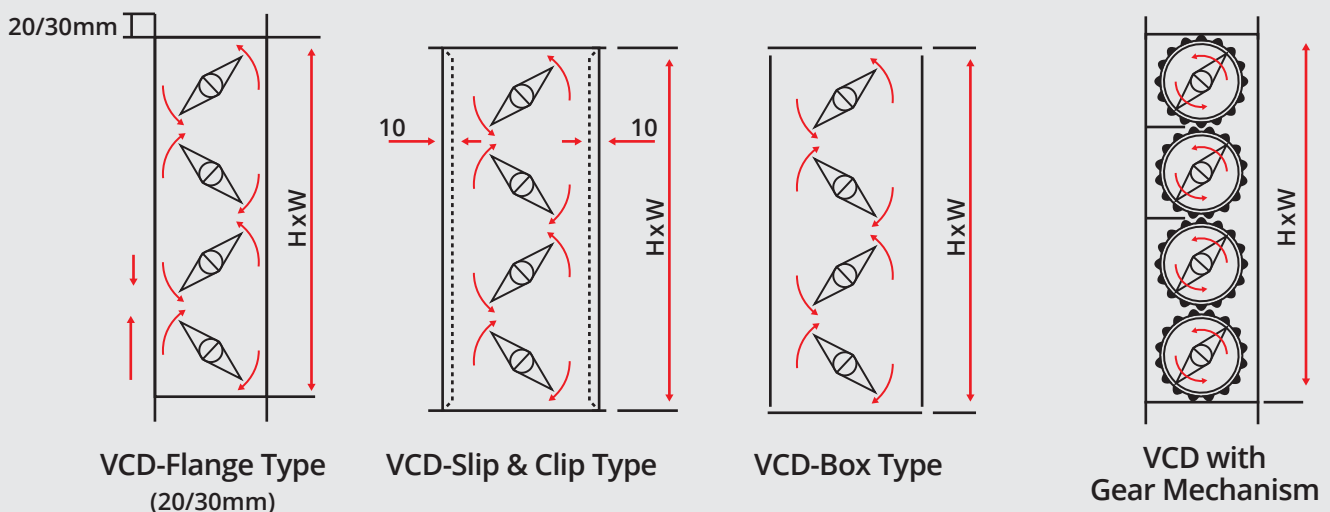


### | G.I. 3V Blade VCD

It is high performance low leakage volume control damper made of 1.2mm thick Galvanized Steel (Stainless steel optional) frame and 1mm thick single skinned 3V blades to ensure lowest resistance to air flow in HVAC systems with velocities to 2000 fpm and 4" w.g. It may be installed horizontally and vertically and is rated for air flow and leakage class-1 and class-2 in either direction.

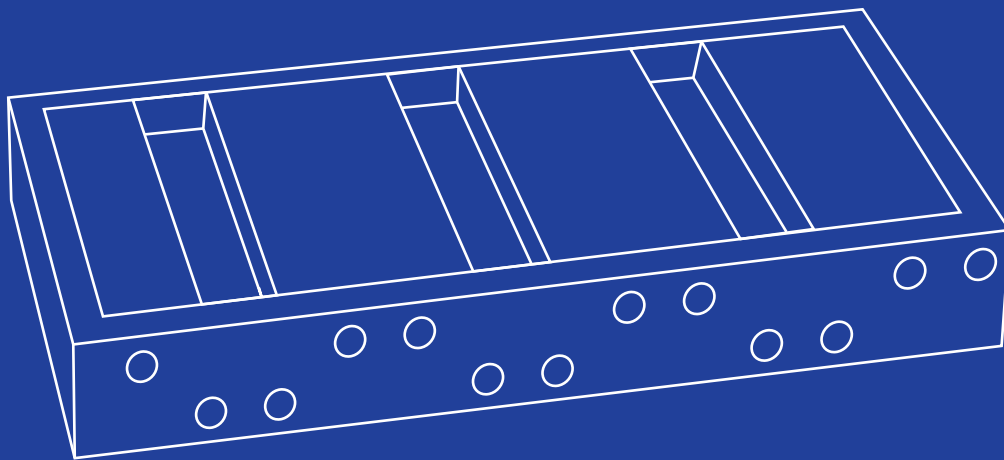
### | Aluminium Aerofoil Blade VCD

It is high performance low leakage volume control damper made of 1.2mm thick Galvanized Steel frame and 1mm thick Extruded Aluminium made double skinned Aerofoil blades to ensure lowest resistance to air flow in HVAC systems with velocities to 2000 fpm and 4" w.g. It may be installed horizontally and vertically and is rated for air flow and leakage class-1 and class-2 in either direction.



# 13 | Sand Trap Louver

Sand Trap Louver  
.....  
Fresh Air Filter Assembly



# Sand Trap Louver

## Sand Trap Louver

Sand Trap Louver is used as per filter for protection of airconditioning plant and designed to separate large size sand particles at low to medium speeds, it can also be supplied (optional) with a bird screen mesh made of galvanized steel to protect against undesired objects. Insect screen of stainless steel can be installed as optional.

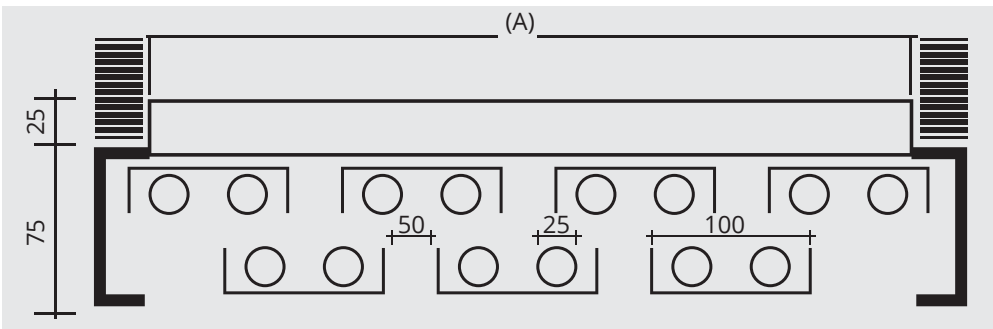


Sand Trap Louver is a self emptying system, it has a set of holes at the bottom face of the casing to discharge separated sand particles.

Sand Trap Louver is made of G.I. or Aluminium sections. It is composed of two sets of inverted U channels, mounted vertically on two opposite rows. Aluminium washable filter (optional) can be installed on the neck of the louver. Filter is 25mm or 50mm thick.

Standard Dimension

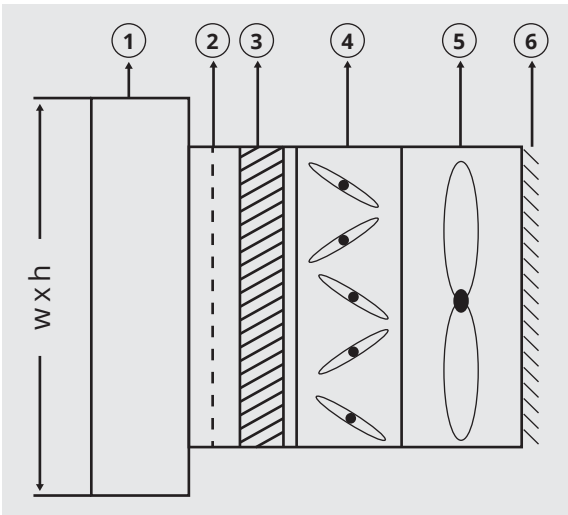
A	450	600	750	900	1050	1200
B	450	500	600	900	1000	1200



## Fresh Air Filtration Assembly

Fresh air filter assembly may consists of the following items within a single housing.

