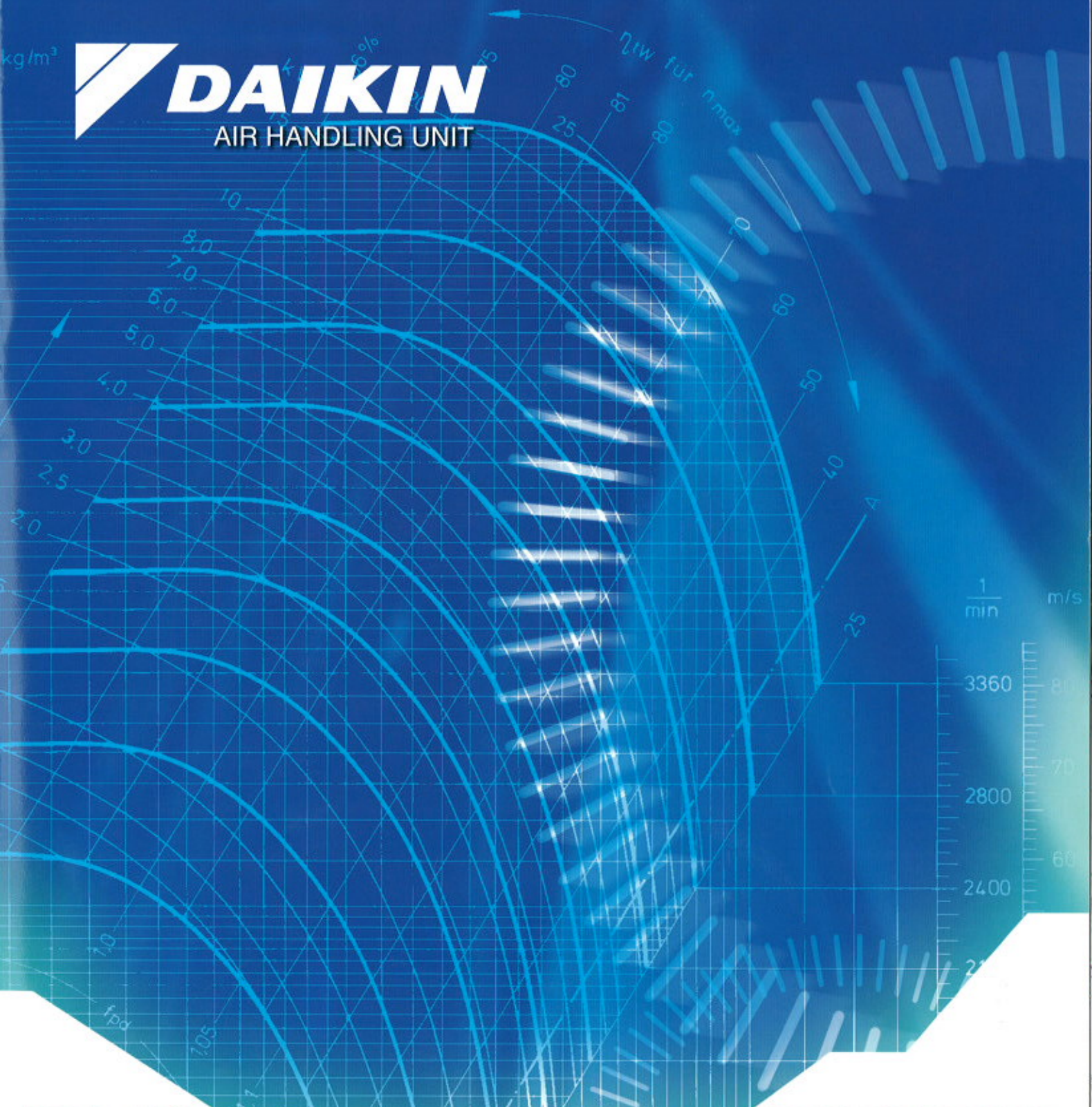


DAIKIN
AIR HANDLING UNIT



FOR ADVANCED AIR CONDITIONING APPLICATIONS

FOR ADVANCED AIR CONDITIONING APPLICATIONS



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Introduction



Daikin Air Handling Units are designed and manufactured to meet the precise environmental demands of high technology processes used in advanced commercial and industrial applications. Thousands of these Air Handling Units are creating the precise air conditioning environment in intelligent commercial buildings as well as in "Clean Rooms" of high technology semiconductor wafer fabrication and computer hard disk drive manufacturing plants.

Daikin Air Handling Units are widely specified and accepted by consultants, system integrators, contractors and facility owners because of their superior design and outstanding quality.

SUPERIOR AIR HANDLING UNITS FOR ADVANCED AIR CONDITIONING APPLICATIONS

These Air Handling Units are manufactured by a unique prefabricated system using modular sized double skin sandwich panels. The system enables a wide range of Air Handling Units of various sizes, configurations and applications to be built precisely and promptly without compromising their high quality.

The Quality Management System of these world class Air Handling Units conforms to ISO 9001:2000 requirements and has been certified as such by the Singapore Productivity and Standards Board (PSB).



CERT.NO.: 95-2-0507
SS ISO 9001:2000

UNIQUE PREFABRICATED MODULAR SYSTEM

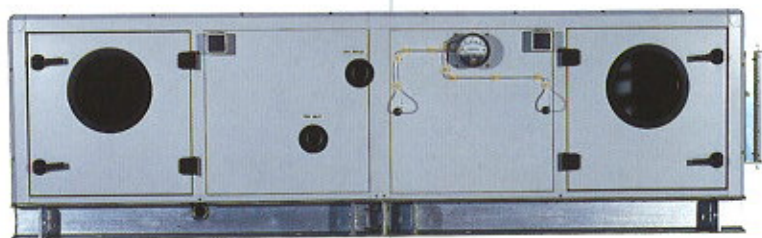
The Daikin Air Handling Unit is manufactured with prefabricated modular steel sandwich panels. It does not have a structural frame and the casing is formed by a simple process of bolting together modular sized insulated panels. Owing to its frameless bolted design, the Air Handling Unit can be dismantled and re-assembled at site with no need for cutting or welding. A set of spanners and screwdrivers is all that is needed for this process.

The unique sandwich panels come in ten standard modular sizes. They are available with both sides using galvanised steel or stainless steel, or with galvanised steel for the external surface and stainless steel for the internal surface.

Units with stainless steel internal surface are ideal for clean rooms, hospital surgical theatres, foods, pharmaceuticals and chemical industries. Double-sided stainless steel panels are most suitable for highly corrosive environments. Daikin Air Handling Units are designed for longer operating life and lower maintenance costs. These have been accomplished by using special high-grade components, such as heavy duty fans and heat exchangers.

The fan impellers and shafts are statically and dynamically balanced as a single unit to a high precision of Q2.5 (or 2.5 grams). These fans sit on heavy-duty sealed-for-life bearings pre-packed with a lithium based grease, which can withstand a wide range of operating temperatures. These impellers are welded by robots to achieve higher precision. The fans ride on solid steel shafts for greater durability.

The wide range of 22 standard models with air volume ranging from 42 cubic metres per minute (CMM) to 1250 CMM enables the user to select a unit that will match very closely his technical specifications and requirements. However, with the modular panel system, custom designed and built units for special applications, such as clean rooms and hospital surgical rooms, can be manufactured and delivered in a relatively short time.



Features

FEATURES OF DAIKIN AIR HANDLING UNIT



1. Modular Sandwich Panels

The panels are modular in size. They can withstand a negative or positive air pressure up to 400mm water column. Due to their double skin construction, there's no possibility of the insulation breaking down, and the interior surfaces of the unit can be easily cleaned or sterilised.



