

# AIR HANDLING UNIT

CAT. NO . 5.801



# OMRAN TAHVIEH

*Heating , Ventilation And Air Conditioning*

**OMRAN TAHVIEH** as a leading company for good required air conditioning , ventilation and heat technology has been projecting and manufacturing a wide range of units . Most of the products are produced by the use of modern technology production .

**OMRAN** company arises from the experience matured by a group of specialists in air conditioning market in over many years of activity . Our company has many times faced , studied and solved all the aspects related to the manufacturing of air conditioning units for air movement and treatment with taking care of using first quality materials and technically correct and economically competitive sizing of the units .

**OMRAN'S** technical department is at your disposal to find the best solution for each application out of the standard available .

**OMRAN'S** constant developments ensure the highest standards of quality , The declared performances are certified by carried on by independent institutes .



INTERNATIONAL GOLD AWARD FOR QUALITY AND TECHNOLOGY OF EUROPE QUALITY CONVENTION

**INTRODUCTION**

**INTRODUCTION**

The OM - AH Series Air Handling Units have been designed to satisfy all engineering requirements in air conditioning, heating and ventilation.

The OM - AH Serie units have found wide application in the following fields :

- general purpose air conditioning for the home, schools, offices, banks, workshops, laboratories, restaurants , cinemas , hospitals , department stores, mosques, supermarkets, etc .
- air cleaning for the sterilization and air conditioning in operating theaters and hospital wards , in store - rooms for foodstuffs and chemical - pharmaceutical products, for clean rooms, etc .
- air conditioning in industrial processes such as drying , air washing , adiabatic cooling products , humidification , etc .

The central station OM - AH Serie units are built up for the specific requirements by suitable combinations of independent sections modules to form a modular air handling unit , thereby imparting the following advantages :

- it is easy to assemble and disassemble the equipment at the site thus facilitating entrance in areas where access is limited .
- overall shipping bulk can be reduced considerably .
- it is easy to add , eliminate or replace any one section , even after installation of the air handling unit .

The OM - AH Serie units are designed and manufactured in the following styles :  
single zone , multi - zone , double duct for systems with high or low static pressures .

Unit delivery is performed in full packaged or in disconnected modules depending to size and overall arrangements' dimensions .

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### LEGEND AND CODING

SCTN.	SYMBOL	CODE	APPLICATION	SCTN.	SYMBOL	CODE	APPLICATION
FANS		FAS FAT FAZ FRZ	F. C. ( L ) F. C. ( L ) F. C. ( LMH ) B. C. ( LMH )	HUMIDIFIERS		HSIG HSEG HFF HPS HAW HCS	STEAM INT. GENERATOR STEAM EXT. GENERATOR FLOODED FILL SPRAY PAD AIR WASHER SPRAY COIL
COILS		CCW CCWE CDX CDXE CHW CST CHG CEH	CHILLED WATER DITTO + ELIMINATOR DX- REFRIGERANT DITTO + ELIMINATOR HOT WATER LP STEAM HOT GAS REFRIGERANT ELECTRIC HEATER	FILTERS		FIP2 FIP4 FIPV FIBG FIRL FISI FIHP	PANEL 2 " THICK PNEL 4 " THICK PNEL ' V ' ARR BAG ROLL AUTO SAND INERTIA HI - EFF. PARTICULATE
MULTIZONE		MZNH MZNV	PACK. COLD + HOT DECK DITTO	PLENUMS		PEM PAC PEB PEV	EMPTY ACCESS END BOTTOM CONN. END VERT. ASSY
DAMPERS		DAI DFC DFBP	AIR INTAKE FULL FACE FACE + BY - PASS	ATTENUATORS		SAT	SOUND ATTENUATOR
BOXES		BEX BMX BMXP BMXV	EXHAUST BOX MIXING BOX DITTO + PANEL FILTER DITTO + ' V ' FILTER	ACCESSORIES		AVV ADF ATC ABS ASM ARH ARL ABD APHT APHU AIL AFC	VAV FAN CONTROL DISCH. DIFFUSER TOP COVER BASE SPRING MOUNTS RAIN HOOD SAND LOUVRE BY- PASS DUCT EL. HTR. PANEL EL. HUM. PANEL INTAKE LOUVRE FLEX. CONNECTOR
HEAT RECOVERY		RHP RHP RHT	PLATE AIR - AIR H. EX. ROTARY AIR - AIR H. EX. HEAT TUBE - AIR H. EX.				

### COMPONENTS' DESCRIPTION

#### 1. CASING CONSTRUCTION

OM - AH Series sections' casings are constructed of framed modules for maximum rigidity and strength. Sections' modular design is enabling easy handling of the same during assembly and installation as well as simple access to all internal components for inspection or maintenance. Side panels are provided with quick release fasteners, where indicated, for such purpose.

Standard OM - AH Serie unit casing is composed of following basic parts :

##### 1.1. Structure frame

Frame is built of zinc galvanized steel sections jointed by bolted corner elements.

##### 1.2. Panels

Panels are built of zinc galvanized steel sheets formed to fit recessed into frame. Panel edges are returned for specified depth and insulation support, and same are finishes with two coat baked enamel paint of OMT standard light grey color.

##### 1.3. Insulation

Fiberglass or polyurethane or polyroll insulation of 1 inch thickness is bonded to internal side of panels.

##### 1.4. Base frame

Base frame is built of structural steel channel and the same is supporting sections' modules in total length according to specified unit arrangement.

In order to comply with various specifications requirement, the following options are available :

- internal panel skin, so called "double skin", made of galvanized steel sheet as an alternative.
- fiberglass or polyurethane or polyroll insulation of 2 inch thickness.

- injected polyurethane insulation when double skin option is specified as alternative to standard fiberglass.

- accessories for outdoor applications.

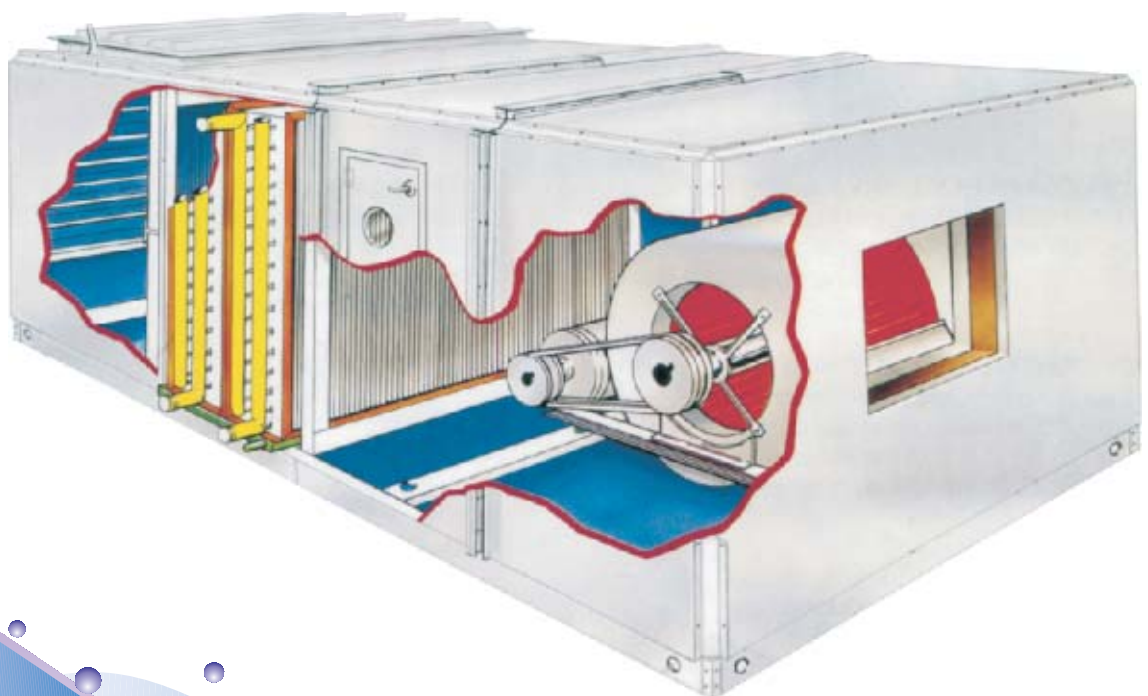
- custom built unit with non-standard dimensions as solution for special arrangements or replacement.

#### 2. FAN SECTION

OM - AH Serie Fan Section is constructed of suitable sized casing module and following sub-assemblies as standard :

##### 2.1. FANS

Fans centrifugal type, statically and dynamically balanced complete with shaft, selfaligning, lubricated for life, ball type bearings and fixed patterns VEE - belt drive fan pulley.



## COMPONENTS' DESCRIPTION

### 2.1. Fans ( Contd ... )

Following type of wheels are available :

- As forward curved Lp range
- AT forward curved Lp range
- AZ forward curved LP , MP, HP range
- RZ backward curved LP , MP, HP

Nominal capacities are indicated in specification schedule . Please refer to bulletin number 110/2 each fan curve for detailed information .

### 2.2 Drive

single or multi VEE belts with variable motor pulley for fine adjustment at commissioning stage .

### 2.3. Fan Motor base

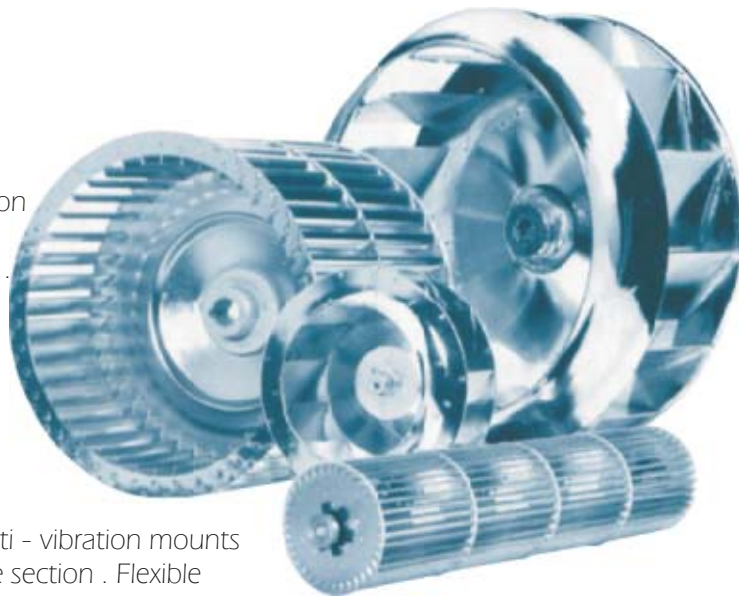
Floating anti - vibration base separated by anti - vibration mounts from casing carries all the rotating parts of the section . Flexible connection is provided between fan discharge and casing panel .

### 2.4. Access Panel

Removable panel at motor side for motor and drive inspection .

In order to meet various specification requirement , the following options are available at request :

- different fan outlet positions .
- hazardous application options including nonferrous side inlet cone , antispark belts and explosion - proof motor .
- stand - by motor and drive ( manually changeover ) .
- stand - by motor with magnetic clutch ( auto changeover ) .
- external motor , extended shaft and drive guard .
- multispeed motor .
- spring anti - vibration mounts .