- 1) Sand Trap Louver (F.A.I.L optional)
- 2) Aluminium bird screen
- 3) Aluminium pre-filter (optional Carbon Filter)
- 4) Volume control damper
- 5) Centrifugal Inline fan
- 6) Supply air adjustable grille



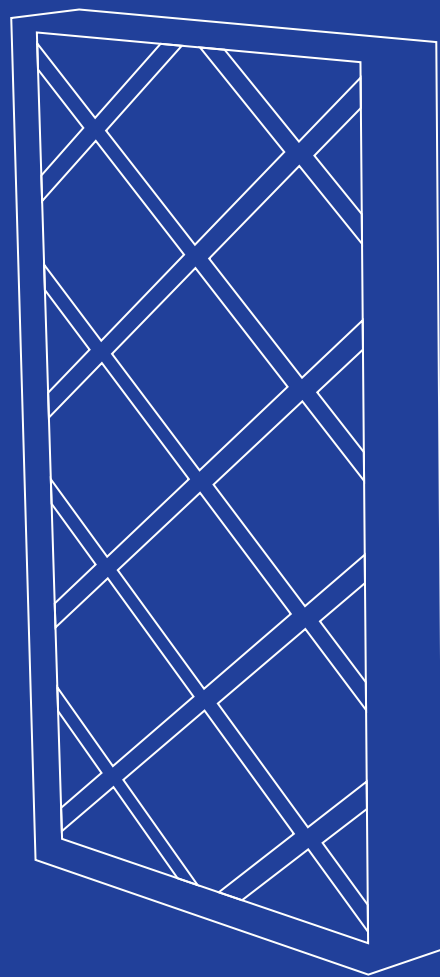


# 15 | Air Filters

Aluminium Filters

Hepa Filter Housing

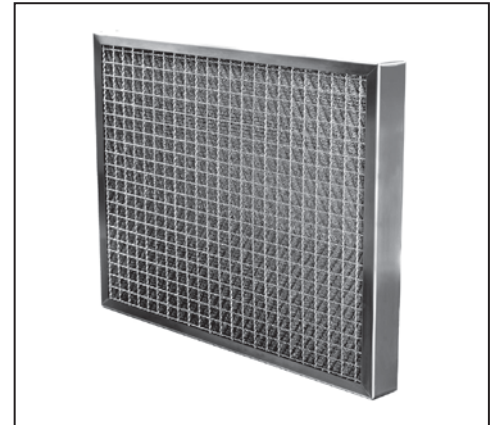
Fan Filter Unit Laminar Flow Cabin



### Washable Aluminium & Synthetic Filters

Washable filters made of Aluminium protection mesh, with Aluminium made frame with compatible of G2 Class & temperature resistance upto 300°C.

Height	Width	Depth	Airflow (m³/h)	ΔP(Pa)
600	300/600	25	2000/4000	≤ 25
600	300/600	50	1900/3800	≤ 30
600	300/600	100	1800/3600	≤ 35



### HEPA Filter Housing

Main demands of the clean room technology and especially in its pharmaceutical applications are the air-conditioning and also accordingly the air quality. Air distribution is generally made through the HEPA filter installed to its housing. Therefore, select and assembling the HEPA filter to its housing without leakage is very important. UNI-AIR HEPA Filter Housing consists of 3 main parts; the box, filter and the diffuser. Box has a duct connection port for air inlet at the top or at the sides. Filters can be chosen according to the room Class from H10 to H16.



### Fan Filter Unit Laminar Flow Cabins

Laminar Flow Cabins with FFU's is made of special aluminium profiles and stainless steel frames. Cabins are either designed to be hanged from ceiling or comes with rolling wheels. Transparent curtains, velocity control switch, magnehelic manometers are some of the accessories. Laminar flow cabins with FFU supplies laminar flow achieving positive pressure in the cabin. These models are used only for laminar flow purpose. They can be designed any dimension according to the demand.



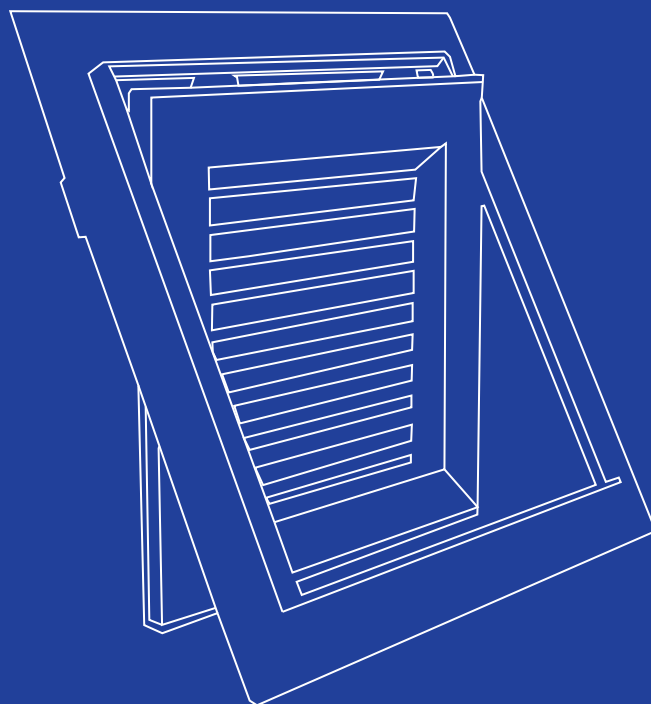
17

# Access Doors

Ceiling Access Door

Duct Access Door

Spiral Duct Access Door



**UNI-AIR**

## Access Doors



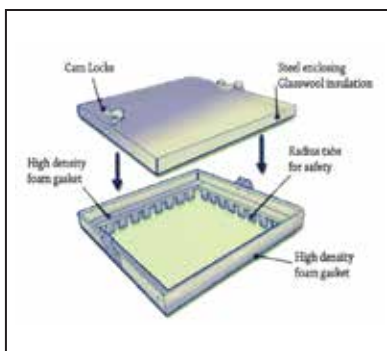
### | Hi-Operational Ceiling Access Doors

The Hi-Operational Ceiling access door is the latest inter-locking style with the ability to be operated inward and outward sides. Its speciality is that it will utilize the same gypsum board as panel, which is removed from installation opening.



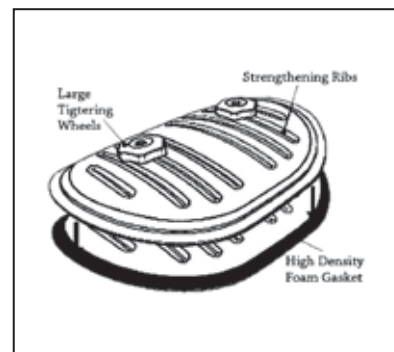
### | Uni-Operational Ceiling Access Doors

The Uni-Operational access door is most suitable for wall and ceiling application. Available in locking and concealed hinges options



### | Duct & Plenum Access Doors

Duct Access Doors have been designed to allow easy and convenient access to such equipments with HVAC duct work, while providing a secure, positive seal when closed. Duct Access Doors have quality double skin construction that meets SMACNA requirements with quick simple installation.



### | Spiral Duct Access Door

Cellular Sponge Gasket, fixed to the inner plate, keeps the doors free of leaks at pressure tested to 20" w.g. Access Doors are also available in Stainless Steel (304 or 316), Aluminium and PVC Coated. 16 Gauge black Iron doors are recommended for kitchen exhaust systems.



