



BELT DRIVE AIR HANDLERS

800 - 12,000 CFM

ADVANCED
HYDRONICS



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ETL LISTED

Williams Belt Drive Air Handlers are listed by Intertek (ETL). The ETL listing ensures that Williams Belt Drive Air Handlers AH/AV Series Horizontal and AV Series Vertical have been examined by ETL and comply with the organization's applicable standards. ETL's re-examination service includes periodic visits by ETL inspectors to Williams' factory to ensure continued compliance for all listed products. Materials and equipment acceptance for use by the New York Department of Buildings: AH 008-120 / MEA 414-05-E



AHRI CERTIFIED

Williams Belt Drive Air Handlers are labeled and approved by the Air Conditioning, Heating & Refrigeration Institute (AHRI). This designation signifies that Williams Belt Drive Air Handler units have been rated as follows in accordance with the latest edition of ANSI/AHRI 440 with Addendum 1 Performance Rating of Room Fan Coils and subject to rating accuracy by AHRI sponsored, independent, third-party testing.



ALS-TRUESDAIL CERTIFICATION MARK FOR DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS

Certified Product and/or packaging, and/or documentation certified to both NSF/ANSI 61 and NSF/ANSI 372 by Truesdail shall bear this Certification mark to identify the compliance.

MORE THAN JUST FAN COILS

For over 100 years, Williams has been a market leader in providing high quality HVAC products for residential and commercial buildings. Today, Williams continues the proud tradition by offering to the commercial/industrial market more configurations and size options of quality fan coils and blower coils/air handlers than any other HVAC company in North America.

Williams is based in Colton California, serving all US and overseas markets with complete application engineering, sales, marketing and administrative services.

Our pledge is to provide complete, high quality and timely support for the successful completion of your construction projects involving engineered products offered by Williams. We believe in a partnering attitude that creates superior projects and high levels of satisfaction.

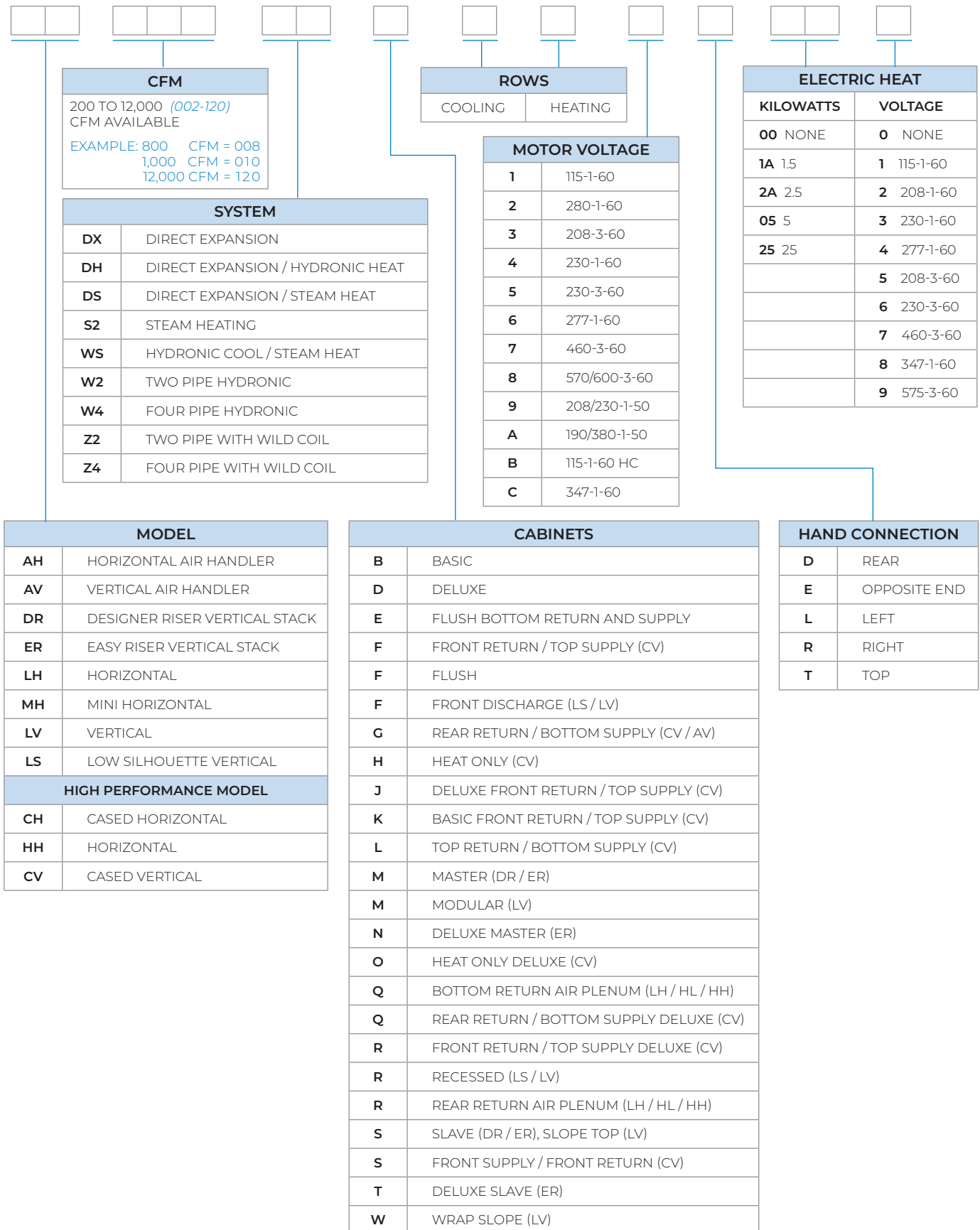


COLTON, CALIFORNIA

FAN COIL ASSEMBLY

AIR HANDLER ASSEMBLY

WILLIAMS FAN COIL AND AIR HANDLERS MODEL IDENTIFICATION SYSTEM



BELT DRIVE AIR HANDLERS

800 - 12,000 CFM

AH HORIZONTAL BASIC / AV VERTICAL BASIC

Housed in a heavy-gauge, galvanized steel cabinet, the AH/AV horizontal and vertical basic belt drive air handler (AH/AV-B) includes coil, forward curved, dynamically balanced blowers, motor and drive package. Controls and motors are factory-mounted and provided in a single-point power supply. Access doors are provided on both sides of the unit for easy maintenance. Size 008 - 040 models are equipped with vibration isolators that minimize noise levels and equipment reverberation.



BELT DRIVE AIR HANDLERS

800 - 12,000 CFM

AH HORIZONTAL DELUXE / AV VERTICAL DELUXE

Ideal for applications where a finished cabinet is required, the belt drive (AH/AV-D) is the same unit as our horizontal and vertical basic model, only finished with a baked-on tough, soft white powder coat epoxy and subjected to 1,500 hour salt spray test in accordance with ASTM B117. Access doors are provided on both sides of the unit for easy maintenance. Also available as double-wall (solid or perforated).



STANDARD FEATURES

- Heavy gauge galvanized steel cabinet with neoprene coated 1/2" thick fiberglass insulation with 1.5 PCF density on models 008-040. 1/2" thick fiberglass insulation with 3.35 PCF density on models 050-120.
- Coils are made of 1/2" OD copper tube with aluminum fins (10 FPI) and equipped with manual air vent. DX and steam coils do not include manual air vent. Coils are 100% underwater pressure tested at 350 PSI with a 300 PSI working pressure at 180 ° maximum water temperature.
- Galvanized drain pan is powder coated epoxy with a 1/8" thick closed cell insulation and has primary and secondary drain connections.
- Belt driven, draw through design with forward curved and dynamically balanced blowers.
- Adjustable, variable pitch drive sheave and cast iron pulley keyed to motor shaft (order separately).
- Controls and motors are factory wired and terminated in a junction box for single point power supply.
- Size 008-040 units are built to minimize noise.
- Two inch thick, 30/30 pleated filter, flatly mounted with spring loaded clips on the side access door for easy maintenance without the use of tools.
- Individually tagged, crated and shipped as scheduled for installation.
- ETL approved, AHRI certified
- 100% factory tested.



OPTIONS

- Deluxe enclosure painted with soft white, powder coated epoxy cabinet that's subjected to a 1,500 hour salt spray test in accordance with ASTM B117.
- Drain Pans - stainless steel.
- Insulation - fiberglass, foil face, elastomeric and double wall (solid or perforated) in 1/2" and 1" thicknesses.
- Coils - copper or stainless steel fins/tubes, phenolic coated, stainless steel end plates. All options are available on one through 10 rows for AH/AV008-040 and one through 10 rows for AH/AV050-120.
- Systems - two or four pipe, hydronic cooling/heating, steam, direct expansion (DX) and/or electric heat.
- Controls - wide selection of factory mounted valves, controls and enclosures.
- Motors - severe-duty, high temperature, ODP, TEFC 115, 208, 230, 277, 460 and 575 voltages.
- Filters - two inch thick pleated, washable, metallic and V-bank.
- Electric Resistance Heat from 1.0 to 25 kW on sizes 008-040; 7.0 to 65 kW on sizes 050-120.
- Mixing Boxes - with dampers, modulating and three position economizers.



AHRI CERTIFIED COOLING CAPACITY



Williams Belt Drive Air Handlers AH Series Horizontal and AV Vertical Series are labeled and approved by the Air-Conditioning, Heating & Refrigeration Institute (AHRI). This designation signifies that Williams Belt Drive Air Handlers AH Horizontal and AV Vertical Series units have been rated as follows in accordance with the latest edition of ANSI/AHRI 440 with Addendum 1 Performance Rating of Room Fan Coils and subject to rating accuracy by AHRI sponsored, independent, third-party testing.

NOTES:

Based on 80°F DB and 67°F WB EAT, 45°F EWT, 10°F temperature rise. Motor voltage 115/1/60 power source. Air flow under dry coil conditions. Water pressure drops shown in feet of water. All units are listed under UL Category Control No. LZFE.

NOMINAL HEATING CAPACITY

UNIT SIZE	NORMAL CFM	ROWS	HEATING CAPACITY (MBH)
008	800	1	41.0
		2	62.0
012	1,200	1	61.5
		2	93.1
016	1,600	1	76.8
		2	117.9
020	2,000	1	92.2
		2	143.3
030	3,000	1	150.5
		2	230.2
040	4,000	1	183.4
		2	281.9
050	5,000	1	240.2
		2	379.5
060	6,000	1	301.3
		2	471.9
080	8,000	1	369.0
		2	574.9
100	10,000	1	473.5
		2	736.8
120	12,000	1	544.9
		2	870.4

AHRI APPROVED STANDARD RATINGS

COOLING CAPACITY

UNIT SIZE	RATED CFM	ROWS	EWT	TOTAL COOLING (MBH)	SENSIBLE COOLING (MSH)
008	800	4	40	38.21	25.36
			45	30.09	22.01
			50	22.25	19.00
		6	40	47.33	29.45
			45	38.20	25.36
			50	28.63	21.44
		8	40	50.19	30.81
			45	40.56	26.39
			50	30.23	22.07
012	1200	4	40	55.74	37.38
			45	43.52	32.38
			50	31.77	27.91
		6	40	69.95	43.67
			45	56.20	37.58
			50	41.86	31.74
		8	40	75.31	46.22
			45	60.89	39.60
			50	45.34	33.11
016	1600	4	40	76.78	50.89
			45	60.28	44.07
			50	44.29	37.93
		6	40	92.48	57.86
			45	74.01	49.71
			50	54.66	41.86
		8	40	102.83	62.80
			45	83.82	53.96
			50	63.19	45.24
020	2000	4	40	99.57	66.16
			45	78.17	56.21
			50	57.08	48.04
		6	40	113.28	71.27
			45	89.73	60.97
			50	65.29	51.16
		8	40	127.11	77.81
			45	103.03	66.68
			50	76.87	55.70
030	3000	4	40	143.96	95.42
			45	113.52	82.83
			50	83.87	71.42
		6	40	175.59	109.49
			45	141.24	94.26
			50	105.39	79.63
		8	40	193.52	118.11
			45	158.00	101.55
			50	119.47	85.23
040	4000	4	40	180.11	122.04
			45	142.39	106.72
			50	106.46	93.06
		6	40	228.80	143.56
			45	184.56	124.08
			50	139.09	105.60
		8	40	249.44	153.26
			45	202.80	131.94
			50	153.13	111.16

MOTOR FULL LOAD AMPS DATA

Motors are wired to a junction box ready for single point field connection.

Outstanding motor features:

- Thermal overload protection
- 1800 RPM for lower operating costs
- Oversized bearings and permanently lubricated and sealed
- 122°F maximum operating temperature
- Custom motor mounts designed to reduce noise and eliminate vibration
- Stators are epoxy dipped for more efficient motor cooling

STANDARD MOTOR OFFERING

VOLTAGE	NORMAL HORSEPOWER										
	1/4	1/3	1/2	3/4	1	1 - 1/2	2	3	5	7 - 1/2	10
115/60/1	6.6	6.6	9.0	11.0	12.6	15.0	20.4	N/A	N/A	N/A	N/A
208/60/1	3.6	3.6	4.9	6.0	6.9	8.2	11.2	N/A	N/A	N/A	N/A
230/60/1	3.3	3.3	4.5	5.5	6.3	7.5	10.2	N/A	N/A	N/A	N/A
277/60/1	N/A	2.2	3.0	4.3	5.4	6.2	N/A	N/A	N/A	N/A	N/A
110/50/1	6.6	6.6	9.0	11.0	12.6	15.0	20.4	N/A	N/A	N/A	N/A
220/50/1	3.3	3.3	4.5	5.5	6.3	7.5	10.2	N/A	N/A	N/A	N/A
208/60/3	N/A	1.8	3.3	3.8	3.0	4.3	5.7	9.5	14.1	21.2	29.6
230/60/3	N/A	1.6	3.0	3.4	2.7	3.9	5.2	8.6	12.8	19.2	26.8
460/60/3	N/A	0.8	1.5	1.7	1.4	2.0	2.6	4.3	6.4	9.6	13.4
575/60/3	N/A	N/A	0.9	1.0	1.4	2.0	2.4	3.6	5.1	7.8	10.3
190/50/3	N/A	1.6	2.2	2.6	3.8	5.4	7.2	N/A	N/A	N/A	N/A
380/50/3	N/A	0.8	1.1	1.3	1.9	2.7	3.6	4.8	7.8	11.5	15.0

NOTES:

- 1) Standard motors are open drip proof type, available in single phase or three phase configurations and resilient mounted or rigid base NEMA frame type.
- 2) Motor full load amps listed refer to National Electric Code (NEC) Amps. Actual motor nameplate amps may vary.