2. Unique Construction

The edge of the panels are specially designed to fold together to form a flange. A reinforcing piece is welded in at each corner. The construction facilitates assembly of the panels. The assembled casing forms a self supporting rigid shell with a totally smooth inner surface and have a stability superior to any frame system. To ensure that the casing is totally insulated, foam-lined cover plates are fixed over the exterior flange connections. This provides even thermal insulation and additional sealing of joints. Humidifiers and units with high internal static pressure can be equipped with a special seal between the panel flanges.

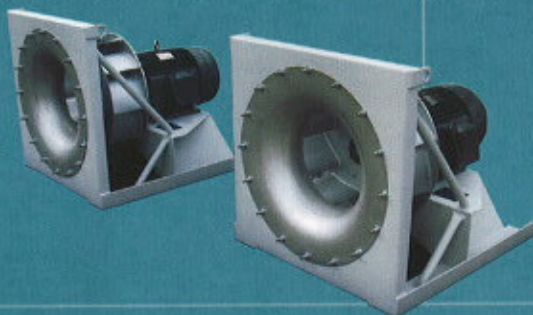
3. Access Doors

Casing panels and access doors are of the same sandwich construction and dimensions. They are therefore interchangeable when needed. A patented quick release device allows easy opening and closing of the doors. The doors are specially designed to prevent air leakage. Access doors are available for both positive and negative air pressure operations.



4. Plenum Fans

A comprehensive range of plenum fans is available to meet different design criteria. These fans are designed to operate unhoused inside the AHUs. The flexible fan section provides a wide combination of discharge arrangements. Plenum fans also contribute to lower overall system pressure drop, thereby reducing energy consumption.



5. Centrifugal Fans

A wide range of forward and backward curved centrifugal fans is available to meet almost any design conditions. A unique feature of this range of fans is the interchangeability of forward and backward curved impellers within the same fan housing. This allows the fan duty to be changed to meet actual operating conditions at site simply by replacing one type of impeller with the other without changing the fan housing, unit casing dimensions or the duct. When variable air volume application is required, multi blade inlet guide vanes are available for backward curved fans.

6. Inlet Rings

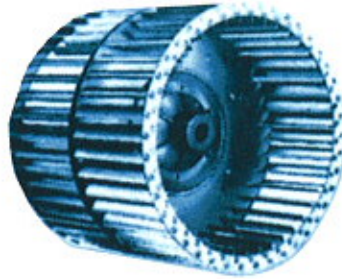
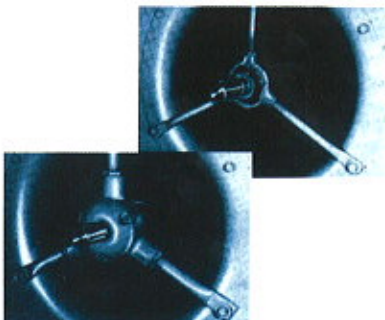
These inlet rings are aerodynamically shaped to give even air distribution over the full width of the impeller.

The shafts are accurately turned and ground with both ends extended beyond the sides of the casing to allow for driving the fan from either side.



7. Sealed-for-life Bearings

All fans are fitted with grease packed bearings which can withstand an average operating time of 20,000 hours. The sealed for life bearing is packed with lithium base grease and retained by means of felt end rings. Should re-lubrication become necessary, the bearing can be fully stripped down, cleaned and repacked.



8. Forward Curved Impeller

The forward curved impeller are of multiblade construction fabricated from galvanised sheet steel, suitable for high-tip speed and with the shaft and impeller statically and dynamically balanced together as one unit.



9. Backward Curved Impeller

The backward curved impellers are of true aerofoil shape with hollow curved blades welded from steel sheet, coated with synthetic resin, and suitable for high-tip speed and with the shaft and impeller statically and dynamically balanced together as one unit.

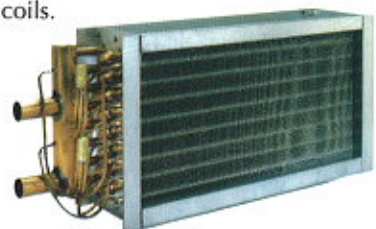
10. Chilled Water Coils

The chilled water cooling coils are constructed from 5/8" diameter copper tubes with copper or aluminium fins. The tubes are available in cupro-nickel, carbon or stainless steel. The staggered tubes design of the coil increases the heat transfer coefficient and thus improves the overall performance of the coil. Different sizes, configuration and circuiting patterns can be provided to handle all sorts of cooling and dehumidification requirements.



11. Direct Expansion Coils

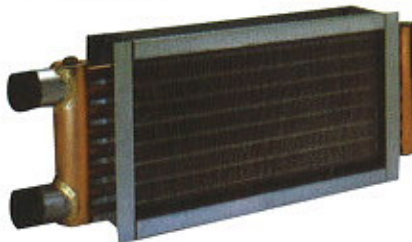
Direct expansion coils are also available in various sizes, configuration and circuiting patterns to suit every need. The coils are engineered and designed to deliver the maximum possible heat transfer efficiency under all operating conditions. Circuiting for face control is also available for a wide variety of coils.



FEATURES OF DAIKIN AIR HANDLING UNIT

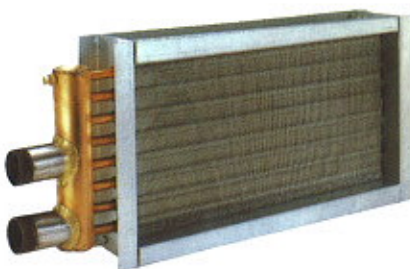
12. Hot Water Coils

Hot water coils are available with various fin spacing and circuiting arrangements. The design is similar to the chilled water coil. For high water pressure applications and applications where water conditions tend to be corrosive, cupro-nickel tubes are available.



13. Steam Coils

Steam coils, designed for general purpose air heating, can be used for a wide variety of heating and processing applications. Both the standard and high steam pressure constructions are available for all models. A baffle is provided at the inlet header to disperse the entering steam. This prevents blow-through or short-circuiting and ensures equal steam distribution to all tubes of the coil.



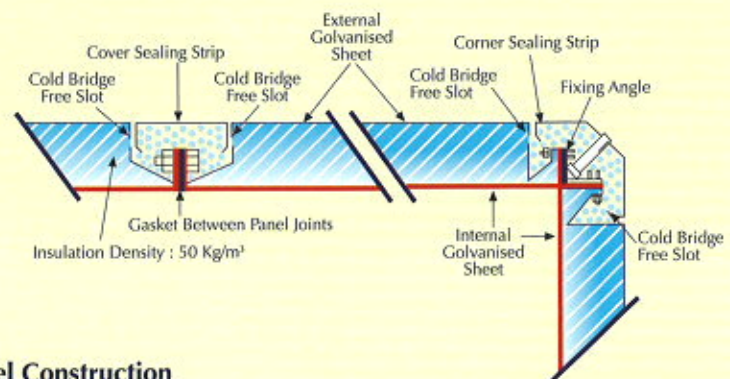
14. Flexibility in Shipping

Units can be shipped as complete units, but where space or weight prevents this, the units can be shipped in sections or as components.



15. Can be easily knocked-down and reassembled on site

Because of its unique prefabricated frameless design, Daikin Units can be easily knocked-down and assembled on site. No gas-cutting or welding is required and all that the field technician needs is a screw-driver and a set of spanners. All the holes are precisely pre-punched and aligned to prevent errors and to save time during assembly.



Panel Construction

16. Outdoor Application

Unlike conventional units, Daikin Air Handling Units can be used for outdoor applications simply by adding a layer of waterproof sealant to the joints. When the need arises, additional insulation on the unit's roof and special gaskets between the panels can be supplied.