### | Plenum Access Door

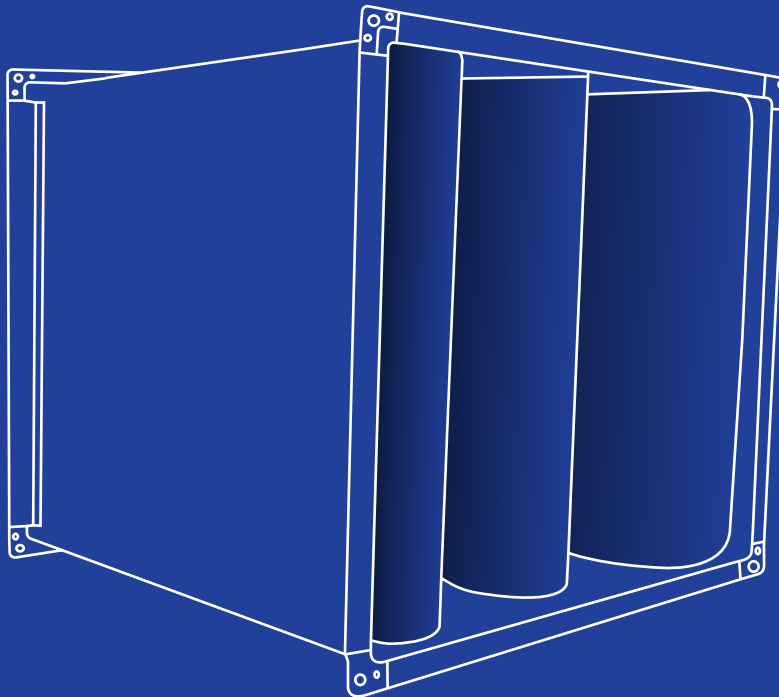
Plenum Access Door has been designed to allow easy and convenient access and inspection to the unit filters plenum while providing a secure, positive seal when closed.

The Double skinned outer frame is made of Galvanized Steel (S.S Optional) and Inspection window made of Glass. Available in different sizes as per client requirements.



# 19 | Sound Attenuators

Rectangular Sound Attenuators  
Circular Sound Attenuators  
Crosstalk Sound Attenuators



## Sound Attenuators

### Rectangular Sound Attenuators

Rectangular Sound Attenuators are galvanized steel construction high performance, to ensure lowest resistance to airflow in HVAC systems with velocities upto 2000 fpm (10 m/sec.) and at 4" w.g. (1000Pa) may be installed vertically or horizontally and rated for airflow and leakage DW-144 class C. The standard construction is suitable for a leakage of <0.5%. The square and rectangular type attenuators are designed for handling maximum air capacities at minimum pressure drop.

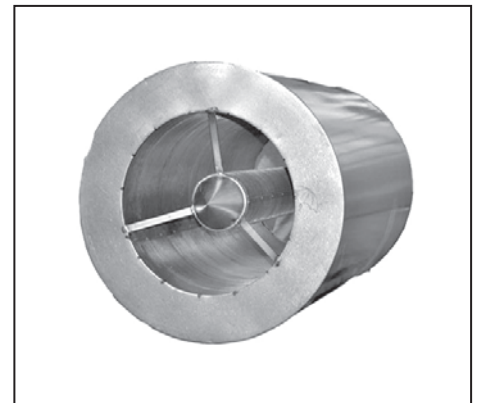
The shell noise radiation is minimized by double skin splitter construction. The turbulence of the airflow is minimized due to the bell nose design of the splitter at the entrance of the air inlet.



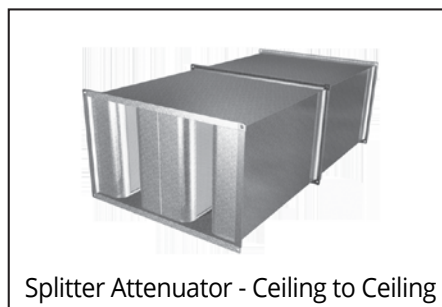
### Circular Sound Attenuators

Circular Sound Attenuators are galvanized steel construction high performance, to ensure lowest resistance to airflow in HVAC systems with velocities upto 2000 fpm (10m/sec.) and at 4"w.g. (1000Pa) may be installed vertically or horizontally and rated for airflow and leakage DW-144 class C. The standard construction is suitable for a leakage of <0.5%. The cylindrical type attenuators are designed for handling maximum air capacities at minimum pressure drop.

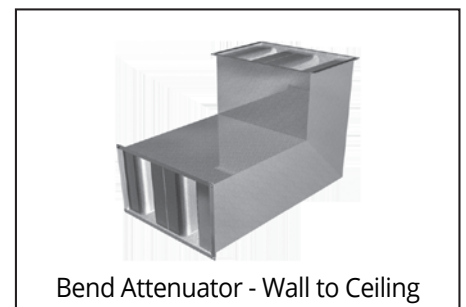
The circular type Sound Attenuators are installed in the duct work between spaces, which must provide noise reduction of air borne noise to at least match the sound transmission loss of the separating structure.



Circular Attenuator



Splitter Attenuator - Ceiling to Ceiling



Bend Attenuator - Wall to Ceiling

### Crosstalk Attenuators

Crosstalk Attenuators are installed within airconditioning or ventilation ductwork systems to reduce the transmission of airborne ducted noise. Attenuators are suitable for terminal equipment, crosstalk applications or attenuated openings in partitions above ceiling voids.

#### Typical Area for Considerations

- Common ductwork serving male-female toilets, changing areas, or for privacy between adjacent cellular offices.
- Penetrations in partitions requiring high acoustic performance.
- Broadcasting recording studios.

#### Construction

- Galvanized steel sheet casing with lock formed mastic sealed joints.
- Internal liners faced with perforated steel sheet.
- Controlled density mineral wool infill with tissue facing to reduce fiber egress.

