

INSTALLATION MANUAL

R-410A XY SERIES

3 - 8.5 Ton

60 Hertz



TABLE OF CONTENTS

General	2	Selectable Defrost Curves	48
Installation	5	Options/Accessories	48
Preceding Installation	5	Standard Economizer and Power Exhaust Set Point	
Limitations	6	Adjustments	48
Location	7	Blower Phasing	49
Rigging And Handling	7	Airflow Performance	52
XYE04-09 Unit Weights	8	Operation	69
XYEA7, 07-09 Unit Roof Curb Dimensions	15	Compressor Operation	69
Ductwork	16	Economizer Sequences	69
Condensate Drain	17	Dry Bulb Changeover	69
Compressors	17	Single Enthalpy Changeover	69
Filters	17	Dual Enthalpy Changeover	69
Power And Control Wiring	17	Auto	69
Typical Field Power and Control Wiring	19	Free Cooling Operation	69
Typical Power Wiring	19	Power Exhaust	70
Operation	46	Setpoints	70
Sequence Of Operation	46	Inputs	70
No Outdoor Air Options	46	Outputs	70
Cooling Operation Errors	46	Operation	70
Heating Sequence Of Operations	47	Start-Up	74
Defrost Termination	48	Troubleshooting	74
Interval between Defrosts	48	Smart Equipment™ Control Board Navigation Components	80
Forced Defrost	48	Start-Up Sheet	81

LIST OF TABLES

1 XYE04-09 Unit Limitations	7	18 Indoor Blower Specifications	59
2 XYE04-09 Corner Weights	8	19 Motor Sheave Datum Diameters	60
3 XYE04-09 Unit Accessory Weights	9	20 Additional Static Resistance - XYE04-06	61
4 XYE04-06 Unit Clearances	14	21 Additional Static Resistance - XYE07, XYEA7	61
5 XYE07/A7-09 Unit Clearances	14	22 Additional Static Resistance - XYE08 thru 09	62
6 Unit Models used with 1RC0456, 1RC0458 Roof Curb	14	23 Smart Equipment™ UCB Details	63
7 Unit Models used with 1RC0457, 1RC0459 Roof Curb	15	24 Smart Equipment™ Economizer Board Details	71
8 Control Wire Sizes	18	25 XYE04 Charging Table	75
9 Electrical Data	20	26 XYE05 Charging Table	75
10 Physical Data	44	27 XYE06 Charging Table	76
11 Supply Air Limitations	49	28 XYE07 Charging Table	76
12 Altitude/Temperature Correction Factors	51	29 XYEA7 Charging Table	77
13 XYE04-09 Side Duct Application (Belt Drive)	53	30 XYE08 Charging Table System 1	77
14 XYE04-06 Side Duct Application (Direct Drive)	55	31 XYE08 Charging Table System 2	78
15 XYE04-09 Bottom Duct Application (Belt Drive)	56	32 XYE09 Charging Table System 1	78
16 XYE04-06 Bottom Duct Application (Direct Drive)	58	33 XYE09 Charging Table System 2	79
17 RPM Selection	59		

LIST OF FIGURES

1 Unit shipping bracket	5	13 XYE07 and XYEA7 Unit Dimensions	12
2 Protective condenser covering	5	14 XYE08 and 09 Unit Dimensions	13
3 Supply air temperature sensor	5	15 1RC0456, 1RC0458 Roof Curb Dimensions	14
4 Factory-mounted return air temperature sensor	6	16 Side Duct Cover Panels	16
5 Supply and return air ducts	6	17 Bottom Return Opening For Side Duct Conversion	16
6 Return air smoke detector - shipped position	6	18 Bottom Supply Opening For Side Duct Conversion	16
7 Return air smoke detector - working position	6	19 Condensate Drain	17
8 Unit 4 Point Load Weight	8	20 Typical Smart Equipment™ Control Wiring	19
9 Unit 6 Point Load Weight	8	21 Belt Adjustment	50
10 Center of Gravity	8	22 Altitude/Temperature Correction Factors	51
11 XYE04 Unit Dimensions	10	23 Unit Control Board	63
12 XYE05-06 Unit Dimensions	11	24 SE-ECO1001-1 Economizer Controller	71

General

XY units are single package heat pumps designed for outdoor installation on a rooftop or slab and for non-residential use.

These units are completely assembled on rigid, permanently attached base rails. All piping, refrigerant charge, and electrical wiring is factory installed and tested. The units require electric power and duct connections.

Safety Considerations



This is a safety alert symbol. When you see this symbol on labels or in manuals, be alert to the potential for personal injury.

Understand and pay particular attention the signal words **DANGER**, **WARNING** or **CAUTION**.

DANGER indicates an **imminently** hazardous situation, which, if not avoided, **will result in death or serious injury**.

WARNING indicates a **potentially** hazardous situation, which, if not avoided, **could result in death or serious injury**.

CAUTION indicates a potentially hazardous situation, which, if not avoided **may result in minor or moderate injury**. It is also used to alert against unsafe practices and hazards involving only property damage.

WARNING

Improper installation may create a condition where the operation of the product could cause personal injury or property damage. Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for assistance or for additional information, consult a qualified contractor, installer or service agency.

CAUTION

This product must be installed in strict compliance with the installation instructions and any applicable local, state and national codes including, but not limited to building, electrical, and mechanical codes.

WARNING

Before performing service or maintenance operations on unit, turn off main power switch to unit. Electrical shock could cause personal injury. Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer or service agency.

CAUTION

This system uses R-410A Refrigerant which operates at higher pressures than R-22. No other refrigerant may be used in this system. Gauge sets, hoses, refrigerant containers and recovery systems must be designed to handle R-410A. If you are unsure, consult the equipment manufacturer. Failure to use R-410A compatible servicing equipment may result in property damage or injury.

WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in dangerous operation, serious injury, death or property damage.

Improper servicing could result in dangerous operation, serious injury, death or property damage.

- Before servicing, disconnect all electrical power to furnace.
- When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly.
- Verify proper operation after servicing.

Due to system pressure, moving parts, and electrical components, installation and servicing of air conditioning equipment can be hazardous. Only qualified, trained service personnel should install, repair, or service this equipment. Untrained personnel can perform basic maintenance functions of cleaning coils and filters and replacing filters.

Observe all precautions in the literature, labels, and tags accompanying the equipment whenever working on air conditioning equipment. Be sure to follow all other applicable safety precautions and codes that apply.

Wear safety glasses and work gloves. Use quenching cloth and have a fire extinguisher available during brazing operations.

Inspection

As soon as a unit is received, it should be inspected for possible damage during transit. If damage is evident, the extent of the damage should be noted on the carrier's freight bill. A separate request for inspection by the carrier's agent should be made in writing.

Reference

Additional information is available in the following reference forms:

- Technical Guide - XYE04-09 5147362
- General Installation - XYE04-09 5513361

- Economizer Option or Accessory -
Vertical Flow Dry Bulb Economizer Factory installed
Option or Field Installed accessory
Horizontal Flow Dry Bulb Economizer Field Installed
accessory
- Power Exhaust Accessory -
Vertical or Horizontal Flow Field Installed

Renewal Parts

Contact your local Ducted Systems parts distribution center for authorized replacement parts.

Approvals

Design certified by CSA as follows:

1. For use as a heat pump unit.
2. For outdoor installation only.
3. For installation on combustible material.

CAUTION

This product must be installed in strict compliance with the enclosed installation instructions and any applicable local, state, and national codes including, but not limited to, building, electrical, and mechanical codes.

WARNING

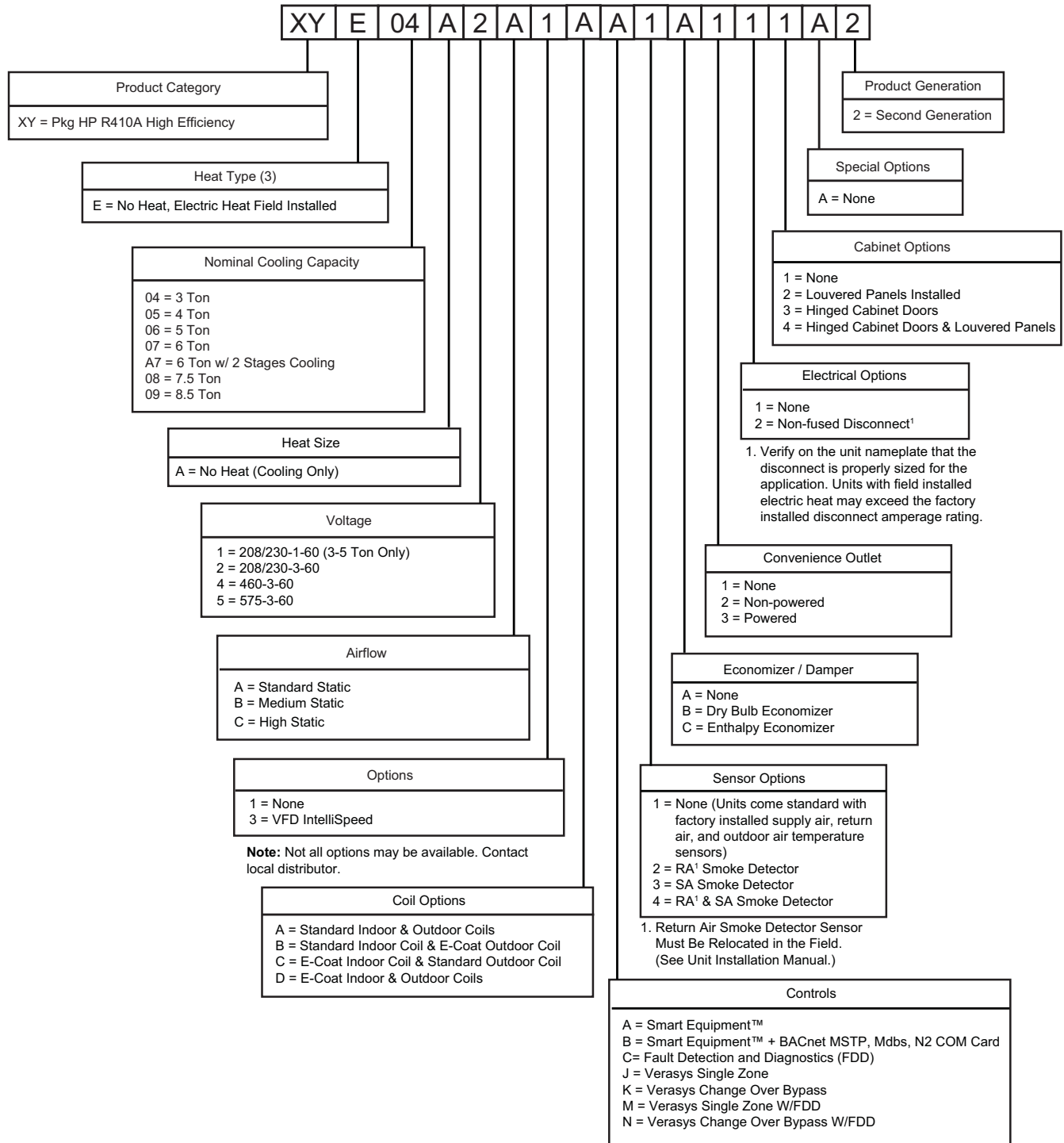
Improper installation may create a condition where the operation of the product could cause personal injury or property damage.

CAUTION

This system uses R-410A Refrigerant which operates at higher pressures than R-22. No other refrigerant may be used in this system.

Nomenclature

3-8.5 Ton Model Number Nomenclature



Installation

Installation Safety Information

Read these instructions before continuing this appliance installation. This is an outdoor combination heating and cooling unit. The installer must assure that these instructions are made available to the consumer and with instructions to retain them for future reference.

1. Install this unit only in a location and position as specified on Page 7 of these instructions.
2. This equipment is not to be used for temporary heating of buildings or structures under construction.

Preceding Installation

1. Remove the two screws that hold the brackets in the fork-lift slots on the side of the unit.

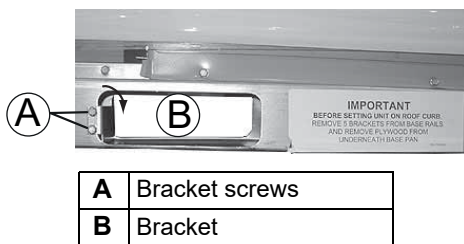


Figure 1: Unit shipping bracket

2. Turn each bracket toward the ground. The protective plywood covering drops to the ground.
3. Remove the protective covering from the condenser coil prior to operation.



Figure 2: Protective condenser covering

4. If a factory option convenience outlet is installed, you must install the weatherproof outlet cover in the field. The cover is located behind the filter access panel.
 - a. Remove the shipping label that covers the convenience outlet.
 - b. Follow the instructions on the back of the cover box.

- c. Attach the cover to the unit with the four screws provided.

CAUTION

208/230-3-60 and units with factory installed Powered Convenience Outlet Option are wired for 230v power supply. Change tap on transformer for 208-3-60 operation. See unit wiring diagram.

5. For gas heating models, you must move the supply air temperature (SAT) sensor to the working position to ensure proper SAT readings. The SAT sensor is shipped in the supply air compartment.
 - a. Move the SAT sensor to the inside of the supply air duct. See item A in Figure 5.
 - b. Use the excess wire available to its full length to drop or mount the SAT sensor in the duct.
 - c. Use the shipping bracket to hold the SAT sensor in the supply air stream. See Figure 3 for the factory SAT sensor location and Figure 5 for the sensor relocation.

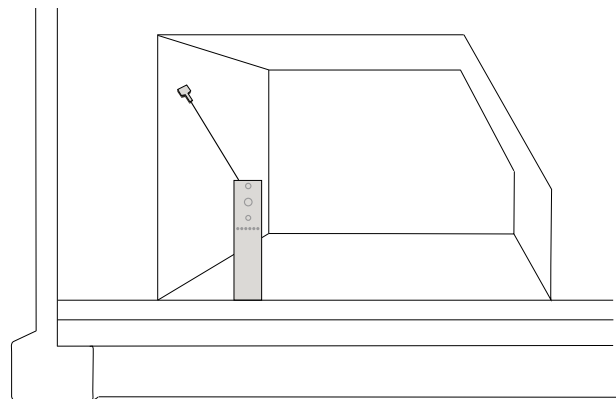
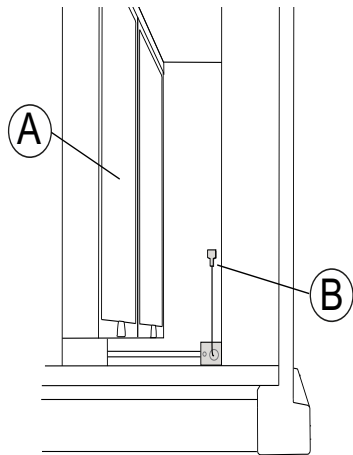


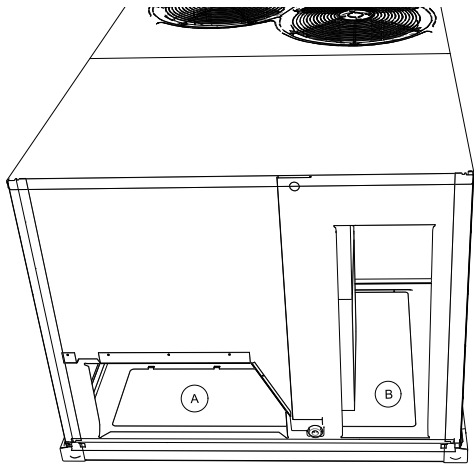
Figure 3: Supply air temperature sensor

6. For units equipped with an economizer or motorized OD air damper, you must move the return air temperature (RAT) sensor to the working position to ensure proper RAT readings. See item B in Figure 5.
 - a. Move the RAT sensor to the inside of the return air duct verifying that the sensor is at least 6 in. below the unit duct opening. The sensor must read the return air temperature not mixed return air and outdoor air temperatures.
 - b. Use the excess wire available to its full length to drop or mount the RAT sensor in the duct.
 - c. You can use the shipping bracket to hold the RAT sensor in the return air stream. See Figure 4 for the factory RAT sensor location and Figure 5 for the sensor relocation.



A	Filter rack and filters	B	RAT sensor
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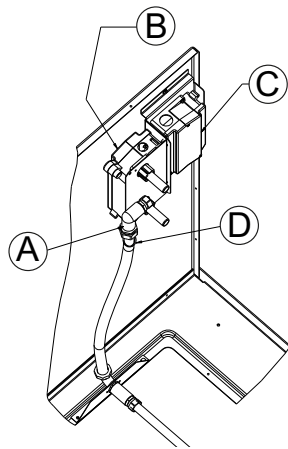
Figure 4: Factory-mounted return air temperature sensor



A	Supply air duct	B	Return air duct
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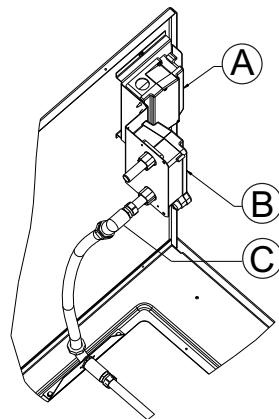
Figure 5: Supply and return air ducts

7. If an optional return air smoke detector is installed, you must move the return air sensor from the factory shipped position (upside down) to the working position (right side up). Then slide the flex tube over the stub and tighten, see Figure 7.



A	Flex tube secured to the bracket	C	Controller
B	Return air sensor	D	Wire tie

Figure 6: Return air smoke detector - shipped position



A	Controller	C	Flex tube in the working position
B	Return air sensor		

Figure 7: Return air smoke detector - working position

Limitations

These units must be installed in accordance with the following:

In U.S.A.:

1. National Electrical Code, ANSI/NFPA No. 70 - Latest Edition
2. Local building codes, and
3. Local utility requirements

In Canada:

1. Canadian Electrical Code, CSA C22.1
2. Local plumbing and waste water codes, and
3. Other applicable local codes.

Refer to unit application data found in this document.

If components are to be added to a unit to meet local codes, they are to be installed at the dealer's and/or customer's expense.

Size of unit for proposed installation should be based on heat loss/heat gain calculation made according to the methods of Air Conditioning Contractors of America (ACCA).

This unit is not to be used for temporary heating of buildings or structures under construction.

Table 1: XYE04-09 Unit Limitations

Model	Size (Tons)	Unit Voltage	SCCR (kVA)	Unit Limitations		
				Applied Voltage		Outdoor DB Temp
				Min	Max	Max (°F)
XE	04 (3)	208/230-1-60	5	187	252	125
		208/230-3-60	5	187	252	125
		460-3-60	5	432	504	125
		575-3-60	5	540	630	125
XE	05 (4)	208/230-1-60	5	187	252	125
		208/230-3-60	5	187	252	125
		460-3-60	5	432	504	125
		575-3-60	5	540	630	125
XE	06 (5)	208/230-1-60	5	187	252	125
		208/230-3-60	5	187	252	125
		460-3-60	5	432	504	125
		575-3-60	5	540	630	125
XE	07 (6)	208/230-3-60	5	187	252	125
		460-3-60	5	432	504	125
		575-3-60	5	540	630	125
XE	A7 (6)	208/230-3-60	5	187	252	125
		460-3-60	5	432	504	125
		575-3-60	5	540	630	125
XE	08 (7.5)	208/230-3-60	5	187	252	125
		460-3-60	5	432	504	125
		575-3-60	5	540	630	125
XE	09 (8.5)	208/230-3-60	5	187	252	125
		460-3-60	5	432	504	125
		575-3-60	5	540	630	125

Location

Use the following guidelines to select a suitable location for these units:

- Unit is designed for *outdoor installation only*.
- Condenser coils must have an unlimited supply of air. Where a choice of location is possible, position the unit on either north or east side of building.
- Suitable for mounting on roof curb.
- For ground level installation, use a level concrete slab with a minimum thickness of 4 inches. The length and width should be at least 6 inches greater than the unit base rails. Do not tie slab to the building foundation.
- Roof structures must be able to support the weight of the unit and its options/accessories. Unit must be installed on a solid, level roof curb or appropriate angle iron frame.
- Maintain level tolerance to 1/2" across the entire width and length of unit.

Clearances

All units require particular clearances for proper operation and service. Installer must make provisions for adequate ventilation

air. Refer to Table 4 for clearances required for servicing and proper unit operation.

WARNING

Do not permit overhanging structures or shrubs to obstruct condenser air discharge outlet, outdoor coil face or combustion air inlet or vent outlets.

Rigging And Handling

Exercise care when moving the unit. Do not remove any packaging until the unit is near the place of installation. Rig the unit by attaching chain or cable slings to the lifting holes provided in the base rails. Spreader bars, whose length exceeds the largest dimension across the unit, **MUST** be used across the top of the unit.

CAUTION

If a unit is to be installed on a roof curb other than a Ducted Systems roof curb, gasketing must be applied to all surfaces that come in contact with the unit underside.

⚠ CAUTION

Before lifting, make sure the unit weight is distributed equally on the rigging cables so it will lift evenly.

Units may be moved or lifted with a forklift. Slotted openings in the base rails are provided for this purpose.

XYE04-09 Unit Weights

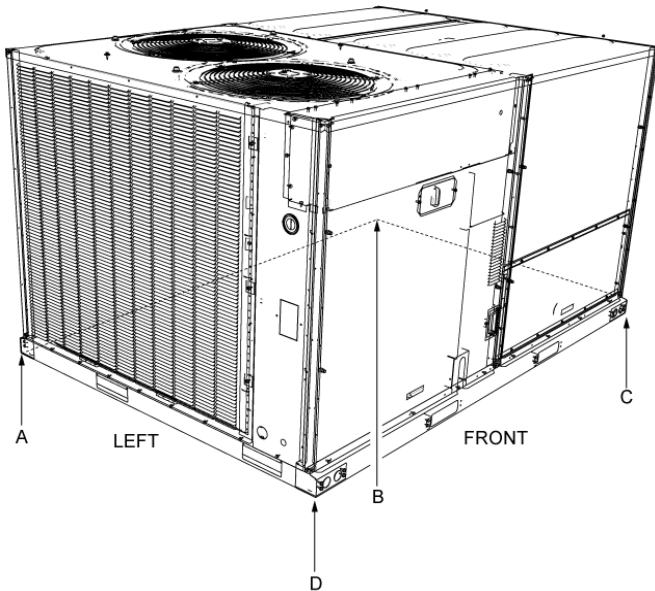


Figure 8: Unit 4 Point Load Weight

LENGTH OF FORKS MUST BE A MINIMUM OF 60 INCHES.

⚠ CAUTION

All panels must be secured in place when the unit is lifted.

The condenser coils should be protected from rigging cable damage with plywood or other suitable material.

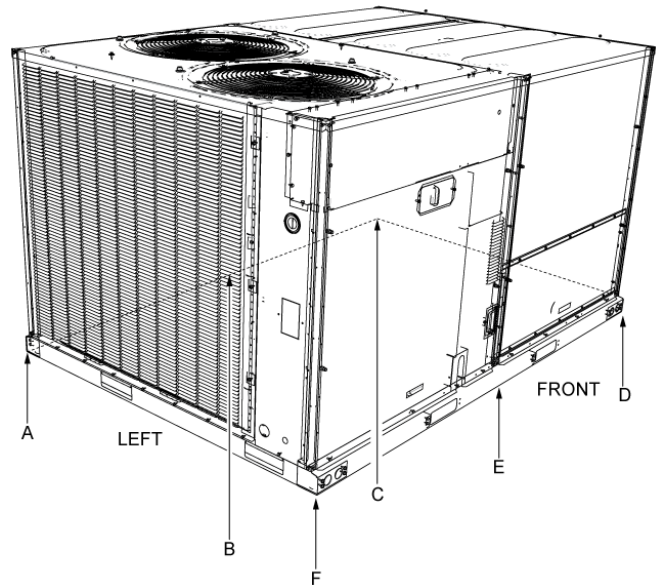


Figure 9: Unit 6 Point Load Weight

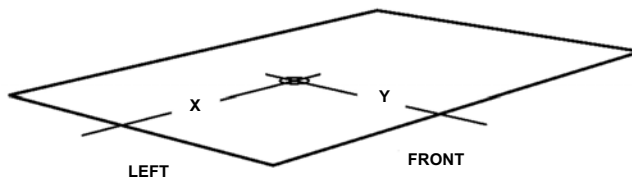


Figure 10: Center of Gravity

Table 2: XYE04-09 Corner Weights

Model	Size (Tons)	Weight (lbs.)		Center of Gravity		4 Point Load Location (lbs.)				6 Point Load Location (lbs.)					
		Shipping	Operating	X	Y	A	B	C	D	A	B	C	D	E	F
XYE	04 (3)	563	535	36.5	25.1	138	135	130	133	92	91	89	86	88	89
XYE	05 (4)	643	614	35.8	24.2	155	146	151	161	105	100	96	100	104	109
XYE	06 (5)	682	653	36.5	26.2	176	171	151	155	118	116	114	100	102	104
XYE	07 (6)	891	861	41.6	27.0	197	180	231	253	133	125	118	152	161	171
XYE	A7 (6)	915	895	44.3	34.9	249	257	197	191	165	169	172	132	130	127
XYE	08 (7.5)	1090	1060	38.7	27.6	264	210	260	326	183	156	135	167	193	226
XYE	09 (8.5)	1091	1061	38.7	27.6	264	211	260	326	183	156	135	167	193	226

Table 3: XYE04-09 Unit Accessory Weights

Unit Accessory	Weights (lbs.)
Vertical Flow Dry Bulb Economizer Small Footprint	55
Vertical Flow Dry Bulb Economizer Large Footprint	60
Horizontal Flow Dry Bulb Economizer Small Footprint Short	74
Horizontal Flow Dry Bulb Economizer Small Footprint Tall	76
Horizontal Flow Dry Bulb Economizer Large Footprint Short	79
Horizontal Flow Dry Bulb Economizer Large Footprint Tall	82
Power Exhaust Vert Flow Small Footprint	55
Power Exhaust Vert Flow Large Footprint	75
Power Exhaust Horiz Flow Small Footprint	40
Power Exhaust Horiz Flow Large Footprint	80
Hail Guard Kit Small Short Factory Installed	18
Hail Guard Kit Small Tall Factory Installed	23
Hail Guard Kit Large Short Factory Installed	36
Hail Guard Kit Large Tall Factory Installed	44
Curb Rigid 14" Small Footprint	94
Curb Rigid 14" Large Footprint	126
Curb Rigid 24" Small Footprint	148
Curb Rigid 24" Large Footprint	222

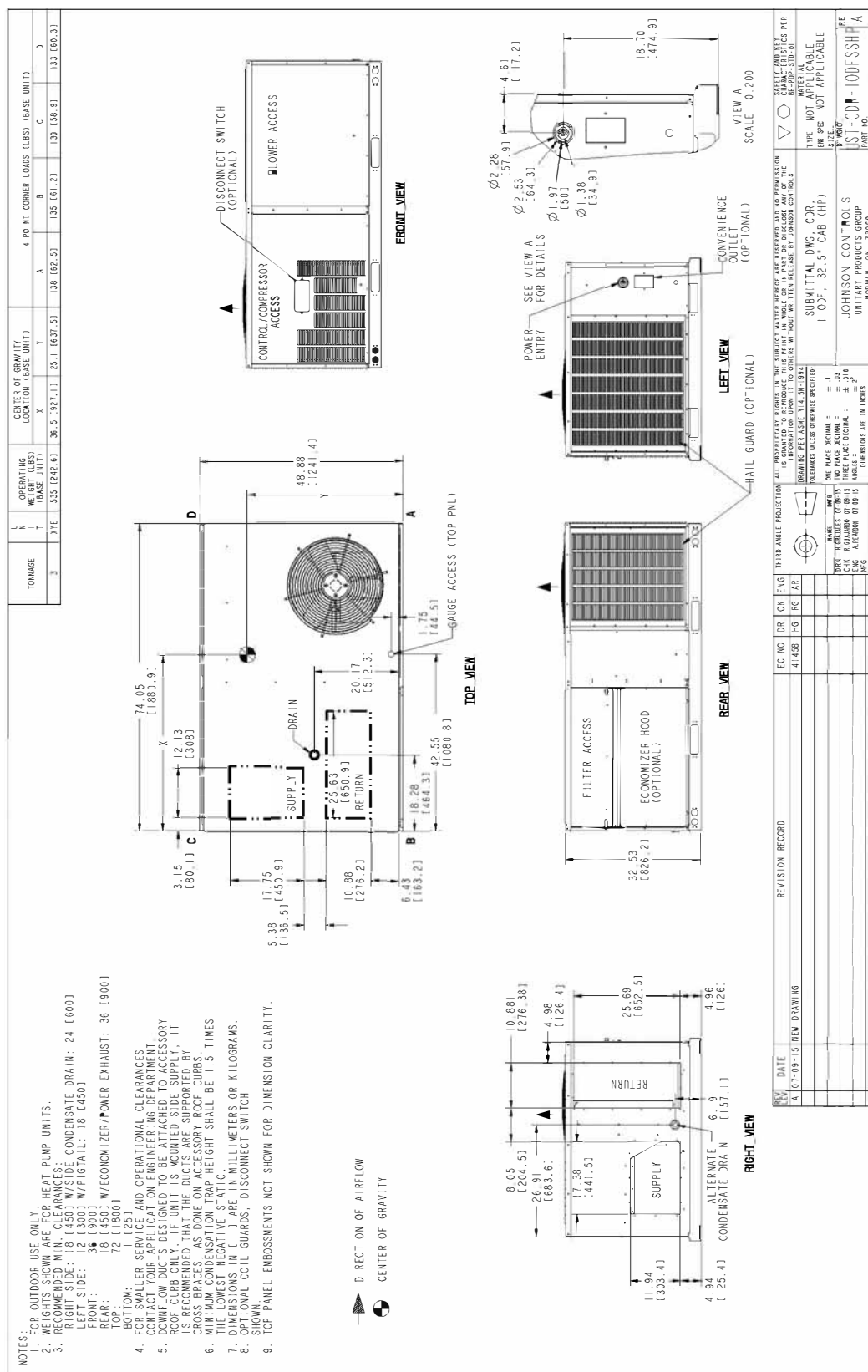
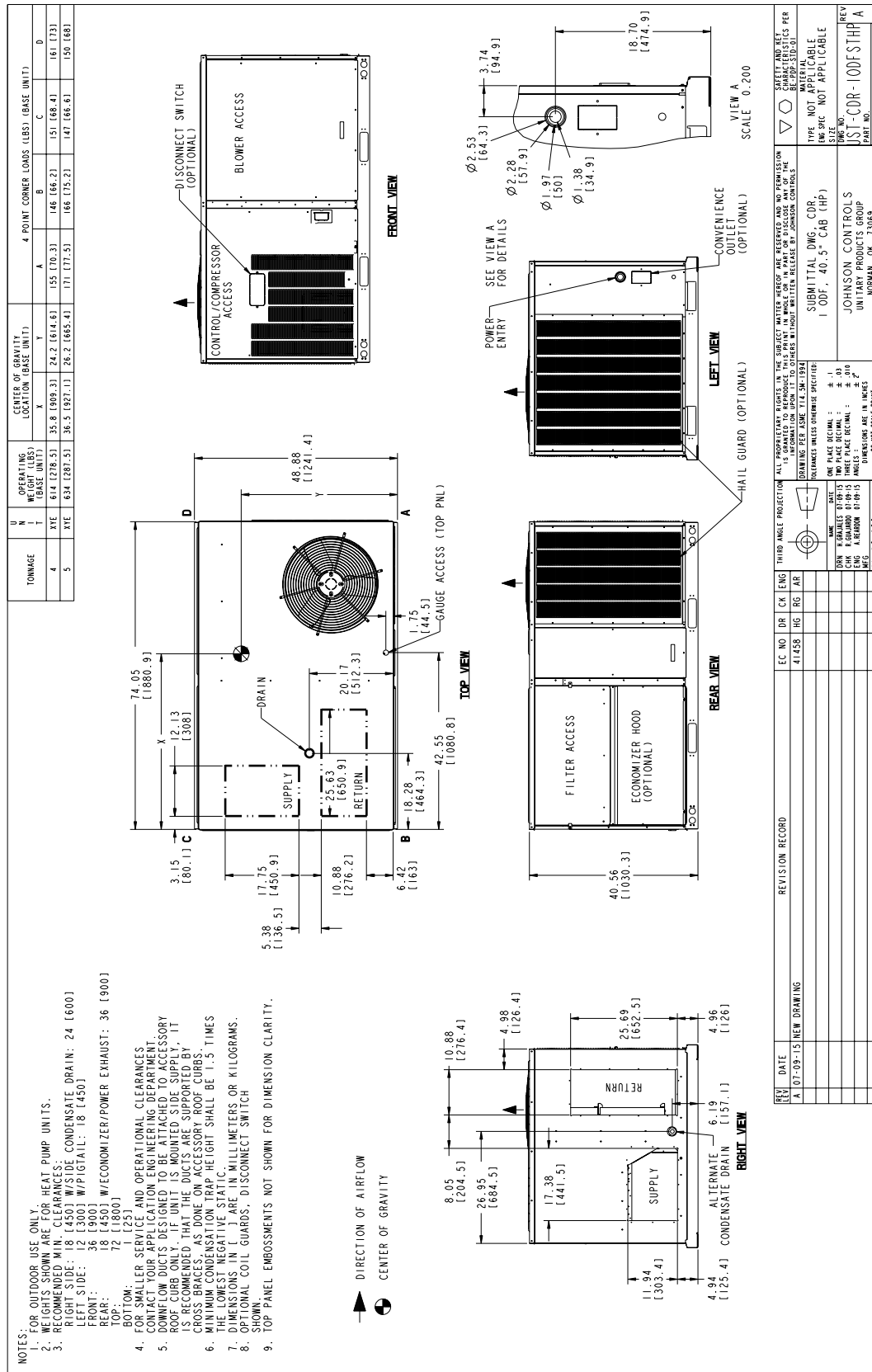


Figure 11: XYE04 Unit Dimensions





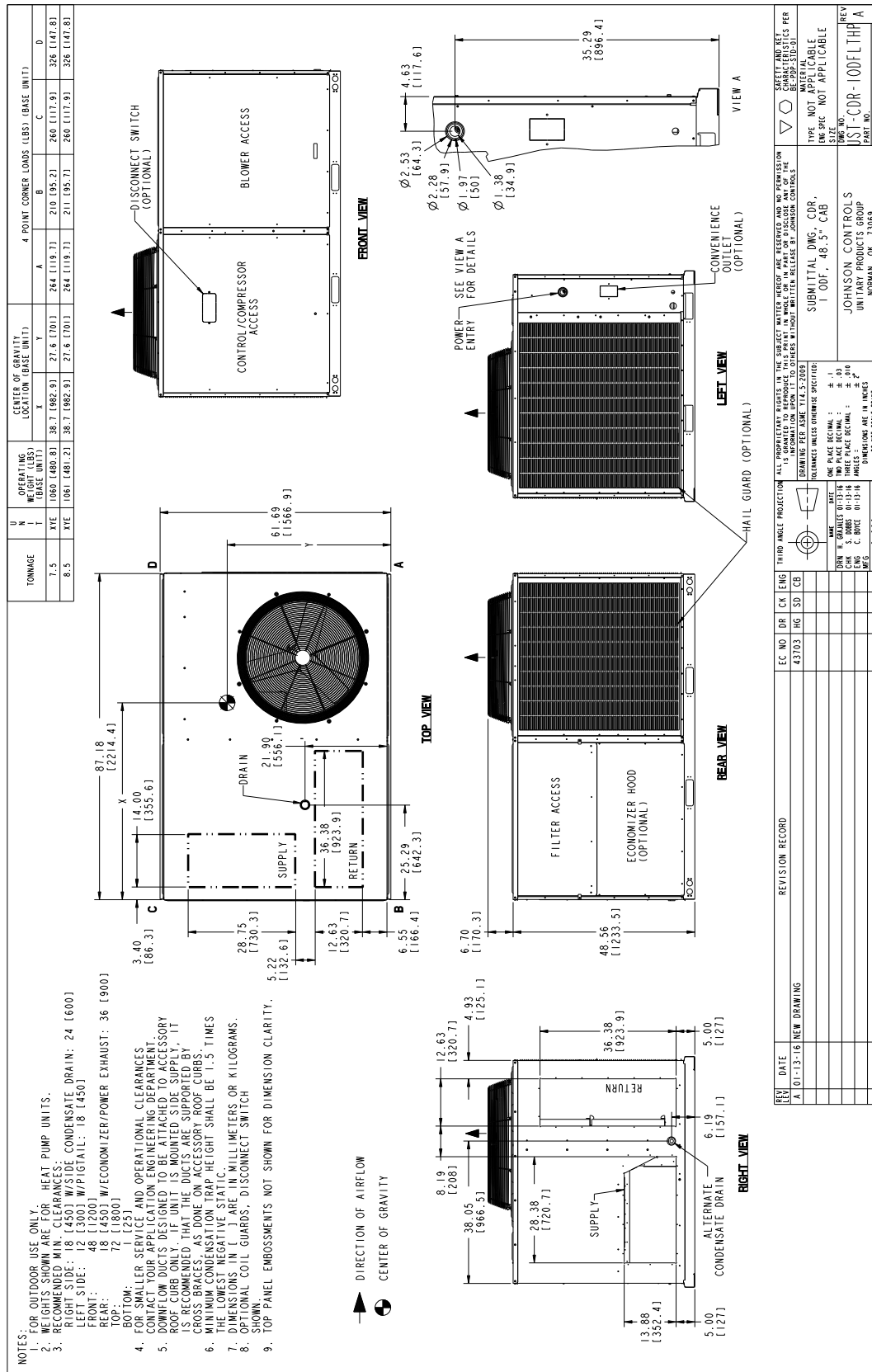
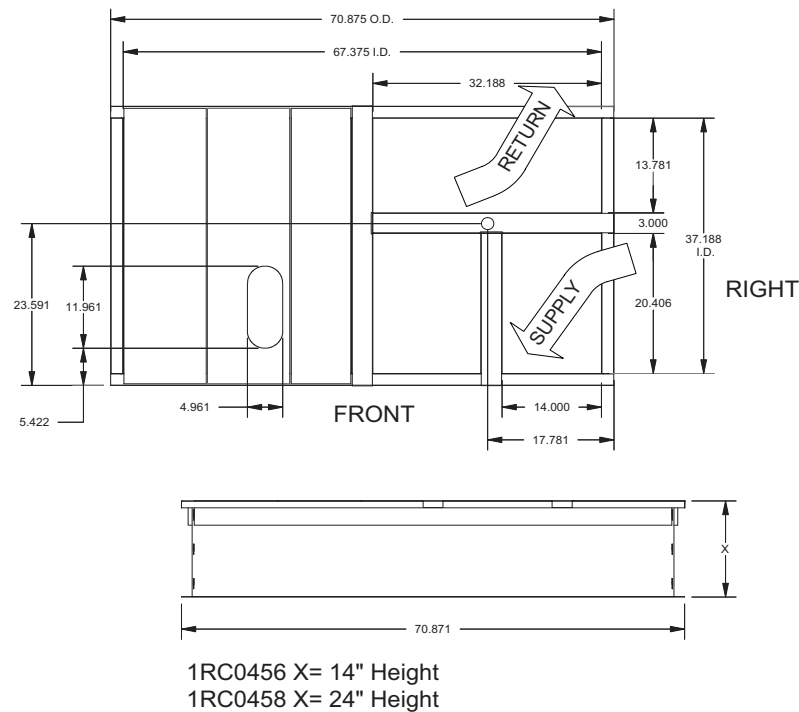


Table 4: XYE04-06 Unit Clearances

Direction	Distance (in.)	Direction	Distance (in.)
Top ¹	72	Right	18
Front	36	Left	12
Rear	18 ² /36 ³	Bottom ⁴	1

1. Units must be installed outdoors. Over hanging structure or shrubs should not obscure condenser air discharge outlet, outdoor coil face.
2. Units without economizer or power exhaust.
3. Units equipped with an Economizer or Power Exhaust. Flue products must not be discharged within 10 Feet of the rear of the unit.
4. Units may be installed on combustible floors made from wood or class A, B or C roof covering materials.