Optional Accessories

Air Washer / Humidifier

Steam or water type humidifiers can be provided



Heater

A selection of heaters are available



Eliminator

Extruded from high quality polypropylene, reinforced with talc
Installed downstream of cooling coils to capture the condensate droplets



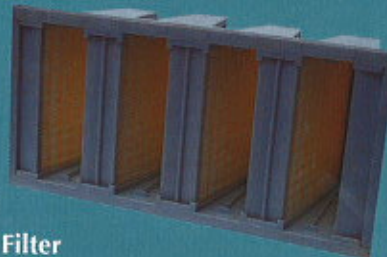
Damper

Constructed of aluminium opposed blade construction



Silencer

Suited for sound sensitive environment



Filter

Full range of filters available, such as disposable, washable varicel, auto roll and HEPA

COILS

Fins coated with anti-corrosion material (such as passivate, electro tinned and epoxy)

- Stainless steel coil
- Steel Coil

CASING

Stainless steel on inside or outside of panel or on both sides Special powder baked epoxy panel can be provided

Isolator

Full range of isolators available, including free standing and housing spring mount



Interior Lighting

Side mounted lamps to illuminate AHU interior during maintenance



Guide Specifications

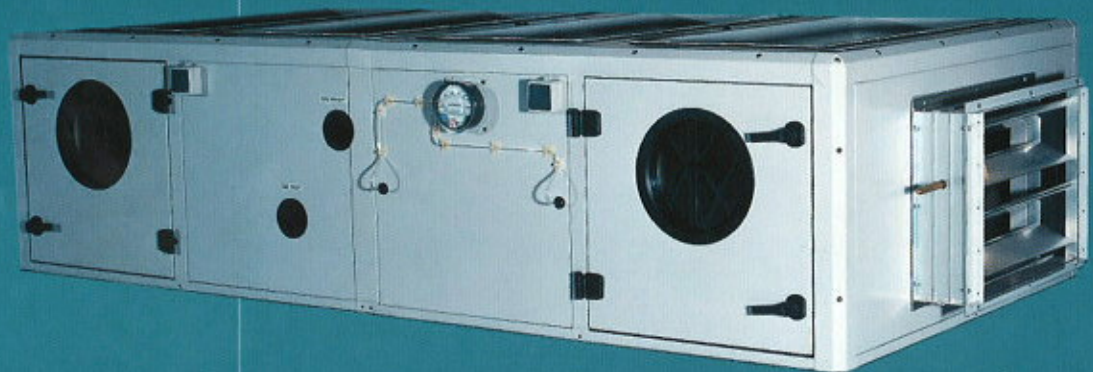
The air handling unit shall be of modular frameless construction incorporating sandwich panels for its casing. Each unit shall be complete with and shall include the following:- prefabricated frameless modular sandwich panel casing, fan section, fan motor with pulley and belt drive, face and bypass dampers, cooling coil section, drain pan and air filters. The unit shall be designed to ensure even air distribution across the face of the cooling coil.

Casing

The casing shall be of a frameless construction. It shall be built up from a standard set of sandwich panels. The panels shall consist of an outer and inner sheet made of galvanised or stainless steel and totally encasing a hard form insulation. At the edges, the sheets shall be folded together to form a flange. A reinforcing piece shall be welded in at each corner. The grid of the system shall divide the inner section of the casing into squares with 310 mm sides so that modules of multiples of such dimensions can be easily built up to match the size of international standard air filter of 620mm x 620mm. The panels shall be prefabricated and precisely dimensioned and shall be

assembled by using concealed bolts and nuts to form a rigid and strong casing. Assembly should not require any welding.

The casing shall be modular in nature so that additional sections and components can be added on at a later date. The assembled casing shall form a self-supporting rigid shell with a totally smooth inner surface and be more stable than a frame system. The internal surface shall be free of frames to allow free air flow without turbulence. The edges of the casing shall be air tight and insulated throughout to be effective against heat and cold bridges. The cut edges of the sheet metal shall be covered and



protected. The double skin sandwich panels shall provide good fire damping characteristic of 32 db.

The complete casing shall be so rigid that it can be crane lifted in one piece. It shall also be possible to assemble the unit on site piece by piece.

The rigid panels shall provide absolute sealing against negative or positive air pressures of up to 500mm of water column. Where necessary, it shall be possible to install an inspection door in the place of a standard panel. The door shall have two eccentric rapid locks and shall be absolutely tight when closed. For units to be installed outdoor, the casing shall be sealed for weather proofing.



Fan

The fan shall be of forward or backward curved centrifugal type. Forward curved impellers shall be of multiblade construction fabricated from galvanised sheet metal, suitable for high tip speeds. Backward curved impellers shall be of true aerofoil shape with hollow plate blades welded from sheet metal and coated with synthetic resin. The impeller and shaft shall be statically and dynamically balanced as a single unit to Q2.5(G2.5). All scrolls and side plates shall be fabricated from galvanised steel. The inlet rings must be aerodynamically shaped to provide even air distribution over the full width of the impeller. All shafts shall be accurately ground with the ends extended beyond both sides of the fan housing.

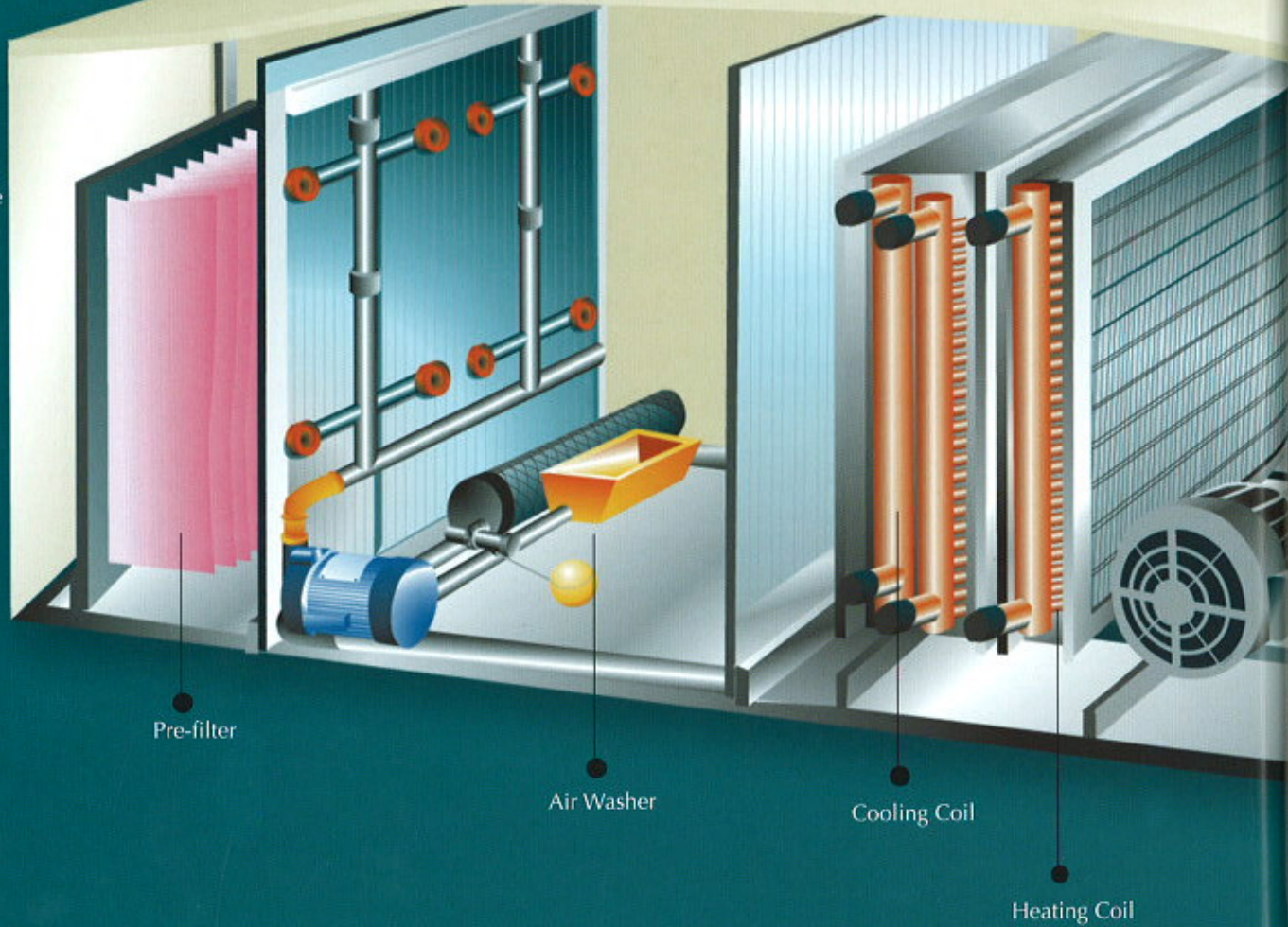
All fans shall be fitted with grease packed sealed-for-life ball bearings. Bearings shall be designed for a minimum anticipated running life of 20,000 hours.



