



YORK Technical Guide: JSE Series

Standard ECM Single Piece Upflow Air Handlers - 208/230
V - Single-Phase



York International Corporation, 5005 York
Drive, Norman, OK 73069

6564075-YTG-A-1124

Supersedes: Nothing

2024-11-18

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Description

The JSE single piece air handler series is for installation in upflow applications only. The JSE unit is a shorter cabinet version of the JHE series air handlers. These units may be located in a closet, utility room, attic, crawl space, or basement. These versatile models may be used for cooling or heat pump operation with or without electric heat. Top or side power and control wiring, color-coded leads for control wiring, and electric heaters all combine to make the installation easy and minimize installation cost. Electric heat kits are available as field-installed accessories. Single phase kits are available from 2.5 kW to 25 kW and 208/230 V three phase kits are available from 10 kW to 25 kW. An R-454B refrigerant detection system (RDS) is factory installed.

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Additional rating information can be found at www.ahridirectory.org.

This document is only for distribution use - it is not to be used at point of retail sale.

Certification



Assembled at a facility with
an ISO 9001:2015-certified
Quality Management
System

Features

Next generation high-efficiency blower

Delivers increased airflow and reduced blower watts by 10%, using a standard ECM motor.

Two-stage operation

Provides flexibility in application with single and two-stage outdoor equipment.

Next generation insulation and gasket design

Reduces thermal transmission paths and reduces sweating.

Nine speed standard ECM blower motor

Provides increased system compatibility.

Electric heat kit

8HK field-installed series available for easy installation and service application

Designed for easy installation and service

A casing size of 20.5 in., smooth sides, and rigid construction provide ease of attic access and tight applications. Front facing components, slide out blower, laser cut knock outs and integrated duct flanges shorten install time.

Cabinet air leakage

Less than 2% at 1 in. W.C. external static pressure when tested in accordance with ASHRAE Standard 193.

Long lasting quality

Structural components made of postpowder painted steel or galvanized steel to prevent corrosion.

A2L refrigerant ready

An R-454B refrigerant detection system (RDS) is factory installed.

Accessories

Refer to the *Price Manual* for specific model numbers.

Table 1: Accessories

Single source power accessory (three-phase)	
S1-32436041000	Contains a terminal block and wiring to connect service disconnects together

Electric heaters

8HK models shown under electrical data include sequential operation and temperature dual limit switches for safe, efficient operation. Service disconnects are provided where shown.

Breaker moisture seal accessory

A clear circuit breaker moisture barrier seals the breakers from humidity and dust. The flexibility of the clear cover allows circuit breakers to be turned ON or OFF without removing the cover. The cover firmly attaches to the access panel around the circuit breakers with the use of double backed adhesive tape. To ensure that moisture or dust does not contaminate circuit breakers, an S1-02435672000, circuit breaker, cover seal may be ordered.

Thermostat

Compatible thermostat controls are available through accessory sourcing. For optimum performance, these indoor units are fully compatible with our YORK touch screen thermostat with proprietary (patent-pending) hexagon interface. For more information, see the thermostat section of the Product Equipment Catalog.

Filter rack

Filtration can be installed external to the unit using an accessory filter rack kit. See the filter rack dimensions in [Figure 1](#).

Figure 1: Filter rack dimensions

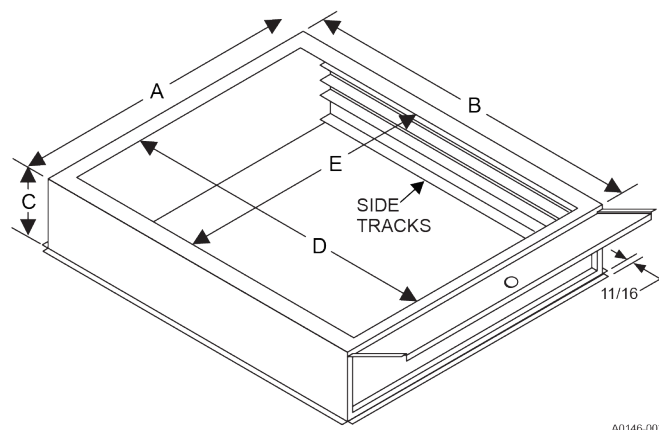


Table 2: Filter rack dimensions

Galvanised model	A	B	C	D	E	Filter size
1BR01117	17.5	21.56	4	18.63	14.25	16 x 20 x 1 or 2
1BR01121	21	21.56	4	18.63	17.75	20 x 20 x 1 or 2

Table 2: Filter rack dimensions

Galvanised model	A	B	C	D	E	Filter size
1BR01124	24.5	21.56	4	18.63	21.25	20 x 24 x 1 or 2
 Note: The filter is not supplied.						