**Notes:**

1. Sides, ends and cross support are 18-G90. Deck pans, R/A & S/A supports are 20-G90.
2. Full perimeter wood nailer.
3. Insulated deck pans.

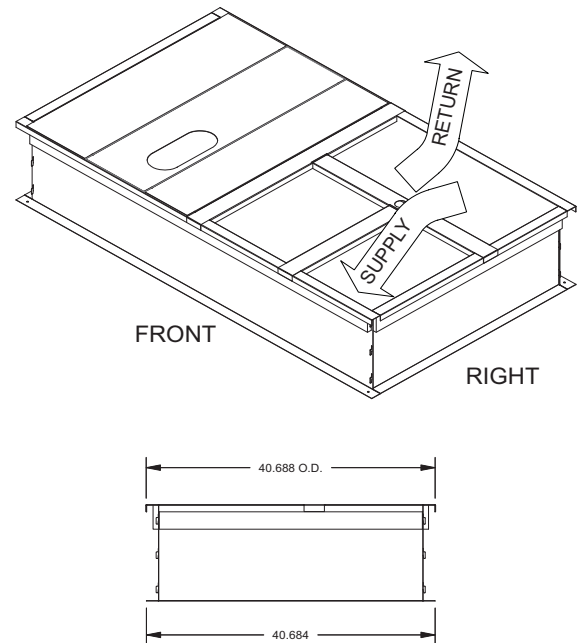
Figure 15: 1RC0456, 1RC0458 Roof Curb Dimensions**Table 6: Unit Models used with 1RC0456, 1RC0458 Roof Curb**

XYE04
XYE05
XYE06

Table 5: XYE07/A7-09 Unit Clearances

Direction	Distance (in.)	Direction	Distance (in.)
Top ¹	72	Right	18
Front	48	Left	12
Rear	18 ² /36 ³	Bottom ⁴	1

1. Units must be installed outdoors. Over hanging structure or shrubs should not obscure condenser air discharge outlet, outdoor coil face.
2. Units without economizer or power exhaust.
3. Units equipped with an Economizer or Power Exhaust. Flue products must not be discharged within 10 Feet of the rear of the unit.
4. Units may be installed on combustible floors made from wood or class A, B or C roof covering materials.

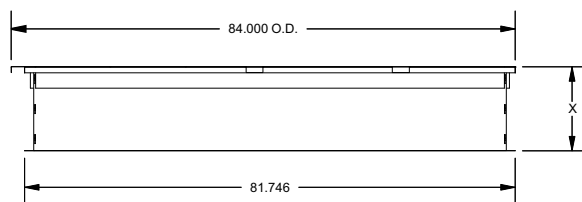
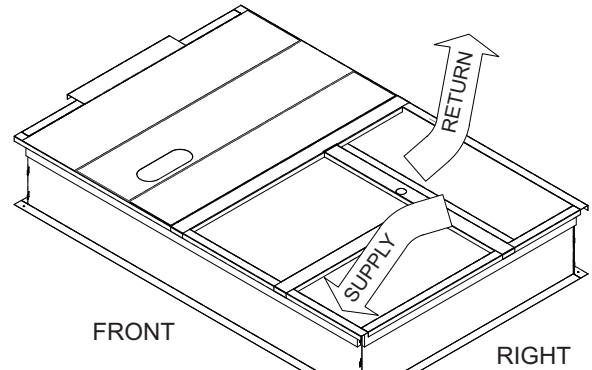
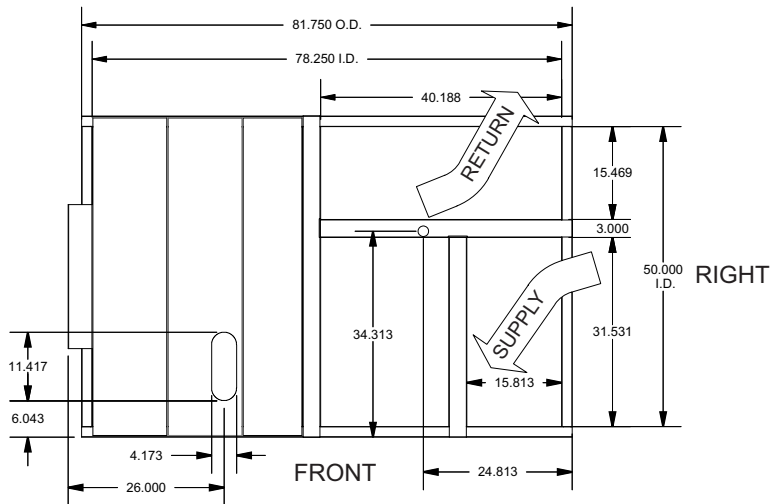


NOTE: If utilities are required thru the base of the unit or thru the roof curb the following field installed accessories can be purchased thru your dealer or contractor:

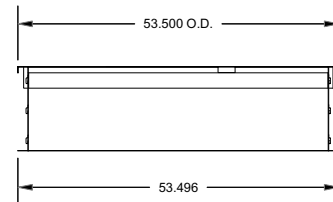
- 1TB0401 Small footprint Elect
- 1TB0403 Small footprint Elect/Gas
- 1TB0402 large footprint Elect
- 1TB0404 Large footprint Elect/gas

XYEA7, 07-09 Unit Roof Curb Dimensions

1RC0457, 1RC0459 Roof Curb Dimensions



1RC0457 X= 14" Height
1RC0459 X= 24" Height



Notes:

1. Sides, ends, unit locator and cross support are 18-G90. Deck pans, R/A & S/A supports are 20-G90.
2. Full perimeter wood nailer.
3. Insulated deck pans.

Unit Models used with 1RC0457, 1RC0459 Roof Curb

XYE07
XYEA7
XYE08
XYE09

NOTE: If utilities are required thru the base of the unit or thru the roof curb the following field installed accessories can be purchased thru your dealer or contractor:

- 1TB0401 Small footprint Elect
- 1TB0403 Small footprint Elect/Gas
- 1TB0402 large footprint Elect
- 1TB0404 Large footprint Elect/gas

Ductwork

Ductwork should be designed and sized according to the methods in Manual D or Manual Q of the Air Conditioning Contractors of America (ACCA) or as recommended by any other recognized authority such as ASHRAE or SMACNA.

A closed return duct system should be used. This will not preclude use of economizers or outdoor fresh air intake. The supply and return air duct connections at the unit should be made with flexible joints to minimize noise.

The supply and return air duct systems should be designed for the CFM and static pressure requirements of the job. They should NOT be sized to match the dimensions of the duct connections on the unit.

Refer to Figures 6 and 7 for bottom and side air duct openings.

Duct Covers

Units are shipped with the side duct openings covered and a covering over the bottom of the unit. For side duct application, remove the side duct covers and install over the bottom duct openings. The panels removed from the side duct connections are designed to be reused by securing each panel to its respective bottom duct opening. But keep in mind that the supply and return panels are installed with the painted surface DOWN, facing the bottom duct opening. The gasket must be removed from the insulation side of the duct cover so it is not directly exposed to the heating elements. The panels are secured by sliding them into slots in the back of the duct openings and screwing them to the base of the unit with screws (Use screws removed from original panel location.). Seals around duct openings must be tight.

⚠ CAUTION

When fastening ductwork to side duct flanges on unit, insert screws through duct flanges only. DO NOT insert screws through casing. Outdoor ductwork must be insulated and water-proofed.



Figure 16: Side Duct Cover Panels

NOTE: Shown with duct connection cover panel as shipped.



Figure 17: Bottom Return Opening For Side Duct Conversion



Figure 18: Bottom Supply Opening For Side Duct Conversion

Condensate Drain

A side condensate drain is provided to facilitate condensate piping. A condensate drain connection is available through the base pan for piping inside the roof curb. Trap the connection per Figure 19. The trap and drain lines should be protected from freezing.

Plumbing must conform to local codes. Use a sealing compound on male pipe threads. Install condensate drain line from the 3/4 inch NPT female connection on the unit to an open drain.

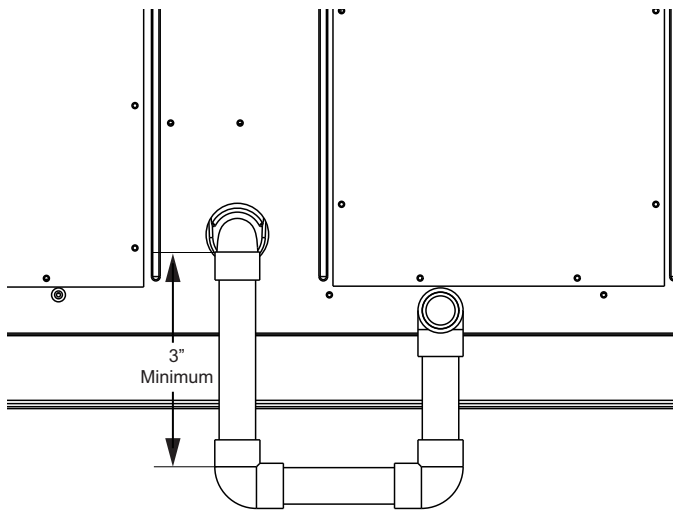


Figure 19: Condensate Drain

Compressors

The compressor used in this product is specifically designed to operate with R-410A Refrigerant and cannot be interchanged.

⚠ CAUTION

This system uses R-410A Refrigerant which operates at higher pressures than R-22. No other refrigerant may be used in this system.

The compressor also uses a refrigerant oil that is extremely hygroscopic, meaning it absorbs water readily. They can absorb 15 times as much water as other oils designed for HCFC and CFC refrigerants. Take all necessary precautions to avoid exposure of the oil to the atmosphere.

⚠ CAUTION

Do not leave the system open to the atmosphere. Unit damage could occur due to moisture being absorbed by the **refrigerant** in the system. This type of oil is highly susceptible to moisture absorption.

R-410A compressor lubricants are known to cause long term damage to some synthetic roofing materials.

⚠ CAUTION

Exposure, even if immediately cleaned up, may cause embrittlement (leading to cracking) to occur in one year or more. When performing any service that may risk exposure of compressor oil to the roof, take precautions to protect roofing.

Procedures which risk oil leakage include, but are not limited to, compressor replacement, repairing refrigerant leaks, replacing refrigerant components such as filter drier, pressure switch, metering device or coil.

Units are shipped with compressor mountings which are factory-adjusted and ready for operation.

⚠ CAUTION

Do not loosen compressor mounting bolts.

Filters

Two-inch filters are supplied with each unit. Four-inch filters may be used with no modification to the filter racks. Filters must always be installed ahead of evaporator coil and must be kept clean or replaced with same size and type. Dirty filters reduce the capacity of the unit and result in frosted coils or safety shutdown. Refer to physical data tables, for the number and size of filters needed for the unit. The unit should not be operated without filters properly installed.

Power And Control Wiring

Field wiring to the unit, fuses, and disconnects must conform to provisions of National Electrical Code (NEC), ANSI/NFPA No. 70 – Latest Edition (in U.S.A.), current Canadian Electrical Code C221, and/or local ordinances. The unit must be electrically grounded in accordance with NEC and CEC as specified above and/or local codes.

Voltage tolerances which must be maintained at the compressor terminals during starting and running conditions are indicated on the unit Rating Plate and Table 1.

⚠ CAUTION

208/230-3-60 and 208/230-1-60 units control transformers are factory wired for 230v. Change tap on transformer for 208v operation. See unit wiring diagram.

The internal wiring harnesses furnished with this unit are an integral part of the design certified unit. Field alteration to comply with electrical codes should not be required. If any of the wire supplied with the unit must be replaced, replacement wire must be of the type shown on the wiring diagram and the same minimum gauge as the replaced wire.

A disconnect must be utilized for these units. Factory installed disconnects are available. If installing a disconnect (field supplied), refer to Figures 11 through 14 for the recommended mounting location.

CAUTION

Avoid damage to internal components if drilling holes for disconnect mounting.

NOTE: Since not all local codes allow the mounting of a disconnect on the unit, please confirm compliance with local code before mounting a disconnect on the unit.

Electrical line must be sized properly to carry the load. USE COPPER CONDUCTORS ONLY. Each unit must be wired with a separate branch circuit fed directly from the meter panel and properly fused.

CAUTION

When connecting electrical power and control wiring to the unit, water-proof connectors must be used so that water or moisture cannot be drawn into the unit during normal operation. The above water-proofing conditions will also apply when installing a field supplied disconnect switch.

CAUTION

When installing equipment in a facility with a 3 phase high-leg delta power supply, care must be taken to ensure that the high-leg conductor is not attached to either of the two legs of the (single phase, direct drive) X13 or ECM motors. Failure to do so can result in the motor acting erratically or not running at all.

Check for the high leg conductor by checking voltage of each phase to ground.

Example: A or L1 phase to ground, voltage reading is 120V. B or L2 phase to ground, voltage reading is 195 to 208V. C or L3 phase to ground, voltage reading is 120V. Therefore B or L2 phase is the high Leg. The high should always be wired to the center or B or L2 tap.

Note: Check all three phase motors and compressors for proper rotation after making a change. If it is necessary to change 3 phase motor rotation, swap A or L1 and C or L3 only.

Thermostat Wiring

A two stage thermostat must be used and should be located on an inside wall approximately 56 inch above the floor where it will not be subject to drafts, sun exposure or heat from electrical fixtures or appliances. Follow the manufacturer's instructions enclosed with thermostat for general installation procedure. Eight (8) color-coded, insulated wires should be used to connect the thermostat to the unit. Refer to Table 7 for control wire sizing and maximum length.

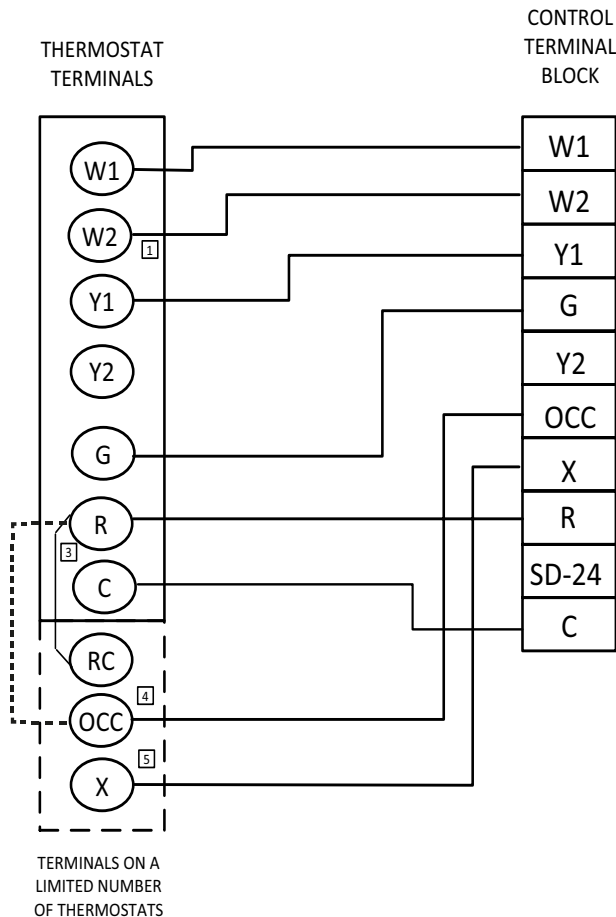
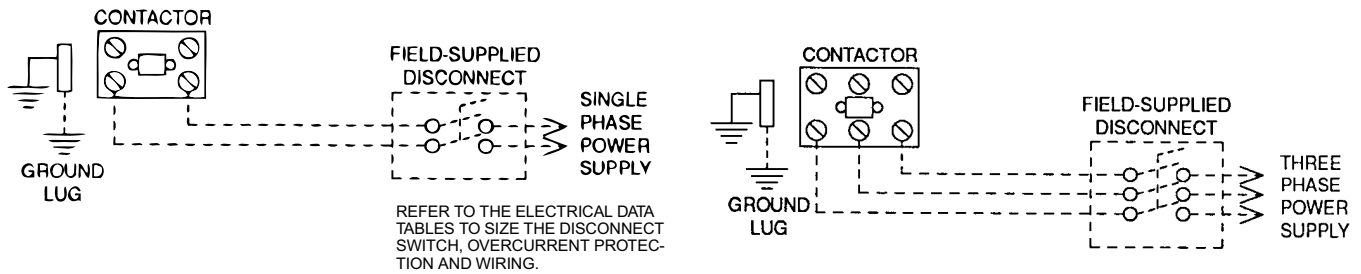
Table 7: Control Wire Sizes

Wire Size	Maximum Length ¹
18 AWG	150 Feet

1. From the unit to the thermostat and back to the unit.

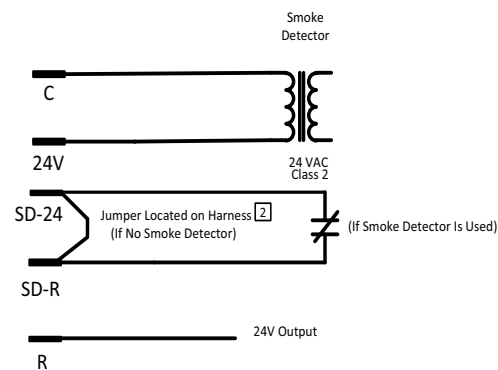
Typical Field Power and Control Wiring

Typical Power Wiring



R~Occ Jumper:

Smart Equipment Control boards come from the factory with a jumper wire between R and OCC terminals on the thermostat terminal strip. Failure to remove this jumper will place the unit into the Occupied mode no matter what the occupancy demand is from the thermostat or EMS system. To allow Thermostat or EMS control of the Occupied mode for the unit, this jumper must be removed during commissioning.



- ⁽¹⁾ Second stage heating not required on single stage heating units.
- ⁽²⁾ Jumper is required if there is no Smoke Detector circuit.
- ⁽³⁾ Jumper is required for any combination of R, RC, or RH.
- ⁽⁴⁾ OCC is an output from the thermostat to indicate the Occupied condition.
- ⁽⁵⁾ X is an input to the thermostat to display Error Status conditions.

Figure 20: Typical Smart Equipment™ Control Wiring

Table 8: Electrical Data

XYE04-09 Standard Indoor Blower - Without Powered Convenience Outlet

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh													
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA												
04 (3)	208-1-60	15.4	83.9	24				2.3	6.6	1.5		None	-	-	-	28.2	30	40	28	91	29.7	30	45	30	94												
												10625	4.9	1	23.6	57.7	60	60	55	114	59.2	60	60	57	118												
												11125	7.9	1	38	75.7	80	80	72	129	77.2	80	80	73	132												
	230-1-60	15.4	83.9	24				2.3	6	1.3		None	-	-	-	27.6	30	40	27	91	28.9	30	40	29	94												
												10625	6.5	1	27.1	61.5	70	70	58	118	62.8	70	70	60	121												
												11125	10.5	1	43.8	82.4	90	90	78	135	83.7	90	90	79	138												
	208-3-60	10.4	73	16				2.3	6.6	1.1		None	-	-	-	21.9	25	30	22	80	23	25	30	23	82												
												10625	4.9	1	13.6	38.9	40	45	38	93	40	40	45	39	96												
												11125	7.9	1	21.9	49.3	50	50	47	102	50.4	60	60	49	104												
												11625	12	1	33.3	63.5	70	70	60	113	64.6	70	70	62	116												
												230-3-60	10.4	73	16				2.3	6	1		None	-	-	-	21.3	25	30	22	80	22.3	25	30	23	82	
																							10625	6.5	1	15.6	40.8	45	45	39	96	41.8	45	45	41	98	
	11125	10.5	1	25.3	52.9	60	60	51	105	53.9	60												60	52	108												
													11625	16	1	38.5	69.4	70	70	66	119	70.4	80	80	67	121											
													460-3-60	5.8	38	9				1.3	3.2	0.5		None	-	-	-	11.8	15	15	12	43	12.3	15	15	12	44
																								10646	6	1	7.2	20.8	25	25	20	50	21.3	25	25	21	51
	11146	11.5	1	13.8	29.1	30	30	28	57	29.6	30	30												28	58												
													11446	14	1	16.8	32.8	35	35	31	60	33.3	35	35	32	61											
													575-3-60	3.8	36.5	6				1.1	6	0.4		None	-	-	-	8.3	15	15	8	40	8.7	15	15	9	41
																								11058	9.2	1	8.9	19.4	20	20	19	49	19.8	20	20	19	49
	11458	13.8	1	13.3	24.9	25	25	24	53	25.3	30	30												24	54												
05 (4)	208-1-60	19.6	130	31				2.3	8.4	1.5		None	-	-	-	35.2	40	50	35	137	36.7	40	50	37	140												
												10625	4.9	1	23.6	64.7	70	70	62	160	66.2	70	70	64	164												
												11125	7.9	1	38	82.7	90	90	79	175	84.2	90	90	80	178												
	230-1-60	19.6	130	31				2.3	7.6	1.3		None	-	-	-	34.4	35	50	34	137	35.7	40	50	35	140												
												10625	6.5	1	27.1	68.3	70	80	65	164	69.6	70	80	67	167												
												11125	10.5	1	43.8	89.2	90	90	84	181	90.5	100	100	86	184												
	208-3-60	13.7	83.1	21				2.3	8.4	1.1		None	-	-	-	27.8	30	40	28	90	28.9	30	40	29	92												
												10625	4.9	1	13.6	44.8	45	50	44	104	45.9	50	50	45	106												
												11125	7.9	1	21.9	55.2	60	60	53	112	56.3	60	60	55	114												
													11625	12	1	33.3	69.4	70	70	66	123	70.5	80	80	68	126											
													230-3-60	13.7	83.1	21				2.3	7.6	1		None	-	-	-	27	30	40	27	90	28	30	40	28	92
																								10625	6.5	1	15.6	46.5	50	50	45	106	47.5	50	50	46	108
	11125	10.5	1	25.3	58.6	60	60	56	115	59.6	60	60												57	118												
													11625	16	1	38.5	75.1	80	80	71	129	76.1	80	80	73	131											
													460-3-60	6.2	41	10				1.3	4	0.5		None	-	-	-	13.1	15	15	13	46	13.6	15	15	14	47
																								10646	6	1	7.2	22.1	25	25	22	53	22.6	25	25	22	54
	11146	11.5	1	13.8	30.4	35	35	29	60	30.9	35	35												30	61												
													11446	14	1	16.8	34.1	35	35	33	63	34.6	35	35	33	64											
													575-3-60	4.8	33	8				1.1	7.6	0.4		None	-	-	-	10.1	15	15	10	36	10.5	15	15	11	37
																								11058	9.2	1	8.9	21.2	25	25	20	45	21.6	25	25	21	46
	11458	13.8	1	13.3	26.7	30	30	26	49	27.1	30	30												26	50												

XYE04-09 Standard Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh		
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA	
06 (5)	208-1-60	24.4	144.2	38				2.3	8.4	1.5		None	-	-	-	41.2	45	60	40	151	42.7	45	60	42	154	
												10625	4.9	1	23.6	70.7	80	80	68	175	72.2	80	90	69	178	
												11125	7.9	1	38	88.7	90	100	84	189	90.2	100	100	86	192	
	230-1-60	24.4	144.2	38				2.3	7.6	1.3		None	-	-	-	40.4	45	60	39	151	41.7	45	60	41	154	
												10625	6.5	1	27.1	74.3	80	90	71	178	75.6	80	90	72	181	
												11125	10.5	1	43.8	95.2	100	100	90	195	96.5	100	100	91	198	
	208-3-60	16	110	25				2.3	8.4	1.1		None	-	-	-	30.7	35	45	31	117	31.8	35	45	32	119	
												10625	4.9	1	13.6	47.7	50	60	46	130	48.8	50	60	48	133	
												11125	7.9	1	21.9	58.1	60	60	56	139	59.2	60	60	57	141	
	230-3-60	16	110	25				2.3	7.6	1		11625	12	1	33.3	72.3	80	80	69	150	73.4	80	80	70	153	
												None	-	-	-	29.9	30	45	30	117	30.9	35	45	31	119	
												10625	6.5	1	15.6	49.4	50	60	48	133	50.4	60	60	49	135	
	460-3-60	7.8	52	12				1.3	4	0.5		11125	10.5	1	25.3	61.5	70	70	59	142	62.5	70	70	60	145	
												11625	16	1	38.5	78	80	80	74	156	79	80	80	75	158	
												None	-	-	-	15.1	20	20	15	57	15.6	20	20	16	58	
	575-3-60	5.7	38.9	9				1.1	7.6	0.4		10646	6	1	7.2	24.1	25	30	23	64	24.6	25	30	24	65	
												11146	11.5	1	13.8	32.4	35	35	31	71	32.9	35	35	32	72	
												11446	14	1	16.8	36.1	40	40	34	74	36.6	40	40	35	75	
												None	-	-	-	11.2	15	15	11	42	11.6	15	15	12	43	
												11458	13.8	1	13.3	27.8	30	30	27	55	28.2	30	30	27	56	
												12358	23	1	22.1	38.8	40	40	37	64	39.2	40	40	37	65	
	07 (6)	208-3-60	19.6	136	31				2.3	5.2	1.1		None	-	-	-	34.3	35	50	34	178	36.5	40	50	36	188
													10725	4.9	1	13.6	51.3	60	60	49	191	53.5	60	60	52	201
													11725	12	1	33.3	75.9	80	80	72	211	78.1	80	80	75	221
12525													18.6	1	51.6	98.8	100	100	93	229	101	110	110	96	239	
230-3-60		19.6	136	31				2.3	5.2	1		None	-	-	-	34.3	35	50	34	181	36.3	40	50	36	176	
												10725	6.5	1	15.6	53.8	60	60	52	197	55.8	60	70	54	206	
												11725	16	1	38.5	82.4	90	90	78	220	84.4	90	90	80	229	
												12525	24.8	1	59.7	108.9	110	110	102	241	110.9	125	125	105	250	
460-3-60		8.2	66.1	13				1.3	2.6	0.5		None	-	-	-	15.5	20	20	15	90	16.5	20	20	17	87	
												10746	6	1	7.2	24.5	25	30	24	97	25.5	30	30	25	102	
												11746	16.5	1	19.8	40.3	45	45	38	110	41.3	45	45	39	114	
												12646	25.5	1	30.7	53.9	60	60	51	121	54.9	60	60	52	125	
575-3-60		6.6	55.3	10				1.1	2	0.4		None	-	-	-	12.5	15	15	12	75	13.3	15	15	13	72	
												11758	17	1	16.4	33	35	35	31	91	33.8	35	35	32	95	
												12658	25.7	1	24.7	43.4	45	45	41	99	44.2	45	45	42	103	
A7 (6)	208-3-60	17.6	136	27				4.4	5.2	1.1		None	-	-	-	31.6	35	45	31	158	33.8	35	50	34	163	
												10725	4.9	1	13.6	48.6	50	60	47	172	50.8	60	60	49	177	
												11725	12	1	33.3	73.2	80	80	70	192	75.4	80	80	72	197	
												12525	18.6	1	51.6	96.1	100	100	91	210	98.3	100	100	93	215	
	230-3-60	17.6	136	27				4.4	5.2	1		None	-	-	-	31.6	35	45	31	161	33.6	35	50	34	166	
												10725	6.5	1	15.6	51.1	60	60	49	177	53.1	60	60	52	181	
												11725	16	1	38.5	79.7	80	80	76	200	81.7	90	90	78	204	
												12525	24.8	1	59.7	106.2	110	110	100	221	108.2	110	110	102	225	
	460-3-60	8.5	66.1	13				2.5	2.6	0.5		None	-	-	-	18.2	20	25	19	79	19.2	20	25	20	81	
												10746	6	1	7.2	27.2	30	30	27	86	28.2	30	30	28	88	
												11746	16.5	1	19.8	43	45	45	41	98	44	45	45	42	101	
												12646	25.5	1	30.7	56.6	60	60	54	109	57.6	60	60	55	112	
	575-3-60	6.3	55.3	10				4.4	2	0.4		None	-	-	-	18.7	20	20	20	65	19.5	20	20	21	67	
												11758	17	1	16.4	39.2	40	40	39	82	40	40	40	39	84	
												12658	25.7	1	24.7	49.6	50	50	48	90	50.4	60	60	49	92	

XYE04-09 Standard Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ^{2/3} Breaker ³ Size (Amps)	Max Fuse ^{2/3} Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ^{2/3} Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ^{2/3} Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ^{4/5} Pwr Exh		
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA	
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	5.2	1.1		None	-	-	-	41.9	45	50	44	211	44.1	45	50	47	221	
												11725	12	1	33.3	83.5	90	90	82	244	85.7	90	90	85	254	
												12525	18.6	1	51.6	106.4	110	110	104	262	108.6	110	110	106	272	
												13225	24	1	66.6	125.2	150	150	121	277	127.4	150	150	123	287	
												14225	31.8	2	88.3	116.9	125	125	112	270	119.6	125	125	115	280	
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	5.2	1		None	-	-	-	41.3	45	50	43	210	43.3	45	50	46	215	
												11725	16	1	38.5	89.4	90	90	88	249	91.4	100	100	90	258	
												12525	24.8	1	59.7	115.9	125	125	112	270	117.9	125	125	114	279	
												13225	32	1	77	137.6	150	150	132	287	139.6	150	150	134	296	
												14225	42.4	2	102	134	150	150	122	278	136.5	150	150	124	288	
	460-3-60	6.2	41	10	6.1	41	10	2.9	2.6	0.5		None	-	-	-	19.4	20	25	20	106	20.4	25	25	22	108	
												11746	16.5	1	19.8	44.2	45	45	43	125	45.2	50	50	44	130	
												12846	27.8	1	33.4	61.2	70	70	59	139	62.2	70	70	60	143	
												13346	33	1	39.7	69	70	70	66	145	70	70	70	67	150	
	575-3-60	4.9	33	8	4.2	33	7	2.2	2	0.4		14246	41.7	2	50.2	66	70	70	59	139	67.3	70	70	60	143	
												None	-	-	-	14.5	15	15	87	15.3	20	20	16	89		
												11758	17	1	16.4	35	35	35	34	104	35.8	40	40	35	107	
												13458	34	1	32.7	55.4	60	60	53	120	56.2	60	60	54	124	
	09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	5.2	1.1		None	-	-	-	42.8	45	50	45	226	45	45	50	48	236
													11725	12	1	33.3	84.4	90	90	83	259	86.6	90	90	86	269
12525													18.6	1	51.6	107.3	110	110	104	277	109.5	110	110	107	287	
13225													24	1	66.6	126.1	150	150	122	292	128.3	150	150	124	302	
14225													31.8	2	88.3	116.9	125	125	113	285	119.6	125	125	116	295	
230-3-60		14.5	98	23	13.7	83.1	21	5.2	5.2	1		None	-	-	-	42.2	45	50	44	225	44.2	45	50	47	230	
												11725	16	1	38.5	90.3	100	100	89	264	92.3	100	100	91	273	
												12525	24.8	1	59.7	116.8	125	125	113	285	118.8	125	125	115	294	
												13225	32	1	77	138.5	150	150	133	302	140.5	150	150	135	311	
												14225	42.4	2	102	134	150	150	123	293	136.5	150	150	125	302	
460-3-60		6.3	55	10	6.2	41	10	2.9	2.6	0.5		None	-	-	-	19.6	20	25	21	120	20.6	25	25	22	122	
												11746	16.5	1	19.8	44.4	45	45	43	139	45.4	50	50	45	144	
												12846	27.8	1	33.4	61.4	70	70	59	153	62.4	70	70	60	157	
												13346	33	1	39.7	69.2	70	70	66	159	70.2	80	80	68	164	
575-3-60		6	41	9	4.8	33	8	2.2	2	0.4		14246	41.7	2	50.2	66	70	70	59	153	67.3	70	70	60	157	
												None	-	-	-	16.5	20	20	17	95	17.3	20	20	18	97	
												11758	17	1	16.4	37	40	40	36	112	37.8	40	40	37	115	
												13458	34	1	32.7	57.4	60	60	55	128	58.2	60	60	56	132	
With VFD																										
A7 (6)		208-3-60	17.6	136	27				4.4	7	1.1		None	-	-	-	33.4	35	50	33	196	35.6	40	50	36	201
	10725												4.9	1	13.6	50.4	60	60	49	210	52.6	60	60	52	215	
	11725												12	1	33.3	75	80	80	72	229	77.2	80	80	74	234	
	12525												18.6	1	51.6	97.9	100	100	93	248	100.1	110	110	95	253	
	230-3-60	17.6	136	27				4.4	7.2	1		None	-	-	-	33.6	35	50	34	198	35.6	40	50	36	202	
												10725	6.5	1	15.6	53.1	60	60	52	213	55.1	60	60	54	218	
												11725	16	1	38.5	81.7	90	90	78	236	83.7	90	90	80	241	
												12525	24.8	1	59.7	108.2	110	110	102	258	110.2	125	125	105	262	
	460-3-60	8.5	66.1	13				2.5	3.6	0.5		None	-	-	-	19.2	20	25	20	97	20.2	25	25	21	99	
												10746	6	1	7.2	28.2	30	30	28	104	29.2	30	30	29	106	
												11746	16.5	1	19.8	44	45	45	42	117	45	45	44	119		
												12646	25.5	1	30.7	57.6	60	60	55	128	58.6	60	60	56	130	
	575-3-60	6.3	55.3	10				4.4	2.5	0.4		None	-	-	-	19.2	20	25	20	73	20	20	25	21	75	
												11758	17	1	16.4	39.7	40	40	39	89	40.5	45	45	40	91	
												12658	25.7	1	24.7	50.1	60	60	49	98	50.9	60	60	50	100	

XYE04-09 Standard Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	7	1.1		None	-	-	-	43.7	45	50	46	248	45.9	50	50	49	258
												11725	12	1	33.3	85.3	90	90	85	282	87.5	90	90	87	292
												12525	18.6	1	51.6	108.2	110	110	106	300	110.4	125	125	108	310
												13225	24	1	66.6	127	150	150	123	315	129.2	150	150	125	325
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	7.2	1		14225	31.8	2	88.3	119.1	125	125	114	307	121.9	125	125	117	317
												None	-	-	-	43.3	45	50	46	247	45.3	50	50	48	252
												11725	16	1	38.5	91.4	100	100	90	286	93.4	100	100	92	295
												12525	24.8	1	59.7	117.9	125	125	114	307	119.9	125	125	117	316
	460-3-60	6.2	41	10	6.1	41	10	2.9	3.6	0.5		13225	32	1	77	139.6	150	150	134	324	141.6	150	150	137	333
												14225	42.4	2	102	136.5	150	150	124	315	139	150	150	126	324
												None	-	-	-	20.4	25	25	22	124	21.4	25	25	23	126
												11746	16.5	1	19.8	45.2	50	50	44	144	46.2	50	50	46	148
	575-3-60	4.9	33	8	4.2	33	7	2.2	2.5	0.4		12846	27.8	1	33.4	62.2	70	70	60	157	63.2	70	70	61	162
												13346	33	1	39.7	70	70	70	67	164	71	80	80	68	168
												14246	41.7	2	50.2	67.3	70	70	60	157	68.5	70	70	61	162
												None	-	-	-	15	20	20	16	95	15.8	20	20	17	97
09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	7	1.1		11758	17	1	16.4	35.5	40	40	35	111	36.3	40	40	36	115
												13458	34	1	32.7	55.9	60	60	53	128	56.7	60	60	54	131
												None	-	-	-	44.6	45	50	47	263	46.8	50	50	49	273
												11725	12	1	33.3	86.2	90	90	85	297	88.4	90	90	88	307
	230-3-60	14.5	98	23	13.7	83.1	21	5.2	7.2	1		12525	18.6	1	51.6	109.1	110	110	106	315	111.3	125	125	109	325
												13225	24	1	66.6	127.9	150	150	124	330	130.1	150	150	126	340
												14225	31.8	2	88.3	119.1	125	125	115	322	121.9	125	125	118	332
												None	-	-	-	44.2	45	50	47	262	46.2	50	50	49	267
	460-3-60	6.3	55	10	6.2	41	10	2.9	3.6	0.5		11725	16	1	38.5	92.3	100	100	91	300	94.3	100	100	93	310
												12525	24.8	1	59.7	118.8	125	125	115	322	120.8	125	125	118	331
												13225	32	1	77	140.5	150	150	135	339	142.5	150	150	138	348
												14225	42.4	2	102	136.5	150	150	125	330	139	150	150	127	339
	575-3-60	6	41	9	4.8	33	8	2.2	2.5	0.4		None	-	-	-	17	20	20	18	103	17.8	20	20	19	105
												11758	17	1	16.4	37.5	40	40	37	119	38.3	40	40	38	123
												13458	34	1	32.7	57.9	60	60	55	136	58.7	60	60	56	139
												None	-	-	-	20.6	25	25	22	138	21.6	25	25	23	140
09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	7	1.1		11746	16.5	1	19.8	45.4	50	50	45	158	46.4	50	50	46	162
												12846	27.8	1	33.4	62.4	70	70	60	171	63.4	70	70	61	176
												13346	33	1	39.7	70.2	80	80	68	178	71.2	80	80	69	182
												14246	41.7	2	50.2	67.3	70	70	60	171	68.5	70	70	61	176
	230-3-60	14.5	98	23	13.7	83.1	21	5.2	7.2	1		None	-	-	-	20.6	25	25	22	138	21.6	25	25	23	140
												11746	16.5	1	19.8	45.4	50	50	45	158	46.4	50	50	46	162
												12846	27.8	1	33.4	62.4	70	70	60	171	63.4	70	70	61	176
												13346	33	1	39.7	70.2	80	80	68	178	71.2	80	80	69	182
	460-3-60	6.3	55	10	6.2	41	10	2.9	3.6	0.5		14246	41.7	2	50.2	67.3	70	70	60	171	68.5	70	70	61	176
												None	-	-	-	17	20	20	18	103	17.8	20	20	19	105
												11758	17	1	16.4	37.5	40	40	37	119	38.3	40	40	38	123
												13458	34	1	32.7	57.9	60	60	55	136	58.7	60	60	56	139

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC.
4. Non-fused Disconnect, Verify on the unit nameplate that the disconnect is properly sized for the application. Units with field installed electric heat kits may exceed the factory installed disconnect amperage rating.