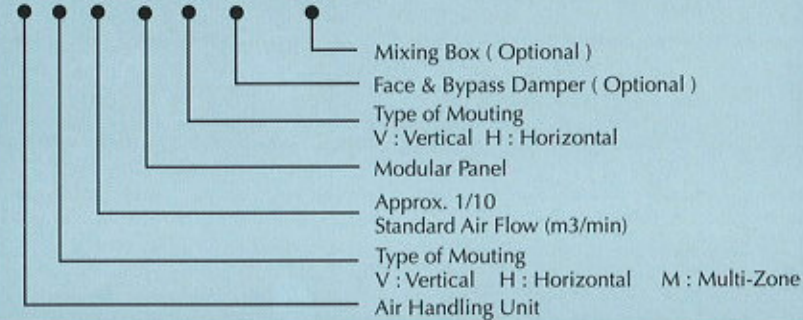
Cooling Coil

The cooling coil shall be constructed of copper tubes and aluminium or copper fins mechanically bonded to the tubes to ensure maximum contact for efficient heat transfer. The coil shall be fabricated from 5/8 inch diameter copper tube in a staggered arrangement. The coil shall be suitable for an operating water pressure of 1 030 KN/m² and selected for face velocity not exceeding 2.8 metres per second without moisture carry over. Each coil shall be fitted with an automatic air vent at the highest point.

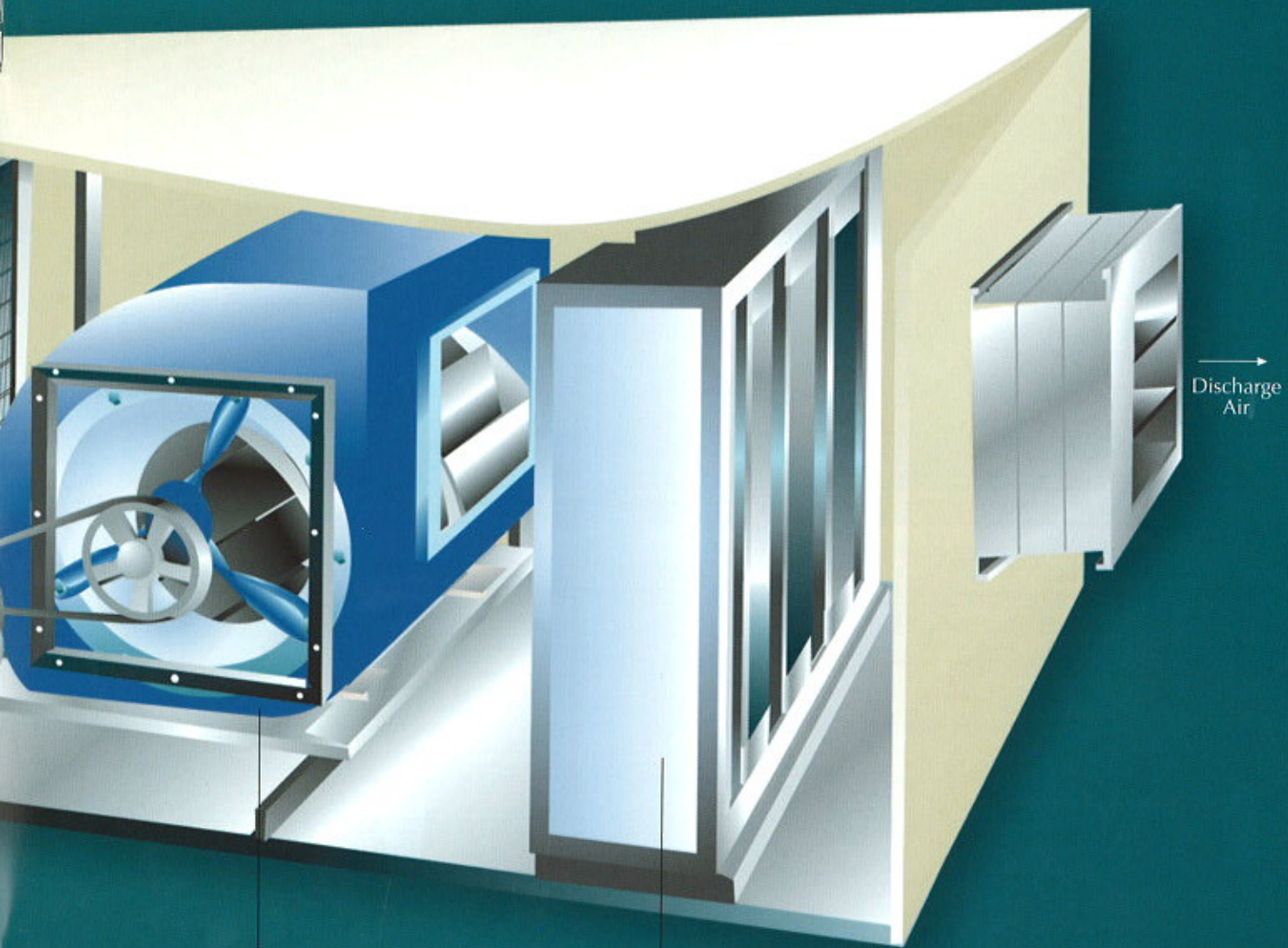
Air Intake



A ^V/_H/_M **M** ^V/_H **FB/MB**



Construction Nomenclature



Fan And Motor Section

Hepa or Chemical filter

Selection Table

METRIC UNITS

MODEL	CMM STANDARD AIR FLOW COIL FACE VELOCITY 2.5M/S	CMM AIR FLOW RANGE COIL FACE VELOCITY 2.0-3.0M/S	COIL SIZE mm	COIL FACE AREA m ²	FAN MODEL	EST.D MOTOR KW	COOLING KILOWATT		
							4 ROWS 8 Fins/in	6 ROWS 8 Fins/in	8 ROWS 8 Fins/in
4M	42	33-50	457 X 610	0.28	200	0.7	11.2	16.0	19.2
6M	63	50-76	457 X 915	0.42	250	1.5	19.4	26.2	30.9
8M	84	67-101	610 X 915	0.56	280	2.2	25.8	34.9	41.2
10M	106	84-127	762 X 915	0.70	315	2.2	32.2	43.6	51.5
14M	141	113-169	762 X 1220	0.93	355	3.7	45.4	58.1	68.6
17M	177	141-212	762 X 1524	1.16	400	3.7	59.6	74.1	83.0
19M	211	168-253	1067 X 1295	1.38	450	5.5	67.6	86.6	102.3
24M	247	198-297	1067 X 1524	1.63	450	5.5	83.5	103.8	116.7
27M	271	217-326	1067 X 1676	1.79	500	5.5	94.0	111.7	131.8
29M	297	237-357	1067 X 1829	1.95	500	5.5	95.3	122.1	144.2
34M	347	277-416	1067 X 2134	2.28	560	7.5	111.1	142.1	168.2
39M	396	317-475	1067 X 2438	2.60	560	7/5	136.8	169.4	192.2
44M	446	356-535	1067 X 2743	2.93	630	7.5	153.9	201.5	216.2
49M	495	396-594	1067 X 3048	3.25	630	11.0	171.0	211.7	248.4
56M	566	453-679	1220 X 3048	3.72	710	11.0	195.5	242.0	274.6
62M	623	498-747	1220 X 3353	4.09	800	11.0	200.0	256.0	302.0
68M	694	554-832	1067X2134X2	4.56	800	15	222.2	285.0	336.4
78M	792	634-950	1067X2438X2	5.20	900	15	273.6	338.8	384.4
88M	892	712-1070	1067X2743X2	5.86	900	18.5	307.8	403.0	432.4
99M	991	792-1188	1067X3048X2	6.50	1000	18.5	342.0	423.4	496.8
110M	1133	906-1359	1220X3048X2	7.43	1000	18.5	391.0	484.0	549.2
120M	1246	997-1495	1220X3353X2	8.18	1000	22.5	400.0	512.0	604.0