Nomenclature

Table 3: Nomenclature for JSE air handler models

Number	Category	Option	Description
1	Product type	J	Air handler
2	Air handler type	H	One piece
		S	Shorter cabinet
3	Motor Type	E	Constant torque
		C	Constant CFM
		V	Variable speed ECM
4, 5	Nominal capacity	18	1.5 ton
		24	2.0 ton
		30	2.5 ton
		36	3.0 ton
		42	3.5 ton
		48	4.0 ton
		60	5.0 ton
6	Cabinet width	A	14.5 in.
		B	17.5 in.
		C	21.0 in.
		D	24.5 in.
		E	19.6 in.
		F	22.0 in.
7	Refrigerant	5	R454B
8	Metering Device	A-W	TXV
		1-9	EEV
		X	No valve
9	Slab Size	A	2R-14-18
		B	2R-16-18
		C	2R-20-18
		D	3R-20-14
		E	3R-22-14
		F	3R-24-12
		G	3R-28-12
		H	3R-32-12
		J	4R-28-12
10	Voltage (voltage-phase-hertz)	2	208/230-1-60
		3	208/230-3-60
		4	460-3-60
11	Control Strategy	C	Communicating
		B	Wireless (Communicating)
		S	Standard (Conventional)
		W	Wireless (Conventional)
12	Accessories	S	A2L sensor
		N	None (no sensor)
13	Generation (major revision)	1	First generation
		2	Second generation
		3	Third generation
		4	Fourth generation
14	Style letter (minor revision) not used for ordering	A	Style A
		B	Style B
		C	Style C
		D	Style D

Table 4: Model nomenclature example

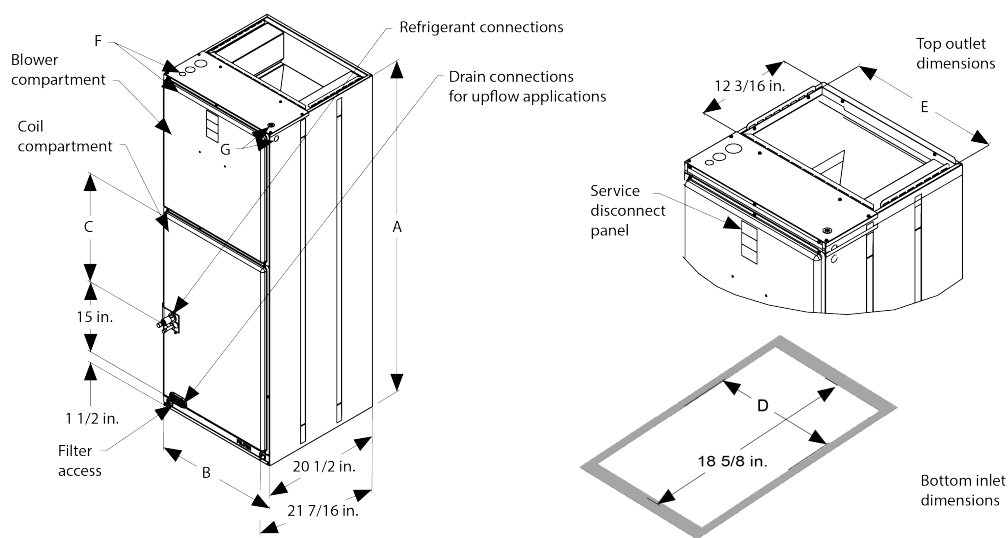
Number	1	2	3	4, 5	6	7	8	9	10	11	12	13	14
Option	J	S	E	48	C	5	C	G	2	S	S	1	A

Example:

The JSE48C5CG2SS1A is a shorter cabinet air handler using constant torque. It is a 4.0 ton model with a cabinet width of 21.0 in. It uses R-454B refrigerant, has a TXV, a slab size of 3R-28-12 and uses 208/230-1-60 voltage. This conventional air handler has an A2L sensor and is a first generation, Style-A model.

