







# **INTRODUCTION**

## YORK AIR HANDLING UNIT

YORK double skin air handling unit (AHU) is designed to meet diversified requirements of high capacity air conditioning application. Various standard model sizes are available for selection with airflow rate ranging from 1060 to 50000 CFM (0.50 to 23.6 m<sup>3</sup>/s) and up to a total static pressure of 2000 Pa (8" WG).

The AHU casing construction is built up with extruded Aluminium profiles, come with air pocket rubber insulation, reinforced plastic ABS angle lug, high density panels and doors. All panels and doors can be easily assembled and removed as a result from the unique YORK patented fastening mechanism using panel frame and EPDM strip gasket.

Wide ranges of air filtration classes filters are available to meet diversified requirements and application. Filters are easily removed, for inspection and cleaning access. Standard water coil is manufactured from copper tubes with aluminium fins. Heat source can be either from electrical heater or hot water coil. Different types of blower are available to meet required airflow, static pressure and acoustic requirements.



# GENERAL

### **QUICK SELECTION FOR AHU MODEL**



2

## GENERAL

## **NOMINAL UNIT AIRFLOW**

		A	ir flow (m <sup>3</sup>	/s)			A	ir flow (CF	M)	
Model		Coil Fa	ace velocit	ty (m/s)			Coil Fa	ace veloci	ty (fpm)	
	2.00	2.25	2.50	2.75	3.00	400	450	500	550	600
20 x 20	0.50	0.56	0.62	0.69	0.75	1060	1187	1314	1462	1589
20 x 30	0.85	0.95	1.06	1.16	1.27	1801	2013	2246	2458	2691
20 x 40	1.19	1.34	1.49	1.64	1.79	2522	2839	3157	3475	3793
20 x 50	1.54	1.73	1.93	2.12	2.31	3263	3666	4090	4492	4895
30 x 30	1.48	1.67	1.85	2.04	2.22	3136	3539	3920	4323	4704
30 x 40	2.09	2.35	2.61	2.87	3.13	4429	4980	5531	6082	6632
30 x 50	2.70	3.03	3.37	3.71	4.05	5721	6421	7141	7861	8582
30 x 60	3.31	3.72	4.13	4.54	4.96	7014	7883	8751	9620	10510
30 x 70	3.91	4.40	4.89	5.38	5.87	8285	9324	10362	11400	12439
40 x 50	3.66	4.12	4.58	5.03	5.49	7756	8730	9705	10659	11633
40 x 60	4.49	5.05	5.61	6.17	6.73	9514	10701	11888	13074	14261
40 x 70	5.31	5.97	6.64	7.30	7.97	11252	12650	14070	15469	16888
40 x 80	6.14	6.90	7.67	8.44	9.20	13011	14621	16253	17884	19495
50 x 50	4.62	5.20	5.78	6.36	6.94	9790	11019	12248	13477	14706
50 x 60	5.67	6.37	7.08	7.79	8.50	12015	13498	15003	16507	18012
50 x 70	6.71	7.55	8.39	9.22	10.06	14218	15998	17778	19537	21317
50 x 80	7.75	8.72	9.69	10.66	11.63	16422	18478	20533	22589	24644
60 x 60	6.85	7.70	8.56	9.41	10.27	14515	16316	18139	19940	21762
60 x 70	8.11	9.12	10.13	11.15	12.16	17185	19325	21465	23627	25767
60 x 80	9.37	10.54	11.71	12.88	14.05	19855	22334	24813	27293	29772
70 x 70	9.50	10.69	11.88	13.07	14.26	20131	22652	25174	27695	30217
70 x 80	10.98	12.35	13.73	15.10	16.47	23267	26170	29094	31997	34900
70 x 90	12.46	14.01	15.57	17.13	18.69	26403	29687	32993	36298	39604
70 x 100	13.92	15.66	17.40	19.14	20.88	29496	33184	36871	40558	44245
70 x 110	15.40	17.32	19.25	21.17	23.10	32633	36701	40791	44859	48949
70 x 120	16.87	18.98	21.09	23.20	25.31	35748	40219	44690	49161	53632
80 x 90	13.92	15.66	17.40	19.14	20.88	29496	33184	36871	40558	44245
80 x 100	15.56	17.50	19.45	21.39	23.34	32972	37083	41215	45325	49457
80 x 110	17.21	19.36	21.51	23.66	25.81	36468	41024	45580	50136	54691
80 x 120	18.86	21.22	23.58	25.93	28.29	39964	44965	49966	54946	59947

