





CÔNG TY CỔ PHẦN AIRTEK VIỆT NAM

163/4 đường TA15, Phường Thới An, Quận 12, HCM **Văn phòng:** 572 Lê Quang Định, Phường 1, Quận Gò Gấp, HCM **Email:** hoang.ho@airtek.vn | **Website:** www.airtek.vn



Air handling units

Technical Catalogue

1 INTRODUCTION



Adapting to individual customer requirements is our core business. Aluminum thermal break of our arbitrary cross-section casing for air flow within range of 1.000 to 320.000 m³/h with different static pressure base on the custom requirements.



2. IDENTIFICATION & DIMENSION

AT 15 -19 S/D/TB BCFM...

AT: AIRTEK

INTERNAL UNIT HIGH

07: 700 mm 09: 900 mm

11: 1100 mm 13: 1300 mm

15: 1500 mm 17: 1700 mm

19: 1900 mm 21: 2100 mm INTERNAL UNIT WIDTH

07: 700 mm 11: 1100 mm

13: 1300 mm 15: 1500 mm

19: 1900 mm 25: 2100 mm

27: 2700 mm 29: 2900 mm 33: 3300 mm

35: 3500 mm 39: 3900 mm

41: 4100 mm

PANEL THICKNESS

S: 25mm

D: 50 mm TB: 50mm Thermal Break UNIT COMPONENT

B: BLOWER

C: COIL

F: FILTER
M: MIXING BOX

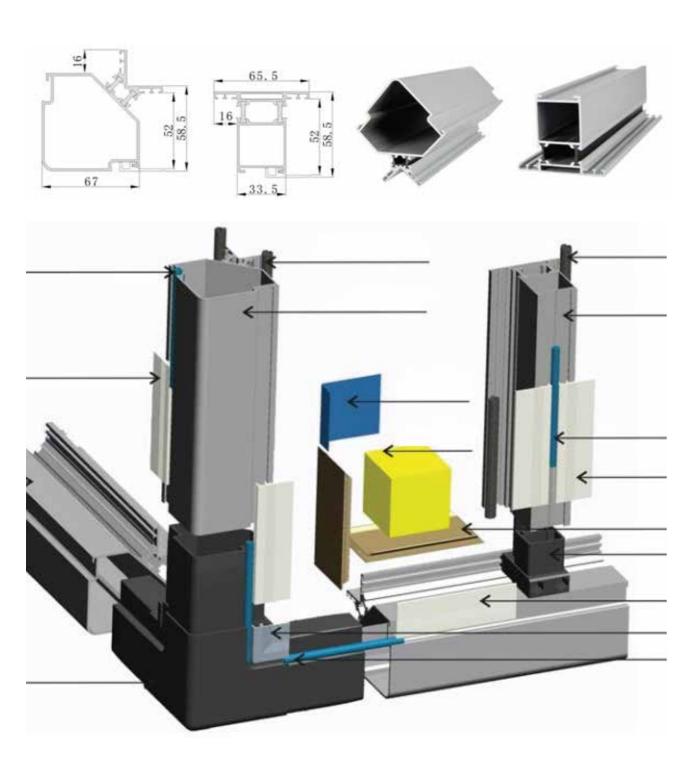
HW: HEAT WHEEL

DHW: DEHUMIDIFIER HX: HEAT EXCHANGER

.....

3. AIR HANDLING UNIT FEATURES

Thermal Break Aluminum profile and Panel



AIRTEK Air Handling Unit is designed in accordance BS EN 1886 and certified by Eurovent. It is constructed of high strength extruded aluminum pentapost and internal post with double modular skin insulation material. The patented frame channel design allows three identical pieces to be bolted together to form a composite corner piece. Both of this features form the rigid frame of the AHU. The unit wall is made up by Double Skin Polyurethane foam (PU) insulation panel with 0.5 mm high strength pre-painted steel as external skin and 0.5 mm galvanized steel (GI) as internal skin.