XYE04-09 Standard Indoor Blower - With Powered Convenience Outlet

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh		
																										Model
				RLA	LRA	MCC	RLA					LRA	MCC													
04 (3)	208-1-60	15.4	83.9	24				2.3	6.6	1.5	8.6	None	-	-	-	32.5	35	45	33	95	34	35	45	35	98	
												10625	4.9	1	23.6	62	70	70	60	119	63.5	70	70	62	122	
												11125	7.9	1	38	80	80	80	77	133	81.5	90	90	78	136	
	230-1-60	15.4	83.9	24				2.3	6	1.3	8.6	None	-	-	-	31.9	35	45	32	95	33.2	35	45	34	98	
												10625	6.5	1	27.1	65.8	70	70	63	122	67.1	70	70	65	125	
												11125	10.5	1	43.8	86.7	90	90	83	139	88	90	90	84	142	
	208-3-60	10.4	73	16				2.3	6.6	1.1	8.6	None	-	-	-	26.2	30	35	27	84	27.3	30	35	28	87	
												10625	4.9	1	13.6	43.2	45	50	43	98	44.3	45	50	44	100	
												11125	7.9	1	21.9	53.6	60	60	52	106	54.7	60	60	54	109	
	230-3-60	10.4	73	16				2.3	6	1	8.6	11625	12	1	33.3	67.8	70	70	65	117	68.9	70	70	67	120	
												None	-	-	-	25.6	30	35	26	84	26.6	30	35	28	87	
												10625	6.5	1	15.6	45.1	50	50	44	100	46.1	50	50	46	102	
	460-3-60	5.8	38	9				1.3	3.2	0.5	8.6	11125	10.5	1	25.3	57.2	60	60	56	110	58.2	60	60	57	112	
												11625	16	1	38.5	73.7	80	80	71	123	74.7	80	80	72	125	
												None	-	-	-	14	15	15	14	45	14.5	15	15	15	46	
	575-3-60	3.8	36.5	6				1.1	6	0.4	8.6	10646	6	1	7.2	23	25	25	23	52	23.5	25	25	23	53	
												11146	11.5	1	13.8	31.3	35	35	30	59	31.8	35	35	31	60	
												11446	14	1	16.8	35	35	35	34	62	35.5	40	40	34	63	
05 (4)	208-1-60	19.6	130	31				2.3	8.4	1.5	8.6	None	-	-	-	39.5	40	50	40	141	41	45	60	42	145	
												10625	4.9	1	23.6	69	70	80	67	165	70.5	80	80	69	168	
												11125	7.9	1	38	87	90	90	83	179	88.5	90	90	85	183	
	230-1-60	19.6	130	31				2.3	7.6	1.3	8.6	None	-	-	-	38.7	40	50	39	141	40	40	50	40	144	
												10625	6.5	1	27.1	72.6	80	80	70	168	73.9	80	80	72	171	
												11125	10.5	1	43.8	93.5	100	100	89	185	94.8	100	100	91	188	
	208-3-60	13.7	83.1	21				2.3	8.4	1.1	8.6	None	-	-	-	32.1	35	45	33	94	33.2	35	45	34	97	
												10625	4.9	1	13.6	49.1	50	50	49	108	50.2	60	60	50	110	
												11125	7.9	1	21.9	59.5	60	60	58	116	60.6	70	70	59	119	
	230-3-60	13.7	83.1	21				2.3	7.6	1	8.6	11625	12	1	33.3	73.7	80	80	71	128	74.8	80	80	73	130	
												None	-	-	-	31.3	35	45	32	94	32.3	35	45	33	97	
												10625	6.5	1	15.6	50.8	60	60	50	110	51.8	60	60	51	112	
	460-3-60	6.2	41	10				1.3	4	0.5	8.6	11125	10.5	1	25.3	62.9	70	70	61	120	63.9	70	70	62	122	
												11625	16	1	38.5	79.4	80	80	76	133	80.4	90	90	78	135	
												None	-	-	-	15.3	20	20	16	48	15.8	20	20	16	49	
	575-3-60	4.8	33	8				1.1	7.6	0.4	8.6	10646	6	1	7.2	24.3	25	25	24	55	24.8	25	25	25	56	
												11146	11.5	1	13.8	32.6	35	35	32	62	33.1	35	35	32	63	
												11446	14	1	16.8	36.3	40	40	35	65	36.8	40	40	36	66	
	575-3-60	4.8	33	8				1.1	7.6	0.4	8.6	None	-	-	-	11.9	15	15	12	38	12.3	15	15	13	39	
												11058	9.2	1	8.9	23	25	25	23	47	23.4	25	25	23	48	
												11458	13.8	1	13.3	28.5	30	30	28	51	28.9	30	30	28	52	

XYE04-09 Standard Indoor Blower - With Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
06 (5)	208-1-60	24.4	144.2	38				2.3	8.4	1.5	8.6	None	-	-	-	45.5	50	60	45	155	47	50	70	47	159
												10625	4.9	1	23.6	75	80	90	72	179	76.5	80	90	74	182
												11125	7.9	1	38	93	100	100	89	193	94.5	100	100	91	197
	230-1-60	24.4	144.2	38				2.3	7.6	1.3	8.6	None	-	-	-	44.7	45	60	44	156	46	50	70	46	158
												10625	6.5	1	27.1	78.6	80	90	76	183	79.9	80	90	77	186
												11125	10.5	1	43.8	99.5	100	110	95	199	100.8	110	110	96	202
	208-3-60	16	110	25				2.3	8.4	1.1	8.6	None	-	-	-	35	35	50	36	121	36.1	40	50	37	124
												10625	4.9	1	13.6	52	60	60	51	135	53.1	60	60	53	137
												11125	7.9	1	21.9	62.4	70	70	61	143	63.5	70	70	62	146
												11625	12	1	33.3	76.6	80	80	74	154	77.7	80	80	75	157
												None	-	-	-	34.2	35	50	35	121	35.2	40	50	36	124
												10625	6.5	1	15.6	53.7	60	60	53	137	54.7	60	60	54	139
												11125	10.5	1	25.3	65.8	70	70	64	147	66.8	70	70	65	149
												11625	16	1	38.5	82.3	90	90	79	160	83.3	90	90	80	162
												None	-	-	-	17.3	20	25	18	59	17.8	20	25	18	60
	460-3-60	7.8	52	12				1.3	4	0.5	8.6	10646	6	1	7.2	26.3	30	30	26	66	26.8	30	30	26	67
												11146	11.5	1	13.8	34.6	35	35	33	73	35.1	40	40	34	74
												11446	14	1	16.8	38.3	40	40	37	76	38.8	40	40	37	77
	575-3-60	5.7	38.9	9				1.1	7.6	0.4	8.6	None	-	-	-	13	15	15	13	44	13.4	15	15	14	45
												11458	13.8	1	13.3	29.6	30	30	29	57	30	30	30	29	58
												12358	23	1	22.1	40.6	45	45	39	66	41	45	45	39	67
07 (6)	208-3-60	19.6	136	31				2.3	5.2	1.1	8.6	None	-	-	-	38.6	40	50	39	182	40.8	45	50	41	192
												10725	4.9	1	13.6	55.6	60	70	54	196	57.8	60	70	57	206
												11725	12	1	33.3	80.2	90	90	77	215	82.4	90	90	80	225
												12525	18.6	1	51.6	103.1	110	110	98	234	105.3	110	110	101	244
	230-3-60	19.6	136	31				2.3	5.2	1	8.6	None	-	-	-	38.6	40	50	39	185	40.6	45	60	41	180
												10725	6.5	1	15.6	58.1	60	70	57	201	60.1	70	70	59	210
												11725	16	1	38.5	86.7	90	90	83	224	88.7	90	90	85	233
												12525	24.8	1	59.7	113.2	125	125	107	245	115.2	125	125	110	254
	460-3-60	8.2	66.1	13				1.3	2.6	0.5	8.6	None	-	-	-	17.7	20	25	18	92	18.7	20	25	19	89
												10746	6	1	7.2	26.7	30	30	26	100	27.7	30	30	27	104
												11746	16.5	1	19.8	42.5	45	45	41	112	43.5	45	45	42	117
												12646	25.5	1	30.7	56.1	60	60	53	123	57.1	60	60	54	127
	575-3-60	6.6	55.3	10				1.1	2	0.4	8.6	None	-	-	-	14.2	15	20	14	76	15	15	20	15	74
												11758	17	1	16.4	34.7	35	35	33	93	35.5	40	40	34	96
												12658	25.7	1	24.7	45.1	50	50	43	101	45.9	50	50	44	105
A7 (6)	208-3-60	17.6	136	27				4.4	5.2	1.1	8.6	None	-	-	-	35.9	40	50	36	163	38.1	40	50	39	168
												10725	4.9	1	13.6	52.9	60	60	52	176	55.1	60	60	54	181
												11725	12	1	33.3	77.5	80	80	75	196	79.7	80	80	77	201
												12525	18.6	1	51.6	100.4	110	110	96	214	102.6	110	110	98	219
	230-3-60	17.6	136	27				4.4	5.2	1	8.6	None	-	-	-	35.9	40	50	36	165	37.9	40	50	39	170
												10725	6.5	1	15.6	55.4	60	60	54	181	57.4	60	70	56	186
												11725	16	1	38.5	84	90	90	81	204	86	90	90	83	208
												12525	24.8	1	59.7	110.5	125	125	105	225	112.5	125	125	107	230
	460-3-60	8.5	66.1	13				2.5	2.6	0.5	8.6	None	-	-	-	20.4	25	25	21	81	21.4	25	25	22	83
												10746	6	1	7.2	29.4	30	35	29	88	30.4	35	35	30	90
												11746	16.5	1	19.8	45.2	50	50	44	101	46.2	50	50	45	103
												12646	25.5	1	30.7	58.8	60	60	56	111	59.8	60	60	58	114
	575-3-60	6.3	55.3	10				4.4	2	0.4	8.6	None	-	-	-	20.4	25	25	22	67	21.2	25	25	23	69
												11758	17	1	16.4	40.9	45	45	40	83	41.7	45	45	41	85
												12658	25.7	1	24.7	51.3	60	60	50	92	52.1	60	60	51	94

26 Johnson Controls Ducted Systems

XYE04-09 Standard Indoor Blower - With Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	7	1.1	8.6	None	-	-	-	48	50	60	51	253	50.2	60	60	54	263
												11725	12	1	33.3	89.6	90	90	89	286	91.8	100	100	92	296
												12525	18.6	1	51.6	112.5	125	125	111	304	114.7	125	125	113	314
												13225	24	1	66.6	131.3	150	150	128	319	133.5	150	150	130	329
												14225	31.8	2	88.3	124.5	125	125	119	312	127.3	150	150	122	322
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	7.2	1	8.6	None	-	-	-	47.6	50	60	51	251	49.6	50	60	53	256
												11725	16	1	38.5	95.7	100	100	95	290	97.7	100	100	97	299
												12525	24.8	1	59.7	122.2	125	125	119	311	124.2	125	125	122	320
												13225	32	1	77	143.9	150	150	139	328	145.9	150	150	142	338
												14225	42.4	2	102	141.9	150	150	129	319	144.4	150	150	131	329
	460-3-60	6.2	41	10	6.1	41	10	2.9	3.6	0.5	8.6	None	-	-	-	22.6	25	25	24	126	23.6	25	25	25	128
												11746	16.5	1	19.8	47.4	50	50	47	146	48.4	50	50	48	150
												12846	27.8	1	33.4	64.4	70	70	63	159	65.4	70	70	64	164
												13346	33	1	39.7	72.2	80	80	70	166	73.2	80	80	71	170
	575-3-60	4.9	33	8	4.2	33	7	2.2	2.5	0.4	8.6	None	-	-	-	16.7	20	20	18	97	17.5	20	20	19	99
												11758	17	1	16.4	37.2	40	40	37	113	38	40	40	38	117
												13458	34	1	32.7	57.6	60	60	55	129	58.4	60	60	56	133
09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	7	1.1	8.6	None	-	-	-	48.9	50	60	52	268	51.1	60	60	55	278
												11725	12	1	33.3	90.5	100	100	90	301	92.7	100	100	93	311
												12525	18.6	1	51.6	113.4	125	125	111	319	115.6	125	125	114	329
												13225	24	1	66.6	132.2	150	150	129	334	134.4	150	150	131	344
												14225	31.8	2	88.3	124.5	125	125	120	327	127.3	150	150	123	337
	230-3-60	14.5	98	23	13.7	83.1	21	5.2	7.2	1	8.6	None	-	-	-	48.5	50	60	52	266	50.5	60	60	54	271
												11725	16	1	38.5	96.6	100	100	96	305	98.6	100	100	98	314
												12525	24.8	1	59.7	123.1	125	125	120	326	125.1	150	150	123	335
												13225	32	1	77	144.8	150	150	140	343	146.8	150	150	142	352
												14225	42.4	2	102	141.9	150	150	130	334	144.4	150	150	132	344
	460-3-60	6.3	55	10	6.2	41	10	2.9	3.6	0.5	8.6	None	-	-	-	22.8	25	25	24	140	23.8	25	25	26	142
												11746	16.5	1	19.8	47.6	50	50	47	160	48.6	50	50	48	164
												12846	27.8	1	33.4	64.6	70	70	63	173	65.6	70	70	64	178
												13346	33	1	39.7	72.4	80	80	70	180	73.4	80	80	71	184
	575-3-60	6	41	9	4.8	33	8	2.2	2.5	0.4	8.6	None	-	-	-	18.7	20	20	20	105	19.5	20	20	21	107
												11758	17	1	16.4	39.2	40	40	39	121	40	40	40	40	125
												13458	34	1	32.7	59.6	60	60	57	137	60.4	70	70	58	141

1. Minimum Circuit Ampacity.

2. Dual Element, Time Delay Type.

3. HACR type per NEC.

4. Non-fused Disconnect, Verify on the unit nameplate that the disconnect is properly sized for the application. Units with field installed electric heat kits may exceed the factory installed disconnect amperage rating.

XYE04-09 Medium Indoor Blower - Without Powered Convenience Outlet

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amp s)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amp s)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh												
																										FLA	LRA	FLA	LRA							
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps																					
04 (3)	208-1-60	15.4	83.9	24				2.3	7.6	1.5		None	-	-	-	29.2	30	40	29	122	30.7	35	45	31	125											
												10625	4.9	1	23.6	58.7	60	60	56	145	60.2	70	70	58	149											
												11125	7.9	1	38	76.7	80	80	73	160	78.2	80	80	75	163											
	230-1-60	15.4	83.9	24				2.3	7	1.3		None	-	-	-	28.6	30	40	28	124	29.9	30	45	30	127											
												10625	6.5	1	27.1	62.5	70	70	60	152	63.8	70	70	61	154											
												11125	10.5	1	43.8	83.4	90	90	79	168	84.7	90	90	80	171											
	208-3-60	10.4	73	16				2.3	5.2	1.1		None	-	-	-	20.5	25	30	21	100	21.6	25	30	22	103											
												10625	4.9	1	13.6	37.5	40	40	36	114	38.6	40	45	37	116											
												11125	7.9	1	21.9	47.9	50	50	46	122	49	50	50	47	125											
												11625	12	1	33.3	62.1	70	70	59	134	63.2	70	70	60	136											
												230-3-60	10.4	73	16				2.3	5.2	1		None	-	-	-	20.5	25	30	21	103	21.5	25	30	22	105
																							10625	6.5	1	15.6	40	40	45	39	119	41	45	45	40	121
	11125	10.5	1	25.3	52.1	60	60	50	128	53.1	60												60	51	131											
												11625	16	1	38.5	68.6	70	70	65	142	69.6	70	70	66	144											
												460-3-60	5.8	38	9				1.3	2.6	0.5		None	-	-	-	11.2	15	15	11	53	11.7	15	15	12	55
																							10646	6	1	7.2	20.2	25	25	19	61	20.7	25	25	20	62
	11146	11.5	1	13.8	28.5	30	30	27	67	29	30												30	28	68											
												11446	14	1	16.8	32.2	35	35	30	70	32.7	35	35	31	71											
												575-3-60	3.8	36.5	6				1.1	2	0.4		None	-	-	-	7.9	15	15	8	49	8.3	15	15	8	50
																							11058	9.2	1	8.9	19	20	20	18	58	19.4	20	20	19	59
	11458	13.8	1	13.3	24.5	25	25	23	62	24.9	25												25	24	63											
05 (4)	208-1-60	19.6	130	31				2.3	7.6	1.5		None	-	-	-	34.4	35	50	34	168	35.9	40	50	36	171											
												10625	4.9	1	23.6	63.9	70	70	61	191	65.4	70	70	63	195											
												11125	7.9	1	38	81.9	90	90	78	206	83.4	90	90	79	209											
	230-1-60	19.6	130	31				2.3	7	1.3		None	-	-	-	33.8	35	50	33	171	35.1	40	50	35	173											
												10625	6.5	1	27.1	67.7	70	80	64	198	69	70	80	66	201											
												11125	10.5	1	43.8	88.6	90	90	84	214	89.9	90	90	85	217											
	208-3-60	13.7	83.1	21				2.3	5.2	1.1		None	-	-	-	24.6	25	35	24	110	25.7	30	35	26	113											
												10625	4.9	1	13.6	41.6	45	50	40	124	42.7	45	50	41	126											
												11125	7.9	1	21.9	52	60	60	50	132	53.1	60	60	51	135											
												11625	12	1	33.3	66.2	70	70	63	144	67.3	70	70	64	146											
												230-3-60	13.7	83.1	21				2.3	5.2	1		None	-	-	-	24.6	25	35	24	113	25.6	30	35	26	115
																							10625	6.5	1	15.6	44.1	45	50	42	129	45.1	50	50	43	131
	11125	10.5	1	25.3	56.2	60	60	53	138	57.2	60												60	55	141											
												11625	16	1	38.5	72.7	80	80	69	152	73.7	80	80	70	154											
												460-3-60	6.2	41	10				1.3	2.6	0.5		None	-	-	-	11.7	15	15	12	56	12.2	15	15	12	58
																							10646	6	1	7.2	20.7	25	25	20	64	21.2	25	25	20	65
	11146	11.5	1	13.8	29	30	30	27	70	29.5	30												30	28	71											
												11446	14	1	16.8	32.7	35	35	31	73	33.2	35	35	32	74											
												575-3-60	4.8	33	8				1.1	2	0.4		None	-	-	-	9.1	15	15	9	45	9.5	15	15	10	46
																							11058	9.2	1	8.9	20.2	25	25	19	54	20.6	25	25	20	55
	11458	13.8	1	13.3	25.7	30	30	24	59	26.1	30												30	25	60											

XYE04-09 Medium Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amp s)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amp s)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh		
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA	
06 (5)	208-1-60	24.4	144.2	38				2.3	6.8	1.5		None	-	-	-	39.6	40	60	39	182	41.1	45	60	40	185	
												10625	4.9	1	23.6	69.1	70	80	66	205	70.6	80	80	67	209	
												11125	7.9	1	38	87.1	90	100	82	220	88.6	90	100	84	223	
	230-1-60	24.4	144.2	38				2.3	6.2	1.3		None	-	-	-	39	40	60	38	182	40.3	45	60	39	185	
												10625	6.5	1	27.1	72.9	80	90	69	209	74.2	80	90	70	212	
												11125	10.5	1	43.8	93.8	100	100	88	226	95.1	100	100	90	229	
	208-3-60	16	110	25				2.3	7	1.1		None	-	-	-	29.3	30	45	29	175	30.4	35	45	30	177	
												10625	4.9	1	13.6	46.3	50	50	45	189	47.4	50	60	46	191	
												11125	7.9	1	21.9	56.7	60	60	54	197	57.8	60	60	56	199	
												11625	12	1	33.3	70.9	80	80	67	208	72	80	80	69	211	
												None	-	-	-	29.5	30	45	29	177	30.5	35	45	30	179	
												10625	6.5	1	15.6	49	50	60	47	192	50	50	60	48	195	
	230-3-60	16	110	25				2.3	7.2	1		11125	10.5	1	25.3	61.1	70	70	58	202	62.1	70	70	60	204	
												11625	16	1	38.5	77.6	80	80	74	215	78.6	80	80	75	218	
												None	-	-	-	14.7	15	20	15	86	15.2	20	20	15	87	
	460-3-60	7.8	52	12				1.3	3.6	0.5		10646	6	1	7.2	23.7	25	25	23	93	24.2	25	25	23	94	
												11146	11.5	1	13.8	32	35	35	30	100	32.5	35	35	31	101	
												11446	14	1	16.8	35.7	40	40	34	103	36.2	40	40	35	104	
	575-3-60	5.7	38.9	9				1.1	2.5	0.4		None	-	-	-	10.7	15	15	11	59	11.1	15	15	11	60	
												11458	13.8	1	13.3	27.3	30	30	26	72	27.7	30	30	26	73	
												12358	23	1	22.1	38.3	40	40	36	81	38.7	40	40	37	82	
	07 (6)	208-3-60	19.6	136	31				2.3	7.5	1.1		None	-	-	-	36.6	40	50	36	204	38.8	40	50	39	214
													10725	4.9	1	13.6	53.6	60	60	52	218	55.8	60	70	55	228
													11725	12	1	33.3	78.2	80	80	75	237	80.4	90	90	77	247
												12525	18.6	1	51.6	101.1	110	110	96	256	103.3	110	110	98	266	
												None	-	-	-	36.6	40	50	36	211	38.6	40	50	39	206	
												10725	6.5	1	15.6	56.1	60	70	54	227	58.1	60	70	57	236	
230-3-60		19.6	136	31				2.3	7.5	1		11725	16	1	38.5	84.7	90	90	81	250	86.7	90	90	83	259	
												12525	24.8	1	59.7	111.2	125	125	105	271	113.2	125	125	107	280	
												None	-	-	-	16.3	20	20	16	105	17.3	20	20	17	102	
460-3-60		8.2	66.1	13				1.3	3.4	0.5		10746	6	1	7.2	25.3	30	30	25	112	26.3	30	30	26	117	
												11746	16.5	1	19.8	41.1	45	45	39	125	42.1	45	45	40	129	
												12646	25.5	1	30.7	54.7	60	60	52	136	55.7	60	60	53	140	
575-3-60	6.6	55.3	10				1.1	2.8	0.4		None	-	-	-	13.3	15	15	13	87	14.1	15	15	14	84		
											11758	17	1	16.4	33.8	35	35	32	103	34.6	35	35	33	107		
											12658	25.7	1	24.7	44.2	45	45	42	111	45	45	45	43	115		
A7 (6)	208-3-60	17.6	136	27				4.4	7.5	1.1		None	-	-	-	33.9	35	50	34	185	36.1	40	50	36	190	
												10725	4.9	1	13.6	50.9	60	60	50	198	53.1	60	60	52	203	
												11725	12	1	33.3	75.5	80	80	72	218	77.7	80	80	75	223	
												12525	18.6	1	51.6	98.4	100	100	93	236	100.6	110	110	96	241	
												None	-	-	-	33.9	35	50	34	191	35.9	40	50	36	196	
												10725	6.5	1	15.6	53.4	60	60	52	207	55.4	60	60	54	211	
	230-3-60	17.6	136	27				4.4	7.5	1		11725	16	1	38.5	82	90	90	78	230	84	90	90	81	234	
												12525	24.8	1	59.7	108.5	110	110	103	251	110.5	125	125	105	255	
												None	-	-	-	19	20	25	19	94	20	20	25	21	96	
	460-3-60	8.5	66.1	13				2.5	3.4	0.5		10746	6	1	7.2	28	30	30	28	101	29	30	30	29	103	
												11746	16.5	1	19.8	43.8	45	45	42	113	44.8	45	45	43	116	
												12646	25.5	1	30.7	57.4	60	60	55	124	58.4	60	60	56	127	
575-3-60	6.3	55.3	10				4.4	2.8	0.4		None	-	-	-	19.5	20	25	21	77	20.3	25	25	22	79		
											11758	17	1	16.4	40	40	40	39	94	40.8	45	45	40	96		
											12658	25.7	1	24.7	50.4	60	60	49	102	51.2	60	60	50	104		

XYE04-09 Medium Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amp s)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amp s)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh		
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA	
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	5.2	1.1		None	-	-	-	41.9	45	50	44	211	44.1	45	50	47	221	
												11725	12	1	33.3	83.5	90	90	82	244	85.7	90	90	85	254	
												12525	18.6	1	51.6	106.4	110	110	104	262	108.6	110	110	106	272	
												13225	24	1	66.6	125.2	150	150	121	277	127.4	150	150	123	287	
												14225	31.8	2	88.3	116.9	125	125	112	270	119.6	125	125	115	280	
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	5.2	1		None	-	-	-	41.3	45	50	43	210	43.3	45	50	46	215	
												11725	16	1	38.5	89.4	90	90	88	249	91.4	100	100	90	258	
												12525	24.8	1	59.7	115.9	125	125	112	270	117.9	125	125	114	279	
												13225	32	1	77	137.6	150	150	132	287	139.6	150	150	134	296	
												14225	42.4	2	102	134	150	150	122	278	136.5	150	150	124	288	
	460-3-60	6.2	41	10	6.1	41	10	2.9	2.6	0.5		None	-	-	-	19.4	20	25	20	106	20.4	25	25	22	108	
												11746	16.5	1	19.8	44.2	45	45	43	125	45.2	50	50	44	130	
												12846	27.8	1	33.4	61.2	70	70	59	139	62.2	70	70	60	143	
												13346	33	1	39.7	69	70	70	66	145	70	70	70	67	150	
												14246	41.7	2	50.2	66	70	70	59	139	67.3	70	70	60	143	
	575-3-60	4.9	33	8	4.2	33	7	2.2	2	0.4		None	-	-	-	14.5	15	15	15	87	15.3	20	20	16	89	
												11758	17	1	16.4	35	35	35	34	104	35.8	40	40	35	107	
												13458	34	1	32.7	55.4	60	60	53	120	56.2	60	60	54	124	
	09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	5.2	1.1		None	-	-	-	42.8	45	50	45	226	45	45	50	48	236
													11725	12	1	33.3	84.4	90	90	83	259	86.6	90	90	86	269
12525													18.6	1	51.6	107.3	110	110	104	277	109.5	110	110	107	287	
13225													24	1	66.6	126.1	150	150	122	292	128.3	150	150	124	302	
14225													31.8	2	88.3	116.9	125	125	113	285	119.6	125	125	116	295	
230-3-60		14.5	98	23	13.7	83.1	21	5.2	5.2	1		None	-	-	-	42.2	45	50	44	225	44.2	45	50	47	230	
												11725	16	1	38.5	90.3	100	100	89	264	92.3	100	100	91	273	
												12525	24.8	1	59.7	116.8	125	125	113	285	118.8	125	125	115	294	
												13225	32	1	77	138.5	150	150	133	302	140.5	150	150	135	311	
												14225	42.4	2	102	134	150	150	123	293	136.5	150	150	125	302	
460-3-60		6.3	55	10	6.2	41	10	2.9	2.6	0.5		None	-	-	-	19.6	20	25	21	120	20.6	25	25	22	122	
												11746	16.5	1	19.8	44.4	45	45	43	139	45.4	50	50	45	144	
												12846	27.8	1	33.4	61.4	70	70	59	153	62.4	70	70	60	157	
												13346	33	1	39.7	69.2	70	70	66	159	70.2	80	80	68	164	
												14246	41.7	2	50.2	66	70	70	59	153	67.3	70	70	60	157	
575-3-60		6	41	9	4.8	33	8	2.2	2	0.4		None	-	-	-	16.5	20	20	17	95	17.3	20	20	18	97	
												11758	17	1	16.4	37	40	40	36	112	37.8	40	40	37	115	
												13458	34	1	32.7	57.4	60	60	55	128	58.2	60	60	56	132	
With VFD																										
A7 (6)		208-3-60	17.6	136	27				4.4	8.9	1.1		None	-	-	-	35.3	40	50	36	198	37.5	40	50	38	203
	10725												4.9	1	13.6	52.3	60	60	51	211	54.5	60	60	54	216	
	11725												12	1	33.3	76.9	80	80	74	231	79.1	80	80	76	236	
	12525												18.6	1	51.6	99.8	100	100	95	249	102	110	110	97	254	
	230-3-60	17.6	136	27				4.4	8.2	1		None	-	-	-	34.6	35	50	35	205	36.6	40	50	37	210	
												10725	6.5	1	15.6	54.1	60	60	53	221	56.1	60	60	55	225	
												11725	16	1	38.5	82.7	90	90	79	244	84.7	90	90	81	248	
												12525	24.8	1	59.7	109.2	110	110	103	265	111.2	125	125	106	269	
	460-3-60	8.5	66.1	13				2.5	4.1	0.5		None	-	-	-	19.7	20	25	20	101	20.7	25	25	21	103	
												10746	6	1	7.2	28.7	30	35	29	108	29.7	30	35	30	110	
												11746	16.5	1	19.8	44.5	45	45	43	120	45.5	50	50	44	123	
												12646	25.5	1	30.7	58.1	60	60	56	131	59.1	60	60	57	134	
	575-3-60	6.3	55.3	10				4.4	3.2	0.4		None	-	-	-	19.9	20	25	21	81	20.7	25	25	22	83	
												11758	17	1	16.4	40.4	45	45	40	98	41.2	45	45	41	100	
												12658	25.7	1	24.7	50.8	60	60	49	106	51.6	60	60	50	108	

XYE04-09 Medium Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amp s)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amp s)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	7	1.1		None	-	-	-	43.7	45	50	46	248	45.9	50	50	49	258
												11725	12	1	33.3	85.3	90	90	85	282	87.5	90	90	87	292
												12525	18.6	1	51.6	108.2	110	110	106	300	110.4	125	125	108	310
												13225	24	1	66.6	127	150	150	123	315	129.2	150	150	125	325
												14225	31.8	2	88.3	119.1	125	125	114	307	121.9	125	125	117	317
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	7.2	1		None	-	-	-	43.3	45	50	46	247	45.3	50	50	48	252
												11725	16	1	38.5	91.4	100	100	90	286	93.4	100	100	92	295
												12525	24.8	1	59.7	117.9	125	125	114	307	119.9	125	125	117	316
												13225	32	1	77	139.6	150	150	134	324	141.6	150	150	137	333
												14225	42.4	2	102	136.5	150	150	124	315	139	150	150	126	324
	460-3-60	6.2	41	10	6.1	41	10	2.9	3.6	0.5		None	-	-	-	20.4	25	25	22	124	21.4	25	25	23	126
												11746	16.5	1	19.8	45.2	50	50	44	144	46.2	50	50	46	148
												12846	27.8	1	33.4	62.2	70	70	60	157	63.2	70	70	61	162
												13346	33	1	39.7	70	70	70	67	164	71	80	80	68	168
												14246	41.7	2	50.2	67.3	70	70	60	157	68.5	70	70	61	162
	575-3-60	4.9	33	8	4.2	33	7	2.2	2.5	0.4		None	-	-	-	15	20	20	16	95	15.8	20	20	17	97
												11758	17	1	16.4	35.5	40	40	35	111	36.3	40	40	36	115
												13458	34	1	32.7	55.9	60	60	53	128	56.7	60	60	54	131
	09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	7	1.1		None	-	-	-	44.6	45	50	47	263	46.8	50	50	50
11725													12	1	33.3	86.2	90	90	85	297	88.4	90	90	88	307
12525													18.6	1	51.6	109.1	110	110	106	315	111.3	125	125	109	325
13225													24	1	66.6	127.9	150	150	124	330	130.1	150	150	126	340
14225													31.8	2	88.3	119.1	125	125	115	322	121.9	125	125	118	332
230-3-60		14.5	98	23	13.7	83.1	21	5.2	7.2	1		None	-	-	-	44.2	45	50	47	262	46.2	50	50	49	267
												11725	16	1	38.5	92.3	100	100	91	300	94.3	100	100	93	310
												12525	24.8	1	59.7	118.8	125	125	115	322	120.8	125	125	118	331
												13225	32	1	77	140.5	150	150	135	339	142.5	150	150	138	348
												14225	42.4	2	102	136.5	150	150	125	330	139	150	150	127	339
460-3-60		6.3	55	10	6.2	41	10	2.9	3.6	0.5		None	-	-	-	20.6	25	25	22	138	21.6	25	25	23	140
												11746	16.5	1	19.8	45.4	50	50	45	158	46.4	50	50	46	162
												12846	27.8	1	33.4	62.4	70	70	60	171	63.4	70	70	61	176
												13346	33	1	39.7	70.2	80	80	68	178	71.2	80	80	69	182
												14246	41.7	2	50.2	67.3	70	70	60	171	68.5	70	70	61	176
575-3-60		6	41	9	4.8	33	8	2.2	2.5	0.4		None	-	-	-	17	20	20	18	103	17.8	20	20	19	105
												11758	17	1	16.4	37.5	40	40	37	119	38.3	40	40	38	123
												13458	34	1	32.7	57.9	60	60	55	136	58.7	60	60	56	139

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC.
4. Non-fused Disconnect, Verify on the unit nameplate that the disconnect is properly sized for the application. Units with field installed electric heat kits may exceed the factory installed disconnect amperage rating.