Dimensions

Figure 2: Dimensions and duct connection dimensions



A2223-001

Table 5: Dimensions

Model	Dimensions					Wiring knockouts (actual conduit size)		Refrigerant Connections Line Size	
	A	B	C	D	E	F	G	Liquid (in.)	Vapor (in.)
	Height (in.)	Width (in.)	Opening width (in.)			Power (in.)	Control (in.)		
JSE48C5*G2SS	57	21	21 3/4	20	20	7/8 (1/2)	7/8 (1/2)	3/8	3/4
JSE48D5*G2SS	56 3/4	24 1/2	21 3/4	23 1/2	23 1/2	1 3/8 (1)			
JSE60D5*J2SS	56 3/4	24 1/2	21 3/4	23 1/2	23 1/2	1 23/32 (1 1/4)			

Coil technical data

Table 6: Coil technical data

Model	Application	Refrigerant connection type	Face area (sq. ft.)	Rows deep	Fins per in.	Coil size	Tube geometry	Tube diameter	Fin type
JSE48C5CG2SS1	Cooling / heat pump	Sweat	6.6	3	12	(2) 28 x17	1 x 0.675	3/8	Lanced
JSE48D5CG2SS1	Cooling / heat pump	Sweat	6.6	3	12	(2) 28 x17	1 x 0.675	3/8	Lanced
JSE60D5CJ2SS1	Cooling / heat pump	Sweat	6.6	4	12	(2) 28 x17	1 x 0.675	3/8	Lanced

Cooling capacity

Table 7: Cooling capacity

Models	Rated CFM	Entering air dry bulb/wet bulb (°F)	MBH at evaporation temperature and corresponding R-454B pressure (°F/psig)			
			35/107.9	40/118.9	45/130.7	50/143.3
JSE48C5*G	1600	85/72	115.6	104.2	91.0	76.2
		80/67	94.9	82.8	67.4	54.3
		75/62	75.6	63.1	49.4	33.6
		70/57	57.9	45.1	32.1	24.8
JSE48D5*G	1600	85/72	115.6	104.2	91.0	76.2
		80/67	94.9	82.8	67.4	54.3
		75/62	75.6	63.1	49.4	33.6
		70/57	57.9	45.1	32.1	24.8
JSE60D5*J	1800	85/72	111.3	100.0	87.1	72.3
		80/67	91.5	79.6	66.3	51.3
		75/62	73.1	60.9	46.9	32.6
		70/57	56.1	43.0	32.5	25.0
Note: Actual capacity varies with the outdoor air conditioning unit or heat pump that is used with the system. See the Condensing Unit or the Heat Pump Technical Guide for total cooling capacity and sensible capacity. Airflow is calculated for each system tonnage.						

Physical and electrical data

Table 8: Physical and electrical data - cooling only

Model		JSE48C5*G	JSE48D5*G	JSE60D5*J
Blower - diameter x width		11 x 10	11 x 11	11 x 11
Motor	HP	3/4 HP	3/4 HP	3/4 HP
	Nominal RPM	1050	1050	1050
Voltage		208/230	208/230	208/230
Full load amps at 230 V		6.8	6.8	6.8
Filter	Type	Disposable or cleanable		
	Size	20 x 20 x 1	23 x 20 x 1	23 x 20 x 1
Shipping weight / Operating weight (lb.)		129/126	135/132	142/139
① Note: The filter is field supplied.				

Electrical data - cooling only

Table 9: Electrical data - cooling only

Model	Motor full load amps	Minimum circuit ampacity	MOP
JSE48C5*G/JSE48D5*G/JSE60D5*J	6.8	8.5	15
① Note: MOP stands for maximum overcurrent protection device. It must be a HACR type circuit breaker or a time delay fuse. Refer to the latest edition of the National Electric Code, or in Canada the Canadian electrical Code and local codes to determine correct wire sizing.			

Electrical heat - minimum fan speed

Table 10: Electrical heat - minimum fan speed

Heater Kit Models	Nom. kW at 240V	Air Handler Models		
		JSE48C5*G	JSE48D5*G	JSE60D5*J
8HK(0,1)6500206	2.4kW	5	6	5
8HK(0,1)6500506	4.8kW	5	6	5
8HK(0,1)6500806	7.7kW	6	7	5
8HK(0,1)6501006 8HK06501025	9.6kW	6	7	5
8HK(1,2)6501506 8HK06501525	14.4kW	6	7	7
8HK(1,2)6502006 8HK16502025	19.2kW	8	7	7
8HK(1,2)6502506 8HK16502525	24kW	—	—	7
Note: (0,1) 0 = No service disconnect. 1 = with service disconnect. (1,2) 1 = with service disconnect, no breaker jumper bar. 2 = with service disconnect and breaker jumper bar.				

