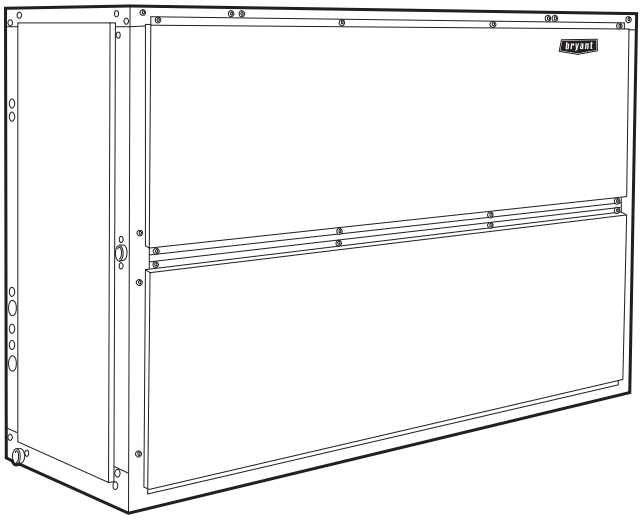
524J
PACKAGED AIR-HANDLING UNITS
WITH PURON® REFRIGERANT
SIZES 07, 08, 12, 14, 16

Product Data



C09311

524J07 – 12



C09312

524J14, 16

Puron™
the environmentally sound refrigerant

Bryant's versatile packaged air-handling units satisfy design requirements with:

- Multi-position design for horizontal or vertical installation without modification.
- Standard sloped drain pans and cleanable insulation treated with Environmental Protection Agency (EPA) registered antimicrobial agent improve indoor air quality.
- High-static design meets a wider range of applications than competitive packaged air handler lines.
- Economizer accessory provides ventilation air and "free" cooling.
- Cooling coils with mechanically bonded fins provide peak heat transfer.
- Hot water coil, steam coil, and electric heat accessories are available.
- Standard factory-installed thermo-static expansion valve (TXV) with removable power element on 524J units.
- Die-formed galvanized steel casings provide durability and structural integrity. Optional paint is available.

FEATURES/BENEFITS

Easy-to-install and economical 524J units provide reliable service.

The 524J Series air-handling units are the best choice for packaged air handlers. Model 524J units have direct-expansion coils. All models offer excellent fan performance, a unique combination of indoor air quality features, easy installation, and affordable prices. Their versatility and state-of-the-art features will provide economical performance now and in the future.

Indoor air quality features

The unique combination of features in the 524J Series air handlers ensures that clean, fresh, conditioned air is delivered to the occupied space.

Cooling coils prevent the build-up of humidity in the room, even during part-load conditions. Unit sizes of 10 tons and above feature dual-circuit face-split coils.

Two-in. (51-mm) disposable filters remove dust and airborne particles from the occupied space.

Thermal insulation contains an immobilized anti-microbial agent to inhibit the growth of bacteria and fungi. The anti-microbial agent is registered with the U.S. Environmental Protection Agency (EPA).

Pitched drain pan can be adjusted for a right-hand or left-hand connection to provide positive drainage and prevent standing condensate.

Accessory economizer can provide ventilation air to improve indoor air quality. When used with CO_2 sensors, the economizer admits fresh outdoor air to replace stale, recirculated indoor air.

Economy

The 524J Series packaged air handlers have low initial costs, and they continue to save money by providing reduced installation expense and energy-efficient performance.

Quick installation is ensured by the multi-position design. Units can be installed in either the horizontal or vertical (upflow) configuration without modifications. All units have drain-pan connections on both sides, and pans can be pitched for right-hand or left hand operation with a simple adjustment.

Fan motors and contactors are pre-wired and TXVs are factory-installed on 524J models.

High-efficiency, precision balanced fans minimize air turbulence, surging, and unbalanced operation, thereby cutting operating expenses.

Economizer accessory precisely controls the blend of outdoor air and room air to achieve comfort levels. When the outside air enthalpy is suitable, outside air dampers can fully open to provide “free” cooling.

Rugged dependability

Die-formed galvanized steel panels ensure structural integrity under all operating conditions. Mechanically bonded coil fins provide improved heat transfer. Galvanized steel fan housings are securely mounted to a die-formed galvanized steel deck.

Rugged pillow-block bearings (14 and 16 size) are securely fastened to the solid steel fan shaft with split collets and clamp locking devices. Smaller unit sizes have spider-type bearings.

Coil flexibility

Model 524J air handling units have galvanized steel casings; inlet and outlet connections are on the same end.

Direct expansion (DX) coils are designed for use with Puron® R-410A refrigerant and have copper tubes mechanically bonded to aluminum sine-wave fins.

Direct-expansion coils include matched, factory-installed thermostatic expansion valves (TXVs) with matching distributor nozzles.

Easier installation and service

The multi-position design and component layout allow for quick unit installation and operation. The DX coils have factory-installed TXVs with matching distributor nozzles. Units can be converted from horizontal to vertical operation by simply repositioning the unit.

Drain pan connections are duplicated on both sides of the unit. The filters, motor, drive, TXVs, and coil connections are easily accessed by removing a single side panel.

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MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5	2	4	J	E	1	4	A	0	0	0	A	1	0	A	0	A	–

Model Type
524J = Bryant Fan Coil
Puron® R–410A Refrigerant

Voltage
E = 460/3/60
J = 208/230/1/60 (07 and 08 Only)
P = 208/230/3/60 (Size 16 and Indoor Fan 3)
T = 575/3/60

Nominal Tonnage
07 = 6 Tons
08 = 7.5 Tons
12 = 10 Tons
14 = 12.5 Tons
16 = 15 Tons

Type of Coil
A = Standard DX Coil

Factory Assigned
0 = Default

Factory Assigned
0 = Default

Factory Assigned
0 = Default

Coil Options
A = Al/Cu (aluminum fin/copper tube)

Indoor Fan Options
1 = Standard Motor/Drive
2 = Standard Motor/Medium Static Drive
3 = High Static Motor/Drive

Factory Assigned
0 = Default

Paint Options
A = None
B = Painted Coil

Factory Assigned
0 = Default

Factory Assigned
A = Standard

Design Rev
– = Default

ENERGY STAR PARTNER

Puron™
the environmentally sound refrigerant

PHYSICAL DATA

524J – English

UNIT 524J	07	08	12	14	16
NOMINAL CAPACITY (Tons)	6	7.5	10	12.5	15
OPERATING WEIGHT (lb)					
Base Unit with TXV (4 Row)	399	404	425	695	713
Plenum	175	175	175	225	225
Economizer	185	185	185	340	340
Hot Water Coil	195	195	195	285	285
Steam Coil	215	215	215	340	340
FANS					
Qty...Diam. (in.)	1...15	1...15	1...15	2...15	2...15
Nominal Airflow (cfm)	2400	3000	4000	5000	6000
Airflow Range (cfm)	1800–3000	2250–3750	3000–5000	3750–6250	4500–7500
Nominal Motor Hp (Standard Motor)					
208/230–1–60	1.3	1.3	—	—	–
208/230–3–60 and 460–3–60	2.4	2.4	2.4	2.9	3.7
575–3–60	1.0	2.0	2.0	3.0	3.0
230–3–50 and 400–3–50	2.4	2.4	2.9	2.9	2.9
Motor Speed (rpm)					
208/230–1–60	1725	1725	—	—	—
208/230–3–60 and 460–3–60	1725	1725	1725	1725	1725
575–3–60	1725	1725	1725	1725	1725
230–3–50, 400–3–50			1425		
Nominal Motor Hp (High Static Motor)					
208/230–1–60	2.4	2.4	—	—	–
208/230–3–60	2.9	2.9	3.7	3.7	5.0
460–3–60	2.9	2.9	2.9	3.7	3.7
575–3–60	2.0	3.0	3.0	5.0	5.0
230–3–50 and 400–3–50	n/a	2.9	5.0	5.0	5.0
Motor Speed (rpm)					
208/230–1–60	1725	1725	—	—	—
208/230–3–60 and 460–3–60	1725	1725	1725	1725	1725
575–3–60	1725	1725	1725	1725	1745
230–3–50, 400–3–50			1425		
REFRIGERANT			Puron R–410A		
Operating charge (lb) (approx per circuit)*	3.0	3.0	1.5/1.5	2.0/2.0	2.5/2.5
DIRECT–EXPANSION COIL			Enhanced Copper Tubes, Aluminum Sine–Wave Fins		
Max Working Pressure (psig)			435		
Face Area (sq ft)	6.67	8.33	10.01	13.25	17.67
Rows			4		
No. of Circuits	1	1	2	2	2
Split Type...Percentage	—	—		Face...50/50	
No. of Circuits per Split	12	15	9	12	16
Fins/in.	15	15	17	15	15
STEAM COIL					
Max Working Pressure (psig at 260 F)			20		
Total Face Area (sq ft)	6.67	6.67	6.67	13.33	13.33
Rows...Fins/in.	1...9	1...9	1...9	1...10	1...10
HOT WATER COIL					
Max Working Pressure (psig)			150		
Total Face Area (sq ft)	6.67	6.67	6.67	13.33	13.33
Rows...Fins/in.	2...8.5	2...8.5	2...8.5	2...8.5	2...8.5
Water Volume					
(gal)		8.3		13.9	
(ft^3)		1.1		1.85	
PIPING CONNECTIONS					
Quantity...Size (in.)					
DX Coil — Suction (ODF)	1...1 1/8	1...1 1/8	2...1 1/8	2...1 1/8	2...1 1/8
DX Coil — Liquid Refrigerant (ODF)		1...5/8		2...5/8	
Steam Coil, In (MPT)		1...2 1/2		1...2 1/2	
Steam Coil, Out (MPT)		1...1 1/2		1...1 1/2	
Hot Water Coil, In (MPT)		1...1 1/2	1...1 1/2	1...2	
Hot Water Coil, Out (MPT)		1...1 1/2	1...1 1/2	1...2	
Condensate (PVC)			1...1 1/4 ODM/1 IDF		
FILTERS			Throwaway — Factory–Supplied		
Quantity...Size (in.)		4...16 x 24 x 2		4...16 x 20 x 2 4...16 x 24 x 2	
Access Location			Right or Left Side		

* Units are shipped without refrigerant charge.

PHYSICAL DATA (cont.)

524J – SI

UNIT 524J	07	08	12	14	16
NOMINAL CAPACITY (kW)	21	26	35	43	52
OPERATING WEIGHT (kg)					
Base Unit with TXV (4 Row)	181	183	193	315	323
Plenum	80	80	80	102	102
Economizer	84	84	84	155	155
Hot Water Coil	89	89	89	130	130
Steam Coil	98	98	98	155	155
FANS					
Qty...Diam. (mm)	1...381	1...381	1...381	2...381	2...381
Nominal Airflow (L/s)	1133	1604	1888	2360	2831
Airflow Range (L/s)	850–1416	1203–2006	1416–2360	1770–2949	2124–3539
Nominal Motor kW (Standard Motor)					
208/230–1–60	0.97	0.97	—	—	–
208/230–3–60 and 460–3–60	1.79	1.79	1.79	2.16	2.76
575–3–60	0.75	1.49	1.49	2.24	2.24
Motor Speed (rpm)					
208/230–1–60	28.8	28.8	—	—	—
208/230–3–60 and 460–3–60	28.8	28.8	28.8	28.8	28.8
575–3–60	28.8	28.8	28.8	28.8	28.8
Nominal Motor Hp (High Static Motor)					
208/230–1–60	1.79	1.79	—	—	–
208/230–3–60	2.16	2.16	2.76	2.76	3.73
460–3–60	2.16	2.16	2.16	2.76	2.76
575–3–60	1.49	2.24	2.24	3.73	3.73
Motor Speed (rpm)					
208/230–1–60	28.8	28.8	—	—	—
208/230–3–60 and 460–3–60	28.8	28.8	28.8	28.8	28.8
575–3–60	28.8	28.8	28.8	28.8	28.8
REFRIGERANT	Puron R–410A				
Operating charge (kg) (approx per circuit)*	1.36	1.36	0.68/0.68	0.90/0.90	1.13/1.13
DIRECT–EXPANSION COIL	Enhanced Copper Tubes, Aluminum Sine–Wave Fins				
Max Working Pressure (kPag)	2999				
Face Area (sq m)	0.62	0.77	0.93	1.23	1.64
Rows	4				
No. of Splits	1	1	2	2	2
No. of Circuits per Split	12	15	9	12	16
Split Type...Percentage	—	—	Face...50/50		
Fins/m	591	591	670	591	591
STEAM COIL					
Max Working Pressure (kPag at 126 C)	138				
Total Face Area (sq m)	0.62	0.62	0.62	1.24	1.24
Rows...Fins/m	1...355	1...355	1...355	1...394	1...394
HOT WATER COIL					
Max Working Pressure (kPag)	1034				
Total Face Area (sq m)	0.62	0.62	0.62	1.24	1.24
Rows...Fins/m	2...335	2...335	2...335	2...335	2...335
Water Volume					
(L)	31.4			52.6	
(m^3)	0.031			0.052	
PIPING CONNECTIONS**					
Quantity...Size (in.)					
DX Coil — Suction (ODF)	1...1 1/8	1...1 1/8	2...1 1/8	2...1 1/8	2...1 1/8
DX Coil — Liquid Refrigerant (ODF)	1...5/8			2...5/8	
Steam Coil, In (MPT)	1...2 1/2			1...2 1/2	
Steam Coil, Out (MPT)	1...1 1/2			1...1 1/2	
Hot Water Coil, In (MPT)	1...1 1/2		1...1 1/2	1...2	
Hot Water Coil, Out (MPT)	1...1 1/2		1...1 1/2	1...2	
Condensate (PVC)	1...1 1/4 ODM/1 IDF				
FILTERS	Throwaway — Factory–Supplied				
Quantity...Size (mm)	4...406 x 610 x 51			4...406 x 508 x 51 4...406 x 610 x 51	
Access Location	Right or Left Side				

* Units are shipped without refrigerant charge.

** All piping sizes are OD inches; equivalent sizes in millimeters follow:

in	mm
5/8	15.9
1 1/8	28.6
1 1/2	38.7
2	50.8
2 1/2	63.5

524J

OPTIONS AND ACCESSORIES

ITEM	OPTION*	ACCESSORY†
Alternate Fan Motors	X	
Alternate Drives	X	
CO_2 Sensors		X
Condensate Drain Trap		X
Discharge Plenum		X
Economizer		X
Electric Heat		X
Hot Water Heating Coils		X
Overhead Suspension Package		X
Prepainted Units	X	
Programmable Thermostats		X
Return Air Grille		X
Steam Heating Coil		X
Subbase		X

* Factory–installed option.
† Field–installed accessory

Factory-installed options

Alternate fan motors and drives are available to provide the widest possible range of performance.

Prepainted steel units are available from the factory for applications that require painted units. Units are painted with American Sterling Gray color.

Field-installed accessories

Two-row hot water coils have copper tubes mechanically bonded to aluminum plate fins and non-ferrous headers.

One-row steam coil has copper tubes and aluminum fins. The Inner Distributing Tube (IDT) design provides uniform temperatures across the coil face. The steam coil has a broad operating pressure range; up to 20 psi (138 kPag) at 260°F (126°C). The IDT steam coils are especially suited to applications where sub-freezing air enters the unit.

Electric resistance heat coils have an open-wire design and are mounted in a rigid frame. Safety cutouts for high temperature conditions are standard. Terminal block for single-point power connection is included.

Economizer (enthalpy controlled) provides ventilation air and "free" cooling if outside ambient temperature and humidity are suitable. It can also be used with CO_2 sensors to help meet indoor air quality requirements.

Discharge plenum directs the air discharge directly into the occupied space; integral horizontal and vertical louvers enable redirection of airflow. Accessory is available unpainted or painted. Field assembly is required (only applicable for vertical application).

Return-air grille provides a protective barrier over the return-air opening and gives a finished appearance to units installed in the occupied space. Accessory is available unpainted or painted.

Subbase provides a stable, raised platform and room for condensate drain trap connection for vertical floor-mounted units. Accessory is available unpainted or painted.

Overhead suspension package includes necessary brackets to support units in horizontal ceiling installations.

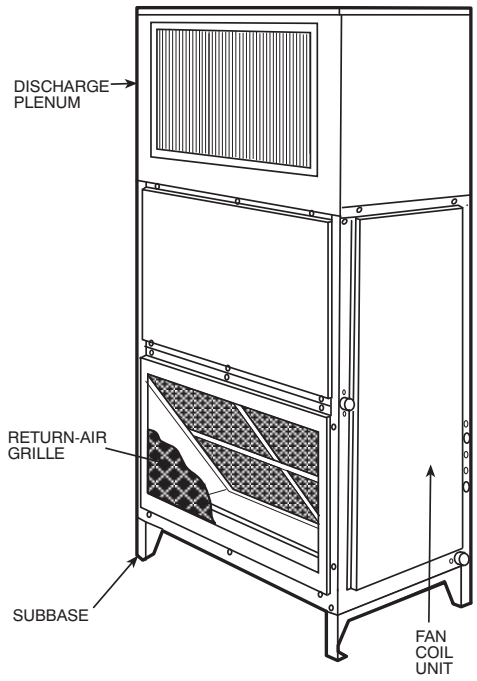
CO_2 sensors can be used in conjunction with the economizer accessory to help meet indoor air quality requirements. The sensor signals the economizer to open when the CO_2 level in the space exceeds the set point. A Bryant Comfort System programmable thermostat can be used to override the sensor if the outside-air temperature is too high or too low.

Bryant's line of thermostats provide both programmable and non-programmable capability with the new Debonair® line of commercial programmable thermostats. The TEMP System controls offer communication capability with staged heating and cooling, and the Commercial Electronic thermostats provide 7-day programmable capability for economical applications.

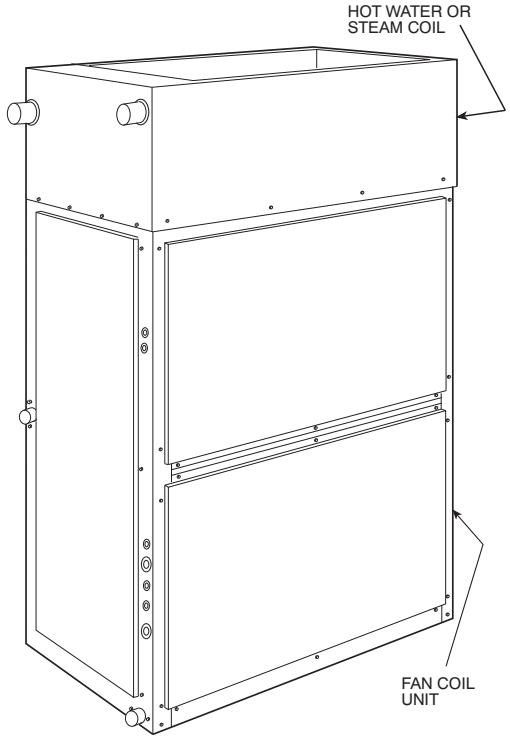
Condensate drain trap includes an overflow shutoff switch that can be wired to turn off the unit if the trap becomes plugged. Kit also includes a wire harness that can be connected to an alarm if desired. The transparent trap is designed for easy service and maintenance.

OPTIONS AND ACCESSORIES (cont.)