# 21 | Air Regulating Boxes

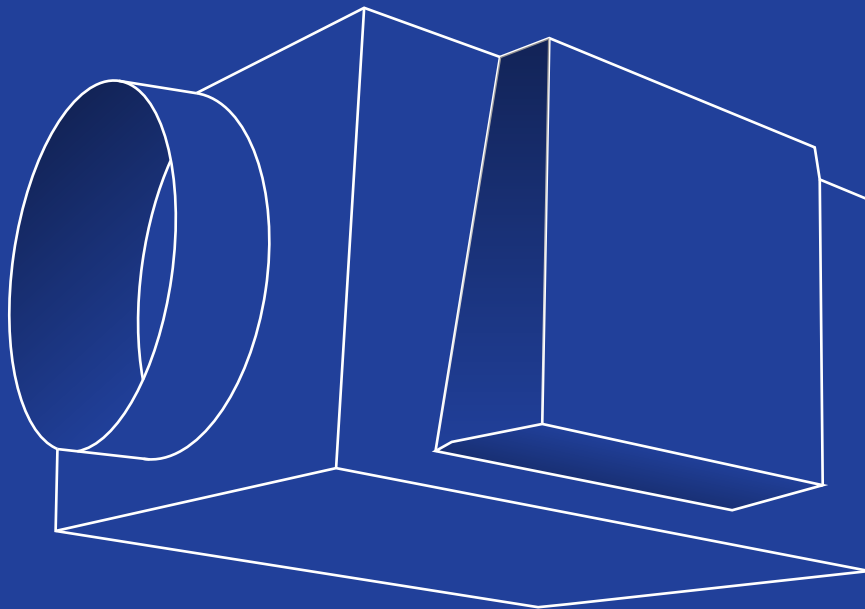
Bypass Type VAV Box

Pressure Independent VAV/CAV Box

Pressure Dependant VAV/CAV Box

Venturi Air Valve

Air Flow Station



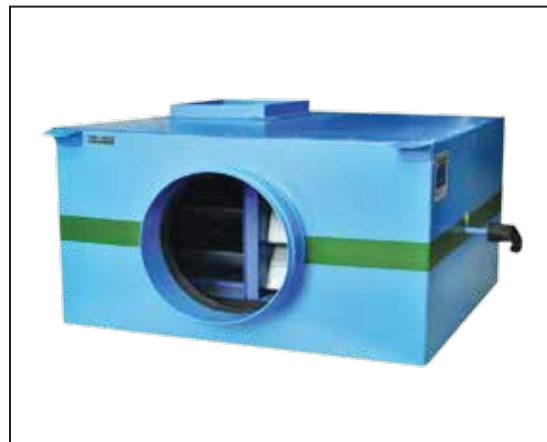
## Air Regulating Boxes

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### | Bypass Type VAV Box

By-pass VAVs combine the advantages of proven air handling concepts to give complete zoning flexibility at lower cost from a single zone source. By-Pass VAVs complement by providing excellent temperature control and central air distribution by individually By-passing excess conditioned air to the main unit. The added costs of multi-zone systems can be avoided. Easy and simple to install, can be used with any Air conditioning units in any buildings or offices and can be easily modified or relocated as interior requirements.

Capacities ranging from 35 to 1500 Ltr/sec. Unit casing is constructed out of 1.0mm (20g) galvanized steel sheet, acoustically and thermally lined. Internal insulation of 12.5 mm, thickness and 24 kg/m<sup>3</sup> density. Loose linear edges are sealed and covered with metal sheet. Electronic thermostat and actuator provide accurate modulating by on/off control and is standard supply.



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### | Pressure Independent VAV /CAV Box

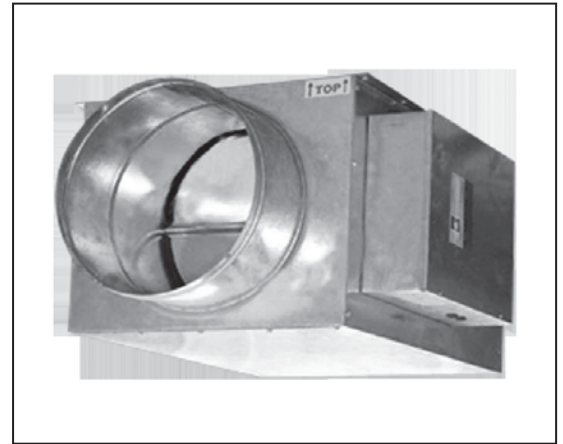
Pressure Independent type VAVs combine the advantages of proven air handling concepts to give complete zoning flexibility at a medium cost from a single zone source. These VAVs deliver variable constant air volume as designed, by providing excellent performance and temperature control for central air distribution with unlimited zoning, combined with common by-passing with VZD - Variable Zone Damper (or VFD). The added advantage of multi-zone systems is by supplying centralized air distribution from unwanted zones to demand related zones. Easy and simple to install, can be used with packaged/ducted Air handling units in any buildings or offices and can be easily modified or relocated as per interior requirements.



Capacities ranging from 35 to 1500 Ltr/sec. Unit casing is constructed out of 1.0mm (20g) galvanized steel, acoustically and thermally lined. Internal insulation of 12.5 mm, thickness and 24 kg/m<sup>3</sup> density, loose linear edges are sealed and covered with metal sheet stiffeners. Electronic thermostat and actuator provide accurate pressure independent control of modulating.

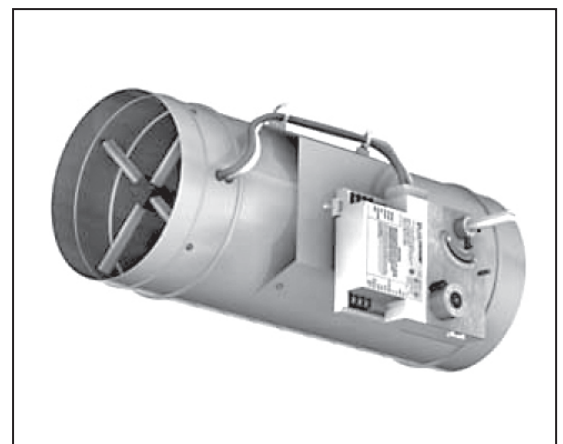
### | Pressure Dependent VAV/CAV Box

Pressure Dependent Type VAVs combine the advantages of proven air handling concepts to give complete zoning flexibility at lower cost from a single zone source. These VAVs complement by providing excellent temperature control and central air distribution with unlimited zoning, combined with common by-passing with VZD -Variable Zone Damper. The added advantage of multi-zone systems are by supplying centralized air distribution from unwanted zones to demand related zones. VAV's are temp and pressure dependent. Easy and simple to install, can be used with packaged ducted air handling units in any buildings or offices and can be easily modified or relocated as per the interior requirements.



### | Circular Pressure Independent VAV /CAV

Circular pressure independent VAV and CAV air volume control terminals. The terminals are designed particularly for systems with space and installation restrictions and for the accurate measurement and control of air volumes courtesy of the patented air flow sensor type Flow-Cross. In CAV application, the terminals maintain the required constant air flow independent to the inlet static pressure. In VAV application, the terminals control the air volume to the room, depending on the cooling load required thus saving energy consumption in both cooling and heating applications.





## Air Regulating Boxes

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### | Venturi Air Valves

Venturi Air Valves are pressure independent flow control valves. The valve opening and the air flow volume are related on an equal percentage flow characteristics curve. The aerodynamic cone and its special built-in mechanism are designed to maintain a constant air volume independent of static pressure change, the air flow volume is mechanically corrected within one second and maintained constant without any actuator reset. No velocity air flow sensor is required before the valve to maintain the volume constant.

All desired air flow adjustments will be possible on site using the external dial and the valve label, no balancing or measuring devices should be required. Inlet and outlet connections to the valve will not influence the flow stability. The valve inlet and outlet are circular and of the same diameter. The body and the mobile cone are made of 18 gauge aluminum through spinning operation. Available in 5",6",8",10",12" Dia for CFM range of 20 to 1600 CFM.



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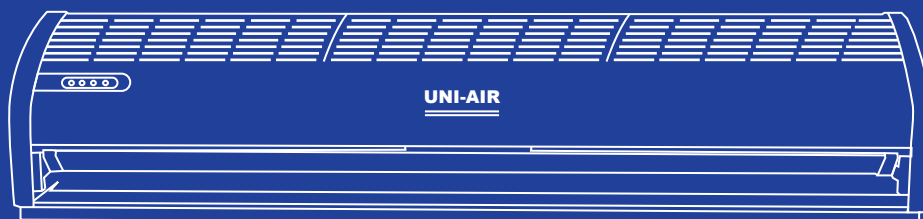
### | Air Flow Stations

The duct mounted airflow measurement station consists of single or multiple airflow elements, factory mounted and pre-piped in a casing designed for flanged connection to the ductwork. Standard materials consist of a G90 galvanized casing and anodized aluminum flow sensors, suitable for most HVAC applications. Flow transducers are available separately.