Application limitations

Adhere to the following:

- These units must be installed in accordance with all national and local safety codes.
- Airflow must be within the minimum and maximum limits approved for electric heat, indoor coils, and outdoor units.

Table 11: Voltage limits

Air handler voltage	Normal operating voltage range
208/230-1-60	187-253
Note: Normal operating voltage range is rated in accordance with ARI standard 110, utilization range A.	

Table 12: Application factors - rated CFM versus actual CFM

Percentage of rated airflow (CFM)	80	90	100	110	120
Capacity factor	0.96	0.98	1	1.02	1.03

Table 13: kW and MBH conversions for total power input requirement

Distribution power (V)	Nominal voltage (V)	Conversion factor
208	240	0.75
220	240	0.84
230	240	0.92

- Note:** For a power distribution voltage that is different than the provided nominal voltage, multiply the kW and MBH data from the table by the conversion factor in [Table 14](#).

Electric heat performance data

Table 14: Electric heat performance data: 208/230-1-60 and 208/230-3-60

Heater model		Nominal kW at 240 V	Total heat				kW staging			
			kW		MBH		W1 only		W1 and W2	
			208 V	230 V	208 V	230 V	208 V	230 V	208 V	230 V
Single phase	8HK(0,1)6500206	2.4	1.8	2.2	6.2	7.5	1.8	2.2	1.8	2.2
	8HK(0,1)6500506	4.8	3.6	4.4	12.3	15	3.6	4.4	3.6	4.4
	8HK(0,1)6500806	7.7	5.8	7.1	19.7	24.1	5.8	7.1	5.8	7.1
	8HK(0,1)6501006	9.6	7.2	8.8	24.6	30.1	7.2	8.8	7.2	8.8
	8HK(1,2)6501506	14.4	10.8	13.2	36.9	45.1	3.6	4.4	10.8	13.2
	8HK(1,2)6502006	19.2	14.4	17.6	49.2	60.2	7.2	8.8	14.4	17.6
	8HK(1,2)6502506	24	18	22	61.5	75.2	7.2	8.8	18	22
Three phase	8HK06501025	9.6	7.2	8.8	24.6	30.1	7.2	8.8	7.2	8.8
	8HK06501525	14.4	10.8	13.2	36.9	45.1	10.8	13.2	10.8	13.2
	8HK16502025	19.2	14.4	17.6	49.2	60.2	7.2	8.8	14.4	17.6
	8HK16502525	24	18	22	61.5	75.2	9	11	18	22
Note: (0,1) 0 = No service disconnect. 1 = with service disconnect. (1,2) 1 = with service disconnect, no breaker jumper bar. 2 = with service disconnect and breaker jumper bar. - For different power distributions, see Table 13.										

Electrical data for single source power supply, 208/230-1-60

Table 15: Electrical data for single source power supply: 208/230-1-60

Air handler model	Heater model	Heater amps (A) at 240 V	Field wiring			
			Minimum circuit ampacity (A)		MOP (A)	
			208 V	230 V	208 V	230 V
JSE48C5*G	8HK(0,1)6500206	10.0	19.3	20.5	20.0	25.0
	8HK(0,1)6500506	20.0	30.1	32.4	35.0	35.0
	8HK(0,1)6500806	32.1	43.4	47.1	45.0	50.0
	8HK(0,1)6501006	40.0	51.8	56.3	60.0	60.0
	8HK(1,2)6501506	60.0	73.4	80.2	80.0	90.0
	8HK(1,2)6502006	80.0	95.0	104.2	100.0	110.0
JSE48D5*G	8HK(0,1)6500206	10.0	19.3	20.5	20.0	25.0
	8HK(0,1)6500506	20.0	30.1	32.4	35.0	35.0
	8HK(0,1)6500806	32.1	43.4	47.1	45.0	50.0
	8HK(0,1)6501006	40.0	51.8	56.3	60.0	60.0
	8HK(1,2)6501506	60.0	73.4	80.2	80.0	90.0
	8HK(1,2)6502006	80.0	95.0	104.2	100.0	110.0
JSE60D5*J	8HK(0,1)6500206	10.0	19.3	20.5	20.0	25.0
	8HK(0,1)6500506	20.0	30.1	32.4	35.0	35.0
	8HK(0,1)6500806	32.1	43.4	47.1	45.0	50.0
	8HK(0,1)6501006	40.0	51.8	56.3	60.0	60.0
	8HK(1,2)6501506	60.0	73.4	80.2	80.0	90.0
	8HK(1,2)6502006	80.0	95.0	104.2	100.0	110.0
 Note: (0,1) 0 = No service disconnect. 1 = with service disconnect. (1,2) 1 = with service disconnect, no breaker jumper bar. 2 = with service disconnect and breaker jumper bar. - MOP = Maximum Overcurrent Protection device; must be HACR type circuit breaker or time delay fuse. Refer to the latest edition of the National Electric Code or in Canada the Canadian electrical Code and local codes to determine correct wire sizing.						