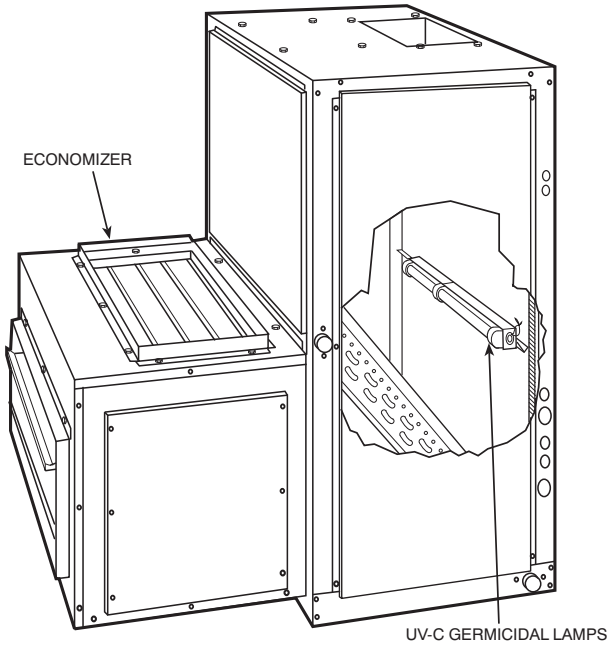
524J WITH DISCHARGE PLENUM
RETURN-AIR GRILLE AND SUBBASE



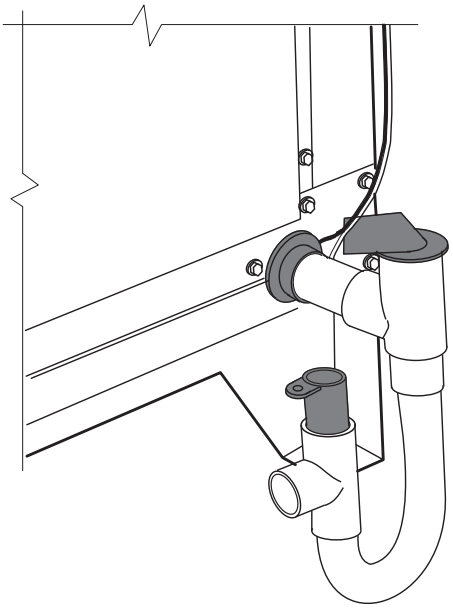
524J WITH HOT WATER OR STEAM COIL



524J WITH ECONOMIZER
AND UV-C GERMICIDAL LAMPS



524J WITH CONDENSATE TRAP

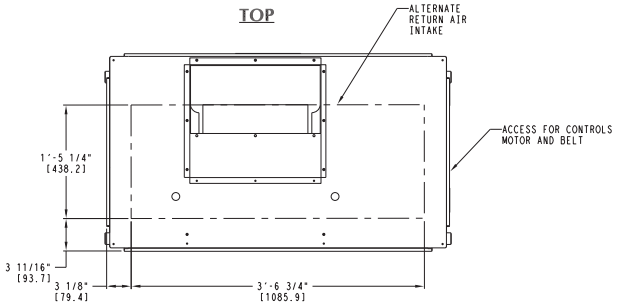


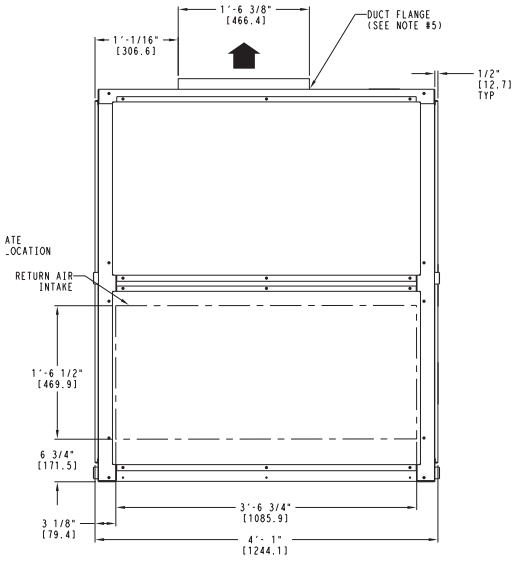
C09259

524J

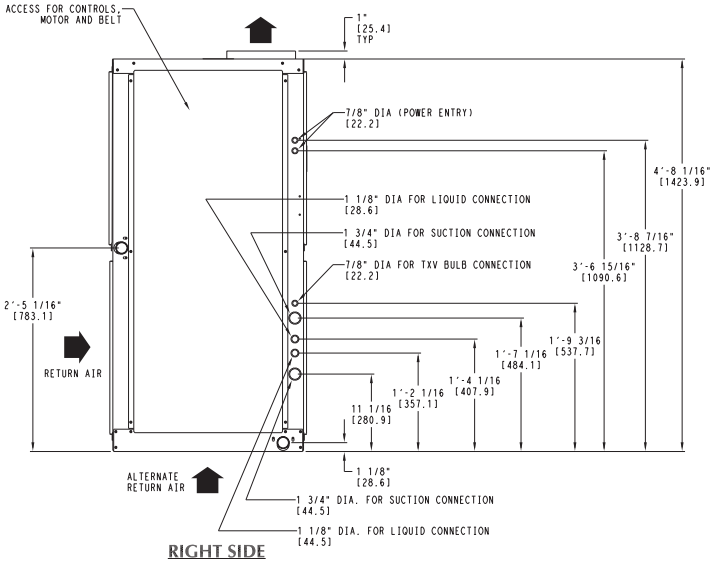
DIMENSIONS

NOTES:
1. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. ➡ DIRECTIONS OF AIRFLOW.
3. RECOMMENDED CLEARANCE:
   REAR: 3 IN. [76 mm]
   FRONT: 2 ft 6 in. [762 mm]
   RIGHT SIDE: 2 ft 6 in. [762 mm]
   LEFT SIDE: 2 ft 6 in. [762 mm]
   LOCAL CODES OR JURISDICTION MAY PREVAIL.
4. LIQUID PIPING NOT SUPPLIED BY CARRIER.
5. DUCT FLANGE IS FACTORY SUPPLIED AND FIELD INSTALLED.

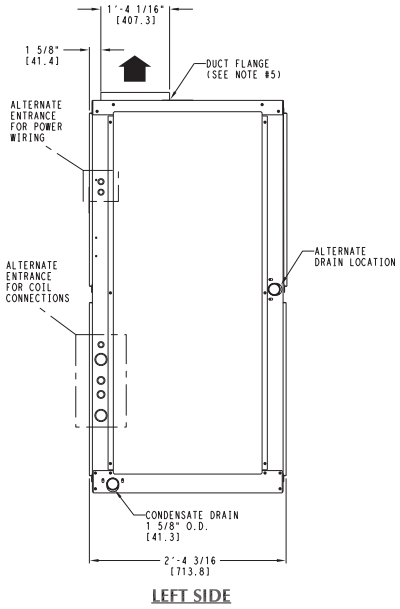




FRONT



RIGHT SIDE



LEFT SIDE

UNIT	UNIT WEIGHT (W/TXV)
524J-07A	399 lbs [181 kg]
524J-08A	404 lbs [183 kg]
524J-12A	425 lbs [193 kg]
524J-07B	381 lbs [173 kg]
524J-08B	390 lbs [177 kg]
524J-12B	391 lbs [177 kg]
524J-07H	391 lbs [177 kg]

ACCESSORY	SEE DRAWING
DISCHARGE PLENUM	40RM500996
ECONOMIZER	40RM500999
STEAM COIL	40RM500999
HOT WATER COIL	40RM500999
RETUNR AIR GRILLE	40RM500996
OVERHEAD SUSPENSION	40RM500996
SUBBASE	40RM500996
ELECTRIC HEAT ◪	40RM501002

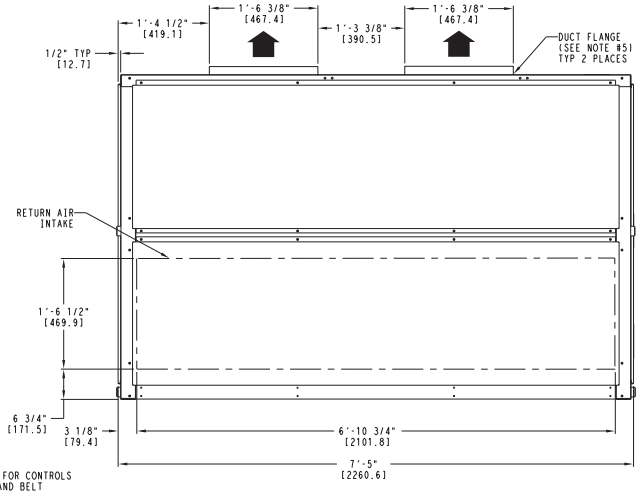
◪ UNRELEASED DATA

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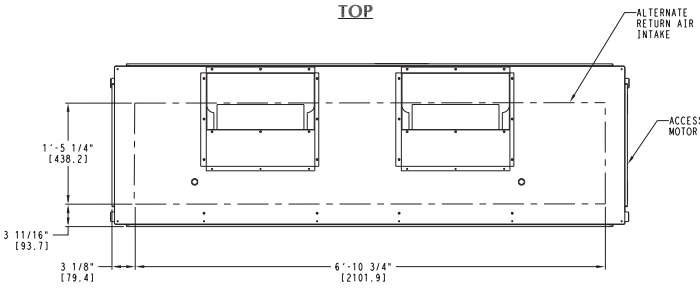
524J*07-12

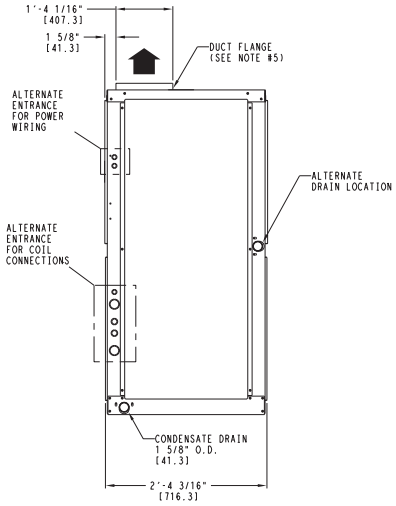
DIMENSIONS (cont.)

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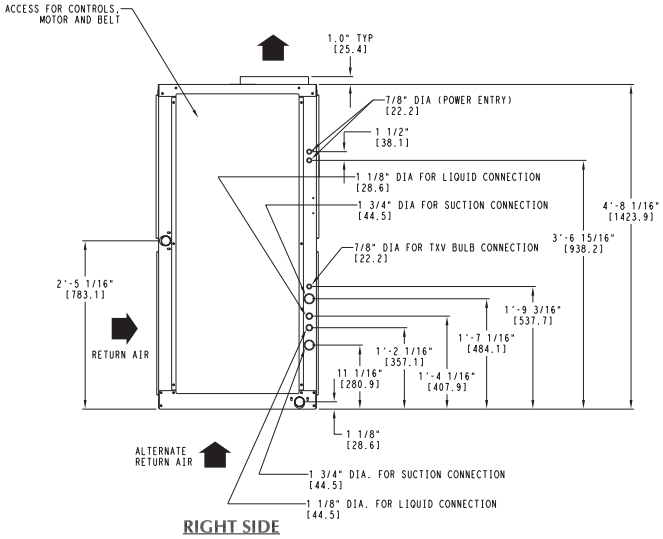


FRONT





LEFT SIDE



RIGHT SIDE

UNIT	UNIT WEIGHT (W/TXV)
524J-14A	695 lbs [315 kg]
524J-16A	713 lbs [323 kg]
524J-25A	730 lbs [331 kg]
524J-14B	661 lbs [300 kg]
524J-16B	677 lbs [307 kg]
524J-25B	683 lbs [310 kg]

ACCESSORY	SEE DRAWING
DISCHARGE PLENUM	40RM500997
ECONOMIZER	40RM501000
STEAM COIL	40RM501000
HOT WATER COIL	40RM501000
RETUNR AIR GRILLE	40RM500997
OVERHEAD SUSPENSION	40RM500997
SUBBASE	40RM500997
ELECTRIC HEAT ◪	40RM501002

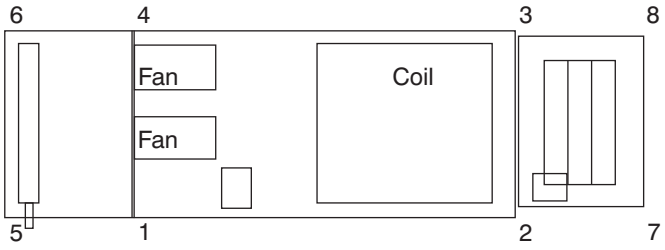
◪ UNRELEASED DATA

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524J*14, 16

DIMENSIONS (cont.)

CORNER WEIGHTS
HORIZONTAL POSITION



Steam Coil or Hot Water Coil | Base Unit Fan Coil | Economizer

C09039

524J – English

524J UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (lb)	CORNER NUMBER (WEIGHT IN LB)							
				1	2	3	4	5	6	7	8
07	FAN COIL BASE UNIT		399	109.3	106.1	90.6	93.4	—	—	—	—
08	FAN COIL BASE UNIT		404	110.7	107.5	91.7	94.5	—	—	—	—
12	FAN COIL BASE UNIT		425	116.4	113.0	96.5	99.4	—	—	—	—
07, 08, 12	STEAM COIL	ADD	215	40.2	0.0	0.0	40.6	66.5	67.5	0.0	0.0
	HOT WATER COIL	ADD	195	35.9	0.0	0.0	36.7	60.4	62.0	0.0	0.0
	ECONOMIZER	ADD	185	0.0	36.8	35.7	0.0	0.0	0.0	56.8	55.1
	ECO + STEAM COIL	ADD	400	38.8	38.6	37.4	39.2	64.2	65.2	59.5	57.7
	ECO + HW COIL	ADD	380	36.9	35.8	34.6	37.7	62.1	63.8	55.1	53.4
14	FAN COIL BASE UNIT		695	224.0	177.7	129.8	163.7	—	—	—	—
16	FAN COIL BASE UNIT		713	229.8	182.3	133.2	167.9	—	—	—	—
14, 16	STEAM COIL	ADD	340	61.4	0.0	0.0	62.0	107.8	108.8	0.0	0.0
	HOT WATER COIL	ADD	285	51.7	0.0	0.0	51.3	91.5	90.6	0.0	0.0
	ECONOMIZER	ADD	340	0.0	66.9	62.0	0.0	0.0	0.0	109.8	102.0
	ECO + STEAM COIL	ADD	680	64.4	63.7	59.0	65.0	113.0	114.1	104.5	97.1
	ECO + HW COIL	ADD	625	60.0	57.6	53.4	59.5	106.2	105.1	94.6	87.8

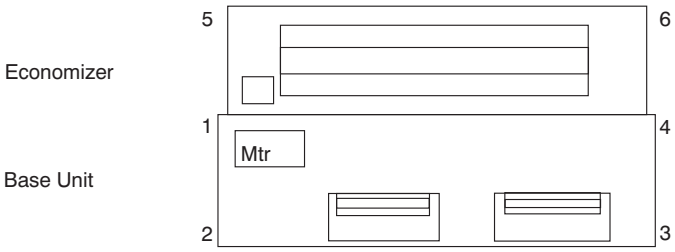
524J – SI

524J UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (kg)	CORNER NUMBER (WEIGHT IN KG)							
				1	2	3	4	5	6	7	8
07	FAN COIL BASE UNIT		181	49.6	48.1	41.1	42.3	—	—	—	—
08	FAN COIL BASE UNIT		183	50.1	48.6	41.5	42.8	—	—	—	—
12	FAN COIL BASE UNIT		193	52.9	51.3	43.8	45.2	—	—	—	—
07, 08, 12	STEAM COIL	ADD	98	18.2	0.0	0.0	18.4	30.2	30.6	0.0	0.0
	HOT WATER COIL	ADD	89	16.4	0.0	0.0	16.7	27.5	28.2	0.0	0.0
	ECONOMIZER	ADD	84	0.0	16.7	16.2	0.0	0.0	0.0	25.8	25
	ECO + STEAM COIL	ADD	182	17.6	17.5	17.0	17.8	29.1	29.6	27.0	26.2
	ECO + HW COIL	ADD	173	16.8	16.3	15.8	17.2	28.3	29.0	25.1	24.3
14	FAN COIL BASE UNIT		315	86.3	83.7	71.5	73.7	—	—	—	—
16	FAN COIL BASE UNIT		323	88.5	85.9	73.3	75.6	—	—	—	—
14, 16	STEAM COIL	ADD	155	28.1	0.0	0.0	28.3	49.3	49.3	0.0	0.0
	HOT WATER COIL	ADD	130	23.6	0.0	0.0	23.4	41.8	41.2	0.0	0.0
	ECONOMIZER	ADD	155	0.0	30.2	28.3	0.0	0.0	0.0	50.3	46.2
	ECO + STEAM COIL	ADD	310	29.3	29.0	26.9	29.6	51.5	51.9	47.6	44.2
	ECO + HW COIL	ADD	285	27.5	26.4	24.4	27.1	48.5	47.9	43.1	40.1

LEGEND:
ECO – Economizer
HW – Hot Water

DIMENSIONS (cont.)

CORNER WEIGHTS
VERTICAL POSITION



NOTE: Steam, Hot Water & Plenum
on top of positions 1,2,3,4

C09040

524J – English

524J UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (lb)	CORNER NUMBER (WEIGHT IN LB)					
				1	2	3	4	5	6
07	FAN COIL BASE UNIT		399	100.5	114.9	98.0	85.8	—	—
08	FAN COIL BASE UNIT		404	101.7	116.3	99.1	86.9	—	—
12	FAN COIL BASE UNIT		425	107.6	122.3	108.0	87.1	—	—
07,08,12	STEAM COIL	ADD	215	54.1	54.1	53.4	53.4	0.0	0.0
	HOT WATER COIL	ADD	195	49.4	49.4	48.1	48.1	0.0	0.0
	PLENUM	ADD	175	50.8	36.7	36.7	50.8	0.0	0.0
	ECONOMIZER	ADD	195	38.9	0.0	0.0	37.1	59.9	58.3
	ECO + STEAM COIL	ADD	410	93.0	53.4	52.6	91.1	61.0	59.1
	ECO + HW COIL	ADD	390	88.9	52.3	50.9	86.5	56.7	54.9
14	FAN COIL BASE UNIT		695	191.2	210.5	153.8	139.5	—	—
16	FAN COIL BASE UNIT		713	196.2	216.0	157.8	143.1	—	—
14, 16	STEAM COIL	ADD	340	85.4	85.4	84.6	84.6	0.0	0.0
	HOT WATER COIL	ADD	285	70.9	70.9	71.6	71.6	0.0	0.0
	PLENUM	ADD	225	72.5	40.0	40.0	72.5	0.0	0.0
	ECONOMIZER	ADD	340	66.5	0.0	0.0	62.0	109.5	102.0
	ECO + STEAM COIL	ADD	680	153.0	89.1	88.7	147.7	104.5	97.0
	ECO + HW COIL	ADD	625	139.9	82.5	83.3	136.7	94.7	87.9

524J – SI

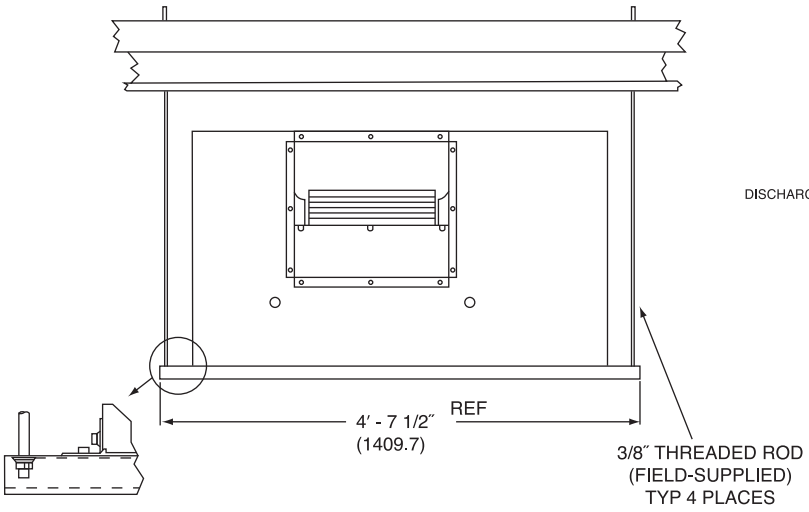
524J UNIT SIZE	UNIT OR ACCESSORY NAME		UNIT OR ACCESSORY WEIGHT (kg)	CORNER NUMBER (WEIGHT IN LB)					
				1	2	3	4	5	6
07	FAN COIL BASE UNIT		181	45.5	52.3	44.4	38.8	—	—
08	FAN COIL BASE UNIT		183	46.0	52.7	44.9	39.4	—	—
12	FAN COIL BASE UNIT		193	48.5	55.6	47.4	41.5	—	—
07,08,12	STEAM COIL	ADD	98	24.6	24.6	24.4	24.4	0.0	0.0
	HOT WATER COIL	ADD	89	22.4	22.4	22.1	22.1	0.0	0.0
	PLENUM	ADD	80	23.3	16.8	16.8	23.3	0.0	0.0
	ECONOMIZER	ADD	84	16.8	0.0	0.0	16.2	25.8	25.2
	ECO + STEAM COIL	ADD	182	41.3	23.6	23.3	40.3	27.0	26.5
	ECO + HW COIL	ADD	173	39.3	23.1	22.5	38.2	25.0	24.9
14	FAN COIL BASE UNIT		315	86.6	95.5	69.8	63.3	—	—
16	FAN COIL BASE UNIT		323	88.9	97.9	71.6	64.9	—	—
14, 16	STEAM COIL	ADD	155	39.0	39.0	38.5	38.5	0.0	0.0
	HOT WATER COIL	ADD	130	32.4	32.4	32.6	32.6	0.0	0.0
	PLENUM	ADD	102	32.9	18.1	18.1	32.9	0.0	0.0
	ECONOMIZER	ADD	155	31.1	0.0	0.0	28.5	49.7	45.7
	ECO + STEAM COIL	ADD	310	69.8	40.7	40.4	67.3	47.6	44.2
	ECO + HW COIL	ADD	285	63.8	37.6	37.8	62.2	43.1	40.5

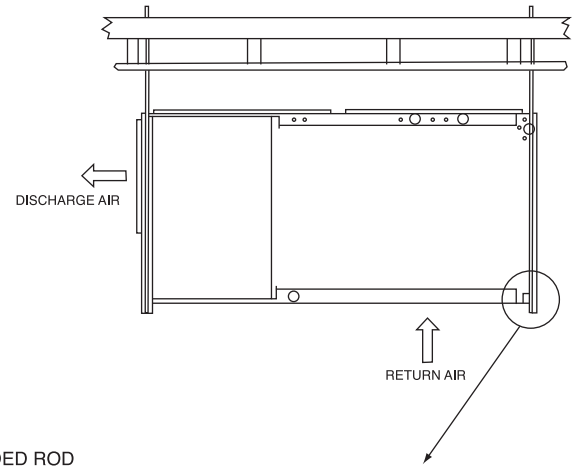
LEGEND:
ECO – Economizer
HW – Hot Water

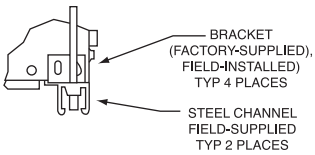
DIMENSIONS (cont.)