XYE04-09 Medium Indoor Blower - With Powered Convenience Outlet

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh		
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA	
04 (3)	208-1-60	15.4	83.9	24				2.3	7.6	1.5	8.6	None	-	-	-	33.5	35	45	34	126	35	35	50	36	129	
												10625	4.9	1	23.6	63	70	70	61	150	64.5	70	70	63	153	
												11125	7.9	1	38	81	90	90	78	164	82.5	90	90	79	167	
	230-1-60	15.4	83.9	24				2.3	7	1.3	8.6	None	-	-	-	32.9	35	45	33	129	34.2	35	45	35	132	
												10625	6.5	1	27.1	66.8	70	70	65	156	68.1	70	70	66	159	
												11125	10.5	1	43.8	87.7	90	90	84	173	89	90	90	85	175	
	208-3-60	10.4	73	16				2.3	5.2	1.1	8.6	None	-	-	-	24.8	25	35	26	105	25.9	30	35	27	107	
												10625	4.9	1	13.6	41.8	45	45	41	118	42.9	45	45	42	121	
												11125	7.9	1	21.9	52.2	60	60	51	126	53.3	60	60	52	129	
												11625	12	1	33.3	66.4	70	70	64	138	67.5	70	70	65	140	
												None	-	-	-	24.8	25	35	26	107	25.8	30	35	27	110	
												10625	6.5	1	15.6	44.3	45	50	43	123	45.3	50	50	45	125	
													11125	10.5	1	25.3	56.4	60	60	55	133	57.4	60	60	56	135
													11625	16	1	38.5	72.9	80	80	70	146	73.9	80	80	71	148
													None	-	-	-	13.4	15	15	14	56	13.9	15	15	14	57
	460-3-60	5.8	38	9				1.3	2.6	0.5	8.6	10646	6	1	7.2	22.4	25	25	22	63	22.9	25	25	23	64	
												11146	11.5	1	13.8	30.7	35	35	30	69	31.2	35	35	30	70	
												11446	14	1	16.8	34.4	35	35	33	72	34.9	35	35	34	73	
575-3-60	3.8	36.5	6				1.1	2	0.4	8.6	None	-	-	-	9.6	15	15	10	51	10	15	15	10	51		
											11058	9.2	1	8.9	20.7	25	25	20	59	21.1	25	25	21	60		
											11458	13.8	1	13.3	26.2	30	30	25	64	26.6	30	30	26	65		
05 (4)	208-1-60	19.6	130	31				2.3	7.6	1.5	8.6	None	-	-	-	38.7	40	50	39	172	40.2	45	50	41	176	
												10625	4.9	1	23.6	68.2	70	80	66	196	69.7	70	80	68	199	
												11125	7.9	1	38	86.2	90	90	83	210	87.7	90	90	84	214	
	230-1-60	19.6	130	31				2.3	7	1.3	8.6	None	-	-	-	38.1	40	50	38	175	39.4	40	50	40	178	
												10625	6.5	1	27.1	72	80	80	69	202	73.3	80	80	71	205	
												11125	10.5	1	43.8	92.9	100	100	89	219	94.2	100	100	90	222	
	208-3-60	13.7	83.1	21				2.3	5.2	1.1	8.6	None	-	-	-	28.9	30	40	29	115	30	30	40	31	117	
												10625	4.9	1	13.6	45.9	50	50	45	128	47	50	50	46	131	
												11125	7.9	1	21.9	56.3	60	60	55	137	57.4	60	60	56	139	
												11625	12	1	33.3	70.5	80	80	68	148	71.6	80	80	69	150	
												None	-	-	-	28.9	30	40	29	117	29.9	30	40	30	120	
												10625	6.5	1	15.6	48.4	50	50	47	133	49.4	50	50	48	135	
												11125	10.5	1	25.3	60.5	70	70	58	143	61.5	70	70	60	145	
												11625	16	1	38.5	77	80	80	74	156	78	80	80	75	158	
												None	-	-	-	13.9	15	20	14	59	14.4	15	20	15	60	
	460-3-60	6.2	41	10				1.3	2.6	0.5	8.6	10646	6	1	7.2	22.9	25	25	22	66	23.4	25	25	23	67	
												11146	11.5	1	13.8	31.2	35	35	30	72	31.7	35	35	31	73	
												11446	14	1	16.8	34.9	35	35	33	75	35.4	40	40	34	76	
575-3-60	4.8	33	8				1.1	2	0.4	8.6	None	-	-	-	10.8	15	15	11	47	11.2	15	15	12	48		
											11058	9.2	1	8.9	21.9	25	25	21	56	22.3	25	25	22	57		
											11458	13.8	1	13.3	27.4	30	30	26	60	27.8	30	30	27	61		

XYE04-09 Medium Indoor Blower - With Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh		
		FLA	LRA	Model	kW	Stages	Amps					FLA	LRA	FLA	LRA											
		RLA	LRA	MCC	RLA	LRA	MCC																			
06 (5)	208-1-60	24.4	144.2	38				2.3	6.8	1.5	8.6	None	-	-	-	43.9	45	60	43	186	45.4	50	60	45	189	
												10625	4.9	1	23.6	73.4	80	90	71	209	74.9	80	90	72	213	
												11125	7.9	1	38	91.4	100	100	87	224	92.9	100	100	89	227	
	230-1-60	24.4	144.2	38				2.3	6.2	1.3	8.6	None	-	-	-	43.3	45	60	43	187	44.6	45	60	44	189	
												10625	6.5	1	27.1	77.2	80	90	74	214	78.5	80	90	75	217	
												11125	10.5	1	43.8	98.1	100	110	93	230	99.4	100	110	95	233	
	208-3-60	16	110	25				2.3	7	1.1	8.6	None	-	-	-	33.6	35	45	34	179	34.7	35	50	35	182	
												10625	4.9	1	13.6	50.6	60	60	50	193	51.7	60	60	51	195	
												11125	7.9	1	21.9	61	70	70	59	201	62.1	70	70	60	204	
	230-3-60	16	110	25				2.3	7.2	1	8.6	11625	12	1	33.3	75.2	80	80	72	213	76.3	80	80	74	215	
												None	-	-	-	33.8	35	45	34	181	34.8	35	50	35	183	
												10625	6.5	1	15.6	53.3	60	60	52	197	54.3	60	60	53	199	
	460-3-60	7.8	52	12				1.3	3.6	0.5	8.6	11125	10.5	1	25.3	65.4	70	70	63	206	66.4	70	70	65	209	
												11625	16	1	38.5	81.9	90	90	79	220	82.9	90	90	80	222	
												None	-	-	-	16.9	20	20	17	88	17.4	20	20	18	89	
	575-3-60	5.7	38.9	9				1.1	2.5	0.4	8.6	10646	6	1	7.2	25.9	30	30	25	95	26.4	30	30	26	96	
												11146	11.5	1	13.8	34.2	35	35	33	102	34.7	35	35	34	103	
												11446	14	1	16.8	37.9	40	40	36	105	38.4	40	40	37	106	
												None	-	-	-	12.4	15	15	13	61	12.8	15	15	13	62	
												11458	13.8	1	13.3	29	30	30	28	74	29.4	30	30	28	75	
												12358	23	1	22.1	40	40	40	38	83	40.4	45	45	39	84	
	07 (6)	208-3-60	19.6	136	31				2.3	7.5	1.1	8.6	None	-	-	-	40.9	45	60	41	208	43.1	45	60	44	218
													10725	4.9	1	13.6	57.9	60	70	57	222	60.1	70	70	60	232
													11725	12	1	33.3	82.5	90	90	80	242	84.7	90	90	82	252
230-3-60		19.6	136	31				2.3	7.5	1	8.6	12525	18.6	1	51.6	105.4	110	110	101	260	107.6	110	110	103	270	
												None	-	-	-	40.9	45	60	41	215	42.9	45	60	44	210	
												10725	6.5	1	15.6	60.4	70	70	59	231	62.4	70	70	62	240	
460-3-60		8.2	66.1	13				1.3	3.4	0.5	8.6	11725	16	1	38.5	89	90	90	86	254	91	100	100	88	263	
												12525	24.8	1	59.7	115.5	125	125	110	275	117.5	125	125	112	284	
												None	-	-	-	18.5	20	25	19	107	19.5	20	25	20	104	
575-3-60		6.6	55.3	10				1.1	2.8	0.4	8.6	10746	6	1	7.2	27.5	30	30	27	115	28.5	30	30	28	119	
												11746	16.5	1	19.8	43.3	45	45	42	127	44.3	45	45	43	132	
												12646	25.5	1	30.7	56.9	60	60	54	138	57.9	60	60	55	142	
575-3-60		6.6	55.3	10				1.1	2.8	0.4	8.6	None	-	-	-	15	20	20	15	88	15.8	20	20	16	86	
												11758	17	1	16.4	35.5	40	40	34	105	36.3	40	40	35	108	
												12658	25.7	1	24.7	45.9	50	50	44	113	46.7	50	50	45	117	
A7 (6)	208-3-60	17.6	136	27				4.4	7.5	1.1	8.6	None	-	-	-	38.2	40	50	39	189	40.4	45	50	41	194	
												10725	4.9	1	13.6	55.2	60	60	55	203	57.4	60	70	57	208	
												11725	12	1	33.3	79.8	80	80	77	222	82	90	90	80	227	
	230-3-60	17.6	136	27				4.4	7.5	1	8.6	12525	18.6	1	51.6	102.7	110	110	98	241	104.9	110	110	101	246	
												None	-	-	-	38.2	40	50	39	195	40.2	45	50	41	200	
												10725	6.5	1	15.6	57.7	60	70	57	211	59.7	60	70	59	216	
	460-3-60	8.5	66.1	13				2.5	3.4	0.5	8.6	11725	16	1	38.5	86.3	90	90	83	234	88.3	90	90	85	238	
												12525	24.8	1	59.7	112.8	125	125	108	255	114.8	125	125	110	260	
												None	-	-	-	21.2	25	25	22	96	22.2	25	25	23	98	
	575-3-60	6.3	55.3	10				4.4	2.8	0.4	8.6	10746	6	1	7.2	30.2	35	35	30	103	31.2	35	35	31	105	
												11746	16.5	1	19.8	46	50	50	45	116	47	50	50	46	118	
												12646	25.5	1	30.7	59.6	60	60	57	126	60.6	70	70	58	129	
	208-3-60	17.6	136	27				4.4	7.5	1.1	8.6	None	-	-	-	21.2	25	25	23	79	22	25	25	23	81	
												11758	17	1	16.4	41.7	45	45	41	95	42.5	45	45	42	97	
												12658	25.7	1	24.7	52.1	60	60	51	104	52.9	60	60	52	106	
											None	-	-	-	38.2	40	50	39	189	40.4	45	50	41	194		
											10725	4.9	1	13.6	55.2	60	60	55	203	57.4	60	70	57	208		
											11725	12	1	33.3	79.8	80	80	77	222	82	90	90	80	227		

34

Johnson Controls Ducted Systems

XYE04-09 Medium Indoor Blower - With Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	7	1.1	8.6	None	-	-	-	48	50	60	51	253	50.2	60	60	54	263
												11725	12	1	33.3	89.6	90	90	89	286	91.8	100	100	92	296
												12525	18.6	1	51.6	112.5	125	125	111	304	114.7	125	125	113	314
												13225	24	1	66.6	131.3	150	150	128	319	133.5	150	150	130	329
												14225	31.8	2	88.3	124.5	125	125	119	312	127.3	150	150	122	322
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	7.2	1	8.6	None	-	-	-	47.6	50	60	51	251	49.6	50	60	53	256
												11725	16	1	38.5	95.7	100	100	95	290	97.7	100	100	97	299
												12525	24.8	1	59.7	122.2	125	125	119	311	124.2	125	125	122	320
												13225	32	1	77	143.9	150	150	139	328	145.9	150	150	142	338
												14225	42.4	2	102	141.9	150	150	129	319	144.4	150	150	131	329
	460-3-60	6.2	41	10	6.1	41	10	2.9	3.6	0.5	8.6	None	-	-	-	22.6	25	25	24	126	23.6	25	25	25	128
												11746	16.5	1	19.8	47.4	50	50	47	146	48.4	50	50	48	150
												12846	27.8	1	33.4	64.4	70	70	63	159	65.4	70	70	64	164
												13346	33	1	39.7	72.2	80	80	70	166	73.2	80	80	71	170
												14246	41.7	2	50.2	69.9	70	70	63	159	71.2	80	80	64	164
	575-3-60	4.9	33	8	4.2	33	7	2.2	2.5	0.4	8.6	None	-	-	-	16.7	20	20	18	97	17.5	20	20	19	99
												11758	17	1	16.4	37.2	40	40	37	113	38	40	40	38	117
												13458	34	1	32.7	57.6	60	60	55	129	58.4	60	60	56	133
09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	7	1.1	8.6	None	-	-	-	48.9	50	60	52	268	51.1	60	60	55	278
												11725	12	1	33.3	90.5	100	100	90	301	92.7	100	100	93	311
												12525	18.6	1	51.6	113.4	125	125	111	319	115.6	125	125	114	329
												13225	24	1	66.6	132.2	150	150	129	334	134.4	150	150	131	344
												14225	31.8	2	88.3	124.5	125	125	120	327	127.3	150	150	123	337
	230-3-60	14.5	98	23	13.7	83.1	21	5.2	7.2	1	8.6	None	-	-	-	48.5	50	60	52	266	50.5	60	60	54	271
												11725	16	1	38.5	96.6	100	100	96	305	98.6	100	100	98	314
												12525	24.8	1	59.7	123.1	125	125	120	326	125.1	150	150	123	335
												13225	32	1	77	144.8	150	150	140	343	146.8	150	150	142	352
												14225	42.4	2	102	141.9	150	150	130	334	144.4	150	150	132	344
	460-3-60	6.3	55	10	6.2	41	10	2.9	3.6	0.5	8.6	None	-	-	-	22.8	25	25	24	140	23.8	25	25	26	142
												11746	16.5	1	19.8	47.6	50	50	47	160	48.6	50	50	48	164
												12846	27.8	1	33.4	64.6	70	70	63	173	65.6	70	70	64	178
												13346	33	1	39.7	72.4	80	80	70	180	73.4	80	80	71	184
												14246	41.7	2	50.2	69.9	70	70	63	173	71.2	80	80	64	178
	575-3-60	6	41	9	4.8	33	8	2.2	2.5	0.4	8.6	None	-	-	-	18.7	20	20	20	105	19.5	20	20	21	107
												11758	17	1	16.4	39.2	40	40	39	121	40	40	40	40	125
												13458	34	1	32.7	59.6	60	60	57	137	60.4	70	70	58	141

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC.
4. Non-fused Disconnect, Verify on the unit nameplate that the disconnect is properly sized for the application. Units with field installed electric heat kits may exceed the factory installed disconnect amperage rating.

XYE04-09 High Indoor Blower - Without Powered Convenience Outlet

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amp s)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
04 (3)	208-3-60	10.4	73	16				2.3	5.2	1.1		None	-	-	-	20.5	25	30	21	100	21.6	25	30	22	103
												10625	4.9	1	13.6	37.5	40	40	36	114	38.6	40	45	37	116
												11125	7.9	1	21.9	47.9	50	50	46	122	49	50	50	47	125
												11625	12	1	33.3	62.1	70	70	59	134	63.2	70	70	60	136
	230-3-60	10.4	73	16				2.3	5.2	1		None	-	-	-	20.5	25	30	21	103	21.5	25	30	22	105
												10625	6.5	1	15.6	40	40	45	39	119	41	45	45	40	121
												11125	10.5	1	25.3	52.1	60	60	50	128	53.1	60	60	51	131
												11625	16	1	38.5	68.6	70	70	65	142	69.6	70	70	66	144
	460-3-60	5.8	38	9				1.3	2.6	0.5		None	-	-	-	11.2	15	15	11	53	11.7	15	15	12	55
												10646	6	1	7.2	20.2	25	25	19	61	20.7	25	25	20	62
												11146	11.5	1	13.8	28.5	30	30	27	67	29	30	30	28	68
												11446	14	1	16.8	32.2	35	35	30	70	32.7	35	35	31	71
	575-3-60	3.8	36.5	6				1.1	2	0.4		None	-	-	-	7.9	15	15	8	49	8.3	15	15	8	50
												11058	9.2	1	8.9	19	20	20	18	58	19.4	20	20	19	59
												11458	13.8	1	13.3	24.5	25	25	23	62	24.9	25	25	24	63
05 (4)	208-3-60	13.7	83.1	21				2.3	5.2	1.1		None	-	-	-	24.6	25	35	24	110	25.7	30	35	26	113
												10625	4.9	1	13.6	41.6	45	50	40	124	42.7	45	50	41	126
												11125	7.9	1	21.9	52	60	60	50	132	53.1	60	60	51	135
												11625	12	1	33.3	66.2	70	70	63	144	67.3	70	70	64	146
	230-3-60	13.7	83.1	21				2.3	5.2	1		None	-	-	-	24.6	25	35	24	113	25.6	30	35	26	115
												10625	6.5	1	15.6	44.1	45	50	42	129	45.1	50	50	43	131
												11125	10.5	1	25.3	56.2	60	60	53	138	57.2	60	60	55	141
												11625	16	1	38.5	72.7	80	80	69	152	73.7	80	80	70	154
	460-3-60	6.2	41	10				1.3	2.6	0.5		None	-	-	-	11.7	15	15	12	56	12.2	15	15	12	58
												10646	6	1	7.2	20.7	25	25	20	64	21.2	25	25	20	65
												11146	11.5	1	13.8	29	30	30	27	70	29.5	30	30	28	71
												11446	14	1	16.8	32.7	35	35	31	73	33.2	35	35	32	74
	575-3-60	4.8	33	8				1.1	2	0.4		None	-	-	-	9.1	15	15	9	45	9.5	15	15	10	46
												11058	9.2	1	8.9	20.2	25	25	19	54	20.6	25	25	20	55
												11458	13.8	1	13.3	25.7	30	30	24	59	26.1	30	30	25	60
06 (5)	208-3-60	16	110	25				2.3	8.9	1.1		None	-	-	-	31.2	35	45	31	192	32.3	35	45	33	194
												10625	4.9	1	13.6	48.2	50	60	47	205	49.3	50	60	48	208
												11125	7.9	1	21.9	58.6	60	60	56	214	59.7	60	70	58	216
												11625	12	1	33.3	72.8	80	80	70	225	73.9	80	80	71	227
	230-3-60	16	110	25				2.3	8.2	1		None	-	-	-	30.5	35	45	30	194	31.5	35	45	32	196
												10625	6.5	1	15.6	50	50	60	48	210	51	60	60	50	212
												11125	10.5	1	25.3	62.1	70	70	60	219	63.1	70	70	61	222
												11625	16	1	38.5	78.6	80	80	75	233	79.6	80	80	76	235
	460-3-60	7.8	52	12				1.3	4.1	0.5		None	-	-	-	15.2	20	20	15	89	15.7	20	20	16	91
												10646	6	1	7.2	24.2	25	30	23	97	24.7	25	30	24	98
												11146	11.5	1	13.8	32.5	35	35	31	103	33	35	35	32	104
												11446	14	1	16.8	36.2	40	40	35	106	36.7	40	40	35	107
	575-3-60	5.7	38.9	9				1.1	3.2	0.4		None	-	-	-	11.4	15	15	12	67	11.8	15	15	12	68
												11458	13.8	1	13.3	28	30	30	27	81	28.4	30	30	27	82
												12358	23	1	22.1	39	40	40	37	89	39.4	40	40	37	90

XYE04-09 High Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amp s)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
07 (6)	208-3-60	19.6	136	31				2.3	10.2	1.1		None	-	-	-	39.3	40	50	40	219	41.5	45	60	42	229
												10725	4.9	1	13.6	56.3	60	70	55	232	58.5	60	70	58	242
												11725	12	1	33.3	80.9	90	90	78	252	83.1	90	90	80	262
												12525	18.6	1	51.6	103.8	110	110	99	270	106	110	110	101	280
	230-3-60	19.6	136	31				2.3	10.2	1		None	-	-	-	39.3	40	50	40	225	41.3	45	60	42	220
												10725	6.5	1	15.6	58.8	60	70	58	241	60.8	70	70	60	250
												11725	16	1	38.5	87.4	90	90	84	264	89.4	90	90	86	273
												12525	24.8	1	59.7	113.9	125	125	108	285	115.9	125	125	111	294
	460-3-60	8.2	66.1	13				1.3	4.8	0.5		None	-	-	-	17.7	20	25	18	112	18.7	20	25	19	109
												10746	6	1	7.2	26.7	30	30	26	119	27.7	30	30	27	124
												11746	16.5	1	19.8	42.5	45	45	41	132	43.5	45	45	42	136
												12646	25.5	1	30.7	56.1	60	60	53	143	57.1	60	60	54	147
	575-3-60	6.6	55.3	10				1.1	3.4	0.4		None	-	-	-	13.9	15	20	14	92	14.7	15	20	15	89
												11758	17	1	16.4	34.4	35	35	33	109	35.2	40	40	34	112
												12658	25.7	1	24.7	44.8	45	45	42	117	45.6	50	50	43	121
A7 (6)	208-3-60	17.6	136	27				4.4	10.2	1.1		None	-	-	-	36.6	40	50	37	199	38.8	40	50	40	204
												10725	4.9	1	13.6	53.6	60	60	53	213	55.8	60	60	55	218
												11725	12	1	33.3	78.2	80	80	75	233	80.4	90	90	78	238
												12525	18.6	1	51.6	101.1	110	110	96	251	103.3	110	110	99	256
	230-3-60	17.6	136	27				4.4	10.2	1		None	-	-	-	36.6	40	50	37	205	38.6	40	50	39	210
												10725	6.5	1	15.6	56.1	60	60	55	221	58.1	60	70	57	225
												11725	16	1	38.5	84.7	90	90	81	244	86.7	90	90	84	248
												12525	24.8	1	59.7	111.2	125	125	106	265	113.2	125	125	108	269
	460-3-60	8.5	66.1	13				2.5	4.8	0.5		None	-	-	-	20.4	25	25	21	101	21.4	25	25	22	103
												10746	6	1	7.2	29.4	30	35	29	108	30.4	35	35	30	110
												11746	16.5	1	19.8	45.2	50	50	44	120	46.2	50	50	45	123
												12646	25.5	1	30.7	58.8	60	60	56	131	59.8	60	60	58	134
	575-3-60	6.3	55.3	10				4.4	3.4	0.4		None	-	-	-	20.1	25	25	21	83	20.9	25	25	22	85
												11758	17	1	16.4	40.6	45	45	40	99	41.4	45	45	41	101
												12658	25.7	1	24.7	51	60	60	50	108	51.8	60	60	51	109
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	10.2	1.1		None	-	-	-	46.9	50	60	50	251	49.1	50	60	52	261
												11725	12	1	33.3	88.5	90	90	88	285	90.7	100	100	91	295
												12525	18.6	1	51.6	111.4	125	125	109	303	113.6	125	125	112	313
												13225	24	1	66.6	130.2	150	150	127	318	132.4	150	150	129	328
												14225	31.8	2	88.3	123.1	125	125	118	311	125.9	150	150	120	321
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	10.2	1		None	-	-	-	46.3	50	60	49	254	48.3	50	60	52	259
												11725	16	1	38.5	94.4	100	100	93	293	96.4	100	100	96	302
												12525	24.8	1	59.7	120.9	125	125	118	314	122.9	125	125	120	323
												13225	32	1	77	142.6	150	150	138	331	144.6	150	150	140	340
												14225	42.4	2	102	140.3	150	150	128	322	142.8	150	150	130	332
	460-3-60	6.2	41	10	6.1	41	10	2.9	4.8	0.5		None	-	-	-	21.6	25	25	23	128	22.6	25	25	24	130
												11746	16.5	1	19.8	46.4	50	50	46	147	47.4	50	50	47	152
												12846	27.8	1	33.4	63.4	70	70	61	161	64.4	70	70	63	165
												13346	33	1	39.7	71.2	80	80	69	167	72.2	80	80	70	172
												14246	41.7	2	50.2	68.8	70	70	61	161	70	70	70	63	165
	575-3-60	4.9	33	8	4.2	33	7	2.2	3.4	0.4		None	-	-	-	15.9	20	20	17	105	16.7	20	20	18	107
11758												17	1	16.4	36.4	40	40	36	121	37.2	40	40	37	125	
13458												34	1	32.7	56.8	60	60	55	138	57.6	60	60	55	141	

XYE04-09 High Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amp s)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	10.2	1.1		None	-	-	-	47.8	50	60	51	266	50	50	60	53	276
												11725	12	1	33.3	89.4	90	90	89	300	91.6	100	100	92	310
												12525	18.6	1	51.6	112.3	125	125	110	318	114.5	125	125	113	328
												13225	24	1	66.6	131.1	150	150	127	333	133.3	150	150	130	343
												14225	31.8	2	88.3	123.1	125	125	119	325	125.9	150	150	121	335
	230-3-60	14.5	98	23	13.7	83.1	21	5.2	10.2	1		None	-	-	-	47.2	50	60	50	269	49.2	50	60	52	274
												11725	16	1	38.5	95.3	100	100	94	308	97.3	100	100	97	317
												12525	24.8	1	59.7	121.8	125	125	119	329	123.8	125	125	121	338
												13225	32	1	77	143.5	150	150	139	346	145.5	150	150	141	355
												14225	42.4	2	102	140.3	150	150	128	337	142.8	150	150	131	346
	460-3-60	6.3	55	10	6.2	41	10	2.9	4.8	0.5		None	-	-	-	21.8	25	25	23	142	22.8	25	25	24	144
												11746	16.5	1	19.8	46.6	50	50	46	161	47.6	50	50	47	166
												12846	27.8	1	33.4	63.6	70	70	62	175	64.6	70	70	63	179
												13346	33	1	39.7	71.4	80	80	69	181	72.4	80	80	70	186
												14246	41.7	2	50.2	68.8	70	70	62	175	70	70	70	63	179
	575-3-60	6	41	9	4.8	33	8	2.2	3.4	0.4		None	-	-	-	17.9	20	20	19	113	18.7	20	20	20	115
												11758	17	1	16.4	38.4	40	40	38	129	39.2	40	40	39	133
												13458	34	1	32.7	58.8	60	60	56	146	59.6	60	60	57	149

With VFD																										
A7 (6)	208-3-60	17.6	136	27				4.4	9.9	1.1		None	-	-	-	36.3	40	50	37	209	38.5	40	50	39	214	
												10725	4.9	1	13.6	53.3	60	60	52	222	55.5	60	60	55	227	
												11725	12	1	33.3	77.9	80	80	75	242	80.1	90	90	78	247	
												12525	18.6	1	51.6	100.8	110	110	96	260	103	110	110	99	265	
	230-3-60	17.6	136	27				4.4	9.4	1		None	-	-	-	35.8	40	50	36	217	37.8	40	50	38	221	
												10725	6.5	1	15.6	55.3	60	60	54	232	57.3	60	70	56	237	
												11725	16	1	38.5	83.9	90	90	80	255	85.9	90	90	83	260	
												12525	24.8	1	59.7	110.4	125	125	105	276	112.4	125	125	107	281	
	460-3-60	8.5	66.1	13				2.5	4.7	0.5		None	-	-	-	20.3	25	25	21	106	21.3	25	25	22	109	
												10746	6	1	7.2	29.3	30	35	29	114	30.3	35	35	30	116	
												11746	16.5	1	19.8	45.1	50	50	44	126	46.1	50	50	45	128	
												12646	25.5	1	30.7	58.7	60	60	56	137	59.7	60	60	57	139	
	575-3-60	6.3	55.3	10				4.4	4.3	0.4		None	-	-	-	21	25	25	22	95	21.8	25	25	23	97	
												11758	17	1	16.4	41.5	45	45	41	112	42.3	45	45	42	114	
												12658	25.7	1	24.7	51.9	60	60	51	120	52.7	60	60	52	122	

08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	9.9	1.1		None	-	-	-	46.6	50	60	50	261	48.8	50	60	52	271
												11725	12	1	33.3	88.2	90	90	88	294	90.4	100	100	90	304
												12525	18.6	1	51.6	111.1	125	125	109	312	113.3	125	125	111	322
												13225	24	1	66.6	129.9	150	150	126	327	132.1	150	150	129	337
												14225	31.8	2	88.3	122.8	125	125	118	320	125.5	150	150	120	330
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	9.4	1		None	-	-	-	45.5	50	50	48	266	47.5	50	60	51	270
												11725	16	1	38.5	93.6	100	100	93	304	95.6	100	100	95	314
												12525	24.8	1	59.7	120.1	125	125	117	326	122.1	125	125	119	335
												13225	32	1	77	141.8	150	150	137	343	143.8	150	150	139	352
												14225	42.4	2	102	139.3	150	150	127	334	141.8	150	150	129	343
	460-3-60	6.2	41	10	6.1	41	10	2.9	4.7	0.5		None	-	-	-	21.5	25	25	23	133	22.5	25	25	24	136
												11746	16.5	1	19.8	46.3	50	50	46	153	47.3	50	50	47	158
												12846	27.8	1	33.4	63.3	70	70	61	167	64.3	70	70	62	171
												13346	33	1	39.7	71.1	80	80	69	173	72.1	80	80	70	177
												14246	41.7	2	50.2	68.6	70	70	61	167	69.9	70	70	62	171
	575-3-60	4.9	33	8	4.2	33	7	2.2	4.3	0.4		None	-	-	-	16.8	20	20	18	117	17.6	20	20	19	119
												11758	17	1	16.4	37.3	40	40	37	134	38.1	40	40	38	137
												13458	34	1	32.7	57.7	60	60	56	150	58.5	60	60	56	151

XYE04-09 High Indoor Blower - Without Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	9.9	1.1		None	-	-	-	47.5	50	60	50	276	49.7	50	60	53	286
												11725	12	1	33.3	89.1	90	90	89	309	91.3	100	100	91	319
												12525	18.6	1	51.6	112	125	125	110	327	114.2	125	125	112	337
												13225	24	1	66.6	130.8	150	150	127	342	133	150	150	130	352
												14225	31.8	2	88.3	122.8	125	125	118	335	125.5	150	150	121	345
	230-3-60	14.5	98	23	13.7	83.1	21	5.2	9.4	1		None	-	-	-	46.4	50	60	49	281	48.4	50	60	52	285
												11725	16	1	38.5	94.5	100	100	93	319	96.5	100	100	96	328
												12525	24.8	1	59.7	121	125	125	118	340	123	125	125	120	350
												13225	32	1	77	142.7	150	150	138	358	144.7	150	150	140	367
												14225	42.4	2	102	139.3	150	150	128	349	141.8	150	150	130	358
	460-3-60	6.3	55	10	6.2	41	10	2.9	4.7	0.5		None	-	-	-	21.7	25	25	23	147	22.7	25	25	24	150
												11746	16.5	1	19.8	46.5	50	50	46	167	47.5	50	50	47	172
												12846	27.8	1	33.4	63.5	70	70	62	181	64.5	70	70	63	185
												13346	33	1	39.7	71.3	80	80	69	187	72.3	80	80	70	191
												14246	41.7	2	50.2	68.6	70	70	62	181	69.9	70	70	63	185
	575-3-60	6	41	9	4.8	33	8	2.2	4.3	0.4		None	-	-	-	18.8	20	20	20	125	19.6	20	20	21	127
												11758	17	1	16.4	39.3	40	40	39	142	40.1	45	45	40	145
												13458	34	1	32.7	59.7	60	60	58	158	60.5	70	70	58	162

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC.
4. Non-fused Disconnect, Verify on the unit nameplate that the disconnect is properly sized for the application. Units with field installed electric heat kits may exceed the factory installed disconnect ampere rating.

XYE04-09 High Indoor Blower - With Powered Convenience Outlet

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amp s)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
04 (3)	208-3-60	10.4	73	16				2.3	5.2	1.1	8.6	None	-	-	-	24.8	25	35	26	105	25.9	30	35	27	107
												10625	4.9	1	13.6	41.8	45	45	41	118	42.9	45	45	42	121
												11125	7.9	1	21.9	52.2	60	60	51	126	53.3	60	60	52	129
												11625	12	1	33.3	66.4	70	70	64	138	67.5	70	70	65	140
	230-3-60	10.4	73	16				2.3	5.2	1	8.6	None	-	-	-	24.8	25	35	26	107	25.8	30	35	27	110
												10625	6.5	1	15.6	44.3	45	50	43	123	45.3	50	50	45	125
												11125	10.5	1	25.3	56.4	60	60	55	133	57.4	60	60	56	135
												11625	16	1	38.5	72.9	80	80	70	146	73.9	80	80	71	148
	460-3-60	5.8	38	9				1.3	2.6	0.5	8.6	None	-	-	-	13.4	15	15	14	56	13.9	15	15	14	57
												10646	6	1	7.2	22.4	25	25	22	63	22.9	25	25	23	64
												11146	11.5	1	13.8	30.7	35	35	30	69	31.2	35	35	30	70
												11446	14	1	16.8	34.4	35	35	33	72	34.9	35	35	34	73
	575-3-60	3.8	36.5	6				1.1	2	0.4	8.6	None	-	-	-	9.6	15	15	10	51	10	15	15	10	51
												11058	9.2	1	8.9	20.7	25	25	20	59	21.1	25	25	21	60
												11458	13.8	1	13.3	26.2	30	30	25	64	26.6	30	30	26	65
05 (4)	208-3-60	13.7	83.1	21				2.3	5.2	1.1	8.6	None	-	-	-	28.9	30	40	29	115	30	30	40	31	117
												10625	4.9	1	13.6	45.9	50	50	45	128	47	50	50	46	131
												11125	7.9	1	21.9	56.3	60	60	55	137	57.4	60	60	56	139
												11625	12	1	33.3	70.5	80	80	68	148	71.6	80	80	69	150
	230-3-60	13.7	83.1	21				2.3	5.2	1	8.6	None	-	-	-	28.9	30	40	29	117	29.9	30	40	30	120
												10625	6.5	1	15.6	48.4	50	50	47	133	49.4	50	50	48	135
												11125	10.5	1	25.3	60.5	70	70	58	143	61.5	70	70	60	145
												11625	16	1	38.5	77	80	80	74	156	78	80	80	75	158
	460-3-60	6.2	41	10				1.3	2.6	0.5	8.6	None	-	-	-	13.9	15	20	14	59	14.4	15	20	15	60
												10646	6	1	7.2	22.9	25	25	22	66	23.4	25	25	23	67
												11146	11.5	1	13.8	31.2	35	35	30	72	31.7	35	35	31	73
												11446	14	1	16.8	34.9	35	35	33	75	35.4	40	40	34	76
	575-3-60	4.8	33	8				1.1	2	0.4	8.6	None	-	-	-	10.8	15	15	11	47	11.2	15	15	12	48
												11058	9.2	1	8.9	21.9	25	25	21	56	22.3	25	25	22	57
												11458	13.8	1	13.3	27.4	30	30	26	60	27.8	30	30	27	61
06 (5)	208-3-60	16	110	25				2.3	8.9	1.1	8.6	None	-	-	-	35.5	40	50	36	196	36.6	40	50	37	198
												10625	4.9	1	13.6	52.5	60	60	52	210	53.6	60	60	53	212
												11125	7.9	1	21.9	62.9	70	70	61	218	64	70	70	63	220
												11625	12	1	33.3	77.1	80	80	75	229	78.2	80	80	76	232
	230-3-60	16	110	25				2.3	8.2	1	8.6	None	-	-	-	34.8	35	50	35	198	35.8	40	50	37	201
												10625	6.5	1	15.6	54.3	60	60	53	214	55.3	60	60	55	216
												11125	10.5	1	25.3	66.4	70	70	65	224	67.4	70	70	66	226
												11625	16	1	38.5	82.9	90	90	80	237	83.9	90	90	81	239
	460-3-60	7.8	52	12				1.3	4.1	0.5	8.6	None	-	-	-	17.4	20	25	18	92	17.9	20	25	18	93
												10646	6	1	7.2	26.4	30	30	26	99	26.9	30	30	27	100
												11146	11.5	1	13.8	34.7	35	35	34	105	35.2	40	40	34	106
												11446	14	1	16.8	38.4	40	40	37	108	38.9	40	40	38	109
	575-3-60	5.7	38.9	9				1.1	3.2	0.4	8.6	None	-	-	-	13.1	15	15	13	69	13.5	15	15	14	70
												11458	13.8	1	13.3	29.7	30	30	29	82	30.1	35	35	29	83
												12358	23	1	22.1	40.7	45	45	39	91	41.1	45	45	39	92