# 25 | Door Air Curtain

Industrial & Commercial Type



**UNI-AIR**

## Door Air Curtain

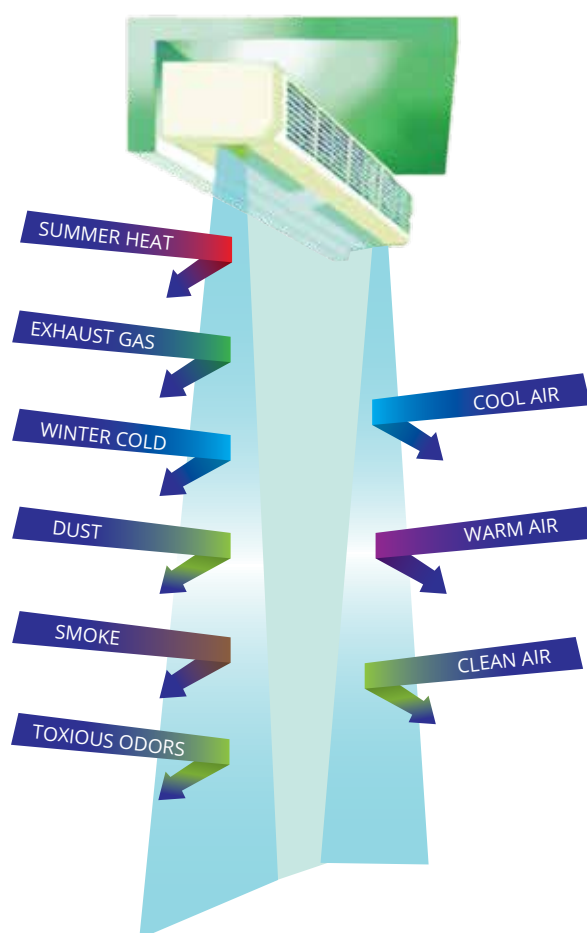
### Commercial Door Air Curtain ( CDAC)

Maximum wind stopping capability  
at 08' Mounting height



### Industrial Door Air Curtain (IDAC)

Maximum wind stopping capability  
at 12' Mounting height



Model#	Commercial DAC			Industrial DAC		
Door Width (Inches)	36	48	60	36	48	60
Max. Vol. (FPM)	3500	3500	3500	4000	4000	4000
Avg. Out Vol. (FPM)	2500	2400	2350	3100	2500	2800
Motor(s) @ hp	1 @ 1/2	1 @ 1/2	1 @ 1	1 @ 1	1 @ 1	1 @ 2
Electric Power (V/Phase/Hz)	220/1/50	220/1/50	220/1/50	380/3/50	380/3/50	380/3/50
Dimensions (Inches) (WxLxH)	14x42x16	14x54x16	14x66x16	14x42x16	14x54x16	14x66x16

While ordering make sure that following  
Information is specified:

- 1) Door width
- 2) Door height
- 3) CFM range I FPM range
- 4) Outside air direction & velocity.
- 5) Nature of activity

Filters, Heaters & Variable  
Speed Drive Motor are Optional

27

# Industrial Fans

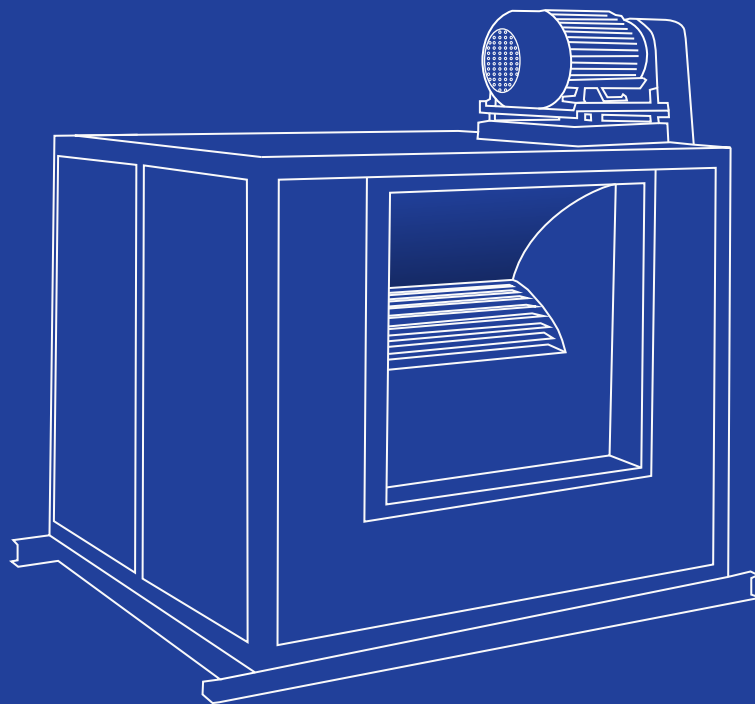
Centrifugal Cabinet Fan

Centrifugal Blower

Centrifugal Inline Fan

Propeller Fan

Tube Axial Fan



**UNI-AIR**

## Industrial Fans

### | Centrifugal Cabinet Fans



FROM 100 To 20000 CFM & 0.1" To 10" WG STATIC PRESSURE

Model#	CCF- 200	CCF- 300	CCF- 400	CCF- 500	CCF- 600	CCF- 700	CCF- 800	CCF- 900	CCF- 1000
CFM Range	100-500	500-1500	1500-3000	3000-5000	5000-8000	8000-10000	10000-13000	13000-17000	17000-20000

### | Centrifugal Blower



FROM 100 To 20000 CFM & 0.1" To 10" WG STATIC PRESSURE

Model#	CCF- 200	CCF- 300	CCF- 400	CCF- 500	CCF- 600	CCF- 700	CCF- 800	CCF- 900	CCF- 1000
CFM Range	100-500	500-1500	1500-3000	3000-5000	5000-8000	8000-10000	10000-13000	13000-17000	17000-20000



## Centrifugal Tubular Inline Fan



**FROM 450 To 1000 CFM**

Model#	CCF- 160	CCF- 200	CCF- 250	CCF- 315
CFM Range	450	600	700	1000

## Propeller Fan



**FROM 500 To 45000 CFM**

Model#	PPF- 300	PPF- 400	PPF- 500	PPF- 600	PPF- 700	PPF- 800	PPF- 1000	PPF- 1200	PPF- 1400
CFM Range	500-1500	1500-2500	2500-5000	5000-6000	6000-9000	9000-12000	12000-20000	20000-30000	30000-45000

### | Tube Axial Fan



#### FROM 100 To 20000 CFM & 0.1" To 6" WG STATIC PRESSURE

Model#	TAF- 300	TAF- 400	TAF- 500	TAF- 600	TAF- 700	TAF- 800	TAF- 1000	TAF- 1200	TAF- 1400
CFM Range	500-1500	1500-2500	2500-5000	5000-6000	6000-9000	9000-12000	12000-20000	20000-30000	30000-45000