## GENERAL



- 1 To calculate unit dimension, each "Module" = 342mm Eg YSM / YBM 40x60 Height : (4x342 + 58 +100)mm Width : (6x342 + 58)mm Eg YDM / YCBM 40x60 Height : (4x342 + 108 + 100)mm Width : (6x342 + 108)mm NOTE : 100mm unit base to be included when calculate for unit height dimension
- Overall installed length for YSM/YBM = Total unit length module x 342 + number section x 58
  Overall installed length for YDM/YCBM = Total unit length module x 342 + number section x 108
- 3 Maximum Module length (L) advisable for each section/unit for contenna loading Unit Width (W) less or equal to 5 Module, Maximum Module Length (L) = 12 Module Unit Width (W) more or equal to 6 Module, Maximum Module Length (L) = 6 Module

## **COMPONENT SECTION SPECIFICATION**

				Section Le	ngth (MODULE)	)		
	External Filter*	Mixing Box	Mixing Box + Prefilter	Prefilter + Bag Filter	Cooling Coil	Heating Coil	Cooling + Heating Coil**	Electrical Heater
All Model								
Accessories available	Pressure Gauge	Lighting, Damper, Damper actuator	Pressure Gauge, Lighting, Damper, Damper actuator	Pressure Gauge, Lighting	Lighting, M Header, Fla Ca	loisture Eliminat Inge, SS Drain P Ising, Fin Coatin	or, Copper 'an, SS Coil g,	Auto reset safety thermostat
20 x 20	N/A	2	2	2	2	2	2-4	1
20 x 30	N/A	2	2	2	2	2	2-4	1
20 x 40	N/A	2	2	2	2	2	2-4	1
20 x 50	N/A	2	2	2	2	2	2-4	1
30 x 30	N/A	2	3	2	2	2	2-4	1
30 x 40	N/A	2	3	2	2	2	2-4	1
30 x 50	N/A	2	3	2	2	2	2-4	1
30 x 60	N/A	2	3	2	2	2	2-4	1
30 x 70	N/A	2	3	2	2	2	2-4	1
40 x 50	N/A	2	3	2	2	2	2-4	1
40 x 60	N/A	2	3	2	2	2	2-4	1
40 x 70	N/A	2	3	2	2	2	2-4	1
40 x 80	N/A	2	3	2	2	2	2-4	1
50 x 50	N/A	2	3	2	2	2	2-4	1
50 x 60	N/A	2	3	2	2	2	2-4	1
50 x 70	N/A	2	3	2	2	2	2-4	1
50 x 80	N/A	2	3	2	2	2	2-4	1
60 x 60	N/A	3	4	2	2	2	2-4	1
60 x 70	N/A	3	4	2	2	2	2-4	1
60 x 80	N/A	3	4	2	2	2	2-4	1
70 x 70	N/A	3	4	2	2	2	2-4	1
70 x 80	N/A	3	4	2	2	2	2-4	1

#### NOTE

\* Not occupy any module length but 76mm (3") extruded out from unit casing
 \*\* Unit length depends on numbers of row for cooling & heating coil selected

		Section Length (MODULE)											
	External Filter*	Mixing Box	Mixing Box + Prefilter	Prefilter + Bag Filter	Cooling Coil	Heating Coil	Cooling + Heating Coil**	Electrical Heater					
Model YDM/YCBM													
Accessories available	Pressure Gauge	Lighting, Damper, Damper actuator	Pressure Gauge, Lighting, Damper, Damper actuator	Pressure Gauge, Lighting	Lighting, M Header, Flar Ca	Lighting, Moisture Eliminator, Copper Header, Flange, SS Drain Pan, SS Coil Casing, Fin Coating							
70 x 90	N/A	3	4	2	2	2	2-4	1					
70 x 100	N/A	3	4	2	2	2	2-4	1					
70 x 110	N/A	3	4	2	2	2	2-4	1					
70 x 120	N/A	3	4	2	2	2	2-4	1					
80 x 90	N/A	3	4	2	3	3	3-4	1					
80 x 100	N/A	3	4	2	3	3	3-4	1					
80 x 110	N/A	3	4	2	3	3	3-4	1					
80 x 120	N/A	3	4	2	3	3	3-4	1					