XYE04-09 High Indoor Blower - With Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
07 (6)	208-3-60	19.6	136	31				2.3	10.2	1.1	8.6	None	-	-	-	43.6	45	60	45	223	45.8	50	60	47	233
												10725	4.9	1	13.6	60.6	70	70	60	236	62.8	70	70	63	246
												11725	12	1	33.3	85.2	90	90	83	256	87.4	90	90	85	266
												12525	18.6	1	51.6	108.1	110	110	104	274	110.3	125	125	106	284
	230-3-60	19.6	136	31				2.3	10.2	1	8.6	None	-	-	-	43.6	45	60	45	229	45.6	50	60	47	224
												10725	6.5	1	15.6	63.1	70	70	62	245	65.1	70	80	65	254
												11725	16	1	38.5	91.7	100	100	89	268	93.7	100	100	91	277
												12525	24.8	1	59.7	118.2	125	125	113	289	120.2	125	125	115	298
	460-3-60	8.2	66.1	13				1.3	4.8	0.5	8.6	None	-	-	-	19.9	20	25	20	114	20.9	25	25	22	111
												10746	6	1	7.2	28.9	30	35	29	122	29.9	30	35	30	126
												11746	16.5	1	19.8	44.7	45	45	43	134	45.7	50	50	44	139
												12646	25.5	1	30.7	58.3	60	60	56	145	59.3	60	60	57	149
	575-3-60	6.6	55.3	10				1.1	3.4	0.4	8.6	None	-	-	-	15.6	20	20	16	94	16.4	20	20	17	91
												11758	17	1	16.4	36.1	40	40	35	110	36.9	40	40	36	114
												12658	25.7	1	24.7	46.5	50	50	44	119	47.3	50	50	45	122
A7 (6)	208-3-60	17.6	136	27				4.4	10.2	1.1	8.6	None	-	-	-	40.9	45	50	42	204	43.1	45	50	45	209
												10725	4.9	1	13.6	57.9	60	70	58	217	60.1	70	70	60	222
												11725	12	1	33.3	82.5	90	90	80	237	84.7	90	90	83	242
												12525	18.6	1	51.6	105.4	110	110	101	255	107.6	110	110	104	260
	230-3-60	17.6	136	27				4.4	10.2	1	8.6	None	-	-	-	40.9	45	50	42	209	42.9	45	60	44	214
												10725	6.5	1	15.6	60.4	70	70	60	225	62.4	70	70	62	230
												11725	16	1	38.5	89	90	90	86	248	91	100	100	89	252
												12525	24.8	1	59.7	115.5	125	125	111	269	117.5	125	125	113	274
	460-3-60	8.5	66.1	13				2.5	4.8	0.5	8.6	None	-	-	-	22.6	25	30	24	103	23.6	25	30	25	105
												10746	6	1	7.2	31.6	35	35	32	110	32.6	35	35	33	112
												11746	16.5	1	19.8	47.4	50	50	46	123	48.4	50	50	47	125
												12646	25.5	1	30.7	61	70	70	59	133	62	70	70	60	136
	575-3-60	6.3	55.3	10				4.4	3.4	0.4	8.6	None	-	-	-	21.8	25	25	23	85	22.6	25	25	24	86
												11758	17	1	16.4	42.3	45	45	42	101	43.1	45	45	43	103
												12658	25.7	1	24.7	52.7	60	60	52	109	53.5	60	60	53	111
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	10.2	1.1	8.6	None	-	-	-	51.2	60	60	55	256	53.4	60	60	57	266
												11725	12	1	33.3	92.8	100	100	93	289	95	100	100	96	299
												12525	18.6	1	51.6	115.7	125	125	114	307	117.9	125	125	117	317
												13225	24	1	66.6	134.5	150	150	131	322	136.7	150	150	134	332
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	10.2	1	8.6	14225	31.8	2	88.3	128.5	150	150	123	315	131.3	150	150	125	325
												None	-	-	-	50.6	60	60	54	259	52.6	60	60	56	263
												11725	16	1	38.5	98.7	100	100	98	297	100.7	110	110	101	306
												12525	24.8	1	59.7	125.2	150	150	123	318	127.2	150	150	125	327
	460-3-60	6.2	41	10	6.1	41	10	2.9	4.8	0.5	8.6	13225	32	1	77	146.9	150	150	143	336	148.9	150	150	145	345
												14225	42.4	2	102	145.6	150	150	132	327	148.1	150	150	135	336
												None	-	-	-	23.8	25	25	26	130	24.8	25	25	27	132
												11746	16.5	1	19.8	48.6	50	50	48	149	49.6	50	50	49	154
	575-3-60	4.9	33	8	4.2	33	7	2.2	3.4	0.4	8.6	12846	27.8	1	33.4	65.6	70	70	64	163	66.6	70	70	65	167
												13346	33	1	39.7	73.4	80	80	71	169	74.4	80	80	72	174
												14246	41.7	2	50.2	71.4	80	80	64	163	72.7	80	80	65	167
												None	-	-	-	17.6	20	20	19	107	18.4	20	20	20	108
	575-3-60	4.9	33	8	4.2	33	7	2.2	3.4	0.4	8.6	11758	17	1	16.4	38.1	40	40	38	123	38.9	40	40	39	127
												13458	34	1	32.7	58.5	60	60	56	139	59.3	60	60	57	143

XYE04-09 High Indoor Blower - With Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh	
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA
09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	10.2	1.1	8.6	None	-	-	-	52.1	60	60	56	271	54.3	60	60	58	281
												11725	12	1	33.3	93.7	100	100	94	304	95.9	100	100	97	314
												12525	18.6	1	51.6	116.6	125	125	115	322	118.8	125	125	118	332
												13225	24	1	66.6	135.4	150	150	132	337	137.6	150	150	135	347
	230-3-60	14.5	98	23	13.7	83.1	21	5.2	10.2	1	8.6	14225	31.8	2	88.3	128.5	150	150	124	330	131.3	150	150	126	340
												None	-	-	-	51.5	60	60	55	273	53.5	60	60	57	278
												11725	16	1	38.5	99.6	100	100	99	312	101.6	110	110	102	321
												12525	24.8	1	59.7	126.1	150	150	124	333	128.1	150	150	126	342
	460-3-60	6.3	55	10	6.2	41	10	2.9	4.8	0.5	8.6	13225	32	1	77	147.8	150	150	144	350	149.8	150	150	146	360
												14225	42.4	2	102	145.6	150	150	133	342	148.1	150	150	136	351
												None	-	-	-	24	25	30	26	144	25	25	30	27	146
												11746	16.5	1	19.8	48.8	50	50	49	163	49.8	50	50	50	168
	575-3-60	6	41	9	4.8	33	8	2.2	3.4	0.4	8.6	12846	27.8	1	33.4	65.8	70	70	64	177	66.8	70	70	65	181
												13346	33	1	39.7	73.6	80	80	71	183	74.6	80	80	73	188
												14246	41.7	2	50.2	71.4	80	80	64	177	72.7	80	80	65	181
												None	-	-	-	19.6	20	25	21	115	20.4	25	25	22	116
A7 (6)	208-3-60	17.6	136	27				4.4	9.9	1.1	8.6	11758	17	1	16.4	40.1	45	45	40	131	40.9	45	45	41	135
												13458	34	1	32.7	60.5	70	70	58	147	61.3	70	70	59	151
	230-3-60	17.6	136	27				4.4	9.4	1	8.6	None	-	-	-	40.6	45	50	42	213	42.8	45	50	44	218
												10725	4.9	1	13.6	57.6	60	70	57	226	59.8	60	70	60	231
												11725	12	1	33.3	82.2	90	90	80	246	84.4	90	90	82	251
												12525	18.6	1	51.6	105.1	110	110	101	264	107.3	110	110	104	269
	460-3-60	8.5	66.1	13				2.5	4.7	0.5	8.6	None	-	-	-	40.1	45	50	41	221	42.1	45	50	43	226
												10725	6.5	1	15.6	59.6	60	70	59	237	61.6	70	70	61	241
												11725	16	1	38.5	88.2	90	90	85	259	90.2	100	100	88	264
												12525	24.8	1	59.7	114.7	125	125	110	281	116.7	125	125	112	285
	575-3-60	6.3	55.3	10				4.4	4.3	0.4	8.6	None	-	-	-	22.5	25	30	23	109	23.5	25	30	25	111
												10746	6	1	7.2	31.5	35	35	32	116	32.5	35	35	33	118
												11746	16.5	1	19.8	47.3	50	50	46	128	48.3	50	50	47	131
												12646	25.5	1	30.7	60.9	70	70	59	139	61.9	70	70	60	141
	575-3-60	6.3	55.3	10				4.4	4.3	0.4	8.6	None	-	-	-	22.7	25	25	24	97	23.5	25	25	25	99
												11758	17	1	16.4	43.2	45	45	43	113	44	45	45	44	115
	575-3-60	6.3	55.3	10				4.4	4.3	0.4	8.6	12658	25.7	1	24.7	53.6	60	60	53	122	54.4	60	60	54	124

XYE04-09 High Indoor Blower - With Powered Convenience Outlet (Continued)

Size (Tons)	Nominal Unit Voltage	Compressor 1			Compressor 2			OD Fan Motors (each)	Supply Blower Motor	Pwr Exh Motor	Pwr Conv Outlet	Electric Heat Field Installed Kit 2EK045*				MCA ¹ (Amps)	Min Fuse ² / Breaker ³ Size (Amps)	Max Fuse ² / Breaker ³ Size (Amps)	Min Discon- nect Rating ⁴		MCA ¹ w/Pwr Exh (Amps)	Min Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Max Fuse ² / Breaker ³ Size w/ Pwr Exh (Amps)	Min Discon- nect Rating ⁴ / Pwr Exh		
		RLA	LRA	MCC	RLA	LRA	MCC					Model	kW	Stages	Amps				FLA	LRA				FLA	LRA	
08 (7.5)	208-3-60	13.8	83.1	22	13.6	83.1	21	5.8	9.9	1.1	8.6	None	-	-	-	50.9	60	60	55	265	53.1	60	60	57	275	
												11725	12	1	33.3	92.5	100	100	93	298	94.7	100	100	95	308	
												12525	18.6	1	51.6	115.4	125	125	114	317	117.6	125	125	116	327	
												13225	24	1	66.6	134.2	150	150	131	332	136.4	150	150	134	342	
												14225	31.8	2	88.3	128.1	150	150	122	324	130.9	150	150	125	334	
	230-3-60	13.8	83.1	22	13.6	83.1	21	5.2	9.4	1	8.6	None	-	-	-	49.8	50	60	53	270	51.8	60	60	56	275	
												11725	16	1	38.5	97.9	100	100	98	309	99.9	100	100	100	318	
												12525	24.8	1	59.7	124.4	125	125	122	330	126.4	150	150	124	339	
												13225	32	1	77	146.1	150	150	142	347	148.1	150	150	144	356	
												14225	42.4	2	102	144.6	150	150	132	338	147.1	150	150	134	347	
	460-3-60	6.2	41	10	6.1	41	10	2.9	4.7	0.5	8.6	None	-	-	-	23.7	25	25	25	135	24.7	25	25	27	138	
												11746	16.5	1	19.8	48.5	50	50	48	155	49.5	50	50	49	160	
												12846	27.8	1	33.4	65.5	70	70	64	169	66.5	70	70	65	173	
												13346	33	1	39.7	73.3	80	80	71	175	74.3	80	80	72	180	
												14246	41.7	2	50.2	71.3	80	80	64	169	72.6	80	80	65	173	
	575-3-60	4.9	33	8	4.2	33	7	2.2	4.3	0.4	8.6	None	-	-	-	18.5	20	20	20	119	19.3	20	20	21	121	
												11758	17	1	16.4	39	40	40	39	135	39.8	40	40	40	139	
												13458	34	1	32.7	59.4	60	60	58	152	60.2	70	70	58	155	
	09 (8.5)	208-3-60	14.5	98	23	13.7	83.1	21	5.8	9.9	1.1	8.6	None	-	-	-	51.8	60	60	55	280	54	60	60	58	290
													11725	12	1	33.3	93.4	100	100	94	313	95.6	100	100	96	323
12525													18.6	1	51.6	116.3	125	125	115	332	118.5	125	125	117	342	
13225													24	1	66.6	135.1	150	150	132	347	137.3	150	150	135	357	
14225													31.8	2	88.3	128.1	150	150	123	339	130.9	150	150	126	349	
230-3-60		14.5	98	23	13.7	83.1	21	5.2	9.4	1	8.6	None	-	-	-	50.7	60	60	54	285	52.7	60	60	56	290	
												11725	16	1	38.5	98.8	100	100	98	324	100.8	110	110	101	333	
												12525	24.8	1	59.7	125.3	150	150	123	345	127.3	150	150	125	354	
												13225	32	1	77	147	150	150	143	362	149	150	150	145	371	
												14225	42.4	2	102	144.6	150	150	132	353	147.1	150	150	135	362	
460-3-60		6.3	55	10	6.2	41	10	2.9	4.7	0.5	8.6	None	-	-	-	23.9	25	30	26	149	24.9	25	30	27	152	
												11746	16.5	1	19.8	48.7	50	50	48	169	49.7	50	50	50	174	
												12846	27.8	1	33.4	65.7	70	70	64	183	66.7	70	70	65	187	
												13346	33	1	39.7	73.5	80	80	71	189	74.5	80	80	72	194	
												14246	41.7	2	50.2	71.3	80	80	64	183	72.6	80	80	65	187	
575-3-60		6	41	9	4.8	33	8	2.2	4.3	0.4	8.6	None	-	-	-	20.5	25	25	22	127	21.3	25	25	23	129	
												11758	17	1	16.4	41	45	45	41	143	41.8	45	45	42	147	
												13458	34	1	32.7	61.4	70	70	59	160	62.2	70	70	60	163	

1. Minimum Circuit Ampacity.

2. Dual Element, Time Delay Type.

3. HACR type per NEC.

4. Non-fused Disconnect, Verify on the unit nameplate that the disconnect is properly sized for the application. Units with field installed electric heat kits may exceed the factory installed disconnect amperage rating.

Table 9: Physical Data
XYE04 thru 09

Component	Models						
	XYE04	XYE05	XYE06	XYE07	XYEA7	XYE08	XYE09
Nominal Tonnage	3	4	5	6	6	7.5	8.5
AHRI Cooling Performance							
Gross Capacity @ AHRI A point (Btu)	37,300	48,600	60,000	73,000	72,000	90,500	101,000
AHRI net capacity (MBH)	36,400	47,000	58,500	71,000	70,000	88,000	98,000
EER	12.5	12.5	12.5	12.0	12.0	12.1	12.0
SEER	15.0	15.0	15.0	-	-	-	-
IEER	-	-	-	13.2	14.1	13.5	13.5
IEER IntelliSpeed	-	-	-	-	14.8	15.0	15.0
CFM	1,250	1,490	1,682	2,440	2,440	2,850	3,000
System power (KW)	2.9	3.8	4.7	5.9	5.6	7.3	8.2
Refrigerant type	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge (lb-oz)							
System 1	12-0	14-0	16-0	19.25	21.00	14.38	14.50
System 2	-	-	-	-	-	14.25	14.63
ARI Heating Performance							
47°F capacity rating (MBH)	34,000	46,000	55,000	69,000	67,000	84,000	96,500
System power (KW) / COP	3.0 / 3.3	3.8 / 3.6	4.4 / 3.6	6.0 / 3.4	5.5 / 3.4	7.0 / 3.5	8.3 / 3.4
17°F capacity rating (MBH)	18,400	26,000	30,000	39,000	38,000	47,000	54,500
System power (KW) / COP	2.7 / 2.0	3.3 / 2.3	3.9 / 2.3	4.8 / 2.4	4.8 / 2.4	5.7 / 2.4	7.1 / 2.26
HSPF (Btu/Watts-hr)	8.0	8.2	8.2	-	-	-	-
Dimensions (inches)							
Length	74.1	74.1	74.1	87.2	87.2	87.2	87.2
Width	48.9	48.9	48.9	61.7	61.7	61.7	61.7
Height	32.5	40.6	40.6	40.6	40.6	55.3	55.3
Operating Weight (lbs.)	535	614	653	861	895	1,060	1,061
Compressors							
Type	SCROLL	SCROLL	SCROLL	SCROLL	2-STAGE SCROLL	SCROLL	SCROLL
Quantity	1	1	1	1	1	2	2
Unit Capacity Steps (%)	-	-	-	100	67/100	50/100	50/100
Outdoor Coil Data							
Face area (Sq. Ft.)	15.1	19.4	19.4	21.0	21.0	25.6	25.6
Rows	2	2	2	3	3	3	3
Fins per inch	17	17	17	13	13	17	17
Tube diameter	0.375	0.375	0.375	0.375	0.375	0.375	0.375
Circuitry Type	Split-face	Split-face	Split-face	Intertwined	Intertwined	Intertwined	Intertwined
Refrigerant control	TXV	TXV	TXV	TXV	TXV	TXV	TXV
Indoor Coil Data							
Face area (Sq. Ft.)	5.5	7.3	7.3	8.9	8.9	11.1	11.1
Rows	3	3	4	4	4	4	4
Fins per inch	15	15	15	15	15	15	15
Tube diameter	0.375	0.375	0.375	0.375	0.375	0.375	0.375
Circuitry Type	Intertwined	Intertwined	Intertwined	Intertwined	Intertwined	Intertwined	Intertwined
Refrigerant control	TXV	TXV	TXV	TXV	TXV	TXV	TXV

XYE04 thru 09 (Continued)

Component	Models																	
	XYE04		XYE05		XYE06		XYE07			XYEA7			XYE08			XYE09		
Nominal Tonnage	3		4		5		6			6			7.5			8.5		
Outdoor Fan Data																		
Quantity	1		1		1		2			2			1			1		
Fan diameter (Inch)	22		22		22		22			22			30			30		
Type	Prop		Prop		Prop		Prop			Prop			Prop			Prop		
Drive type	DIRECT DRIVE		DIRECT DRIVE		DIRECT DRIVE		DIRECT DRIVE			DIRECT DRIVE			DIRECT DRIVE			DIRECT DRIVE		
No. speeds	1		1		1		1			2			1			1		
Number of motors	1		1		1		2			2			1			1		
Motor HP each	1/2		1/2		1/2		1/2			1/2			1 1/2			1 1/2		
RPM	1100		1100		1100		1100			850 / 1100			1140			1140		
Total CFM	3600		4000		4300		7600			5800 / 7600			9700			9700		
Belt Drive Indoor Fan Data																		
Airflow Option	B	C	B	C	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Quantity	1		1		1		1			1			1			1		
Fan diameter (Inch)	10 x 10		10 x 10		11 x 10		15 x 15			15 x 15			15 x 15			15 x 15		
Type	Centrifugal		Centrifugal		Centrifugal		Centrifugal			Centrifugal			Centrifugal			Centrifugal		
Motor Sheave	1VL34	1VL44	1VL34	1VL44	1VL34	1VL44	1VL34	1VL44	1VP50	1VL34	1VL44	1VP50	1VL34	1VL44	1VP50	1VL34	1VL44	1VP50
Blower Sheave	AK46	AK46	AK46	AK46	AK46	AK46	AK74	AK74	AK74	AK74	AK74	AK74	AK74	AK74	AK74	AK74	AK74	AK74
Belt	A39	A40	A39	A40	A37	A39	A47	A48	A48	A47	A48	A48	A47	A48	A50	A47	A48	A50
Motor HP, 1 Phase	1.5	-	1.5	-	1.5	-	-			-			-			-		
Motor Max BHP, 3 Phase	2.4	2.4	2.4	2.4	2.4	2.9	2.4	2.9	3.7	2.4	2.9	3.7	2.4	2.4	3.7	2.4	2.4	3.7
RPM	1725		1725		1750		1725	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725
Frame size	56Y		56Y		56HZ		56Y	56Y	56HZ	56Y	56Y	56HZ	56Y	56Y	65HZ	56Y	56Y	65HZ
Direct Drive Indoor Fan Data																		
Air Flow Option	A		A		A		-			-			-			-		
Quantity	1		1		1		-			-			-			-		
Fan Size (Inch)	10 x 10		10 x 10		11 x 10		-			-			-			-		
Type	Centrifugal		Centrifugal		Centrifugal		-			-			-			-		
Motor HP each	3/4		1		1		-			-			-			-		
RPM	1050		1050		1050		-			-			-			-		
Filters																		
Quantity - Size	2 - (16 x 25 x 2) ¹		4 - (16 x 16 x 2) ¹		4 - (16 x 16 x 2) ¹		4 - (16 x 20 x 2) ¹			4 - (16 x 20 x 2) ¹			4 - (20 x 20 x 2) ¹			4 - (20 x 20 x 2) ¹		

1. 2-inch Throwaway, Standard, MERV 4 (Minimum Efficiency Reporting Value)

Operation

Sequence Of Operation

For XYE units, a "Y1" call for the first stage of cooling is passed to the Unit Control Board (UCB) which then determines whether the requested operation is available and if so, which components to energize. With an "Y1" call for first stage cooling the UCB will determine if a first stage cooling output is valid as long as all safeties and time-delays allow a C1 output for cooling. The C1 relay on the UCB will close and send 24 volts to the compressor contactor starting the first stage compressor and also energizing a contactor starting the associated condenser fans. During any call for fan or cooling the FAN output on the UCB will energize the appropriate contactor starting the supply fan.

If at any time a call for both heating and cooling are present, the heating operation will be performed. If operating, the cooling system is halted as with a completion of a call for cooling. Heating always takes priority.

Continuous Blower

By setting the room thermostat fan switch to "ON," the supply air blower will operate continuously.

Intermittent Blower

With the room thermostat fan switch set to "AUTO" and the system switch set to either the "AUTO" or "HEAT" settings, the blower is energized whenever a cooling or heating operation is requested. The blower is energized after any specified delay associated with the operation.

When energized, the indoor blower has a minimum run time of 30 seconds. Additionally, the indoor blower has a minimum off delay of 10 seconds.

No Outdoor Air Options

When the thermostat calls for cooling, the low-voltage control circuit from "R" to "Y1" and "G" is completed. The compressor and condenser fan motor are energized. After completing the specified fan on delay for cooling, the UCB will energize the blower motor.

Once the thermostat has been satisfied, it will de-energize Y1. If the compressor has satisfied its minimum run time, the compressor and condenser fan de-energize. Otherwise, the unit operates the cooling system until the minimum run time for the compressor has been completed. After the compressor de-energizes, the blower is stopped following the elapse of the fan off delay for cooling.

To be available, a compressor must not be locked-out due to a high or low-pressure switch or Evaporator Low Limit sensor (EC1) detecting a temperature below 26° F and the anti-short cycle delay (ASCD) must have elapsed.

Economizer With Single Enthalpy Sensor

When the room thermostat calls for cooling, the low voltage control circuit from "R" to "G" and "Y1" is completed. The UCB energizes the blower motor (if the fan switch on the room thermostat is set in the "AUTO" position) and drives the

economizer dampers from fully closed to their minimum position. If the enthalpy of the outdoor air is below the setpoint of the enthalpy controller (previously determined), "Y1" energizes the economizer. The dampers will modulate to maintain a constant supply air temperature as monitored by the discharge air sensor. If the outdoor air enthalpy is above the setpoint, "Y1" energizes the compressor and condenser fan motor only.

Once the thermostat has been satisfied, it will de-energize "Y1". If the compressor has satisfied its minimum run time, the compressor and condenser fan are de-energized. Otherwise, the unit operates the cooling system until the minimum run times for the compressor has been completed. After the compressor de-energizes, the blower is stopped following the elapse of the fan off delay for cooling, and the economizer damper goes to the closed position. If the unit is in continuous fan operation the economizer damper goes to the min. position.

Economizer With Dual Enthalpy Sensors

The operation with the dual enthalpy sensors is identical to the single sensor except that a second enthalpy sensor is mounted in the return air. This return air sensor allows the economizer to choose between outdoor air and return air, whichever has the lowest enthalpy value, to provide maximum operating efficiency.

Economizer With Power Exhaust

A unit equipped with an economizer (single or dual enthalpy) and a power exhaust operates as specified above with one addition. The power exhaust motor is energized 45 seconds after the actuator position exceeds the exhaust fan set point on the economizer control. As always, the "R" to "G" connection provides minimum position but does not provide power exhaust operation.

Motorized Outdoor Air Dampers

This system operation is the same as the units with no outdoor air options with one exception. When the "R" to "G" circuit is complete, the motorized damper drives open to a position set by the thumbwheel on the damper motor. When the "R" to "G" circuit is opened, the damper spring returns fully closed.

Cooling Operation Errors

Each cooling system is monitored for operation outside of the intended parameters. Errors are handled as described below. All system errors override minimum run times for compressors.

High-Pressure Limit Switch

During cooling operation, if a high-pressure limit switch opens, the UCB will de-energize the compressor, initiate the ASCD (Anti-short cycle delay), and stop the condenser fan. If the call for cooling is still present at the conclusion of the ASCD, the UCB will re-energize the compressor.

Should a high-pressure switch open three times within two hours of operation, the UCB will lock-out the associated compressor and sends an error message.

Low-Pressure Limit Switch

The low-pressure limit switch is not monitored during the initial 30 seconds of a cooling system's operation. For the following 30 seconds, the UCB will monitor the low-pressure switch to ensure it closes. If the low-pressure switch fails to close after the 30-second monitoring phase, the UCB will de-energize the compressor, initiate the ASCD, and stop the condenser fan.

Once the low-pressure switch has been proven (closed during the 30-second monitor period described above), the UCB will monitor the low-pressure limit switch for any openings. If the low-pressure switch opens for greater than 5 seconds, the UCB will de-energize the compressor, initiate the ASCD, and stop the condenser fan.

If the call for cooling is still present at the conclusion of the ASCD, the UCB will re-energize the compressor.

Should a low-pressure switch open three times within one hour of operation, the UCB will lock-out the compressor and sends an error message.

Evaporator Low Limit

During cooling operation, if the **Evaporator Low Limit Sensor (EC1)** (Located on the Suction Line at the Evaporator Coil.) detects a temperature below 26 Deg. F (default), the UCB will de-energize the compressor, initiate the ASCD, and stop the condenser fan. If the call for cooling is still present at the conclusion of the ASCD and the evaporator temperature (EC1) is above 39°F, the UCB will re-energize the halted compressor.

Should the evaporator low limit sensor (**EC1**) detect a temperature below 26°F three times within two hours of operation, the UCB will lock-out the associated compressor and flash an error message.

Low Ambient Cooling

To determine when to operate in low ambient mode, the UCB has an **Outdoor Air Temperature Sensor (OAT)** with a low ambient setpoint at 45°F (default). When the **OAT Sensor** senses a temperature below the low ambient setpoint and the thermostat is calling for cooling, the UCB will operate in the low ambient mode.

Low ambient mode operates the compressors in this manner:

10 minutes on, 5 minutes off. The indoor blower is operated throughout the cycle. The 5-minute off period is necessary to defrost the indoor coil.

Low ambient mode always begins with compressor operation. Compressor minimum run time may extend the minutes of compressor operation. The off cycle will begin immediately following the elapse of the minimum run time.

When operating in low ambient mode, an **Evaporator Low Limit Sensor (EC1)** temperature below 26°F will de-energize the compressor. If the call for cooling is still present at the end of the ASCD and the evaporator temperature (**EC1**) is above 39°F, the unit will resume operation.

Safety Controls

The unit control board monitors the following inputs for each cooling system:

1. An evaporator low limit sensor (**EC1**) (Located on the Suction Line at the Evaporator Coil.) to protect against low evaporator temperatures due to a low airflow or a low return air temperature, set at 26°F.
2. A high-pressure switch to protect against excessive discharge pressures due to a blocked condenser coil or a condenser motor failure, (opens at 650 ± 25 psig).
3. A low-pressure switch to protect against loss of refrigerant charge, (opens at 7 ± 3 psig).

The above pressure switches are hard-soldered to the unit. The refrigeration systems are independently monitored and controlled. On any fault, only the associated system will be affected by any safety/preventive action.

The unit control board monitors the temperature limit switch of electric heat units.

Compressor Protection

In addition to the external pressure switches, the compressor also has inherent (internal) protection. If there is an abnormal temperature rise in a compressor, the protector will open to shut down the compressor. The UCB incorporates features to minimize compressor wear and damage. An **Anti-Short Cycle Delay (ASCD)** is utilized to prevent operation of a compressor too soon after its previous run. Additionally, a minimum run time is imposed any time a compressor is energized.

The ASCD is initiated on unit start-up and on any compressor reset or lock-out.

Error Message

The UCB will initiate a error message associated with errors within the system.

Reset

Remove the call for cooling, by raising thermostat setting higher than the conditioned space temperature. This resets any pressure or evaporator low limit error messages.

Heating Sequence Of Operations

With or Without Electric Heat

When the thermostat calls for the first stage of heating, the low voltage control circuit is completed between "R" and "W1". The 24vac signal is passed through the UCB to the Fan, C1 and CN-Fan output Terminals and withholds a 24vac output to the H1 terminal assuring the reversing valve cannot be energized, except during defrost. If the ASCD timer is satisfied the UCB will energize compressor contactor M1.

If the compressor alone cannot satisfy the heating requirements, a second stage call from the thermostat completes the circuit between "R" and "W2". This 24vac signal is passed through the UCB H2 output terminal to the electric

heat section (if available). The total available kW of electric heat will be energized on a call for "W2".

Defrost Initiation

Defrost control implements a temperature differential, demand defrost algorithm. The heat pump is allowed to operate in the heating mode until the combination of outdoor ambient temperature and outdoor coil temperature indicate that defrosting is necessary. When the coil temperature is maintained below the initiate point for a given ambient temperature, continuously for 4-1/2 minutes, the heat pump is put into a defrost cycle. This 4-1/2 minute timer eliminates unnecessary defrost cycles caused by refrigeration surges such as those that occur at the start of a heating cycle.

For defrost, the UCB will signal the energizing of the reversing valve and de-energizing the systems condenser fan motor(s). The unit's optional electric first-stage heater is also energized via a 24-volt VAC output terminal labeled "H2".

Defrost Termination

The UCB terminates the defrost mode when either of the following two conditions are met;

1. The outdoor coil temperature sensor reaches 40°F, or
2. The maximum allowable defrost run time of 8 minutes.

Interval between Defrosts

A timed inhibit feature prevents the system from responding to a call for defrost less than 40 minutes after the initiation of the previous defrost. After this inhibit time has expired, temperature conditions must call for defrost continuously for 4- 1/2 minutes before another defrost cycle is initiated. A temperature inhibit feature prohibits defrost if the coil temperature is above 40°F. All defrost timing occurs only while the compressor is on.

Forced Defrost

A forced-defrost feature puts the system into a defrost cycle every 6 hours and 4 minutes to recirculate lubricants, unless the coil temperature is above 40°F. All defrost timing occurs only while the compressor is on.

For trouble shooting purposes, the defrost cycle can be manually initiated by selecting "Test Defrost" in the UCB menu.

Selectable Defrost Curves

Defrost initiation will occur when the outdoor coil temperature falls below a particular threshold value, which varies depending upon the selected Defrost curve. The relative behavior of the various defrost curves is as follows;

- Above an outdoor ambient temperature of approximately 20 F, defrost initiation would occur the soonest on Curves 4 or 5, followed by Curve 3, Curve 1 and the latest on Curve 2.
- Below an outdoor ambient temperature of approximately 20 F, defrost initiation would occur the soonest on Curve

3, followed by Curves 4 or 5, Curve 1 and the latest on Curve 2.

A customer that lives in colder climates, where temperatures under 20 are normal, with higher humidity, such as Boston, may want to use a more aggressive defrost curve like Curve 3. A customer that lives in a warmer climate, such as the Southeast United States, can use a less aggressive defrost curve like Curve 2. Each customer should decide for themselves which defrost curve will be suitable for their application.

Options/Accessories

Economizer

The Economizer can be a factory installed option or a field installed accessory. If factory installed, refer to the instructions included with the outdoor air hood to complete the assembly. Field installed Economizer accessories include complete instructions for installation.

There are two Economizer options. Each is specific to footprint:

1. Vertical Flow application with barometric relief standard.
2. Horizontal Flow application with barometric relief standard.

Power Exhaust

The Power Exhaust is a field installed accessory. Field installed Power Exhaust accessories include complete instructions for installation.

The Power Exhaust factory installed option is for Down Flow application only.

There are two field installed Power Exhaust accessories. Each is specific to footprint and unit voltage:

1. Down Flow application.
2. Horizontal Flow application that requires the purchase of a barometric relief hood.

Rain Hood

All of the hood components, including the mist eliminators, the gasketing and the hardware for assembling, are packaged and located between the condenser coil section and the main unit cabinet, if the unit has factory installed options. If field installed accessories are being installed all parts necessary for the installation comes in the accessory.

Standard Economizer and Power Exhaust Set Point Adjustments

Remove the filter access (from Figures 11 through 14) panel from the unit. Locate the economizer control module, where the following adjustments will be made.

CAUTION

Extreme care must be exercised in turning all set point, maximum and minimum damper positioning adjustment screws to prevent twisting them off.

Minimum Position Adjustment

- Check that the damper blades move smoothly without binding; carefully turn the Minimum Position Adjust screw (found on the damper control module) fully clockwise and then set the thermostat indoor fan switch to the ON position and then OFF or energize and de-energize terminals "R" to "G".
- With the thermostat set to the indoor fan ON position or terminals "R" to "G" energized, turn the Minimum Position Adjusting screw (located on the damper control module) counterclockwise until the desired minimum damper position has been attained.

Power Exhaust Damper Set Point

- With power exhaust option, each building pressurization requirement will be different. The point at which the power exhaust comes on is determined by the economizer damper position (Percent Open). The Exhaust Air Adjustment Screw should be set at the Percent Open of the economizer damper at which the power exhaust is needed. It can be set from 0 to 100% damper open.

Indoor Air Quality AQ

Indoor Air Quality (indoor sensor input): Terminal AQ accepts a +2 to +10 VDC signal with respect to the (AQ1) terminal. When the signal is below its set point, the actuator is allowed to modulate normally in accordance with the enthalpy and mixed air sensor inputs. When the AQ signal exceeds its set point setting and there is no call for free cooling, the actuator is proportionately modulated from the 2 to 10 VDC signal, with 2 VDC corresponding to full closed and 10 VDC corresponding to full open. When there is no call for free cooling, the damper position is limited by the IAQ Max damper position setting. When the signal exceeds its set point (Demand Control Ventilation Set Point) setting and there is a call for free cooling, the actuator modulates from the minimum position to the full open position based on the highest call from either the mixed air sensor input or the AQ voltage input.

- Optional CO₂ Space Sensor Kit Part # 2AQ04700524B
- Optional CO₂ Sensor Kit Part # 2AQ04700624C

Blower Phasing

XYE units are properly phased at the factory. Check for proper blower rotation. If the blower rotates in the wrong direction at

start-up, the electrical connection to the unit is misphased. Change the phasing of the **Field Line Connection at the factory or field supplied disconnect** to obtain proper rotation.

CAUTION

When installing equipment in a facility with a 3 phase high-leg delta power supply, care must be taken to ensure that the high-leg conductor is not attached to either of the two legs of the (single phase, direct drive) X13 or ECM motors. Failure to do so can result in the motor acting erratically or not running at all.

Check for the high leg conductor by checking voltage of each phase to ground.

Example: A or L1 phase to ground, voltage reading is 120V. B or L2 phase to ground, voltage reading is 195 to 208V. C or L3 phase to ground, voltage reading is 120V. Therefore B or L2 phase is the high Leg. The high should always be wired to the center or B or L2 tap.

Note: Check all three phase motors and compressors for proper rotation after making a change. If it is necessary to change 3 phase motor rotation, swap A or L1 and C or L3 only.

Blower Rotation

Check for proper supply air blower rotation. If the blower is rotating backwards, the line voltage at the unit point of power connection is misphased (See 'BLOWER PHASING').

Table 10: Supply Air Limitations

Model (Size)	Supply Air (CFM)	
	Minimum	Maximum
XYE04 (3)	900	1500
XYE05 (4)	1200	2000
XYE06 (5)	1500	2500
XYE07 (6)	1800	3000
XYEA7 (6)	1800	3000
XYE08 (7.5)	2250	3750
XYE09 (8.5)	2550	4250

Belt Tension

The tension on the belt should be adjusted as shown in Figure 20.