Besides, there are optional thicknesses: 0.8mm, 1.0mm and 1.2mm of skin material. The PU foam insulation thickness can be 25mm or 50mm with density 40 kg/m3, which provides an overall thermal conductivity, k=0.017 W/(m.K).

Blower & Motor Section

Fans are used extensively in air-conditioning for circulating air over coils. The fan type includes forward, backward, airfoil wheel fan, twin fans with double width double inlet (DWDI) centrifugal fan. The first low cost option will be forward curved fans which are generally used for low static pressure applications. The blade of fan is constructed of galvanized steel. It consists of blade which has tips curving forward that is in the direction of rotation of fan wheel.

Fan performance of all these fans have been tested and measured in accordance to AMCA Standard 210. The sound level is measure and rated in accordance with AMCA Standard 300. The fan bearing provided will have a minimum life of 200,000 hours, and are available as high as 1,000,000 hours. Bearing are selected for minimum noise level and minimum device. The bearing is lubricated for life and maintenance free, lubrication is optional. Fan is dynamically and statically balanced to Standard ISO 1940. The fan shaft is manufactured from C45 carbon steel. It is coated with a layer of anti-corrosion varnish.







Motor is internally mounted integral to an isolated fan assembly. Standard motor shall be horizontal foot mounting, induction motor, squirrel cage, totally enclosed fan-cooled (TEFC or TEFV) with IP 55 protection and class F insulation. Motor capacity cannot be undersized but oversized for desired running capacity. For the desired operation speed between fan and motor, different poles (2, 4, 6 and 8 poles) can be consider.

The fan in AHU can create substantial vibration that will transform to panels / casing and consequently widespread the generated sound waves. To avoid this, spring or rubber isolator is mounted between the fan compartment and therest of the AHU to prevent the transmission of noise and vibration into panels.





3 4

Coil & Drain Pan

Coil is installed such that unit casing enclose headers and return bends. Coil is designed based on the maximum utilization of available cross section area to achieve the most efficient heat transfer. Coil connections should be factory sealed with grommets on interior and gasket sleeve between outer wall and liner where each pipe extends through the unit casing to minimize air leakage and condensation inside panel assembly. Coils shall be removable through side and/ or top panels of unit without the need to remove and disassemble the entire section from the unit.

Coil constructed with aluminum corrugated fins and seamless copper tubes. Copper fins and hydrophilic fins are anti-corrosive materials which are optional. The fins are designed purposely for better heat transfer efficiency and moisture carry-over limit performance. Capacity, water pressure drop and selection procedure is designed in accordance with ARI Standard 410.







- Over 30 fin presses, tube benders, vertical & horizontal expanders
- Jig & Fixtures
- Burst Testing
- Internal Cleanliness Testing
- Helium Sniffer & Vacuum Chambers

CIG Production Machinery







Full Corrosion

Protection for HVAC





Airtek cooperate with CIG for coil line production, all coil under Test strict inspection before shipment. The optional for Pharmaceutical/ Oil and gas/ Food process is D-Coating. It can stand for corrosion and killing the mold/ bacterial

D-Coat Technology

Advantage

- Dry Surface, increase efficiency
- Reduce Dirt and Dust Collection
- Less Maintenance - Corrosion Protection
- Reduce Mold and Bacteria.
- Ag+ technology (Silver ion), No Biofilm
- Very Thin, not effect heat exchange or air flow

Certificate

- ASTM B117 : 10,000 Hrs Salt Spray Test
- ASTM G21 : Resistance to Fungi
- ASTM G22 : Resistance to Bacteria
- Indirect Food Contact Notification from FDA
- ASTM D-5894 : UV Exposed 2,000 Hrs < D-Coat UV>



Coil with D-Coating will be blue color, with all test certificates. Drain pan will be SS 304 optional for all special requirements