## **COMPONENT SECTION SPECIFICATION**

#### NOTE

\* Not occupy any module length but 76mm (3") extruded out from unit casing

\*\* Unit length depends on numbers of row for cooling & heating coil selected

#### Module length for coil section with cooling + heating coil (20 to 70 height)

	(	Module Length (M)	
	2M	3M	4M
Cooling coil	Heating coil	Heating coil	Heating coil
1-3 row	1-6 row	8-12 row	-
4-6 row	1-3 row	4-12 row	-
8 row	-	1-12 row	-
10 row	-	1-10 row	12 row
12 row	-	1-8 row	10-12 row

#### Module length for coil section with cooling + heating coil (80 height)

	Module	E Length (M)
	3M	4M
Cooling coil	Heating coil	Heating coil
1-3 row	1-12 row	-
4-6 row	1-12 row	-
8 row	1-12 row	-
10 row	1-10 row	12 row
12 row	1-8 row	10-12 row

#### EXAMPLE

1) YSM 30x60, unit with 6 row cooling coil and 4 row heating coil, coil section module length = 3M.

2) YDM 80x90, unit with 6 row cooling coil and 2 row heating coil, coil section module length = 3M.

### **BLOWER SECTION SPECIFICATION**

_					Horizontal unit		Vertica	al Unit	
AHU Model	Available	Fan Discharge	Max Motor Power	Motor	R/RI Discharge	T/TI Discharge	R/RI Discharge	T/TI Discharge	
Name	Fan Size (mm)	Opening (mm)	kW	Mounting Position	Unit Length (MODULE)	Unit Length (MODULE)	Unit Length (MODULE)	Unit Length (MODULE)	
	180	230	3.0	REAR	2	2	3	3	
20 X 20	250	330	4.0	REAR	2	2	3	3	
	250	330	4.0	SIDE	2	2	2	2	
	220	270	1.5	SIDE	2	2	2	2	
20 x 30	280	370	7.5	REAR	3	3	3	3	
	0.15	100	7.5	SIDE	2	2	3	3	
	315	420	7.5	REAR	3	3	3	3	
	250	330	4.0	SIDE	2	2	3	3	
20 x 40	280	370	7.5	SIDE	2	2	2	2	
	315	420	7.5	SIDE	2	2	3	3	
	250	330	4.0	SIDE	2	2	2	2	
20 x 50	280	370	7.5	SIDE	2	2	2	2	
	315	420	7.5	SIDE	2	2	3	3	
			1.5	SIDE	2	2	2	2	
	280	370	7.5	REAR	3	3	3	3	
30 x 30			7.5	SIDE	2	2	3	3	
	315	420	7.5	REAR	3	3	3	3	
	315	420	7.5	SIDE	2	2	3	3	
30 x 40	355	465	7.5	SIDE	2	3	3	3	
	355	465	7.5	SIDE	2	3	3	3	
30 x 50	400	520	7.5	SIDE	2	3	3	3	
	450	580	11	SIDE	3	3	3	3	
	355	465	7.5	SIDE	2	3	3	3	
30 x 60	400	520	7.5	SIDE	2	3	3	3	
	450	580	11	SIDE	3	3	3	3	
	355	465	7.5	SIDE	2	3	3	3	
30 x 70	400	520	7.5	SIDE	2	3	3	3	
	450	580	11	SIDE	3	3	3	3	
	450	580	11	SIDE	3	3	3	3	
40 x 50	500	650	11	SIDE	3	3	3	3	
	500	650	18.5	SIDE	3	3	3	3	
40 x 60	560	730	18.5	SIDE	3	4	3	4	
	630	810	15	SIDE	3	4	4	4	
	500	650	18.5	SIDE	3	3	3	3	
40 x 70	560	730	18.5	SIDE	3	4	3	4	
	630	810	15	SIDE	3	4	4	4	
	560	730	30	SIDE	3	4	3	4	
40 x 80	630	810	30	SIDE	3	4	4	4 ,	