Note: Above cooling capacities are based on standard air flow rate and the following conditions:
 • Chilled water temperature : 7.2/12.8°C (45/55°F) • Entering air temperature : 26.6/19.4°C (80/67°F) • Coil face velocity : 2.5m/s(500FPM)

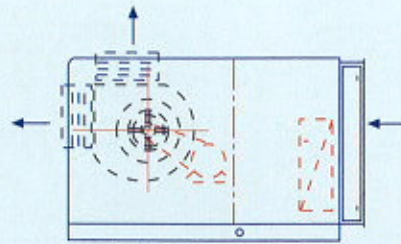
IMPERIAL UNITS

MODEL	CFM STANDARD AIR FLOW COIL FACE VELOCITY 500FPM	CFM AIR FLOW RANGE COIL FACE VELOCITY 400-600FPM	COIL SIZE	COIL FACE AREA	FAN MODEL	MOTOR HP	COOLING BTU/HR		
							4 ROWS 8 Fins/in	6 ROWS 8 Fins/in	8 ROWS 8 Fins/in
4M	1500	1165-1765	18 X 24	3	200	1	38200	54600	65500
6M	2250	1765-2685	18 X 36	4.5	250	2	66200	89400	105400
8M	3000	2365-3565	24 X 36	6	280	3	88000	119000	140600
10M	3750	2965-4485	30 X 36	7.5	315	3	109900	148700	175700
14M	5000	3990-5965	30 X 48	10	355	5	154900	198200	234000
17M	6250	4980-7485	30 X 60	12.5	400	5	203300	252800	283200
19M	7450	5930-8930	42 X 51	14.9	450	7.5	230600	295500	349000
24M	8750	6990-10485	42 X 60	17.5	450	7.5	284900	354100	396000
27M	9600	7660-11510	42 X 66	19.2	500	7.5	320700	381100	449700
29M	10500	8365-12600	42 X 72	21	500	7.5	325100	416600	492000
34M	12250	9780-14685	42 X 84	24.5	560	10	379100	486200	573900
39M	14000	11190-16770	42 X 96	28	560	10	466800	578000	655900
44M	15750	12565-18885	42 X 108	31.5	630	10	525100	687500	737700
49M	17500	13980-20970	42 X 120	35	630	15	583500	722300	847500
56M	20000	15990-23970	48 X 120	40	710	15	667000	825700	936900
62M	22000	17580-26370	48 X 132	44	800	15	682400	873400	1030400
68M	24500	19555-29370	42 X 84 X 2	49	800	20	758200	972400	1147800
78M	28000	22380-33535	42 X 96 X 2	56	900	20	933600	1156000	1311600
88M	31500	25135-37770	42 X 108 X 2	63	900	25	1050200	1375000	1475400
99M	35000	27990-41970	42 X 120 X 2	70	1000	25	1167000	1444600	1695000
110M	40000	31980-47970	48 X 120 X 2	80	1000	25	1334000	1654400	1873800
120M	44000	35195-52775	48 X 132 X 2	88	1000	30	1364800	1746800	2060800

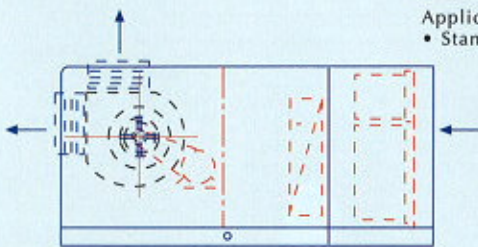
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 • Chilled water temperature : 7.2/12.8°C (45/55°F) • Entering air temperature : 26.6/19.4°C (80/67°C) • Coil face velocity : 2.5m/s(500FPM)

Application Guide

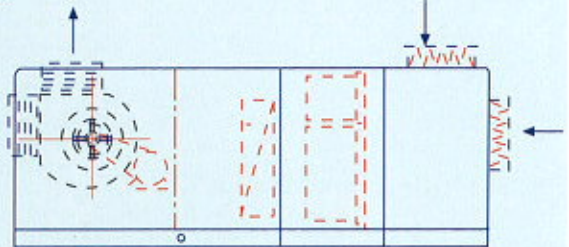
Application Guide



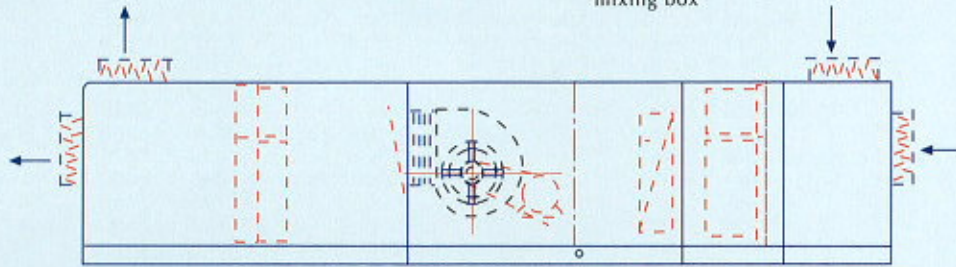
Application 1
• Standard configuration



Application 2
• Unit with medium or high efficiency filters

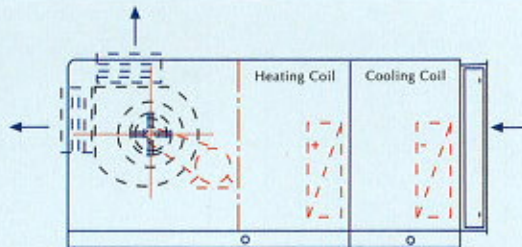


Application 3
• Unit with medium or high efficiency filters & mixing box

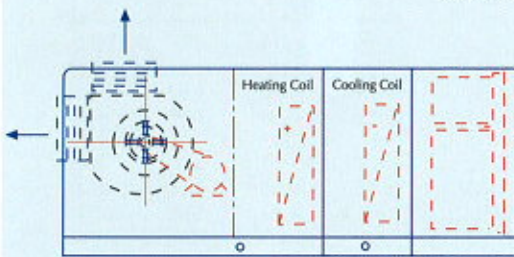


Application 4
• Unit with medium or high efficiency filters, mixing box & secondary filter section.