Electrical data for multi-source power supply, 208/230-1-60

Table 16: Electrical data for multi-source power supply: 208/230-1-60

Air handler model	Heater model	Heater amps (A) at 240 V	Minimum circuit ampacity (A)						MOP (A)					
			208 V			230 V			208 V			230 V		
			Circuit						Circuit					
			First	Second	Third	First	Second	Third	First	Second	Third	First	Second	Third
JSE48C5*G	8HK16501506	60	29.9	43.5	—	32.2	48.1	—	30	45	—	35	50	—
	8HK16502006	80	51.8	43.3	—	56.3	47.8	—	60	45	—	60	50	—
JSE48D5*G	8HK16501506	60	29.9	43.5	—	32.2	48.1	—	30	45	—	35	50	—
	8HK16502006	80	51.8	43.3	—	56.3	47.8	—	60	45	—	60	50	—
JSE60D5*J	8HK16501506	60	29.9	43.5	—	32.2	48.1	—	30	45	—	35	50	—
	8HK16502006	80	51.8	43.3	—	56.3	47.8	—	60	45	—	60	50	—
	8HK16502506	100	51.8	43.3	21.6	56.3	47.8	23.9	60	45	25	60	50	25

Electrical data for single source power supply, 208/230-3-60

Table 17: Electrical data for single source power supply: 208/230-3-60

Air handler model	Heater model	Heater amps (A) at 240 V	Field wiring			
			Minimum circuit ampacity (A)		MOP (A)	
			208 V	230 V	208 V	230 V
JSE48C5*G	8HK06501025	23.1	33.5	36.1	35.0	40.0
	8HK06501525	34.6	46.0	49.9	50.0	50.0
	8HK16502025	46.2	58.5	63.7	60.0	70.0
JSE48D5*G	8HK06501025	23.1	33.5	36.1	35.0	40.0
	8HK06501525	34.6	46.0	49.9	50.0	50.0
	8HK16502025	46.2	58.5	63.7	60.0	70.0
JSE60D5*J	8HK06501025	23.1	33.5	36.1	35.0	40.0
	8HK06501525	34.6	46.0	49.9	50.0	50.0
	8HK16502025	46.2	58.5	63.7	60.0	70.0
	8HK16502525	57.7	71.0	77.5	80.0	80.0
① Note: - MOP = Maximum Overcurrent Protection device; must be HACR type circuit breaker or time delay fuse. Refer to the latest edition of the National Electric Code or in Canada the Canadian electrical Code and local codes to determine correct wire sizing. 0 = No service disconnect. 1 = with service disconnect. The 20 kW and 25 kW heater models (8HK16502025 and 8HK16502525) come with circuit breakers standard. Single source power MCA and MOP requirements are given here only for reference if used with field installed single point power modification.						

Electrical data for multi-source power supply, 208/230-3-60

Table 18: Electrical data for multi-source power supply: 208/230-3-60

Air handlers model	Heater model	Heater amps (A) at 240 V	Minimum circuit ampacity (A)				MOP(A)			
			208 V		230 V		208 V		230 V	
			Circuit				Circuit			
			First	Second	First	Second	First	Second	First	Second
JSE48C5*G	8HK16502025	46.2	33.5	25.0	36.1	27.6	35.0	25.0	40.0	30.0
JSE48D5*G	8HK16502025	46.2	33.5	25.0	36.1	27.6	35.0	25.0	40.0	30.0
JSE60D5*J	8HK16502025	46.2	33.5	25.0	36.1	27.6	35.0	25.0	40.0	30.0
	8HK16502525	57.7	39.7	31.2	43.0	34.5	40.0	35.0	45.0	35.0
Note: The 20kW and 25kW heater models (8HK16502025 and 8HK16502525) come with circuit breakers standard. MOP = Maximum Overcurrent Protection device; must be HACR type circuit breaker or time delay fuse. Refer to the latest edition of the National Electric Code or in Canada the Canadian electrical Code and local codes to determine correct wire sizing.										