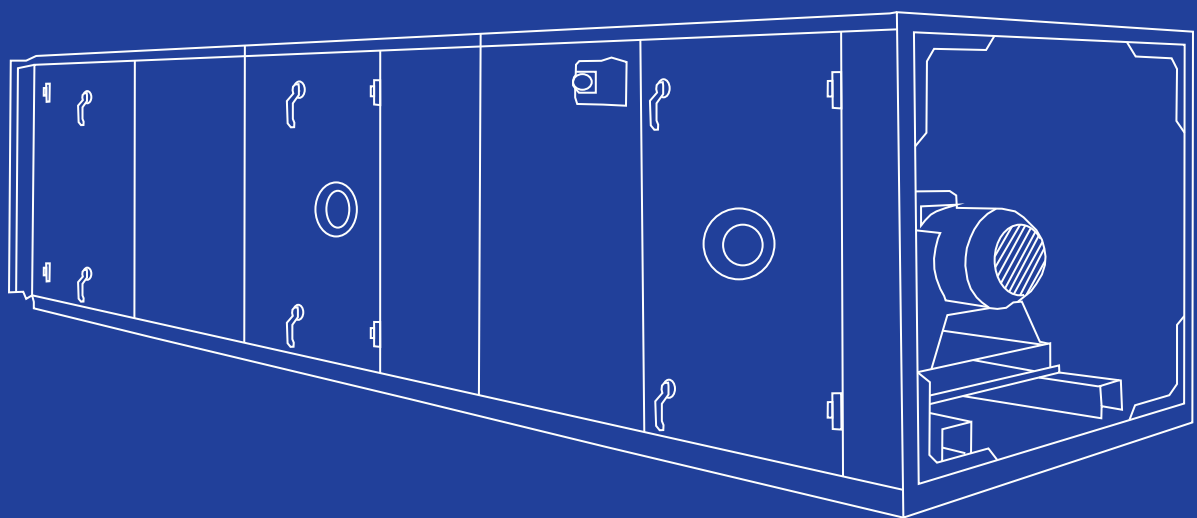
### | Jet Ventilation Fans

Jet ventilation fans are active system provides cost effective solution for normal ventilation and smoke extraction in enclosed, multi story and underground car parks.

Jet ventilation fans are available in three sizes 315, 355 and 400 mm impeller diameter. Fan casings and outside sheet for fan housing and silencers manufactured from pre-coated galvanized sheet. Silencers with integrated inlet cones and guide vanes to straighten the airflow. Air flow rating ranging from 2000CFM to 6000CPM.



# 31 | Air Handling Units



## Air Handling Units

### Air Handling Units

The UNI-AIR Air Handling Units are designed to increase the building efficiency with high engineering standards to provide the requirements of cooling, dehumidification, heating, ventilation and air distribution to a conditioned space, pharmaceutical industry, food, high rise commercial buildings, hospitality sector and other industrial applications.

#### Unit Certification

The units are manufactured in a **facility registered ISO 9001: 2008** manufacturing quality standards.

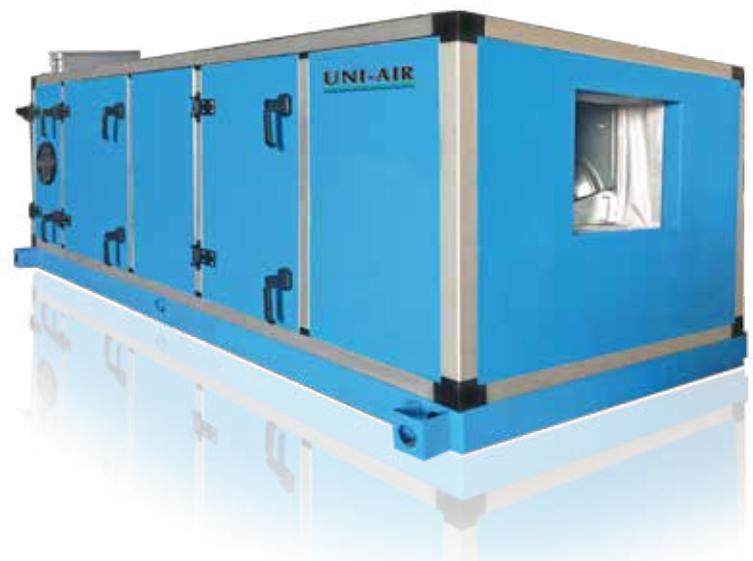
The units are tested according to **European Standard EN 1886** (Certification in process) for Mechanical Performance and 13053 will be processed at later stage.

The Coil performance according to AHRI 410 (Certification in process)

The fans are ACMA certified to meet market specifications.

#### Unit Construction

The units are manufactured by using latest technologies, with entire range of standard components, suited for different applications.



Construction		
Frame-Casing		High Quality Aluminium Profile
Panels	Type	Double Skin
	Structure	Galvanized Steel
	Insulator	Polyurethane
	Paint	Pre-painted or back powder paint
Vibrator Isolators		Standard between Fan & Motor
Thermal Breaker		Thermal Breaking System-Panels & Frame
Fan Motor		Standard 'F' Class IP56
Fan Type		Forward Curved Centrifugal
		Backward Inlined Centrifugal
		Backwards Inlined Plug fan
Static Pressure		Total Static Pressure up to 10 inch WG
Filter Type		G4, F6, F7, F9, H11, H13, H14
Drain Tray		Stainless Steel
Electrical Panel		Optional

#### Unit Air Flow Range

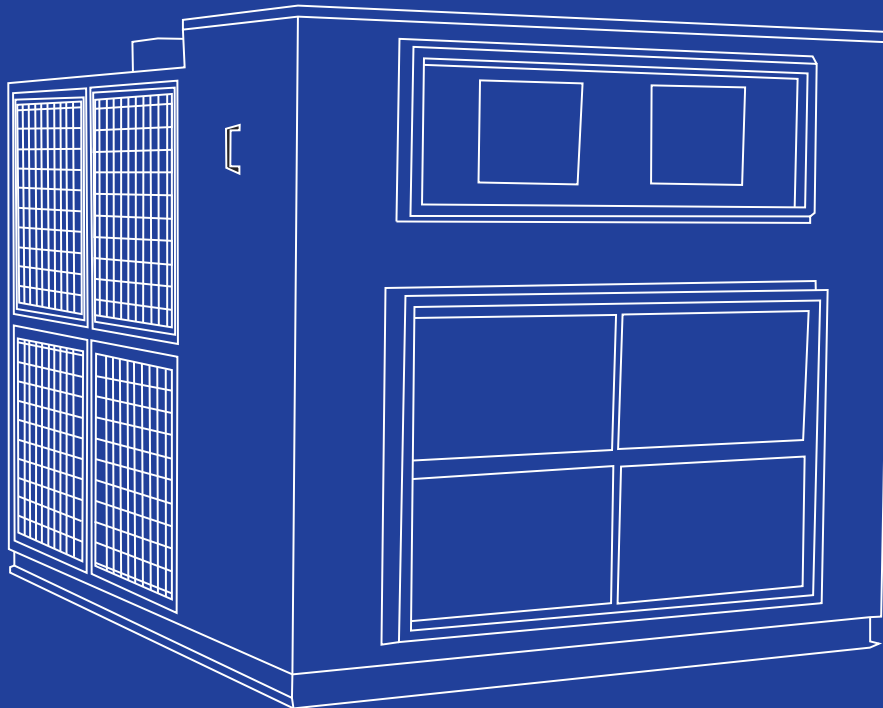
The Units are available from **1000 CFM to 25000 CFM**

#### Unit Selections

Cooling Capacity, CFM, Water Temperatures and Filter Details are required

# 33 | Packaged AC Unit

Horizontal Ducted Type  
Vertical Free Standing Unit  
Air Cooled Self Contained Unit





## Packaged Air Conditioner

Uni-Air Packaged air conditioners are designed and manufactured to increase the entire building efficiency with high engineering standards to meet the requirements to operate in severe climate conditions/tropical regions and are built for outdoor installation, either ground or roof levels and suitable for commercial buildings like schools, warehouses, institutions, banks and office buildings etc.