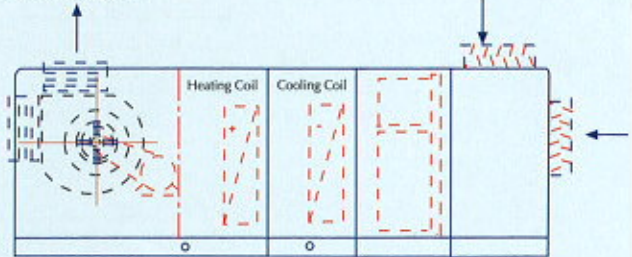
Application Guide with Heating Coil



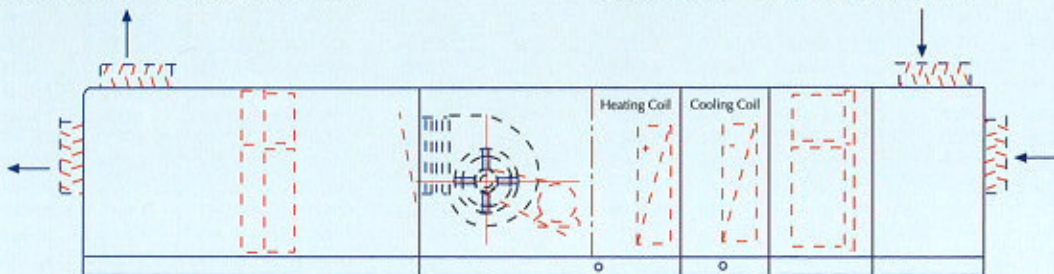
Application 1 • Unit with heating coil



Application 2 • Unit with heating coil



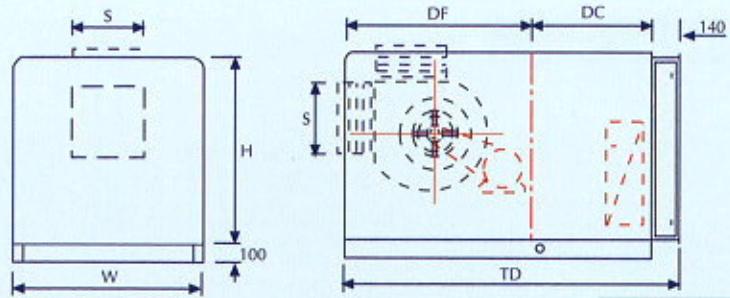
Application 3 • Unit with heating coil



Application 4 • Unit with heating coil

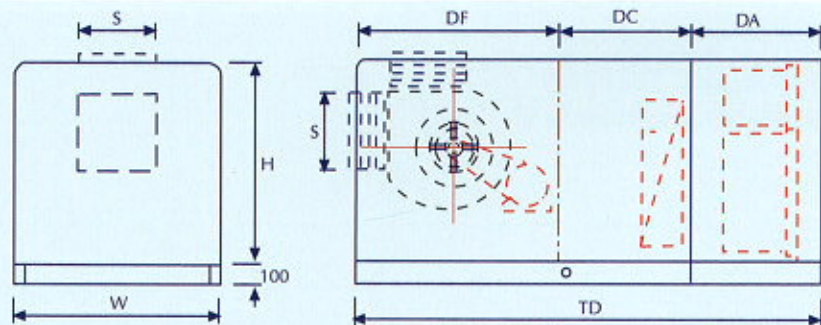
*For units with heating coil, additional 955mm (minimum) should be included to the total depth (TD) of the unit dimension.

Application 1 Standard configuration



MODEL	W	H	TD	DF	DC	S	WT(KG)	Suggested Filter Qty	
								12" X 24"	24" X 24"
4M	1010	970	1420	660	620	255	270	1	1
6M	1320	970	1420	660	620	320	330	0	2
8M	1320	970	1420	660	620	360	360	2	2
10M	1320	970	1420	660	620	400	400	2	2
14M	1630	970	1730	970	620	450	510	2	2
17M	1940	1280	1730	970	620	505	670	3	3
19M	1940	1280	1730	970	620	565	710	0	6
24M	1940	1280	1730	970	620	565	740	0	6
27M	2250	1280	2040	1280	620	635	870	2	6
29M	2250	1280	2040	1280	620	635	890	2	6
34M	2560	1590	2040	1280	620	710	1110	0	8
39M	2870	1590	2040	1280	620	710	1200	2	8
44M	3180	1590	2040	1280	620	800	1320	0	10
49M	3490	1590	2040	1280	620	800	1410	2	10
56M	3490	1900	2350	1590	620	895	1680	5	10
62M	3800	1900	2350	1590	620	1005	1870	6	12
68M	2560	2520	2995	1900	955	1005	2090	0	16
78M	2870	2520	2995	1900	955	1125	2450	4	16
88M	3180	2520	2995	1900	955	1125	2680	0	20
99M	3490	2520	3305	2210	955	1265	3010	4	20
110M	3490	2830	3305	2210	955	1265	3130	5	20
120M	3800	2830	3305	2210	955	1265	3290	6	24

Application 2 Units with medium or high efficiency filters

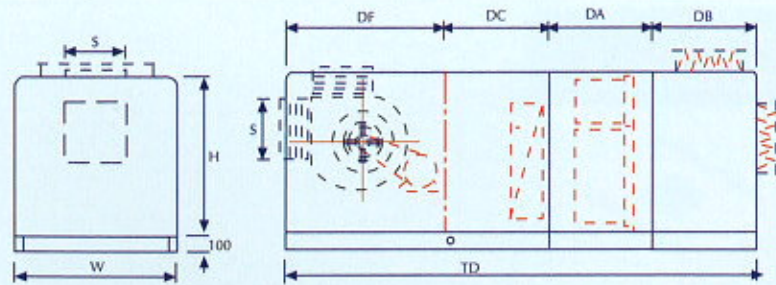


MODEL	W	H	TD	DF	DC	DA	S	WT(KG)
4M	1010	970	1925	660	645	620	255	340
6M	1320	970	1925	660	645	620	320	420
8M	1320	970	1925	660	645	620	360	450
10M	1320	970	1925	660	645	620	400	480
14M	1630	970	2235	970	645	620	450	600
17M	1940	1280	2235	970	645	620	505	770
19M	1940	1280	2235	970	645	620	565	800
24M	1940	1280	2235	970	645	620	565	830
27M	2250	1280	2545	1280	645	620	635	1000
29M	2250	1280	2545	1280	645	620	635	1020
34M	2560	1590	2545	1280	645	620	710	1250
39M	2870	1590	2545	1280	645	620	710	1350
44M	3180	1590	2545	1280	645	620	800	1480
49M	3490	1590	2545	1280	645	620	800	1580
56M	3490	1900	2855	1590	645	620	895	1870
62M	3800	1900	2855	1590	645	620	1005	2060
68M	2560	2520	3475	1900	955	620	1005	2240
78M	2870	2520	3475	1900	955	620	1125	2600
88M	3180	2520	3475	1900	955	620	1125	2860
99M	3490	2520	3785	2210	955	620	1265	3190
110M	3490	2830	3785	2210	955	620	1265	3330
120M	3800	2830	3785	2210	955	620	1265	3480

*Filter quantity varies with airflow requirements. Please contact our Sales Executive for details.