PREMIUM MOTOR OFFERING

VOLTAGE	NORMAL HORSEPOWER										
	1/4	1/3	1/2	3/4	1	1 - 1/2	2	3	5	7-1/2	10
115/60/1	N/A	3.2	4.6	6.5	12.6	N/A	N/A	N/A	N/A	N/A	N/A
208/60/1	N/A	1.8	2.5	3.6	6.9	6.9	N/A	N/A	N/A	N/A	N/A
230/60/1	N/A	1.6	2.3	3.3	6.3	6.3	8.8	N/A	N/A	N/A	N/A
208/60/3	N/A	N/A	N/A	N/A	5.4	5.1	6.7	8.4	15.6	22.6	28.6
230/60/3	N/A	N/A	N/A	N/A	12.6	4.4	5.6	8.0	13.0	19.6	26.4
460/60/3	N/A	N/A	N/A	N/A	6.3	2.2	2.9	4.0	6.5	9.8	13.2

NOTES:

- 1) Premium motors are open drip proof type, resilient mounted or rigid base NEMA frame type and are available in single phase or three phase configurations. They meet EPA 1992 standards and carry E+ efficiency ratings.
- 2) Motor full load amps listed refer to National Electric Code (NEC) Amps. Actual motor nameplate amps may vary.

ELECTRIC HEAT

Electric heat may be furnished with either hydronic, direct expansion and may be factory mounted, wired, and tested and shipped loose for field installation. Option equipped with nichrome wire elements. These heaters have a built-in, high limit, and fusible link to provide maximum safety.

Electric heat eliminates the need for a boiler, providing heating and/or cooling throughout the year. Electric heat is available only for dual power (motor and heater voltage the same).

kW	UNIT SIZE						FULL LOAD AMPS						
							SINGLE PHASE				THREE PHASE		
	008	012	016	020	030	040	120	208	240	277	208	240	460
1	•	–	–	–	–	–	8.3	4.8	4.2	3.6	2.8	2.4	–
1.5	•	•	–	–	–	–	12.5	7.2	6.3	5.4	4.2	3.6	–
2	•	•	–	–	–	–	16.7	9.6	8.3	7.2	5.6	4.8	–
2.5	•	•	•	–	–	–	20.8	12.0	10.4	9.0	6.9	6.0	–
3	•	•	•	–	–	–	25.0	14.4	12.5	10.8	8.3	7.2	3.8
3.5	•	•	•	•	–	–	29.2	16.8	14.6	12.6	9.7	8.4	4.4
4	•	•	•	•	–	–	33.3	19.2	16.7	14.4	11.1	9.6	5.0
4.5	•	•	•	•	–	–	37.5	21.6	18.8	16.2	12.5	10.8	5.7
5	•	•	•	•	–	–	–	24.0	20.8	18.1	13.9	12.0	6.3
6	•	•	•	•	•	•	–	28.8	25.0	21.7	16.7	14.5	7.5
7	•	•	•	•	•	•	–	33.7	29.2	25.3	19.5	16.9	8.8
8	•	•	•	•	•	•	–	38.5	33.3	28.9	22.2	19.3	10.1
9.9	•	•	•	•	•	•	–	–	41.3	35.7	27.5	23.8	12.4
11	–	•	•	•	•	•	–	–	–	39.7	30.8	26.5	13.8
12	–	–	•	•	•	•	–	–	–	41.3	33.3	28.9	15.1
13.5	–	–	•	•	•	•	–	–	–	–	37.5	32.5	17.0
14	–	–	–	–	•	•	–	–	–	–	38.9	33.7	17.6
15	–	–	–	–	•	•	–	–	–	–	41.7	36.1	18.8
16	–	–	–	–	•	•	–	–	–	–	44.5	38.5	20.1
18	–	–	–	–	•	•	–	–	–	–	50.0	43.4	22.6
18.5	–	–	–	–	•	•	–	–	–	–	51.4	44.6	23.2
19.9	–	–	–	–	–	•	–	–	–	–	55.3	47.6	25.0
25	–	–	–	–	–	•	–	–	–	–	69.5	60.2	31.4

NOTES:

1) Electric heaters are available for 1-stage, 2-stage or 3-stage applications depending on power phase and heater kW.

- Single Phase / 1-Stage available for 1kw through 12kw requirements.
- Single Phase / 2-Stage available for 3kw through 12kw requirements.
- Three Phase / 1-Stage available for 1kw through 25kw requirements.
- Three Phase / 2-Stage available for 4kw through 25kw requirements.
- Three Phase / 3-Stage available for 12kw through 25kw requirements.

2) Electric heaters for sizes 050-120 are custom. Please consult factory.

3) Electric Heating Capacities (BTUH) - Heater kW x 3413

4) Electric Heater Amperage for Single-Phase Power + (Heater kW x 1000)/Applied Voltage
Electric Heater Amperage for Three-Phase Power + (Heater kW x 1000)/(Applied Voltage x 1.73)

PERFORMANCE STATIC RESISTANCE TABLE

UNIT SIZE	NOMINAL CFM	CABINET	WET COILS				DRY COIL				2 IN. PLEATED FILTER	MIXING BOX
			ROWS				ROWS					
			2	4	6	8	2	4	6	8		
008	600	0.04	0.03	0.08	0.21	0.34	0.01	0.04	0.09	0.15	0.03	0.07
	700	0.06	0.08	0.16	0.32	0.48	0.04	0.07	0.14	0.22	0.06	0.09
	800	0.08	0.13	0.24	0.43	0.62	0.06	0.11	0.19	0.28	0.09	0.11
	900	0.1	0.18	0.32	0.54	0.76	0.08	0.14	0.24	0.34	0.12	0.13
	1000	0.12	0.23	0.40	0.65	0.90	0.10	0.18	0.29	0.41	0.15	0.15
012	1000	0.06	0.12	0.22	0.37	0.59	0.05	0.10	0.17	0.27	0.09	0.08
	1100	0.08	0.15	0.28	0.46	0.69	0.07	0.13	0.21	0.31	0.11	0.10
	1200	0.10	0.18	0.34	0.55	0.79	0.08	0.15	0.25	0.36	0.13	0.12
	1300	0.12	0.21	0.40	0.64	0.89	0.09	0.18	0.29	0.40	0.15	0.14
	1400	0.14	0.24	0.46	0.73	0.99	0.11	0.21	0.33	0.45	0.17	0.16
016	1400	0.08	0.13	0.29	0.40	0.60	0.06	0.13	0.18	0.27	0.09	0.08
	1500	0.10	0.16	0.33	0.47	0.68	0.07	0.15	0.21	0.31	0.11	0.10
	1600	0.12	0.18	0.37	0.54	0.76	0.08	0.17	0.24	0.34	0.13	0.12
	1700	0.14	0.21	0.41	0.61	0.84	0.09	0.18	0.27	0.38	0.15	0.14
	1800	0.16	0.23	0.45	0.68	0.92	0.10	0.20	0.31	0.41	0.17	0.16
020	1800	0.08	0.09	0.36	0.56	0.75	0.04	0.16	0.25	0.34	0.11	0.07
	1900	0.10	0.13	0.40	0.62	0.83	0.06	0.18	0.28	0.37	0.13	0.09
	2000	0.12	0.17	0.44	0.68	0.91	0.08	0.20	0.31	0.41	0.15	0.11
	2100	0.14	0.21	0.48	0.74	0.99	0.09	0.22	0.33	0.45	0.17	0.13
	2200	0.16	0.25	0.52	0.80	1.07	0.11	0.23	0.36	0.48	0.19	0.15
030	2800	0.12	0.07	0.31	0.43	0.60	0.03	0.14	0.19	0.27	0.12	0.08
	2900	0.14	0.11	0.35	0.50	0.69	0.05	0.16	0.23	0.31	0.14	0.10
	3000	0.16	0.16	0.39	0.57	0.78	0.07	0.18	0.26	0.35	0.16	0.12
	3100	0.18	0.19	0.43	0.64	0.87	0.09	0.19	0.29	0.39	0.18	0.14
	3200	0.20	0.23	0.47	0.71	0.96	0.10	0.21	0.32	0.43	0.20	0.16
040	3800	0.12	0.13	0.38	0.55	0.72	0.08	0.17	0.25	0.32	0.12	0.07
	3900	0.14	0.16	0.41	.60	0.79	0.07	0.18	0.27	0.36	0.14	0.09
	4000	0.16	0.19	0.44	0.65	0.86	0.09	0.20	0.29	0.30	0.16	0.11
	4100	0.18	0.22	0.47	0.70	0.93	0.10	0.21	0.32	0.42	0.18	0.13
	4200	0.20	0.25	0.50	0.75	1.00	0.11	0.23	0.34	0.45	0.20	0.15
050	4500	0.12	0.13	0.38	0.54	0.71	0.06	0.17	0.24	0.32	0.12	0.07
	4800	0.14	0.16	0.41	0.59	0.78	0.07	0.18	0.27	0.35	0.14	0.09
	5000	0.16	0.19	0.44	0.64	0.85	0.09	0.20	0.29	0.38	0.16	0.11
	5300	0.18	0.22	0.47	0.69	0.92	0.10	0.21	0.31	0.41	0.18	0.13
	5600	0.20	0.25	0.50	0.74	0.99	0.11	0.23	0.33	0.45	0.20	0.15
060	4800	0.12	0.13	0.38	0.54	0.71	0.06	0.17	0.24	0.32	0.12	0.07
	5400	0.14	0.16	0.41	0.59	0.78	0.07	0.18	0.27	0.35	0.14	0.09
	6000	0.16	0.19	0.44	0.64	0.85	0.09	0.20	0.29	0.38	0.16	0.11
	7200	0.18	0.22	0.47	0.69	0.92	0.10	0.21	0.31	0.41	0.18	0.13
	7400	0.20	0.25	0.50	0.74	0.99	0.11	0.23	0.33	0.45	0.20	0.15
080	6800	0.17	0.12	0.38	0.54	0.70	0.05	0.17	0.24	0.32	0.12	0.07
	7400	0.19	0.15	0.41	0.59	0.77	0.07	0.18	0.27	0.35	0.14	0.09
	7900	0.21	0.18	0.44	0.64	0.84	0.08	0.20	0.29	0.38	0.16	0.11
	8500	0.23	0.21	0.47	0.69	0.91	0.09	0.21	0.31	0.41	0.18	0.13
	9000	0.25	0.24	0.50	0.74	0.98	0.11	0.23	0.33	0.44	0.20	0.15
100	9100	0.17	0.13	0.37	0.53	0.69	0.06	0.17	0.24	0.31	0.12	0.07
	9700	0.19	0.16	0.40	0.58	0.76	0.07	0.18	0.26	0.34	0.14	0.09
	10300	0.21	0.19	0.43	0.63	0.83	0.09	0.19	0.28	0.37	0.16	0.11
	10900	0.23	0.22	0.46	0.68	0.90	0.10	0.21	0.31	0.41	0.18	0.13
	11400	0.25	0.25	0.49	0.73	0.97	0.11	0.22	0.33	0.44	0.20	0.15
120	11500	0.17	0.15	0.44	0.64	0.83	0.07	0.20	0.29	0.37	0.12	0.07
	11600	0.19	0.18	0.47	0.69	0.90	0.08	0.21	0.31	0.41	0.14	0.09
	11800	0.21	0.21	0.50	0.74	0.97	0.09	0.23	0.33	0.44	0.16	0.11
	11900	0.23	0.24	0.53	0.79	1.04	0.11	0.24	0.36	0.47	0.18	0.13
	12000	0.25	0.27	0.56	0.84	1.11	0.12	0.25	0.38	0.50	0.20	0.15