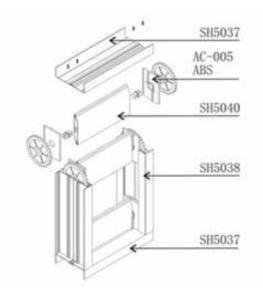


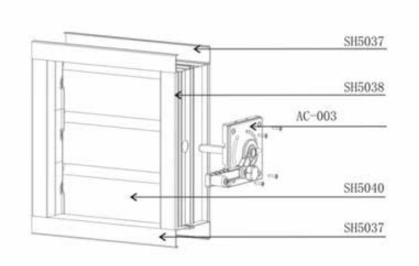




Mixing box & Damper

Mixing box complete with dampers are specially designed to minimize the stratification of entering air streams for maximum efficiency. Damper are assembly within a rigid extruded aluminum frame. Damper are opposed blade type and available in both flat and double skinned aerofoil section. Blades are formed from extruded aluminum. Gaskets are provided to minimize leakage of air.





Primary/ Bag/ Hepa Filter

It plays a major role in maintaining good indoor air quality by filtration. There are wide ranges of filter options which are provided by prominent filter manufacturer. We has been designed to handle primary, secondary & HEPA filtration.







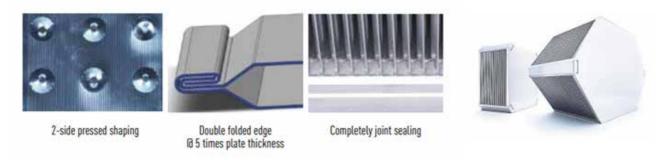
 5

4. Other Components as Optional for Special Design

Pleat Heat Exchanger

Two neighbor aluminum foils form a channel for fresh or exhaust air stream. Heat is transferred when the air streams flow crossly through the channels, and fresh air and exhaust air is totally separated

Main Features: Sensible heat recovery total separation of fresh air & exhaust air streams/ Heat recovery efficiency up to 80%./ 2-side press shaping./ Double folded edge completely joint sealing./Resistance of pressure difference up to 2500Pa. Under pressure of 700Pa, air leakage less than 0.6%

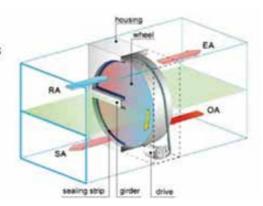


Heat Wheel

Rotary heat exchanger is composed of alveolate heat wheel, case, drive system and sealing parts. the exhaust and outdoor air pass through half of the wheel separately, when the wheel rotates, the heat and moisture are exchanged between the exhaust and outdoor air. the energy recovery efficiency is up to 70% to 90%.

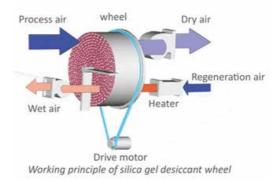
Main Features

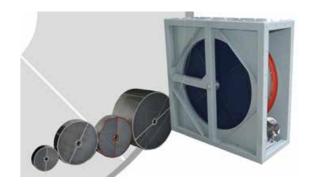
- 3A Molecular sieve coating of total heat wheel selectively absorbs moisture and expels odors
- Interior spokes are used to mechanically bond the rotor's laminations.
- · Double sealing system
- · Double purge sector
- Self cleaning
- · life-time-lubricated bearing of easy maintenance



Dehumidifier Wheel/ Desiccant Wheel

The easy dry desiccant wheel works on the principle ofsorpton, which is the adsorpton or the absorpton process by which a desiccant removes water vapor directly from the air. The air to be dried passes through the desiccant wheel and the desiccant removes the water vapor directly from the air and holds it while rotating. As the moisture-laden desiccant passed through the regeneration sector, the water vapor is transferred to a heated airstream, which is exhausted to the outside. This process is continuous, allowing for highly effective and uninterrupted dehumidification.





Humidifier & Electric heater

There are a few humidifiers are used commercially in AHU. First is electrode steam humidifier, which is categorized as BFDT series, the second generation, high precision, intellectualized electrode humidifier. It requires an empty section to be installed. It is a device which is used to increase the air relative humidity in atmosphere without steam source. It is a constant temperature humidifier. Its principle is the common electrode humidifier regulates the generated steam by the way of controlling water level and electrical current. Electrical loop will be built up through salt minerals in the water. Therefore, water will be heated up and boiled until vapor is generated continuously. Quality of water in the region must be considered because it reduces the steam capacity. (Softened water cannot be used).