524J

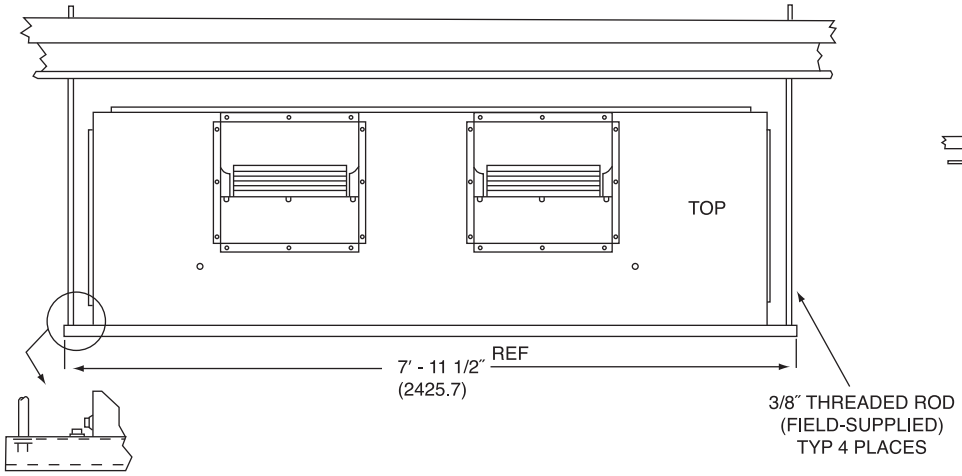
UNIT SIZES 07-12
(FRONT)

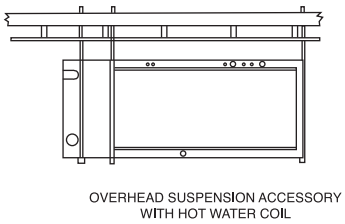


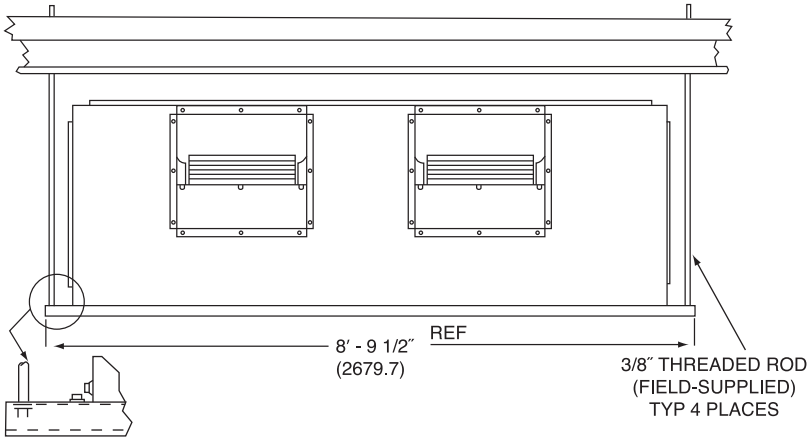




UNIT SIZES 14-16
(FRONT)





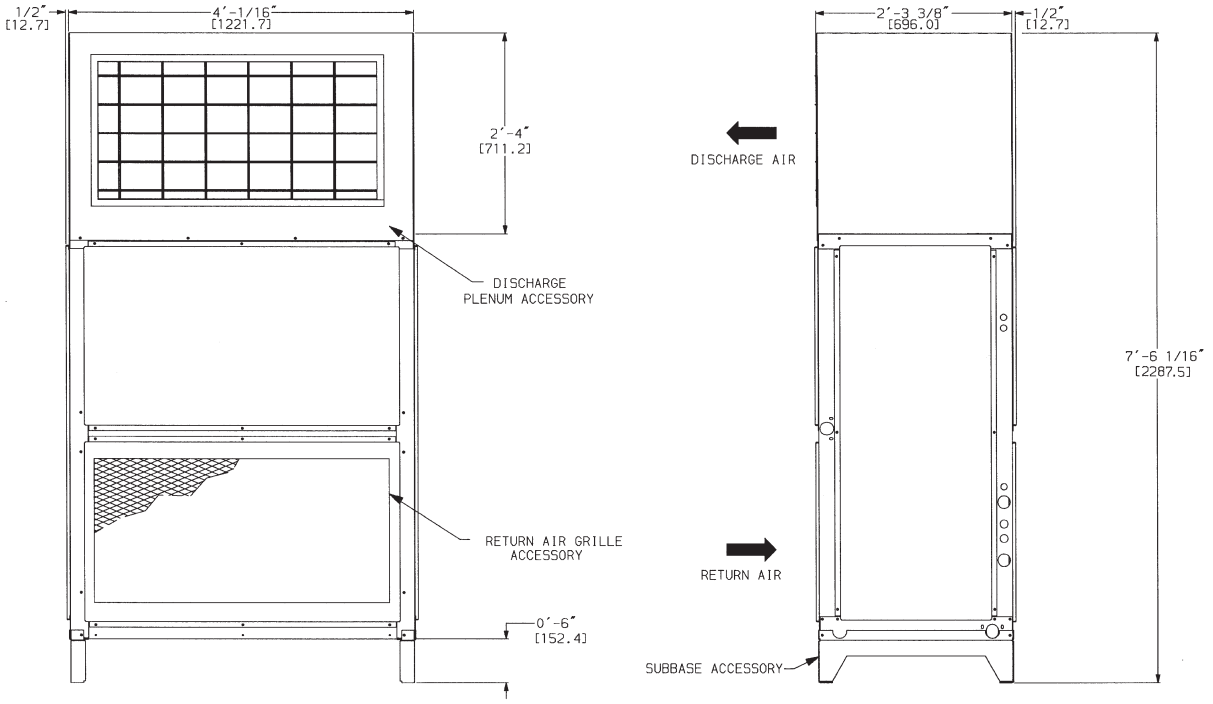


C09041

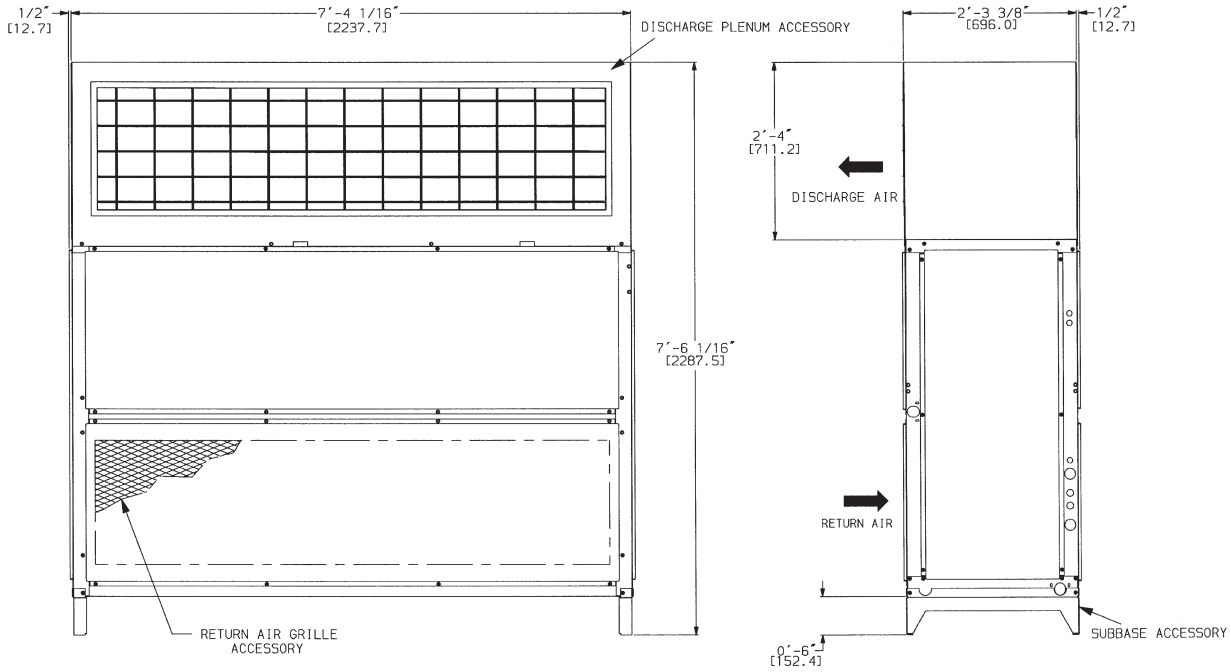
DIMENSIONS (cont.)

PLENUM, RETURN-AIR GRILLE, AND SUBBASE ACCESSORIES

UNIT SIZES 07-12



UNIT SIZE 14, 16



NOTE: Dimensions in [ ] are millimeters.

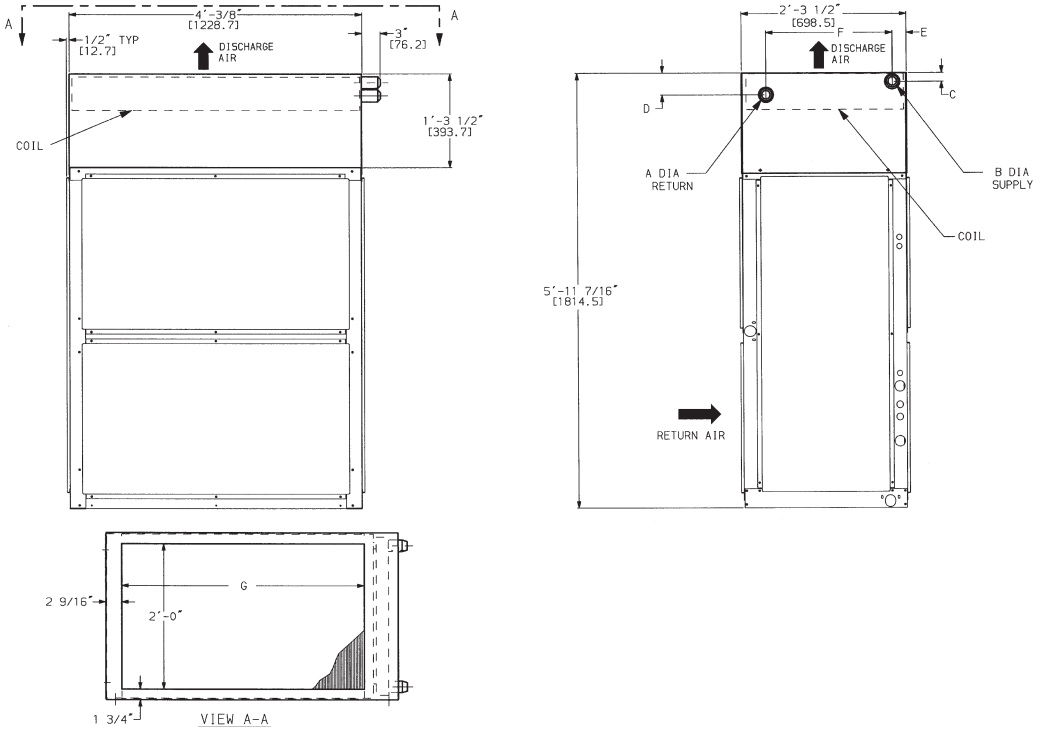
C09042

524J

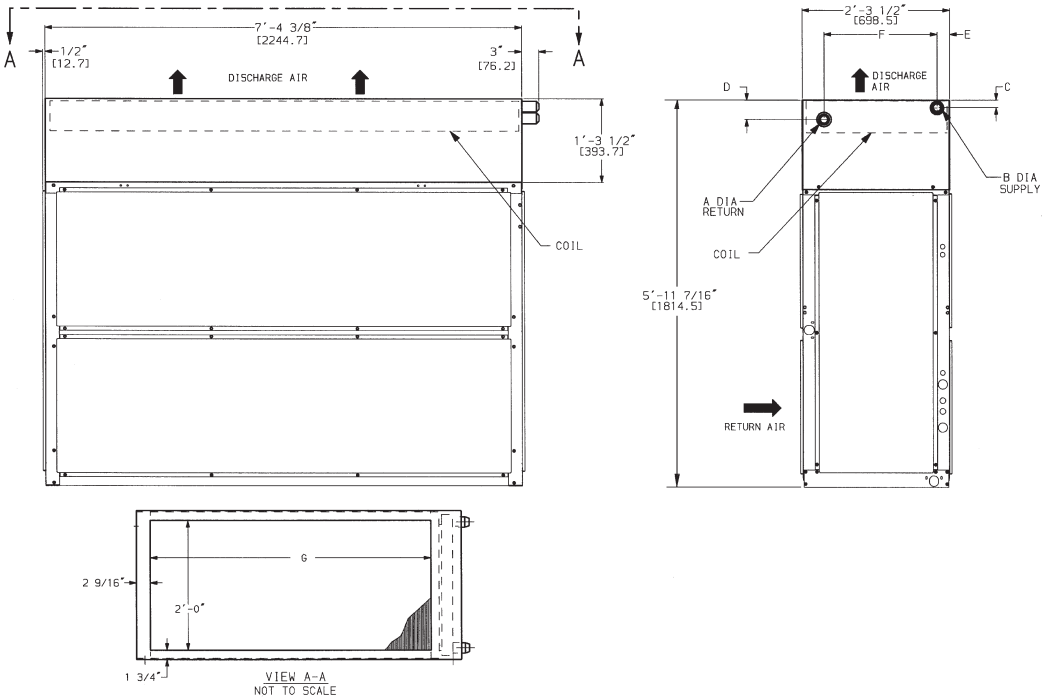
DIMENSIONS (cont.)

HOT WATER AND STEAM COIL ACCESSORIES

UNIT SIZES 07 - 12



UNIT SIZE 14, 16



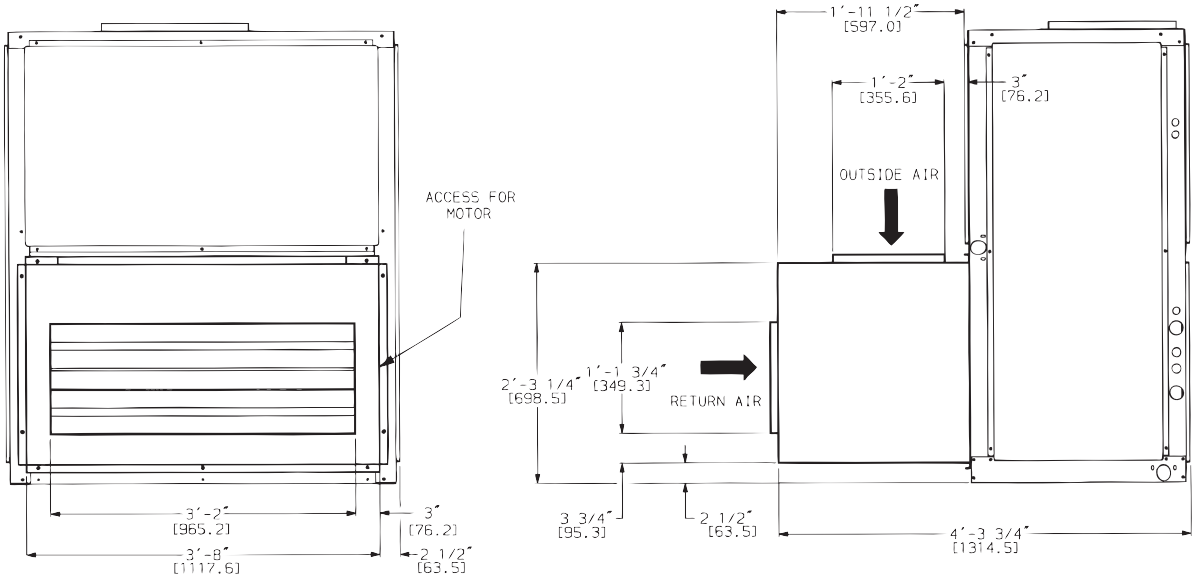
NOTE: Dimensions in [ ] are millimeters.

C09043

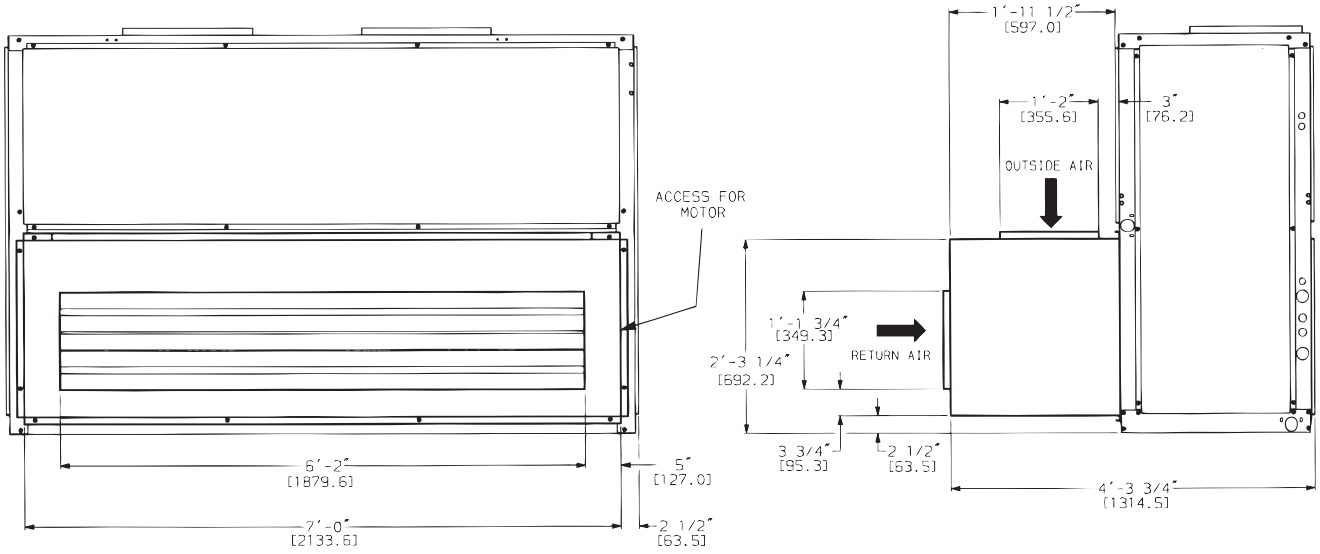
DIMENSIONS (cont.)

ECONOMIZER ACCESSORY

UNIT SIZES 07-12



UNIT SIZES 14, 16



NOTE:
1. For horizontal unit applications, economizer can be attached to end of unit opposite duct connections.
2. Dimensions in [ ] are millimeters.