NOMINAL BLOWER PERFORMANCE TABLE

TOTAL STATIC PRESSURE			0.5			0.6		0.7		0.8		0.9		1.0		1.1		1.2	
UNIT SIZE	BLOWER SIZE	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
008	11" x 4"	600	787	0.15	825	0.17	863	0.19	902	0.20	940	0.22	978	0.24	1011	0.26	1044	0.28	
		700	852	0.20	887	0.22	922	0.24	957	0.27	992	0.29	1027	0.31	1058	0.33	1089	0.35	
		800	917	0.25	950	0.28	983	0.30	1017	0.33	1050	0.35	1083	0.38	1112	0.41	1141	0.43	
		900	982	0.30	1015	0.34	1047	0.37	1080	0.41	1112	0.44	1145	0.48	1172	0.51	1199	0.53	
		1000	1047	0.35	1080	0.40	1113	0.45	1146	0.49	1179	0.54	1212	0.59	1237	0.62	1262	0.65	
012	11" x 6"	1000	833	0.21	861	0.25	889	0.29	916	0.33	944	0.37	972	0.41	1000	0.43	1028	0.45	
		1100	880	0.41	906	0.43	932	0.44	958	0.46	984	0.47	1010	0.49	1037	0.51	1063	0.54	
		1200	925	0.48	952	0.51	979	0.54	1006	0.56	1033	0.59	1060	0.62	1084	0.64	1108	0.66	
		1300	990	0.64	1014	0.65	1038	0.66	1062	0.68	1086	0.69	1110	0.70	1132	0.73	1154	0.76	
		1400	1070	0.70	1088	0.73	1106	0.76	1124	0.78	1142	0.81	1160	0.84	1180	0.86	1201	0.89	
016	11" x 8"	1400	743	0.28	782	0.31	821	0.33	860	0.36	899	0.38	938	0.41	971	0.44	1004	0.47	
		1500	766	0.32	804	.035	841	0.38	879	0.40	916	0.43	954	0.46	987	0.49	1019	0.52	
		1600	790	0.37	826	0.40	863	0.43	899	0.46	936	0.49	972	0.52	1004	0.55	1036	0.58	
		1700	815	0.42	850	0.45	886	0.48	921	0.52	957	0.55	992	0.58	1023	0.61	1054	0.65	
		1800	841	0.48	875	0.51	909	0.55	944	0.58	978	0.62	1012	0.65	1042	0.68	1072	0.72	
020	11" x 8"	1800	841	0.48	875	0.51	909	0.55	944	0.58	978	0.62	1012	0.65	1042	0.68	1072	0.72	
		2000	895	0.62	927	0.66	959	0.69	991	0.73	1023	0.76	1055	0.80	1084	0.84	1113	0.88	
		2200	951	0.79	981	0.83	1011	0.87	1042	0.91	1072	0.95	1102	0.99	1129	1.03	1156	1.07	
		2400	1009	0.98	1038	1.02	1066	1.07	1095	1.11	1123	1.16	1152	1.20	1178	1.24	1204	1.29	
		2500	1039	1.09	1067	1.13	1094	1.18	1122	1.22	1149	1.27	1177	1.31	1202	1.36	1228	1.40	
030	15" x 6"	2500	755	0.90	779	0.95	803	1.00	828	1.05	852	1.10	876	1.15	898	1.20	920	1.25	
		2800	816	1.19	838	1.25	861	1.30	883	1.36	906	1.41	928	1.47	948	1.53	969	1.58	
		3000	858	1.42	879	1.48	900	1.54	922	1.60	943	1.66	964	1.72	984	1.78	1003	1.84	
		3300	922	1.82	942	1.89	962	1.95	981	2.02	1001	2.08	1021	2.15	1039	2.22	1058	2.28	
		3500	965	2.12	984	2.19	1003	2.26	1023	2.34	1042	2.41	1061	2.48	1079	2.55	1096	2.62	
040	15" x 9"	3500	706	1.17	730	1.24	754	1.30	777	1.37	801	1.43	825	1.50	847	1.86	868	1.63	
		3800	746	1.44	768	1.51	791	1.58	813	1.65	836	1.72	858	1.79	879	2.08	899	1.93	
		4000	773	1.64	795	1.71	816	1.79	838	1.86	859	1.94	881	2.01	901	2.45	921	2.16	
		4300	814	1.97	835	2.05	855	2.13	876	2.21	896	2.29	917	2.37	936	2.72	955	2.53	
		4500	842	2.22	862	2.30	882	2.39	902	2.47	922	2.56	942	2.64	960	1.51	979	2.80	
050	(2) 12" x 12"	4500	648	0.92	686	1.02	725	1.11	763	1.21	802	1.30	840	1.40	873	1.67	907	1.62	
		4800	664	1.06	701	1.16	738	1.26	775	1.36	812	1.46	849	1.56	882	1.77	914	1.78	
		5000	675	1.14	711	1.24	748	1.35	784	1.45	821	1.56	857	1.66	889	1.96	921	1.88	
		5300	693	1.30	728	1.41	763	1.52	798	1.62	833	1.73	868	1.84	899	2.16	930	2.07	
		5600	711	1.46	745	1.58	779	1.69	812	1.81	846	1.92	880	2.04	910	1.88	940	2.28	
060	(2) 12" x 9"	4600	757	1.24	791	1.35	825	1.46	859	1.56	893	1.67	927	1.78	957	2.54	987	1.98	
		5400	827	1.86	858	1.97	889	2.08	920	2.20	951	2.31	982	2.42	1010	3.17	1038	2.66	
		6000	884	2.40	913	2.53	942	2.66	970	2.78	999	2.91	1028	3.04	1054	4.73	1080	3.30	
		7200	1004	3.82	1029	3.97	1054	4.12	1080	4.28	1105	4.43	1130	4.58	1153	5.04	1177	4.88	
		7400	1025	4.12	1050	4.27	1075	4.42	1099	4.58	1124	4.73	1149	4.88	1172	2.14	1195	5.19	
080	(2) 15" x 15"	6800	569	1.28	598	1.42	628	1.57	657	1.71	687	1.86	716	2.00	745	2.45	775	2.29	
		7400	590	1.54	618	1.69	645	1.84	673	2.00	700	2.15	728	2.30	756	2.76	783	2.60	
		7900	607	1.82	633	1.98	660	2.13	686	2.29	713	2.44	739	2.60	765	3.14	792	2.91	
		8500	619	2.18	646	2.34	673	2.50	701	2.66	728	2.82	755	2.98	780	3.49	805	3.31	
		9000	639	2.50	665	2.66	691	2.83	718	2.99	744	3.16	770	3.32	794	3.57	818	3.66	
100	(2) 15" x 15"	9100	643	2.56	669	2.73	695	2.90	721	3.06	747	3.23	773	3.40	797	4.04	821	3.74	
		9700	668	2.98	693	3.16	718	3.33	742	3.51	767	3.68	792	3.86	815	4.59	838	4.23	
		10300	693	3.46	717	3.65	741	3.84	764	4.02	788	4.21	812	4.40	834	5.16	856	4.78	
		10900	718	3.98	741	4.18	764	4.37	788	4.57	811	4.76	834	4.96	855	5.69	876	5.37	
		11400	740	4.44	762	4.64	785	4.86	807	5.06	830	5.27	852	5.48	873	5.81	893	5.90	
120	(2) 15" x 15"	11500	745	4.54	767	4.75	789	4.96	812	5.18	834	5.39	856	5.60	876	5.91	897	6.02	
		11600	749	4.64	771	4.85	793	5.06	816	5.28	838	5.49	860	5.70	880	6.14	900	6.12	
		11800	758	4.86	780	5.07	802	5.28	823	5.50	845	5.71	867	5.92	887	6.26	907	6.36	
		11900	762	4.96	784	5.18	806	5.39	827	5.61	849	5.82	871	6.04	891	6.38	911	6.48	
		12000	767	5.06	789	5.28	810	5.50	832	5.72	853	5.94	875	6.16	895		915	6.60	

NOMINAL BLOWER PERFORMANCE TABLE

TOTAL STATIC PRESSURE			1.3		1.4		1.5		1.6		1.7		1.8		1.9		2.0	
UNIT SIZE	BLOWER SIZE	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
008	11" x 4"	600	1078	0.30	1111	0.32	1144	0.34	1174	0.36	1204	0.38	1233	0.41	1263	0.43	1293	0.45
		700	1121	0.38	1152	0.40	1183	0.42	1211	0.44	1239	0.47	1268	0.49	1296	0.52	1324	0.54
		800	1170	0.46	1199	0.48	1228	0.51	1255	0.54	1282	0.56	1308	0.59	1335	0.61	1362	0.64
		900	1227	0.56	1254	0.58	1281	0.61	1306	0.64	1331	0.67	1357	0.69	1382	0.72	1407	0.75
		1000	1288	0.67	1313	0.70	1338	0.73	1362	0.76	1386	0.79	1409	0.82	1433	0.85	1457	0.88
012	11" x 6"	1000	1056	0.47	1084	0.49	1112	0.51	1139	0.53	1166	0.56	1192	0.58	1219	0.61	1246	0.63
		1100	1090	0.56	1116	0.59	1143	0.61	1168	0.63	1193	0.66	1219	0.68	1244	0.71	1269	0.73
		1200	1132	0.68	1156	0.70	1180	0.72	1203	0.74	1227	0.77	1250	0.79	1274	0.82	1297	0.84
		1300	1177	0.78	1199	0.81	1221	0.84	1243	0.87	1265	0.90	1287	0.92	1309	0.95	1331	0.98
		1400	1221	0.91	1242	0.94	1262	0.96	1283	0.99	1304	1.03	1326	1.06	1347	1.10	1368	1.13
016	11" x 8"	1400	1038	0.49	1071	0.52	1104	0.55	1134	0.58	1163	0.61	1193	0.64	1222	0.67	1252	0.70
		1500	1052	0.55	1084	0.58	1117	0.61	1146	0.64	1175	0.67	1204	0.71	1233	0.74	1262	0.77
		1600	1067	0.62	1099	0.65	1131	0.68	1159	0.71	1188	0.74	1216	0.78	1245	0.81	1273	0.84
		1700	1084	0.68	1115	0.72	1146	0.75	1174	0.78	1202	0.82	1229	0.85	1257	0.89	1285	0.92
		1800	1102	0.75	1132	0.79	1162	0.82	1189	0.86	1217	0.89	1244	0.93	1272	0.96	1299	1.00
020	11" x 8"	1800	1102	0.75	1132	0.79	1162	0.82	1189	0.86	1217	0.89	1244	0.93	1272	0.96	1299	1.00
		2000	1141	0.91	1170	0.95	1199	0.99	1225	1.03	1251	1.07	1277	1.10	1303	1.14	1329	1.18
		2200	1184	1.11	1211	1.15	1238	1.19	1263	1.23	1288	1.27	1314	1.32	1339	1.36	1364	1.40
		2400	1229	1.33	1255	1.38	1281	1.42	1305	1.46	1329	1.51	1354	1.55	1378	1.60	1402	1.64
		2500	1253	1.45	1279	1.49	1304	1.54	1328	1.59	1351	1.63	1375	1.68	1398	1.72	1422	1.77
030	15" x 6"	2500	941	1.30	963	1.35	985	1.40	1006	1.45	1026	1.51	1047	1.56	1067	1.62	1088	1.67
		2800	989	1.64	1010	1.69	1030	1.75	1049	1.81	1068	1.87	1088	1.92	1107	1.98	1126	2.04
		3000	1023	1.90	1042	1.96	1062	2.02	1080	2.08	1099	2.14	1117	2.20	1136	2.26	1154	2.32
		3300	1076	2.35	1095	2.41	1113	2.48	1130	2.55	1148	2.61	1165	2.68	1183	2.74	1200	2.81
		3500	1114	2.69	1131	2.76	1149	2.83	1166	2.90	1182	2.97	1199	3.04	1215	3.11	1232	3.18
040	15" x 9"	3500	890	1.70	911	1.76	933	1.83	953	1.90	973	1.97	994	2.03	1014	2.10	1034	2.17
		3800	920	2.01	940	2.08	961	2.15	980	2.22	999	2.29	1019	2.37	1038	2.44	1057	2.51
		4000	941	2.23	961	2.31	981	2.38	1000	2.46	1018	2.53	1037	2.61	1055	2.68	1074	2.76
		4300	974	2.61	993	2.69	1012	2.77	1030	2.85	1048	2.93	1065	3.01	1083	3.09	1101	3.17
		4500	997	2.89	1016	2.97	1034	3.05	1051	3.14	1069	3.22	1086	3.31	1104	3.39	1121	3.48
050	(2) 12" x 12"	4500	940	1.72	974	1.83	1007	1.94	1029	2.05	1050	2.15	1072	2.26	1093	2.37	1115	2.48
		4800	947	1.88	979	1.99	1012	2.10	1041	2.22	1071	2.35	1100	2.47	1130	2.60	1159	2.72
		5000	952	2.00	984	2.11	1016	2.22	1045	2.35	1074	2.48	1103	2.60	1132	2.73	1161	2.86
		5300	961	2.19	992	2.30	1023	2.42	1051	2.55	1079	2.68	1108	2.80	1136	2.93	1164	3.06
		5600	971	2.40	1001	2.52	1031	2.64	1059	2.77	1086	2.90	1114	3.02	1141	3.15	1169	3.28
060	(2) 12" x 9"	4600	1017	2.08	1047	2.18	1077	2.28	1104	2.39	1131	2.50	1159	2.60	1186	2.71	1213	2.82
		5400	1065	2.78	1093	2.90	1121	3.02	1146	3.14	1172	3.26	1197	3.38	1223	3.50	1248	3.62
		6000	1107	3.42	1133	3.55	1159	3.68	1183	3.81	1207	3.94	1232	4.06	1256	4.19	1280	4.32
		7200	1200	5.04	1224	5.19	1247	5.34	1269	5.49	1291	5.64	1313	5.80	1335	5.95	1357	6.10
		7400	1217	5.35	1240	5.50	1263	5.66	1285	5.82	1306	5.97	1328	6.13	1349	6.28	1371	6.44
080	(2) 15" x 15"	6800	804	2.43	834	2.58	863	2.72	892	2.86	922	3.01	951	3.15	981	3.30	N/A	N/A
		7400	811	2.76	838	2.91	866	3.06	892	3.22	918	3.39	945	3.55	971	3.72	997	3.88
		7900	818	3.07	845	3.22	871	3.38	896	3.55	921	3.72	946	3.88	971	4.05	996	4.22
		8500	830	3.47	855	3.64	880	3.80	904	3.98	928	4.15	951	4.33	975	4.50	999	4.68
		9000	842	3.84	866	4.01	890	4.18	913	4.36	936	4.55	958	4.73	981	4.92	1004	5.10
100	(2) 15" x 15"	9100	844	3.92	868	4.09	892	4.26	915	4.44	937	4.63	960	4.81	982	5.00	1005	5.18
		9700	860	4.41	883	4.60	906	4.78	928	4.97	949	5.16	971	5.36	992	5.55	1014	5.74
		10300	878	4.98	900	5.17	922	5.36	943	5.56	964	5.75	984	5.95	1005	6.14	1026	6.34
		10900	897	5.57	918	5.78	939	5.98	959	6.19	979	6.40	999	6.60	1019	6.81	1039	7.02
		11400	914	6.12	934	6.33	955	6.54	974	6.75	994	6.96	1013	7.18	1033	7.39	1052	7.60
120	(2) 15" x 15"	11500	917	6.22	938	6.43	958	6.64	977	6.86	996	7.08	1016	7.30	1035	7.52	1054	7.74
		11600	921	6.34	941	6.55	961	6.76	980	6.98	999	7.20	1019	7.42	1038	7.64	1057	7.86
		11800	928	6.58	948	6.80	968	7.02	987	7.24	1006	7.46	1024	7.68	1043	7.90	1062	8.12
		11900	931	6.70	951	6.92	971	7.14	990	7.36	1009	7.58	1027	7.80	1046	8.02	1065	8.24
		12000	934	6.82	954	7.04	974	7.26	993	7.48	1012	7.71	1030	7.93	1049	8.16	1068	8.38