Application 3

Units with medium or high efficiency filters, mixing box

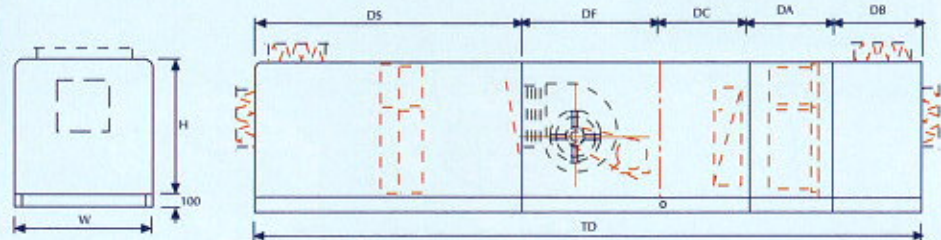


MODEL	W	H	TD	DF	DC	DA	DB	S	WT(KG)
4M	1010	970	2585	660	645	620	660	255	440
6M	1320	970	2585	660	645	620	660	320	520
8M	1320	970	2585	660	645	620	660	360	550
10M	1320	970	2585	660	645	620	660	400	580
14M	1630	970	2895	970	645	620	660	450	730
17M	1940	1280	2895	970	645	620	660	505	900
19M	1940	1280	2895	970	645	620	660	565	940
24M	1940	1280	2895	970	645	620	660	565	970
27M	2250	1280	3515	1280	645	620	970	635	1200
29M	2250	1280	3515	1280	645	620	970	635	1220
34M	2560	1590	3515	1280	645	620	970	710	1490
39M	2870	1590	3515	1280	645	620	970	710	1610
44M	3180	1590	3515	1280	645	620	970	800	1770
49M	3490	1590	3515	1280	645	620	970	800	1890
56M	3490	1900	3825	1590	645	620	970	895	2200
62M	3800	1900	4135	1590	645	620	1280	1005	2460
68M	2560	2520	4755	1900	955	620	1280	1005	2600
78M	2870	2520	4755	1900	955	620	1280	1125	3020
88M	3180	2520	4755	1900	955	620	1280	1125	3330
99M	3490	2520	5375	2210	955	620	1590	1265	3740
110M	3490	2830	5375	2210	955	620	1590	1265	4000
120M	3800	2830	5375	2210	955	620	1590	1265	4200

*Filter quantity varies with airflow requirements. Please contact our Sales Executive for details.

Application 4

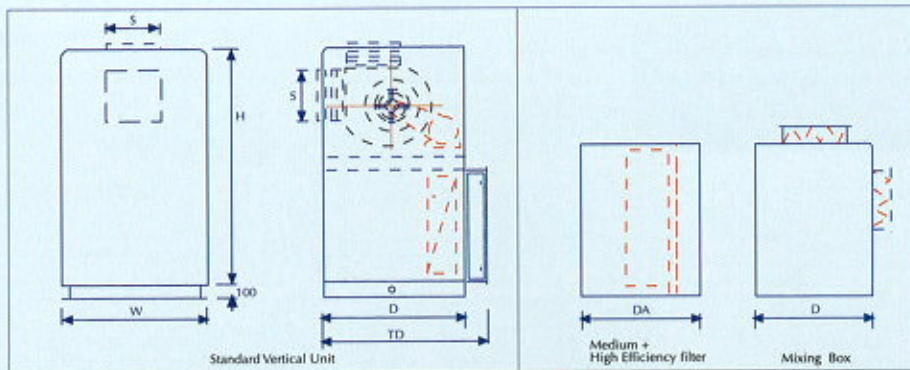
Units with medium or high efficiency filters, mixing box and secondary filters section



MODEL	W	H	TD	DS	DF	DC	DA	DB	WT(KG)
4M	1010	970	4470	1900	645	645	620	660	620
6M	1320	970	4470	1900	645	645	620	660	730
8M	1320	970	4470	1900	645	645	620	660	760
10M	1320	970	4470	1900	645	645	620	660	790
14M	1630	970	4780	900	955	645	620	660	970
17M	1940	1280	4780	1900	955	645	620	660	1190
19M	1940	1280	4780	1900	955	645	620	660	1220
24M	1940	1280	4780	1900	955	645	620	660	1250
27M	2250	1280	5710	2210	1265	645	620	970	1560
29M	2250	1280	5710	2210	1265	645	620	970	1580
34M	2560	1590	5710	2210	1265	645	620	970	1890
39M	2870	1590	5710	2210	1265	645	620	970	2060
44M	3180	1590	5710	2210	1265	645	620	970	2250
49M	3490	1590	5710	2210	1265	645	620	970	2390
56M	3490	1900	6020	2210	1575	645	620	970	2750
62M	3800	1900	6330	2210	1575	645	620	1280	3050
68M	2560	2520	6950	2210	1885	955	620	1280	3150
78M	2870	2520	6950	2210	1885	955	620	1280	3610
88M	3180	2520	6950	2210	1885	955	620	1280	4000
99M	3490	2520	7570	2210	2195	955	620	1590	4500
110M	3490	2830	7570	2210	2195	955	620	1590	4890
120M	3800	2830	7570	2210	2195	955	620	1590	5150

*Filter quantity varies with airflow requirements. Please contact our Sales Executive for details.

Standard Vertical Unit

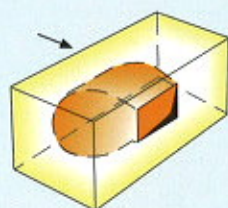


MODEL	W	H	TD	D	DA	DB	D+DA	D+DA+DB	S	WT(KG)	Suggested Filter Qty	
											12" x 24"	24" x 24"
4M	1010	1280	1150	1010	620	660	1630	2290	255	270	1	1
6M	1320	1590	1150	1010	620	660	1630	2290	320	340	0	2
8M	1320	1590	1150	1010	620	660	1630	2290	360	380	2	2
10M	1320	1900	1150	1010	620	660	1630	2290	400	450	2	2
14M	1630	1900	1150	1010	620	660	1630	2290	450	510	2	2
17M	1940	1900	1150	1010	620	660	1630	2290	505	590	3	3
19M	1940	2520	1460	1320	620	660	1940	2600	565	820	0	6
24M	1940	2520	1460	1320	620	660	1940	2600	565	850	0	6
27M	2250	2520	1460	1320	620	970	1940	2910	635	870	2	6
29M	2250	2520	1460	1320	620	970	1940	2910	635	920	2	6
34M	2560	2520	1460	1320	620	970	1940	2910	710	1030	0	8
39M	2870	2520	1460	1320	620	970	1940	2910	710	1100	2	8
44M	3180	2830	1770	1630	620	970	2250	3220	800	1480	0	10
49M	3490	2830	1770	1630	620	970	2250	3220	800	1740	2	10
56M	3490	3140	1770	1630	620	970	2250	3220	895	2630	5	10
62M	3800	3450	2080	1940	620	1280	2560	3840	1005	2750	6	12

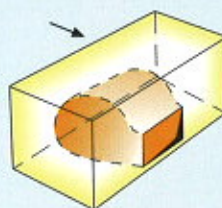
Fan Outlet Positions/ Service Door + Pipe connection