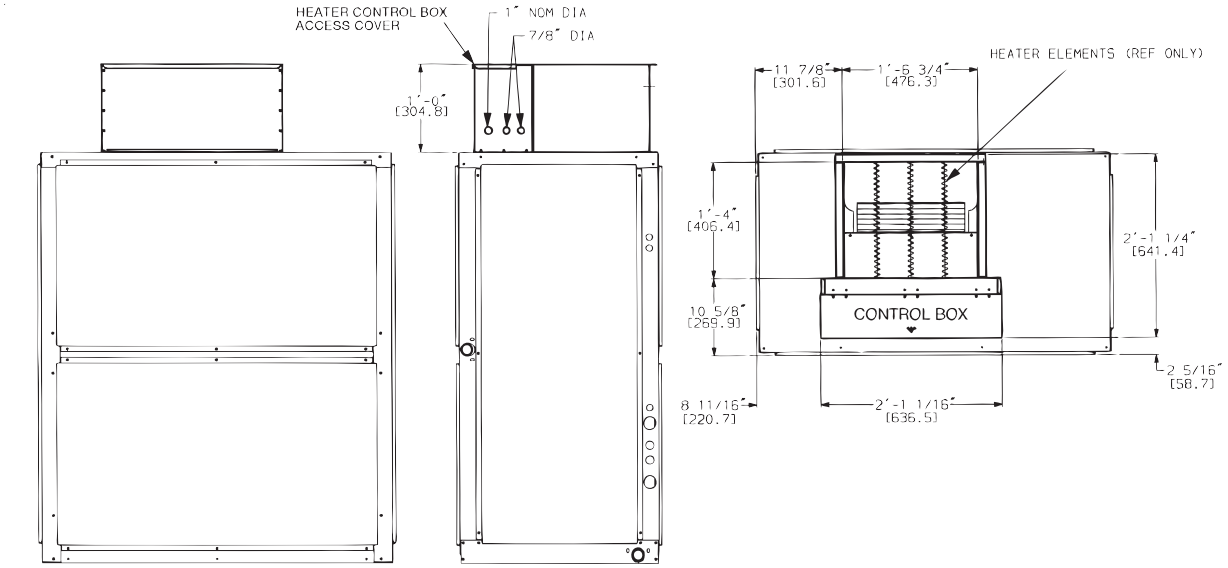
524J

C09044

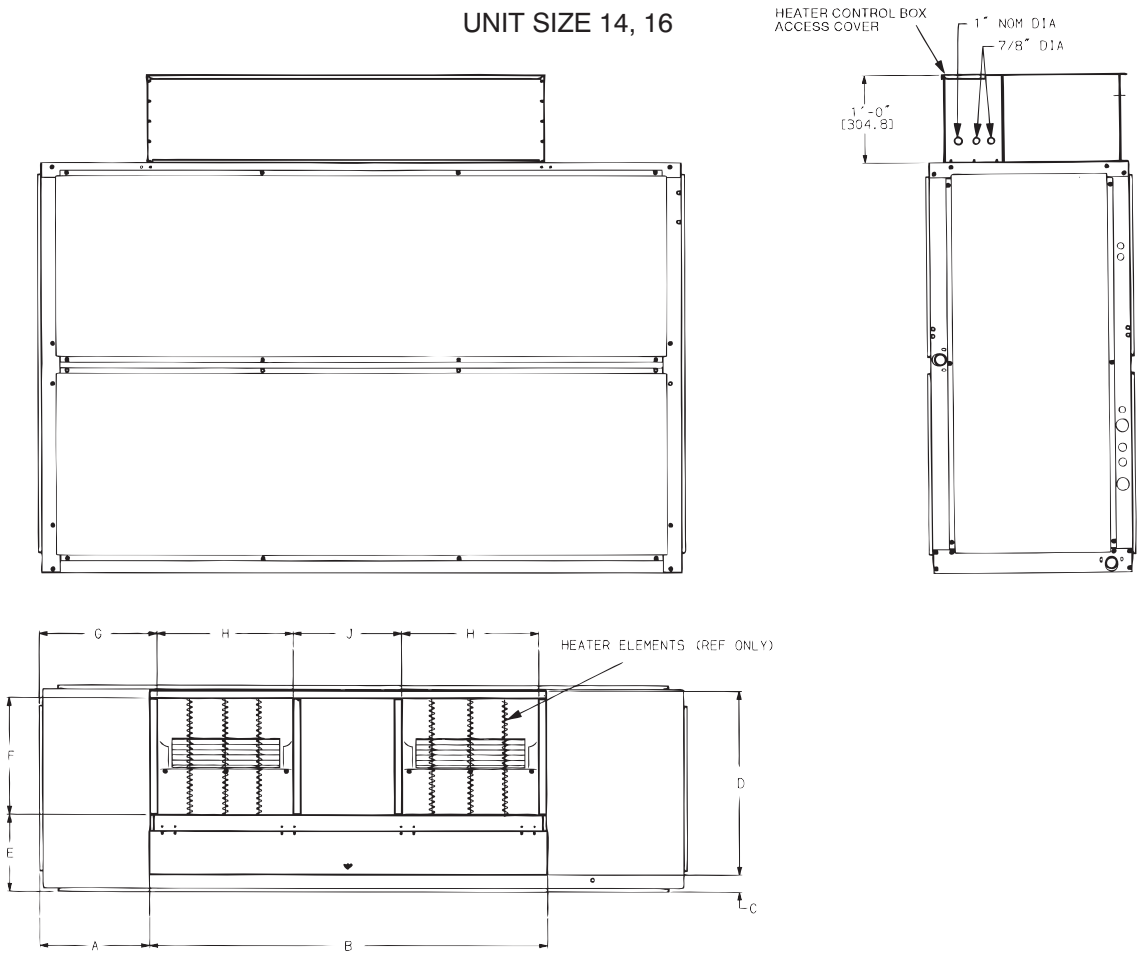
DIMENSIONS (cont.)

ELECTRIC HEAT ACCESSORY

UNIT SIZES 07 - 12



UNIT SIZE 14, 16



C09045

524J UNIT SIZE	A	B	C	D	E	F	G	H	J
14, 16	1'-3 1/4" [387.4]	4'-6 3/8" [1381.1]	2 5/16" [58.7]	2'-1 1/4" [641.4]	10 5/8" [269.9]	1'-4" [406.4]	1'-4 5/16" [414.3]	1'-6 3/4" [476.3]	1-7/8" [327.0]

NOTE: Dimensions in [ ] are millimeters.

SELECTION PROCEDURE (WITH EXAMPLE)

Cooling (DX)

I. Determine the cooling load and temperature and quantity of air entering the evaporator.

Given:

Total Capacity . . . . . 200,000 Btuh

Sensible Heat Capacity . . . . . 130,000 Btuh

Air Temperature Entering Indoor Coil . . . . . 80°F (27°C)db, 67°F (19°C) wb

Air Quantity Entering Indoor Coil . . . . . 6000 cfm

Ductwork Static Pressure Loss . . . . . 0.8 in. wg

Power Supply 230-3-60

II. Determine unit selection and coil refrigerant temperature.

Enter the Cooling Capacities table at 6000 cfm. Select a 524J16 unit which has a total capacity of 207,000 and 174,000 Btuh at 40 and 45°F (4 and 7°C) coil refrigerant temperature, respectively. By interpolation, coil refrigerant temperature of 41.1°F (5.1°C) is needed to give a total capacity of 200,000 Btuh. Sensible capacity is approximately 149,000 Btuh. Cooling load is satisfied.

Heating (Hot Water Coil)

I. Determine heating load and temperature of air entering the indoor coil.

Given:

Load . . . . . 425,000 Btuh

Entering-Air Temperature . . . . . 70°F (21°C)

Coils 2-Row Hot Water

Coil Entering-Water Temperature . . . . . 200°F (93°C)

Water Temperature Drop . . . . . 20°F (-7°C)

II. Find the heating capacity.

Enter Hydronic Heating Capacities table for the 524J16 unit at 6000 cfm. A 2-row hot water coil delivers 471,000 Btuh (based on 60°F/16°C entering air temperature and 20°F/-7°C water temperature drop). Since existing entering air temperature is 70°F (21°C), enter the Heating Correction Factors table for hot water coils at 200°F (93°C) entering water temperature, 20°F (-7°C) water temperature drop and 70°F (21°C) entering air. Read a constant of 0.93.

471,000 x 0.93 = 438,000

The 438,000 Btuh rating satisfies the heating load.

Fan

I. Determine fan speed and brake horsepower:

From the Accessory Pressure Drop table, read a loss of 0.23 in. wg for a hot water coil at 6000 cfm.

External static pressure = 0.80 + 0.23

= 1.03 in. wg

Enter 524J16 Fan Performance table at 6000 cfm and 1.03 in. wg. Interpolate and determine fan speed of 864 rpm and 3.1 bhp.

II. Determine motor and drive.

Enter the fan motor data tables and find that the 230 v standard motor for a 524J16 unit is rated at 3.7 Hp. Since the bhp required is 3.1, a standard motor satisfies the requirement and should be used.

Next, find the type of drive that satisfies the 864 rpm requirement in the Drive Data tables. For a 524J016 unit, the Medium-Static Drive table shows an rpm range of 742 to 943. Since the rpm required is 864, the medium-static drive satisfies the requirement and should be used. Select the standard motor and medium-static drive combination.

To select an outdoor unit for this 524J16 indoor section, refer to the Combination Rating sheets for Bryant condensing units in the condensing unit Product Data Digest.

PERFORMANCE DATA

HYDRONIC HEATING CAPACITIES — English

UNIT SIZE	AIRFLOW (Cfm)	1-ROW STEAM*		2-ROW HOT WATER COIL†			
		Cap.	Ldb	Cap.	Ldb	Water Flow (Gpm)	PD
524J 07	1,800	146	134	156.0	140	15.6	3.4
	2,400	173	126	183.0	131	18.3	4.3
	3,000	209	123	206.0	124	20.6	5.2
524J 08	2,250	168	129	174.0	133	17.4	4.0
	3,000	209	123	206.0	124	20.6	5.2
	3,750	240	117	238.0	118	23.8	6.5
524J 12	3,000	209	123	299.0	152	29.9	5.0
	4,000	243	115	275.0	124	27.5	6.6
	5,000	279	111	316.0	119	31.6	8.2
524J 14	3,750	370	150	362.0	149	36.2	4.2
	5,000	425	137	409.0	136	40.9	5.1
	6,250	465	128	456.0	128	45.6	6.0
524J 16	4,500	402	141	412.0	145	41.2	4.5
	6,000	458	129	471.0	133	47.1	5.5
	7,500	479	118	529.0	125	52.9	6.6

LEGEND:

Cap. – Capacity (Btuh in thousands)

Ldb – Leaving Air Dry Bulb Temp (F)

PD . – Pressure Drop (ft water)

* Based on 5 psig steam, 60° F entering-air temperature. All steam coils are non-freeze type.

† Based on 200° F entering water, 20° F water temperature drop, 60° F entering-air temperature.

NOTES:

1. Maximum operating limits for heating coils: 20 psig at 260 F.
2. Leaving db = Entering db (F) + $\frac{\text{Capacity (Btuh)}}{1.1 \times \text{cfm}}$
3. See Heating Correction Factors table.

HYDRONIC HEATING CAPACITIES — SI

UNIT SIZE	AIRFLOW (L/s)	1-ROW STEAM*		2-ROW HOT WATER COIL†			
		Cap.	Ldb	Cap.	Ldb	Water Flow (L/s)	PD
524J 07	850	43	57	46	59	1.0	10.2
	1150	53	53	53	53	1.2	12.8
	1450	62	51	61	50	1.3	16.0
524J 08	1000	48	55	50	56	1.1	11.5
	1400	59	50	60	50	1.3	15.3
	1800	71	47	70	47	1.5	19.5
524J 12	1450	62	50	88	65	1.9	15.0
	1900	72	46	90	54	2.0	24.7
	2350	82	44	93	48	2.0	24.5
524J 14	1750	108	66	106	65	2.3	12.4
	2350	122	58	120	57	2.6	15.2
	2950	136	53	134	52	2.9	17.9
524J 16	2100	117	61	120	62	2.6	13.3
	2800	129	53	137	55	3.0	16.2
	3500	140	48	154	51	3.3	19.5

LEGEND:

Cap. – Capacity (Btuh in thousands)

Ldb – Leaving Air Dry Bulb Temp (C)

PD . – Pressure Drop (ft water)

* Based on 34.5 kPag steam, 15.6° C entering-air temperature. All steam coils are non-freeze type.

† Based on 93.3° C entering water temperature, 11.1° C water temperature drop, 15.6° C entering-air temperature.

NOTES:

1. Maximum operating limits for heating coils: 138 kPag at 126.7 C.
2. Leaving db = Entering db (C) + $\frac{\text{Capacity (kW)}}{1.23 \times 10^{-3} \times \text{L/s}}$
3. See Heating Correction Factors table.

HEATING CORRECTION FACTORS — English

HOT WATER COIL						
Water Temp Drop (F)	Entering Water Temp (F)	Entering-Air Temp (F)				
		40	50	60	70	80
10	140	0.72	0.64	0.57	0.49	0.41
	160	0.89	0.81	0.74	0.66	0.58
	180	1.06	0.98	0.90	0.83	0.75
	200	1.22	1.15	1.07	1.00	0.92
	220	1.39	1.32	1.24	1.17	1.09
20	140	0.64	0.57	0.49	0.41	0.33
	160	0.81	0.74	0.66	0.58	0.51
	180	0.98	0.91	0.83	0.75	0.68
	200	1.15	1.08	1.00	0.93	0.85
	220	1.32	1.25	1.17	1.10	1.02
30	140	0.56	0.49	0.41	0.33	0.24
	160	0.74	0.66	0.58	0.51	0.43
	180	0.91	0.83	0.76	0.68	0.60
	200	1.08	1.00	0.93	0.85	0.78
	220	1.25	1.18	1.10	1.03	0.95

STEAM COIL					
Steam Pressure (psig)	Entering-Air Temp (F)				
	40	50	60	70	80
0	1.06	0.98	0.91	0.85	0.78
2	1.09	1.02	0.95	0.89	0.82
5	1.13	1.06	1.00	0.93	0.87

NOTE: Multiply capacity given in the Hydronic Heating Capacities table by the correction factor for conditions at which unit is actually operating. Correct leaving-air temperature using formula in Note 2 of Hydronic Heating Capacities table.

HEATING CORRECTION FACTORS — SI

HOT WATER COIL						
Water Temp Drop (C)	Entering Water Temp (C)	Entering-Air Temp (C)				
		4	10	16	20	25
5	60	0.72	0.64	0.55	0.50	0.43
	70	0.87	0.79	0.71	0.65	0.58
	80	1.02	0.94	0.86	0.80	0.73
	90	1.17	1.09	1.01	0.95	0.89
	100	1.32	1.24	1.16	1.10	1.04
11	60	0.65	0.56	0.48	0.42	0.35
	70	0.80	0.72	0.63	0.58	0.51
	80	0.95	0.87	0.79	0.73	0.66
	90	1.10	1.02	0.94	0.89	0.82
	100	1.26	1.18	1.09	1.04	0.97
16	60	0.56	0.48	0.39	0.33	0.26
	70	0.72	0.63	0.55	0.49	0.42
	80	0.87	0.79	0.70	0.65	0.58
	90	1.02	0.94	0.86	0.81	0.74
	100	1.18	1.10	1.02	0.97	0.90

STEAM COIL					
Steam Pressure (kPag)	Entering-Air Temp (C)				
	4	10	16	20	25
0	1.07	0.99	0.91	0.86	0.80
14	1.10	1.02	0.95	0.90	0.84
35	1.14	1.07	0.99	0.95	0.89

NOTE: Multiply capacity given in the Hydronic Heating Capacities table by the correction factor for conditions at which unit is actually operating. Correct leaving-air temperature using formula in Note 2 of Hydronic Heating Capacities table.

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 524J 208/230–1–60
0.0-1.2 in. wg ESP — 60 Hz, English

524J UNIT SIZE 4-Row Coil	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)													
		0.0		0.2		0.4		0.6		0.8		1.0		1.2	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	***419***	***0.21***	471	0.26	564	0.37	649	0.49	727	0.63	797	0.77	862	0.92
	2,100	471	0.31	519	0.37	602	0.49	679	0.62	751	0.77	819	0.92	882	1.09
	2,400	524	0.44	568	0.51	645	0.64	715	0.79	781	0.94	844	1.11	905	1.28
	2,700	578	0.61	619	0.69	690	0.84	755	0.99	816	1.15	875	1.33	932	1.51
	3,000	633	0.81	671	0.90	738	1.07	799	1.24	856	1.41	910	1.60	963	1.79
08	2,250	***290***	***0.10***	***510***	***0.39***	594	0.51	669	0.65	739	0.79	806	0.95	870	1.12
	2,600	***349***	***0.19***	561	0.55	640	0.70	709	0.84	773	1.00	834	1.16	893	1.34
	3,000	579	0.70	621	0.79	695	0.96	759	1.12	818	1.30	874	1.47	928	1.66
	3,400	646	0.99	683	1.09	752	1.29	813	1.48	869	1.67	920	1.86	970	2.06
	3,750	705	1.31	739	1.42	804	1.63	862	1.85	915	2.05	964	2.26	1011	2.48

Plain type – Standard Motor and fan drive
_____ – Medium static option; std motor, medium static drive
BOLD – Standard motor & field–supplied drive required
_____ – High static motor & drive
BOLD – High static motor & field–supplied drive

524J

FAN PERFORMANCE DATA — 524J 208/230–1–60
1.4-2.4 in. wg ESP — 60 Hz, English

524J UNIT SIZE 4-Row Coil	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)											
		1.4		1.6		1.8		2.0		2.2		2.4	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	921	1.07	975	1.23	1026	1.39	1074	1.55	**1120**	**1.72**	**1164**	**1.90**
	2,100	942	1.26	997	1.43	1048	1.61	**1097**	**1.79**	**1143**	**1.97**	**1186**	**2.16**
	2,400	963	1.47	1017	1.66	1069	1.85	**1118**	**2.05**	**1164**	**2.25**	—	—
	2,700	987	1.71	1039	1.91	**1090**	**2.12**	**1138**	**2.33**	**1185**	**2.55**	—	—
	3,000	1015	1.99	1065	2.20	**1113**	**2.42**	**1161**	**2.65**	—	—	—	—
08	2,250	930	1.29	986	1.47	1039	1.65	1089	1.84	1136	2.03	1181	2.22
	2,600	950	1.53	1005	1.72	1057	1.92	1107	2.13	1154	2.33	—	—
	3,000	980	1.86	1031	2.06	1081	2.27	1129	2.49	1175	2.72	—	—
	3,400	1018	2.26	1065	2.48	1111	2.70	1156	2.93	—	—	—	—
	3,750	1057	2.69	1101	2.92	1144	3.15	1186	3.39	—	—	—	—

Plain type – Standard Motor and fan drive
_____ – Medium static option; std motor, medium static drive
BOLD – Standard motor & field–supplied drive required
_____ – High static motor & drive
BOLD – High static motor & field–supplied drive

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 524J 208/230–3–60 & 460–3–60
0.0-1.2 in. wg ESP — 60 Hz, English

UNIT 524J 4–Row Coil	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)													
		0.0		0.2		0.4		0.6		0.8		1.0		1.2	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	***419***	***0.21***	471	0.26	564	0.37	649	0.49	727	0.63	797	0.77	862	0.92
	2,100	471	0.31	519	0.37	602	0.49	679	0.62	751	0.77	819	0.92	882	1.09
	2,400	524	0.44	568	0.51	645	0.64	715	0.79	781	0.94	844	1.11	905	1.28
	2,700	578	0.61	619	0.69	690	0.84	755	0.99	816	1.15	875	1.33	932	1.51
	3,000	633	0.81	671	0.90	738	1.07	799	1.24	856	1.41	910	1.60	963	1.79
08	2,250	***290***	***0.10***	***510***	***0.39***	594	0.51	669	0.65	739	0.79	806	0.95	870	1.12
	2,600	***349***	***0.19***	561	0.55	640	0.70	709	0.84	773	1.00	834	1.16	893	1.34
	3,000	579	0.70	621	0.79	695	0.96	759	1.12	818	1.30	874	1.47	928	1.66
	3,400	646	0.99	683	1.09	752	1.29	813	1.48	869	1.67	920	1.86	970	2.06
	3,750	705	1.31	739	1.42	804	1.63	862	1.85	915	2.05	964	2.26	1011	2.48
12	3,000	***421***	***0.35***	***592***	***0.73***	670	0.90	737	1.06	797	1.23	854	1.41	908	1.59
	3,500	***626***	***0.98***	***664***	***1.08***	735	1.28	798	1.48	855	1.67	908	1.87	958	2.07
	4,000	706	1.42	738	1.54	803	1.77	862	2.00	917	2.23	967	2.45	1014	2.67
	4,500	786	1.99	815	2.12	873	2.39	929	2.65	980	2.90	1028	3.16	1073	3.41
	5,000	867	2.70	893	2.84	946	3.14	997	3.43	1046	3.72	1092	4.00	1135	4.28
14	3,750	***410***	***0.43***	***467***	***0.55***	567	0.83	649	1.12	721	1.41	788	1.72	851	2.05
	4,300	***455***	***0.62***	***504***	***0.74***	599	1.05	679	1.38	748	1.70	811	2.04	871	2.39
	5,000	***514***	***0.92***	556	1.06	641	1.39	718	1.76	786	2.14	847	2.52	903	2.91
	5,700	575	1.32	612	1.47	686	1.82	759	2.23	825	2.66	884	3.09	939	3.52
	6,250	624	1.71	657	1.87	725	2.24	793	2.66	856	3.12	915	3.59	969	4.06
16	4,500	***437***	***0.61***	***483***	***0.72***	576	1.01	660	1.35	732	1.69	797	2.03	856	2.38
	5,300	***499***	***0.95***	538	1.07	617	1.37	696	1.74	767	2.13	830	2.53	888	2.94
	6,000	***555***	***1.34***	590	1.48	659	1.79	730	2.17	798	2.59	860	3.04	918	3.49
	6,800	620	1.91	651	2.06	712	2.39	774	2.78	836	3.22	896	3.71	952	4.21
	7,500	677	2.52	706	2.69	761	3.04	817	3.44	873	3.89	929	4.39	984	4.93

Plain type – Standard Motor and fan drive
_____ – High static motor & drive
_____ – Medium static option; std motor, medium static drive
BOLD – High static motor & field–supplied drive
BOLD – Standard motor & field–supplied drive required

FAN PERFORMANCE DATA — 524J 208/230–3–60 & 460–3–60
1.4-2.4 in. wg ESP — 60 Hz, English