NOMINAL BLOWER PERFORMANCE TABLE

TOTAL STATIC PRESSURE			2.1		2.2		2.3		2.4		2.5		2.6		2.7		2.8	
UNIT SIZE	BLOWER SIZE	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
008	11" x 4"	600	1320	0.47	1347	0.49	1373	0.52	1400	0.54	1427	0.56	1451	0.58	1474	0.60	1498	0.61
		700	1350	0.56	1376	0.59	1402	0.61	1428	0.64	1454	0.66	1478	0.68	1502	0.71	1526	0.73
		800	1387	0.67	1412	0.69	1436	0.72	1461	0.74	1486	0.77	1509	0.80	1533	0.83	1556	0.85
		900	1431	0.78	1454	0.81	1478	0.84	1501	0.87	1525	0.90	1547	0.93	1570	0.96	1592	0.99
		1000	1480	0.91	1502	0.94	1525	0.98	1547	1.01	1570	1.04	1591	1.07	1613	1.10	1634	1.14
012	11" x 6"	1000	1271	0.66	1297	0.69	1322	0.71	1348	0.74	1373	0.77	1397	0.80	1421	0.83	1445	0.86
		1100	1293	0.76	1317	0.78	1341	0.81	1365	0.83	1389	0.86	1412	0.89	1435	0.92	1459	0.95
		1200	1320	0.87	1343	0.90	1365	0.92	1388	0.95	1411	0.98	1433	1.01	1455	1.04	1477	1.07
		1300	1352	1.01	1374	1.04	1395	1.06	1417	1.09	1438	1.12	1459	1.15	1480	1.18	1500	1.21
		1400	1388	1.16	1408	1.19	1429	1.21	1449	1.24	1469	1.27	1489	1.30	1509	1.33	1528	1.37
016	11" x 8"	1400	1279	0.73	1306	0.76	1332	0.80	1359	0.83	1386	0.86	1411	0.89	1436	0.92	1461	0.96
		1500	1288	0.80	1315	0.83	1341	0.87	1368	0.90	1394	0.93	1419	0.96	1443	1.00	1468	1.03
		1600	1299	0.87	1325	0.91	1351	0.94	1377	0.98	1403	1.01	1427	1.05	1451	1.08	1476	1.12
		1700	1311	0.95	1336	0.99	1362	1.02	1387	1.06	1413	1.09	1437	1.13	1461	1.17	1484	1.20
		1800	1324	1.04	1349	1.07	1374	1.11	1399	1.14	1424	1.18	1447	1.22	1471	1.26	1494	1.29
020	11" x 8"	1800	1324	1.04	1349	1.07	1374	1.11	1399	1.14	1424	1.18	1447	1.22	1471	1.26	1494	1.29
		2000	1353	1.22	1377	1.26	1402	1.30	1426	1.34	1450	1.38	1473	1.42	1496	1.46	1518	1.51
		2200	1387	1.44	1410	1.48	1434	1.53	1457	1.57	1480	1.61	1502	1.65	1524	1.70	1546	1.74
		2400	1424	1.69	1447	1.73	1469	1.78	1492	1.82	1514	1.87	1535	1.92	1556	1.96	1578	2.01
		2500	1444	1.82	1466	1.87	1488	1.91	1510	1.96	1532	2.01	1553	2.06	1574	2.11	1594	2.15
030	15" x 6"	2500	1107	1.73	1127	1.78	1146	1.84	1166	1.89	1185	1.95	1204	2.01	1222	2.07	1241	2.12
		2800	1144	2.10	1162	2.16	1181	2.22	1199	2.28	1217	2.34	1234	2.40	1252	2.46	1269	2.53
		3000	1172	2.38	1189	2.45	1207	2.51	1224	2.58	1242	2.64	1259	2.70	1275	2.77	1292	2.83
		3300	1216	2.88	1233	2.95	1249	3.01	1266	3.08	1282	3.15	1298	3.22	1314	3.29	1330	3.35
		3500	1248	3.25	1264	3.32	1280	3.39	1296	3.46	1312	3.53	1327	3.60	1343	3.67	1358	3.75
040	15" x 9"	3500	1053	2.24	1072	2.31	1090	2.39	1109	2.46	1128	2.53	1146	2.60	1164	2.68	1182	2.75
		3800	1075	2.59	1093	2.66	1112	2.74	1130	2.81	1148	2.89	1165	2.97	1182	3.05	1200	3.12
		4000	1092	2.84	1109	2.92	1127	2.99	1144	3.07	1162	3.15	1179	3.23	1196	3.31	1212	3.40
		4300	1118	3.25	1135	3.34	1152	3.42	1169	3.51	1186	3.59	1202	3.67	1218	3.76	1235	3.84
		4500	1137	3.56	1154	3.65	1170	3.73	1187	3.82	1203	3.90	1219	3.99	1235	4.08	1250	4.16
050	(2) 12" x 12"	4500	1136	2.58	1158	2.69	1179	2.80	1201	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		4800	1188	2.84	1218	2.97	1247	3.09	1277	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		5000	1190	2.99	1219	3.12	1248	3.24	1277	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		5300	1192	3.19	1220	3.32	1249	3.44	1277	3.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		5600	1197	3.41	1224	3.54	1252	3.66	1279	3.79	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
060	(2) 12" x 9"	4600	1238	2.94	1263	3.05	1288	3.17	1313	3.28	1338	3.40	1363	3.52	1388	3.63	1413	3.75
		5400	1272	3.74	1295	3.87	1319	3.99	1342	4.12	1366	4.24	1388	4.37	1410	4.50	1433	4.64
		6000	1303	4.46	1325	4.59	1348	4.73	1370	4.86	1393	5.00	1414	5.14	1436	5.28	1457	5.42
		7200	1378	6.26	1399	6.41	1419	6.57	1440	6.72	1461	6.88	1481	7.04	1500	7.20	1520	7.36
		7400	1391	6.60	1412	6.76	1432	6.92	1453	7.08	1473	7.24	1493	7.40	1512	7.57	1532	7.73
080	(2) 15" x 15"	6800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		7400	1023	4.04	1049	4.21	1076	4.37	1102	4.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		7900	1020	4.40	1044	4.58	1069	4.76	1093	4.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		8500	1022	4.87	1045	5.06	1068	5.24	1091	5.43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		9000	1026	5.29	1048	5.48	1070	5.68	1092	5.87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100	(2) 15" x 15"	9100	1027	5.38	1049	5.57	1071	5.77	1093	5.96	1115	6.16	1136	6.36	1157	6.57	1179	6.77
		9700	1035	5.94	1056	6.14	1077	6.34	1098	6.54	1119	6.74	1139	6.95	1159	7.16	1180	7.38
		10300	1046	6.55	1066	6.76	1086	6.96	1106	7.17	1126	7.38	1145	7.60	1165	7.82	1184	8.04
		10900	1058	7.24	1077	7.45	1097	7.67	1116	7.88	1135	8.10	1154	8.32	1172	8.55	1191	8.77
		11400	1071	7.82	1089	8.05	1108	8.27	1126	8.50	1145	8.72	1163	8.95	1181	9.18	1199	9.42
120	(2) 15" x 15"	11500	1073	7.96	1091	8.19	1110	8.41	1128	8.64	1147	8.86	1165	9.09	1183	9.32	1200	9.54
		11600	1075	8.08	1094	8.31	1112	8.53	1131	8.76	1149	8.98	1167	9.21	1185	9.44	1202	9.68
		11800	1080	8.35	1098	8.58	1117	8.80	1135	9.03	1153	9.26	1171	9.50	1188	9.73	1206	9.97
		11900	1083	8.47	1101	8.70	1119	8.94	1137	9.17	1155	9.40	1173	9.64	1190	9.87	1208	10.11
		12000	1086	8.61	1104	8.84	1121	9.08	1139	9.31	1157	9.54	1175	9.78	1192	10.01	1210	10.25

NOMINAL BLOWER PERFORMANCE TABLE

TOTAL STATIC PRESSURE			2.9			30.		3.1		3.2		3.3		3.4		3.5	
UNIT SIZE	BLOWER SIZE	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
008	11" x 4"	600	1521	0.63	1545	0.65	1568	0.67	1591	0.70	1614	0.72	1637	0.75	1660	0.77	
		700	1550	0.76	1574	0.78	1596	0.81	1619	0.83	1641	0.86	1664	0.88	1686	0.91	
		800	1580	0.88	1603	0.91	1625	0.94	1647	0.97	1668	0.99	1690	1.02	1712	1.05	
		900	1615	1.02	1637	1.05	1658	1.08	1679	1.11	1701	1.14	1722	1.17	1743	1.20	
		1000	1656	1.17	1677	1.20	1697	1.23	1718	1.27	1738	1.30	1759	1.34	1779	1.37	
012	11" x 6"	1000	1469	0.89	1493	0.92	1516	0.95	1539	0.99	1562	1.02	1585	1.06	1608	1.09	
		1100	1482	0.98	1505	1.01	1527	1.04	1549	1.08	1571	1.11	1593	1.15	1615	1.18	
		1200	1499	1.10	1521	1.13	1542	1.16	1563	1.19	1585	1.23	1606	1.26	1627	1.29	
		1300	1521	1.24	1542	1.27	1562	1.30	1583	1.33	1603	1.37	1624	1.40	1644	1.43	
		1400	1548	1.40	1568	1.43	1587	1.46	1607	1.49	1626	1.53	1646	1.56	1665	1.59	
016	11" x 8"	1400	1486	0.99	1511	1.02	1534	1.05	1557	1.09	1581	1.12	1604	1.16	1627	1.19	
		1500	1492	1.07	1517	1.10	1540	1.14	1563	1.17	1585	1.21	1608	1.24	1631	1.28	
		1600	1500	1.15	1524	1.19	1547	1.23	1569	1.26	1592	1.30	1614	1.33	1637	1.37	
		1700	1508	1.24	1532	1.28	1554	1.32	1577	1.35	1599	1.39	1622	1.42	1644	1.46	
		1800	1518	1.33	1541	1.37	1563	1.41	1585	1.45	1608	1.49	1630	1.53	1652	1.57	
020	11" x 8"	1800	1518	1.33	1541	1.37	1563	1.41	1585	1.45	1608	1.49	1630	1.53	1652	1.57	
		2000	1541	1.55	1564	1.59	1585	1.63	1607	1.67	1628	1.72	1650	1.76	1671	1.80	
		2200	1568	1.79	1590	1.83	1611	1.87	1632	1.92	1652	1.96	1673	2.01	1694	2.05	
		2400	1599	2.05	1620	2.10	1640	2.15	1660	2.20	1681	2.24	1701	2.29	1721	2.34	
		2500	1615	2.20	1636	2.25	1656	2.30	1676	2.35	1696	2.40	1716	2.45	1736	2.50	
030	15" x 6"	2500	1259	2.18	1278	2.24	1296	2.30	1314	2.37	1332	2.43	1350	2.50	1368	2.56	
		2800	1287	2.59	1304	2.65	1321	2.72	1338	2.78	1355	2.85	1372	2.91	1389	2.98	
		3000	1308	2.90	1325	2.96	1341	3.03	1357	3.10	1374	3.16	1390	3.23	1406	3.30	
		3300	1346	3.42	1362	3.49	1377	3.56	1392	3.63	1408	3.71	1423	3.78	1438	3.85	
		3500	1374	3.82	1389	3.89	1404	3.96	1419	4.04	1433	4.11	1448	4.19	1463	4.26	
040	15" x 9"	3500	1200	2.83	1218	2.90	1235	2.98	1252	3.06	1270	3.13	1287	3.21	1304	3.29	
		3800	1217	3.20	1234	3.28	1251	3.36	1267	3.44	1284	3.53	1300	3.61	1317	3.69	
		4000	1229	3.48	1246	3.56	1262	3.64	1278	3.72	1295	3.81	1311	3.89	1327	3.97	
		4300	1251	3.93	1267	4.01	1283	4.10	1298	4.19	1314	4.27	1329	4.36	1345	4.45	
		4500	1266	4.25	1282	4.34	1297	4.43	1312	4.52	1328	4.61	1343	4.70	1358	4.79	
050	(2) 12" x 12"	4500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
		4800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
		5000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
		5300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	NA	NA	NA	
		5600	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	NA	NA	NA	
060	(2) 12" x 9"	4600	1438	3.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		5400	1455	4.77	1477	4.90	1498	5.04	1519	5.17	1540	5.31	1561	5.44	1582	5.58	
		6000	1479	5.56	1500	5.70	1520	5.84	1540	5.99	1561	6.13	1581	6.28	1601	6.42	
		7200	1539	7.52	1559	7.68	1578	7.84	1597	8.00	1615	8.16	1634	8.32	1653	8.48	
		7400	1551	7.90	1571	8.06	1590	8.22	1608	8.39	1627	8.55	1645	8.72	1664	8.88	
080	(2) 15" x 15"	6800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
		7400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
		7900	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
		8500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
		9000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
100	(2) 15" x 15"	9100	1200	6.98	1221	7.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	NA	
		9700	1200	7.59	1220	7.80	1240	8.02	1260	8.23	1279	8.45	1299	8.66	1319	8.88	
		10300	1204	8.26	1223	8.48	1242	8.70	1261	8.93	1280	9.15	1299	9.38	1318	9.60	
		10900	1209	9.00	1228	9.22	1246	9.45	1264	9.68	1283	9.92	1301	10.15	1319	10.38	
		11400	1217	9.65	1235	9.88	1253	10.12	1270	10.35	1288	10.59	1305	10.82	1323	11.06	
120	(2) 15" x 15"	11500	1218	9.77	1236	10.00	1254	10.24	1271	10.48	1289	10.72	1306	10.96	1324	11.20	
		11600	1220	9.91	1238	10.14	1255	10.38	1273	10.63	1290	10.87	1308	11.12	1325	11.36	
		11800	1223	10.20	1241	10.44	1258	10.68	1275	10.92	1293	11.16	1310	11.40	1327	11.64	
		11900	1225	10.34	1243	10.58	1260	10.82	1277	11.07	1294	11.31	1311	11.56	1328	11.80	
		12000	1227	10.48	1245	10.72	1262	10.97	1279	11.22	1295	11.46	1312	11.71	1329	11.96	