Airflow data

Table 19: Airflow data (CFM per watts)

Model	Blower motor speed	Unit	External static pressure (in. W.C.)									
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
JSE48C5*G	#9	CFM	1925	1900	1875	1850	1825	1800	1750	1725	1700	1675
		WATTS	626	638	650	662	674	686	698	710	722	734
	#8	CFM	1750	1725	1700	1650	1625	1600	1575	1550	1525	1475
		WATTS	464	476	488	500	513	525	537	550	562	574
	#7	CFM	1500	1475	1425	1400	1350	1325	1300	1250	1225	1175
		WATTS	299	309	320	330	341	351	361	372	382	393
	#6	CFM	1400	1375	1325	1300	1250	1225	1175	1150	1100	1050
		WATTS	248	258	268	277	287	297	306	316	326	335
	#5	CFM	1225	1175	1125	1075	1025	975	925	900	850	800
		WATTS	167	175	183	192	200	208	217	225	233	242
	#4	CFM	975	900	850	800	750	700	625	575	525	475
		WATTS	97	104	110	117	123	130	137	143	150	156
	#3	CFM	725	650	575	500	425	350	275	225	150	—
		WATTS	52	57	62	67	72	77	81	86	91	—
	#2	CFM	625	550	475	400	325	225	150	—	—	—
		WATTS	42	46	51	56	60	65	70	—	—	—
	#1	CFM	475	375	275	175	75	—	—	—	—	—
		WATTS	27	31	35	39	43	—	—	—	—	—
JSE48D5*G	#9	CFM	2075	2050	2025	1975	1950	1925	1900	1850	1825	1800
		WATTS	567	582	597	612	627	642	658	673	688	703
	#8	CFM	1875	1850	1800	1775	1750	1700	1675	1650	1600	1575
		WATTS	421	435	449	462	476	490	503	517	531	544
	#7	CFM	1675	1625	1600	1550	1500	1475	1425	1375	1350	1300
		WATTS	297	309	321	333	346	358	370	383	395	407
	#6	CFM	1300	1250	1200	1150	1075	1025	975	925	850	800
		WATTS	153	163	172	182	192	201	211	221	230	240
	#5	CFM	1150	1100	1025	975	900	850	775	725	675	600
		WATTS	115	124	132	141	150	158	167	175	184	192
	#4	CFM	950	875	825	750	675	600	525	475	400	325
		WATTS	78	85	92	99	105	112	119	126	133	140
	#3	CFM	850	775	700	625	550	475	400	325	250	—
		WATTS	63	69	75	82	88	94	101	107	113	—
	#2	CFM	725	650	550	450	375	275	175	100	—	—
		WATTS	46	51	56	62	67	72	78	83	—	—
	#1	CFM	650	550	450	350	250	150	50	—	—	—
		WATTS	37	43	49	53	58	61	64	—	—	—
JSE60D5*J	#9	CFM	2150	2125	2100	2075	2050	2025	1975	1925	1900	1850
		WATTS	698	710	722	734	746	758	769	781	793	805
	#8	CFM	2000	1975	1925	1900	1875	1850	1800	1775	1750	1700
		WATTS	514	529	544	559	574	589	603	618	633	648
	#7	CFM	1800	1775	1750	1700	1675	1625	1600	1550	1525	1500
		WATTS	390	404	417	431	445	458	472	486	499	513
	#6	CFM	1575	1525	1475	1425	1375	1350	1300	1250	1200	1150
		WATTS	255	267	278	290	302	313	325	337	348	360
	#5	CFM	1400	1325	1275	1225	1175	1125	1075	1025	975	925
		WATTS	185	196	206	217	227	238	248	259	269	279
	#4	CFM	1250	1200	1125	1075	1025	950	900	850	775	725
		WATTS	145	154	163	172	180	189	198	206	215	224
	#3	CFM	900	825	775	700	625	550	475	400	325	—
		WATTS	73	79	85	92	98	105	111	118	124	—
	#2	CFM	700	625	550	450	375	275	200	—	—	—
		WATTS	46	51	57	62	68	73	78	—	—	—
	#1	CFM	625	525	450	350	250	175	—	—	—	—
		WATTS	39	43	48	53	57	62	—	—	—	—

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