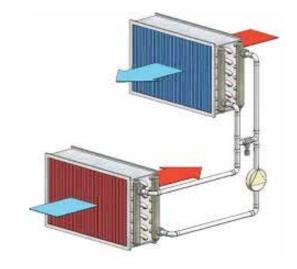
Electric heaters are optional with either single step or multi step of heating process. It depents much on the heating capacity. Heaters are available in 220-230V and the wiring can be in single phase / 3 phase for contractor or thyristor control.

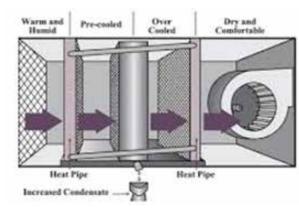




Run around Coil & Heat Pipe

To increasing the heat transfer and Energy saiving, the run around coil and heat pipe should be consider. The cost invest also add up for special option.





5. QUICK SELECTION

Model	ROWS	Flow rate (m³/h) Standard	Chilled water 7°C/12°C				Chilled water 5°C/10°C				Direct Expansion R410A	
			Water Flow (I/s)	Water pressure drop (Kpa)	Total Capacity (KW)	Sensible Capacity (KW)	Water Flow (I/s)	Water pressure drop (Kpa)	Total Capacity (KW)	Sensible Capacity (KW)	Total Capacity (KW)	Sensible Capacity (KW)
	3		0.47	2.67	9.87	7.88	0.56	3.64	11.75	8.57	11.64	8.5
AHU 0707	4	2300	0.61	4.91	12.71	9.33	0.71	7.15	15.01	10.22	13.6	9.64
	6		0.83	9.92	17.34	11.5	0.97	13.7	20.29	12.76	17.21	11.4
AHU 0711	3	3700	0.84	9.92	17.65	13.31	1.01	13.99	21.16	14.62	18.28	13.5
	4		1.05	15.92	22.03	15.62	1.25	22.57	26.18	17.26	22.34	15.69
	6		1.37	34.64	28.78	18.87	1.61	46.66	33.77	21.02	27.91	18.43
AHU 0911	3	5400	1.26	12.06	26.43	19.67	1.51	17.6	31.71	21.66	26.9	19.79
	4		1.63	21.2	34.28	23.61	1.94	29.61	40.76	26.23	33.03	23.06
	6		1.95	11.42	41.06	27.14	2.31	15.92	48.52	30.34	40.93	26.98
AHU 0913	3	6700	1.62	20.74	34.06	24.87	1.95	29.38	40.91	27.47	33.59	24.62
	4		2.08	38.13	43.61	29.72	2.32	18.23	48.7	31.78	41.36	28.75
	6		2.45	20.75	51.52	33.92	2.9	28.49	60.97	37.99	50.75	33.47
	3		1.97	35	41.43	29.82	2.37	49.66	49.9	33.06	40.46	29.36
AHU 0915	4	7900	2.34	21.06	49.19	34.19	2.78	28.96	58.45	37.88	48.74	33.9
	6		2.93	32.34	61.45	40.29	3.46	43.49	72.8	45.2	48.74	33.9
	3		2.56	19.99	53.82	39.14	3.07	27.76	64.64	43.26	53.84	39.03
AHU 0919	4	10500	3.2	41.7	67.14	46.11	3.8	29.09	79.97	51.3	64.28	44.85
	6		3.88	26.69	81.52	53.48	4.62	26.92	97.16	60.25	71.6	49.25
	3		3.23	19.73	67.78	49.61	3.87	27.82	81.34	54.75	68.2	49.61
AHU 1119	4	13400	4.02	43.42	84.48	58.38	4.78	31.99	100.56	64.84		57.18
			4.02								81.88	
	6			34.73	102.96	67.79	5.96	47.39	125.22	77.42	101.79	67.05
AHU 1319	3	17200	4.22	19.64	88.57	64.27	5.06	27.99	106.32	71.03	88.25	63.95
	4		5.42	42.3	113.77	77.03	6.44	31.79	135.38	85.86	104.39	73.12
AHU 1519	6	20000	6.6	35.09	138.67	89.77	8.04	27.29	169.09	103.2	116.34	80.29
	3		5.1	16.01	107.05	76.27	6.12	24.24	128.57	84.51	101.44	73.95
	4		6.44	41.01	135.22	90.74	7.66	33.16	161	101.36	121.98	85.25