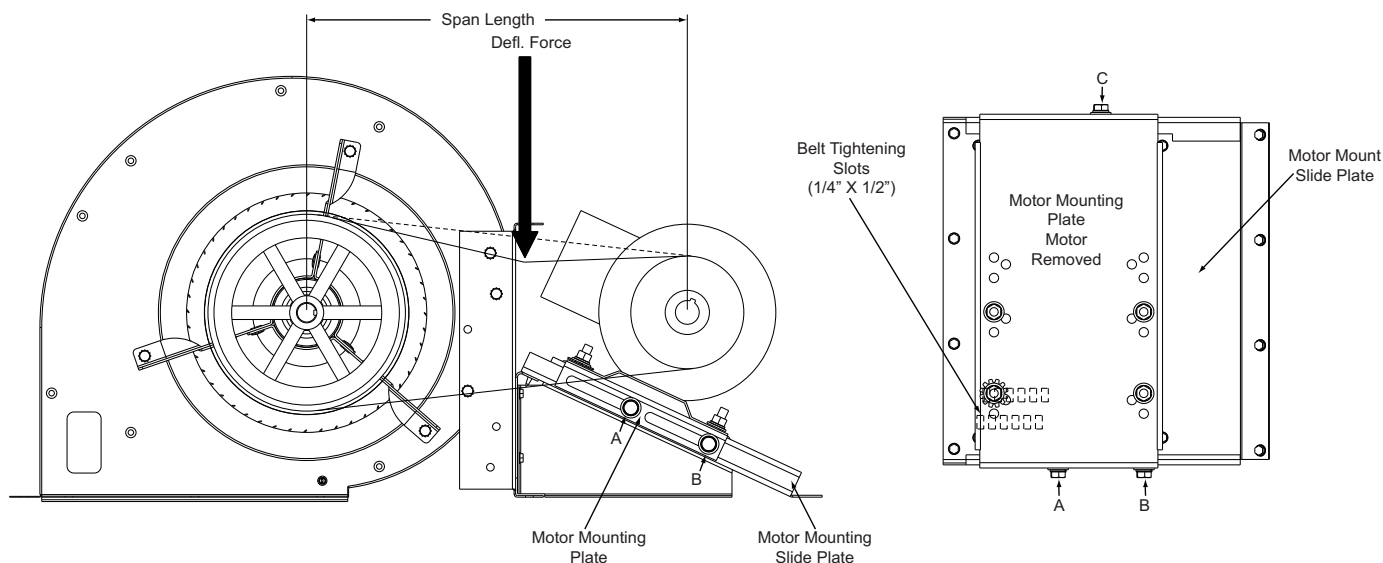


Figure 21: Belt Adjustment

CAUTION

Procedure for adjusting belt tension:

1. Loosen the three nuts (A and B on side and C on back) of motor mount slide plate.
2. Adjust tension by placing a flat heat screwdriver into the belt tightening slots (1/4" X 1/2") in the motor mount slide plate and applying pressure against the motor mounting plate. See Figure 21.
3. Tighten the three loosened nuts (A, B and C).
4. Determine the deflection distance from normal position, use a straight edge from sheave to sheave as reference line. Use belt tension checker to apply a perpendicular force to the belt at the midpoint of the span as shown. Deflection distance of 4mm (5/32") is obtained.
5. After adjustments are completed re-tighten nuts (A, B and C).

Altitude and Temperature Correction for CFM, Static Pressure and Power.

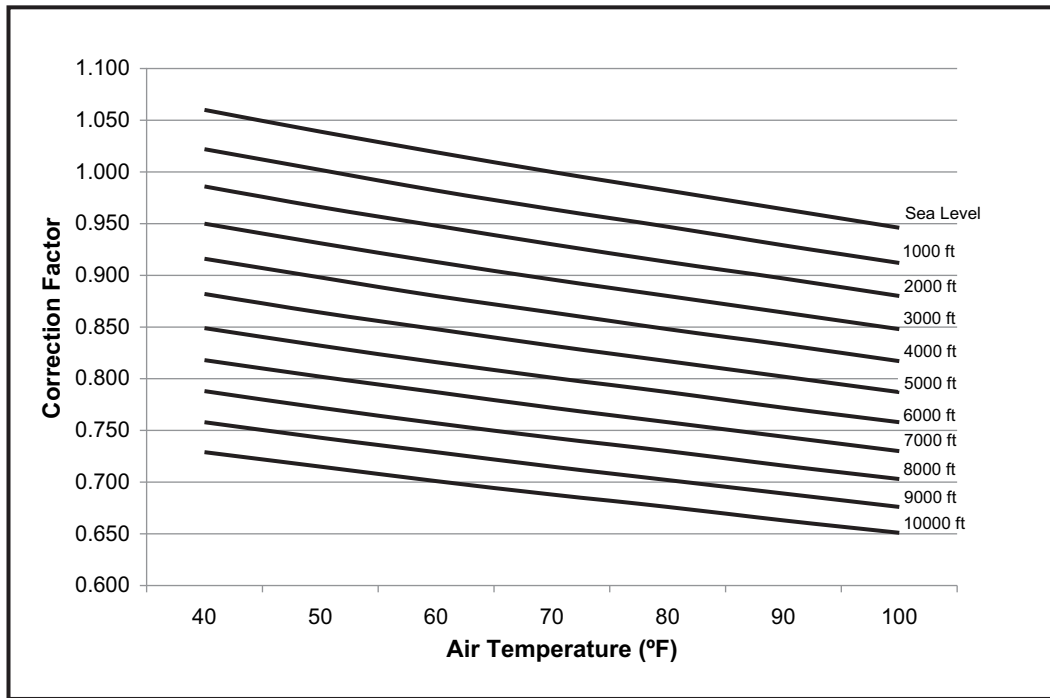
The information below should be used to assist in application of product when being applied at altitudes at or exceeding 1000 feet above sea level.

The air flow rates listed in the standard blower performance tables are based on standard air at sea level. As the altitude or temperature increases, the density of air decreases. In order to use the indoor blower tables for high altitude applications, certain corrections are necessary.

A centrifugal fan is a "constant volume" device. This means that, if the rpm remains constant, the CFM delivered is the same regardless of the density of the air. However, since the air at high altitude is less dense, less static pressure will be generated and less power will be required than a similar application at sea level. Air density correction factors are shown in Table 11 and Figure 22.

Table 11: Altitude/Temperature Correction Factors

Air Temp.	Altitude (Ft.)										
	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
40	1.060	1.022	0.986	0.950	0.916	0.882	0.849	0.818	0.788	0.758	0.729
50	1.039	1.002	0.966	0.931	0.898	0.864	0.832	0.802	0.772	0.743	0.715
60	1.019	0.982	0.948	0.913	0.880	0.848	0.816	0.787	0.757	0.729	0.701
70	1.000	0.964	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.715	0.688
80	0.982	0.947	0.913	0.880	0.848	0.817	0.787	0.758	0.730	0.702	0.676
90	0.964	0.929	0.897	0.864	0.833	0.802	0.772	0.744	0.716	0.689	0.663
100	0.946	0.912	0.880	0.848	0.817	0.787	0.758	0.730	0.703	0.676	0.651

**Figure 22: Altitude/Temperature Correction Factors**

The examples below will assist in determining the airflow performance of the product at altitude.

Example 1: What are the corrected CFM, static pressure, and BHP at an elevation of 5,000 ft. if the airflow performance data is 3,000 CFM, 1.4 IWC and 2.0 BHP?

Solution: At an elevation of 5,000 ft. the indoor blower will still deliver 3,000 CFM if the rpm is unchanged. However, the Altitude correction must be used to determine the static pressure and BHP. Since no temperature data is given, we will assume an Air Temperature of 70°F. The Altitude/Temperature Factors show the correction factor to be 0.832.

$$\text{Corrected static pressure} = 1.4 \times 0.832 = 1.16 \text{ IWC}$$

$$\text{Corrected BHP} = 2.0 \times 0.832 = 1.66$$

Example 2: A system, located at 5,000 feet of elevation, is to deliver 3,000 CFM at a static pressure of 1.4". Use the unit blower tables to select the blower speed and the BHP requirement.

Solution: As in the example above, no temperature information is given so 70°F is assumed.

The 1.4" static pressure given is at an elevation of 5,000 ft. The first step is to convert this static pressure to equivalent sea level conditions.

$$\text{Sea level static pressure} = 1.4" / .832 = 1.68"$$

Enter the Supply Air Blower Performance Table at 3,000 CFM and static pressure of 1.68". The rpm listed will be the same rpm needed at 5,000 ft.

Suppose that the corresponding BHP listed in the table is 2.0. This value must be corrected for elevation.

$$\text{BHP at 5,000 ft.} = 2.0 \times .832 = 1.66$$

Drive Selection

1. Determine side or bottom supply duct Application.
2. Determine desired airflow.
3. Calculate or measure the amount of external static pressure.
 - Add or deduct any additional static resistance from "Additional Static Resistance Table".
4. Using the operating point determined from steps 1, 2 & 3, locate this point on the appropriate supply air blower performance table. (Linear interpolation may be necessary.)
5. Noting the RPM and BHP from step 4, locate the appropriate motor and, or drive.
6. Review the BHP compared to the motor options available. Select the appropriate motor and, or drive.
7. Review the RPM range for the motor options available. Select the appropriate drive if multiple drives are available for the chosen motor.
8. Determine turns open to obtain the desired operation point.

Example

1. 1600 CFM
2. 1.4 iwg
3. Using the airflow performance table below, the following data point was located: 1417 RPM & 1.28 BHP.
4. Using the RPM selection table below, Model XYE and Size 05 (4-Tons) is found.
5. The High Static Option is selected to achieve the required 1417 RPM.
6. Using the High Static Option, 2 turns open will achieve 1417 RPM.

Airflow Performance**Example Supply Air Blower Performance
XYE05 (4.0 Ton) Bottom Duct**

CFM	Available External Static															
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	801	0.25	903	0.38	999	0.51	1089	0.63	1173	0.76	1252	0.88	1327	1.00	1396	1.11
1300	822	0.31	924	0.44	1020	0.57	1110	0.69	1194	0.82	1273	0.94	1348	1.06	1417	1.17
1400	844	0.38	946	0.51	1042	0.64	1132	0.76	1216	0.89	1295	1.01	1370	1.13	1439	1.24
1500	867	0.46	969	0.59	1065	0.71	1155	0.84	1239	0.96	1319	1.08	1393	1.20	1462	1.32
1600	891	0.54	993	0.67	1089	0.79	1179	0.92	1264	1.04	1343	1.16	1417	1.28	1486	1.40
1700	917	0.63	1019	0.75	1115	0.88	1205	1.01	1289	1.13	1368	1.25	1442	1.37	1512	1.48
1800	943	0.72	1045	0.85	1141	0.97	1231	1.10	1316	1.22	1395	1.34	1469	1.46	1538	1.58
1900	971	0.81	1073	0.94	1169	1.07	1259	1.19	1344	1.32	1423	1.44	1497	1.56	1566	1.67
2000	1000	0.92	1102	1.04	1198	1.17	1288	1.29	1372	1.42	1452	1.54	1526	1.66	1595	1.77

$$\text{kW} = 0.929 \times \text{BHP}$$

	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 2.4-hp
Bold	Field-supplied AK41 x 3/4" fixed blower pulley with motor rated at 2.4-hp
--	Exceeds recommended blower speed

Example RPM Selection

Model	Size (Tons)	Airflow Option	Phase	Max BHP	Blower Sheave	Motor Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turns Open	Fully Closed
XYE	05 (4)	Std.					Direct Drive						
		Med.	3	2.4	AK46	1VL34	N/A	792	875	958	1042	1125	1208
		H. Static	3	2.4	AK46	1VL44	N/A	1167	1250	1333	1417	1500	1593

Example Additional Static Resistance

Model	Size (Tons)	CFM	Economizer ¹	4" Filter ¹	Electric Heat kW ²				
					6/6.5	9.2/10.5/11	13.8/14/16	23	---
XYE	05 (4.0)	1200	0.24	---	0.01	0.01	0.02	0.03	---
		1300	0.28	---	0.01	0.01	0.03	0.03	---
		1400	0.33	---	0.02	0.02	0.03	0.04	---
		1500	0.44	---	0.02	0.02	0.04	0.04	---
		1600	0.52	---	0.02	0.02	0.04	0.05	---
		1700	0.59	---	0.03	0.03	0.05	0.05	---
		1800	0.66	---	0.03	0.03	0.05	0.06	---
		1900	0.74	---	0.04	0.04	0.06	0.07	---
		2000	0.81	---	0.04	0.04	0.07	0.08	---

Table 12: XYE04-09 Side Duct Application (Belt Drive)

XEY04 (3.0 Ton) Side Duct

CFM	Available External Static															
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900			810	0.27	922	0.38	1024	0.49	1118	0.59	1205	0.69	1285	0.80	1359	0.91
1000	703	0.19	826	0.31	938	0.43	1041	0.53	1135	0.64	1221	0.74	1301	0.85	1376	0.96
1100	721	0.25	843	0.37	956	0.48	1058	0.59	1152	0.69	1239	0.80	1319	0.90	1393	1.01
1200	738	0.31	861	0.43	973	0.54	1076	0.65	1170	0.75	1256	0.86	1336	0.96	1411	1.08
1300	756	0.38	879	0.50	991	0.61	1094	0.72	1188	0.82	1274	0.92	1354	1.03	1429	1.14
1400	774	0.45	897	0.57	1009	0.68	1112	0.79	1206	0.89	1292	1.00	1372	1.10	1447	1.21
1500	792	0.53	915	0.65	1027	0.76	1129	0.87	1223	0.97	1310	1.07	1390	1.18	1464	1.29

$$\text{kW} = 0.929 \times \text{BHP}$$

Bold	Field-supplied AK51 x 3/4" fixed blower pulley with motor rated at 2.4-hp
	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 2.4-hp
Bold	Field-supplied AK41 x 3/4" fixed blower pulley with motor rated at 2.4-hp

XEY05 (4.0 Ton) Side Duct

CFM	Available External Static															
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	759	0.28	860	0.38	957	0.49	1050	0.62	1139	0.76	1224	0.89	1306	1.03	1383	1.15
1300	777	0.34	878	0.44	975	0.55	1068	0.68	1157	0.81	1242	0.95	1324	1.08	1401	1.21
1400	796	0.40	897	0.50	995	0.61	1088	0.74	1177	0.88	1262	1.01	1343	1.15	1420	1.27
1500	816	0.46	918	0.56	1015	0.68	1108	0.81	1197	0.94	1282	1.08	1363	1.21	1440	1.34
1600	837	0.53	938	0.63	1035	0.75	1129	0.88	1218	1.01	1303	1.15	1384	1.28	1461	1.41
1700	858	0.61	960	0.71	1057	0.83	1150	0.95	1239	1.09	1324	1.22	1405	1.36	1482	1.48
1800	880	0.69	981	0.79	1078	0.91	1171	1.04	1260	1.17	1345	1.31	1427	1.44	1504	1.57
1900	902	0.78	1003	0.88	1100	1.00	1193	1.12	1282	1.26	1367	1.40	1448	1.53	1526	1.65
2000	924	0.88	1025	0.98	1122	1.09	1215	1.22	1304	1.35	1389	1.49	1470	1.62	1548	1.75

$$\text{kW} = 0.929 \times \text{BHP}$$

Bold	Field-supplied AK51 x 3/4" fixed blower pulley with motor rated at 2.4-hp
	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 2.4-hp
Bold	Field-supplied AK41 x 3/4" fixed blower pulley with motor rated at 2.4-hp
--	Exceeds recommended blower speed

XEY06 (5.0 Ton) Side Duct

CFM	Available External Static															
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	770	0.40	836	0.50	901	0.60	964	0.69	1025	0.79	1084	0.89	1142	0.98	1197	1.07
1600	779	0.45	845	0.54	910	0.64	973	0.74	1034	0.83	1093	0.93	1151	1.02	1206	1.11
1700	791	0.50	857	0.60	922	0.69	985	0.79	1046	0.89	1105	0.98	1162	1.07	1218	1.16
1800	805	0.56	872	0.66	936	0.75	999	0.85	1060	0.95	1120	1.04	1177	1.13	1232	1.22
1900	822	0.63	888	0.72	953	0.82	1016	0.92	1077	1.01	1136	1.11	1194	1.20	1249	1.29
2000	841	0.70	907	0.80	972	0.89	1035	0.99	1096	1.09	1155	1.18	1212	1.27	1268	1.36
2100	862	0.78	928	0.87	993	0.97	1056	1.07	1117	1.16	1176	1.26	1233	1.35	1289	1.44
2200	885	0.86	951	0.96	1016	1.05	1079	1.15	1140	1.25	1199	1.34	1256	1.43	1311	1.52
2300	910	0.95	976	1.04	1040	1.14	1103	1.23	1165	1.33	1224	1.43	1281	1.52	1336	1.61
2400	936	1.03	1002	1.13	1067	1.23	1130	1.32	1191	1.42	1250	1.52	1307	1.61	1362	1.70
2500	964	1.13	1030	1.22	1095	1.32	1158	1.41	1219	1.51	1278	1.61	1335	1.70	1390	1.79

Bold	Field-supplied AK51 x 3/4" fixed blower pulley with motor rated at 2.4-hp
	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 2.9-hp

XYE07 (6.0 Ton) Side Duct

CFM	Available External Static																			
	0.20		0.40		0.60		0.80		1.00		1.20		1.40		1.60		1.80		2.00	
	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP
1800	532	0.30	592	0.48	647	0.66	698	0.84	746	1.02	793	1.19	842	1.34	892	1.48	946	1.60	1006	1.69
1900	540	0.34	600	0.52	655	0.70	706	0.88	754	1.06	802	1.23	850	1.39	900	1.52	954	1.64	1014	1.73
2000	548	0.39	609	0.56	664	0.74	714	0.92	763	1.10	810	1.27	859	1.43	909	1.57	963	1.68	1023	1.77
2100	558	0.43	618	0.61	673	0.79	724	0.97	772	1.15	820	1.32	868	1.47	918	1.61	972	1.73	1032	1.82
2200	567	0.48	628	0.66	683	0.84	733	1.02	782	1.20	829	1.37	877	1.52	928	1.66	982	1.78	1042	1.86
2300	578	0.53	638	0.71	693	0.89	744	1.07	792	1.25	839	1.42	888	1.57	938	1.71	992	1.83	1052	1.91
2400	588	0.59	648	0.76	703	0.94	754	1.12	802	1.30	850	1.47	898	1.63	948	1.77	1003	1.88	1062	1.97
2500	599	0.64	659	0.82	714	1.00	765	1.18	813	1.36	861	1.53	909	1.69	959	1.82	1013	1.94	1073	2.03
2600	610	0.71	670	0.88	725	1.06	776	1.24	824	1.42	872	1.59	920	1.75	971	1.89	1025	2.00	1084	2.09
2700	622	0.77	682	0.95	737	1.13	788	1.31	836	1.49	883	1.66	932	1.81	982	1.95	1036	2.07	1096	2.16
2800	633	0.84	694	1.02	749	1.20	799	1.38	848	1.56	895	1.73	943	1.89	994	2.02	1048	2.14	-	-
2900	646	0.92	706	1.09	761	1.27	812	1.46	860	1.63	907	1.80	956	1.96	1006	2.10	1060	2.21	-	-
3000	658	1.00	718	1.17	773	1.35	824	1.54	872	1.71	920	1.88	968	2.04	1018	2.18	1073	2.29	-	-

	Standard Static Option with Motor rated at 2.4-Max Bhp
	Medium Static Option with Motor rated at 2.4-Max Bhp
	High Static Option with Motor rated at 3.7-Max Bhp
--	Exceeds recommended blower speed

XYEA7 (6.0 Ton) Side Duct

CFM	Available External Static																			
	0.20		0.40		0.60		0.80		1.00		1.20		1.40		1.60		1.80		2.00	
	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP
1800	532	0.30	592	0.48	647	0.66	698	0.84	746	1.02	793	1.19	842	1.34	892	1.48	946	1.60	1006	1.69
1900	540	0.34	600	0.52	655	0.70	706	0.88	754	1.06	802	1.23	850	1.39	900	1.52	954	1.64	1014	1.73
2000	548	0.39	609	0.56	664	0.74	714	0.92	763	1.10	810	1.27	859	1.43	909	1.57	963	1.68	1023	1.77
2100	558	0.43	618	0.61	673	0.79	724	0.97	772	1.15	820	1.32	868	1.47	918	1.61	972	1.73	1032	1.82
2200	567	0.48	628	0.66	683	0.84	733	1.02	782	1.20	829	1.37	877	1.52	928	1.66	982	1.78	1042	1.86
2300	578	0.53	638	0.71	693	0.89	744	1.07	792	1.25	839	1.42	888	1.57	938	1.71	992	1.83	1052	1.91
2400	588	0.59	648	0.76	703	0.94	754	1.12	802	1.30	850	1.47	898	1.63	948	1.77	1003	1.88	1062	1.97
2500	599	0.64	659	0.82	714	1.00	765	1.18	813	1.36	861	1.53	909	1.69	959	1.82	1013	1.94	1073	2.03
2600	610	0.71	670	0.88	725	1.06	776	1.24	824	1.42	872	1.59	920	1.75	971	1.89	1025	2.00	1084	2.09
2700	622	0.77	682	0.95	737	1.13	788	1.31	836	1.49	883	1.66	932	1.81	982	1.95	1036	2.07	1096	2.16
2800	633	0.84	694	1.02	749	1.20	799	1.38	848	1.56	895	1.73	943	1.89	994	2.02	1048	2.14	-	-
2900	646	0.92	706	1.09	761	1.27	812	1.46	860	1.63	907	1.80	956	1.96	1006	2.10	1060	2.21	-	-
3000	658	1.00	718	1.17	773	1.35	824	1.54	872	1.71	920	1.88	968	2.04	1018	2.18	1073	2.29	-	-

	Standard Static Option with Motor rated at 2.4-Max Bhp
	Medium Static Option with Motor rated at 2.4-Max Bhp
	High Static Option with Motor rated at 3.7-Max Bhp
--	Exceeds recommended blower speed

XYE08 (7.5 Ton) Side Duct

CFM	Available External Static																			
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	562	0.17	616	0.36	671	0.57	726	0.78	781	1.00	835	1.20	886	1.40	935	1.59	979	1.75	1019	1.89
2400	567	0.26	620	0.45	675	0.65	730	0.87	785	1.08	839	1.29	890	1.49	939	1.67	983	1.84	1023	1.97
2600	572	0.38	625	0.58	680	0.78	736	0.99	790	1.21	844	1.42	895	1.62	944	1.80	989	1.96	1029	2.10
2800	578	0.53	632	0.72	687	0.93	742	1.14	797	1.35	850	1.56	902	1.76	950	1.95	995	2.11	1035	2.24
3000	586	0.69	639	0.88	694	1.08	749	1.30	804	1.51	858	1.72	909	1.92	958	2.10	1002	2.27	1043	2.40
3200	595	0.86	648	1.05	703	1.25	758	1.46	813	1.68	867	1.89	918	2.09	967	2.27	1012	2.43	1052	2.57
3400	606	1.03	660	1.23	714	1.43	770	1.64	824	1.86	878	2.07	930	2.27	978	2.45	1023	2.61	1063	2.75
3600	619	1.22	673	1.41	728	1.62	783	1.83	838	2.04	891	2.25	943	2.45	991	2.63	1036	2.80	1076	2.93
3750	631	1.36	684	1.55	739	1.76	794	1.97	849	2.19	903	2.39	954	2.59	1003	2.78	1047	2.94	1087	3.08

	Standard Static Option with Motor rated at 2.4-hp
	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 3.7-hp

XYE09 (8.5 Ton) Side Duct

CFM	Available External Static													
	0.2		0.4		0.6		0.8		1.0		1.2		1.4	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	571	0.35	624	0.54	679	0.75	734	0.96	789	1.17	843	1.38	894	1.58
2600	572	0.38	625	0.58	680	0.78	736	0.99	790	1.21	844	1.42	895	1.62
2800	578	0.53	632	0.72	687	0.93	742	1.14	797	1.35	850	1.56	902	1.76
3000	586	0.69	639	0.88	694	1.08	749	1.30	804	1.51	858	1.72	909	1.92
3200	595	0.86	648	1.05	703	1.25	758	1.46	813	1.68	867	1.89	918	2.09
3400	606	1.03	660	1.23	714	1.43	770	1.64	824	1.86	878	2.07	930	2.27
3600	619	1.22	673	1.41	728	1.62	783	1.83	838	2.04	891	2.25	943	2.45
3800	635	1.41	688	1.60	743	1.81	798	2.02	853	2.23	907	2.44	958	2.64
4000	652	1.61	706	1.80	761	2.01	816	2.22	871	2.43	924	2.64	976	2.84
4200	672	1.81	726	2.00	781	2.21	836	2.42	891	2.64	944	2.84	996	3.04
4250	678	1.86	731	2.06	786	2.26	841	2.47	896	2.69	950	2.90	1001	3.10

	Standard Static Option with Motor rated at 2.4-hp
	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 3.7-hp
Bold	Field-supplied AK79 x 1 fixed pulley (p/n 9381) with Motor rated at 3.7-hp
--	Exceeds recommended blower speed

Table 13: XYE04-06 Side Duct Application (Direct Drive)**XYE04-06 Side Duct**

Unit (Ton)	Motor Speed	Available External Static														
		0.2			0.4			0.6			0.8			1.0		
		CFM	WATTS	RPM	CFM	WATTS	RPM	CFM	WATTS	RPM	CFM	WATTS	RPM	CFM	WATTS	RPM
XYE04 (3)	1 (LOW)	987	120	651	813	145	774	698	162	864	541	180	959	383	201	1047
	2 (MED/LOW)	1079	144	677	936	171	795	793	190	886	692	214	975	521	232	1063
	3 (MED)	1153	166	701	1037	195	812	875	221	913	786	239	986	654	263	1076
	4 (MED/HI)	1191	178	712	1086	206	815	927	233	916	837	257	998	711	278	1083
	5 (HI)	1326	229	757	1235	261	856	1124	291	951	973	319	1035	896	336	1099
XYE05 (4)	1 (LOW)	1302	207	727	1188	240	841	1037	266	933	941	296	1022	882	318	1098
	2 (MED/LOW)	1421	247	757	1323	282	861	1209	315	958	1064	346	1043	993	368	1116
	3 (MED)	1538	297	795	1453	332	888	1343	367	982	1216	396	1058	1093	427	1146
	4 (MED/HI)	1571	315	809	1496	352	898	1385	389	996	1288	420	1072	1135	444	1147
	5 (HI)	1779	432	878	1707	470	960	1615	511	1042	1516	544	1123	1165	468	1160
XYE06 (5)	1 (LOW)	1588	298	695	1517	330	761	1409	358	835	1273	393	913	1167	418	973
	2 (MED/LOW)	1624	321	713	1557	352	777	1464	383	845	1315	418	924	1224	446	983
	3 (MED)	1942	504	792	1881	536	852	1800	565	908	1714	605	969	1611	644	1038
	4 (MED/HI)	2146	631	840	2064	692	908	2001	713	954	1932	757	1007	1843	794	1065
	5 (HI)	2316	812	892	2240	861	954	2181	894	1000	2113	938	1045	2003	946	1093

Table 14: XYE04-09 Bottom Duct Application (Belt Drive)

XEY04 (3.0 Ton) Bottom Duct

CFM	Available External Static															
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	743	0.14	852	0.26	955	0.37	1050	0.48	1140	0.57	1225	0.67	1306	0.77	1384	0.87
1000	757	0.20	867	0.33	969	0.44	1065	0.54	1155	0.64	1240	0.74	1321	0.84	1399	0.94
1100	774	0.27	884	0.40	986	0.51	1082	0.61	1172	0.71	1257	0.81	1338	0.91	1416	1.01
1200	793	0.35	903	0.47	1005	0.58	1101	0.69	1191	0.78	1276	0.88	1357	0.98	1435	1.08
1300	814	0.42	924	0.54	1026	0.65	1122	0.76	1212	0.86	1297	0.96	1378	1.05	1456	1.15
1400	837	0.49	947	0.61	1049	0.72	1145	0.83	1235	0.93	1320	1.03	1401	1.12	1479	1.23
1500	862	0.56	972	0.68	1074	0.79	1170	0.90	1260	1.00	1345	1.09	1426	1.19	1504	1.29

$$kW = 0.929 \times BHP$$

Bold	Field-supplied AK51 x 3/4" fixed blower pulley with motor rated at 2.4-hp
	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 2.4-hp
Bold	Field-supplied AK41 x 3/4" fixed blower pulley with motor rated at 2.4-hp
--	Exceeds recommended blower speed

XEY05 (4.0 Ton) Bottom Duct

CFM	Available External Static															
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	801	0.25	903	0.38	999	0.51	1089	0.63	1173	0.76	1252	0.88	1327	1.00	1396	1.11
1300	822	0.31	924	0.44	1020	0.57	1110	0.69	1194	0.82	1273	0.94	1348	1.06	1417	1.17
1400	844	0.38	946	0.51	1042	0.64	1132	0.76	1216	0.89	1295	1.01	1370	1.13	1439	1.24
1500	867	0.46	969	0.59	1065	0.71	1155	0.84	1239	0.96	1319	1.08	1393	1.20	1462	1.32
1600	891	0.54	993	0.67	1089	0.79	1179	0.92	1264	1.04	1343	1.16	1417	1.28	1486	1.40
1700	917	0.63	1019	0.75	1115	0.88	1205	1.01	1289	1.13	1368	1.25	1442	1.37	1512	1.48
1800	943	0.72	1045	0.85	1141	0.97	1231	1.10	1316	1.22	1395	1.34	1469	1.46	1538	1.58
1900	971	0.81	1073	0.94	1169	1.07	1259	1.19	1344	1.32	1423	1.44	1497	1.56	1566	1.67
2000	1000	0.92	1102	1.04	1198	1.17	1288	1.29	1372	1.42	1452	1.54	1526	1.66	1595	1.77

$$kW = 0.929 \times BHP$$

	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 2.4-hp
Bold	Field-supplied AK41 x 3/4" fixed blower pulley with motor rated at 2.4-hp
--	Exceeds recommended blower speed

XEY06 (5.0 Ton) Bottom Duct

CFM	Available External Static															
	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	812	0.36	869	0.46	931	0.55	997	0.64	1063	0.74	1129	0.84	1193	0.94	1253	1.05
1600	829	0.43	886	0.52	948	0.61	1013	0.71	1080	0.80	1146	0.90	1210	1.01	1270	1.11
1700	846	0.50	904	0.59	966	0.68	1031	0.78	1097	0.87	1164	0.97	1227	1.07	1287	1.18
1800	865	0.57	922	0.66	985	0.75	1050	0.85	1116	0.95	1182	1.05	1246	1.15	1306	1.25
1900	885	0.65	943	0.74	1005	0.83	1070	0.93	1136	1.02	1203	1.12	1266	1.23	1326	1.33
2000	907	0.73	964	0.82	1026	0.92	1092	1.01	1158	1.11	1224	1.21	1288	1.31	1348	1.42
2100	930	0.82	987	0.91	1049	1.01	1115	1.10	1181	1.20	1247	1.30	1311	1.40	1371	1.51
2200	955	0.92	1012	1.01	1074	1.10	1139	1.20	1206	1.29	1272	1.39	1336	1.50	1396	1.60
2300	981	1.02	1038	1.11	1101	1.20	1166	1.30	1232	1.39	1298	1.49	1362	1.60	1422	1.70
2400	1009	1.12	1066	1.22	1128	1.31	1194	1.40	1260	1.50	1326	1.60	1390	1.70	1450	1.81
2500	1038	1.24	1096	1.33	1158	1.42	1223	1.52	1290	1.61	1356	1.71	1420	1.82	1480	1.92

	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 2.9-hp

XYE07 (6.0 Ton) Bottom Duct

CFM	Available External Static											
	0.20		0.40		0.60		0.80		1.00		1.20	
	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP
1800	517	0.35	592	0.51	661	0.67	723	0.83	779	0.99	832	1.15
1900	526	0.39	601	0.55	670	0.71	732	0.87	789	1.03	841	1.19
2000	535	0.44	611	0.60	679	0.76	741	0.92	798	1.08	850	1.24
2100	544	0.49	620	0.65	688	0.81	750	0.97	807	1.13	859	1.29
2200	554	0.54	629	0.70	698	0.86	760	1.02	816	1.18	869	1.34
2300	563	0.60	639	0.76	707	0.92	769	1.08	826	1.24	878	1.40
2400	573	0.66	649	0.82	717	0.98	779	1.14	836	1.30	888	1.46
2500	583	0.73	658	0.88	727	1.04	789	1.20	846	1.37	898	1.52
2600	593	0.79	669	0.95	737	1.11	799	1.27	856	1.43	908	1.59
2700	603	0.87	679	1.02	747	1.18	809	1.35	866	1.51	919	1.66
2800	614	0.94	690	1.10	758	1.26	820	1.42	877	1.58	929	1.74
2900	625	1.02	701	1.18	769	1.34	831	1.50	888	1.66	940	1.82
3000	636	1.11	712	1.27	780	1.43	842	1.59	899	1.75	951	1.91

	Standard Static Option with Motor rated at 2.4-Max Bhp
	Medium Static Option with Motor rated at 2.9-Max Bhp
	High Static Option with Motor rated at 3.7-Max Bhp
--	Exceeds recommended blower speed

XYEA7 (6.0 Ton) Bottom Duct

CFM	Available External Static											
	0.20		0.40		0.60		0.80		1.00		1.20	
	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP	RPMs	BHP
1800	517	0.35	592	0.51	661	0.67	723	0.83	779	0.99	832	1.15
1900	526	0.39	601	0.55	670	0.71	732	0.87	789	1.03	841	1.19
2000	535	0.44	611	0.60	679	0.76	741	0.92	798	1.08	850	1.24
2100	544	0.49	620	0.65	688	0.81	750	0.97	807	1.13	859	1.29
2200	554	0.54	629	0.70	698	0.86	760	1.02	816	1.18	869	1.34
2300	563	0.60	639	0.76	707	0.92	769	1.08	826	1.24	878	1.40
2400	573	0.66	649	0.82	717	0.98	779	1.14	836	1.30	888	1.46
2500	583	0.73	658	0.88	727	1.04	789	1.20	846	1.37	898	1.52
2600	593	0.79	669	0.95	737	1.11	799	1.27	856	1.43	908	1.59
2700	603	0.87	679	1.02	747	1.18	809	1.35	866	1.51	919	1.66
2800	614	0.94	690	1.10	758	1.26	820	1.42	877	1.58	929	1.74
2900	625	1.02	701	1.18	769	1.34	831	1.50	888	1.66	940	1.82
3000	636	1.11	712	1.27	780	1.43	842	1.59	899	1.75	951	1.91

	Standard Static Option with Motor rated at 2.4-Max Bhp
	Medium Static Option with Motor rated at 2.9-Max Bhp
	High Static Option with Motor rated at 3.7-Max Bhp
--	Exceeds recommended blower speed

XYE08 (7.5 Ton) Bottom Duct

CFM	Available External Static											
	0.2		0.4		0.6		0.8		1.0		1.2	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	552	0.25	614	0.43	674	0.63	733	0.83	789	1.02	844	1.22
2400	559	0.34	621	0.52	682	0.72	740	0.91	797	1.11	852	1.31
2600	569	0.47	631	0.65	691	0.85	750	1.04	806	1.24	861	1.44
2800	579	0.61	641	0.79	701	0.99	760	1.19	817	1.38	872	1.58
3000	590	0.76	652	0.95	713	1.14	771	1.34	828	1.54	883	1.73
3200	602	0.92	665	1.11	725	1.30	783	1.50	840	1.70	895	1.89
3400	616	1.09	678	1.28	738	1.47	797	1.67	854	1.87	909	2.06
3600	631	1.27	693	1.45	754	1.65	812	1.85	869	2.04	924	2.24
3750	644	1.40	706	1.59	766	1.78	824	1.98	881	2.18	936	2.37

	Standard Static Option with Motor rated at 2.4-hp
	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 3.7-hp
--	Exceeds recommended blower speed

XYE09 (8.5 Ton) Bottom Duct

CFM	Available External Static													
	0.2		0.4		0.6		0.8		1.0		1.2		1.4	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	567	0.43	629	0.62	689	0.81	747	1.01	804	1.21	859	1.40	912	1.59
2600	569	0.47	631	0.65	691	0.85	750	1.04	806	1.24	861	1.44	915	1.62
2800	579	0.61	641	0.79	701	0.99	760	1.19	817	1.38	872	1.58	925	1.77
3000	590	0.76	652	0.95	713	1.14	771	1.34	828	1.54	883	1.73	936	1.92
3200	602	0.92	665	1.11	725	1.30	783	1.50	840	1.70	895	1.89	948	2.08
3400	616	1.09	678	1.28	738	1.47	797	1.67	854	1.87	909	2.06	962	2.25
3600	631	1.27	693	1.45	754	1.65	812	1.85	869	2.04	924	2.24	977	2.43
3800	648	1.45	710	1.64	770	1.83	829	2.03	885	2.23	940	2.42	994	2.61
4000	666	1.64	729	1.82	789	2.01	847	2.21	904	2.41	959	2.61	1012	2.79
4200	687	1.82	749	2.01	809	2.20	867	2.42	924	2.60	979	2.79	1032	2.98
4250	692	1.87	754	2.06	814	2.25	873	2.45	929	2.65	984	2.84	1038	3.03

	Standard Static Option with Motor rated at 2.4-hp
	Medium Static Option with Motor rated at 2.4-hp
	High Static Option with Motor rated at 3.7-hp
--	Exceeds recommended blower speed

Table 15: XYE04-06 Bottom Duct Application (Direct Drive)**XYE04-06 Bottom Duct**