## 3. FAN MOTORS

Units serie OM - AH are equipped as standard , with totally enclosed fan cooled ( TEFC ) motors , foot mounted ( B3 ) 4 pole , protection IP54 , insulation class "F" , rated for temp rise of 80 deg k , 3 phase . According to order instruction scheme , motors are available for power supply as specified at 50 / 60 Hz network . Motors' terminals are arranged for DOL starting up to and including 5.5 KW . Star - Delta starting is standard for sizes 7.5 KW and over. Please refer to ordering instructions for selection of alternative options as required by particular specification , for standard motors detailed , please refer to Electric Motors Data .

**COMPONENTS' DESCRIPTION**

**4. HEAT TRANSFER SECTION ( COILS )**

Units Serie OM - AH Can be equipped according to specified requirement with variety of Heat Transfer blocks . The following groups are available in order to satisfy the most requirements that may be specified for air treatment process :

4.1. Cooling and Heating Coils

These coils are constructed according to well established heat transfer principle where in tubes is circulating heating or cooling medium and around finned external tube surface is circulating the air in cross - flow pattern . The most popular cooling mediums are chilled water , brine and DX or flooded refrigerants . Regarding heating medium the most applicable are hot or warm water , low pressure steam and superheated high pressure refrigerants .

Cooling and heating coils are built of seamless copper tubes , as standard , expanded into aluminum waved fins for maximum heat transfer .

DX coils are equipped with refrigerant distributor ( s ) connected to tubes according to circuiting requirement and numbers of matched condensing units . Chilled and hot water coils are circulated according to specified capacity requirement. Standard tube sizes are 5/8 " O.D. For chilled , steam hot water and DX coils , and 3/8 " O.D. For de superheating coils .

Standard ( nominal ) finning is 8 FPI for chilled , hot water , steam and DX , and 12FPI for de superheating coils . However 10FPI and 12FPI finning is applied whenever required for maximum coil efficiency and complex applications .

Prior to assembly all coils are subjected to pressure test of 250 psig as standard , except steam and de superheating coils which are tested at 450 psig as standard .

Cooling coils are also available , suffix "E", with droplets eliminators ,

when ordered or required by specifications . Eliminators are available in PVC , galvanized steel , stainless steel or aluminum .

Further to above , all cooling coils are equipped with an insulated drain pan , as standard , for condensate removal . Drain pan are made of zinc galvanized steel sheet . Coils and drain connections can be arranged from either or both side as required .

Nominal coils capacities are presented in Specification schedule, however OMT computer selection is available for variety of design conditions .

As mentioned earlier standard Construction is Cu-tube and Al - fins but as an option , the following alternatives are available :

- a - copper fins
- b - copper fins electro - tinned





## COMPONENTS' DESCRIPTION

### 4.2 Electric heater .

Where required by Specification , units serie OM - AH can be equipped with electric heating battery composed of finned / un finned tubular enclosed heating elements . Standard elements are of galvanized steel construction, however stainless steel construction is available as option .

Standard capacities are presented in specification schedule in four variants ' for 25, 50, 75 and 100 % outdoor air mixture . Electric heaters with different than standard capacities can be delivered at request . Each Electrical Heater Section will be supplied with High limit safety cutout ( Auto & manual ) as standard .



### 5.1. FIP2

panel filter section for all kind of 2 " thick filters .

### 5.2. FIP4

panel filter section for all kind of 4 " thick filters .

### 5.3. FIPV

Filter section for 2 " thick filters arranged in " v " banks for side removals .

### 5.4. FLBG

Bag Filter Section in three different lengths for maximum filter depth of 36 " . Section is equipped with side access for filters removal and installation .

## 5. FILTER SECTIONS

Units Serie OM - AH are provided with possibility for various filtration requirement in order to meet the most complex specifications .

Being aware of the fact that air filtration is the industry itself , OMT have arranged within this literature the most frequent filters ' types that appears in HVAC specifications . However any other special filters as grease , oil fume , electrostatic , carbon etc can be furnished at request by accommodating the same within available universal optional empty sections . Standard filters Ordering Instructions has been made according to the following classification :

#### -G- ASHRAE 52-76

gravimetric test , i.e. Extraction ( arrestance ) efficiency obtained by testing the specimen of synthetic dust , also referred as Dust arrestance method ( equivalent to DIN 24185 ) .

#### -C- ASHRAE 52-76

Colorimetric test , i.e. Separation efficiency obtained by testing the specimen of atmospheric dust , also called Dust spot method ( equivalent to DIN 24185 ) .

#### -D- DOP test

For high efficiency filtration components . It is important to note that OMT is Ready to comply with other codes and testing standards by comparison certification available with filters manufacturers .

The following OM - AH Serie units ' filter sections are available :



## COMPONENTS' DESCRIPTION

5.5. FIPL

Automatic Roll filter section complete with drive machine , motor and control ( diff. Pressure , timer or both ) "end roll " switch and indication alarm light and free contact for remote alarm indication as an option .

Section is equipped with side access for media maintenance . Roll travel is horizontal and standard roll cartridges are used .

5.6. FISJ

Sand Inertia Filter Section for use with external bleed - off fan as standard , complete with vertical "V" louvered inertial separators and bottom collector duct . Stainless steel one , are available , as option , at request .

5.7. FIHP

High , very high or ultra high efficiency filters section for specific requirement is available complete with fixing sub frame , gaskets , clamps and side access panels for universal access to filter cartridges , Section dimension are not presented due variety of specification and filters' capacities . Certified drawing shall be issued when ordered .

As general accessory OMT can include, as option , differential pressure gauge as filters' status indication .

Also spare sets of filters' inserts are spare sets of filters ' inserts are available , at request , as an option .



## 6. HUMIDIFIER SECTIONS

Units Serie OM - AH can be equipped with variety of humidifiers' section in order to satisfy different specifications . Two basic concept for air humidification are employed :

- steam generation by heating and boiling of the water with electric heater .
- water evaporation on extended surface in contact with dry air resulting in sensible heat removal along with relative humidity increment .

The following humidifier section are constructed around above basics :

6.1. HSIJ Section

with integral Steam generator composed of immersion type electric heater , stainless steel tank , water level control , safety thermal cut-out , tank and perforated cover as steam distributor . Access panel is provided for inspection .

6.2. HSEG Section

for application with External steam generator or steam main . Section is empty with drain pan . External steam generator as option can be provided by OMT at request .

6.3. HFF Section

with evaporative flooded fill type humidifier complete with internally mounted water circulation pump , fill in two alternative thickness , 6 " for 75% max . Efficiency And 12" for 87% max . Efficiency at nominal air flow, water - tank , level control and droplets eliminator . Eliminator alternative construction are galvanized steel , PVC or stainless steel depending on specification . This type of humidifier could be used in systems where no water recirculating is allowed but proper water consumption in this case an electric steam generator may be more economic .

**COMPONENTS' DESCRIPTION**

6.4. HSP Section with spray pad type

humidifier similar in construction to HFF with exception that water is sprayed , and not flooded , over pad area having efficiency of 90% at nominal air flow . Circulation pump ( s ) is externally mounted . This section can be also used as an air washer section where required by application .

6.5. HCS Section

with sprayed Coil Type humidifier equivalent to HPS Section which is extended enough to accommodate coil . All other details are same with exception to water flow rate which is reduced . Application of this section is extended for cooling period when sprayed active coil is improving air saturation with resulting lower leaving air dry bulb temperature, i . e. Some reduction in air flow is possible for same sensible load to be removed from air conditioned space .

The application of above listed types of humidifier sections should be governed by the job specification , I . E . by the purpose, electricity or water availability , hygienic requirement etc .

Specification schedule is presenting steam humidifier section HSIG in four capacity variants based on 100 , 75 , 50 and 25 % outside air mixture .

However specified capacities can be arranged as, required for particular specification .

Regarding evaporative humidifiers application , the following basic relation can be used for leaving air condition estimate for an adiabatic process :

$$EFF = ( EATD - LATD ) / ( EATED - EATW )$$

$$EATW = LATW$$

where : EFF is humidify cation efficiency EATD ent . Air db temp .

LATD leaving - ditto -

EATW entering air wb temp

LATW leaving - ditto -

All sections are provided with access panel sided as per

ordering instruction Form .

6.6 HAW Section

An air washer or de humidifier is an apparatus designed primarily to produce an intimate contact between air and water for the purpose of obtaining transfer of either heat or moisture from one to the other, for removing impurities from the air , or for a combination of these affects. Essentially , an air washer consists of a chamber or casing enclosing a system of water sprays , a tank for collecting the water falling from the sprays , inlet louvers over the air entering face of the washer , and moisture eliminators at the air leaving end . Air is drawn through the casing to bring it in to contact with the water . The inlet louvers aid in producing a uniform flow of air in to the washer so to secure the full benefit of the sprays , and they prevent any backlash from the sprays . The eliminators remove drops of moisture entrained in the air leaving the sprays to avoid water carryover in to the air distribution system . The use of a system of flooding sprays to continuously wet the eliminators adds additional area of water surface for contact with the air , increasing the air washer efficiency.



## COMPONENTS' DESCRIPTION

### 7. DAMPERS & DAMPERS SECTIONS

Units Serie OM - AH are equipped , as required by ordering instruction , with dampers and dampers ' section According to arrangements . Generally two types of dampers are available :

- parallel blade damper
- opposed blade damper

As rule , parallel types are to be used for mixing air application and opposed types for throttling one .

As an option an airfoil blade dampers of both types are available as well as optional edge seal for all types when specified .

Accordingly , the following dampers are available either as accessory or part of the section :

#### 7.1. SAI AIR Intake damper

for different applications sized for :

- 100 % of nominal air flow
- 50 % - ditto -
- 25 % - ditto-

#### 7.2. DFC Face damper

for throttling applications across complete section face .

#### 7.3. DFB Face and By - pass damper

as section for application of air by - pass around the coil as system control , with accessory by - pass duct for complete length of alternate air passage .

Reduced area air intake dampers are exclusively designed for the region where , in majority of application , reduced fresh air flow is used due a ambient condition . In such cases full area dampers are easier to control and duct connection is simple and without long conical reducer .

### 8. BOXES

Units Serie OM - AH can be equipped with the following boxes as may be required by specified arrangement :

#### 8.1. BMX Mixing box

with fresh air and return air parallel blade dampers as standard .

#### 8.2. BMXP Mixing box

as BMX but Provided with panel type filter frame .