#### NOTE

Discharge Orientation: R - Rear, RI - Rear Inverted, T - Top, TI - Top Inverted

					Horizontal unit		Vertic	al Unit
AHU Model	Available	Fan Discharge	Max Motor Power	Motor	R/RI Discharge	T/TI Discharge	R/RI Discharge	T/TI Discharge
Name	(mm)	Opening (mm)	kW	Position	Unit Length (MODULE)	Unit Length (MODULE)	Unit Length (MODULE)	Unit Length (MODULE)
50 x 50	500	650	11	SIDE	3	3		
50 60	560	730	18.5	SIDE	3	4		
50 X 60	630	810	15	SIDE	3	4		
	630	810	15	SIDE	3	4		
50 x 70	710	910	30	SIDE	4	4		
	800	1020	22	SIDE	4	5		
	630	810	30	SIDE	3	4		
50 x 80	710	910	37	SIDE	4	4		
	800	1020	22	SIDE	4	5		
60 x 60	560	730	18.5	SIDE	3	4		
00 X 00	630	810	15	SIDE	3	4		
60 x 70	710	910	37	SIDE	4	4		
00 x 70	800	1020	22	SIDE	4	5		
	710	910	37	SIDE	4	4		
60 x 80	800	1020	22	SIDE	4	5		
	900	1140	45	SIDE	5	5		ΙΑ
70 x 70	710	910	37	SIDE	4	4		
	800	1020	22	SIDE	4	5		
	710	910	37	SIDE	4	4		
70 x 80	800	1020	22	SIDE	4	5		
	900	1140	45	SIDE	5	5		
70 x 90	900	1140	45	SIDE	5	5		
70 X 90	1000	1260	75	SIDE	5	6		
70 x 100	900	1140	55	SIDE	5	5		
10 × 100	1000	1260	75	SIDE	5	6		
70 x 110	1000	1260	75	SIDE	5	6		
70 x 120	1000	1260	75	SIDE	5	6		
80 x 90	1000	1260	75	SIDE	5	6		
80 x 100	1000	1260	75	SIDE	5	6		
80 x 110	1000	1260	75	SIDE	5	6		
80 x 120	1000	1260	75	SIDE	5	6		

## **BLOWER SECTION SPECIFICATION**

#### NOTE

# Vertical unit is available up to 40 unit height only Discharge Orientation: R - Rear, RI - Rear Inverted, T - Top, TI - Top Inverted.

### CASING (YSM/YDM)

AHU casing is made of extruded aluminium profile joined by 3D ABS rounded corners, forming the structural frame to house all internal components. 25mm/50mm thickness double skin panel is made up by 0.5mm thick galvanized inner skin and 0.5mm galvanized outer skin (pre-painted with white (RAL 9016)). CFC-free Polyurethane foam (PUF) of 40 kg/m<sup>3</sup> density with thermal conductivity of 0.022W/m<sup>2</sup>K as standard AHU wall.



Panels are removable from the frame by means of the YORK patented locking system made out of an extruded aluminium profile, held in place with one locking EPDM strip gasket. This fastening method, together with an enhanced framework gasket ensures air tightness. Access doors can be supplied with hinged type or lift-off type as standard.





Standard units will come with 100mm height unit base made from galvanized steel. Unit sections are mounted on a thick galvanized steel bolted base frame, to assure stability and permit easy lifting, handling and positioning at site. Unit with sectional split(s) shall be provided with gaskets and sealing material (supply by site) as well as section joints (factory provided), to permit quickly and air tight site assembly.

On request, sandwich panel with 60 kg/m<sup>3</sup> density PU foam, both side pre-painted skin panel, different thickness of skin panel, different type of skin material such as aluminium, stainless steel, and mix skin panels are available.

### SOUND REDUCTION

Sound reduction effect of the casing will not be more than:-

Mid frequency (Hz)	125	250	500	1000	2000	4000	8000
Reduction value (dB) for YSM / YBM Model	8	13	16	17	21	22	27
Reduction value (dB) for YDM / YCBM Model	10	20	20	20	20	30	35

NOTE: The given values relate to inner and outer skin thickness 0.5 mm.

### **OPTIONAL**

### a) 2" Thermal Break Design (YCBM)

The casing of the York YCBM Air Handling Unit is manufactured with bi-material. Internal structure made of extruded fiberglass frame with thermal break property. The overall YCBM AHU thermal transmittance is T2 and thermal bridging factor is class TB2 tested as per EN 1886 - 1998.