	6		8.02	40.75	168.43	107.44	9.5	42.16	199.76	121.46	131.28	91.78
AHU 1719	3	23600	6.16	22.36	129.47	91.14	7.39	31.59	155.47	101.2	117.77	86.53
	4		7.71	30.65	161.97	108.04	9.17	37.22	192.84	120.82	126.72	94.04
	6		9.65	27.69	202.66	128.47	11.44	31.39	240.5	145.52	150.3	106.52
AHU 1725	3	30500	8.13	49.67	170.75	119.1	9.77	23.16	205.5	132.65	137.72	106.55
	4		9.5	26.44	199.47	135.69	11.25	36.41	236.43	150.73	143.68	114.17
	6		11.25	13.7	236.32	155.14	14.32	42.73	301.1	183.59	175.28	130.34
AHU 1927	3	35400	9.51	16.11	199.83	138.85	11.44	19.73	240.61	154.77	154.17	121.6
	4		11.33	25.8	237.9	160.02	13.41	29.23	281.97	178.13	160.05	130.07
	6		13.43	22.5	282.14	183.36	15.97	28.13	335.81	206.81	265.14	175.59
AHU 1929	3	40000	10.49	70.59	220.41	154.8	12.63	75.68	265.5	172.28	173.5	137.18
	4		12.56	53.28	263.92	178.86	14.89	56.7	313.06	198.93	180.48	146.83
	6		15.14	30.52	318.02	206.87	18.01	34.32	378.66	233.32	301.35	199.11
AHU 1933	3	44500									191.44	150.38
	4		13.55	80.39	284.73	193.69	16.09	82.8	338.21	215.47	198.08	160.42
	6		1.51	23.56	31.73	23.36	19.6	37.27	411.98	253.89	327.58	216.57
AHU 2135	3	55000									263.59	197.79
	4		17.1	68.03	359.26	244.54	20.3	71.3	426.77	272.03	324.35	230.22
	6		21.13	62.64	443.87	287.31	25.15	65.63	528.83	324.61	406.44	270.59
AHU 2139	3	67000									302.22	224.79
	4		17.88	20.52	375.59	264.22	21.6	21.98	454.08	295.52	368.16	260.48
	6		23.4	92.09	491.56	320.11	27.88	95.41	586.16	361.34	464.24	307.52
	3				,						352.54	270.99
AHU 2141	4	77000	22.78	15.79	478.6	332.93	29.7	109.57	623.92	403.32	437.7	316.09
	6		27.55	29.97	579.17	373.23	35.39	115.52	744.11	456.21	556.61	373.94

Control System & Software Selection

Control System

- Advantages of the AIRTEK control concept
- Programmable controls (DDC)
- Highly flexible hardware and software
- International usability (up to 10 languages)
- Computer-based programming and service tools
- Open communications and integration
- Use of innovative technologies



The modular control concept impresses with its optimised hardware components for HVAC applications. Furthermore, it proves its high flexibility through programmable functions, the I/Os and operating structure. The choice of operating languages in particular facilitates the setup and operation abroad. International character sets are used for this.

There are endless possibilities in terms of control unit communication and integration into existing systems. The control units have slots for the ideal communication modules, for a LON-, Bacnet- or Modbus-connection

Airtek Software Selection

We have the software to customize all the requirement.