WEIGHTS AND MEASURES

The following AH Horizontal / AV Vertical Series weights and measures are based on fan coil units only. Add approximately 20% for packaging and crating.

MODEL	MODEL	DIMENSION / INCHES			WT/LBS		DIMENSION / INCHES			WT/KG	
		HEIGHT	WIDTH	DEPTH	DRY	WET	HEIGHT	WIDTH	DEPTH	DRY	WET
AH HORIZONTAL / AV VERTICAL	008	17 - 1/2	18	18	326	348	533	711	1270	148	158
	012	17 - 1/2	18	23	357	386	533	889	1270	162	175
	016	17 - 1/2	18	29 - 11/16	373	412	610	889	1270	169	187
	020	17 - 1/2	18	29 - 11/16	394	440	610	991	1270	179	200
	030	22 - 9/16	18	37 - 11/16	515	552	737	1245	1422	234	250
	040	22 - 9/16	22	49 - 3/16	640	742	737	1549	1422	290	337
	050	22 - 9/16	22	62 - 3/16	778	878	762	1829	1219	353	398
	060	22 - 9/16	22	72 - 11/16	840	967	762	2184	1219	381	439
	080	22 - 9/16	22	76 - 11/16	950	1111	940	2184	1219	431	504
	100	30 - 9/16	22	103 - 1/16	1080	1283	940	2667	1219	490	582
	120	30 - 9/16	22	104 - 3/4	1456	1681	940	2972	1549	660	762
MIXING BOXES											
AH HORIZONTAL / AV VERTICAL	008	17 - 1/2	18	18	40	N/A	447	460	457	18	N/A
	012	17 - 1/2	18	23	45	N/A	447	587	457	20	N/A
	016-020	17 - 1/2	18	29 - 11/16	51	N/A	447	756	457	23	N/A
	030	22 - 9/16	18	37 - 11/16	65	N/A	575	959	457	30	N/A
	040	22 - 9/16	22	49 - 3/16	115	N/A	576	1253	559	52	N/A
	050	22 - 9/16	22	62 - 3/16	140	N/A	576	1583	559	64	N/A
	060	22 - 9/16	22	72 - 11/16	160	N/A	578	1851	559	73	N/A
	080	22 - 9/16	22	76 - 11/16	175	N/A	762	1953	559	80	N/A
	100	30 - 9/16	22	103 - 1/16	240	N/A	781	2623	559	109	N/A
	120	30 - 9/16	22	104 - 3/4	260	N/A	781	2661	559	119	N/A



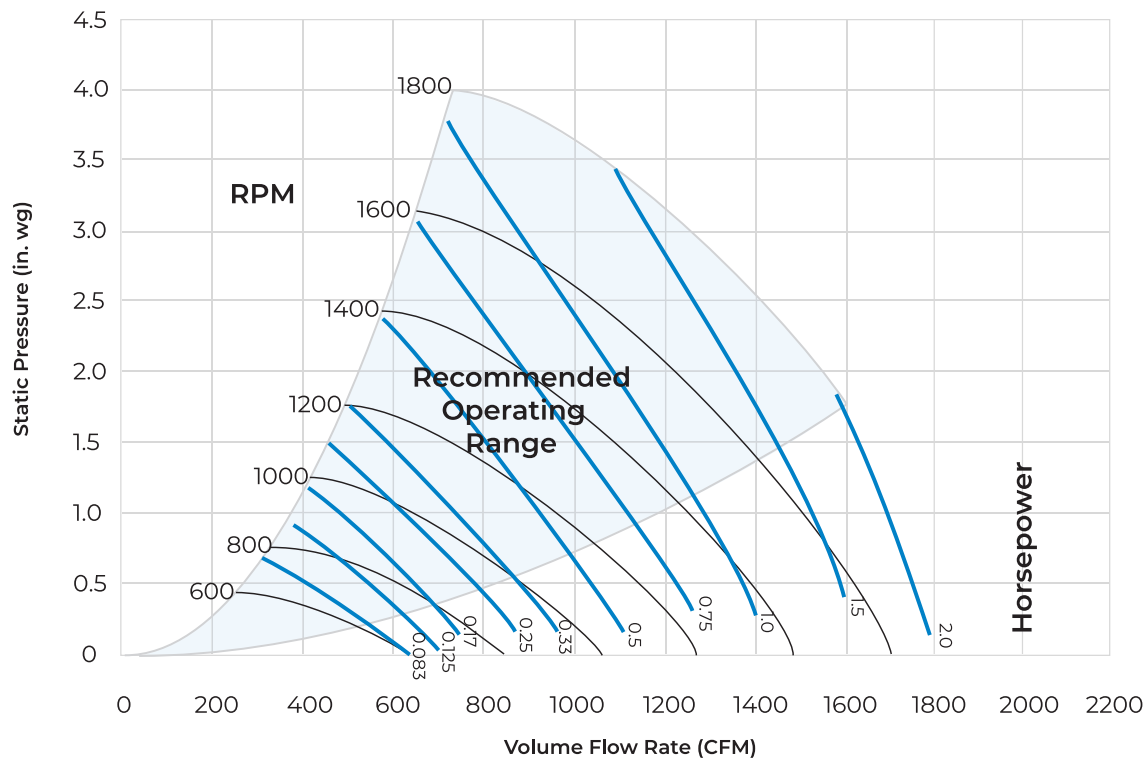
FILTERS

The AH Horizontal / AV Vertical Series Belt Drive Air Handler comes with a two inch, pleated filter as standard equipment.

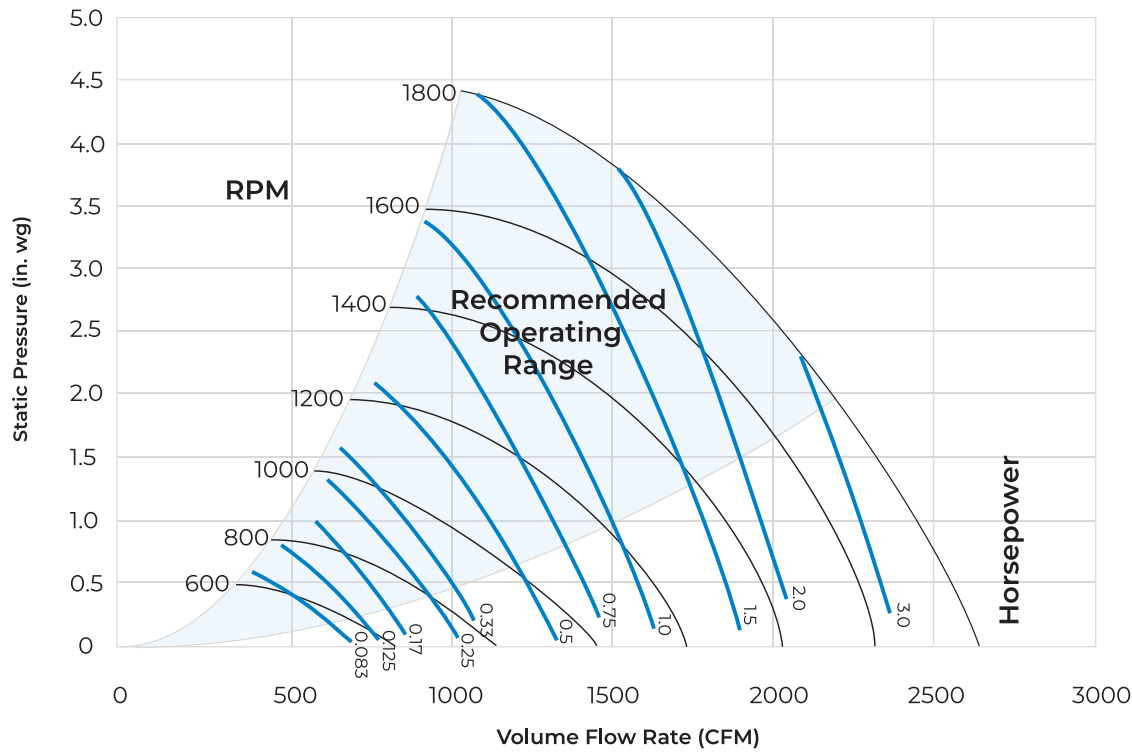
FILTERS - NOMINAL SIZES			
UNIT SIZE	QUANTITY	WIDTH	HEIGHT
008	1	16"	25"
		406 mm	635 mm
012	2	16"	16"
		406 mm	406 mm
016	2	16"	20"
		406 mm	508 mm
020	2	16"	20"
		406 mm	508 mm
030	2	21"	25"
		533 mm	635 mm
040	2	25"	27"
		635 mm	686 mm
050	4	16"	25"
		406 mm	635 mm
060	2	25"	25"
		635 mm	635 mm
	1	25"	27"
		635 mm	686 mm
80	8	16"	20"
		406 mm	508 mm
100	6	16"	25"
		406 mm	635 mm
	2	16"	20"
		406 mm	508 mm
120	8	16"	20"
		406 mm	508 mm
	2		25"
			635 mm