UNIT 524J 4–Row Coil	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)											
		1.4		1.6		1.8		2.0		2.2		2.4	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	921	1.07	975	1.23	1026	1.39	1074	1.55	**1120**	**1.72**	**1164**	**1.90**
	2,100	942	1.26	997	1.43	1048	1.61	**1097**	**1.79**	**1143**	**1.97**	**1186**	**2.16**
	2,400	963	1.47	1017	1.66	1069	1.85	**1118**	**2.05**	**1164**	**2.25**	—	—
	2,700	987	1.71	1039	1.91	**1090**	**2.12**	**1138**	**2.33**	**1185**	**2.55**	—	—
	3,000	1015	1.99	1065	2.20	**1113**	**2.42**	**1161**	**2.65**	—	—	—	—
08	2,250	930	1.29	986	1.47	1039	1.65	1089	1.84	1136	2.03	1181	2.22
	2,600	950	1.53	1005	1.72	1057	1.92	1107	2.13	1154	2.33	—	—
	3,000	980	1.86	1031	2.06	1081	2.27	1129	2.49	1175	2.72	—	—
	3,400	1018	2.26	1065	2.48	1111	2.70	1156	2.93	—	—	—	—
	3,750	1057	2.69	1101	2.92	1144	3.15	1186	3.39	—	—	—	—
12	3,000	961	1.78	1012	1.98	1062	2.19	1111	2.41	1158	2.64	—	—
	3,500	1005	2.27	1052	2.49	1098	2.71	1142	2.94	1186	3.18	—	—
	4,000	1058	2.90	1101	3.13	1143	3.36	1184	3.60	—	—	—	—
	4,500	1116	3.66	1157	3.91	1196	4.16	—	—	—	—	—	—
	5,000	1176	4.56	—	—	—	—	—	—	—	—	—	—
14	3,750	912	2.39	971	2.76	1028	3.14	1083	3.54	**1135**	**3.95**	**1185**	**4.36**
	4,300	928	2.75	982	3.13	1036	3.53	1087	3.94	**1138**	**4.37**	**1187**	**4.81**
	5,000	956	3.30	1007	3.71	1056	4.13	**1104**	**4.56**	**1151**	**5.00**	**1196**	**5.46**
	5,700	990	3.96	1039	4.40	1086	4.85	**1130**	**5.31**	**1174**	**5.78**	—	—
	6,250	1019	4.54	1067	5.02	**1112**	**5.50**	**1156**	**5.99**	**1198**	**6.49**	—	—
16	4,500	912	2.75	967	3.12	1019	3.52	1070	3.92	1120	4.35	1168	4.79
	5,300	942	3.34	992	3.76	1041	4.18	1088	4.61	1134	5.06	**1179**	**5.52**
	6,000	971	3.95	1020	4.40	1067	4.86	1112	5.33	1156	5.81	**1198**	**6.29**
	6,800	1005	4.72	1054	5.23	1101	5.75	1145	6.27	**1187**	**6.79**	—	—
	7,500	1036	5.48	1084	6.04	1131	6.61	**1174**	**7.17**	—	—	—	—

Plain type – Standard Motor and fan drive
_____ – High static motor & drive
_____ – Medium static option; std motor, medium static drive
BOLD – High static motor & field–supplied drive
BOLD – Standard motor & field–supplied drive required

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 524J 575–3–60
0.0-1.2 in. wg ESP — 60 Hz, English

UNIT 524J 4–Row Coil	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)													
		0.0		0.2		0.4		0.6		0.8		1.0		1.2	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	***419***	***0.21***	471	0.26	564	0.37	649	0.49	727	0.63	797	0.77	862	0.92
	2,100	471	0.31	519	0.37	602	0.49	679	0.62	751	0.77	819	0.92	882	1.09
	2,400	524	0.44	568	0.51	645	0.64	715	0.79	781	0.94	844	1.11	905	1.28
	2,700	578	0.61	619	0.69	690	0.84	755	0.99	816	1.15	875	1.33	932	1.51
	3,000	633	0.81	671	0.90	738	1.07	799	1.24	856	1.41	910	1.60	963	1.79
08	2,250	***290***	***0.10***	***510***	***0.39***	594	0.51	669	0.65	739	0.79	806	0.95	870	1.12
	2,600	***349***	***0.19***	561	0.55	640	0.70	709	0.84	773	1.00	834	1.16	893	1.34
	3,000	579	0.70	621	0.79	695	0.96	759	1.12	818	1.30	874	1.47	928	1.66
	3,400	646	0.99	683	1.09	752	1.29	813	1.48	869	1.67	920	1.86	970	2.06
	3,750	705	1.31	739	1.42	804	1.63	862	1.85	915	2.05	964	2.26	1011	2.48
012	3,000	***421***	***0.35***	***592***	***0.73***	670	0.90	737	1.06	797	1.23	854	1.41	908	1.59
	3,500	***626***	***0.98***	***664***	***1.08***	735	1.28	798	1.48	855	1.67	908	1.87	958	2.07
	4,000	706	1.42	738	1.54	803	1.77	862	2.00	917	2.23	967	2.45	1014	2.67
	4,500	786	1.99	815	2.12	873	2.39	929	2.65	980	2.90	1028	3.16	1073	3.41
	5,000	867	2.70	893	2.84	946	3.14	997	3.43	1046	3.72	1092	4.00	1135	4.28
14	3,750	***410***	***0.43***	***467***	***0.55***	567	0.83	649	1.12	721	1.41	788	1.72	851	2.05
	4,300	***455***	***0.62***	***504***	***0.74***	599	1.05	679	1.38	748	1.70	811	2.04	871	2.39
	5,000	***514***	***0.92***	556	1.06	641	1.39	718	1.76	786	2.14	847	2.52	903	2.91
	5,700	575	1.32	612	1.47	686	1.82	759	2.23	825	2.66	884	3.09	939	3.52
	6,250	624	1.71	657	1.87	725	2.24	793	2.66	856	3.12	915	3.59	969	4.06
16	4,500	***437***	***0.61***	***483***	***0.72***	576	1.01	660	1.35	732	1.69	797	2.03	856	2.38
	5,300	***499***	***0.95***	538	1.07	617	1.37	696	1.74	767	2.13	830	2.53	888	2.94
	6,000	***555***	**1.34**	590	1.48	659	1.79	730	2.17	798	2.59	860	3.04	918	3.49
	6,800	620	1.91	651	2.06	712	2.39	774	2.78	836	3.22	896	3.71	952	4.21
	7,500	677	2.52	706	2.69	761	3.04	817	3.44	873	3.89	929	4.39	984	4.93

Plain type – Standard Motor and fan drive
_____ – High static motor & drive
_____ – Medium static option; std motor, medium static drive
BOLD – High static motor & field–supplied drive
BOLD – Standard motor & field–supplied drive required

FAN PERFORMANCE DATA — 524J 575–3–60
1.4-2.4 in. wg ESP — 60 Hz, English

UNIT 524J 4–Row Coil	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)											
		1.4		1.6		1.8		2.0		2.2		2.4	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	921	1.07	975	1.23	1026	1.39	1074	1.55	**1120**	**1.72**	**1164**	**1.90**
	2,100	942	1.26	997	1.43	1048	1.61	**1097**	**1.79**	**1143**	**1.97**	**1186**	**2.16**
	2,400	963	1.47	1017	1.66	1069	1.85	**1118**	**2.05**	**1164**	**2.25**	—	—
	2,700	987	1.71	1039	1.91	**1090**	**2.12**	**1138**	**2.33**	**1185**	**2.55**	—	—
	3,000	1015	1.99	1065	2.20	**1113**	**2.42**	**1161**	**2.65**	—	—	—	—
08	2,250	930	1.29	986	1.47	1039	1.65	1089	1.84	1136	2.03	1181	2.22
	2,600	950	1.53	1005	1.72	1057	1.92	1107	2.13	1154	2.33	—	—
	3,000	980	1.86	1031	2.06	1081	2.27	1129	2.49	1175	2.72	—	—
	3,400	1018	2.26	1065	2.48	1111	2.70	1156	2.93	—	—	—	—
	3,750	1057	2.69	1101	2.92	1144	3.15	1186	3.39	—	—	—	—
12	3,000	961	1.78	1012	1.98	1062	2.19	1111	2.41	1158	2.64	—	—
	3,500	1005	2.27	1052	2.49	1098	2.71	1142	2.94	1186	3.18	—	—
	4,000	1058	2.90	1101	3.13	1143	3.36	1184	3.60	—	—	—	—
	4,500	1116	3.66	1157	3.91	1196	4.16	—	—	—	—	—	—
	5,000	1176	4.56	—	—	—	—	—	—	—	—	—	—
14	3,750	912	2.39	971	2.76	1028	3.14	1083	3.54	**1135**	**3.95**	**1185**	**4.36**
	4,300	928	2.75	982	3.13	1036	3.53	1087	3.94	**1138**	**4.37**	**1187**	**4.81**
	5,000	956	3.30	1007	3.71	1056	4.13	**1104**	**4.56**	**1151**	**5.00**	**1196**	**5.46**
	5,700	990	3.96	1039	4.40	1086	4.85	**1130**	**5.31**	**1174**	**5.78**	—	—
	6,250	1019	4.54	1067	5.02	**1112**	**5.50**	**1156**	**5.99**	**1198**	**6.49**	—	—
16	4,500	912	2.75	967	3.12	1019	3.52	1070	3.92	1120	4.35	1168	4.79
	5,300	942	3.34	992	3.76	1041	4.18	1088	4.61	1134	5.06	**1179**	**5.52**
	6,000	971	3.95	1020	4.40	1067	4.86	1112	5.33	1156	5.81	**1198**	**6.29**
	6,800	1005	4.72	1054	5.23	1101	5.75	1145	6.27	**1187**	**6.79**	—	—
	7,500	1036	5.48	1084	6.04	1131	6.61	**1174**	**7.17**	—	—	—	—

Plain type – Standard Motor and fan drive
_____ – High static motor & drive
_____ – Medium static option; std motor, medium static drive
BOLD – High static motor & field–supplied drive
BOLD – Standard motor & field–supplied drive required

PERFORMANCE DATA (cont.)

FAN PERFORMANCE DATA — 524J 230–3–60 & 460–3–60
0.0-1.2 in. wg ESP — 60 Hz, English

UNIT 524J 4–Row Coil	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)													
		0.0		0.2		0.4		0.6		0.8		1.0		1.2	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	***419***	***0.21***	471	0.26	564	0.37	649	0.49	727	0.63	797	0.77	862	0.92
	2,100	471	0.31	519	0.37	602	0.49	679	0.62	751	0.77	819	0.92	882	1.09
	2,400	524	0.44	568	0.51	645	0.64	715	0.79	781	0.94	844	1.11	905	1.28
	2,700	578	0.61	619	0.69	690	0.84	755	0.99	816	1.15	875	1.33	932	1.51
	3,000	633	0.81	671	0.90	738	1.07	799	1.24	856	1.41	910	1.60	963	1.79
08	2,250	***290***	***0.10***	***510***	***0.39***	594	0.51	669	0.65	739	0.79	806	0.95	870	1.12
	2,600	***349***	***0.19***	561	0.55	640	0.70	709	0.84	773	1.00	834	1.16	893	1.34
	3,000	579	0.70	621	0.79	695	0.96	759	1.12	818	1.30	874	1.47	928	1.66
	3,400	646	0.99	683	1.09	752	1.29	813	1.48	869	1.67	920	1.86	970	2.06
	3,750	705	1.31	739	1.42	804	1.63	862	1.85	915	2.05	964	2.26	1011	2.48
12	3,000	***421***	***0.35***	***592***	***0.73***	670	0.90	737	1.06	797	1.23	854	1.41	908	1.59
	3,500	***626***	***0.98***	***664***	***1.08***	735	1.28	798	1.48	855	1.67	908	1.87	958	2.07
	4,000	706	1.42	738	1.54	803	1.77	862	2.00	917	2.23	967	2.45	1014	2.67
	4,500	786	1.99	815	2.12	873	2.39	929	2.65	980	2.90	1028	3.16	1073	3.41
	5,000	867	2.70	893	2.84	946	3.14	997	3.43	1046	3.72	1092	4.00	1135	4.28
14	3,750	***410***	***0.43***	***467***	***0.55***	567	0.83	649	1.12	721	1.41	788	1.72	851	2.05
	4,300	***455***	***0.62***	***504***	***0.74***	599	1.05	679	1.38	748	1.70	811	2.04	871	2.39
	5,000	***514***	***0.92***	556	1.06	641	1.39	718	1.76	786	2.14	847	2.52	903	2.91
	5,700	575	1.32	612	1.47	686	1.82	759	2.23	825	2.66	884	3.09	939	3.52
	6,250	624	1.71	657	1.87	725	2.24	793	2.66	856	3.12	915	3.59	969	4.06
16	4,500	***437***	***0.61***	***483***	***0.72***	576	1.01	660	1.35	732	1.69	797	2.03	856	2.38
	5,300	***499***	***0.95***	538	1.07	617	1.37	696	1.74	767	2.13	830	2.53	888	2.94
	6,000	***555***	***1.34***	590	1.48	659	1.79	730	2.17	798	2.59	860	3.04	918	3.49
	6,800	620	1.91	651	2.06	712	2.39	774	2.78	836	3.22	896	3.71	952	4.21
	7,500	677	2.52	706	2.69	761	3.04	817	3.44	873	3.89	929	4.39	984	4.93

Plain type – Standard Motor and fan drive
_____ – High static motor & drive
_____ – Medium static option; std motor, medium static drive
BOLD – High static motor & field–supplied drive
BOLD – Standard motor & field–supplied drive required

FAN PERFORMANCE DATA — 524J 230–3–60 & 460–3–60
1.4-2.4 in. wg ESP — 60 Hz, English

UNIT 524J 4–Row Coil	AIRFLOW (Cfm)	EXTERNAL STATIC PRESSURE (in. wg)											
		1.4		1.6		1.8		2.0		2.2		2.4	
		Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp	Rpm	Bhp
07	1,800	921	1.07	975	1.23	1026	1.39	1074	1.55	**1120**	**1.72**	**1164**	**1.90**
	2,100	942	1.26	997	1.43	1048	1.61	**1097**	**1.79**	**1143**	**1.97**	**1186**	**2.16**
	2,400	963	1.47	1017	1.66	1069	1.85	**1118**	**2.05**	**1164**	**2.25**	—	—
	2,700	987	1.71	1039	1.91	**1090**	**2.12**	**1138**	**2.33**	**1185**	**2.55**	—	—
	3,000	1015	1.99	1065	2.20	**1113**	**2.42**	**1161**	**2.65**	—	—	—	—
08	2,250	930	1.29	986	1.47	1039	1.65	1089	1.84	1136	2.03	1181	2.22
	2,600	950	1.53	1005	1.72	1057	1.92	1107	2.13	1154	2.33	—	—
	3,000	980	1.86	1031	2.06	1081	2.27	1129	2.49	1175	2.72	—	—
	3,400	1018	2.26	1065	2.48	1111	2.70	1156	2.93	—	—	—	—
	3,750	1057	2.69	1101	2.92	1144	3.15	1186	3.39	—	—	—	—
12	3,000	961	1.78	1012	1.98	1062	2.19	1111	2.41	1158	2.64	—	—
	3,500	1005	2.27	1052	2.49	1098	2.71	1142	2.94	1186	3.18	—	—
	4,000	1058	2.90	1101	3.13	1143	3.36	1184	3.60	—	—	—	—
	4,500	1116	3.66	1157	3.91	1196	4.16	—	—	—	—	—	—
	5,000	1176	4.56	—	—	—	—	—	—	—	—	—	—
14	3,750	912	2.39	971	2.76	1028	3.14	1083	3.54	**1135**	**3.95**	**1185**	**4.36**
	4,300	928	2.75	982	3.13	1036	3.53	1087	3.94	**1138**	**4.37**	**1187**	**4.81**
	5,000	956	3.30	1007	3.71	1056	4.13	**1104**	**4.56**	**1151**	**5.00**	**1196**	**5.46**
	5,700	990	3.96	1039	4.40	1086	4.85	**1130**	**5.31**	**1174**	**5.78**	—	—
	6,250	1019	4.54	1067	5.02	**1112**	**5.50**	**1156**	**5.99**	**1198**	**6.49**	—	—
16	4,500	912	2.75	967	3.12	1019	3.52	1070	3.92	1120	4.35	1168	4.79
	5,300	942	3.34	992	3.76	1041	4.18	1088	4.61	1134	5.06	**1179**	**5.52**
	6,000	971	3.95	1020	4.40	1067	4.86	1112	5.33	1156	5.81	**1198**	**6.29**
	6,800	1005	4.72	1054	5.23	1101	5.75	1145	6.27	**1187**	**6.79**	—	—
	7,500	1036	5.48	1084	6.04	1131	6.61	**1174**	**7.17**	—	—	—	—

Plain type – Standard Motor and fan drive
_____ – High static motor & drive
_____ – Medium static option; std motor, medium static drive
BOLD – High static motor & field–supplied drive
BOLD – Standard motor & field–supplied drive required

PERFORMANCE DATA (cont.)

LEGEND AND NOTES FOR STANDARD CAPACITY COIL FAN PERFORMANCE DATA TABLES (English)

LEGEND:

Bhp – Brake Horsepower Input to Fan

ESP – External Static Pressure

NOTES:

1. Maximum allowable fan speed is 1200 rpm for all sizes.
2. Fan performance is based on deductions for wet coil, clean 2-in filters, and unit casing. See table below for factory-supplied filter pressure drop.

DUCT SOUND POWER LEVELS (Lw)

MODEL	SIZE	CFM	dB(A)	OCTAVE BAND CENTER FREQUENCY (Hz)						
				63	125	250	500	1000	2000	4000
524J	07	2,400	86.3	93.2	89.2	85.2	84.2	80.2	78.2	74.2
	08	3,000	88.3	95.3	91.3	87.3	86.3	82.3	80.3	76.3
	12	4,000	91.6	98.6	94.6	90.6	89.6	85.6	83.6	79.6
	14	5,000	91.1	97.3	93.3	89.3	90.3	84.3	82.3	78.3
	16	6,000	92.7	98.9	94.9	90.9	91.9	85.9	83.9	79.9

LEGEND:

ASHRAE – American Society of Heating, Refrigerating and Air Conditioning, Inc.

HVAC – Heating, Ventilation and Air Conditioning

NOTES:

1. The above estimated sound power levels are based upon the ASHRAE calculation approach from the ASHRAE HVAC Systems and Applications handbook.
2. Since this data is calculated, these sound power levels may be different than the actual sound power levels.
3. The acoustic center of the unit is located at the geometric center of the unit.

FACTORY-SUPPLIED FILTER PRESSURE DROP — English

SIZE	UNIT	AIRFLOW (Cfm)	PRESSURE DROP (in. wg)
07	524J	1,800 2,400 3,000	0.05 0.08 0.11
08	524J	2,250 3,000 3,750	0.07 0.11 0.15
12	524J	3,000 4,000 5,000	0.11 0.17 0.23
14	524J	3,750 5,000 6,250	0.06 0.10 0.13
16	524J	4,500 6,000 7,500	0.08 0.12 0.17

FACTORY-SUPPLIED FILTER PRESSURE DROP — SI

SIZE	UNIT	AIRFLOW (L/s)	PRESSURE DROP (Pa)
07	524J	850 1150 1450	13 20 28
08	524J	1000 1400 1800	17 27 38
12	524J	1450 1900 2350	28 42 56
14	524J	1750 2350 2950	15 24 33
16	524J	2100 2800 3500	20 30 42

PERFORMANCE DATA (cont.)

ACCESSORY PLENUM AIR THROW DATA — English (Ft)

UNIT	AIRFLOW (Cfm)	VANE DEFLECTION		
		Straight	21∫°	45°
524J 07	2,400	39	33	24
524J 08	3,000	45	38	28
524J 12	4,000	55	46	33
524J 14	5,000	45	38	28
524J 16	6,000	50	43	31

NOTE: Throw distances shown are for 75 fpm terminal velocity. Use the following multipliers to determine throw values for other terminal velocities.

TERMINAL VELOCITY (Fpm)	THROW FACTOR
50	X 1.50
100	X 0.75
150	X 0.50

ACCESSORY PLENUM AIR THROW DATA — SI(m)

UNIT	AIRFLOW (L/s)	VANE DEFLECTION		
		Straight	21∫°	45°
524J 07	1150	11.71	9.91	7.20
524J 08	1400	13.87	11.71	8.63
524J 12	1900	16.65	13.93	9.99
524J 14	2350	13.77	11.63	8.57
524J 16	2800	15.41	13.25	9.55

NOTE: Throw distances shown are for 0.381 m/sec terminal velocity. Use the following multipliers to determine throw values for other terminal velocities.

TERMINAL VELOCITY (m/sec)	THROW FACTOR
0.254	X 1.50
0.508	X 0.75
0.762	X 0.50

PERFORMANCE DATA (cont.)