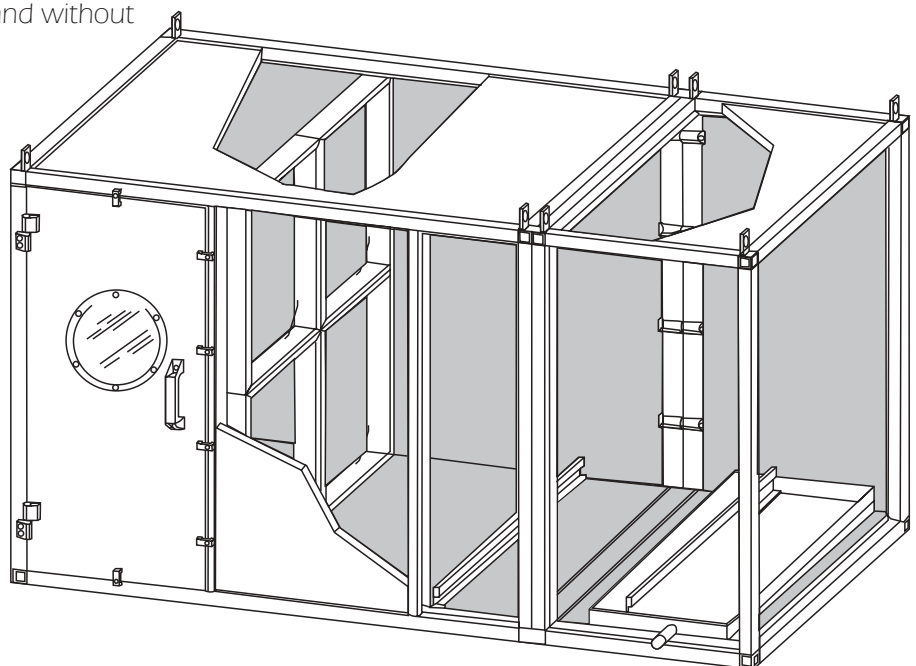
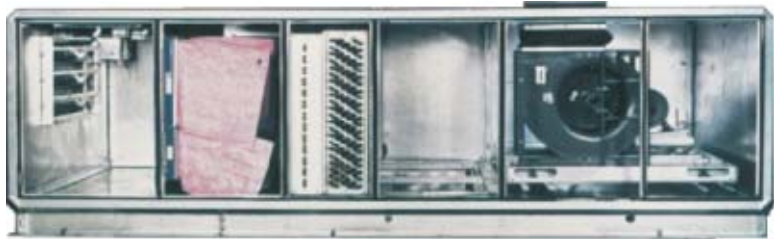
#### 8.3. BMXV Mixing box

as BMX but Provided with "V" type filter frame .

#### 8.4. BEX Exhaust box

as a part of Exhaust / Mixing box arrangement when Return / Exhaust fan section is added to air handling unit package .

As standard , this set is provided with full area dampers enabling full fresh air intake by modulating dampers during mild periods for "free" cooling , combined with full exhaust .





## COMPONENTS' DESCRIPTION

### 9. PLENUM SECTIONS

Units Serie OM - AH plenum Sections are available to fulfil various requirement for either special arrangements or nonstandard but specifies components ' housing . Following plenums are listed as scheduled in ordering Instruction :

#### 9.1. PEM - Empty plenum

section in three different length as standard and any length required as option .

#### 9.2. PAC - Access plenum section

complete with access door on either or both side to be inserted within arrangement as required for universal access .

#### 9.3. PEB -End plenum

section for arrangements with bottom supply or return , like outdoor Roof Top units, or for application as end angle section .

#### 9.4. PEV - End plenum for

Vertical arrangement also accommodating coil section elements .

As an option for different requirement variety of splitter thickness , spacing and casing . Length is available in order to satisfy most strict attenuation requirement .

SAT-1 is code for 24 " long section  
SAT-1 is code for 28 " long section

### 10. MULTIZONE SECTION

OM -AH Serie Multizone Section is available for relating system application . Section is complete with cooling coil , heating coil ( if required ) and zones ' dampers which are mechanically inter lickered for opposed operation . Two arrangements are available , vertical discharge and horizontal discharge .

This section can be also used for dual - duct systems application ( less dampers ) .

All standard and optional ranges of heating and cooling coils are available for this section . However the use of chilled and hot water coils is recommended being nit affected by reduced air flow when discharge damper start to modulate towards closed position for relating deck .



### 11. ATTENUATOR SECTIONS

Sound attenuator sections ( SAT ) are available for use with OM - AH Serie units .

Attenuators are of standard design with vertical splitters in the air stream . Two standard section lengths are available , 24" and 48" . Standard splitters are 8" thick and 4" spaced forming airway in between .

## COMPONENTS' DESCRIPTION

## 12. HEAT RECOVERY SECTIONS

In order to fulfil the growing demand for energy conservation and requirement , OM - AH Serie units could be provided with relating section of the following type :

RHP - Fixed plate Heat recovery section , with air to air heat exchanger insert , for application Where no contact between two air streams are allowed .

RHR - Rotary Heat recovery section , with air to air heat exchanger in form of heat absorptions in rotary plates which are as block passing from one air stream to other in endless circulation by rotation . Heat transfer surfaces are available for either sensible , only , heat transfer ( RTS ) or total heat transfer ( RTL ) by use of hygroscopic surface material . The use of this section is applicable where minor mixing of supply and exhaust air is allowed due gap between rotary wheel and housing . Purging clean fresh air intake when supply fan is in blow - thru arrangement and exhaust one in draw - thru arrangement , i.e. Clean side is pressurized and exhaust side is under pressured .

RHT - Heat Tube Heat exchanger made of fixed recharged refrigerant tubes, expanded into Aluminum fins , divided into two sections and exhaust and exposed to supply and exhaust air stream. Lower section is performing as heat sink and upper as heat source being actually evaporator and condenser of single refrigeration circuit . Condensed refrigerant is draining into lower part for next evaporation cycle . Heat transfer is clean , i.e. No mixing of air streams exists . There are two variants :

RHT - V with vertical tubes to be used for one season application .

RHT - H with inclined tubes for both seasons application when units located above exhaust - mixing section and inclination is changed for each season .



### COMPONENTS' DESCRIPTION

#### 13. ACCESSORIES

OM - AH Serie Units Sections are available with various accessories in order to provide maximum compliance to most complex specification .

The following accessories are listed and described :

ABS - Common base frame

acting as the skid collecting all section within specified arrangement . ABS is equipped with lifting lugs to enable easy handling of the unit during transportation and installation .

ATC - Top cover as

weather proofing component of outdoor unit . ATC is made with slight pitch down from the center line finishing with channel gutters on either sides to avoid rain water splash at side of the unit .

ASM - Spring mounts

for Fan floating base instead of standing rubber mounts for precisely specified antivibration protection requirement . ASM selection of different static deflections is available at request .

AIL - Air intake louver

for application on outdoor units or industrial units with free return . Ail are of standard fixed design with bird screen in from of wire mesh and sized according to selected air intake damper ( DAI ) for 100 % ( full ) , 50 % and 25 % air flow .

ASL - Air intake sand louver for

coarse sand extraction prior the entry in the unit as considerable help in pre - filtration process in areas where sandstorms are frequent .

ARH - Rain Hood

for air intake of outdoor unit . ARH is completely projected over air Intel opening and equipped with bird screen in from of wire mesh .

The use of ARH is protecting the unit from rain drops penetration through air intake regardless of rainstorm intensity and direction .

ABD - BY - pass duct

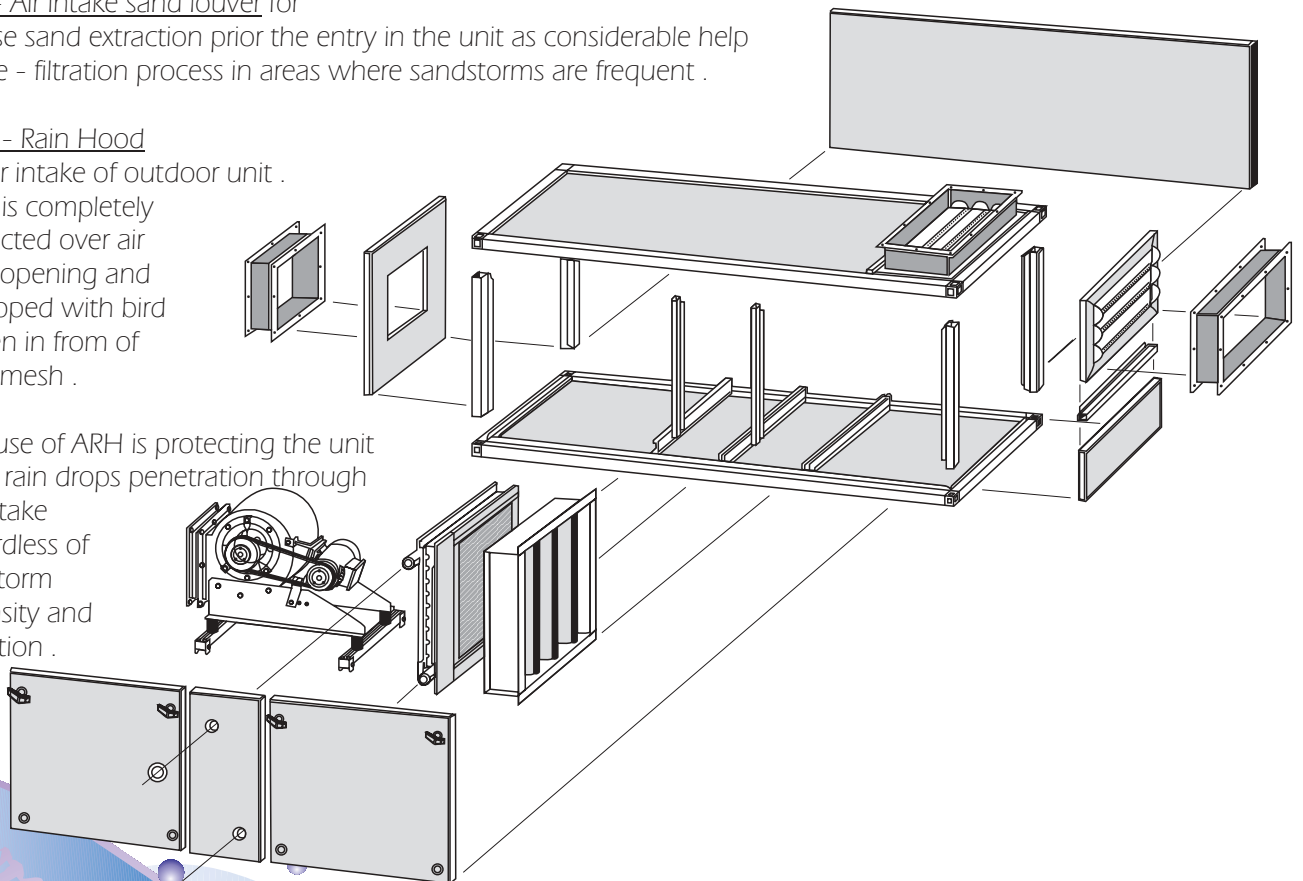
as obligatory accessory to Face and Bypass control damper . ABD is providing accessory alternative air passage around the coil .

ABD is provided with perforated

restructure, when required , for air flow balance , as the same is Essential for proper functioning of Bypass control .

AFC - Flexible duct connector , to

be used if required by specification for complete anti - vibration disconnect from dusting system . AFC is available for all types of fans' outlets as well as for all other connections . This accessory is not required with This type of unit as all vibration is held at floating fan base but some specification are asking for the same for more protection .