### b) 1" Thermal Break Design (YBM)

This design is meant to be cold bridge free by splitting the Aluminium frame with nylon strip in the middle. The overall YBM AHU thermal transmittance is T3 and thermal bridging factor is class TB2 tested as per EN 1886 - 1998.

### c) Positive Pressurized Section (YCM)

YORK YCM is "Positive Pressurized Section" to meet the precise environmental demands of high technology processes used in advanced commercial and industrial applications.

"Positive Pressurized Section" is meant to couple with YORK AHU after the blower section. Units with "Positive Pressurized Section" are ideal for clean rooms, clean benches, semiconductor, hospital surgical theatres, food processing, pharmaceuticals, bio tech and chemical industries in which airborne contaminants must be carefully controlled. "Positive Pressurized Section" also comes with diffuser and HEPA Filter Section.

The diffuser is used to distribute the high velocity discharge air evenly into the HEPA Filter. All HEPA Filter are leak tested. There are a wide range of efficiencies of HEPA Filters available ranging from 99.99% at 0.3 µm to 99.999% at 0.3 µm.

**NOTE:** YCM profile is not a thermal break profile.



### **MIXING BOX**

It is an inlet section to mix fresh and return air according to the design condition through dampers. Dampers mounted on AHU are fabricated from steel with opposed blade type and housed in nylon bushes providing a smooth operation requiring no lubrication.

Damper can be provided with powder coated finishes, aluminum or stainless steel material for rusty/corrosion environment. Damper is provided with shaft for manual operation or motorized drive (actuator as option). In addition, dampers maybe individually sized (to full airflow) to provide better mixing effect.



## **Damper Opening Dimension Top / Front Damper**

Unit Height	20	30	40	50	60	70	80				
Max Opening Size, HT/HF (mm)	190	532	532	532	874	874	874				
Unit Width	20	30	40	50	60	70	80	90	100	110	120
Max Opening Size, W⊤/W⊧ (mm)	532	874	1216	1558	1900	2242	2584	2584	2584	2584	2584

### Side Damper

Unit Height	20	30	40	50	60	70	80
Max Opening Size, Hs (mm)	532	874	1216	1558	1900	2242	2584
Max Opening Size, Ws (mm)	532	532	532	532	874	874	874



#### Sample of maximum opening

Unit YSM 30x70. **H**<sub>T</sub>= 532 **Hs**= 874 **H**<sub>F</sub>= 532 **W**T= 2242 **Ws**= 532 WF= 2242

#### NOTE :

Diagram show internal damper for Top and Front locataion, external damper for Side location

### **AIR FILTRATION**

In order to achieve hygienic comfortable ambient condition, filter selection is the fundamental for treatment air. This section could be installed with different filter types having different arrestance / efficiency to meet required air filtration quality.

Pre-filters of panel type, either washable media (G3 – G4 arrestance) or disposable media (G4 arrestance) could be arranged in aluminium sliding rails for side/front/rear removal. The material use for washable filter media is synthetic fibers while disposable filter media is non woven cotton synthetic blend.

Secondary filters of bag type media could achieve up to F7 - F8 efficiency. Secondary filters are always use after pre-filter to improve the lifespan of filter. The bag filter shall be accessible from front and side with access door. The material use for filter media is meltblown synthetic fibers.

As option, it is possible to provide

- a) 4" Box Filter (F7 / F8) Filter media is dual density ultra fine fiberglass. To have a better air tightness, we offer front loading Universal Holding Frame (3" UHF or 5" UHF).
- b) 12" HEPA Filter (H13) Filter media is ultra fine fire retardant fiberglass. HEPA filter frame is only accessible from either front or rear.

Mo	odel	20x20	20x30	20x40	20x50	30x30	30x40	30x50	30x60	30x70	40x50
Filter	12" x 24"	0	1	0	1	2	2	3	3	4	2
Quantity	24" x 24"	1	1	2	2	1	2	2	3	3	4
Mo	odel	40x60	40x70	40x80	50x50	50x60	50x70	50x80	60x60	60x70	60x80
Filter	12" x 24"	0	2	0	4	3	5	4	0	3	0
Quantity	24" x 24"	6	6	8	4	6	6	8	9	9	12
Mo	odel	70x70	70x80	70x90	70x100	70x110	70x120	80x90	80x100	80x110	80x120
Filter	12" x 24"	6	4	7	5	8	6	4	0	4	0
Quantity	24" x 24"	9	12	12	15	15	18	16	20	20	24