ACCESSORY PRESSURE DROP — English (in. wg)

UNIT	AIRFLOW (Cfm)	DISCHARGE PLENUM	RETURN AIR GRILLE	HEATING COILS			ECONOMIZER
				Hot Water	Steam	Electric	
524J 07	1,800	0.06	0.01	0.10	0.10	0.04	0.05
	2,400	0.10	0.01	0.16	0.16	0.06	0.07
	3,000	0.14	0.02	0.23	0.23	0.10	0.09
524J 08	2,250	0.09	0.01	0.15	0.15	0.06	0.06
	3,000	0.14	0.02	0.23	0.23	0.10	0.09
	3,750	0.21	0.03	0.35	0.35	0.15	0.15
524J 12	3,000	0.14	0.02	0.23	0.23	0.10	0.09
	4,000	0.22	0.04	0.37	0.37	0.17	0.17
	5,000	0.32	0.06	0.53	0.53	0.26	0.28
524J 14	3,750	0.07	0.01	0.11	0.11	0.04	0.05
	5,000	0.12	0.02	0.17	0.17	0.07	0.07
	6,250	0.17	0.02	0.25	0.25	0.11	0.11
524J 16	4,500	0.10	0.01	0.15	0.15	0.06	0.06
	6,000	0.16	0.02	0.23	0.23	0.10	0.09
	7,500	0.23	0.03	0.33	0.33	0.15	0.15

ACCESSORY PRESSURE DROP — SI (Pa)

UNIT	AIRFLOW (L/s)	DISCHARGE PLENUM	RETURN AIR GRILLE	HEATING COILS			ECONOMIZER
				Hot Water	Steam	Electric	
524J 07	850	15	2	25	25	9	12
	1150	25	3	41	41	16	18
	1450	36	5	60	60	26	23
524J 08	1000	20	2	33	33	12	13
	1400	34	5	57	57	24	22
	1800	51	8	85	85	39	39
524J 12	1450	36	5	60	60	26	23
	1900	56	10	93	93	43	43
	2350	79	15	132	132	65	69
524J 14	1750	18	2	26	26	10	12
	2350	29	5	43	43	17	17
	2950	43	5	62	62	26	27
524J 16	2100	24	2	36	36	14	15
	2800	39	5	57	57	24	22
	3500	56	7	82	82	37	37

ELECTRICAL DATA

STANDARD MOTORS

UNIT	V-PH-Hz	VOLTAGE LIMITS	FAN MOTOR		POWER SUPPLY	
			Hp (kW)	FLA	Minimum Circuit Amps	MOCP
524J 07	208/230-1-60	187-253	1.3 (0.97)	7.6	9.5	15
	208/230-3-60	187-253	2.4 (1.79)	5.8	7.5	15
	460-3-60	414-506	2.4 (1.79)	2.6	3.3	15
	575-3-60	518-632	1.0 (0.75)	1.4	1.7	15
524J 08	208/230-1-60	187-253	2.4 (1.79)	11.0	13.8	20
	208/230-3-60	187-253	2.4 (1.79)	5.8	6.5	15
	460-3-60	414-506	2.4 (1.79)	2.6	3.3	15
	575-3-60	518-632	2.0 (1.49)	2.4	3.0	15
524J 12	208/230-3-60	187-253	2.4 (1.79)	5.8	7.3	15
	460-3-60	414-506	2.4 (1.79)	2.6	3.3	15
	575-3-60	518-632	2.0 (1.49)	2.4	3.0	15
524J 14	208/230-3-60	187-253	2.4 (1.79)	5.8	7.5	15
	460-3-60	414-506	2.4 (1.79)	2.6	3.3	15
	575-3-60	518-632	3.0 (2.24)	3.8	4.8	15
524J 16	208/230-3-60	187-253	3.7 (2.76)	10.6	13.3	20
	460-3-60	414-506	3.7 (2.76)	4.8	6.0	15
	575-3-60	518-632	3.0 (2.24)	3.8	4.8	15

LEGEND

FLA — Full Load Amps

MOCP — Maximum Overcurrent Protection

* Motors are designed for satisfactory operation within 10% of nominal voltages shown. Voltages should not exceed the limits shown in the Voltage Limits column.

NOTES:

1. Minimum circuit amps (MCA) and MOCP values are calculated in accordance with NEC (National Electrical Code) (U.S.A. standard), Article 440.
2. Motor FLA values are established in accordance with UL (Underwriters' Laboratories) Standard 1995 (U.S.A. standard).
3. Indoor fan motors 5 hp and larger meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT) effective October 24, 1997.
4. Unbalanced 3–Phase Supply Voltage
   Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 230-3-60



AB = 224 v
BC = 231 v
AC = 226 v

$$\text{Average Voltage} = \frac{(224 + 231 + 226)}{3} = \frac{681}{3}$$

$$= 227$$

Determine maximum deviation from average voltage.
(AB) 227 – 224 = 3 v
(BC) 231 – 227 = 4 v
(AC) 227 – 226 = 1 v
Maximum deviation is 4 v.
Determine percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{4}{227}$$

$$= 1.76\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

ELECTRICAL DATA (cont.)

ALTERNATE MOTORS

UNIT	V-PH-Hz	VOLTAGE LIMITS	FAN MOTOR		POWER SUPPLY	
			Hp (kW)	FLA	Minimum Circuit Amps	MOCP
524J 07	208/230-1-60	187-253	2.4 (1.79)	11.0	13.8	20
	208/230-3-60	187-253	2.9 (2.16)	7.5	9.4	15
	460-3-60	414-506	2.9 (2.16)	3.4	4.3	15
	575-3-60	518-632	2.0 (1.49)	2.4	3.0	15
524J 08	208/230-1-60	187-253	2.4 (1.79)	11.0	13.8	20
	208/230-3-60	187-253	2.9 (2.16)	7.5	9.4	15
	460-3-60	414-506	2.9 (2.16)	3.4	4.3	15
	575-3-60	518-632	3.0 (2.24)	3.8	4.8	15
524J 12	208/230-3-60	187-253	3.7 (2.76)	10.6	13.3	20
	460-3-60	414-506	3.7 (2.76)	4.8	6.0	15
	575-3-60	518-632	3.0 (2.24)	3.8	4.8	15
524J 14	208/230-3-60	187-253	3.7 (2.76)	10.6	13.3	20
	460-3-60	414-506	3.7 (2.76)	4.8	6.0	15
	575-3-60	518-632	5.0 (3.73)	5.1	6.4	15
524J 16	208/230-3-60	187-253	5.0 (3.73)	14.6	18.3/16.0	30/25
	460-3-60	414-506	5.0 (3.73)	6.4	8.0	15
	575-3-60	518-632	5.0 (3.73)	5.1	6.4	15

LEGEND

FLA — Full Load Amps

MOCP — Maximum Overcurrent Protection

* Motors are designed for satisfactory operation within 10% of nominal voltages shown. Voltages should not exceed the limits shown in the Voltage Limits column.

NOTES:

1. Minimum circuit amps (MCA) and MOCP values are calculated in accordance with NEC (National Electrical Code) (U.S.A. standard), Article 440.
2. Motor FLA values are established in accordance with UL (Underwriters' Laboratories) Standard 1995 (U.S.A. standard).
3. Indoor fan motors 5 hp and larger meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT) effective October 24, 1997.
4. Unbalanced 3–Phase Supply Voltage
   Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 230-3-60



AB = 224 v
BC = 231 v
AC = 226 v

$$\text{Average Voltage} = \frac{(224 + 231 + 226)}{3} = \frac{681}{3}$$

$$= 227$$

Determine maximum deviation from average voltage.
(AB) 227 – 224 = 3 v
(BC) 231 – 227 = 4 v
(AC) 227 – 226 = 1 v
Maximum deviation is 4 v.
Determine percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{4}{227}$$

$$= 1.76\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

ELECTRICAL DATA (cont.)

ELECTRIC HEATER DATA

HEATER PART NO. CAELHEAT	SIZE	V-PH-Hz	FAN MOTOR			ELECTRIC HEATER(S)					MCA*	MOCP*
						Nominal Capacity (kW)	Actual Capacity (kW)			FLA		
			Hp	kW	FLA		Stage 1	Stage 2	Total			
001A00	524J 07–12	208-3-60	1.3†	0.97	7.6	5	3.8	—	3.8	10.4	22.5	25
			2.4†	1.79	11.0	5	3.8	—	3.8	10.4	26.8	35
			2.4	1.79	5.2	5	3.8	—	3.8	10.4	19.5	20
			2.9	2.16	7.5	5	3.8	—	3.8	10.4	22.4	25
			3.7	2.76	10.2	5	3.8	—	3.8	10.4	25.8	30
		240-3-60	1.3†	0.97	7.6	5	5.0	—	5.0	12.0	24.5	25
			2.4†	1.79	11.0	5	5.0	—	5.0	12.0	28.8	35
			2.4	1.79	5.2	5	5.0	—	5.0	12.0	21.5	25
			2.9	2.16	7.5	5	5.0	—	5.0	12.0	24.4	25
			3.7	2.76	10.2	5	5.0	—	5.0	12.0	27.8	30
002A00		480-3-60	2.4	1.79	2.6	5	5.0	—	5.0	6.00	10.8	15
			2.9	2.16	3.4	5	5.0	—	5.0	6.00	11.8	15
			3.7	2.76	4.8	5	5.0	—	5.0	6.00	13.5	15
003A00		575-3-60	1.0	0.75	1.4	5	5.0	—	5.0	5.00	8.0	15
			2.0	1.49	2.3	5	5.0	—	5.0	5.00	9.2	15
			3.0	2.24	3.8	5	5.0	—	5.0	5.00	11.0	15
004A00		208-3-60	1.3†	0.97	7.6	10	7.5	—	7.5	20.8	35.6	40
			2.4†	1.79	11.0	10	7.5	—	7.5	20.8	39.8	40
			2.4	1.79	5.2	10	7.5	—	7.5	20.8	32.6	35
			2.9	2.16	7.5	10	7.5	—	7.5	20.8	35.4	40
			3.7	2.76	10.2	10	7.5	—	7.5	20.8	38.8	40
		240-3-60	1.3†	0.97	7.6	10	10.0	—	10.0	24.1	39.6	40
			2.4†	1.79	11.0	10	10.0	—	10.0	24.1	43.8	50
			2.4	1.79	5.2	10	10.0	—	10.0	24.1	36.6	40
			2.9	2.16	7.5	10	10.0	—	10.0	24.1	39.4	40
			3.7	2.76	10.2	10	10.0	—	10.0	24.1	42.8	50
005A00		480-3-60	2.4	1.79	2.6	10	10.0	—	10.0	12.0	18.3	20
			2.9	2.16	3.4	10	10.0	—	10.0	12.0	19.3	20
			3.7	2.76	4.8	10	10.0	—	10.0	12.0	21.0	25
006A00		575-3-60	1.0	0.75	1.4	10	10.0	—	10.0	10.0	14.3	15
			2.0	1.49	2.3	10	10.0	—	10.0	10.0	15.4	20
			3.0	2.24	3.8	10	10.0	—	10.0	10.0	17.3	20
007A00		208-3-60	1.3†	0.97	7.6	15	11.3	—	11.3	31.3	48.6	50
			2.4†	1.79	11.0	15	11.3	—	11.3	31.3	52.9	60
			2.4	1.79	5.2	15	11.3	—	11.3	31.3	45.6	50
			2.9	2.16	7.5	15	11.3	—	11.3	31.3	48.5	50
			3.7	2.76	10.2	15	11.3	—	11.3	31.3	51.9	60
		240-3-60	1.3†	0.97	7.6	15	15.0	—	15.0	36.1	54.6	60
			2.4†	1.79	11.0	15	15.0	—	15.0	36.1	58.9	60
			2.4	1.79	5.2	15	15.0	—	15.0	36.1	51.6	60
			2.9	2.16	7.5	15	15.0	—	15.0	36.1	54.5	60
			3.7	2.76	10.2	15	15.0	—	15.0	36.1	57.9	60

LEGEND

FLA — Full Load Amps
Hp — Horsepower
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection (Amps)

* Values shown are for single-point connection of electric heat accessory and air handler.

† Single-phase motors. All other motors are 3-phase.

NOTES:

1. Electrical resistance heaters are rated at 240 v, 480 v, or 575 v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.

HEATER RATING VOLTAGE	ACTUAL HEATER VOLTAGE										
	200	208	230	240	400	440	460	480	550	575	600
240	0.694	0.751	0.918	1	—	—	—	—	—	—	—
480	—	—	—	—	0.694	0.84	0.918	1	—	—	—
575	—	—	—	—	—	—	—	—	0.915	1	1.089

2. The following equation converts kW of heat energy to Btuh: kW x 3,412 = Btuh.
3. Heater contactor coils are 24 v and require 8 va holding current.
4. Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
5. MCA and MOCP values apply to both standard and alternate factory-supplied motors.
6. Approximate shipping weight for CAELHEAT001A00-015A00 is 55 lb (25 kg) each. Approximate shipping weight for CAELHEAT016A00-027A00 is 60 lb (27 kg) each, and CAELHEAT028A00-039A00 is 75 lb (34 kg) each.

ELECTRICAL DATA (cont.)

ELECTRIC HEATER DATA (cont)

HEATER PART NO. CAELHEAT	SIZE	V-PH-Hz	FAN MOTOR			ELECTRIC HEATER(S)					MCA*	MOCP*
						Nominal Capacity (kW)	Actual Capacity (kW)			FLA		
			Hp	kW	FLA		Stage 1	Stage 2	Total			
008A00	524J 07–12	480-3-60	2.4	1.79	2.6	15	15.0	—	15.0	18.0	25.8	30
			2.9	2.16	3.4	15	15.0	—	15.0	18.0	26.8	30
			3.7	2.76	4.8	15	15.0	—	15.0	18.0	28.6	30
009A00		575-3-60	1.0	0.75	1.4	15	15.0	—	15.0	15.1	20.6	25
			2.0	1.49	2.3	15	15.0	—	15.0	15.1	21.7	25
			3.0	2.24	3.8	15	15.0	—	15.0	15.1	23.6	25
010A00		208-3-60	1.3†	0.97	7.6	25	11.3	7.5	18.8	52.1	74.7	80
			2.4†	1.79	11.0	25	11.3	7.5	18.8	52.1	78.9	80
			2.4	1.79	5.2	25	11.3	7.5	18.8	52.1	71.7	80
			2.9	2.16	7.5	25	11.3	7.5	18.8	52.1	74.5	80
			3.7	2.76	10.2	25	11.3	7.5	18.8	52.1	77.9	80
		240-3-60	1.3†	0.97	7.6	25	15.0	10.0	25.0	60.1	84.7	90
			2.4†	1.79	11.0	25	15.0	10.0	25.0	60.1	88.9	90
			2.4	1.79	5.2	25	15.0	10.0	25.0	60.1	81.7	90
			2.9	2.16	7.5	25	15.0	10.0	25.0	60.1	84.6	90
			3.7	2.76	10.2	25	15.0	10.0	25.0	60.1	87.9	90
011A00		480-3-60	2.4	1.79	2.6	25	15.0	10.0	25.0	30.1	40.8	50
			2.9	2.16	3.4	25	15.0	10.0	25.0	30.1	41.8	50
			3.7	2.76	4.8	25	15.0	10.0	25.0	30.1	43.6	50
012A00		575-3-60	1.0	0.75	1.4	25	15.0	10.0	25.0	25.1	33.1	35
			2.0	1.49	2.3	25	15.0	10.0	25.0	25.1	34.3	35
			3.0	2.24	3.8	25	15.0	10.0	25.0	25.1	36.1	40
013A00	524J 07–12	208-3-60	2.4†	1.79	11.0	35	15.0	11.3	26.3	73.0	105.0	110
			2.4	1.79	5.2	35	15.0	11.3	26.3	73.0	97.7	100
			2.9	2.16	7.5	35	15.0	11.3	26.3	73.0	100.6	110
			3.7	2.76	10.2	35	15.0	11.3	26.3	73.0	104.0	110
		240-3-60	2.4†	1.79	11.0	35	20.0	15.0	35.0	84.2	119.0	125
			2.4	1.79	5.2	35	20.0	15.0	35.0	84.2	111.7	125
			2.9	2.16	7.5	35	20.0	15.0	35.0	84.2	114.6	125
			3.7	2.76	10.2	35	20.0	15.0	35.0	84.2	118.0	125
014A00		480-3-60	2.4	1.79	2.6	35	20.0	15.0	35.0	42.1	55.9	60
			2.9	2.16	3.4	35	20.0	15.0	35.0	42.1	56.9	60
			3.7	2.76	4.8	35	20.0	15.0	35.0	42.1	58.6	60
015A00		575-3-60	2.0	1.49	2.3	35	20.0	15.0	35.0	35.1	46.8	50
			3.0	2.24	3.8	35	20.0	15.0	35.0	35.1	48.7	50

* Values shown are for single-point connection of electric heat accessory and air handler.

† Single-phase motors. All other motors are 3-phase.

LEGEND

FLA — Full Load Amps
Hp — Horsepower
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection (Amps)

NOTES:

1. Electrical resistance heaters are rated at 240 v, 480 v, or 575 v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.

HEATER RATING VOLTAGE	ACTUAL HEATER VOLTAGE										
	200	208	230	240	400	440	460	480	550	575	600
240	0.694	0.751	0.918	1	—	—	—	—	—	—	—
480	—	—	—	—	0.694	0.84	0.918	1	—	—	—
575	—	—	—	—	—	—	—	—	0.915	1	1.089

2. The following equation converts kW of heat energy to Btuh: kW x 3,412 = Btuh.
3. Heater contactor coils are 24 v and require 8 va holding current.
4. Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
5. MCA and MOCP values apply to both standard and alternate factory-supplied motors.
6. Approximate shipping weight for CAELHEAT001A00-015A00 is 55 lb (25 kg) each. Approximate shipping weight for CAELHEAT016A00-027A00 is 60 lb (27 kg) each, and CAELHEAT028A00-039A00 is 75 lb (34 kg) each.

ELECTRICAL DATA (cont.)

ELECTRIC HEATER DATA (cont)

HEATER PART NO. CAELHEAT	SIZE	V-PH-Hz	FAN MOTOR Hp	FAN MOTOR kW	FAN MOTOR FLA	ELECTRIC HEATER(S) Nominal Capacity (kW)	ELECTRIC HEATER(S) Actual Capacity (kW) Stage 1	ELECTRIC HEATER(S) Actual Capacity (kW) Stage 2	ELECTRIC HEATER(S) Actual Capacity (kW) Total	ELECTRIC HEATER(S) FLA	MCA*	MOCP*
016A00	524J 14,16	208-3-60	2.9	2.16	7.5	10	7.5	—	7.5	20.8	35.4	40
			3.7	2.76	10.2	10	7.5	—	7.5	20.8	38.8	40
			5.0	3.73	14.6	10	7.5	—	7.5	20.8	41.3	50
		240-3-60	2.9	2.16	7.5	10	10.0	—	10.0	24.1	39.4	40
			3.7	2.76	10.2	10	10.0	—	10.0	24.1	42.8	50
			5.0	3.73	12.8	10	10.0	—	10.0	24.1	46.1	50
017A00		480-3-60	2.9	2.16	3.4	10	10.0	—	10.0	12.0	19.3	20
			3.7	2.76	4.8	10	10.0	—	10.0	12.0	21.0	25
			5.0	3.73	6.4	10	10.0	—	10.0	12.0	23.0	25
018A00		575-3-60	3.0	2.24	3.8	10	10.0	—	10.0	10.0	17.3	20
			5.0	3.73	5.1	10	10.0	—	10.0	10.0	19.6	20
019A00		208-3-60	2.9	2.16	7.5	20	14.9	—	14.9	41.5	51.2	70
			3.7	2.76	10.2	20	14.9	—	14.9	41.5	64.6	70
			5.0	3.73	14.6	20	14.9	—	14.9	41.5	70.1	80
		240-3-60	2.9	2.16	7.5	20	19.9	—	19.9	47.9	69.2	70
			3.7	2.76	10.2	20	19.9	—	19.9	47.9	72.6	80
			5.0	3.73	12.8	20	19.9	—	19.9	47.9	75.8	80
020A00		480-3-60	2.9	2.16	3.4	20	20.0	—	20.0	24.1	34.3	35
			3.7	2.76	4.8	20	20.0	—	20.0	24.1	36.1	40
			5.0	3.73	6.4	20	20.0	—	20.0	24.1	39.1	40
021A00		575-3-60	3.0	2.24	3.8	20	20.0	—	20.0	20.1	29.9	30
			5.0	3.73	5.1	20	20.0	—	20.0	20.1	31.5	35
022A00		208-3-60	2.9	2.16	7.5	30	15.0	7.5	22.5	62.5	87.5	90
			3.7	2.76	10.2	30	15.0	7.5	22.5	62.5	90.9	100
			5.0	3.73	14.6	30	15.0	7.5	22.5	62.5	96.4	100
		240-3-60	2.9	2.16	7.5	30	20.0	10.0	30.0	72.2	99.6	100
			3.7	2.76	10.2	30	20.0	10.0	30.0	72.2	103.0	110
			5.0	3.73	12.8	30	20.0	10.0	30.0	72.2	106.2	110
023A00		480-3-60	2.9	2.16	3.4	30	20.0	10.0	30.0	36.1	49.4	50
			3.7	2.76	4.8	30	20.0	10.0	30.0	36.1	51.1	60
			5.0	3.73	6.4	30	20.0	10.0	30.0	36.1	53.1	60
024A00		575-3-60	3.0	2.24	3.8	30	20.0	10.0	30.0	30.1	42.4	50
			5.0	3.73	5.1	30	20.0	10.0	30.0	30.1	44.0	50

LEGEND

FLA — Full Load Amps
Hp — Horsepower
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection (Amps)

* Values shown are for single-point connection of electric heat accessory and air handler.
† Single-phase motors. All other motors are 3-phase.