FAN CURVES

AH HORIZONTAL / AV VERTICAL FAN CURVES - SIZE 008

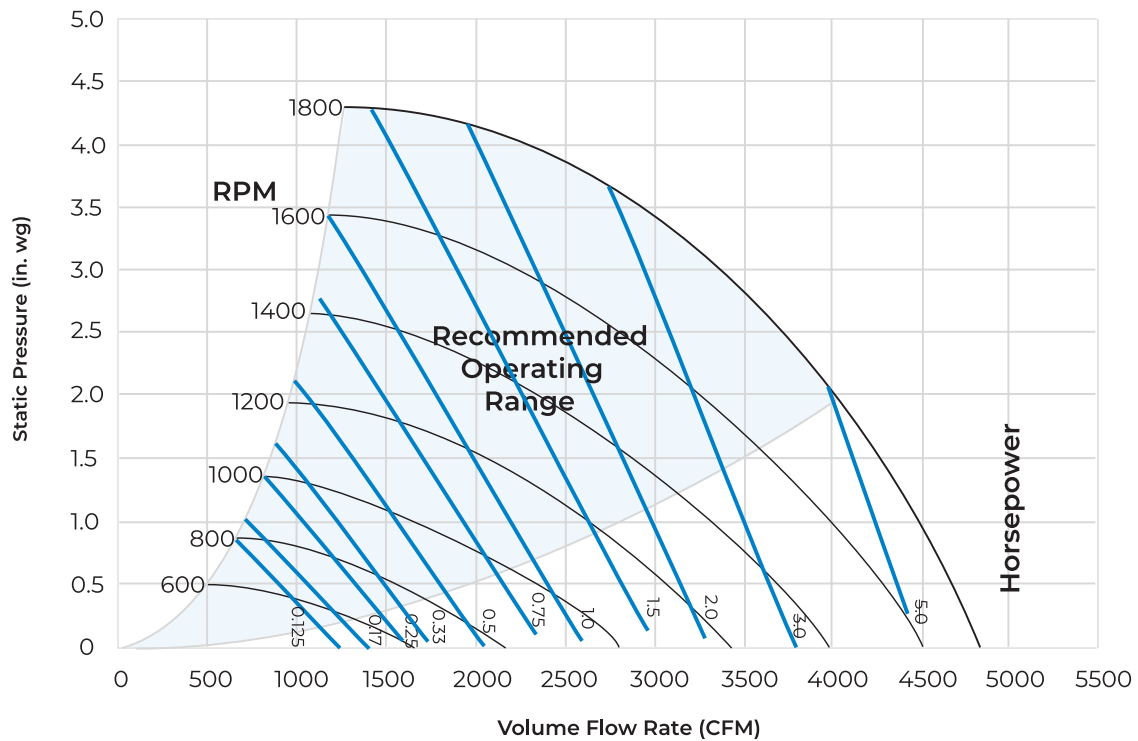


AH HORIZONTAL / AV VERTICAL FAN CURVES - SIZE 012

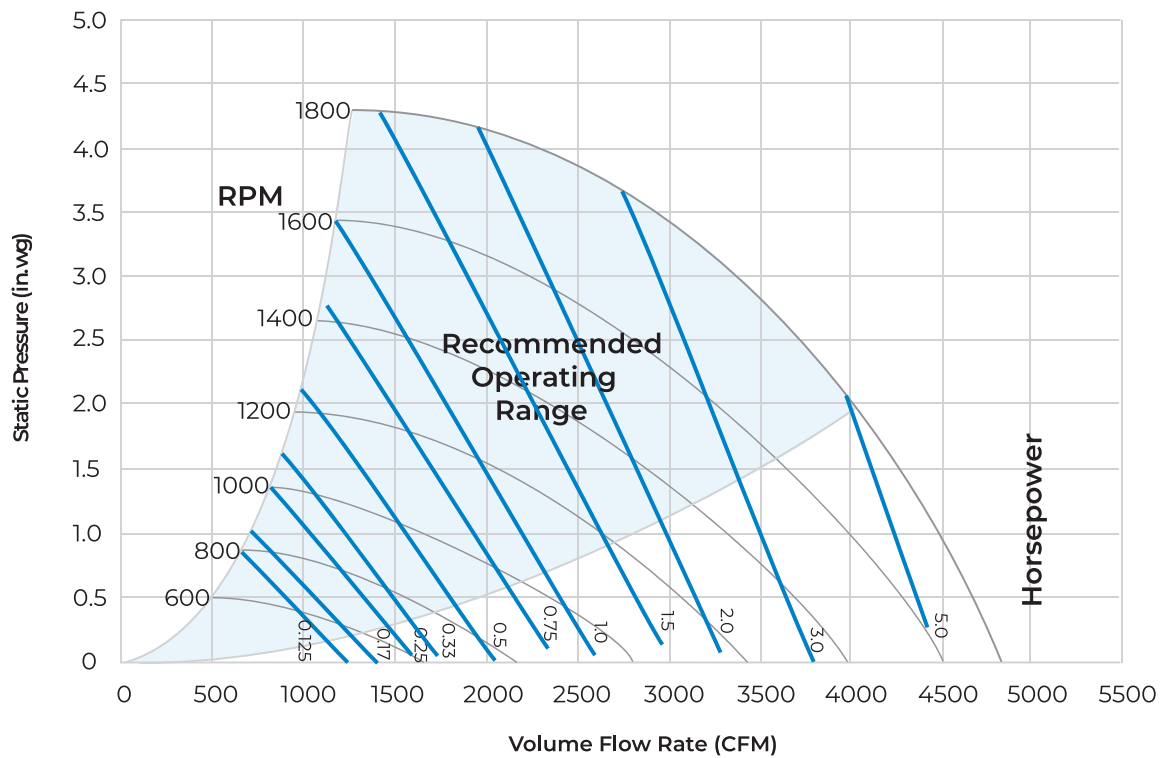


FAN CURVES

AH HORIZONTAL / AV VERTICAL FAN CURVES - SIZE 016

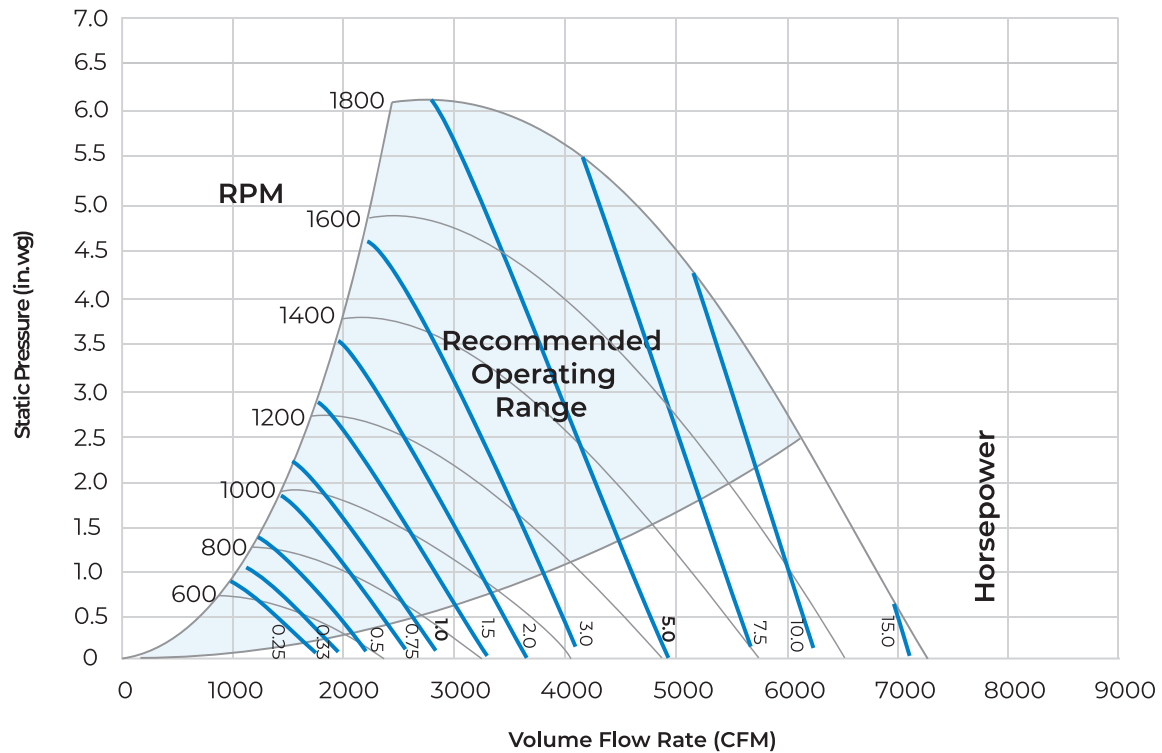


AH HORIZONTAL / AV VERTICAL FAN CURVES - SIZE 020

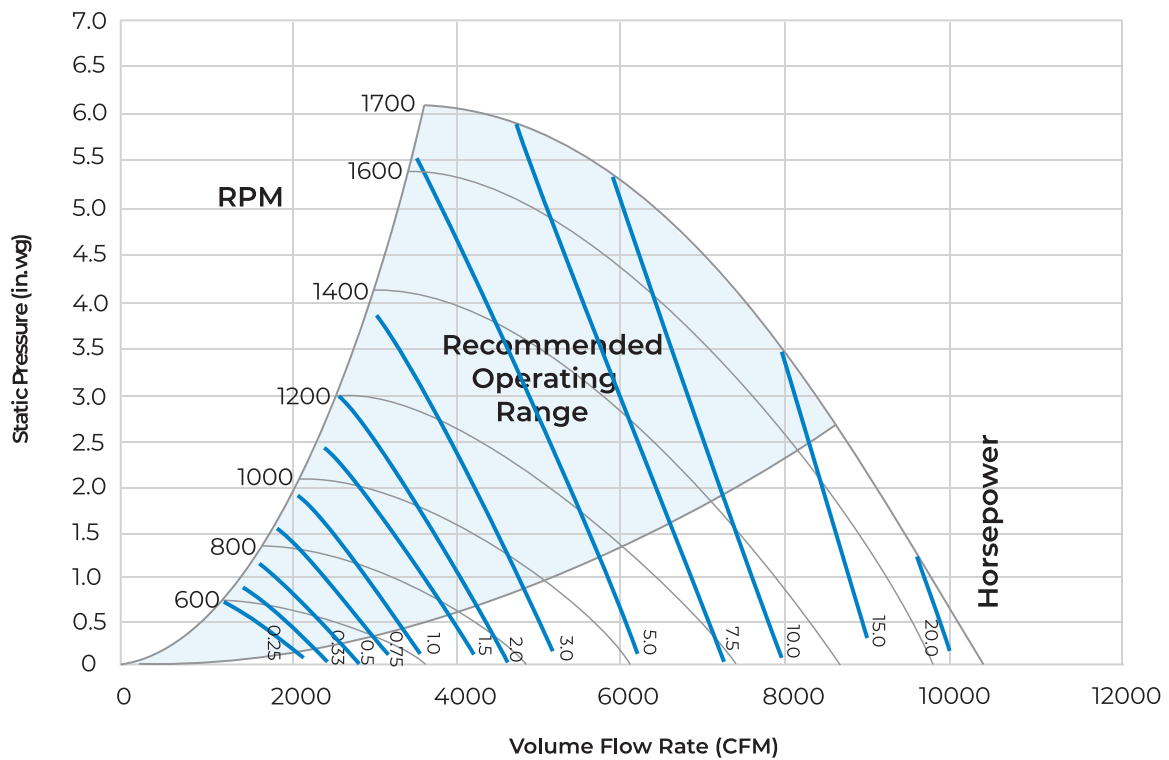


FAN CURVES

AH HORIZONTAL / AV VERTICAL FAN CURVES - SIZE 030

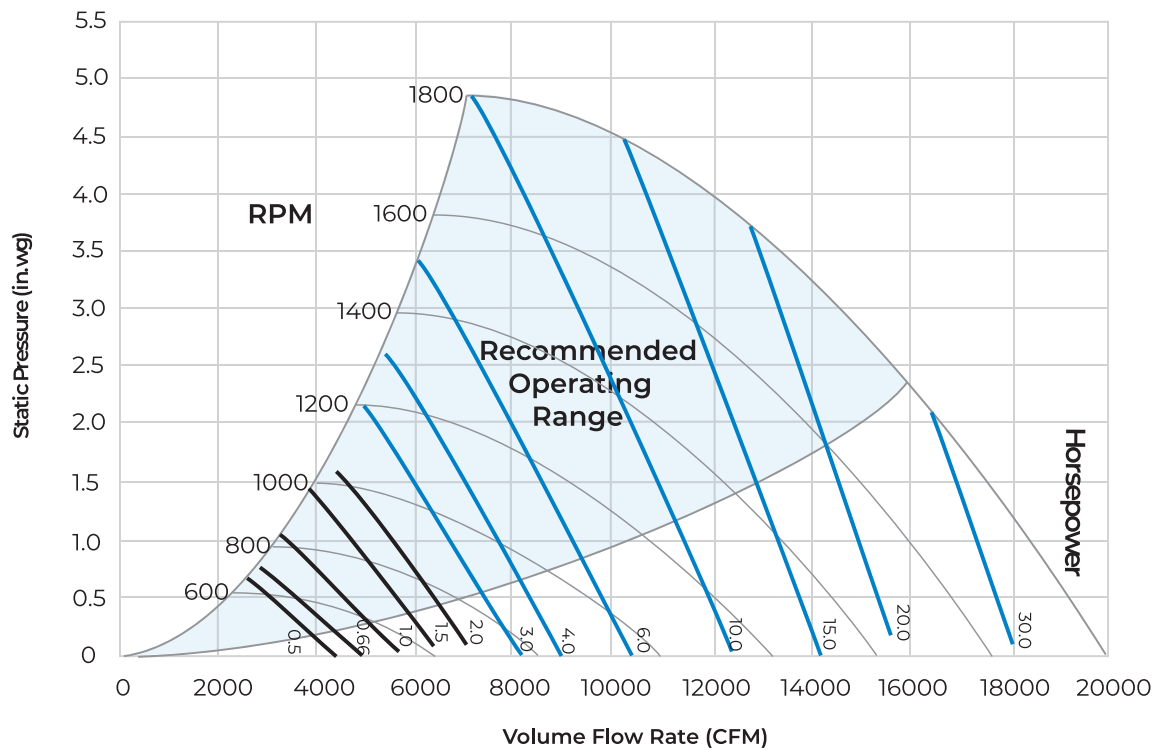


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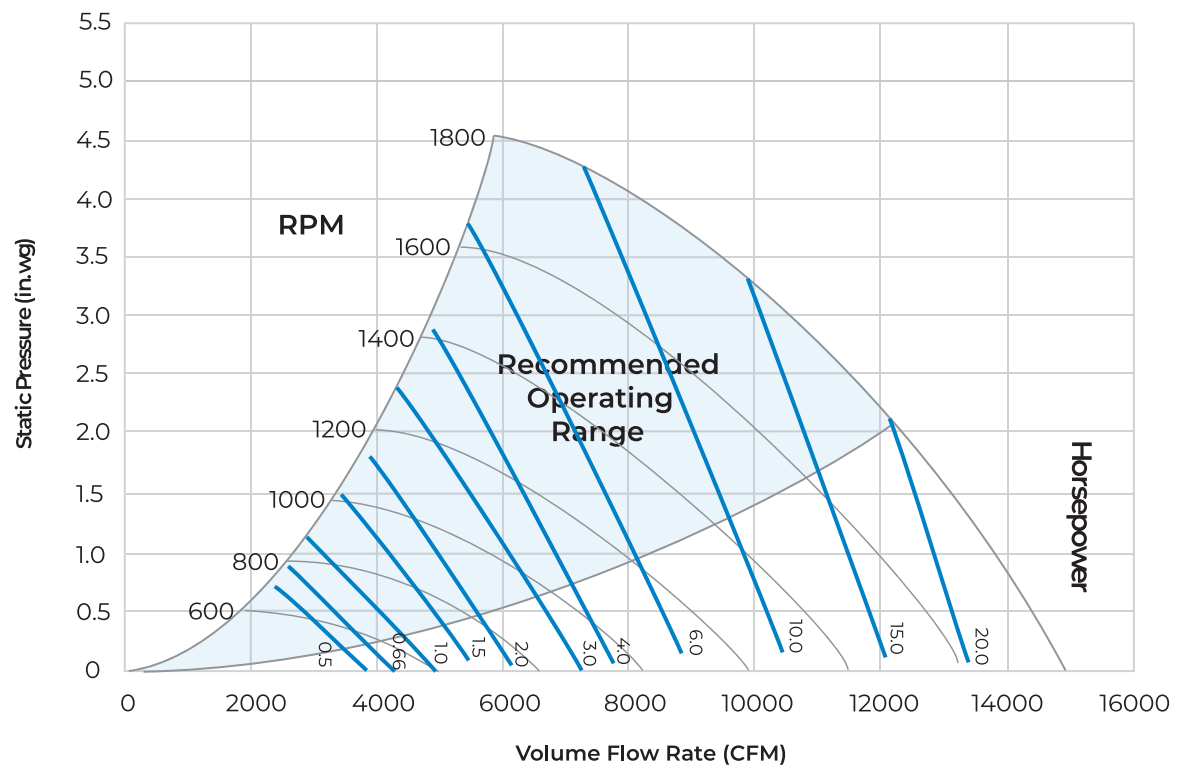