### **FILTER QUANTITY**

### **AIR FILTER CLASSIFICATION**

#### **Equivalent table**

ASHRAE 52.2	MERV 1	MERV 2	MERV 3	MERV 4	MERV 5
EN 779 CLASS	G1	G2	G2	G2	G3
Am% / Em%	Am < 65	65 <= Am < 80	65 <= Am < 80	65 <= Am < 80	80 <= Am < 90
ASHRAE 52.2	MERV 6	MERV 7	MERV 8	MERV 9	MERV 10
EN 779 CLASS	G4	G4	F5	F5	F5
Am% / Em%	90 <= Am	90 <= Am	40 <= Em < 60	40 <= Em < 60	40 <= Em < 60
ASHRAE 52.2	MERV 11	MERV 12	MERV 13	MERV 14	MERV 15
EN 779 CLASS	F6	F6	F7	F8	F9
Am% / Em%	60 <= Em < 80	60 <= Em < 80	80 <= Em < 90	90 <= Em < 95	95 <= Em
ASHRAE 52.2	MERV 16	MERV 17	MERV 18	MERV 19	MERV 20
EN 1822 CLASS	H10	H11	H12	H13	H14
E% @ 0.3μm	E >= 95	E >= 98	E >= 99.95	E >= 99.99	E >= 99.999
E% @ MPPS	E >= 85	E >= 95	E >= 99.5	E >= 99.95	E >= 99.995
IESTRP-CC001.3			TYPE C	TYPE C	TYPE D

#### NOTE :

Am% = Average arrestance for Coarse filters in the classification range G1-G4

Em% = Average efficiency for Fine filters in the classification range F5-F9

E% = Mean fractional efficiency for HEPA filters in the classification range H10-H14

MPPS = Most Penetrating Particle Size

Type C = Scanned (>= 99.99%)

Type D = 0.3µm (>=99.999%)

### **HEAT EXCHANGER - COILS**

Coil is designed based on maximum utilization of available cross sectional area of every AHU size to achieve the most compact and competitive unit. Cooling and heating coils are manufactured from 0.013" (0.340mm) wall thickness, 1/2" seamless copper tubes with a minimum of 0.0045" (0.115mm) thickness corrugated type aluminium fins (8, 10 or 12 FPI), bonded to the tubes through mechanical expansion. Coil casing and coil plate shall be fabricated from galvanized steel, as a standard construction. Steel headers come with threaded male pipe connections (BSPT) and



include drain plug and air vent as standard. Standard coils are pressure tested to 350 PSIG (2400 KPa), with a maximum design operating pressure of 250 PSIG (1700 KPa). Capacity, water pressure drop and selection procedure is designed in accordance to ARI Standard 410.



Standard design for coil face velocity should be less than 500FPM (2.5m/s). It is advisable to use moisture eliminator if you require a higher coil face velocity without much of moisture carry over. Moisture eliminator frame is made of extruded Aluminium and Polypropylene

3-pitch drain pan design with at least  $1-9_{16}$ " (40mm) depth allows quick and easy drainage of condensate. This design eliminates stagnant water during shut-down periods and could avoid algae forming. Drain pan is fabricated by EG sheet with oven-baked powder coating and covered externally with 15mm

Polyethylene (PE) foam to prevent any occurrence of condensation. It

is fully insulated in all section where condensate water is produced. For unit comes with stacked coil, an intermediate condensate drip pan shall be provided and installed between two coils. Condensate water from intermediate drain pan will be drained to the bottom drain pan through rubber host.

blade.

Various fin material such as hydrophilic and copper fin can be provided to meet special requirements. Fin finishing such as heresite or epoxy coating can be used to withstand highly corrosion environment. Coil frame and drain pan can be made from stainless steel for a better resistance towards rusty. Coil header can be copper material with or without brass connection. Direct expansion (DX) cooling coil is available for YORK AHU.