Unit (Ton)	Motor Speed	Available External Static														
		0.2			0.4			0.6			0.8			1.0		
		CFM	WATTS	RPM	CFM	WATTS	RPM	CFM	WATTS	RPM	CFM	WATTS	RPM	CFM	WATTS	RPM
XYE04 (3)	1 (LOW)	929	128	699	782	148	794	663	164	880	514	187	976	377	202	1053
	2 (MED/LOW)	1036	157	732	870	177	827	803	198	905	649	217	996	508	236	1074
	3 (MED)	1106	181	760	956	204	849	878	225	928	755	245	1010	616	266	1092
	4 (MED/HI)	1147	197	776	1042	218	860	916	243	944	820	262	1017	671	286	1103
	5 (HI)	1272	252	830	1177	277	909	1037	304	986	975	323	1053	872	347	1125
XYE05 (4)	1 (LOW)	1256	220	776	1170	242	851	1077	266	931	988	298	1025	872	321	1113
	2 (MED/LOW)	1350	272	828	1279	292	893	1196	320	966	1105	347	1048	1003	372	1131
	3 (MED)	1449	323	866	1380	350	937	1303	370	996	1223	402	1071	1133	428	1149
	4 (MED/HI)	1488	345	882	1418	374	954	1357	394	1006	1264	424	1083	1160	442	1155
	5 (HI)	1677	471	966	1602	507	1034	1543	525	1083	1475	545	1131	1209	465	1162
XYE06 (5)	1 (LOW)	1548	310	720	1441	336	792	1337	370	864	1213	397	928	1097	421	988
	2 (MED/LOW)	1593	337	738	1488	363	805	1381	394	875	1271	425	937	1150	451	997
	3 (MED)	1880	532	827	1792	563	890	1719	588	944	1632	629	1006	1527	652	1061
	4 (MED/HI)	2066	689	895	1999	712	942	1907	761	999	1830	773	1048	1734	809	1100
	5 (HI)	2237	862	949	2163	882	996	2097	929	1036	1998	946	1085	1815	883	1115

Table 16: RPM Selection

Model	Size (Tons)	Airflow Option	Phase	Max BHP	Blower Sheave	Motor Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turns Open	Fully Closed
XYE	04 (3)	Std.					Direct Drive						
		Med	1	1.5	AK46	1VL34	N/A	792	875	958	1042	1125	1208
		Med	3	2.4	AK46	1VL34	N/A	792	875	958	1042	1125	1208
		H. Static	3	2.4	AK46	1VL44	N/A	1167	1250	1333	1417	1500	1593
XYE	05 (4)	Std.					Direct Drive						
		Med	1	1.5	AK46	1VL34	N/A	792	875	958	1042	1125	1208
		Med	3	2.4	AK46	1VL34	N/A	792	875	958	1042	1125	1208
		H. Static	3	2.4	AK46	1VL44	N/A	1167	1250	1333	1417	1500	1593
XYE	06 (5)	Std.					Direct Drive						
		Med	1	1.5	AK46	1VL34	N/A	792	875	958	1042	1125	1208
		Med	3	2.4	AK46	1VL34	N/A	792	875	958	1042	1125	1208
		H. Static	3	2.9	AK46	1VL44	N/A	1167	1250	1333	1417	1500	1593
XYE	07 (6)	Std.	3	2.4	AK74	1VL34	N/A	475	525	575	625	675	725
		Med.	3	2.9	AK74	1VL44	N/A	700	750	800	850	900	950
		H. Static	3	3.7	AK74	1VP50	N/A	850	900	950	1000	1050	1100
XYE	A7 (6)	Std.	3	2.4	AK74	1VL34	N/A	475	525	575	625	675	725
		Med.	3	2.9	AK74	1VL44	N/A	700	750	800	850	900	950
		H. Static	3	3.7	AK74	1VP50	N/A	850	900	950	1000	1050	1100
XYE	08 (7.5)	Std.	3	2.4	AK74	1VL34	N/A	475	525	575	625	675	725
		Med.	3	2.4	AK74	1VL44	N/A	700	750	800	850	900	950
		H. Static	3	3.7	AK74	1VP50	N/A	850	900	950	1000	1050	1100
XYE	09 (8.5)	Std.	3	2.4	AK74	1VL34	N/A	475	525	575	625	675	725
		Med.	3	2.4	AK74	1VL44	N/A	700	750	800	850	900	950
		H. Static	3	3.7	AK74	1VP50	N/A	850	900	950	1000	1050	1100

Table 17: Indoor Blower Specifications

Model	Size (Tons)	Airflow Option	Motor						Motor Sheave			Blower Sheave			Belt
			Phase	Max BHP	RPM	Eff.	SF	Frame	Datum Dia. (in.)	Bore (in.)	Model	Datum Dia. (in.)	Bore (in.)	Model	
XYE	04 (3)	Std.	Direct Drive												
		Med.	1	1.5	1725	0.79	1.15	56HZ	1.9 - 2.9	5/8	1VL34	4.2	3/4	AK46	A39
		Med.	3	2.4	1725	0.80	1.15	56Y	1.9 - 2.9	5/8	1VL34	4.2	3/4	AK46	A39
		H. Static	3	2.4	1725	0.80	1.15	56Y	2.8 - 3.8	5/8	1VL44	4.2	3/4	AK46	A40
XYE	05 (4)	Std.	Direct Drive												
		Med.	1	1.5	1725	0.79	1.15	56HZ	1.9 - 2.9	5/8	1VL34	4.2	3/4	AK46	A39
		Med.	3	2.4	1725	0.80	1.15	56Y	1.9 - 2.9	5/8	1VL34	4.2	3/4	AK46	A39
		H. Static	3	2.4	1725	0.80	1.15	56Y	2.8 - 3.8	5/8	1VL44	4.2	3/4	AK46	A40
XYE	06 (5)	Std.	Direct Drive												
		Med.	1	1.5	1750	0.83	1.15	56H	1.9 - 2.9	5/8	1VL34	4.2	3/4	AK46	A37
		Med.	3	2.4	1750	0.87	1.15	56HZ	1.9 - 2.9	5/8	1VL34	4.2	3/4	AK46	A37
		H. Static	3	2.9	1750	0.87	1.15	56Z	2.8 - 3.8	7/8	1VL44	4.2	3/4	AK46	A39
XYE	07 (6)	Std.	3	2.4	1725	0.80	1.15	56Y	1.9 - 2.9	5/8	1VL34	7.0	1	AK74	A47
		Med.	3	2.9	1725	0.81	1.15	56Y	2.8 - 3.8	7/8	1VL44	7.0	1	AK74	A48
		H. Static	3	3.7	1725	0.84	1.15	56HZ	3.4 - 4.4	7/8	1VP50	7.0	1	AK74	A48
XYE	A7 (6)	Std.	3	2.4	1725	0.80	1.15	56Y	1.9 - 2.9	5/8	1VL34	7.0	1	AK74	A47
		Med.	3	2.9	1725	0.81	1.15	56Y	2.8 - 3.8	7/8	1VL44	7.0	1	AK74	A48
		H. Static	3	3.7	1725	0.84	1.15	56HZ	3.4 - 4.4	7/8	1VP50	7.0	1	AK74	A48
XYE	08 (7.5)	Std.	3	2.4	1725	0.80	1.15	56Y	1.9 - 2.9	5/8	1VL34	7.0	1	AK74	A47
		Med.	3	2.4	1725	0.80	1.15	56Y	2.8 - 3.8	5/8	1VL44	7.0	1	AK74	A48
		H. Static	3	3.7	1725	0.84	1.15	56HZ	3.4 - 4.4	7/8	1VP50	7.0	1	AK74	A50
XYE	09 (8.5)	Std.	3	2.4	1725	0.80	1.15	56Y	1.9 - 2.9	5/8	1VL34	7.0	1	AK74	A47
		Med.	3	2.4	1725	0.80	1.15	56Y	2.8 - 3.8	5/8	1VL44	7.0	1	AK74	A48
		H. Static	3	3.7	1725	0.84	1.15	56HZ	3.4 - 4.4	7/8	1VP50	7.0	1	AK74	A50

Supply Air Drive Adjustment

CAUTION

Before making any blower speed changes review the installation for any installation errors, leaks or undesirable systems effects that can result in loss of airflow.

Even small changes in blower speed can result in substantial changes in static pressure and BHP. BHP and AMP draw of the blower motor will increase by the cube of the blower speed. Static pressure will increase by the square of the blower speed. Only qualified personnel should make blower speed changes, strictly adhering to the fan laws.

At unit start-up, the measured CFM may be higher or lower than the required CFM. To achieve the required CFM, the speed of the drive may have adjusted by changing the datum diameter (DD) of the variable pitch motor sheave as described below:

$$\left(\frac{\text{Required CFM}}{\text{Measured CFM}} \right) \cdot \text{Existing DD} = \text{New DD}$$

Use the following tables and the DD calculated per the above equation to adjust the motor variable pitch sheave.

EXAMPLE NEW DATUM DIAMETER

A 4 ton unit was selected to deliver 1,600 CFM with a 1VL34 motor sheave, but the unit is delivering 1,350 CFM. The variable pitch motor sheave is set at 4 turns open.

Use the equation to determine the required DD for the new motor sheave,

$$\left(\frac{1,600 \text{ CFM}}{1,350 \text{ CFM}} \right) \cdot 2.1 \text{ in.} = 2.48 \text{ in.}$$

Use Table 17 to locate the DD nearest to 2.48 in. Close the sheave to 2 turn open.

EXAMPLE NEW BHP

$$= (\text{Speed increase})^3 \cdot \text{Original BHP} = \text{New BHP}$$

$$= (\text{Speed increase})^3 \cdot \text{BHP at 1,350 CFM}$$

EXAMPLE NEW MOTOR AMPS

$$= (\text{Speed increase})^3 \cdot \text{Original Amps} = \text{New Amps}$$

$$= (\text{Speed increase})^3 \cdot \text{Amps at 1,350 CFM}$$

Table 18: Motor Sheave Datum Diameters

1VL34		1VL44		1VP50	
Turns Open	Datum Diameter	Turns Open	Datum Diameter	Turns Open	Datum Diameter
0	2.9	0	3.8	0	4.4
1/2	2.8	1/2	3.7	1/2	4.3
1	2.7	1	3.6	1	4.2
1-1/2	2.6	1-1/2	3.5	1-1/2	4.1
2	2.5	2	3.4	2	4.0
2-1/2	2.4	2-1/2	3.3	2-1/2	3.9
3	2.3	3	3.2	3	3.8
3-1/2	2.2	3-1/2	3.1	3-1/2	3.7
4	2.1	4	3.0	4	3.6
4-1/2	2.0	4-1/2	2.9	4-1/2	3.5
5	1.9	5	2.8	5	3.4

CAUTION

Belt drive blower systems MUST be adjusted to the specific static and CFM requirements for the application. The Belt drive blowers are NOT set at the factory for any specific static or CFM. Adjustments of the blower speed and belt tension are REQUIRED. Verify proper sheave alignment; tighten blower pulley and motor sheave set screws after these adjustments. Re-checking set screws and belt tension after 10-12 hrs. run time is recommended.

Table 19: Additional Static Resistance - XYE04-06

Model	Size (Tons)	CFM	Economizer ^{1 2}	4" Filter ¹	Electric Heat kW ²				
					6/6.5	9.2/10.5/11	13.8/14/16	23	---
XYE	04 (3.0)	900	0.15	---	0.00	0.00	0.01	0.01	---
		1000	0.18	---	0.00	0.00	0.02	0.02	---
		1100	0.21	---	0.01	0.01	0.02	0.03	---
		1200	0.24	---	0.01	0.01	0.02	0.03	---
		1300	0.28	---	0.01	0.01	0.03	0.03	---
		1400	0.33	---	0.02	0.02	0.03	0.04	---
		1500	0.44	---	0.02	0.02	0.04	0.04	---
XYE	05 (4.0)	1200	0.24	---	0.01	0.01	0.02	0.03	---
		1300	0.28	---	0.01	0.01	0.03	0.03	---
		1400	0.33	---	0.02	0.02	0.03	0.04	---
		1500	0.44	---	0.02	0.02	0.04	0.04	---
		1600	0.52	---	0.02	0.02	0.04	0.05	---
		1700	0.59	---	0.03	0.03	0.05	0.05	---
		1800	0.66	---	0.03	0.03	0.05	0.06	---
		1900	0.74	---	0.04	0.04	0.06	0.07	---
XYE	06 (5.0)	2000	0.81	---	0.04	0.04	0.07	0.08	---
		1800	0.66	---	0.03	0.03	0.05	0.06	---
		2000	0.81	---	0.04	0.04	0.07	0.08	---
		2200	0.95	---	0.06	0.06	0.08	0.09	---
		2400	1.10	---	0.07	0.07	0.10	0.11	---
		2500	1.17	---	0.08	0.08	0.11	0.12	---

1. Deduct these values from the available external static pressure shown in the respective Blower Performance Tables.

2. The pressure drop through the economizer is greater for 100% outdoor air than for 100% return air. If the resistance of the return air duct is less than 0.25 IWG, the unit will deliver less CFM during full economizer operation.

Table 20: Additional Static Resistance - XYE07, XYE A7

Model	Size (Tons)	CFM	Economizer ^{1 2}	4" Filter ¹	Electric Heat kW ²		
					6/6.5	16/16.5/17	24.8/25.5/27.8
XYE	07 (6) A7 (6)	1800	0.11	---	0.03	0.05	0.06
		1900	0.11	---	0.04	0.06	0.06
		2000	0.11	---	0.04	0.06	0.07
		2100	0.12	---	0.05	0.07	0.08
		2200	0.12	---	0.06	0.07	0.09
		2300	0.12	---	0.06	0.08	0.09
		2400	0.13	---	0.07	0.08	0.10
		2500	0.13	---	0.08	0.09	0.11
		2600	0.13	---	0.08	0.09	0.11
		2700	0.15	---	0.09	0.10	0.12
		2800	0.15	---	0.09	0.10	0.12
		2900	0.16	---	0.10	0.11	0.13
		3000	0.17	---	0.11	0.12	0.14

1. Deduct these values from the available external static pressure shown in the respective Blower Performance Tables.

2. The pressure drop through the economizer is greater for 100% outdoor air than for 100% return air. If the resistance of the return air duct is less than 0.25 IWG, the unit will deliver less CFM during full economizer operation.

Table 21: Additional Static Resistance - XYE08 thru 09

Model	Size (Tons)	CFM	Economizer ^{1 2}	4" Filter ¹	Electric Heat kW ²			
					16/16.5/17	24.8/25.5/27.8	32/33/34	41.7/42.4
XYE	08 (7.5), 09 (8.5)	2200	0.11	---	0.07	0.09	0.10	0.12
		2600	0.13	---	0.09	0.11	0.12	0.15
		3000	0.17	---	0.12	0.14	0.15	0.19
		3400	0.20	---	0.15	0.18	0.19	0.23
		3800	0.25	---	0.19	0.22	0.23	0.27
		4000	0.28	---	0.21	0.24	0.25	0.30
		4400	0.33	---	0.25	0.29	0.30	0.35
		4800	0.38	---	0.30	0.34	0.35	0.41
		5200	0.43	---	0.35	0.39	0.41	0.47
		5600	0.46	---	0.41	0.45	0.47	0.54
		6000	0.50	---	0.48	0.52	0.54	0.60

1. Deduct these values from the available external static pressure shown in the respective Blower Performance Tables.

2. The pressure drop through the economizer is greater for 100% outdoor air than for 100% return air. If the resistance of the return air duct is less than 0.25 IWG, the unit will deliver less CFM during full economizer operation.



Figure 23: Unit Control Board

Table 22: Smart Equipment™ UCB Details

Description		Function & Comments
Terminal Directional orientation: viewed with silkscreen labels upright		
Limit, 24 VAC power and shutdown connections from unit wiring harness at left on upper edge of UCB		
LIMIT	Monitored 24 VAC input through heat section limit switch(es)	If voltage is absent, indicating the heat section is over-temperature, the UCB will bring on the indoor blower
C	24 VAC, 75 VA transformer Common referenced to cabinet ground	Connects through circuit traces to thermostat connection strip C and indoor blower VFD pin C
24V	24 VAC, 75 VA transformer hot	Powers the UCB microprocessor, connects through circuit trace to the SD 24 terminal
SD 24	24 VAC hot out for factory accessory smoke detector, condensate overflow and/or user shutdown relay switching in series	Connects through circuit trace to thermostat connection strip SD-24. A wiring harness jumper plug connecting SD 24 to SD R is in place if factory accessories for unit shutdown are not used - this jumper plug must be removed if the switching of field-added external accessories for unit shutdown are wired between thermostat connection strip SD-24 and R
SD R	24 VAC hot return from factory accessory smoke detector, condensate overflow and user shutdown relay switching in series	Connects through circuit trace to the R terminal on the upper left of the board

Table 22: Smart Equipment™ UCB Details (Continued)

Description		Function & Comments
R	24 VAC hot for switched inputs to the UCB	Connects through circuit trace to the thermostat connection strip R terminal, right FAN OVR pin, right HPS1 pin, right HPS2 pin, lower DFS pin and lower APS pin
Terminal Thermostat connection strip on left edge of UCB		
W1	1st stage heating request, 24 VAC input switched from R	Not effective for cooling-only units
W2	2nd stage heating request, 24 VAC input switched from R	Not effective for cooling-only units or units with single-stage heat sections
Y1	1st stage cooling request, 24 VAC input switched from R	
Y2	2nd stage cooling request, 24 VAC input switched from R	Visible in the display menu when the #ClgStgs parameter is set for 2 or more, also effective for economizer free cooling supply air temperature reset when the #ClgStgs parameter is set for 1 or more
G	Continuous indoor blower request, 24 VAC input switched from R	
OCC	Occupancy request, 24 VAC input switched from R	Must have the OccMode parameter set for External to be effective
X	Hard lockout indicator, 24 volt output to a light thermostat LED	
R	24 VAC hot for thermostat switching and power	If field-added external accessories for unit shutdown are used, 24 VAC hot return from smoke detector, condensate overflow and/or user shutdown relay switching in series
SD-24	If field-added external accessories for unit shutdown are used, 24 VAC hot out for smoke detector, condensate over- flow and/or user shutdown relay switching in series	Unit wiring harness jumper plug for factory shutdown accessories must be removed if the switching of field-added external accessories for unit shutdown are wired between thermo- stat connection strip SD-24 and R
C	24 VAC common for thermostat power	
LEDs on left edge of UCB		
POWER	Green UCB power indicator	Lit indicates 24 VAC is present at C and 24V terminals
FAULT	Red hard lockout, networking error and firmware error indicator	1/2 second on/off flashing indicates one or more alarm is currently active, 1/10th second on/off flashing indicates a networking error (polarity, addressing, etc.) or a firmware error (likely correctable with re-loading from USB flash drive)
SA BUS	Green UCB SA bus communication transmission indicator	Lit/flickering indicates UCB SA bus communication is currently active, off indicates the UCB is awaiting SA bus communication
Terminal Space temperature sensor connections at center on upper edge of UCB		
ST	Space Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Positive of VDC circuit (3.625 VDC reading to COM with open circuit), effective if "Thermo- stat-only Control" parameter is set OFF, space sensor override momentary shorts ST to COM to initiate/terminate temporary occupancy
COM	Common for ST and SSO inputs	Negative of VDC circuit for ST and SSO inputs
SSO	Space Sensor Offset input from 0 to 20KΩ potentiometer	Positive of VDC circuit (3.625 VDC reading to COM with open circuit), 10KΩ/2.5 VDC is 0°F offset, 0Ω/0 VDC is maximum above offset and 20KΩ/3.4 VDC is maximum below offset from active space temperature setpoint

Table 22: Smart Equipment™ UCB Details (Continued)

Description		Function & Comments
Pin Temperature sensor connections at right on upper edge of UCB		
SAT+	Supply Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation; 3.625 VDC reading SAT+ to SAT– with open circuit. Used in heat/cool staging cutouts, free cooling operation, demand ventilation operation, comfort ventilation operation, economizer loading operation, VAV cooling operation, hydronic heat operation.
RAT+	Return Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation; 3.625 VDC reading RAT+ to RAT– with open circuit. Used in return air enthalpy calculation. Substitutes for space temperature if no other space temperature input is present.
OAT+	Outside Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation but may be a communicated value; 3.625 VDC reading OAT+ to OAT– with open circuit. Used in heat/cool cutouts, low ambient cooling determination, dry bulb free cooling changeover, outside air enthalpy calculation, economizer loading operation, heat pump demand defrost calculation.
CC1+	#1 refrigerant circuit Condenser Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for heat pump units, not required for A/C units; 3.625 VDC reading CC1+ to CC1– with open circuit. Used in heat pump demand defrost calculation.
EC1+	#1 refrigerant circuit Evaporator Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation; 3.625 VDC reading EC1+ to EC1– with open circuit. Used in suction line temperature safety.
CC2+	#2 refrigerant circuit Condenser Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for 2-compressor heat pump units, not required for 2-compressor A/C units, not active for 1-compressor units; 3.625 VDC reading CC2+ to CC2– with open circuit. Used in heat pump demand defrost calculation.
EC2+	#2 refrigerant circuit Evaporator Coil temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	Input required for operation of 2-compressor units, not active for 1-compressor units; 3.625 VDC reading EC2+ to EC2– with open circuit. Used in suction line temperature safety.
Pinned connections on right edge of UCB		
RAH+	Return Air Humidity input from 0-10 VDC @ 0-100% RH sensor	Input required for reheat units, optional in all other units, may be a communicated value. Used in return air enthalpy calculation, temperature/humidity setpoint reset, reheat operation.
DCT PRS+	Supply Duct Pressure input from 0-10 VDC @ 0-5" w.c. sensor	Input required for variable air volume units. Used in VAV indoor blower operation.
DFS (upper pin)	24 VAC hot return from Dirty Filter Switch	Optional input; switch closure for greater than 15 seconds during indoor blower operation initiates a notification alarm
DFS (lower pin)	24 VAC hot out for Dirty Filter Switch	Connects through circuit trace to the R terminal
APS (upper pin)	24 VAC hot return from Air Proving Switch	When this optional input is enabled: the air proving switch must close within 30 seconds of initiation of indoor blower operation and not open for greater than 10 seconds during in-door blower operation to allow heat/cool operation and prevent an "APS open" alarm; the air proving switch must open within 30 seconds of termination of indoor blower operation to prevent an "APS stuck closed" notification alarm
APS (lower pin)	24 VAC hot out for Air Proving Switch	Connects through circuit trace to the R terminal
C	Common for the VFD output	Negative of the VDC circuit for the VFD output

Table 22: Smart Equipment™ UCB Details (Continued)

Description		Function & Comments
VFD	2-10 VDC (0-100%) output for the indoor blower Variable Frequency Drive	Output is active with indoor blower operation. For CV units: this output provides stepped IntelliSpeed control of the indoor blower VFD based on fan-only, cooling stage and heating stage outputs. For VAV units: this output provides control of the indoor blower VFD based on supply duct static pressure input and setpoint.
VFDFLT	24 VAC hot input from the normally open VFD alarm contact	The VFD alarm contact switches from R within the unit wiring harness. 24 VAC input results in unit shutdown and a "VFD fault" alarm
Terminal at lower right corner of UCB		
24V FOR OUTPUTS	24 VAC hot for H1, H2, CN-FAN, AUX HGR, FAN C1 and C2 output relay contact switching	Output relay circuitry is isolated from other UCB components and the 24 VAC hot source may be from a second transformer in the unit
Pin Heat section connections at right on lower edge of UCB		
H1	24 VAC hot output for heat section stage 1	Not effective for cooling-only units. Output if demand is present and permissions allow one stage or two stages of heat section operation
H2	24 VAC hot output for heat section stage 2	Not effective for cooling-only units or units with single-stage heat sections. Output if demand is present and permissions allow two stages of heat section operation
MV	24 VAC hot input confirming heat section operation	Sourced from gas valve in gas heat units or first stage heat contactor in electric heat units. Input within 5 minutes from initiation of H1 output initiates the "Heat On Fan Delay" timer, loss of input following the termination of H1 output initiates the "Heat On Fan Delay" timer, no input within 5 minutes from initiation of H1 output initiates an "Ignition Failure" alarm, input for longer than 5 minutes without H1 output initiates a "Gas Valve Mis-wire" alarm
Pin Cooling and fan output connections at right on lower edge of UCB		
CN-FAN	24 VAC hot output for the condenser fan contactor coil	Output with either C1 or C2 output; interrupted during defrost cycle for heat pump units
AUX HGR	24 VAC hot output for hot gas reheat components	Effective only for reheat units, output with reheat operation
FAN	24 VAC hot output for indoor blower contactor coil/indoor blower VFD enable relay coil	Output with heat/cool operation, G input or schedule demand
C1	24 VAC hot output for compressor 1	If demand is present and permissions allow compressor 1 operation; output with compressor cooling, comfort ventilation cooling, reheat or heat pump heating demands
C2	24 VAC hot output for compressor 2	Not effective for one stage compressor UCBs. If demand is present and permissions allow compressor 2 operation; output with compressor cooling, comfort ventilation cooling or heat pump heating demands
Pin Refrigerant circuit safety switch and indoor blower overload connections at center on lower edge of UCB		
HPS1 (right pin)	24 VAC hot out for refrigerant circuit 1 High Pressure Switch	Connects through circuit trace to the R terminal
HPS1 (left pin)	24 VAC hot return from refrigerant circuit 1 High Pressure Switch	Input is only considered if C1 output is needed; input must be present to allow C1 output. Three HPS1 trips in a two hour period cause a "High Pressure Switch 1 Lockout" and C1 output is then prevented until alarm reset. Connects through circuit trace to the right LPS1 pin.
LPS1 (right pin)	24 VAC hot out for refrigerant circuit 1 Low Pressure Switch	Connects through circuit trace to the left HSP1 pin

Table 22: Smart Equipment™ UCB Details (Continued)

Description		Function & Comments
LPS1 (left pin)	24 VAC hot return from refrigerant circuit 1 Low Pressure Switch	Input is only considered after 30 seconds of C1 output; afterwards, input must be present to allow C1 output. Three LPS1 trips in a one hour period cause a "Low Pressure Switch 1 Lockout" and C1 output is then prevented until alarm reset.
HPS2 (right pin)	24 VAC hot out for refrigerant circuit 2 High Pressure Switch	Not effective for one stage compressor UCBs. Connects through circuit trace to the R terminal
HPS2 (left pin)	24 VAC hot return from refrigerant circuit 2 High Pressure Switch	Not effective for one stage compressor UCBs. Input is only considered if C2 output is needed; input must be present to allow C1 output. Three HPS2 trips in a two hour period cause a "High Pressure Switch 1 Lockout" and C2 output is then prevented until alarm reset. Connects through circuit trace to the right LPS2 pin.
LPS2 (right pin)	24 VAC hot out for refrigerant circuit 2 Low Pressure Switch	Not effective for one stage compressor UCBs. Connects through circuit trace to the left HSP2 pin
LPS2 (left pin)	24 VAC hot return from refrigerant circuit 2 Low Pressure Switch	Not effective for one stage compressor UCBs. Input is only considered after 30 seconds of C2 output; afterwards, input must be present to allow C2 output. Three LPS2 trips in a one hour period cause a "Low Pressure Switch 2 Lockout" and C2 output is then prevented until alarm reset.
FAN OVR (right pin)	24 VAC hot out for indoor blower FAN Overload relay contact/motor protector switch	Connects through circuit trace to the R terminal
FAN OVR (left pin)	24 VAC hot return from indoor blower FAN Overload relay contact/motor protector switch	Input is only considered if FAN output is needed; input must be present to allow FAN output and unit operation. One FAN OVR trip lasting longer than 5 minutes or three FAN OVR trips in a two hour period cause a "Fan Overload Lockout" and unit operation is then prevented until alarm reset.
Terminal SA BUS connections on at left on lower edge and center of UCB		
PWR	Power for SA ("Sensor-Actuator") BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the 15 VDC (reading to C) circuit for powering an optional netstat and/or Multi Touch gateway
C	Common for SA BUS power and communication circuits	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Negative of the SA BUS circuits
-	Communication for SA BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts lower than +) SA BUS communication circuit to optional economizer board, 4-stage board, fault detection & diagnostics board, netstat and/or Multi Touch gateway
+	Communication for SA BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts higher than -) SA BUS communication circuit to optional economizer board, 4-stage board, fault detection & diagnostics board, netstat and/or Multi Touch gateway
J8	6-pin phone jack connector	Incorporates the SA BUS terminals for convenience/alternate connection of SA BUS devices, primarily used for temporary service connection of the Multi Touch gateway
Item Integrated user interface at lower left corner of UCB		
Display	On-board, 2-line x 8-character back-lit display	On-board display, buttons and joystick allow access to UCB, economizer, 4-stage and FDD board parameters

Table 22: Smart Equipment™ UCB Details (Continued)

Description		Function & Comments
ENTER	Button for display menu acknowledgment and navigation	
CANCEL	Button for display menu navigation and zeroing of active compressor ASCD timer	
JOY	4-way Joystick for display menu navigation	
Item USB connector at right of UCB		
J10	Type A female Universal Serial Bus connector	Used for backup, restoration, & copying of board parameters as well as board software updating through a flash drive
J15	Factory wired SA Bus connector	
Optional communication sub-board at center of UCB		
Terminal FC BUS connections on left edge of the communication board		
FC+	FC ("Field Connected") BUS BACnet MSTP communication	Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to COM; at least 0.25 volts higher than –) FC bus BACnet MSTP communication circuit
FC–	FC ("Field Connected") BUS BACnet MSTP communication	Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to COM; at least 0.25 volts lower than +) FC bus BACnet MSTP communication circuit
COM	Common for the FC ("Field Connected") BUS BACnet MSTP communication circuit	Negative of the VDC FC bus BACnet MSTP communication circuit
SHLD	Shield for the FC ("Field Connected") BUS BACnet MSTP communication circuit	Earth ground reference of the cable to prevent interference on the FC bus BACnet MSTP communication circuit
Item Selector in red housing at left on top edge of the communication board		
EOL switch	End Of Line selector switch for the FC BUS BACnet MSTP communication circuit	ON selected only for the UCB that is the terminus of the FC bus BACnet MSTP communication cable to prevent signal "bounce-back"
LEDs on the communication board		
EOL	Green End Of Line indicator	Lit indicates the EOL switch is selected ON
FC BUS	Green FC bus communication transmission indicator	Lit/flickering indicates outgoing UCB FC bus communication is currently active, off indicates the UCB is awaiting incoming FC bus communication
ISO PWR	Green communication board Isolated Power indicator	Lit indicates the UCB is supplying power to the communication sub-board

Operation

Compressor Operation

Compressor Operation details include:

- Compressors are controlled by the Y1 through Y2 thermostat inputs. If the Lead/Lag function is turned OFF, a Y1 input energizes the C1 output when the compressor number 1 anti-short cycle delay is at 0 and all refrigerant safety devices are closed (Default 5 minutes).
- The FAN output for indoor fan operation energizes with any cooling output after the Indoor Fan Cool On Delay expires.
- When the thermostat cooling inputs are lost **and** the minimum runtime expires, the compressor outputs stage off (Default 3 minutes).
- A 30 second interstage delay occurs when multiple stages are requested.

NOTE: A Y2 input without a Y1 input energizes a C1 first and then C2 30 seconds later.

Economizer Sequences

Several functions can drive the economizer, including: minimum position, free cooling, economizer loading, and minimum outdoor air supply.

Economizer Minimum Position

The economizer minimum position is set during occupied mode when outside air is not suitable for free cooling. The position of the damper is set proportionally between the "Economizer Minimum Position and the Economizer Minimum Position Low Speed Fan" set points. On a constant volume single speed supply fan system both set-points should be set to the same value.

Free Cooling

Four types of free cooling options are available: dry bulb changeover, single enthalpy, dual enthalpy changeover, and Auto.

Dry Bulb Changeover

For dry bulb economizer operation, the outside air is suitable for free cooling if the outside air temperature is 1°F below the Economizer OAT Enable Setpoint **and** 1°F below the Return Air Temperature.

Free cooling is no longer available if the outside air temperature rises above **either** the Economizer OAT Enable setpoint **or** the return air temperature.

Single Enthalpy Changeover

For single enthalpy economizer operation, the outside air is suitable for free cooling if the outside air enthalpy is at least 1 BTU/lb below the Economizer Outside Air Enthalpy Setpoint **and** the outside air temperature is no greater than the RAT plus 9°F.

If the outside air temperature rises above the RAT plus 10°F, free cooling is no longer available. The outside air temperature must drop to no greater than RAT plus 9°F to enter free cooling again.

Free cooling is no longer available if the outside air enthalpy rises above the Economizer Outside Air Enthalpy Setpoint.

Dual Enthalpy Changeover

For dual enthalpy economizer operation, the outside air enthalpy must be lower than the return air enthalpy by 1 btu/lb **AND** the outside air temperature is no greater than the RAT plus 9°F.

Auto

The control determines the type of free cooling changeover based on which sensors are present and reliable. Conditions include:

- Return and outside air dry bulb = dry bulb changeover
- Return and outside air dry bulb and outside air humidity = single enthalpy
- Return and outside air dry bulb and return and outside air humidity = dual enthalpy
- If either the return or outside air dry bulb sensors are unreliable, free cooling is not available

Free Cooling Operation

When the control determines that the outside air is suitable, the first stage of cooling will always be free cooling.

Thermostat

In free cooling, with a thermostat input to Y1, the dampers modulate to control the supply air temperature to the Economizer Setpoint +/- 1°F (default 55°F).

If the thermostat provides an input to Y2 **and** the parameter Compressors Off in Free Cooling is turned OFF a compressor output energizes. The economizer dampers continue to modulate to control the supply air temperature to the Economizer Setpoint.

If the supply air temperature cannot be maintained within 5°F of the economizer setpoint, the first stage compressor (C1) will be turned on.

Sensor

In free cooling, with a demand from the zone/return sensor for the first stage of cooling, the dampers modulate to control the supply air temperature to the Economizer Setpoint +/- 1°F.

If the economizer output is at 100% **and** the SAT is greater than the Economizer setpoint + 1°F, the control starts a 12-minute timer to energize a compressor output.

If at any time the economizer output drops below 100% the timer stops and resets when the economizer output returns to 100%.

Once a compressor output is turned ON, the economizer dampers continue to modulate to control the supply air temperature to the Economizer Setpoint.

At no time will a compressor output be turned ON if the economizer output is less than 100%, even if the differential between zone (or return) temperature and the current cooling setpoint is great enough to demand more than one stage of cooling.

If the economizer output goes to minimum position **and** the SAT is less than Economizer Setpoint -1°F, the control starts a 12-minute timer to de-energize a compressor output.

If at any time the economizer output goes above the minimum position the timer stops and resets when the economizer output returns to minimum position.

If the demand for cooling from the space/return is satisfied, the economizer output will modulate to minimum position and the compressor outputs will be de-energized as long as their minimum run timers have expired.

Economizer Loading

Power Exhaust

Setpoints

- a. Economizer Enable ON
- b. Power Exhaust Enable ON

- | | |
|--------------------------------------|-------------|
| c. Modulating Power Exhaust | OFF |
| d. Exhaust VFD Installed | OFF |
| e. Building Pressure Sensor Enabled | OFF |
| f. Econo Damper Position For Exh Fan | ON Percent |
| g. Econo Damper Position For Exh Fan | OFF Percent |

Inputs

No inputs are present for non-modulating power exhaust.