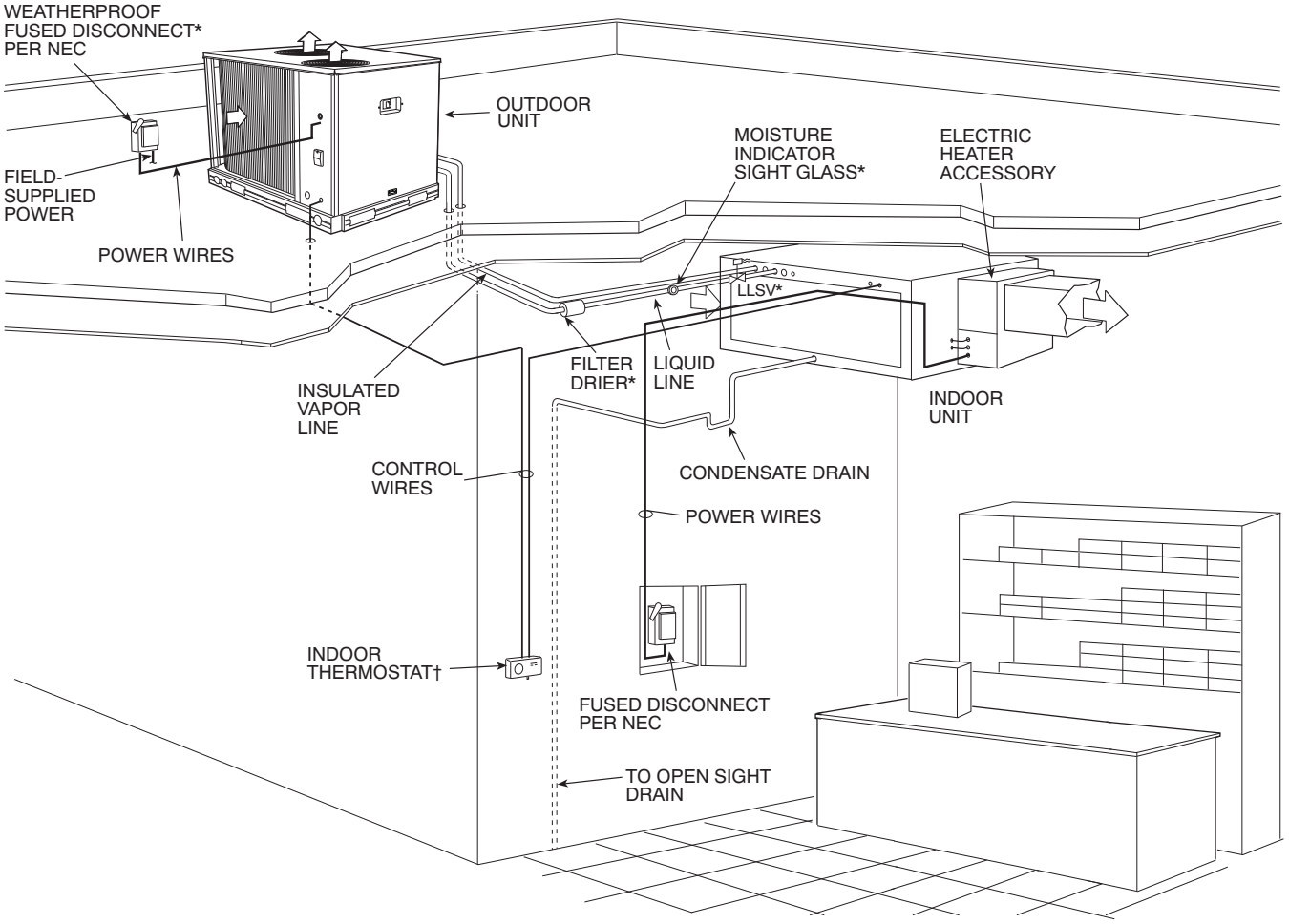
NOTES:

1. Electrical resistance heaters are rated at 240 v, 480 v, or 575 v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.

HEATER RATING VOLTAGE	ACTUAL HEATER VOLTAGE 200	208	230	240	400	440	460	480	550	575	600
240	0.694	0.751	0.918	1	—	—	—	—	—	—	—
480	—	—	—	—	0.694	0.84	0.918	1	—	—	—
575	—	—	—	—	—	—	—	—	0.915	1	1.089

2. The following equation converts kW of heat energy to Btuh: kW x 3,412 = Btuh.
3. Heater contactor coils are 24 v and require 8 va holding current.
4. Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
5. MCA and MOCP values apply to both standard and alternate factory-supplied motors.
6. Approximate shipping weight for CAELHEAT001A00-015A00 is 55 lb (25 kg) each. Approximate shipping weight for CAELHEAT016A00-027A00 is 60 lb (27 kg) each, and CAELHEAT028A00-039A00 is 75 lb (34 kg) each.

TYPICAL PIPING AND WIRING



C09054

LEGEND:

NEC – National Electrical Code

TXV – Thermostatic Expansion Valve

* Field–supplied

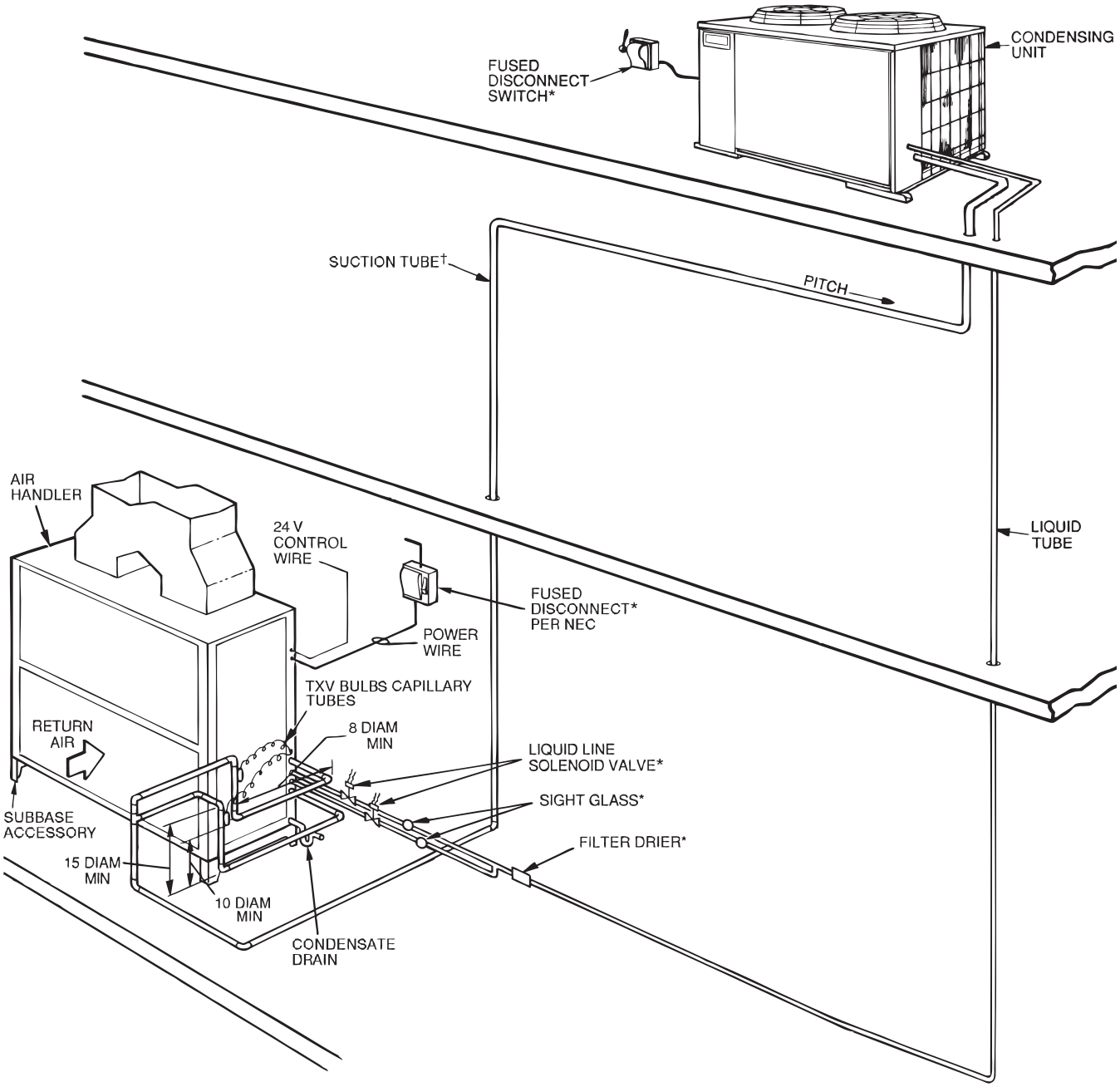
† Double riser may be required. Consult condensing unit product data catalog for details.

NOTES:

1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

TYPICAL PIPING AND WIRING (cont.)

VERTICAL INSTALLATION - 524J (TYPICAL)



C09436

LEGEND:

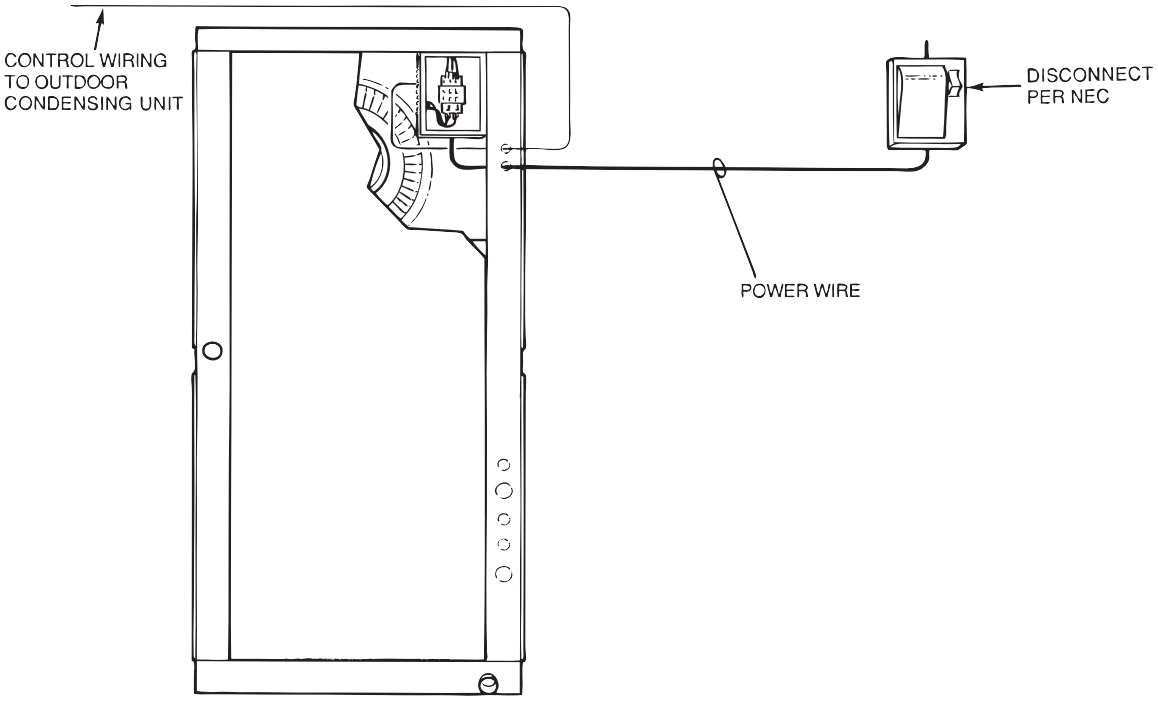
LLSV – Liquid Line Solenoid Valve
NEC – National Electrical Code
TXV – Thermostatic Expansion Valve
* Field–supplied
† Double riser may be required Consult condensing unit product data catalog ro details.

NOTES:

1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

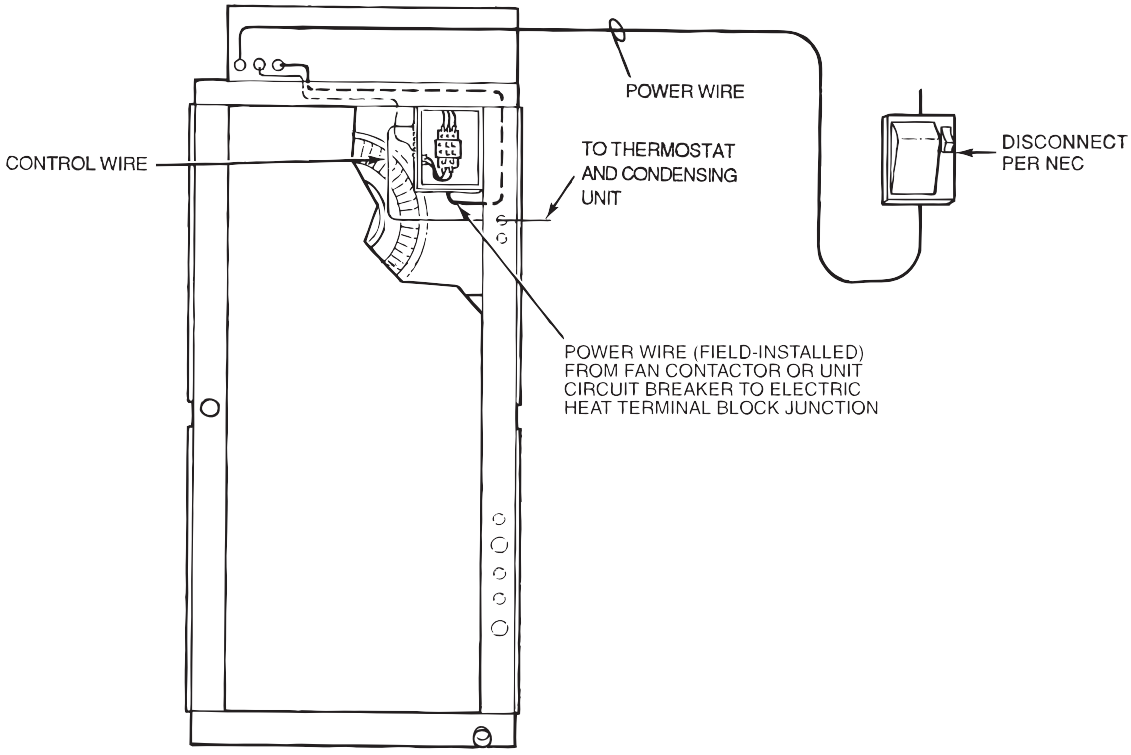
TYPICAL PIPING AND WIRING (cont.)

WIRE ROUTING, BASE UNIT 524J



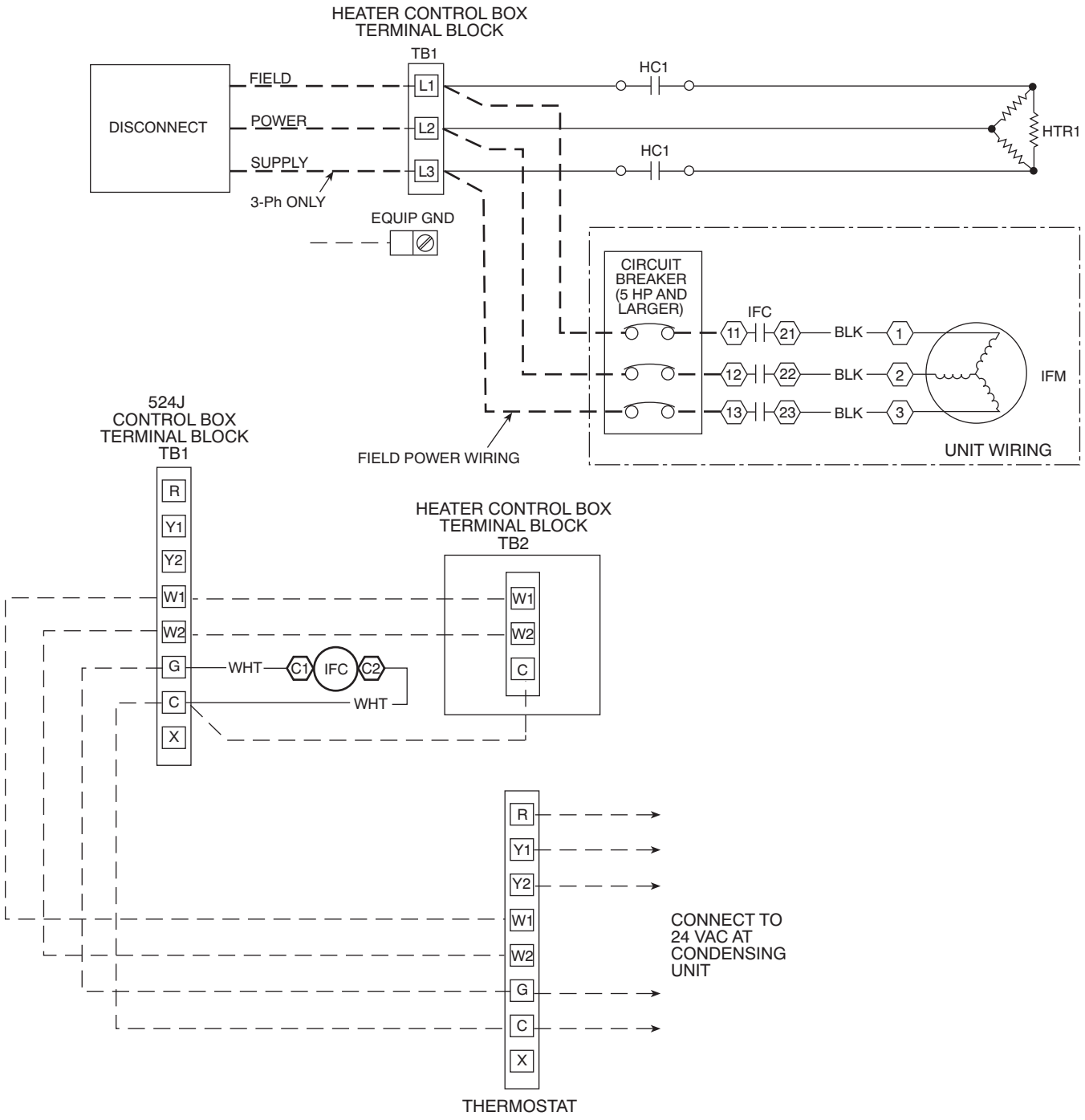
C09437

WIRE ROUTING, UNIT WITH ELECTRIC HEAT - 524J



C09438

TYPICAL CONTROL WIRING SCHEMATIC



C09439

APPLICATION DATA

Operating limits

Maximum fan speed

524J07-14 . . . . . 1200 RPM(20 R/S)

General

IMPORTANT: Do not bury refrigerant piping underground.

Select equipment to match or to be slightly less than peak load. This provides better humidity control, less unit cycling, and less part-load operation. Equipment should be selected to perform at no less than 300 cfm/ton (40 L/s per kW).

The air handler fan must always be operating when the condensing unit is operating.

Ductwork should be sized according to unit size, not building load. For larger units with two fans, a split duct transition is recommended at the fan outlets, but a plenum can be used with slight reduction in external static pressure capability.

Hot gas bypass

Hot gas bypass may be required for low load control in certain applications. Hot gas should only be used during first stage cooling operation and should be applied to all evaporator circuits that are active at that time. To apply hot gas bypass, the 524J unit will require a field-installed auxiliary side connector(s). See the Auxiliary Side Connector Data table for part numbers.

AUXILIARY SIDE CONNECTOR DATA

UNIT 524J	Bryant P/N	INLET/OUTLET DIAMETER — ODF (in.)	AUXILIARY (Hot Gas) DIAMETER — ODF (in.)
07	EA19BA705	$1^{1}/_{8}$	$^{5}/_{8}$
08	EA19BA905	$1^{3}/_{8}$	$^{7}/_{8}$
12	EA19BA705	$1^{1}/_{8}$	$^{5}/_{8}$
14	EA19BA705	$1^{1}/_{8}$	$^{5}/_{8}$
16	EA19BA705	$1^{1}/_{8}$	$^{5}/_{8}$

FACTORY-INSTALLED NOZZLE AND DISTRIBUTOR DATA

UNIT	COIL TYPE	TXV Qty...Part No.	DISTRIBUTOR Qty...Part No.†	FEEDER TUBES PER DISTRIBUTOR* Qty...Size (in.)	NOZZLE Qty...Part No.
524J07	4 Row	1...BBIZE–5–GA	1...1135	12...$^{1}/_{4}$	1...G4
524J08	4 Row	1...BBIZE–6–GA	1...1136	15...$^{1}/_{4}$	1...G5
524J12	4 Row	2...BBIZE–4–GA	2...1135	9...$^{1}/_{4}$	2...G3
524J14	4 Row	2...BBIZE–5–GA 2...BBIZE–5–GA	2...1135 2...1113	9...$^{1}/_{4}$ 12...$^{3}/_{16}$	2...G4 2...G3

* Feeder tube size is $^{1}/_{4}$ in. (6.35 mm)

NOTE: Hot gas bypass applications require field-supplied auxiliary side connector.