### SPECIFICATIONS

SIZE		24	32	40	50	62	80	100	120	150	200	250	320	400	450		
NOMINAL AIR FLOW		CFM	2400	3200	4000	5000	6250	8000	10000	12000	15000	20000	25000	32000	40000	45000	
FACE AREA		FT <sup>2</sup>	6.42	8.00	10.00	12.50	15.81	20.13	23.93	30.00	40.00	50.00	64.00	80.00	90.00		
COILS	CW	4R	WFR	13.52	19.06	25.30	34.66	46.20	58.74	73.18	92.56	152.70	163.60	211.20	266.92	289.00	
			FT/WG	2.72	4.43	8.19	1.94	2.98	4.90	6.23	7.53	13.69	16.61	16.61	16.95	3.28	
			COOLING CAP.	67.60	95.30	126.50	138.40	231.00	293.70	462.80	628.50	816.00	1056.00	1334.60	1793.90	2332.00	2669.00
		6R	WFR	18.56	25.74	33.02	38.54	48.10	62.92	78.26	97.00	123.28	165.86	194.56	251.42	314.28	358.78
			FT/WG	6.51	10.11	17.99	4.66	4.66	6.91	6.78	10.87	13.97	16.64	9.84	11.76	11.76	16.53
			COOLING CAP.	92.80	129.70	165.10	192.70	240.90	314.60	396.30	485.00	616.40	829.30	972.80	1257.10	1571.40	1793.90
	8R	WFR	21.92	30.16	35.48	45.78	57.20	74.30	93.90	113.30	131.60	172.00	228.90	295.22	369.04	421.00	
		FT/WG	10.99	16.88	4.53	7.85	7.85	11.55	11.33	17.87	3.35	3.99	7.30	8.68	8.68	11.92	
		COOLING CAP.	109.60	150.80	177.40	228.90	286.00	371.50	468.00	566.50	658.00	886.00	1144.50	1476.10	1845.20	2105.00	
	DX	4R	WFR	19.84	27.60	36.00	40.70	51.24	67.48	85.48	104.18	133.66	179.58	232.76	299.22	374.54	382.74
			FT/WG	5.55	8.63	15.73	3.99	4.04	6.25	6.00	9.46	12.32	14.59	26.77	31.58	31.58	6.35
			COOLING CAP.	99.20	138.00	180.00	203.50	256.20	337.40	427.40	520.90	668.30	897.90	1163.80	1496.10	1872.70	1913.70
6R		WFR	25.88	35.50	45.38	53.88	67.26	87.36	110.56	133.68	168.94	227.64	271.74	351.86	439.82	500.90	
		FT/WG	11.98	18.23	32.16	8.67	8.64	12.66	12.53	19.60	24.91	29.73	18.06	21.80	21.80	30.52	
		COOLING CAP.	129.40	177.50	226.90	269.40	336.30	436.80	522.80	668.40	844.70	1138.20	1358.70	1759.30	2199.10	2504.50	
8R	WFR	30.54	41.80	50.00	63.96	79.96	103.34	129.66	156.90	188.00	25.00	319.90	411.80	514.80	284.60		
	FT/WG	20.12	30.55	8.17	14.50	14.50	21.12	20.85	32.37	6.35	7.53	13.52	16.00	16.01	21.76		
	COOLING CAP.	152.70	209.00	250.00	319.80	399.80	516.70	648.30	784.50	930.00	1250.00	1599.50	2059.00	2574.00	2923.00		
HW	4R	WFR	71.10	96.30	120.00	150.00	187.50	237.10	301.90	358.90	449.90	599.90	749.90	959.90	1199.90	1349.80	
		FT/WG	86.10	116.70	145.40	181.70	227.20	287.30	365.80	434.90	545.20	726.90	908.70	1163.10	1453.90	1635.60	
		COOLING CAP.	92.90	125.80	156.80	196.00	245.00	309.90	394.60	469.10	588.00	784.10	980.10	1254.50	1568.10	1764.10	
	6R	WFR	90.60	122.80	153.00	191.20	239.00	302.30	384.90	457.50	573.60	764.80	956.00	1223.70	1529.60	1720.80	
		FT/WG	109.80	148.70	185.30	231.70	289.60	366.30	466.40	554.40	695.00	926.70	1158.40	1482.70	1853.40	2085.10	
		COOLING CAP.	110.40	160.40	199.90	249.90	312.40	395.10	503.00	598.00	749.70	999.50	1249.40	1599.30	1999.10	2249.00	
8R	WFR	6.12	8.30	10.64	13.60	17.00	21.50	27.40	32.54	40.80	54.40	68.00	87.04	108.80	122.40		
	FT/WG	3.10	6.70	12.30	3.20	3.20	4.00	4.70	7.40	9.40	11.40	2.90	3.40	3.40	4.70		
	HEATING CAP.	61.20	83.00	106.40	136.00	170.00	215.00	247.00	325.40	408.00	544.00	680.00	870.40	1088.00	1224.00		
STM	1R	WFR	115.57	15.66	19.52	24.40	30.50	35.58	48.91	59.35	74.40	99.20	124.00	158.72	188.40	223.20	
		FT/WG	2.80	6.10	8.90	2.60	2.60	3.80	4.00	6.30	8.00	8.90	2.30	2.90	2.90	4.0	
		HEATING CAP.	115.70	156.60	195.20	244.00	305.00	385.80	466.10	593.50	744.00	992.00	1240.00	1587.20	1984.00	2232.00	
	2R	WFR	106.20	143.80	179.20	224.00	280.00	354.10	450.90	536.00	672.00	896.00	1120.00	1433.60	1792.00	2016.00	
		FT/WG	191.50	259.40	323.20	404.00	505.00	638.70	813.25	966.80	1212.00	1616.00	2020.00	2585.60	3232.00	3636.00	
		HEATING CAP.	191.50	259.40	323.20	404.00	505.00	638.70	813.25	966.80	1212.00	1616.00	2020.00	2585.60	3232.00	3636.00	

MBH = 1000 BTUH

AET - AIR ENTERING TEMP.

CW - COIL CAPACITY AT NOM. CFM, 8 FPI, ET = 45 °F. HW - COIL CAPACITY AT NOM. CFM, 8 FPI, EWT / LWT = 180/160 °F. \* MBH = 1000 BTUH. STM - COIL CAPACITY AT NOM. CFM, 8 FPI, 2 PSIG STEAM PRESSURE. WPD - WTR PRESS DROP. WFR - WTR FLOW RATE.

### SPECIFICATIONS

SIZE		24	32	40	50	62	80	100	120	150	200	250	320	400	450			
		CFM	3200	4000	5000	6250	8000	10000	12000	15000	20000	25000	32000	40000	45000			
HEATER	ELECTRIC	NOMINAL AIR FLOW	2400	3200	4000	5000	6250	8000	10000	12000	15000	20000	25000	32000	40000	45000		
		CAPACITY	12.00	15.00	18.00	24.00	30.00	36.00	48.00	60.00	72.00	90.00	126.00	144.00	189.00	216.00		
		STEPS	1	2	2	2	2	2	2	2	2	2	3	3	4	3	6	
		ELEMENT KW/QTY	4.0/3	2.5/3	3.0/3	4.0/3	5.0/3	6.0/3	4.0/6	5.0/6	6.0/6	5.0/9	7.0/6	6.0/6	6.0/6	7.0/9	6.0/6	
		CAPACITY	18.00	24.00	27.00	36.00	45.00	54.00	72.00	84.00	108.00	144.00	180.00	225.00	270.0	324.00		
		STEPS	2	2	3	2	3	3	4	4	3	4	5	5	5	5	6	
	HEATER	ELECTRIC	NOMINAL AIR FLOW	3.0/3	4.0/3	3.0/3	6.0/3	5.0/3	6.0/3	6.0/3	7.0/3	6.0/6	6.0/6	6.0/6	5.0/9	6.0/9	6.0/9	
			CAPACITY	27.00	30.00	36.00	48.00	60.00	72.00	90.00	108.00	144.00	189.00	252.00	315.00	378.00	441.00	
			STEPS	3	4	4	4	4	4	5	3	4	3	4	4	7	6	7
			ELEMENT KW/QTY	3.0/3	2.5/3	3.0/3	4.0/3	5.0/3	6.0/3	4.0/6	5.0/6	6.0/6	7.0/9	7.0/9	5.0/9	5.0/9	7.0/9	7.0/9
			CAPACITY	30.00	36.00	48.00	60.00	72.00	90.00	108.00	144.00	180.00	252.00	315.00	378.00	504.00	567.00	
			STEPS	4	4	4	4	4	5	6	4	5	6	7	7	6	8	9
HUMIDIFIER	STEAM GENERATOR	NOMINAL AIR FLOW	2.5/3	3.0/3	4.0/3	5.0/3	6.0/3	6.0/3	6.0/3	6.0/6	6.0/6	7.0/6	5.0/9	7.0/9	7.0/9	7.0/9		
		CAPACITY	13.90	13.90	18.60	23.20	27.90	37.20	46.40	55.70	74.30	92.90	111.50	146.00	167.20	222.90		
		POWER INPUT	4.50	4.50	6.00	7.50	9.00	12.00	15.00	18.00	24.00	30.00	36.00	48.00	54.00	72.00		
		STEPS	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	
		ELEMENT KW/QTY	4.5/1	4.5/1	6.0/1	7.5/1	9.0/1	12.0/1	15.0/1	18.0/1	24.0/1	30.0/1	36.0/1	48.0/1	54.0/1	72.0/1	84.0/1	
		CAPACITY	23.20	27.90	37.20	46.40	55.70	74.30	92.90	111.50	146.60	167.20	222.90	297.20	371.50	445.80		
	HUMIDIFIER	STEAM GENERATOR	NOMINAL AIR FLOW	7.50	9.00	12.00	15.00	18.00	24.00	30.00	36.00	48.00	54.00	72.00	96.00	120.00	144.00	
			CAPACITY	1	1	1	1	1	1	2	2	2	3	3	4	5	6	
			POWER INPUT	7.5/1	9.0/1	12.0/1	15.0/1	18.0/1	24.0/1	30.0/1	36.0/1	48.0/1	54.0/1	72.0/1	96.0/1	120.0/1	144.0/1	
			STEPS	1	1	1	1	1	1	2	2	2	3	3	4	5	6	
			ELEMENT KW/QTY	7.5/1	9.0/1	12.0/1	15.0/1	18.0/1	24.0/1	30.0/1	36.0/1	48.0/1	54.0/1	72.0/1	96.0/1	120.0/1	144.0/1	
			CAPACITY	37.20	46.40	55.70	74.30	92.90	111.50	146.60	167.20	222.90	297.20	371.50	445.80	520.10	594.40	
PADS	AIR WASHER	NOMINAL AIR FLOW	12.00	15.00	18.00	24.00	30.00	36.00	48.00	48.00	72.00	96.00	108.00	144.00	168.00	192.00		
		CAPACITY	1	1	1	1	2	2	2	2	3	4	4	6	6	7	8	
		POWER INPUT	12.0/1	15.0/1	18.0/1	24.0/1	30.0/1	36.0/1	48.0/1	48.0/1	72.0/1	96.0/1	108.0/1	144.0/1	168.0/1	192.0/1		
		STEPS	1	1	1	1	2	2	2	2	3	4	6	6	8	9	9	
		ELEMENT KW/QTY	12.0/1	15.0/1	18.0/1	24.0/1	30.0/1	36.0/1	48.0/1	48.0/1	72.0/1	96.0/1	108.0/1	144.0/1	168.0/1	192.0/1		
		CAPACITY	46.40	55.70	74.30	92.90	111.50	146.80	167.20	222.90	297.20	371.50	445.80	594.40	668.70	668.70		
	AIR WASHER	WASHER	NOMINAL AIR FLOW	15.00	18.00	24.00	30.00	36.00	48.00	54.00	72.00	96.00	120.00	144.00	192.00	216.00	216.00	
			CAPACITY	1	1	1	2	2	2	3	3	4	5	6	8	9	9	
			POWER INPUT	15.0/1	18.0/1	24.0/1	30.0/1	36.0/1	48.0/1	54.0/1	72.0/1	96.0/1	120.0/1	144.0/1	192.0/1	216.0/1	216.0/1	
			STEPS	1	1	1	2	2	2	3	3	4	5	6	8	9	9	
			ELEMENT KW/QTY	15.0/1	18.0/1	24.0/1	30.0/1	36.0/1	48.0/1	54.0/1	72.0/1	96.0/1	120.0/1	144.0/1	192.0/1	216.0/1	216.0/1	
			CAPACITY	57.5	7.50	9.25	12.25	13.75	16.62	21.50	25.50	32.00	42.00	53.00	67.00	83.00	93.00	
AIR WASHER	WASHER	WFR	15.00	20.00	25.00	30.00	35.00	40.00	50.00	60.00	80.00	100.00	125.00	165.00	210.00	228.00		
		WFR	14.4	19.2	24	30	37.2	48	60	72	90	120	150	192	240	270		
AIR WASHER	WASHER	WFR	12.2	23.6	32	40	49.6	64	80	96	120	160	200	256	320	360		
		WFR	12.2	23.6	32	40	49.6	64	80	96	120	160	200	256	320	360		