### Unit Certifications

- The units are manufactured in **facility registered with ISO 9001: 2008** manufacturing quality standard.
- The units are designed and rated in accordance with **AHRI 210/240** and **340/360** standards.
- The DX coils are according to **AHRI 410** (certification in process).

### Unit Construction

Unit Packaged Air Conditioners are factory assembled, leak tested, evaluated, internally wired, fully charged with refrigerants and fully factory tested ready for installation.

### Unit Components

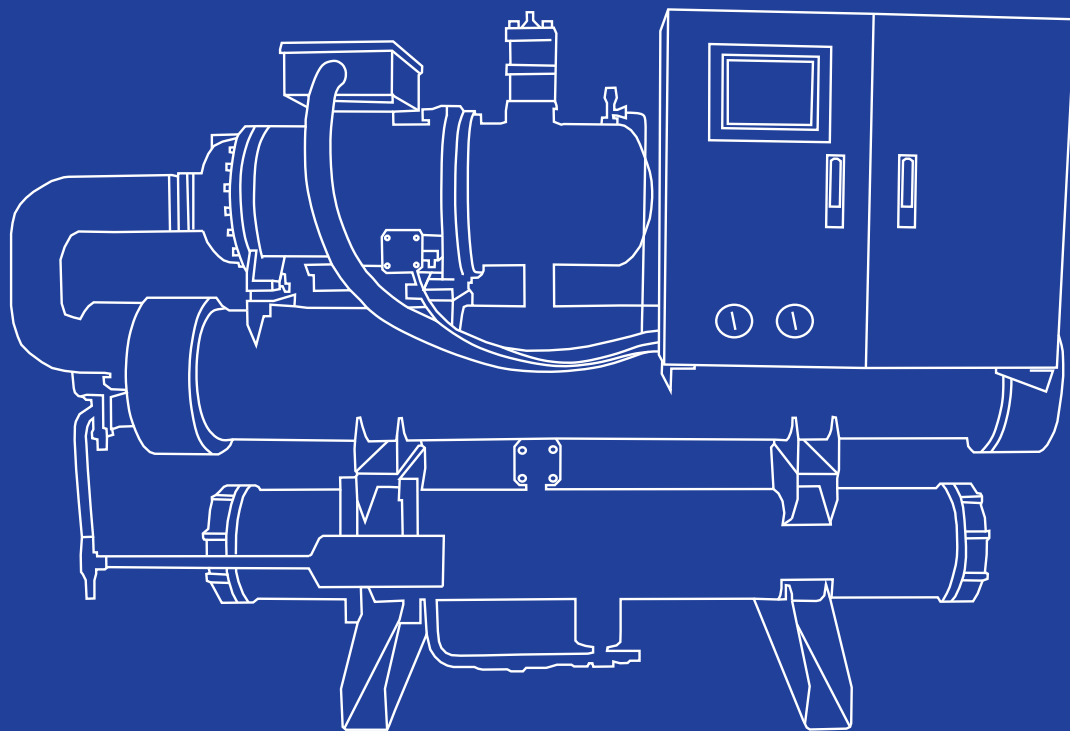
Unit Casing -Structure	The unit casing is made of Zinc coated and has an appropriate gauge galvanized steel sheet, which are de-rusted before phosphating and then finish with backed paint. The Evaporation section is insulated from all sides with polyurethane insulation/fibre glass insulation, meeting the requirements
Compressor	Compressor used are hermetically sealed world class Scroll technology, equipped with crank case heater, internal protection, mounting parts and vibration insulators to minimize the noise and vibration.
Evaporator Coil	The evaporator coils are made of seamless copper tubes mechanically bonded to aluminium waven fins to ensure optimum heat transfer. Coil Leak Test @ 250 PSIG
Condenser Coil	Condenser Coils are Air cooled and manufactured of seamless copper tube and heavy gauge aluminium plate fans. Coil Leak Test @ 450 PSIG
Condenser Fan and Motor	Condenser fans are propeller type with aluminium alloy blades and directly driven by electric motors. The fans are individually statically and dynamically balanced at the factory. The motor is totally enclosed Air Over (TEAO), 6 poles, Class 'F' insulation, IP55 protection.
Control Panel	The unit is provided with a weatherproof Control Panel with standard components: <ul style="list-style-type: none"><li>• Motor Contractor-Individual compressors, Condenser Fan Motor and Evaporator Fan</li><li>• Overload Relays- Condensing Fan Motor and Evaporating Fan Motor</li><li>• Anti-recycling time delay relays</li><li>• Control Circuit Disconnect Switch</li></ul>
Safety Devices	Oil Protection Switch, HP /LP Switch, Liquid Line Side Glass, Shut off Valve, Manual Reset
Microprocessor	Optional

### Unit Capacity Range and Choice of Refrigerant

The unit are available in sizes from 3.5HP to 40HP at nominal ARI conditions, with R-22, R-407, and R-410A Refrigerants (A2L in process).

# 35 | Chillers

Air Cooled Chiller  
Water Cooled Chiller



## Chillers

Uni-Air Chillers are designed and manufactured to increase the entire building efficiency with high engineering standards to meet the requirements to operate in severe climatic conditions, and environment friendly coupled with minimal noise and vibration, use with high efficiency compressors for utmost performance and reliably in a compact construction, suitable for Hotels, High-rise Buildings, Warehouses, Shopping Centres, Banks, Pharmaceutical and other industrial process applications.

### Chiller Certifications

The Uni-Air Chillers are manufactured in facility registered with **ISO 9001: 2008** manufacturing quality standard.

The Uni-Air Chillers are designed and rated in accordance with **AHRI 550/540** standards.

### Chiller Construction

Uni-Air Chillers are assembled, leak tested, evaluated, internally wired, fully charged with environment friendly refrigerants and fully factory tested ready for installation, available with both Air cooled and Water cooled applications.

### Chiller Components

Compressor	Compressor are Scrolls, Semi-Hermitic Reciprocating and Screw based technologies, equipped with Crank Case Heaters, Internal Protection, Mounting Parts, Vibrator Isolators along with all Standard Protections, available as Independent or Tendam arrangements.
Evaporator Shell	Shell & Tube -Direct Expansion with bundle of copper tubes, tested @250PSIG and water enclosed in M.S. Shell tested @100PSIG, insulated with Polyurethane along with shell jacketing,
Condenser Coil	Condenser Coils are Air cooled and manufactured of seamless copper tube and heavy gauge aluminium plate fans. Coil Leak Test @ 450 PSIG
Condenser Fan and Motor	Condenser fans are propeller type with aluminium alloy blades and directly driven by electric motors. The fans are individually statically and dynamically balanced at the factory. The motor is totally enclosed Air Over (TEAO), 6 poles, Class 'F' insulation, IP55 protection.
Expansion Device	Chillers are equipped with Thermal or Electronic Expansion valve along with controller
Control Panel	The unit is provided with a weatherproof Control Panel with standard components: <ul style="list-style-type: none"><li>• Motor Contractor-Individual compressors, Condenser Fan Motor and Evaporator Fan</li><li>• Overload Relays- Condensing Fan Motor and Evaporating Fan Motor</li><li>• Anti-recycling time delay relays</li><li>• Control Circuit Disconnect Switch</li></ul>
Safety Devices	Oil Protection Switch, HP /LP Switch, Liquid Line Side Glass, Shut off Valve, Manual Reset, Freeze up & Low Temp. devices- Defrost, Main Thermostat
Microprocessor	Standard Microprocessors Control suitable to connect BMS with different protocols.
Heat Pump	Optional

### Chiller Capacity Range and Choice of Refrigerants

Uni Air Air Cooled Chillers - 3.5HP to 200H, Water Cooled Chillers - 4.5HP to 250HP  
Available with R-22, R-407, and R-410A Refrigerants (A2L in process).