Outputs

- a. 2-10 VDC from ECON on Economizer Expansion module
- b. 24 VAC from EX-FAN to energize exhaust fan on Economizer Expansion module

Operation

Operation details include:

- Compares economizer output to the Economizer Damper Position For Exhaust Fan On and OFF.
- Energizes exhaust fan when economizer output is above Economizer Damper Position For Exhaust Fan On.
- De-energizes exhaust fan when economizer output is below the Economizer Damper Position for Exhaust Fan OFF

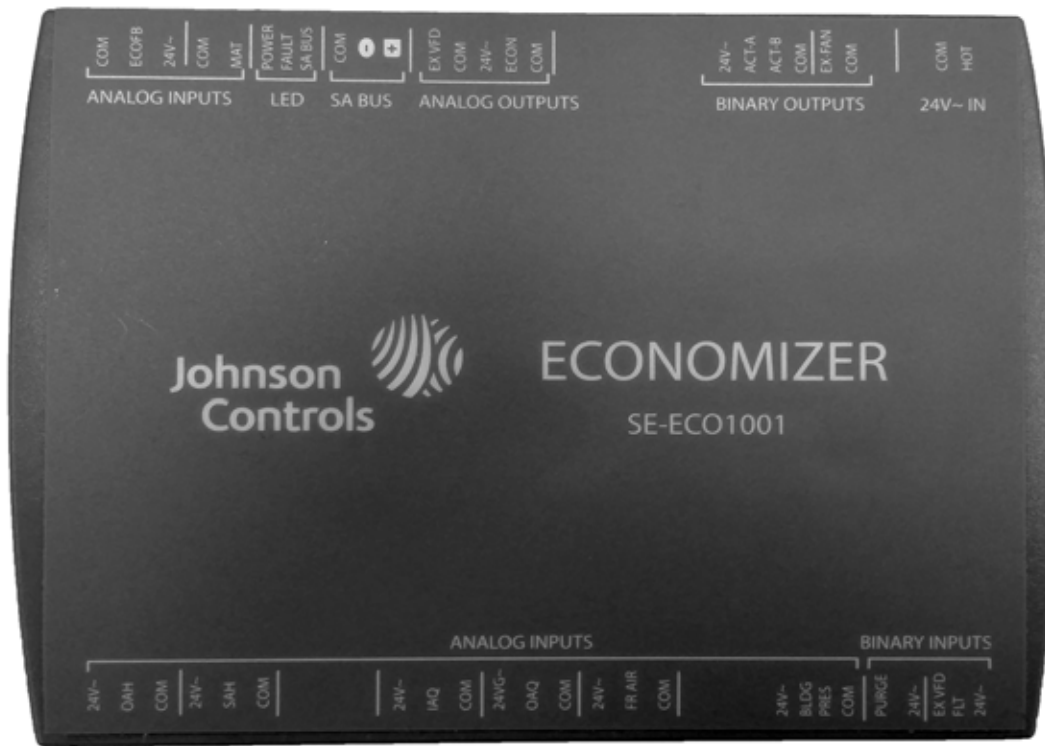


Figure 24: SE-ECO1001-1 Economizer Controller

Table 23: Smart Equipment™ Economizer Board Details

Board Label	Cover Label	Description	Function & Comments
Directional orientation: viewed with the center text of the cover label upright			
ANALOG INPUTS Terminal at left on upper edge of economizer board			
C	COM	24 VAC common/0-10 VDC negative for economizer actuator position feedback	Connects through circuit trace to 24V~ IN pin COM
IN2	ECOFB	0-10 VDC positive input from Economizer actuator position Feedback	EconDampPos parameter reports input status (0-100%). Used to meet Cali. Title 24 requirements for economizer actuator position feedback
R	24V~	24 VAC hot supplied for economizer actuator position feedback	Connects through circuit trace to 24V~ IN pin HOT
C	COM	Mixed Air Temperature sensor input from 10KΩ @ 77°F, Type III negative temperature coefficient thermistor	MAT parameter reports input status (°F/°C), 3.65 VDC reading MAT (+) to COM (-) with open circuit. Read-only use in current control revision.
IN1	MAT		
LEDs at left on upper edge of economizer board			
POWER	POWER	Green UCB power indicator	Lit indicates 24 VAC is present at 24V~ IN COM and HOT pins
FAULT	FAULT	Red networking error and firmware error indicator	1/10th second on/off flashing indicates a networking error (polarity, addressing, etc.) or a firmware error (likely correctable with re-loading from USB flash drive)
SA BUS	SA BUS	Green UCB SA bus communication transmission indicator	Lit/flickering indicates UCB-to-economizer board SA bus communication is currently active, off indicates the economizer board is awaiting SA bus communication

Table 23: Smart Equipment™ Economizer Board Details (Continued)

Board Label	Cover Label	Description	Function & Comments
SA BUS Pin connections at left on upper edge of economizer board			
C	COM	Common for SA BUS power and communication circuits	EconCtrlr parameter reports UCB-to-economizer board SA bus communication status. Negative of the SA BUS communication circuit to the UCB. Through the unit wiring harness, may continue on to the 4-stage board and/or fault detection & diagnostics board
-	-	Communication for SA BUS devices	EconCtrlr parameter reports UCB-to-economizer board SA BUS communication status. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts lower than +) SA BUS communication circuit to the UCB. Through the unit wiring harness, may continue on to the 4-stage board and/or fault detection & diagnostics board
+	+	Communication for SA BUS devices	EconCtrlr parameter reports UCB-to-economizer board SA BUS communication status. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts higher than -) SA BUS communication circuit to the UCB. Through the unit wiring harness, may continue on to the 4-stage board and/or fault detection & diagnostics board
ANALOG OUTPUTS Pin at center on upper edge of economizer board			
J4	EX VFD	2-10 VDC positive output for the modulating power Exhaust fan Variable Frequency Drive/ discharge damper modulating power exhaust actuator	ExFanVFD parameter reports output status (0-100%) when ExFType selection is Variable Frequency Fan; EAD-O parameter reports output status (0-100%) when ExFType selection is Modulating Damper. Used to ramp the power exhaust fan VFD/ position the discharge damper actuator.
	COM	24 VAC common/0-10 VDC negative for the power exhaust variable frequency drive/ discharge damper modulating power exhaust actuator	Connects through circuit trace to 24V~ IN pin COM
	24V~	24 VAC hot supplied for the discharge damper modulating power exhaust actuator and economizer actuator	Connects through circuit trace to 24V~ IN pin HOT
	ECON	2-10 VDC output for the Economizer actuator	Econ parameter reports output status (0-100%). Used to position the economizer actuator for minimum position, free cooling, demand ventilation, cooling economizer loading and purge functions
	COM	24 VAC common/0-10 VDC negative for economizer actuator	Connects through circuit trace to 24V~ IN pin COM
BINARY OUTPUTS Pin at right on upper edge of economizer board			
J3	24V~	24 VAC hot supplied for an incremental (floating control) economizer actuator	Connects through circuit trace to 24V~ IN pin HOT
	ACT-A	24 VAC hot outputs to position an incremental (floating control) economizer actuator	Unused in current control revision
	ACT-B	24 VAC return	Unused in current control revision
	COM	24 VAC common for an incremental (floating control) economizer actuator	Connects through circuit trace to 24V~ IN pin COM
	EX-FAN	24 VAC hot output to energize power exhaust fan contactor coil/VFD enable relay coil	ExFan parameter reports output status (Off-On) when ExFType selection is Non-Modulating, Modulating Damper or Variable Frequency Fan. Used to turn on/enable the power exhaust fan motor.
	COM	24 VAC common/0-10 VDC negative for economizer actuator	Connects through circuit trace to 24V~ IN pin COM

Table 23: Smart Equipment™ Economizer Board Details (Continued)

Board Label	Cover Label	Description	Function & Comments
24V~ IN Pin connections at right on upper edge of economizer board			
C	COM	24 VAC transformer Common referenced to cabinet ground	24 VAC common connection to power the economizer board. Connects through circuit traces to C/COM terminals and pins distributed on the economizer board.
R	HOT	24 VAC transformer HOT	24 VAC hot connection to power the economizer board. Connects through circuit traces to R/24V~ terminals and pins distributed on the economizer board.
ANALOG INPUTS Terminal on lower edge of economizer board			
R	24V~	24 VAC hot supplied for the outdoor air humidity sensor	Connects through circuit trace to 24V~ IN pin HOT
IN3	OAH	0-10 VDC positive input from the Outdoor Air Humidity sensor	OAH parameter reports input status (0-100%H). Used in outdoor air enthalpy calculation for dual enthalpy economizer free cooling changeover.
C	COM	24 VAC common/0-10 VDC negative for the outdoor air humidity sensor	Connects through circuit trace to 24V~ IN pin COM
R	24V~	24 VAC hot supplied for the supply air humidity sensor	Connects through circuit trace to 24V~ IN pin HOT
IN4	SAH	0-10 VDC positive input from the Supply Air Humidity sensor	SAH parameter reports input status (0-100%H). Unused in current control revision.
C	COM	24 VAC common/0-10 VDC negative for the supply air humidity sensor	Connects through circuit trace to 24V~ IN pin COM
R	24V~	24 VAC hot supplied for the indoor air quality sensor	Connects through circuit trace to 24V~ IN pin HOT
IN5	IAQ	0-10 VDC positive input from the Indoor Air Quality sensor	IAQRange parameter sets the CO2 parts per million measured by the indoor air quality sensor when it outputs 10 VDC; IAQ parameter reports input status (0-5000ppm). Used for demand ventilation functions if the NetIAQ parameter indicates ?Unrel.
C	COM	24 VAC common/0-10 VDC negative for the indoor air quality sensor	Connects through circuit trace to 24V~ IN pin COM
R	24V~	24 VAC hot supplied for the outdoor air quality sensor	Connects through circuit trace to 24V~ IN pin HOT
IN6	OAQ	0-10 VDC positive input from the Outdoor Air Quality sensor	OAQRange parameter sets the CO2 parts per million measured by the outdoor air quality sensor when it outputs 10 VDC; OAQ parameter reports input status (0-5000ppm). Used for demand ventilation function when DVent-Mode selection is Diff between IAQ and OAQ and the NetOAQ parameter indicates ?Unrel.
C	COM	24 VAC common/0-10 VDC negative for the outdoor air quality sensor	Connects through circuit trace to 24V~ IN pin COM
R	24V~	24 VAC hot supplied for the air monitoring station sensor	Connects through circuit trace to 24V~ IN pin HOT
IN7	FR AIR	0-10 VDC positive input from the air monitoring station sensor	MOA-Range parameter sets the cubic feet per minute/liters per second measured by the air monitoring station sensor when it outputs 10 VDC; Fr Air parameter reports input status (0-50000CFM/23595lps). Used for economizer minimum position reset in speed-controlled indoor blower applications.
C	COM	24 VAC common/0-10 VDC negative for the air monitoring station sensor	Connects through circuit trace to 24V~ IN pin COM
R	24V~	24 VAC hot supplied for the building pressure sensor	Connects through circuit trace to 24V~ IN pin HOT

Table 23: Smart Equipment™ Economizer Board Details (Continued)

Board Label	Cover Label	Description	Function & Comments
IN8	BLDG PRES	0-5 VDC positive input from the Building Pressure sensor	BldgPres parameter reports input status (-.250-.250"/w/-.062-.062kPa). Used for modulating power exhaust functions when ExFType selection is Modulating Damper or Variable Frequency Fan.
C	COM	24 VAC common/0-5 VDC negative for the building pressure sensor	Connects through circuit trace to 24V~ IN pin COM
BINARY INPUTS at right on lower edge of economizer board			
IN9	PURGE	24 VAC hot input from the PURGE dry contact	Purge parameter reports input status (False with 0 VAC input-True with 24 VAC input). When Purge status is True, heating and cooling operation is prevented, the indoor blower and power exhaust fan operate, the economizer actuator is positioned to 100%.
	24V~	24 VAC hot supplied for the purge dry contact	Connects through circuit trace to 24V~ IN pin HOT
IN10	EX VFD FLT	24 VAC hot input from the power Exhaust Variable Frequency Drive Fault contact	ExFanVFDFlt parameter reports input status (Normal with 0 VAC input-Alarm with 24 VAC input) when ExFType selection is Variable Frequency Fan. When ExFanVFDFlt status is Alarm, EX-FAN fan output is prevented.
	24V~	24 VAC hot supplied for the power exhaust variable frequency drive fault contact	Connects through circuit trace to 24V~ IN pin HOT

Start-Up

Prestart Check List

After installation has been completed:

1. Check the electrical supply voltage being supplied. Be sure that it is the same as listed on the unit nameplate.
2. Set the room thermostat to the off position.
3. Turn unit electrical power on.
4. Set the room thermostat fan switch to on.
5. Check indoor blower rotation.
 - If blower rotation is in the wrong direction. Refer to Phasing Section in general information section.
 Check blower drive belt tension.
6. Check the unit supply air (CFM).
7. Measure evaporator fan motor's amp draw.
8. Set the room thermostat fan switch to off.
9. Turn unit electrical power off.

Operating Instructions

1. Turn unit electrical power on.

NOTE: Prior to each cooling season, the crankcase heaters must be energized at least 10 hours before the system is put into operation.

2. Set the room thermostat setting to lower than the room temperature.

3. First stage compressors will energize after the built-in time delay (five minutes).

Post Start Check List

1. Verify proper system pressures.
2. Measure the temperature drop across the evaporator coil.

Troubleshooting

WARNING

Troubleshooting of components may require opening the electrical control box with the power connected to the unit. **Use extreme care when working with live circuits!** Check the unit nameplate for the correct line voltage and set the voltmeter to the correct range before making any connections with line terminals.

When not necessary, shut off all electric power to the unit prior to any of the following maintenance procedures so as to prevent personal injury.

CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation, which could cause injury to person and/or damage unit components. Verify proper operation after servicing.

Table 24: XYE04 Charging Table

Air Flow Indoor Db/Wb	Outdoor DB (F)	Suction P (psig)	Suction Temp. (F)	Liquid P (psig)	Liquid Temp. (F)	Delta T Db (F)	Compr. amps
300 Cfm/Ton 80/62	75	137	62	273	81	-25	8.0
	85	136	63	318	90	-26	9.1
	95	136	63	362	99	-26	10.2
300 Cfm/Ton 80/67	75	136	62	274	81	-25	8.0
	85	140	64	320	90	-24	9.2
	95	143	65	366	100	-23	10.3
300 Cfm/Ton 80/72	75	136	62	274	81	-25	8.0
	85	142	65	321	91	-23	9.2
	95	149	67	369	101	-20	10.4
300 Cfm/Ton 75/62	75	131	60	272	80	-23	8.0
	85	132	61	316	90	-22	9.1
	95	133	62	361	99	-22	10.2
400 Cfm/Ton 80/62	75	142	64	275	81	-23	8.0
	85	143	65	319	91	-23	9.1
	95	145	66	364	100	-23	10.2
400 Cfm/Ton 80/67	75	143	64	275	81	-23	8.0
	85	146	66	321	91	-22	9.1
	95	148	67	367	101	-21	10.3
400 Cfm/Ton 80/72	75	144	64	275	81	-22	8.0
	85	148	66	322	91	-21	9.1
	95	152	68	370	101	-19	10.3
400 Cfm/Ton 75/62	75	136	62	273	81	-21	8.0
	85	138	63	318	90	-20	9.1
	95	140	64	363	100	-19	10.2

Table 25: XYE05 Charging Table

Air Flow Indoor Db/Wb	Outdoor DB (F)	Suction P (psig)	Suction Temp. (F)	Liquid P (psig)	Liquid Temp. (F)	Delta T Db (F)	Compr. amps
300 Cfm/Ton 80/62	75	135	60	274	79	-25	10.6
	85	135	60	319	89	-26	12.1
	95	136	61	363	99	-26	13.7
300 Cfm/Ton 80/67	75	135	60	274	79	-25	10.7
	85	139	61	320	89	-24	12.2
	95	143	62	366	99	-23	13.7
300 Cfm/Ton 80/72	75	134	60	275	79	-26	10.7
	85	142	62	322	89	-23	12.2
	95	150	64	369	99	-20	13.8
300 Cfm/Ton 75/62	75	129	58	273	79	-23	10.6
	85	131	59	317	89	-22	12.1
	95	133	60	362	99	-22	13.6
400 Cfm/Ton 80/62	75	139	63	274	79	-23	10.6
	85	142	63	320	89	-23	12.1
	95	144	63	365	99	-22	13.7
400 Cfm/Ton 80/67	75	140	64	275	79	-22	10.7
	85	145	64	321	89	-22	12.2
	95	149	64	367	99	-21	13.7
400 Cfm/Ton 80/72	75	142	65	276	80	-22	10.8
	85	148	65	323	90	-20	12.2
	95	154	65	369	100	-19	13.7
400 Cfm/Ton 75/62	75	134	60	273	79	-20	10.6
	85	137	61	318	89	-20	12.1
	95	140	61	364	99	-19	13.6

Table 26: XYE06 Charging Table

Air Flow Indoor Db/Wb	Outdoor DB (F)	Suction P (psig)	Suction Temp. (F)	Liquid P (psig)	Liquid Temp. (F)	Delta T Db (F)	Compr. amps
300 Cfm/Ton 80/62	75	138	62	283	78	-26	13.7
	85	138	62	328	88	-26	15.6
	95	139	61	374	98	-26	17.4
300 Cfm/Ton 80/67	75	138	61	282	78	-26	13.7
	85	142	62	331	88	-25	15.7
	95	145	64	379	98	-24	17.6
300 Cfm/Ton 80/72	75	138	61	281	78	-26	13.7
	85	145	63	333	88	-23	15.7
	95	152	66	384	99	-21	17.8
300 Cfm/Ton 75/62	75	132	59	281	78	-23	13.6
	85	134	60	328	88	-23	15.5
	95	136	61	375	98	-22	17.5
400 Cfm/Ton 80/62	75	143	64	284	79	-23	13.8
	85	145	64	331	89	-23	15.7
	95	148	65	379	98	-22	17.6
400 Cfm/Ton 80/67	75	144	64	283	79	-23	13.8
	85	147	65	333	89	-22	15.7
	95	151	66	382	99	-21	17.7
400 Cfm/Ton 80/72	75	144	64	283	78	-22	13.7
	85	149	65	334	89	-21	15.8
	95	154	66	386	99	-19	17.8
400 Cfm/Ton 75/62	75	137	61	283	78	-21	13.7
	85	140	62	330	88	-20	15.6
	95	143	63	378	98	-19	17.6

Table 27: XYE07 Charging Table

Air Flow Indoor Db/Wb	Outdoor DB	Suction Pressure	Suction Temp.	Discharge Pressure	Liquid Temp.	Delta T Db	Entering Evap Db	Leaving Evap Db	Compressor Amps
300 Cfm/Ton 80/62	75	123	56	276	80	30	80	50	11.8
	85	125	55	314	88	29	80	51	12.9
	95	129	56	360	99	28	80	52	14.4
300 Cfm/Ton 80/67	75	131	67	275	78	25	80	55	11.5
	85	137	62	323	90	25	80	55	13.2
	95	141	61	370	101	23	80	57	14.8
300 Cfm/Ton 80/72	75	153	71	372	100	18	80	62	14.2
	85	146	73	323	88	19	80	61	12.6
	95	139	73	280	78	20	80	60	11.2
300 Cfm/Ton 75/62	75	124	54	273	79	25	75	50	11.0
	85	127	54	316	89	24	75	51	12.3
	95	130	55	362	99	23	75	52	13.8
400 Cfm/Ton 80/62	75	129	59	276	79	27	80	53	10.9
	85	132	59	318	89	26	80	54	12.3
	95	137	61	365	100	25	80	55	13.9
400 Cfm/Ton 80/67	75	139	72	280	79	22	80	58	10.9
	85	143	69	324	90	22	80	58	12.3
	95	148	64	371	101	21	80	59	13.8
400 Cfm/Ton 80/72	75	144	76	284	78	17	80	63	11.0
	85	150	76	329	89	16	80	64	12.4
	95	157	76	375	100	16	80	64	13.9
400 Cfm/Ton 75/62	75	130	58	275	79	22	75	53	11.2
	85	133	57	319	89	22	75	53	12.3
	95	136	57	365	100	21	75	54	13.9

Table 28: XYE7 Charging Table

Air Flow Indoor Db/Wb	Outdoor DB	Suction Pressure	Suction Temp.	Liquid Pressure	Liquid Temp.	Delta T Db	Compressor Amps
300 Cfm/Ton 80/62	75	130	67	256	78	-25	10.8
	85	132	66	300	88	-26	12.1
	95	133	65	344	98	-26	13.4
300 Cfm/Ton 80/67	75	131	63	256	78	-26	10.8
	85	135	65	301	88	-25	12.2
	95	139	67	346	98	-24	13.5
300 Cfm/Ton 80/72	75	131	58	256	78	-26	10.8
	85	138	63	301	88	-23	12.2
	95	145	68	347	99	-21	13.5
300 Cfm/Ton 75/62	75	125	62	255	78	-23	10.8
	85	128	63	299	88	-23	12.1
	95	130	63	344	98	-22	13.4
400 Cfm/Ton 80/62	75	134	70	257	78	-23	10.9
	85	137	69	301	88	-22	12.2
	95	141	68	345	98	-22	13.5
400 Cfm/Ton 80/67	75	135	69	257	78	-22	10.9
	85	139	68	301	88	-22	12.2
	95	143	68	345	98	-21	13.5
400 Cfm/Ton 80/72	75	136	68	257	78	-22	10.9
	85	141	68	302	88	-21	12.2
	95	146	68	346	98	-19	13.6
400 Cfm/Ton 75/62	75	130	64	256	78	-20	10.8
	85	133	65	300	88	-20	12.1
	95	137	65	344	98	-19	13.4

Table 29: XYE08 Charging Table System 1

Air Flow Indoor Db/Wb	Outdoor DB	Suction Pressure	Suction Temp. (F)	Discharge Pressure	Liquid Temp. (F)	Delta T Db	Entering Evap. Db	Leaving Evap. Db	Compressor #1 Amps
300 Cfm/Ton 80/62	75	124	52	282	79	31	80	49	7.3
	85	126	53	325	90	29	80	51	8.1
	95	129	54	371	100	28	80	52	9.1
300 Cfm/Ton 80/67	75	136	57	289	80	26	80	54	7.3
	85	138	58	332	91	25	80	55	8.2
	95	136	62	373	99	25	80	55	9.0
300 Cfm/Ton 80/72	75	149	62	295	80	21	80	59	7.4
	85	151	63	339	90	20	80	60	8.3
	95	154	65	386	101	19	80	61	9.2
300 Cfm/Ton 75/62	75	124	52	282	79	26	75	49	7.2
	85	126	53	326	90	25	75	50	8.0
	95	129	55	372	100	23	75	52	9.0
400 Cfm/Ton 80/62	75	131	54	285	80	28	80	52	7.2
	85	134	61	327	89	27	80	53	8.1
	95	136	62	373	99	25	80	55	9.0
400 Cfm/Ton 80/67	75	143	59	293	80	23	80	57	7.3
	85	145	60	335	90	22	80	58	8.3
	95	147	61	381	100	21	80	59	9.1
400 Cfm/Ton 80/72	75	156	65	300	81	18	80	62	7.5
	85	158	66	343	91	17	80	63	8.3
	95	160	66	390	101	16	80	64	9.2
400 Cfm/Ton 75/62	75	131	54	285	80	23	75	52	7.2
	85	133	55	329	90	22	75	53	8.1
	95	135	56	377	101	21	75	54	9.1

Table 30: XYE08 Charging Table System 2

Air Flow Indoor Db/Wb	Outdoor DB	Suction Pressure	Suction Temp. (F)	Discharge Pressure	Liquid Temp. (F)	Delta T Db	Entering Evap. Db	Leaving Evap. Db	Compressor #2 Amps
300 Cfm/Ton 80/62	75	124	54	283	79	31	80	49	7.1
	85	127	55	327	90	29	80	51	7.9
	95	129	57	374	100	28	80	52	8.8
300 Cfm/Ton 80/67	75	136	58	288	80	26	80	54	7.1
	85	140	59	334	91	25	80	55	8.0
	95	137	64	376	99	25	80	55	8.7
300 Cfm/Ton 80/72	75	149	64	294	80	21	80	59	7.2
	85	152	64	339	90	20	80	60	8.0
	95	156	66	387	101	19	80	61	8.9
300 Cfm/Ton 75/62	75	124	54	283	79	26	75	49	7.0
	85	127	56	328	90	25	75	50	7.8
	95	130	57	376	100	23	75	52	8.8
400 Cfm/Ton 80/62	75	130	56	286	80	28	80	52	7.1
	85	134	62	329	89	27	80	53	7.9
	95	137	64	376	99	25	80	55	8.7
400 Cfm/Ton 80/67	75	143	61	293	80	23	80	57	7.2
	85	146	62	336	90	22	80	58	8.0
	95	148	63	383	100	21	80	59	8.8
400 Cfm/Ton 80/72	75	156	66	299	81	18	80	62	7.3
	85	159	67	343	91	17	80	63	8.0
	95	162	68	392	101	16	80	64	8.9
400 Cfm/Ton 75/62	75	130	56	286	80	23	75	52	7.1
	85	133	57	332	90	22	75	53	7.9
	95	136	58	381	101	21	75	54	8.9

Table 31: XYE09 Charging Table System 1

Air Flow Indoor Db/Wb	Outdoor DB	Suction Pressure	Suction Temp. (F)	Discharge Pressure	Liquid Temp. (F)	Delta T Db	Entering Evap. Db	Leaving Evap. Db	Compressor #1 Amps
300 Cfm/Ton 80/62	75	125	58	291	79	30	80	50	8.4
	85	137	60	336	89	29	80	51	9.4
	95	141	62	384	100	28	80	52	10.4
300 Cfm/Ton 80/67	75	134	62	296	79	25	80	55	8.7
	85	136	64	341	89	24	80	56	9.6
	95	140	66	392	100	23	80	57	10.8
300 Cfm/Ton 80/72	75	146	67	306	80	20	80	60	8.6
	85	149	69	349	90	19	80	61	9.6
	95	153	71	401	101	18	80	62	10.7
300 Cfm/Ton 75/62	75	125	59	292	79	24	75	51	8.5
	85	131	61	337	89	23	75	52	9.6
	95	139	63	387	100	22	75	53	10.8
400 Cfm/Ton 80/62	75	132	62	340	90	26	80	54	9.5
	85	145	63	339	90	26	80	54	9.4
	95	146	65	388	100	25	80	55	10.6
400 Cfm/Ton 80/67	75	141	65	302	80	22	80	58	8.7
	85	143	66	345	90	21	80	59	9.6
	95	146	68	396	100	21	80	59	10.8
400 Cfm/Ton 80/72	75	151	70	309	80	18	80	62	8.8
	85	156	71	354	91	16	80	64	9.7
	95	159	73	403	101	16	80	64	10.9
400 Cfm/Ton 75/62	75	140	61	294	79	21	75	54	8.4
	85	154	63	340	90	20	75	55	9.4
	95	163	65	389	100	20	75	55	10.6

Table 32: XYE09 Charging Table System 2

Air Flow Indoor Db/Wb	Outdoor DB	Suction Pressure	Suction Temp. (F)	Discharge Pressure	Liquid Temp. (F)	Delta T Db	Entering Evap. Db	Leaving Evap. Db	Compressor #2 Amps
300 Cfm/Ton 80/62	75	127	59	286	80	30	80	50	7.7
	85	130	61	331	91	29	80	51	8.7
	95	133	64	379	101	28	80	52	9.8
300 Cfm/Ton 80/67	75	138	62	291	80	25	80	55	7.9
	85	141	64	335	91	24	80	56	8.8
	95	145	66	386	101	23	80	57	10.0
300 Cfm/Ton 80/72	75	151	66	299	82	20	80	60	7.9
	85	154	68	342	91	19	80	61	8.8
	95	157	70	394	102	18	80	62	10.0
300 Cfm/Ton 75/62	75	128	59	287	80	24	75	51	7.8
	85	131	62	333	91	23	75	52	8.9
	95	135	64	383	101	22	75	53	10.1
400 Cfm/Ton 80/62	75	137	63	335	91	26	80	54	8.8
	85	136	63	334	91	26	80	54	8.7
	95	140	66	383	101	25	80	55	9.8
400 Cfm/Ton 80/67	75	144	64	296	81	22	80	58	8.0
	85	147	66	339	91	21	80	59	8.8
	95	151	68	390	102	21	80	59	10.0
400 Cfm/Ton 80/72	75	156	69	302	82	18	80	62	8.0
	85	160	70	346	92	16	80	64	9.0
	95	164	72	396	102	16	80	64	10.1
400 Cfm/Ton 75/62	75	134	60	289	80	21	75	54	7.7
	85	137	63	335	91	20	75	55	8.7
	95	140	65	384	101	20	75	55	9.8

Smart Equipment™ Control Board Navigation Components

The following components are needed to access the control points in the Smart Equipment™ control. Installation and operation guides are available from your equipment dealer or distributor.

1. Local LCD on Unit Control Board.
2. Mobile Access Portal (MAP) Gateway (Portable).
 - Source 1 P/N S1-JC-MAP1810-OP

3. *MAP Gateway Quick Start Guide* P/N 24-10737-16

4. *MAP Gateway Instruction* P/N 24-10737-8

For more information on the Smart Equipment™ unit control board navigation, refer to the *Smart Equipment™ Quick Start Guide*.

NOTE: For more in-depth sequence of operation of the Smart Equipment™ control, refer to the *Smart Equipment™ Controls Sequence of Operation Overview* LIT-12011950.

Start-Up Sheet

START-UP & SERVICE DATA INSTRUCTION

COMMERCIAL PACKAGE UNITS

3.0 To 40.0 TONS

START-UP CHECKLIST

Date: _____

Job Name: _____

Customer Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Model Number: _____ Serial Number: _____

Qualified Start-up Technician: _____ Signature: _____

HVAC Contractor: _____ Phone: _____

Address: _____

Contractor's E-mail Address: _____

Electrical Contractor: _____ Phone: _____

Distributor Name: _____ Phone: _____

WARRANTY STATEMENT

Johnson Controls/Ducted Systems is confident that this equipment will operate to the owner's satisfaction if the proper procedures are followed and checks are made at initial start-up. This confidence is supported by the 30 day dealer protection coverage portion of our standard warranty policy which states that Johnson Controls/Ducted Systems will cover parts and labor on new equipment start-up failures that are caused by a defect in factory workmanship or material, for a period of 30 days from installation. Refer to the current standard warranty policy and warranty manual for details.

In the event that communication with Johnson Controls/Ducted Systems is required regarding technical and/or warranty concerns, all parties to the discussion should have a copy of the equipment start-up sheet for reference. A copy of the original start-up sheet should be filed with the Technical Services Department.

The packaged unit is available in constant or variable air volume versions with a large variety of custom options and accessories available. Therefore, some variation in the startup procedure will exist depending upon the products capacity, control system, options and accessories installed.

This start-up sheet covers all startup check points common to all package equipment. In addition it covers essential startup check points for a number of common installation options. Depending upon the particular unit being started not all sections of this startup sheet will apply. Complete those sections applicable and use the notes section to record any additional information pertinent to your particular installation.

Warranty claims are to be made through the distributor from whom the equipment was purchased.

EQUIPMENT STARTUP

Use the local LCD or Mobile Access Portal (MAP) Gateway to complete the start-up.

A copy of the completed start-up sheet should be kept on file by the distributor providing the equipment and a copy sent to:

Johnson Controls/Ducted Systems
Technical Services Department
5005 York Drive
Norman, OK 73069

SAFETY WARNINGS

The inspections and recording of data outlined in this procedure are required for start-up of Johnson Controls/Ducted Systems' packaged products. Industry recognized safety standards and practices must be observed at all times. General industry knowledge and experience are required to assure technician safety. It is the responsibility of the technician to assess all potential dangers and take all steps warranted to perform the work in a safe manner. By addressing those potential dangers, prior to beginning any work, the technician can perform the work in a safe manner with minimal risk of injury.

WARNING

Lethal voltages are present during some start-up checks. Extreme caution must be used at all times.

WARNING

Moving parts may be exposed during some startup checks. Extreme caution must be used at all times.

NOTE: Read and review this entire document before beginning any of the startup procedures.

DESIGN APPLICATION INFORMATION

This information will be available from the specifying engineer who selected the equipment. If the system is a VAV system the CFM will be the airflow when the remote VAV boxes are in the

full open position and the frequency drive is operating at 60 HZ. **Do not proceed with the equipment start-up without the design CFM information.**

Design Supply Air CFM: _____ Design Return Air CFM: _____

Design Outdoor Air CFM At Minimum Position: _____

Total External Static Pressure: _____

Supply Static Pressure: _____

Return Static Pressure: _____

Design Building Static Pressure: _____

Outside Air Dilution: Economizer Position Percentage: _____ CFM: _____

Supply Gas Pressure After Regulator W/o Heat Active _____ Inches _____

ADDITIONAL APPLICATION NOTES FROM SPECIFYING ENGINEER:

1034349-UCL-F-0318

REFERENCE

General Inspection	Completed	See Notes
Unit inspected for shipping, storage, or rigging damage	☐	☐
Unit installed with proper clearances	☐	☐
Unit installed within slope limitations	☐	☐
Refrigeration system checked for gross leaks (presence of oil)	☐	☐
Terminal screws and wiring connections checked for tightness	☐	☐
Filters installed correctly and clean	☐	☐
Economizer hoods installed in operating position	☐	☐
Condensate drain trapped properly, refer to Installation Manual	☐	☐
Economizer damper linkage tight	☐	☐
Gas Heat vent hood installed	☐	☐
All field wiring (power and control) complete	☐	☐

Air Moving Inspection	Completed	See Notes
Alignment of drive components	☐	☐
Belt tension adjusted properly	☐	☐
Blower pulleys tight on shaft, bearing set screws tight, wheel tight to shaft	☐	☐
Pressure switch or transducer tubing installed properly	☐	☐

Exhaust Inspection Powered ☐ Barometric Relief ☐	Completed	See Notes
Check hub for tightness	☐	☐
Check fan blade for clearance	☐	☐
Check for proper rotation	☐	☐
Check for proper mounting (screen faces towards unit)	☐	☐
Prove operation by increasing minimum setting on economizer	☐	☐

Economizer Inspection Standard ☐ BAS ☐	Completed	See Notes
CO ₂ sensor installed Yes ☐ No ☐	☐	☐
Check economizer setting (Reference Smart Equipment™ Control Board LCD menu location)	☐	☐
Prove economizer open/close through Smart Equipment™ Board Setting	☐	☐

Reheat Mode Normal ☐ or Alternate ☐ Not Applicable ☐
Humidity Sensor (2SH0401) _____

Operating Measurements - Air Flow

Fan operates with proper rotation (All VFD equipped units with the optional Manual Bypass must be phased for correct blower rotation with the Bypass switch set in the LINE position)		ID Fans ☐	Exh. Fans ☐	Cond. Fans ☐
Pressure drop across dry evaporator coil (At maximum design CFM) ¹				IWC
External Static Pressure				IWC
Return Static Pressure				IWC
Supply Static Pressure				IWC
Supply Air CFM Using Dry Coil Chart				CFM
Final Adjusted Supply Air CFM ²				CFM

1. Consult the proper airflow to pressure drop table to obtain the actual airflow at the measured pressure differential.
2. Was a motor pulley adjustment or change required to obtain the correct airflow?
Was it necessary to increase or decrease the airflow to meet the design conditions?
If the motor pulley size was changed, measure the outside diameters of the motor and blower pulleys and record those diameters here;

Blower Motor HP _____ FLA _____ RPM _____

Pulley Pitch Diameter _____ Turns Out _____ Final Turns Out _____

Blower Pulley Pitch Diameter _____ Fixed Sheave _____

ELECTRICAL DATA

T1 - T2 _____ Volts T2 - T3 _____ Volts
Control Voltage _____ Volts T1 - T3 _____ Volts

Device	Nameplate	Measured List All Three Amperages
Supply Fan Motor ^{1, 2}	AMPS	AMPS
Exhaust Motor (Dampers 100%)	AMPS	AMPS
Condenser Fan #1	AMPS	AMPS
Condenser Fan #2 (if equipped)	AMPS	AMPS
Condenser Fan #3 (if equipped)	AMPS	AMPS
Condenser Fan #4 (if equipped)	AMPS	AMPS
Compressor #1	AMPS	AMPS
Compressor #2 (if equipped)	AMPS	AMPS
Compressor #3 (if equipped)	AMPS	AMPS
Compressor #4 (if equipped)	AMPS	AMPS

1. VAV units with heat section - simulate heat call to drive VAV boxes and VFD/IGV to maximum design airflow position.
2. VAV units without heat section - VAV boxes must be set to maximum design airflow position.

1034349-UCL-F-0318

OPERATING MEASUREMENTS - COOLING

Stage	Discharge Pressure	Discharge Temp.	Liquid Line Temp. ¹	Subcooling ²	Suction Pressure	Suction Temp.	Superheat
First	#	°	°	°	#	°	°
Second (if equipped)	#	°	°	°	#	°	°
Third (if equipped)	#	°	°	°	#	°	°
Fourth (if equipped)	#	°	°	°	#	°	°
Reheat 1st Stage	#	°	°	°	#	°	°

1. Liquid temperature should be taken before filter/drier.

2. Subtract 10 psi from discharge pressure for estimated liquid line pressure

Outside air temperature	_____	°F db	_____	°F wb	_____	%RH
Return Air Temperature	_____	°F db	_____	°F wb	_____	%RH
Mixed Air Temperature	_____	°F db	_____	°F wb	_____	%RH
Supply Air Temperature	_____	°F db	_____	°F wb	_____	%RH

REFRIGERANT SAFETIES

Action	Completed	See Notes
Prove Compressor Rotation (3 phase only) by gauge pressure	☐	☐
Prove High Pressure Safety, All Systems	☐	☐
Prove Low Pressure Safety, All Systems	☐	☐

OPERATING MEASUREMENTS - GAS HEATING
 Fuel Type: ☐ Natural Gas ☐ LP Gas

Action	Completed	See Notes
Check for gas leaks	☐	☐
Prove Ventor Motor Operation	☐	☐
Prove Primary Safety Operation	☐	☐
Prove Auxiliary Safety Operation	☐	☐
Prove Rollout Switch Operation	☐	☐
Prove Smoke Detector Operation	☐	☐
Manifold Pressure	Stage 1	IWC ☐
	Stage 2 (If Equipped)	IWC ☐
	Stage 3 (If Equipped)	IWC ☐
Supply gas pressure at full fire	IWC	☐
Check temperature rise ¹	☐ measured at full fire	°F ☐

1. Input X Eff. (BTU output)

1.08 X Temp. Rise

OPERATIONAL MEASUREMENTS - STAGING CONTROLS

Verify Proper Operation of Heating/Cooling Staging Controls	
Create a cooling demand at the Thermostat, BAS System or Smart Equipment™ Verify that cooling/economizer stages are energized.	☐
Create a heating demand at the Thermostat, BAS System or Smart Equipment™ Verify that heating stages are energized.	☐
Verify Proper Operation of the Variable Frequency Drive (If Required)	
Verify that motor speed modulates with duct pressure change.	☐

FINAL - INSPECTION

Verify that all operational control set points have been set to desired value Scroll through all setpoints and change as may be necessary to suit the occupant requirements.	☐
Verify that all option parameters are correct Scroll through all option parameters and ensure that all installed options are enabled in the software and all others are disabled in the software. (Factory software settings should match the installed options)	☐
Verify that all access panels have been closed and secured	☐
Save a backup file from the unit control board onto a USB flash drive.	☐

OBSERVED PRODUCT DEFICIENCIES & CONCERNS:This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.