WFR - WATER FLOW RATE

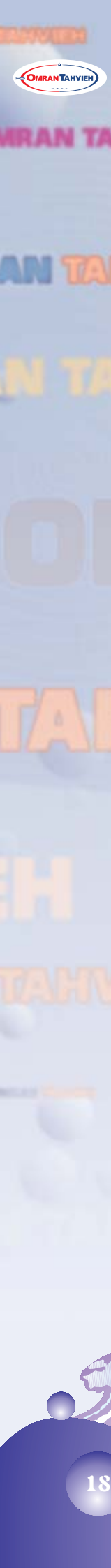
**COMPONENTS AIR PRESSURE DROP**



SCTN	CODE		RATING												
			350		400		450		500		550		600		
COILS	FACE FPM		350		400		450		500		550		600		
	CCW	4 R	8	0.24	0.30	0.37	0.43	0.50	0.57	0.64	0.71	0.78	0.85	0.92	
			10	0.29	0.36	0.44	0.52	0.60	0.68	0.76	0.84	0.92	1.00		
			12	0.34	0.42	0.52	0.61	0.71	0.81	0.91	1.01	1.11	1.21		
		CDX (Wet)	6 R	8	0.36	0.45	0.55	0.65	0.75	0.85	0.95	1.05	1.15	1.25	1.35
				10	0.43	0.54	0.66	0.78	0.90	1.02	1.14	1.26	1.38	1.50	
				12	0.51	0.63	0.78	0.92	1.06	1.20	1.34	1.48	1.62	1.76	
	8 R	8	0.48	0.60	0.74	0.88	1.02	1.16	1.30	1.44	1.58	1.72	1.86		
		10	0.58	0.72	0.88	1.04	1.20	1.36	1.52	1.68	1.84	2.00	2.16		
		12	0.68	0.84	1.04	1.22	1.42	1.62	1.82	2.02	2.22	2.42	2.62		
	CHW	1 R	8	0.05	0.06	0.07	0.085	0.10	0.11	0.125	0.14	0.155	0.17	0.185	
	CST	2 R	10	0.10	0.12	0.14	0.17	0.20	0.22	0.25	0.28	0.31	0.34	0.37	
	CHG	4 R	12	0.15	0.19	0.24	0.28	0.33	0.39	0.45	0.51	0.57	0.63	0.69	
	HUMIDIFIERS	FACE FPM		350		400		450		500		550		600	
HFF - 1		0.25		0.31		0.38		0.44		0.50		0.57			
HAW4		HAW6	0.23	-	0.37	0.19	0.39	0.20	0.35	0.25	0.43	0.31	-	0.37	
HPS		0.27		0.35		0.43		0.54		0.63		0.74			
DAMP & LOUV.	FACE FPM		200		400		600		800		1000		1200		
	DAMPERS		0.045		0.02		0.035		0.056		0.087		0.126		
	AIL		0.01		0.046		0.103		0.183		0.286		0.411		
	ASL		0.08		0.32		0.72		1.28		2.00		2.88		

AIR PRESSURE DROP IN ( IN. WG )





# AIR HANDLING UNIT OMRAN TAHVIEH

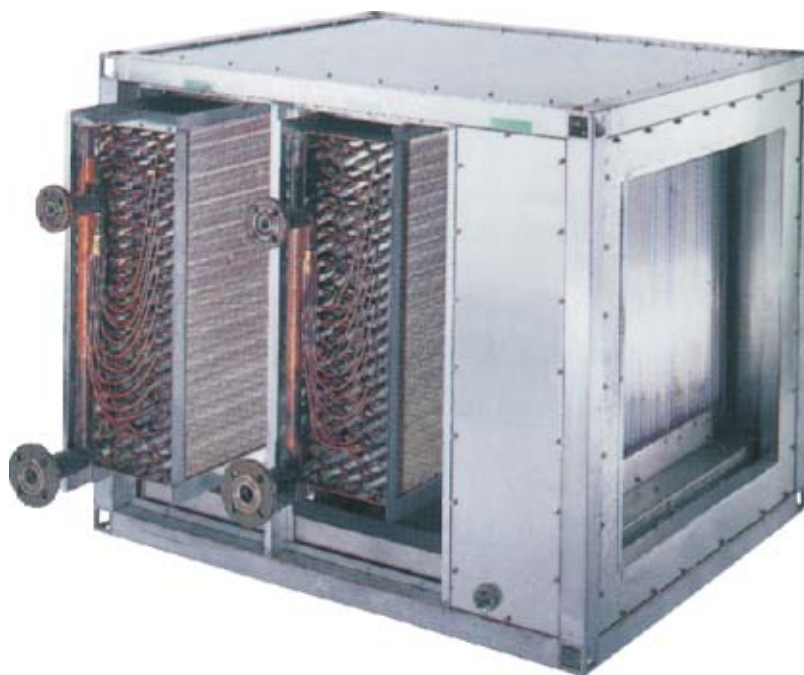
## COMPONENTS AIR PRESSURE DROP



SCTN	CODE		RATING						
			200	300	400	500	600	FPD	
FILTERS ( * )	FACE FPM		200	300	400	500	600	FPD	
	FIP2		0.30	0.06	0.08	0.12	0.18	0.3	
	FIPV		0.03	0.07	0.12	0.13	0.18	0.3	
	FIP4		0.06	0.12	0.16	0.24	0.36	0.6	
	FIBG	65	-	-	0.27	0.35	0.48	1.00	
		85	-	-	0.37	0.45	0.58	1.00	
		95	-	-	0.53	0.60	0.67	1.00	
	FIRL	80	-	-	0.09	0.14	0.20	0.52	
		85	-	-	0.12	0.18	0.26	0.52	
	FIHP	95.00	D	0.35	0.45	0.65	-	-	2.00
		99.97	D	0.70	0.90	1.30	-	-	2.00
		99.99	D	0.88	1.15	1.60	-	-	2.00
BOXES	NOM. CFM%		-	-	80	100	120	-	
	BEX		-	-	0.045	0.07	0.10	-	
	BMX		-	-	0.045	0.07	0.09	-	
	BMXP		BMX + FIP2						
	BMXV		BMX + FIPV						
ATTENU.	NOM. CFM%		-	-	80	100	120	-	
	SAT	L=24"	-	-	0.06	0.09	0.14	-	
		L=48"	-	-	0.07	0.11	0.16	-	
PLENUMS	NOM. CFM%		-	-	80	100	120	-	
	REV, PEB		-	-	0.05	0.07	0.09	-	
	ADF ( diff. )		-	-	0.13	0.20	0.26	-	

NOTE : ( \* ) FOR ACTUAL REFER MFG. DATA. FPD - RECOMM. FINAL PRESS. DROP. AIR PRESSURE DROP IN ( IN. WG )

COILS CONNECTIONS



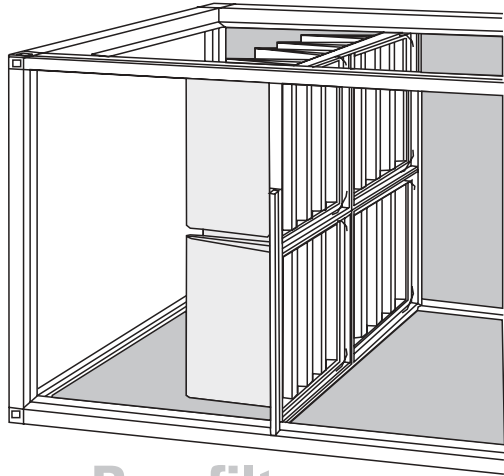
COIL TYPE	CHILLED WATER COIL				HOT WATER	STEAM COIL			
	4 R	6 R	8 R	1 & 2 R		1 R		2 R	
UNIT SIZE					SUPPLY	RETURN	SUPPLY	RETURN	
024	1 ¼"	1 ¼"	1 ¼"	¾"	1 ½"	1 ¼"	2"	2"	
032	1 ½"	1 ½"	1 ½"	1"	1 ½"	1 ¼"	2"	2"	
040	1 ½"	1 ½"	1 ½"	1"	1 ½"	1 ¼"	2"	2"	
050	1 ½"	1 ½"	1 ½"	1"	1 ½"	1 ¼"	2"	2"	
062	2"	2"	2"	1 ¼"	2"	1 ½"	2 ½"	2"	
080	2"	2"	2"	1 ¼"	2"	1 ½"	2 ½"	2"	
100	2"	2 ½"	2 ½"	1 ½"	2 ½"	2"	2 ½"	2"	
120	2 ½"	2 ½"	2 ½"	1 ½"	2 ½"	2"	2 ½"	2"	
150	2 ½"	3"	3"	2"	2 ½"	2"	3"	2"	
200	3"	3"	2 x 2 ½"	2"	2 ½"	2"	3"	2"	
250	3"	2 x 2 ½"	2 x 2 ½"	2"	2 ½"	2"	3"	2"	
320	2 x 3"	2 x 3"	2 x 3"	2"	2 ½"	2"	3"	2"	
400	2 x 3"	2 x 3"	2 x 3"	2 x 2"	2 ½"	2"	3"	2"	
450	2 x 3"	2 x 3"	2 x 3"	2 x 2"	2 ½"	2"	3"	2"	

DRAIN CONNECTIONS (CCW & CDX COILS)