FAN CURVES

AH HORIZONTAL / AV VERTICAL FAN CURVES - SIZE 050

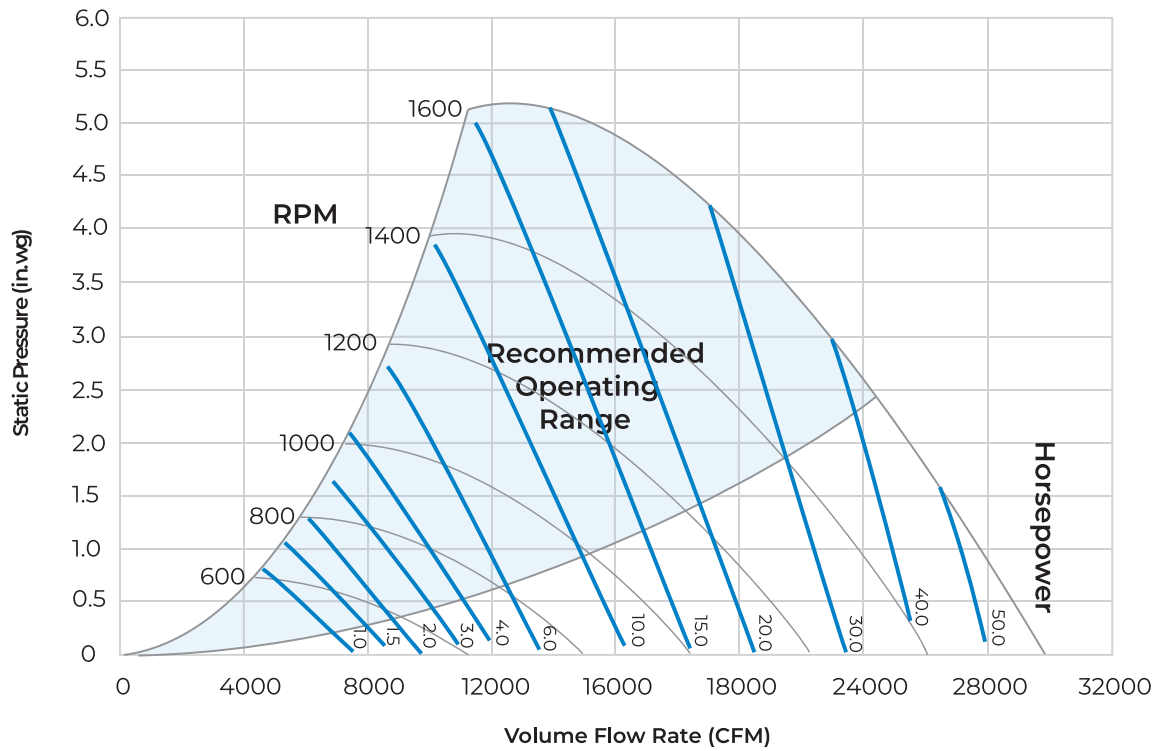


AH HORIZONTAL / AV VERTICAL FAN CURVES - SIZE 060



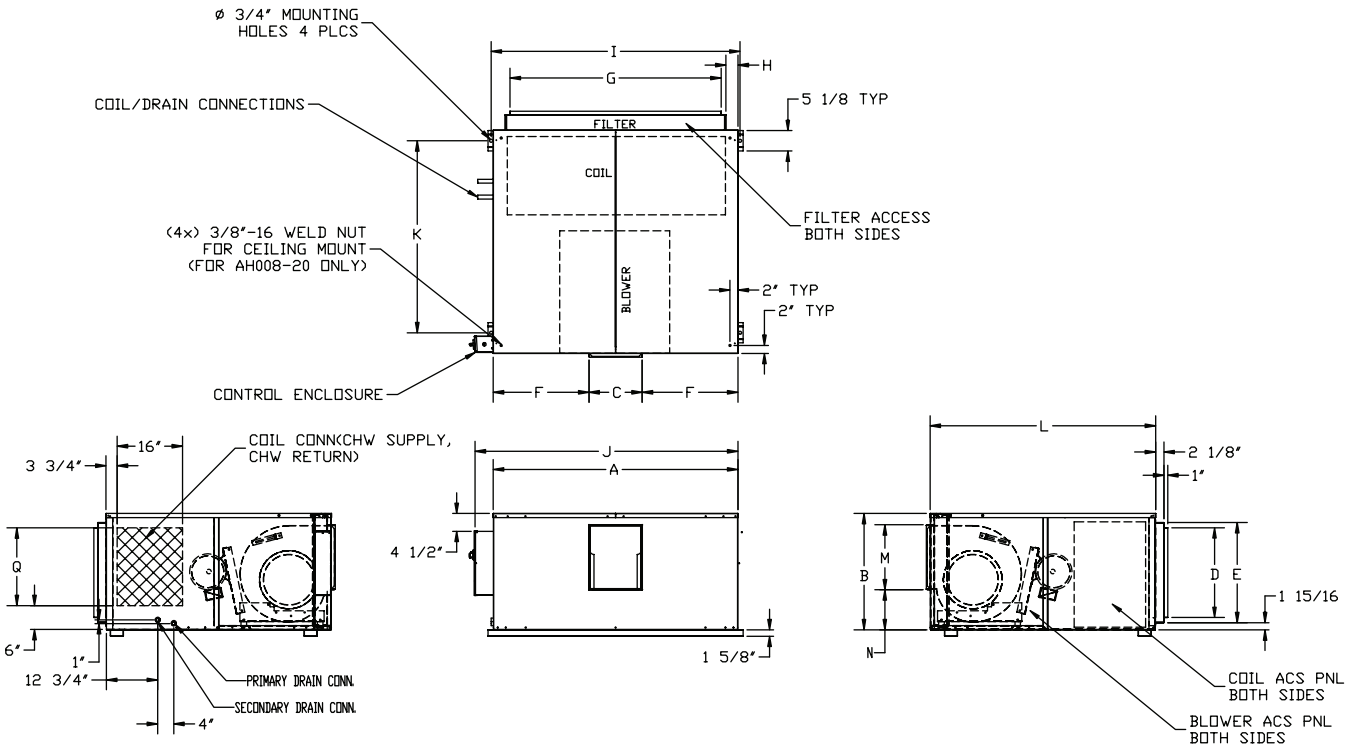
FAN CURVES

AH HORIZONTAL / AV VERTICAL FAN CURVES - SIZE 080 / 100 / 120



AH HORIZONTAL / AV VERTICAL SERIES

800 - 4,000 CFM



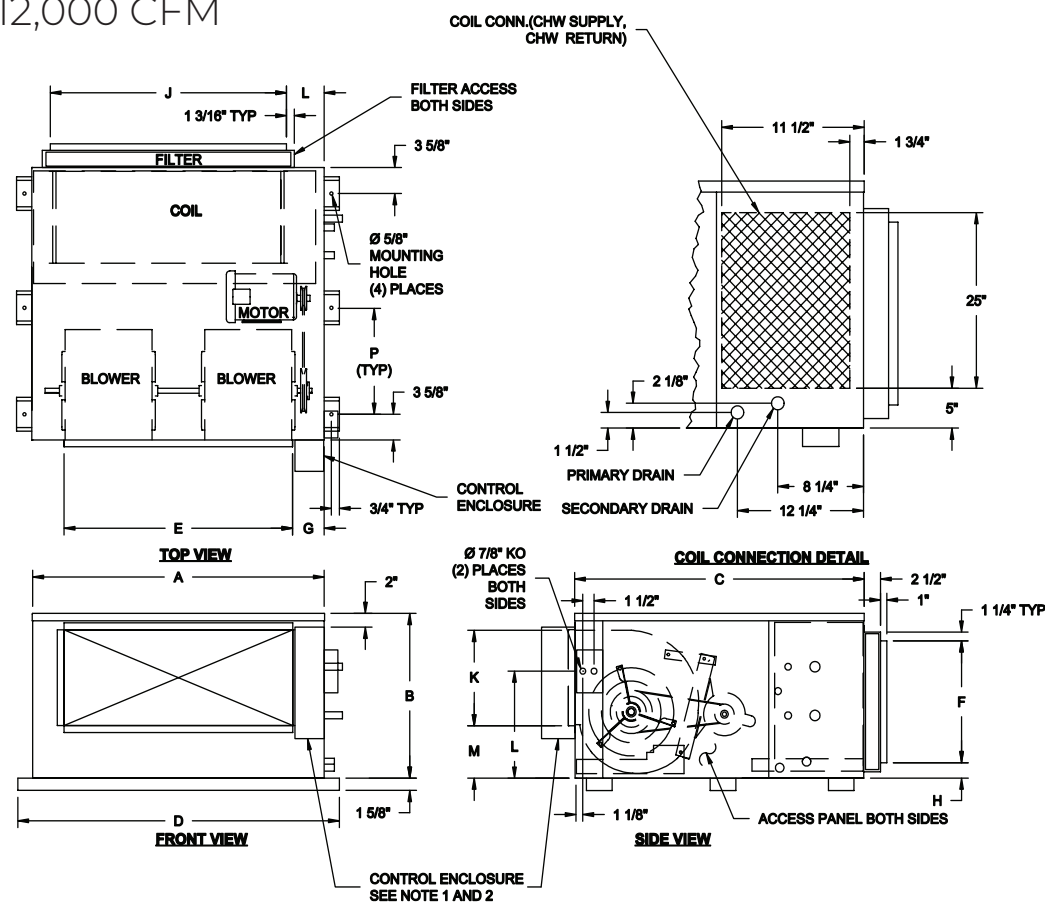
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	FILTER NO & SIZE
008	28-7/8	21-9/16	7-5/16	14-1/8	16-5/8	10-3/4	22-3/4	3-7/16	30-3/4	33-1/2	42-5/16	50-3/16	13	7	6-5/8	3-1/2	(1) 16x25x2
012	35	21-9/16	8-11/16	14-1/8	16-5/8	13-1/16	29-3/4	1-5/16	36-3/4	39-1/2	42-5/16	50-3/16	13	7	6-5/8	3-1/2	(2) 16x16x2
016	35	24-1/4	11	17-3/4	20-1/4	12	29-3/4	1-5/16	36-3/4	39-1/2	42-5/16	50-3/16	13	7	6-5/8	8-1/2	(2) 16x20x2
020	39	24-1/4	11	17-3/4	20-1/4	14	29-3/4	3-7/16	40-3/4	43-1/2	42-5/16	50-3/16	13	7	6-5/8	8-1/2	(2) 16x20x2
030	49	29-1/4	9-5/8	22-5/8	25	19-11/16	40-5/8	3	50	53-1/2	48-5/16	56-3/16	16-3/8	10	9-5/8	13-1/2	(2) 21x25x2
040	61	29-1/4	13-1/4	22-5/8	25	23-7/8	52-5/8	3	62	65-1/2	48-5/16	56-3/16	16-3/8	10	9-5/8	13-1/2	(2) 25x27x2

NOTE: All dimensions shown above are in inches.

- Control box size depends on control options selected; largest size 6" W x 19" H x 5" D.
- Optional disconnect switch will be mounted through the side of the control box.
- Mounting channels are optional on AH/AV008-020, mandatory on 3,000 +.
- Right hand unit shown, left hand unit optional.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Removable drain pan is powder coated epoxy with a 1/8" thick closed-cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are galvanized steel.
- Coil connections: range from 1/2" to 2-1/2".