→ Direction of air flow

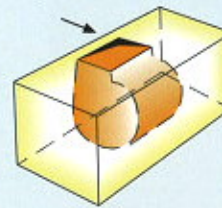
Fan Outlet Positions



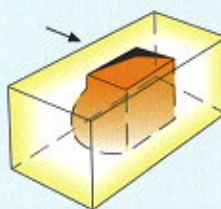
Arrangement #1



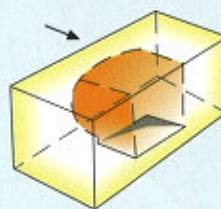
Arrangement #2



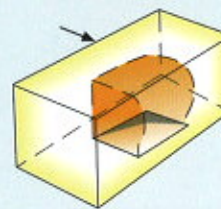
Arrangement #3



Arrangement #4

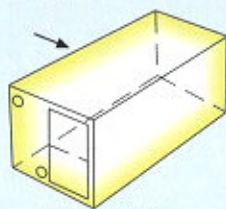


Arrangement #5

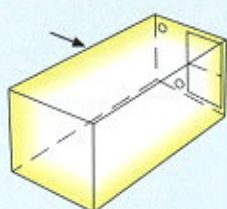


Arrangement #6

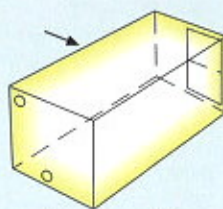
Service Door & Pipe Connection



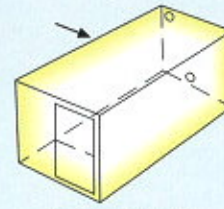
Arrangement A
Pipe - Right
Door - Right



Arrangement B
Pipe - Left
Door - Left



Arrangement C
Pipe - Right
Door - Left

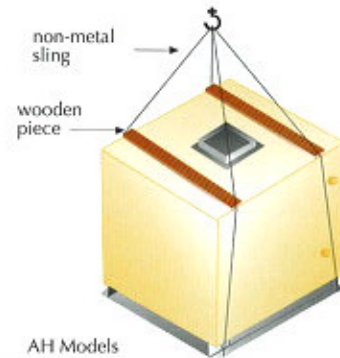


Arrangement D
Pipe - Left
Door - Right

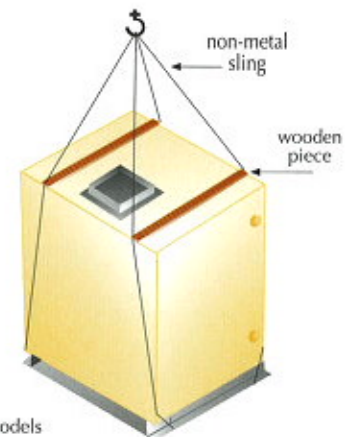
Hoisting and Installation

HOISTING

- All units are provided with hoisting brackets located at the base of the unit.
- When hoisting is required, hoisting strips should have a suitable length so that no unnecessary force is being applied to the casing while hoisting.
- Only non-metal slings are to be used for hoisting to avoid damage to the side panels. Wooden pieces are to be inserted between the slings as an additional protection for the casing.
- When using a fork-lift truck to lift the unit, care must be taken to ensure that the insulation under the drain pan is not damaged.
- It is generally recommended that the AHU should not be dragged, as this will damage the insulation under the unit.
- If for whatever reasons, the contractor is unable to make use of the hoisting brackets, then care should be taken to prevent the casing from damage while moving and handling the unit.



AH Models



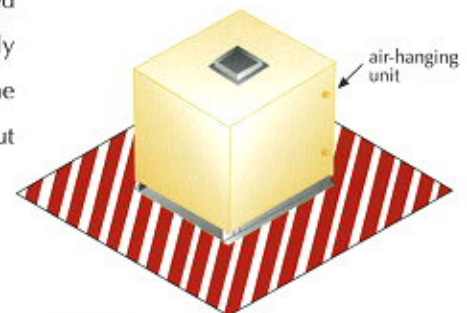
AV Models

INSTALLATION

If units are installed on a plinth, the height of the plinth should be determined according to the height of the drain trap and drainage pipe. It is generally recommended that the height of the drain trap should be no less than twice the internal pressure drop of the Air Handling Unit so that water can flow smoothly out of the drain tray.

The following precautions should also be taken:

- Use special cable entry for installation of electrical cables.
- Hole-saw must be used to cut any round holes through the sandwich panels.
- All field wiring must be carried out accordance to the regulations of the country concerned.
- It is recommended that an electrical isolator be fitted adjacent to the motor, electrical heaters or other electrical components.
- Pulley alignment and tension must be checked before start-up. The table below indicates the correct tension and alignment



 recommended service area
min: 600mm

Before you install the AHU in the plant room, ensure that there is sufficient space around the unit so that the servicing can be done easily. The unit should also be installed at a height that allows a smooth flow of condensate water.



*Recommended u-trap height(mm)
is at least $2 \times \text{Pressure (Pa)} / 9.810$*

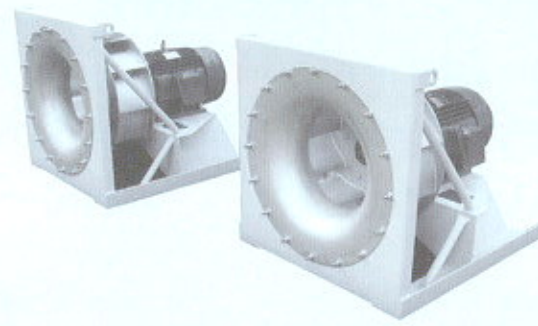
Conversion Tables

To convert from	To		Multiply by
LENGTH			
Inches	millimetres	mm	25.4
Feet	metres	m	0.3048
Miles	kilometres	km	1.609
AREA			
Square inches	sq. millimetres	mm	645.2
Square feet	sq. metres	m	0.0929
VOLUME			
Cubic feet	cubic metres	m	0.0283
U.S. Gallons	litres	L	3.7854
MASS			
Pounds	kilograms	Kg	0.4536
Short ton (2000 lbs)	tonne (1000 kg)	T	0.907
Long ton (2240 lbs)	Tonne (1000 kg)	T	1.016
TEMPERATURE			
Deg. Fahrenheit F	Deg. Celsius	C	5/9 (F-32)
Deg. Celcius C	Deg. Fahrenheit	F	9/5C + 32
ENERGY OR WORK			
BTU	Kilojoules	kj	1.055
Kilo-watt-hour	Kilojoules	kj	3600
Horsepower	Kilowatts	kw	0.746
HEAT FLOW			
BTU/hr	Watts	W	0.2931
Tons (Refrigeration)	Kilowatts	kW	3.517
(U) BTU/hr/ft ² /F	Watts/m ² /C	W/m ² /C	5.678
VOLUME FLOW			
CFM	cu. metres/sec	CMS	0.000472
CFM	litres/sec	L/sec	0.472
CFM	cu. metres/hr	CMH	1.70
GPM (U.S.)	litres/sec	L/sec	0.063
VELOCITY			
FPM	metres/sec	m/sec	0.0051
PRESSURE			
in. of water (in H ² O)	Kilopascals	kPa	0.249
Ft. of water (in H ² O)	Kilopascals	kPa	2.990
Pounds/sq. in. (psi)	Kilopascals	kPa	6.895
OTHERS			
(FF) ft ² .F.ht/BTU	m ² K/KW	Sq.mK/KW	176

Singapore



- AMD Building • ASM Technology Singapore Pte Ltd •
- Bugis Junction • Century Square Shopping Centre •
- Changi Water Reclamation Plant •
- Chartered Semiconductor Fab 7 • Goodrich Building •
- GSK Centre for Cognitive and Neurodegenerative Disorders •
- GSK Pilot Plant Chemdev • Hewlett Packard (Depot Road) •
- Hitachi Global Storage Technologies S'pore Pte Ltd •
- Keppel Tower • MT Building • Micron Semiconductor •
- Murata • National Eye Centre • National Skin Centre •
- NEA Tuas Incineration Plant • NEC Building •
- NH Techno Singapore • Ocean Tower • Panasonic Semiconductor •
- Park View • Schering-Plough Ltd at Biopolis •
- Seagate Technology • Showa Denko • SIA Hanger 2 •
- Sony Synergy Project • Siltronic Samsung Wafer Pte Ltd •
- ST Microelectronics • STATS CHIPPAC • Sumitomo Bakelite •
- Tampines Mall • Tech Semiconductor • UTAC • Xilinx •



Project References

Regional

China

- AMD Building • Fairchild Semiconductor Incorporated •
- Hitachi Global Storage Technology • Seagate Wuxi •



Indonesia

- Ciba Vision • Infineon • NSK • Siemens •



Malaysia

- Hitachi Electronic Devices • Hitachi Semiconductor •
- Motorola • Nestle •



Phillippines

- Amkor Technology Philippines Inc • Asian Development Bank •
- Fairchild Semiconductor Incorporated •
- National Semi-Conduct Inc • TDK •



Sri Lanka

- British High Commission • Mount Lavinia Hotel •
- Omegaline • Trans Asia Hotel •



Vietnam

- Canon Vietnam Factory • Hoya Building • Nidec Sankyo •
- Panasonic Vietnam • Rhoto • Sanyo DI Solutions •
- Sumitomo Bakelite Co. Ltd • Wonderful Saigon Electrics •



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