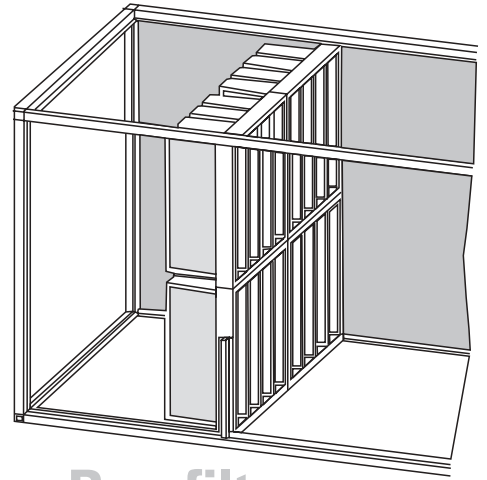
UNIT SIZE	024	032	040	050	062	080	100	120	150	200	250	320	400	450
DRAIN	1 ¼"		1 ½"					2"			2 x 1 ½"			

ALL DIMENSION IN INCHES

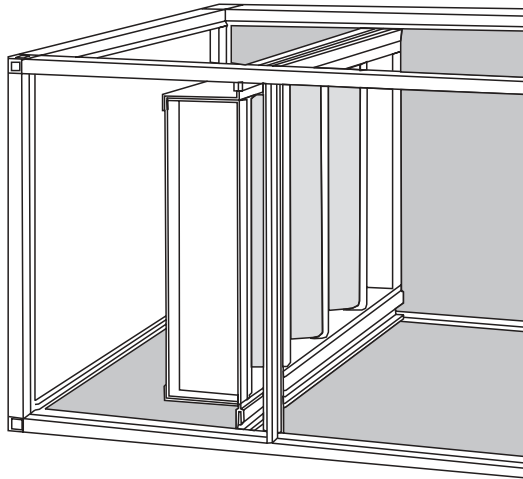
**SPECIFICATIONS**



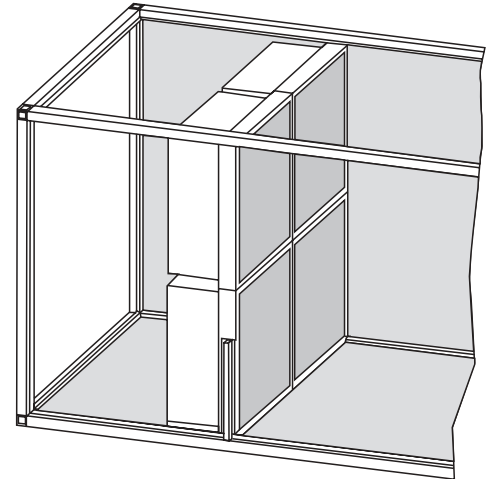
**Bag filter**



**Bag filter**



**Plated filter**



**Special order**  
( Hepa , Ulpa )

				SIZE						
				24	32	40	50	62	80	100
FILTERS	FLAT	NOMINAL FILTER AREA	Ft <sup>2</sup>	5.55	6.94	8.68	10.42	13.33	18.22	21.18
	"V"	NOMINAL FILTER AREA	Ft <sup>2</sup>	8	11.11	13.89	16.67	20.83	24.31	36.46
	BAG	NOMINAL FACE AREA	Ft <sup>2</sup>	5.33	6.66	8.00	10.00	14.00	18.00	22.00
				SIZE						
				120	150	200	250	320	400	450
FILTERS	FLAT	NOMINAL FILTER AREA	Ft <sup>2</sup>	26.56	31.25	40.00	50.00	67.71	81.25	90.63
	"V"	NOMINAL FILTER AREA	Ft <sup>2</sup>	41.67	46.88	65.97	85.33	108.51	130.21	40.63
	BAG	NOMINAL FACE AREA	Ft <sup>2</sup>	24.00	30.66	40.00	50.00	66.00	82.66	92.00

**FAN PERFORMANCE RATING**

MODEL	FAN SIZE QTY.	Air Flow CFM	T. S. P. ( in. wg. )							
			0.5"		0.75"		1.00"		1.25"	
			Speed RPM	HP	Speed RPM	HP	Speed RPM	HP	Speed RPM	HP
24	1× ( 12 - 09 )"	1750	560	0.50	667	0.50	771	0.75	870	0.75
24	1× ( 12 - 09 )"	2000	578	0.50	680	0.75	777	0.75	862	1.00
24	1× ( 12 - 09 )"	2250	603	0.75	697	0.75	780	1.00	862	1.00
24 - 32	1× ( 12 - 09 )"	2500	630	0.75	706	1.00	790	1.00	869	1.50
24 - 32	1× ( 12 - 12 )"	2750	605	0.75	708	1.00	811	1.50	913	1.50
24 - 32	1× ( 12 - 12 )"	3000	622	1.00	716	1.00	812	1.50	914	1.50
24 - 32	1× ( 12 - 12 )"	3250	640	1.00	732	1.50	819	1.50	915	2.00
32 - 40	1× ( 12 - 12 )"	3500	543	1.50	605	1.50	676	1.50	743	2.00
40	1× ( 15 - 11 )"	4000	564	1.50	622	2.00	686	2.00	747	3.00
40	1× ( 15 - 11 )"	4250	580	2.00	637	2.00	695	2.00	753	3.00
40 - 50	1× ( 15 - 15 )"	4500	549	1.50	613	2.00	676	2.00	744	3.00
40 - 50	1× ( 15 - 15 )"	4750	565	1.50	623	2.00	683	3.00	752	3.00
50	1× ( 15 - 15 )"	5000	578	2.00	633	2.00	692	3.00	759	3.00
50 - 60	1× ( 15 - 15 )"	5500	600	3.00	654	3.00	708	3.00	769	4.00
62	1× ( 18 - 13 )"	6000	485	3.00	635	3.00	582	3.00	631	4.00
62	1× ( 18 - 13 )"	6500	507	3.00	554	3.00	599	4.00	646	4.00
62	1× ( 18 - 13 )"	7000	532	3.00	576	4.00	617	4.00	655	5.50
80	1× ( 18 - 18 )"	7500	466	3.00	532	3.00	591	4.00	648	4.00
80	1× ( 18 - 18 )"	8000	482	3.00	542	3.00	591	4.00	654	4.00
80	1× ( 20 - 20 )"	8500	458	3.00	503	3.00	547	4.00	594	5.50
80 - 100	1× ( 20 - 20 )"	9000	477	4.00	517	4.00	562	4.00	602	5.50
100	1× ( 22 - 22 )"	9500	388	3.00	433	4.00	479	4.00	525	5.50
100	1× ( 22 - 22 )"	10000	404	3.00	444	4.00	486	5.50	530	5.50
100	1× ( 22 - 22 )"	10750	422	4.00	469	4.00	500	5.50	538	5.50
120 - 100	1× ( 22 - 22 )"	11500	440	4.00	477	5.50	516	5.50	550	7.50
120	1× ( 28 - 20 )"	12250	294	3.00	325	4.00	362	5.50	383	5.50
120	1× ( 28 - 20 )"	13000	306	4.00	337	5.50	365	5.50	392	7.50
150	1× ( 28 - 20 )"	13750	315	4.00	344	5.50	372	5.50	398	7.50
150	1× ( 25 - 25 )"	14500	325	4.00	370	5.50	410	5.50	450	7.50
150	1× ( 30 - 20 )"	15250	255	4.00	300	5.50	339	7.50	376	10.00
150	1× ( 30 - 20 )"	16000	264	5.00	306	5.50	344	7.50	378	7.50
150 - 200	1× ( 28 - 28 )"	17000	286	5.00	321	7.50	358	7.50	392	10.00
200	1× ( 28 - 28 )"	18000	294	5.00	331	7.50	364	7.50	395	10.00
200	1× ( 30 - 28 )"	19000	263	5.00	297	7.50	333	7.50	366	10.00
200	1× ( 30 - 28 )"	20000	270	5.00	300	7.50	335	10.00	366	10.00
200	1× ( 30 - 28 )"	22000	283	7.50	314	10.00	344	10.00	373	15.00
250	2× ( 28 - 20 )"	24000	295	3.00	325	4.00	356	5.50	388	5.50
250	2× ( 28 - 20 )"	26000	306	4.00	337	5.50	365	5.50	392	7.50
250	2× ( 28 - 20 )"	28000	319	4.00	345	5.50	372	5.50	397	7.50
380	2× ( 30 - 20 )"	30000	253	4.00	298	5.50	338	7.50	373	7.50
320	2× ( 30 - 20 )"	32000	254	5.50	306	5.50	344	7.50	378	7.50
320	2× ( 28 - 28 )"	34000	286	5.50	321	7.50	358	7.50	392	10.00
320	2× ( 28 - 28 )"	36000	294	5.50	331	7.50	364	7.50	395	10.00
400	2× ( 30 - 28 )"	38000	263	5.50	297	7.50	333	7.50	366	10.00
400	2× ( 30 - 28 )"	40000	270	5.50	300	7.50	335	10.00	366	10.00
400	2× ( 30 - 28 )"	42000	276	7.50	306	7.50	336	10.00	370	10.00
450	2× ( 30 - 28 )"	44000	283	7.50	314	10.00	344	10.00	373	15.00
450	2× ( 30 - 28 )"	46000	291	10.00	319	10.00	350	15.00	379	15.00
450	2× ( 30 - 28 )"	48000	298	10.00	325	15.00	356	15.00	383	15.00