AH HORIZONTAL / AV VERTICAL SERIES

5,000 - 12,000 CFM



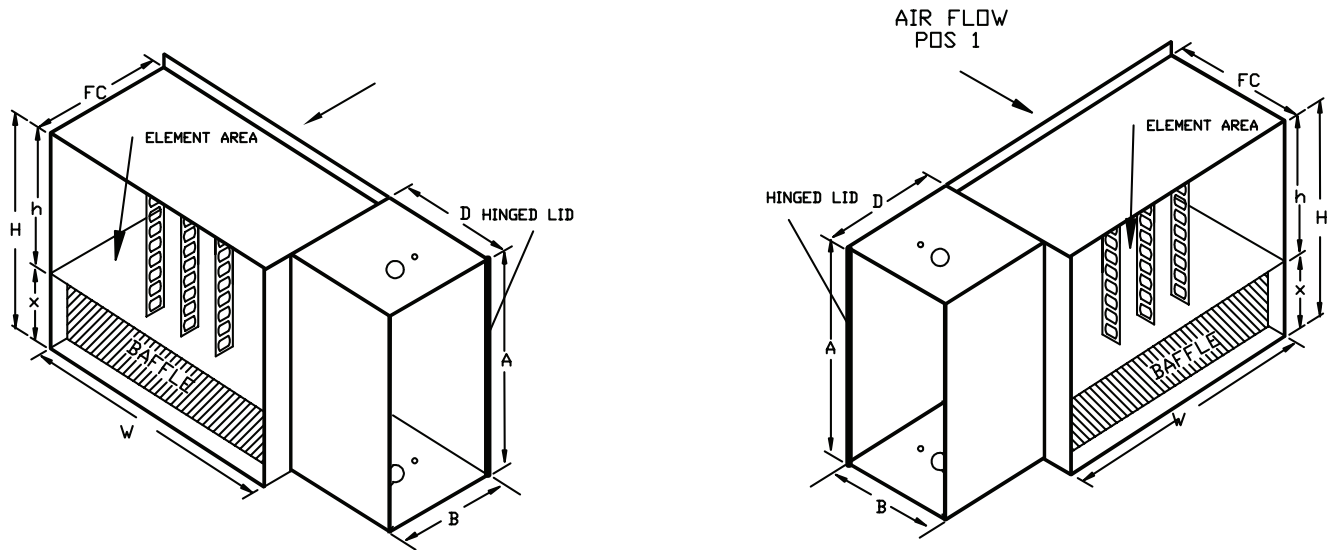
SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	FILTER NO & SIZE
050	71-1/8	27-7/8	45-1/4	74-1/2	44-7/8	22-1/2	10-1/8	2-1/4	62-3/16	13-7/8	8-1/4	7-1/2	20-3/8	19	(4) 16x25x2
060	85-1/8	27-7/8	45-1/4	88-1/2	54-7/8	22-1/2	12-1/8	2-1/4	75-1/4	16-1/4	6-3/4	7-7/8	20-3/8	19	(2) 25x25x2 (1) 25x27x2
080	85-1/8	35-1/4	45-1/4	88-1/2	54-7/8	29-7/8	12-1/8	2-1/4	76-3/4	16-1/4	6-3/4	9	27-5/8	19	(8) 16x20x2
100	105-3/8	35-1/4	45-1/4	108-1/2	54-7/8	30-1/2	20-3/8	2-1/4	93	16-1/4	42-5/16	9	27-5/8	19	(6) 16x25x2 (2) 16x20x2
120	116-3/8	35-1/4	45-1/4	120	54-7/8	30-1/2	30-3/4	2-1/4	104-1/2	16-1/4	48-5/16	9	27-5/8	24	(8) 16x20x2 (2) 16x25x2

NOTE: All dimensions shown above are in inches.

- Control box size depends on control options selected; largest size 5" W x 16" H x 4-1/2" D.
- Optional disconnect switch will be mounted through the side of the control enclosure.
- Left hand unit shown, right hand unit optional.
- Coil connections determined by facing the supply air opening.
- Electrical junction box is located on the same side as the coil connections.
- Unit must be installed level and condensate drain lines should be trapped.
- Removable drain pan is powder-coated epoxy with a 1/8" thick closed cell insulation and has 3/4" NPT primary and secondary drain connections.
- Entire cabinet, scroll and blower wheel are heavy gauge, galvanized steel.
- Coil connections: range from 1/2" to 1-1/4"

AH HORIZONTAL / AV VERTICAL SERIES

DUCT HEATER

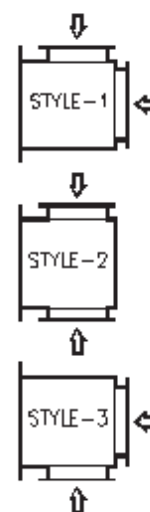
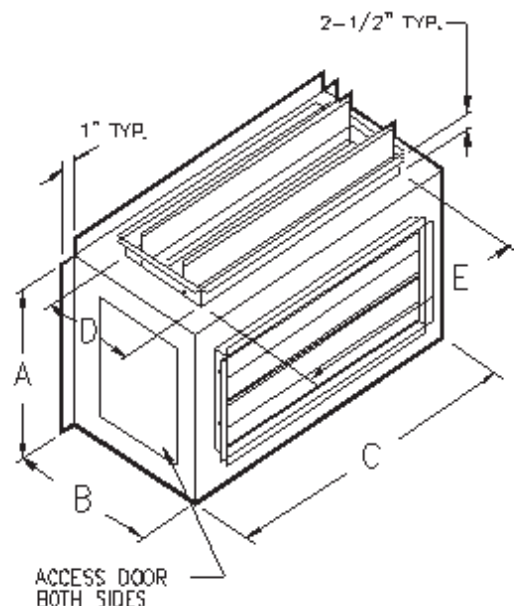


SIZE	A	B (MIN)	B (MAX)	FC	D (MIN)	D (MAX)	H	X	ENTER	
									W	H
008	15	17	23	B+1	4	4	13	4	8	9
012	15	17	22	B+1	4	4	13	4	9	9
016	15	17	25	B+1	4	4	13	4	11	9
020	15	17	25	B+1	4	4	13	4	11	9
030	19	15	25	B+1	4	6	17	4	10	13
040	19	15	25	B+1		6	17	4	14	13

NOTE: All dimensions shown above are in inches.

- Heater frame and control panel constructed of heavy gauge galvanized steel.
- Heating element is supported by ceramic insulators to expand and contract freely.
- Air flow switch (pressure), door interlocking disconnect switch and contractors.
- Control circuit transformer with fused circuits.
- Automatic reset thermal safety cutout.
- Replaceable manual reset thermal safety cutout as a secondary temperature limit control.

TWO POSITION ECONOMIZER



R. SIDE VIEW

MODEL AH/AV	MIXING BOX				
	A	B	C	D	E
008	17 1/2	18	18	12	14
012	17 1/2	18	23	12	18
016	17 1/2	18	29 11/16	12	24
020	17 1/2	18	29 11/16	12	24
030	22 9/16	18	37 11/16	14	32
040	22 9/16	22	49 3/16	18	45
050	22 9/16	22	62 3/16	18	58
060	22 9/16	22	72 11/16	18	68
080	29 9/16	22	76 11/16	18	72
100	30 9/16	22	103 1/16	18	99
120	30 9/16	22	104 3/4	18	99

- Heavy-gauge galvanized steel construction.
- Internally insulated with one-half inch, over three-pound density fiberglass.
- One-inch duct flange on damper openings.
- Dampers are centered in panel.
- Single, horizontal blade dampers with air seals on edge for positive closing, except double horizontal blade dampers.
- Furnished with crank arms and linkage rod for damper connection.
- Access doors on both sides.
- Connections may be made on either side (Linkage hardware motor and controls not included).
- Box attaches to return-air and outside-air duct flanges.
- Shipped separately for field installation.

GENERAL INFORMATION

Furnish and install Williams AH/AV Series Belt Drive Air Handler units as indicated on the plans and in the Installation, Operation Manual. All units shall be completely factory-assembled, tested and shipped as one working unit. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. Dimensions for each model and size shall be considered maximums. Units shall be ETL listed and also in compliance with UL/ANSI Standard 1995 (USA) CSA C22.2#236 (CA) and be certified as complying with the latest edition of AHRI Standard 430.

CONSTRUCTION

All unit chassis shall be fabricated of heavy gauge galvanized steel panels able to meet 1,500 hour salt spray test per ASTM B-117. All exterior panels shall be insulated with 1/2" thick, 1.5 pound per cubic foot, dual density fiberglass insulation rated for a maximum air velocity of 3600 f.p.m. Insulation shall conform to UL 181 for erosion and NFPA 90A and 90B for flame spread (25) and smoke developed (50) rating per ASTM E-84 and UL 723 and CAN./ULC, S102-M88.

All concealed units shall have a minimum 1" duct collar on the discharge.

All exposed units shall have exterior panels fabricated of cold-rolled steel.

OPTION: Provide foil faced insulation in lieu of standard. Foil insulation shall meet or exceed the requirements stated above, and in addition, meet ASTM Standards C665 and C-1136 for biological growth in insulation. Insulation shall be lined with aluminum foil, fiberglass scrim reinforcement, and 30 pound kraft paper laminated together with a flame resistant adhesive. All exposed edges shall be sealed to prevent any fibers from reaching the air stream.

OPTION: Provide elastomeric closed cell foam Insulation in lieu of standard. Insulation shall conform to UL 181 for erosion and NFPA 90A for fire, smoke and melting, and comply with a 25/50 Flame Spread and Smoke Developed Index per ASTM E-84 or UL 723. Additionally, insulation shall comply with Anti-microbial Performance Rating of zero, no observed growth, per ASTM G21. Polyethylene insulation is not acceptable.

PAINTED FINISH *(optional)*

All exposed cabinet exterior panels shall be provided with soft white powder coated epoxy finish.

COILS

All cooling and heating coils shall optimize rows and fins per inch to meet the specified capacity. Coils shall have seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and fin. Fins shall have high efficiency aluminum surface optimized for heat transfer, air pressure drop and carryover.

All coils shall be hydrostatically tested at 350 PSIG air pressure under water, and rated for a maximum of 300 PSIG working pressure at 180°F maximum water temperature. Direct expansion cooling coils shall include a fixed orifice distributor and nozzle.

Steam coils shall be standard steam type suitable for temperatures above 35°F and 15 PSIG maximum working pressure.

OPTION: Coil casing shall be fabricated from 304 stainless steel.

OPTION: Provide a manual air vent fitting to allow for coil venting.

OPTION: Provide a manual-water drain fitting for coil draining.

OPTION: Provide automatic air vents in lieu of manual air vents.

Cooling and heating coils shall be in the common coil casing, heating coils shall be furnished in the re-heat or preheat position on the unit with chilled water coils, and DX coil shall be in preheat position only.

DRAIN PANS

Primary condensate drain pans shall be single wall, heavy gauge, powder coated epoxy and extend under the entire cooling coil. Drain pans shall be of one piece construction and be positively sloped for condensate removal. Drain pans shall have primary and secondary drain connections.

The drain pan shall be externally insulated with a closed cell foam insulation. The insulation shall

GENERAL INFORMATION

carry no more than a 25/50 Flame Spread and Smoke Developed Rating per ASTM E-84 and UL 723 and fungi resistant per ASTM G21/C1338, bacteria resistant per ASTM G22 and mold growth per UL 181.

OPTION: Provide a single wall primary drain pan constructed entirely of heavy gauge type 304 stainless steel for superior corrosion resistance. Stainless steel drain pans shall be externally insulated and meet or exceed the requirements stated above.

FILTERS

All units shall be furnished with a two inch thick, flatly mounted with spring loaded clips on the side access door for easy maintenance without the use of tools.

OPTIONAL: washable filters.

ELECTRICAL

Units shall be furnished with single point power connection. Installer shall provide an electrical junction box with terminal strip for motor and other electrical terminations. Electrical junction box can be ordered separately.

OPTION: Electrical junction box with multiple position ¼" spade terminal block to facilitate wiring terminations for the electric control valves and thermostats.

OPTION: With Electric Heat, unit may be shipped loose or integrated.

OPTIONS: include fusing, disconnects, sensors and switches.

ELECTRIC HEAT

Electric Duct Heaters shall be open coil type. Voltage, KW, size, number of steps and accessories shall be as shown. Units shall be U.L. listed for zero clearance and meet all applicable requirements of the latest National Electric Code and A.N.S.I. standards.

Element temperatures shall not exceed 400°F below the melting point of the element alloy when energized with design voltage in still, free air at 75°F ambient. The resistance element is the heart of the heater and should be designed with the operating temperature of the element alloy as the

most important criterion. Because no air flow is likely to occur in at least some areas of the heater, this condition will be the basis for design for the entire element.

Frames shall be hot dipped galvanized after fabrication if spot welds are used. Spot welding must be coated after fabrication to prevent corrosion

Mounting assemblies for the element support insulators shall pass between the insulators permitting free expansion of the insulators under high temperature conditions without cracking or breaking.

The total load of a heater should be divided into steps of no more than 30 amps for good design practice, or less if finer control is required. Units greater than 50 kW shall be controlled by a system with a recycling feature that will not allow all steps to be energized simultaneously.

The recycling feature prevents all steps from being energized simultaneously on power interruptions, cold start, thermostat manipulation, or other abnormal situations. All accessories are furnished as an integral part of each unit. Integrated accessories include air pressure switch, door interlock disconnect switch and transformer.

PIPING PACKAGES *(OPTION)*

Provide a factory assembled valve piping package to consist of a 2 or 3 way valve body, on/off motorized electric control valve actuator and two isolation ball valves. Control valves are piped normally closed to the coil. Maximum entering water temperature on the control valve is 180°F, and maximum close off pressure is 75 PSIG (1/2") or 44 PSIG (3/4"). Maximum allowed pressure shall be 300 PSIG.

OPTION: Provide 3 wire floating point modulating control valve in lieu of standard 2 position control valve with factory assembled valve piping package

OPTION: Provide either a fixed or adjustable flow control device for each piping package.

OPTION: Provide pressure temperature ports for each piping package.

OPTION: Strainer for each package. Piping packages are shipped loose on all units and can be installed by request only.

NOTES



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