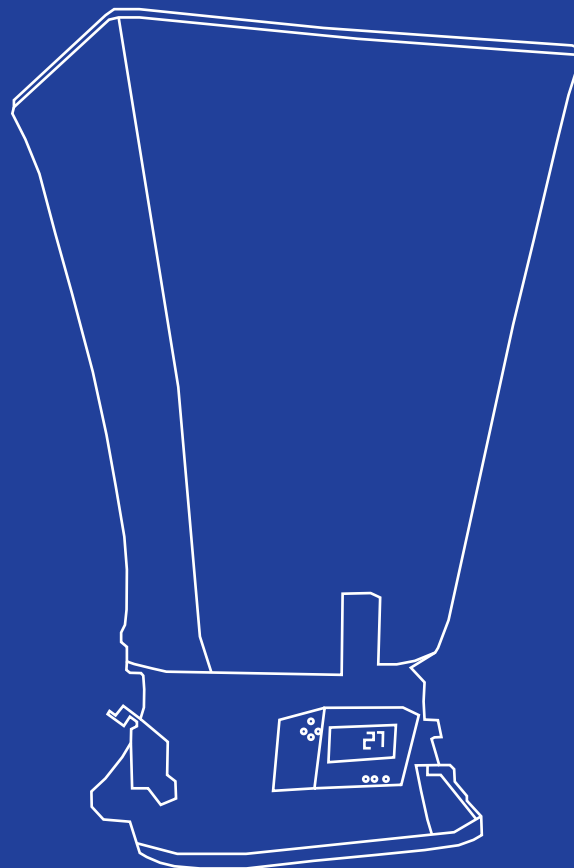
# 37 | TAB & Commissioning Services

Duct Leakage Testing

TAB Services

Duct Cleaning Services

Operation & Maintenance of HVAC System



## TAB Services

### | TAB & Commissioning Services

#### TAB Services

- ✓ Air & Hydronics System
- ✓ Sound & Vibration
- ✓ Clean Room Performance Testing
- ✓ Fume Hood Performance Testing
- ✓ Indoor Air Quality Test and Periodic Solutions
- ✓ Periodic Fire damper inspection Testing
- ✓ BAS, BMS, ATC Functional performance tests
- ✓ Electro-Mechanical System
- ✓ Functional Performance testing



#### Duct Cleaning Service

Realizing the importance of periodic duct cleaning, SHAN GROUP introduce as imported special duct cleaning equipment, to ensure the cleanliness and proper functioning of the ducts. From the supply and branch ducts, to the grilles and diffusers, all the parts are thoroughly cleaned, separately. The cleaning equipment also has an inspection system which consists of a video camera and a portable colour monitor. With the help of this, you can see the condition of your ducts before and after cleaning.



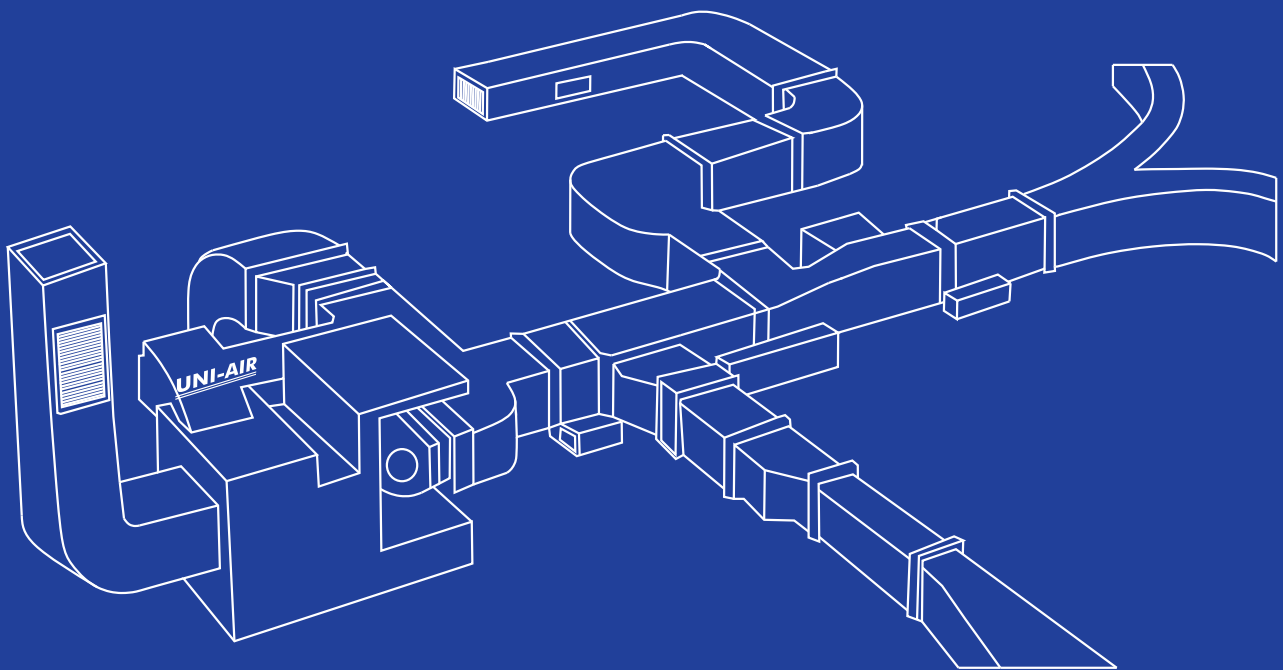
#### ADVANTAGES

Remove allergens remove bacteria in air ducts  
eliminate dust in air ducts improve indoor air quality  
system efficiency

BS EN 15780:2011 Ventilation for buildings provides inspection time periods in months for air systems

QUALITY CLASS	TYPICAL EXAMPLES	AHU	AIR FILTERS	DUCTS	AIR TERMINALS
Low	Storage Room, Technical Rooms	24	12	48	48
Medium	Offices, Hotels, Residential Homes, Shopping Malls, Exhibition and Support Buildings	12	12	24	24
High	Laboratories, Treatment Areas in Hospitals , High Quality Offices	12	6	12	12

# 39 | Our Projects





## Our Projects

### PHARMACEUTICALS



### COMMERCIAL BUILDING



### BANKS



### TOBACCO COMPANIES



### FOOD INDUSTRIES COMPANIES



### HOSPITALS



### HOTEL & RESTAURANTS



### TANNERIES



### TEXTILE & GARMENTS



### EDUCATIONAL INSTITUTE



### ENERGY & POWER & OTHER INDUSTRIES



# **UNI-AIR**

we care the air



**SHAN INDUSTRIES**  
OEM OF HVAC & AIR DISTRIBUTION EQUIPMENT



**Unit-1:** Plot # 3/29 & 3/55, Sector-21,  
Korangi Industrial Area, Karachi-74900, Pakistan.

**Unit-2:** Plot # LE-16 A1, Korangi Creek  
Industrial Park, Karachi-75190, Pakistan.

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0301-8239887, 0316-2984434, 0334-2722887

**Email:** [factory@shangroup.net](mailto:factory@shangroup.net), [info@shangroup.net](mailto:info@shangroup.net)  
**URL:** [www.shangroup.net](http://www.shangroup.net)