APPLICATION DATA (cont.)

FAN MOTOR DATA
STANDARD MOTOR — English

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
208/230-1-60					
Speed (rpm)	1725	1725	—	—	—
Hp	1.3	2.4	—	—	—
Frame (NEMA)	56Y	56Y	—	—	—
Shaft Dia (in.)	5/8	5/8	—	—	—
208/230-3-60 and 460-3-60					
Speed (rpm)	1725	1725	1725	1725	1725
Hp	2.4	2.4	2.4	2.4	3.7
Frame (NEMA)	56Y	56Y	56Y	56Y	56Y
Shaft Dia (in.)	5/8	5/8	5/8	7/8	7/8
575-3-60					
Speed (rpm)	1725	1725	1725	1725	1725
Hp	1.0	2.0	2.0	3.0	3.0
Frame (NEMA)	56	56HZ	56HZ	56HZ	56HZ
Shaft Dia (in.)	5/8	7/8	7/8	7/8	7/8

LEGEND:
NEMA — National Electrical Manufacturers Association (U.S.A.)

ALTERNATE MOTOR — English

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
208/230-1-60					
Speed (rpm)	1725	1725	—	—	—
Hp	2.4	2.4	—	—	—
Frame (NEMA)	56Y	56Y	—	—	—
Shaft Dia (in.)	5/8	5/8	—	—	—
230-3-60 and 460-3-60					
Speed (rpm)	1725	1725	1725	1725	1725
Hp	2.9	2.9	3.7	3.7	5.0
Frame (NEMA)	56Y	56Y	Y56Y	Y56Y	S184T
Shaft Dia (in.)	7/8	7/8	7/8	7/8	1 1/8
575-3-60					
Speed (rpm)	1725	1725	1725	1745	1745
Hp	2.0	3.0	3.0	5.0	5.0
Frame (NEMA)	56HZ	56HZ	56HZ	184T	184T
Shaft Dia (in.)	7/8	7/8	7/8	1 1/8	1 1/8

LEGEND:
NEMA — National Electrical Manufacturers Association (U.S.A.)

MOTOR EFFICIENCY 524J

MOTOR HP	EPACT MINIMUM	MOTOR EFFICIENCY
1.3*	—	70%
2.4	—	82%
2.9	—	82%
3.7	—	84%
5.0	87.5%	87.5%
7.5	88.5%	88.5%
10.0	89.5%	89.5%

LEGEND:
EPACT – Energy Policy and Conservation Act of 1992
* Single-phase only.

APPLICATION DATA (cont.)

FAN MOTOR DATA (cont)
STANDARD MOTOR — SI

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
208/230-1-60					
Speed (r/s)	28.75	28.75	—	—	—
Shaft kW	0.97	1.79	—	—	—
Frame (NEMA)	56Y	56Y	—	—	—
Shaft Dia (mm)	15.9	15.9	—	—	—
208/230-3-60 and 460-3-60					
Speed (r/s)	28.75	28.75	28.75	28.75	28.75
Shaft kW	1.79	1.79	1.79	2.16	2.76
Frame (NEMA)	56Y	56Y	56Y	56Y	56Y
Shaft Dia (mm)	15.9	15.9	15.9	22.2	22.2
575-3-60					
Speed(r/s)	28.75	28.75	28.75	28.75	28.75
Shaft kW	0.75	1.49	1.49	2.24	2.24
Frame (NEMA)	56	56HZ	56HZ	56HZ	56HZ
Shaft Dia (mm)	15.9	22.2	22.2	22.2	22.2

LEGEND:
NEMA — National Electrical Manufacturers Association (U.S.A.)

ALTERNATE MOTOR — SI

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
208/230-1-60					
Speed (r/s)	28.75	28.75	—	—	—
Shaft kW	1.79	1.79	—	—	—
Frame (NEMA)	56Y	56Y	—	—	—
Shaft Dia (mm)	15.9	15.9	—	—	—
208/230-3-60 and 460-3-60					
Speed(r/s)	28.75	28.75	28.75	28.75	29.08
Shaft kW	2.16	2.16	2.76	2.76	3.73
Frame (NEMA)	56Y	56Y	Y56Y	Y56Y	S184T
Shaft Dia (mm)	22.2	22.2	22.2	22.2	28.6
575-3-60					
Speed (r/s)	28.75	28.75	28.75	29.08	29.08
Shaft kW	1.50	2.24	2.24	3.73	3.73
Frame (NEMA)	56HZ	56HZ	56HZ	184T	184T
Shaft Dia (mm)	22.2	22.2	22.2	28.6	28.6

LEGEND:
NEMA — National Electrical Manufacturers Association (U.S.A.)

STANDARD DRIVE DATA, 60 Hz — English

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
MOTOR DRIVE					
Motor Pulley Pitch Diameter (in.)	2.4-3.4	2.8-3.8	3.4-4.4	2.8-3.8	2.8-3.8
Pulley Factory Setting Full Turns Open	2.5	2.5	2.5	2.5	2.5
FAN DRIVE					
Pulley Pitch Dia (in.)	8.8	8.8	8.8	9.0	9.0
Pulley Bore (in.)	1	1	1	$1^{7}/_{16}$	$1^{7}/_{16}$
Belt No. — Section	1—A	1—A	1—A	1—A	1—A
Belt Pitch (in.)	40.3	41.3	42.3	42.3	42.3
FAN SPEEDS (rpm)					
Factory Settings	568	647	764	632	632
Range	470-666	549-745	666-863	537-728	537-728
Max Allowable Speed (rpm)	1200	1200	1200	1200	1200
Change per 1/2 turn of Moveable Motor Pulley Flange	19.6	19.6	19.7	19.1	19.1
MAX FULL TURNS FROM CLOSED POSITION	5	5	5	5	5
SHAFTS CENTER DISTANCE (in.)	10.44-12.32	10.44-12.32	10.44-12.32	10.44-12.32	10.44-12.32

APPLICATION DATA (cont.)

MEDIUM-STATIC DRIVE DATA, 60 Hz — English

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
MOTOR DRIVE					
Motor Pulley Pitch Diameter (in.)	3.4-4.4	3.4-4.4	3.4-4.4	3.4-4.4	3.4-4.7
Pulley Factory Setting Full Turns Open	2.5	2.5	2.5	2.5	3.0
FAN DRIVE					
Pulley Pitch Dia (in.)	8.8	8.0	8.0	8.2	8.6
Pulley Bore (in.)	1	1	1	$1^{7}/_{16}$	$1^{7}/_{16}$
Belt No. — Section	1—A	1—A	1—A	1—A	1—B
Belt Pitch (in.)	42.3	40.3	40.3	41.3	41.8
FAN SPEEDS (rpm)					
Factory Setting	764	841	841	820	842
Range	666-863	733-949	733-949	715-926	742–943
Max Allowable Speed (rpm)	1200	1200	1200	1200	1200
Change per 1/2 Turn of Moveable Motor Pulley Flange	19.7	21.6	21.6	21.1	16.7
MAX FULL TURNS FROM CLOSED POSITION	5	5	5	5	6
SHAFTS CENTER DISTANCE (in.)	10.44-12.32	10.44-12.32	10.44-12.32	10.44-12.32	10.44-12.32

HIGH-STATIC DRIVE DATA, 60 Hz — English

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
MOTOR DRIVE					
Motor Pulley Pitch Diameter (in.)	3.4-4.4	3.4-4.4	3.4-4.4	3.7-4.7	4.3–5.3
Pulley Factory Setting Full Turns Open	2.5	2.5	2.5	3.0	3.0
FAN DRIVE					
Pulley Pitch Dia (in.)	7.0	6.0*	6.0	7.4	7.9
Pulley Bore (in.)	1	1	1	$1^{7}/_{16}$	$1^{7}/_{16}$
Belt No. — Section	1—A	1—A	1—A	1—B	1—B
Belt Pitch (in.)	41.3	37.3	37.3	39.8	39.8
FAN SPEEDS (rpm)					
Factory Setting	961	1121	1121	979	1060
Range	838-1084	978-1200*†	978-1200†	873-1096	950-1171
Max Allowable Speed (rpm)	1200	1200	1200	1200	1200
Change per 1/2 Turn of Moveable Motor Pulley Flange	24.6	28.7	28.7	19.4	18.4
MAX FULL TURNS FROM CLOSED POSITION	5	5	5	6	6
SHAFTS CENTER DISTANCE (in.)	10.44-12.32	10.44-12.32	10.44-12.32	10.44-12.32**	9.16-10.99

* Values for 3-phase motor shown. For single-phase motor, pulley pitch diameter is 7–in and resulting fan speed is 837-1096 rpm.

† It is possible to adjust drive so that fan speed exceeds maximum allowable. DO NOT exceed 1200 rpm.

** 575-v unit has a center distance of 9.16-10.99.

APPLICATION DATA (cont.)

STANDARD DRIVE DATA, 60 Hz — SI

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
MOTOR DRIVE					
Motor Pulley Pitch Diameter (mm)	61.0-86.4	71.1-96.5	86.4-111.8	71.1-96.5	71.1-96.5
Pulley Factory Setting Full Turns Open	2.5	2.5	2.5	2.5	2.5
FAN DRIVE					
Pulley Pitch Dia (mm)	224	224	224	229	229
Pulley Bore (mm)	25.4	25.4	25.4	36.5	36.5
Belt No. — Section	1—A	1—A	1—A	1—A	1—A
Belt Pitch (mm)	1024	1049	1074	1074	1074
FAN SPEEDS (r/s)					
Factory Setting	9.5	10.8	12.7	10.5	10.5
Range	7.8-11.1	9.2-12.4	11.1-14.4	9.0-12.1	9.0-12.1
Max Allowable Speed (r/s)	20.0	20.0	20.0	20.0	20.0
Change per 1/2 Turn of Moveable Motor Pulley Flange	0.327	0.327	0.328	0.318	0.318
MAX FULL TURNS FROM CLOSED POSITION	5	5	5	5	5
SHAFTS CENTER DISTANCE (mm)	265-313	265-313	265-313	265-313	265-313

MEDIUM-STATIC DRIVE DATA, 60 Hz — SI

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
MOTOR DRIVE					
Motor Pulley Pitch Diameter (mm)	86.4-111.8	86.4-111.8	86.4-111.8	86.4-111.8	94.0-119.4
Pulley Factory Setting Full Turns Open	2.5	2.5	2.5	2.5	3.0
FAN DRIVE					
Pulley Pitch Dia (mm)	224	203	203	208	218
Pulley Bore (mm)	25.4	25.4	25.4	36.5	36.5
Belt No. — Section	1—A	1—A	1—A	1—A	1—B
Belt Pitch (mm)	1074	1024	1024	1049	1062
FAN SPEEDS (r/s)					
Factory Setting	12.7	14.0	14.0	13.7	14.0
Range	11.1-14.4	12.2-15.8	12.2-15.8	11.9-15.4	12.4–15.7
Max Allowable Speed (r/s)	20.0	20.0	20.0	20.0	20.0
Change per $^1/_2$ Turn of Moveable Motor Pulley Flange	0.328	0.360	0.360	0.352	0.278
MAX FULL TURNS FROM CLOSED POSITION	5	5	5	6	6
SHAFTS CENTER DISTANCE (mm)	265-313	265-313	265-313	265-313	265-313

APPLICATION DATA (cont.)

HIGH-STATIC DRIVE DATA, 60 Hz — SI

UNIT	524J 07	524J 08	524J 12	524J 14	524J 16
MOTOR DRIVE					
Motor Pulley Pitch Diameter (mm)	86.4-111.8	86.4-111.8	86.4-111.8	94.0-119.4	109.2-134.6
Pulley Factory Setting Full Turns Open	2.5	2.5	2.5	3.0	3.0
FAN DRIVE					
Pulley Pitch Dia (mm)	178	152*	152	188	201
Pulley Bore (mm)	25.4	25.4	25.4	36.5	36.5
Belt No. — Section	1—A	1—A	1—A	1—B	1—B
Belt Pitch (mm)	1049	947	947	1011	1011
FAN SPEEDS (r/s)					
Factory Setting	16.0	18.7	18.7	16.3	17.7
Range	14.0-18.1	16.3-20.0*†	16.3-20.0†	14.4-18.3	15.8–19.5
Max Allowable Speed (r/s)	20.0	20.0	20.0	20.0	20.0
Change per $^1/_2$ Turn of Moveable Motor Pulley Flange	0.410	0.478	0.478	0.323	0.307
MAX FULL TURNS FROM CLOSED POSITION	5	5	5	6	6
SHAFTS CENTER DISTANCE (mm)	265-313	265-313	265-313	265-313**	232–279

* Values for 3-phase motor shown. For single-phase motor, pulley pitch diameter is 178 mm and resulting fan speed is 14.0-18.3 r/s.

† It is possible to adjust drive so that fan speed exceeds maximum allowable. DO NOT exceed 20 r/s.

** 575-v unit has a center distance of 233-279.

GUIDE SPECIFICATIONS

Commercial Packaged Air-Handling Unit

HVAC Guide Specifications

Size Range: **2,400 to 6,000 Cfm (1150 to 2830 L/s), Nominal Airflow, 6 to 15 Tons (21 to 52 kW), Nominal Cooling**

Bryant Model Numbers: **524J (Direct-Expansion Coil)**

GENERAL

1.01 SYSTEM DESCRIPTION

A. Indoor, packaged air-handling unit for use in commercial split systems. Unit shall have a multi-position design and shall be capable of horizontal or vertical installation on a floor or in a ceiling, with or without ductwork. (Only vertical units are to be applied without ductwork.)

B. Unit with direct-expansion coil shall be used in a refrigerant circuit with a matching air-cooled condensing unit.

1.02 QUALITY ASSURANCE

A. Coils shall be designed and tested in accordance with ASHRAE 15 Safety Code for Mechanical Refrigeration (U.S.A.), latest edition.

B. Unit shall be constructed in accordance with ETL (U.S.A.) and ETL, Canada, standards and shall carry the ETL and ETL, Canada, labels.

C. Unit insulation and adhesive shall comply with NFPA-90A (U.S.A.) requirements for flame spread and smoke generation. Insulation shall contain an EPA-registered immobilized antimicrobial agent to effectively resist the growth of bacteria and fungi as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).

D. Unit shall be manufactured in a facility registered to the ISO 9001:2000 manufacturing quality standard.

E. Direct-expansion coils shall be burst and leak tested at 435 psi (2999 kPa).

1.03 DELIVERY AND STORAGE

Units shall be stored and handled per manufacturer's recommendations.

PRODUCTS

1.04 EQUIPMENT

Indoor mounted, draw-thru, packaged air-handling unit that can be used in a suspended horizontal configuration or a vertical configuration. Unit shall consist of forward-curved belt-driven centrifugal fan(s), motor and drive assembly, pre-wired fan motor contactor, factory-installed refrigerant metering devices (direct-expansion coil units), cooling coil, 2-in. (51-mm) disposable air filters, and condensate drain pans for vertical or horizontal configurations.

A. Base Unit:

1. Cabinet shall be constructed of mill-galvanized steel.

2. Cabinet panels shall be fully insulated with $^1/_2$-in. (12.7-mm) fire-retardant material. Insulation shall contain an EPA-registered immobilized antimicrobial agent to effectively resist the growth of bacteria and fungi as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).

3. Unit shall contain non-corroding condensate drain pans for both vertical and horizontal applications. Drain pans shall have connections on right and left sides of unit to facilitate field connection. Drain pans shall have the ability to be sloped toward the right or left side of the unit to prevent standing water from accumulating in pans.

4. Unit shall have factory-supplied 2-in (51 mm) throwaway-type filters installed upstream from the cooling coil. Filter access shall be from either the right or left side of the unit.

B. Coils:

DX coil is 4-row and consists of copper tubes with sine-wave aluminum fins bonded to the tubes by mechanical expansion. Suction and liquid line connections or supply and discharge connections shall be made on the same side of the coil.

1. Direct-expansion coils shall feature factory installed thermostatic expansion valves (TXVs) for refrigerant control. The TXVs shall be Puron® R-410A compatible and capable of external adjustment. Direct-expansion heat pump coils shall have a factory-installed bypass line and check valve assembly around the TXVs to allow liquid flow from the coil to the outdoor unit during the heating mode. Coil tubing shall be internally rifled to maximize heat transfer.

C. Operating Characteristics:

Unit shall be capable of providing _____ cfm (L/s) airflow at an external static pressure of _____ in. wg (kPag).

D. Motor:

1. Fan motor of the size and electrical characteristics specified on the equipment schedule shall be factory supplied and installed.

2. Motors rated at 1.3 through 3.7 hp (0.97 through 2.76 kW) shall have internal thermal overload protection. Motors rated at 5 hp (3.73 kW) shall be protected by a circuit breaker.

3. Evaporator-fan motor shall have permanently lubricated, sealed bearings and inherent automatic-reset thermal overload protection or manual reset calibrated circuit breakers. Evaporator motors are designed specifically for Bryant and do not have conventional horsepower (hp) ratings listed on the motor nameplate. Motors are designed and qualified in the "air-over" location downstream of the cooling coil and carry a maximum continuous bhp rating that is the maximum application bhp rating for the motor; no "safety factors" above that rating may be applied.

4. All evaporator-fan motors 5 hp and larger shall meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT).

E. Special Features:

1. Alternate Motor and Drive:

   An alternate motor and/or medium-static or high-static drive shall be available to meet the airflow and external static pressure requirements specified on the equipment schedule.

2. External Paint:

   Where conditions require, units shall be painted with an American Sterling Gray finish.

3. Hot Water Coil:

   Coil shall be 2-row, U-bend coil with copper tubes and aluminum plate fins bonded to the tubes by mechanical expansion. Coil shall be mounted in a galvanized steel housing that shall be fastened to the unit's fan deck for blow-thru heating operation. Coil shall have maximum working pressure of 150 psig (1034 kPag).

4. Steam Distributing Coil:

   Coil shall consist of one row of copper tubes with aluminum plate fins, and shall have inner steam distributing tubes. Coil shall be mounted in a galvanized steel housing and shall be fastened to the unit's fan deck for blow-thru heating operation. Coil shall have maximum working pressure of 20 psig at 260°F (138 kPag at 126°C).

5. Electric Heaters:

   Heaters for nominal 240, 480, or 575-volt, 3-phase, 60 Hz shall be factory-supplied for field installation as shown on the equipment drawings. Electric heat assembly shall be ETL (U.S.A.) and ETL, Canada, agency approved, and shall have single-point power wiring. Heater assembly shall include contactors with 24-v coils, power wiring, 24-v control wiring terminal blocks, and a hinged access panel. Electric heaters shall not be used with air discharge plenum.

6. Air Discharge Plenum:

   Plenum shall be factory-supplied to provide free-blow air distribution for vertical floor-mounted units. A grille with moveable vanes for horizontal or vertical airflow adjustment shall be included. Plenum shall be field-assembled and field-installed on the unit's fan deck for blow-thru air distribution. Plenum shall not be used with electric heaters.

7. Return-Air Grille:

   Grille shall be factory-supplied for field installation on the unit's return air opening.

8. Unit Subbase:

   Subbase assembly shall be factory-supplied for field installation. Subbase shall elevate floor-mounted vertical units to provide access for correct condensate drain connection.

9. Economizer:

   Economizer for ventilation or "free" cooling shall be factory provided for field installation on either return air opening of air handler. For free cooling applications, economizer shall be compatible with separate thermostat; economizer dampers shall open when outdoor air enthalpy is suitable for free cooling. Economizer shall be compatible with separate CO_2 sensor accessory; economizer dampers shall open when indoor CO_2 level rises above predetermined set point. Economizer shall include enthalpy control and damper actuator.

GUIDE SPECIFICATIONS (cont.)

10. Thermostat Controls:

    a. Commercial Electronic Thermostat with 7-day time clock, auto-changeover, multi-stage capability, and large LCD temperature display.

11. Overhead Suspension Package:

    Package shall include necessary brackets to support units in a horizontal ceiling installation.

12. CO_2 Sensor:

    Sensor shall provide the ability to signal the economizer to open when the space CO_2 level exceeds the predetermined setpoint.

13. Condensate Drain Trap:

    Trap shall have transparent, serviceable design for easy cleaning. Kit shall include overflow shutoff switch and wiring harness for connection to an alarm if desired.

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