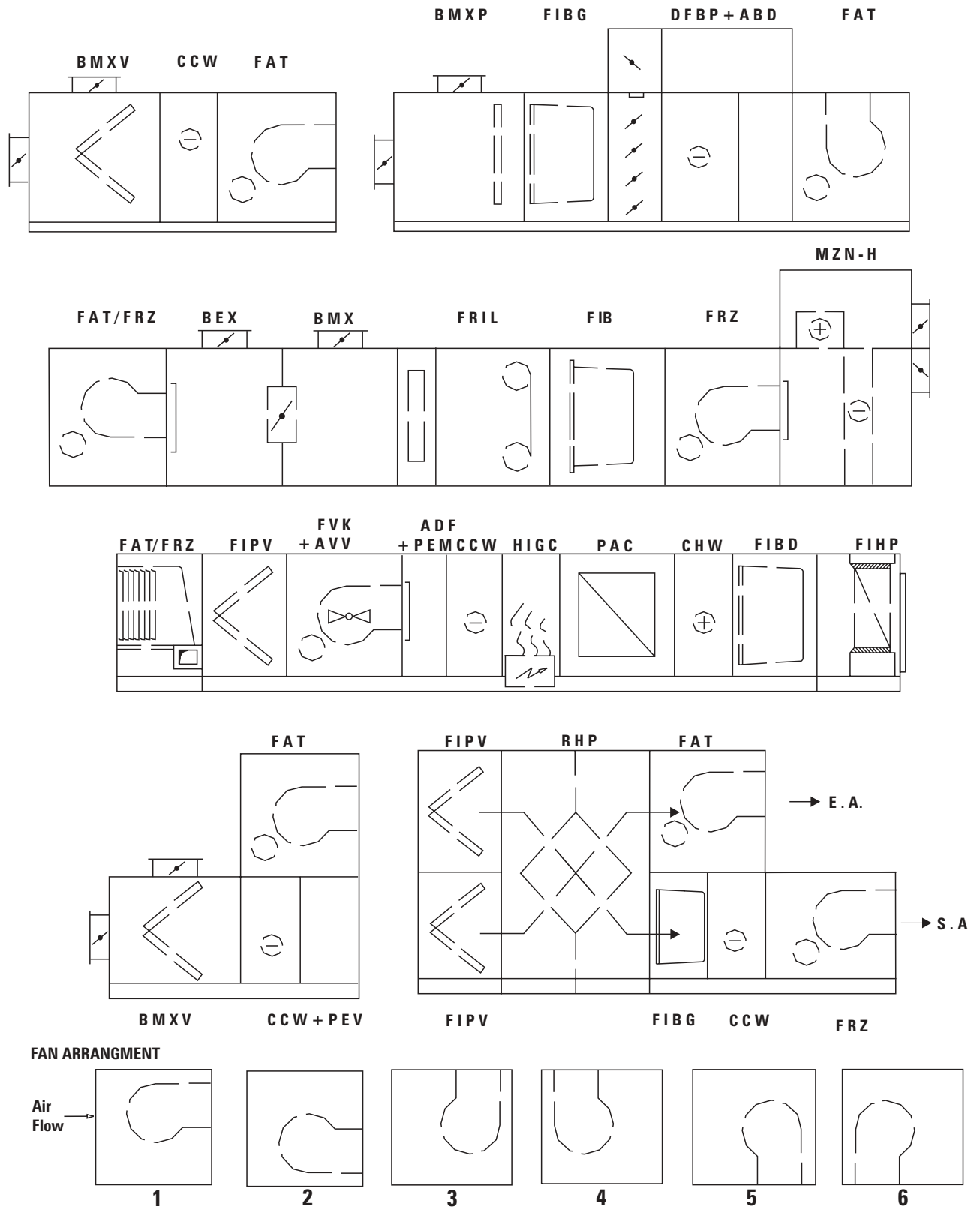




**FAN PERFORMANCE RATING**

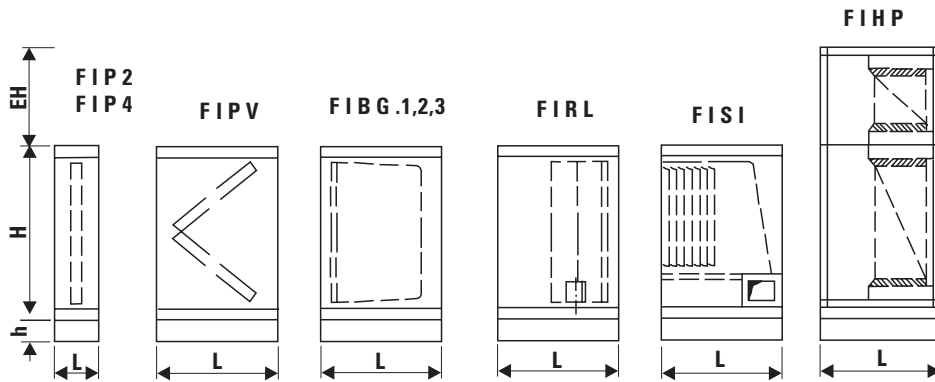
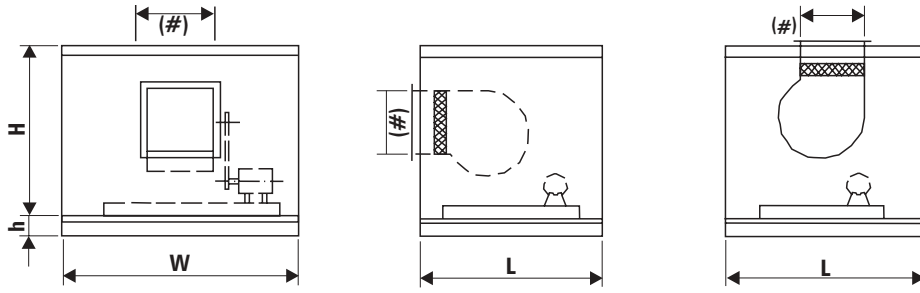
MODEL	FAN SIZE QTY.	Air Flow CFM	T. S. P. ( in. wg. )							
			1.50"		1.75"		2.00"		2.50"	
			Speed RPM	HP	Speed RPM	HP	Speed RPM	HP	Speed RPM	HP
24	1x (12 - 09)"	1750	954	1.00	1055	1.00	1116	1.50	1264	1.50
24	1x (12 - 09)"	2000	945	1.00	1031	1.50	1121	1.50	1246	2.00
24	1x (12 - 09)"	2250	937	1.50	1013	1.50	1093	1.50	1257	2.00
24 - 32	1x (12 - 09)"	2500	937	1.50	1000	1.50	1071	2.00	1230	3.00
24 - 32	1x (12 - 12)"	2750	1000	1.50	1088	2.00	1158	2.00	1300	3.00
24 - 32	1x (12 - 12)"	3000	1000	2.00	1082	2.00	1169	3.00	1293	3.00
24 - 32	1x (12 - 12)"	3250	997	2.00	1074	3.00	1154	3.00	1291	3.00
32 - 40	1x (12 - 12)"	3500	990	3.00	1067	3.00	1149	3.00	1283	4.00
32 - 40	1x (15 - 11)"	3750	805	3.00	875	3.00	928	3.00	1043	4.00
40	1x (15 - 11)"	4000	810	3.00	874	3.00	924	3.00	1039	4.00
40	1x (15 - 11)"	4250	818	3.00	877	3.00	925	4.00	1038	4.00
40 - 50	1x (15 - 15)"	4500	819	3.00	883	4.00	946	4.00	1070	4.00
40 - 50	1x (15 - 15)"	4750	820	3.00	885	4.00	947	4.00	1068	5.50
50	1x (15 - 15)"	5000	825	4.00	856	4.00	948	4.00	1067	5.50
50 - 62	1x (15 - 15)"	5500	832	4.00	898	4.00	949	4.00	058	5.50
62	1x (18 - 13)"	6000	573	4.00	724	4.00	773	5.50	865	5.50
62	1x (18 - 13)"	6500	683	4.00	733	5.00	774	5.50	864	5.50
62	1x (18 - 13)"	7000	694	5.50	740	5.00	778	5.50	865	7.50
80	1x (18 - 18)"	7500	699	5.50	755	5.00	806	5.50	907	7.50
80	1x (18 - 18)"	8000	700	5.50	756	5.00	811	7.50	908	7.50
80	1x (20 - 20)"	8500	531	5.50	674	5.00	715	7.50	783	7.50
80 - 100	1x (20 - 20)"	9000	541	5.50	683	7.50	720	7.50	788	7.50
100	1x (22 - 22)"	9500	569	5.50	608	7.50	660	7.50	749	7.50
100	1x (22 - 22)"	10000	573	5.50	611	7.50	662	7.50	745	10.00
100	1x (22 - 22)"	10750	580	7.50	619	7.50	663	7.50	740	10.00
120 - 100	1x (22 - 22)"	11500	588	7.50	628	7.50	666	10.00	745	10.00
120	1x (28 - 20)"	12250	422	7.50	456	7.50	549	10.00	558	10.00
120	1x (28 - 20)"	13000	423	7.50	453	10.00	490	10.00	558	15.00
150	1x (28 - 20)"	13750	425	7.50	460	10.00	491	10.00	557	15.00
150	1x (25 - 25)"	14500	481	7.50	518	10.00	557	10.00	626	15.00
150	1x (30 - 20)"	15250	411	10.00	440	10.00	469	15.00	529	15.00
150	1x (30 - 20)"	16000	411	10.00	438	10.00	467	15.00	523	15.00
150 - 200	1x (28 - 28)"	17000	427	10.00	462	15.00	493	15.00	555	15.00
200	1x (28 - 28)"	18000	430	10.00	462	15.00	490	15.00	553	15.00
200	1x (30 - 28)"	19000	400	10.00	436	15.00	466	15.00	526	15.00
200	1x (30 - 28)"	20000	399	15.00	434	15.00	463	15.00	521	20.00
200	1x (30 - 28)"	22000	402	15.00	433	15.00	461	15.00	513	20.00
250	2x (28 - 20)"	24000	421	7.50	455	7.50	495	10.00	558	15.00
250	2x (28 - 20)"	26000	423	7.50	453	10.00	490	10.00	558	15.00
250	2x (28 - 20)"	28000	426	7.50	458	10.00	491	10.00	556	15.00
380	2x (30 - 20)"	30000	411	10.00	440	10.00	470	10.00	530	15.00
320	2x (30 - 20)"	32000	411	10.00	438	10.00	467	15.00	523	15.00
320	2x (28 - 28)"	34000	427	10.00	462	15.00	493	15.00	555	15.00
320	2x (28 - 28)"	36000	430	10.00	462	15.00	490	15.00	553	15.00
400	2x (30 - 28)"	38000	400	10.00	436	15.00	466	15.00	526	15.00
400	2x (30 - 28)"	40000	399	15.00	434	15.00	463	15.00	521	20.00
400	2x (30 - 28)"	42000	400	15.00	433	15.00	461	15.00	516	20.00
450	2x (30 - 28)"	44000	402	15.00	433	15.00	461	15.00	513	20.00
450	2x (30 - 28)"	46000	406	15.00	434	15.00	459	2.00	512	20.00
450	2x (30 - 28)"	48000	410	15.00	436	20.00	462	2.00	511	20.00

### ARRANGEMENT EXAMPLES



## DIMENSIONS

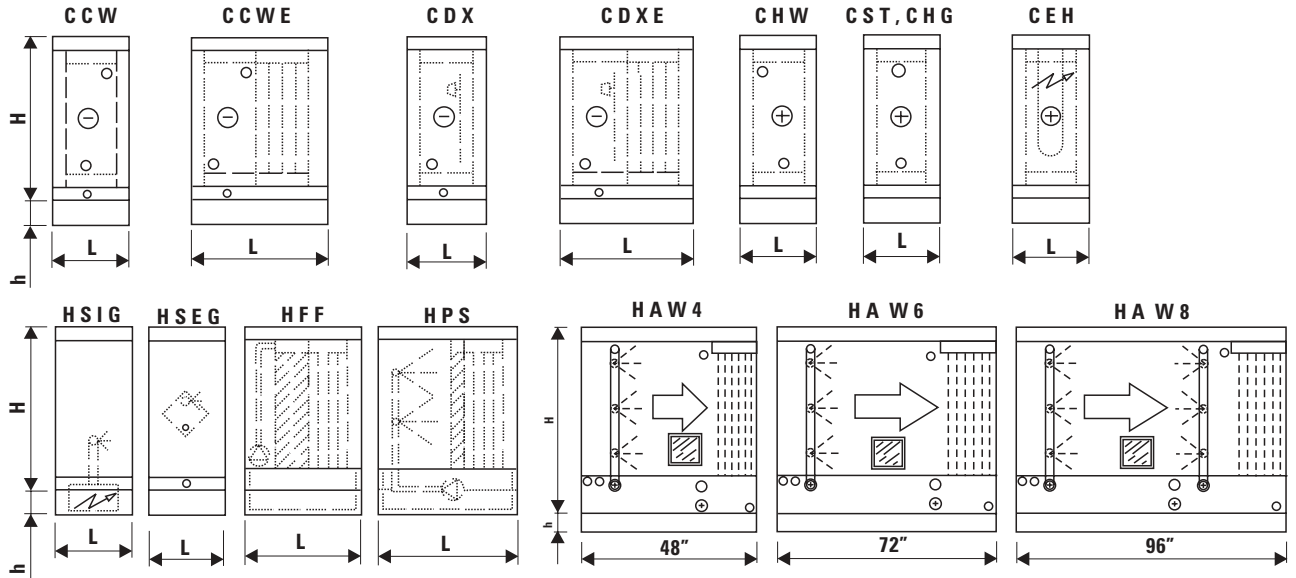
### FAN SECTION : FAS , FAT , FAZ , FRZ , FVK