		Tube Height					
Row	Circuiting	16	18	28	30	38	
		Nominal Steel Pipe Size					
1	A	11/2"	2"	2"	2"	2"	
1	В	11⁄4"	11⁄4"	11⁄4"	11⁄4"	11⁄4"	
1	С	11⁄4"	11⁄4"	11⁄4"	11⁄4"	11⁄4"	
2	A	2"	2"	3"	3"	3"	
2	В	11⁄2"	2"	2"	2"	2"	
2	С	11⁄4"	11⁄4"	11/2"	11/2"	11⁄2"	
3	A	2"	21/2"	3"	3"	3"	
3	В	2"	2"	21/2"	21/2"	21/2"	
3	С	11/2"	11/2"	2"	2"	2"	
3	D	11⁄4"	11⁄4"	11/2"	11/2"	11/2"	
3	E	11⁄4"	11⁄4"	11⁄4"	11⁄4"	11⁄4"	
3	F	11⁄4"	11⁄4"	11⁄4"	11⁄4"	11⁄4"	
4	A	2"	21/2"	3"	3"	3"	
4	В	2"	21/2"	3"	3"	3"	
4	С	2"	2"	2"	2"	2"	
4	D	11⁄4"	11⁄2"	2"	2"	2"	
4	E	11⁄4"	11⁄4"	11⁄4"	11⁄4"	11⁄4"	
4	F	11⁄4"	11⁄4"	11⁄4"	11⁄4"	11⁄4"	
5	В	2"	21/2"	3"	3"	3"	
5	С	2"	2"	21/2"	21/2"	21/2"	
5	D	11/2"	2"	2"	2"	2"	
5	E	11⁄4"	11⁄4"	11/4"	11⁄4"	11⁄4"	
5	F	11⁄4"	11⁄4"	11/4"	11/4"	11/4"	

## WATER COIL HEADER SIZE

		Tube Height					
Row	Circuiting	16	18	28	30	38	
		Nominal Steel Pipe Size					
6	В	2"	3"	3"	3"	3"	
6	С	2"	21/2"	21/2"	21/2"	21/2"	
6	D	2"	2"	2"	2"	2"	
6	E	11⁄4"	11⁄4"	11/2"	11/2"	11/2"	
6	F	11⁄4"	11⁄4"	11⁄4"	11⁄4"	11⁄4"	
8	В	21/2"	3"	3"	3"	3"	
8	С	21/2"	3"	3"	3"	3"	
8	D	2"	21/2"	21/2"	21/2"	21/2"	
8	E	11⁄2"	11⁄2"	2"	2"	2"	
8	F	11⁄4"	11⁄4"	11⁄4"	11⁄4"	11⁄4"	
10	С	3"	3"	3"	3"	3"	
10	D	21/2"	21/2"	21/2"	21/2"	21/2"	
10	E	2"	2"	2"	2"	2"	
10	F	2"	2"	2"	2"	2"	
12	C	3"	3"	3"	3"	3"	
12	D	21/2"	21/2"	21/2"	21/2"	21/2"	
12	E	2"	2"	2"	2"	2"	
12	F	2"	2"	2"	2"	2"	

## **COIL TUBE HEIGHT LIST**

Unit Height	Tube Height
20	16
30	28
40	38
50	18+30
60	28+30
70	30+38
80	38+38

#### NOTE :

Coil header is male threaded (BSPT)
 Drain pan pipe is 1½"male threaded (BSPT)

3) Unit 50x50 and above come with stacked coils

### **ELECTRICAL HEATER**



The electrical heater elements are used to control on relative humidity or for heating mode application. Electrical heater is being used as an alternative to steam and hot water heating coil. Heater element is designed with 80/20 nickel chrome resistance wire centered in a protected stainless steel tube with spiral stainless steel fin packed with magnesium oxide. The electrical heater set could be supplied with auto reset safety thermostat (cut off @ 90°C).

Manual reset could be done on field wiring (consult factory for wiring diagram recommendation). The control of electrical heater must be interlocked with blower. It is advisable that the blower is switched on before the electrical heater. Electrical heater should be cut off 10 minutes before the blower is switched off. Heater controller (solid state relay) is available upon request.





## **BLOWER MOTOR ASSEMBLY**

Blower is selected according to the applications needs in terms of required capacity, pressure head and sound level. Blower section could be fitted with double width, double inlet, (DWDI) forward curved or backward inclined centrifugal blower (air foil as option). Blower inlets are aerodynamically designed and wheels are statically and dynamically balanced. All blowers installed in YORK AHU are AMCA certified. The standard offer blower (710 and below) uses single row, deep groove, self aligning, sealed and life lubricated ball bearings, while standard offer blower (800 and above) uses single row, self aligning, ball bearings with grease nipples, bolted to the side frame. With proper pulley sizing and at the maximum load conditions, the fan bearings are designed, to allow an L10 operating life of average 40000 hours. Single inlet fan is available as option to cater for high static, low air flow rate requirement normally for operation theater. Plug fan is also available upon request.