SECTION		SIZE	24	32	40	50	62	80	100	120	150	200	250	320	400	450	
		COMMON	W	50	50	60	70	70	72	72	80	88	100	130	155	170	180
ALL	H	39	39	39	40	40	45	54	54	72	78	78	80	85	85		
SECTION	h	4	4	4	4	4	4	4	5	5	6	6	6	6	6		
FILTERS	FAN	L	30	34	38	40	43	45	52	55	58	70	58	63	70	72	
	FIP2	L	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	FIP4	L	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
	FIPV	L	20	24	30	30	30	30	36	42	50	50	50	50	50	55	
	FIBG	1		32													
		2		36													
		3		42													
	FIRL	L	36														
	FISI	L	32	32	32	32	32	32	32	32	32	32	36	36	36	42	42
	FIHP	L	26	26	26	26	26	26	26	26	26	26	26	26	26	32	32
EH / H		ACCORDING TO ACTUAL FILTER SELECTION															

ALL DIMENSIONS IN INCHES

## DIMENSIONS

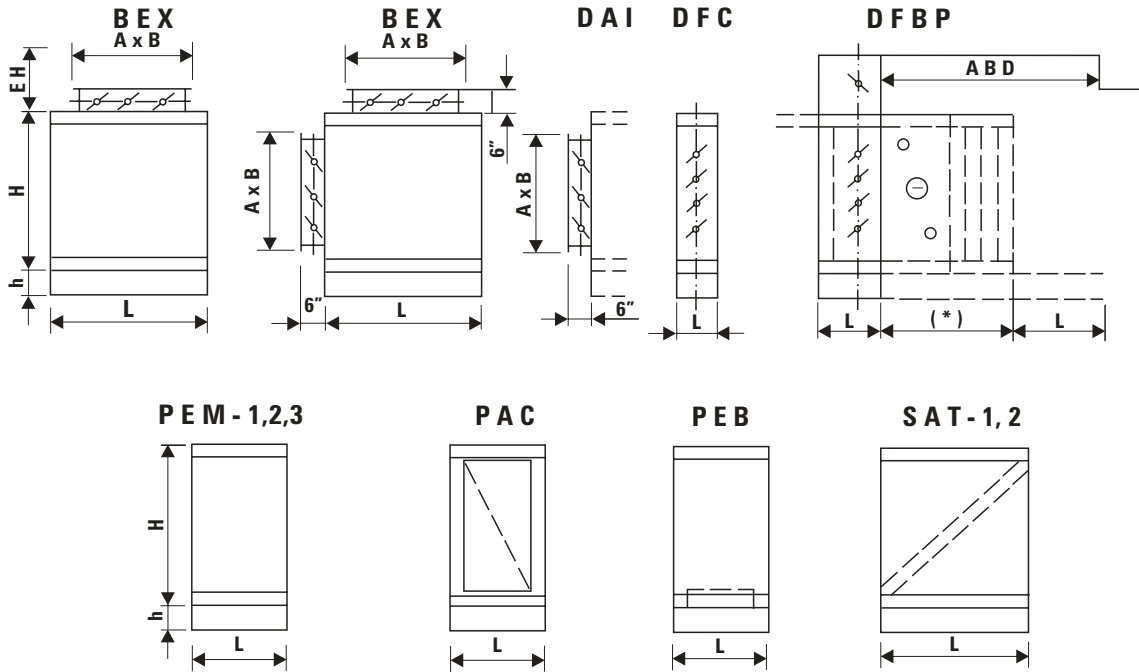


SECTION		SIZE	24	32	40	50	62	80	100	120	150	200	250	320	400	450	
		SECTION	W	H	h												
COILS ( HEAT EXCHANGERS )	COMMON	W	50	50	60	70	70	72	72	80	88	100	130	155	170	180	
	ALL	H	39	39	39	40	40	45	54	54	72	78	78	80	85	85	
	SECTION	h	4	4	4	4	4	4	4	5	5	6	6	6	6	6	
	COILS ( HEAT EXCHANGERS )	CCW - Short	L	12	12	12	12	12	14	14	14	14	14	14	14	16	16
		CCW - Long	L	18	18	18	18	18	20	20	20	25	25	25	25	25	25
		CCW - Short	L	18	18	18	18	18	20	20	20	25	25	25	25	25	25
		CCW - Long	L	24	24	24	24	24	26	26	26	30	30	30	30	30	30
		CDX - Short	L	12	12	12	12	12	14	14	14	14	14	14	14	16	16
		CDX - Long	L	18	18	18	18	18	20	20	20	25	25	25	25	25	25
		CDXE - Short	L	18	18	18	18	18	20	20	20	25	25	25	25	25	25
		CDXE - Long	L	24	24	24	24	24	26	26	26	30	30	30	30	30	30
		CHW	L	10	10	10	10	12	12	12	12	12	14	14	14	14	14
		CST	L	10	10	10	10	10	10	12	12	12	12	12	12	12	12
CHG	L	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
CEH	L	12	12	12	12	12	16	16	16	20	20	20	20	20	20		
HUMIDIFIERS	HSIC	L	12	12	12	16	16	16	20	20	24	24	24	24	24	24	
	HSEG	L	12	12	12	12	12	16	16	16	20	20	20	20	20	20	
	HFF	L	24	24	24	24	24	24	24	24	24	24	24	24	20	20	
	HPS	L	26	26	26	26	26	26	26	26	26	32	32	32	32	32	

NOTE : CCW / CDX / CCWE / CDXE - (Short) UPTO 6 ROWS, ( Long ) UPTO 8 ROWS ALL DIMENSIONS IN INCHES



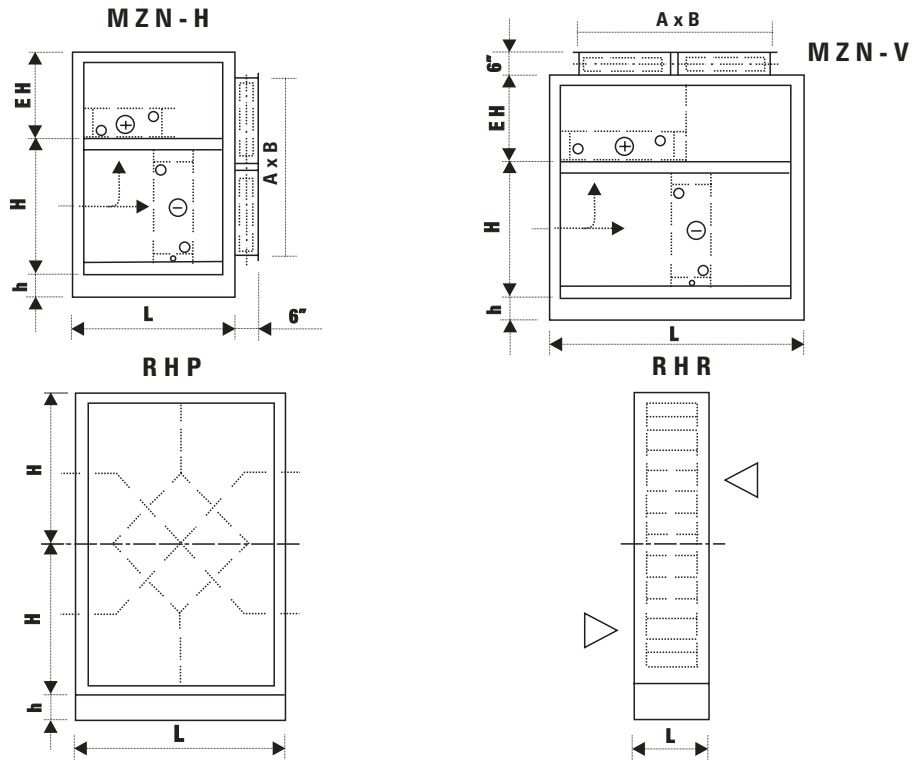
## DIMENSIONS



SECTION		SIZE	24	32	40	50	62	80	100	120	150	200	250	320	400	450	
		W	50	50	60	70	70	72	72	80	88	100	130	155	170	180	
COMMON	H	39	39	39	40	40	45	54	54	72	78	78	80	85	85		
	h	4	4	4	4	4	4	4	4	5	5	6	6	6	6		
	L	24	24	24	24	32	32	36	36	36	42	42	42	48	48		
BOX	BEX	L	24	24	24	24	32	32	36	36	36	42	42	42	48	48	
	BMX	L	24	24	24	24	32	32	36	36	36	42	42	42	48	48	
DAMPER	DFC	L	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	DFBP	L	10	10	10	10	10	12	12	12	15	16	16	18	20	20	
PLENUM	PEM	1	L	12	12	12	12	12	12	12	12	12	12	12	12	12	12
		2	L	18	18	18	18	18	18	18	18	18	18	18	18	18	18
		3	L	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	PAC	L	24	24	24	24	24	24	24	24	24	24	24	24	24	24	
	PEB	L	24	24	24	24	32	32	36	36	36	42	42	42	48	48	
SOUND ATTEN	SAT	1	L	24	24	24	24	24	24	24	24	24	24	24	24	24	
		2	L	48	48	48	48	48	48	48	48	48	48	48	48	48	

ALL DIMENSIONS IN INCHES (\*) REFER COIL SECTION

**DIMENSIONS**



SECTION		SIZE	24	32	40	50	62	80	100	120	150	200	250	320	400	450
		<b>COMMON</b>	W	50	50	60	70	70	72	72	80	88	100	130	155	170
<b>ALL</b>	H	39	39	39	40	40	45	54	54	72	78	78	80	85	85	
<b>SECTION</b>	h	4	4	4	4	4	4	4	5	5	6	6	6	6	6	
<b>MULTI ZONE</b>	M Z N H	L	48	50	50	50	58	62	72	72	82	96	96	96	96	96
		EH	15	15	15	15	20	20	28	28	28	34	34	38	50	50
	M Z N V	L	48	50	50	50	58	62	72	72	82	96	96	110	130	130
		EH	12	12	12	12	16	16	18	18	18	20	20	20	24	24
<b>HEAT REC</b>	RHP	L	40	44	44	54	54	74	74	85	102	102	102	-	-	-
	BHR	L	22	22	22	22	22	22	22	22	22	22	28	28	32	32

ALL DIMENSIONS IN INCHES



INTERNATIONAL GOLD AWARD FOR QUALITY  
AND TECHNOLOGY OF EUROPE QUALITY CONVENTION

برنده تندیس و پلاک طلایی اجلاس کیفیت اروپا



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کارخانه : کیلومتر ۲۶ جاده تهران - ساوه ، بعداز سه راه آدران ، خیابان جاده قرمز ، دوازده متری ششم  
تلفن : ۶۳۳۰۱ - ۶۳۳۰۰ ( ۰۲۲۹۴۴ )

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