Blower drives package (V belt) shall be factory selected and installed to meet the required performances. Standard factory offering for the blower motor drive package will be taper lock pulleys. On request, adjustable drive package is available up to 30kW motor. Motor shall be TEFC IP55 type, class F insulation with Class B temperature rise. Standard motor provided are single speed (4 or 6 poles) or on request can be supplied with two speeds. All motors supplied are VFD compatible.

Assembly blower and motor shall be installed on a separate base frame supported and isolated from the unit structure by spring isolator (blower size 400 and above) or rubber grommet (blower size below 400). The standard set spring offer shall have 1" nominal deflection. Optional set spring with 2" nominal deflection and Seismic type is available upon request. The isolation base shall be fixed and hold down with bolt and nuts to maintain the blower base in a rigid position during shipping. Flexible connections shall be provided between blower discharge and casing to prevent vibration transmission.

Plug Fans are designed to operate inside field erected or factory built air handling units. The fan pressurizes the air handling unit in which the fan operates. This allows air ducts in any direction to be directly connected to the air handling unit enclosure. The design saves space by eliminating the ductwork transition to the AHU.







### **HEAT WHEEL**

Heat or enthalpy wheels are rotary air-to-air heat exchangers. Adjacent supply and exhaust air counter flow streams each flow through half of the wheel. Heat wheels have a fill that transfers only sensible heat while an enthalpy wheel's fill transfers total heat.

Heat recovery wheels use custom made metallic honey comb matrix coated with Molecular Sieve desiccant. The rotary heat exchangers are provided with purge section to reduce the penetration of exhaust air to supply air. Non contact labyrinth seals are placed on the rotors perimeter and dividing line to provide additional protection against air leakages.

Apart from supplying the wheel, we could also provide installation services for customer who intended to purchase their own wheel. For shipping, customers could opt for delivery of the wheel completely installed to the AHU casing or ship it in CKD form.

### **HEAT PIPE**

Heat pipe is a passive device and required no energy or moving parts to operate. A heat pipe is designed to have two sections - precool and reheat sections. The first section is located in the incoming air stream. When warm air passes over the first section of heat pipes, heat pipe extracts the sensible heat energy from the air before the air reaches the cooling coil. The refrigerant inside the tube vaporizes, carrying heat to the second section of heat pipes, which is located downstream. Because some heat has been removed from the air before reaching the evaporator coil, the incoming air stream section is called the precool heatpipe section. Precool makes the work of the cooling coil section more efficient. Air passing through the evaporator coil is cooled to a lower temperature, resulting in greater condensate removal. The "overcooled" air is then reheated to a comfortable temperature by the reheat heat pipe section, using the heat transferred from the precool heatpipe. Apart from supplying the heat pipe, we could also provide installation service for customer who intended to purchase their own heatpipe.





### ACCESSORIES

A wide range of accessories is available.

- 1. Access door comes with inspection window/additional lock
- 2. IP 65 lighting and switch
- 3. Hydrophilic or copper fin coil
- 4. Pressure gauge
- 5. Epoxy powder coated roofing
- 6. Blower motor with higher efficiency or higher IP protection.
- 7. Blower motor equips with space heater or thermistor.
- 8. Belt guard for blower section
- 9. Silencer
- 10. Direct Drive Blower
- 11. Steel Flange for water coil header







THIS PAGE IS INTENTIONALLY LEFT BLANK



For more information on product catalogs, specifications sheets and performance data refer to:-

Product origin :-



O.YL.-Condair Industries Sdn. Bhd. (31113-U) Jalan Pengapit 15/19, P.O. Box 7196, 40706 Shah Alam, Selangor Darul Ehsan, Malaysia. Tel: +603 55192293 Fax: +603 55106282

### AHU-A-CTL-022014

\*Photo used for illustration purposes only

While utmost care is taken in ensuring that all details in the publication are correct at the time of going to press, we are constantly striving for improvement and therefore please confirm with your local distribution office for the latest update on the product interested. All rights reserved.