



Installation, Operation, and Maintenance

Water Source Heat Pump Axiom™ Horizontal/Vertical GEHE/GEVE, EXHF/EXVF 1/2–25 Tons, 50/60 Hz



GEHE 006-060 - 50/60 Hz

GEHE 072-180 - 50/60 Hz

EXHF 018-070 - 60 Hz

GEVE 006-060 - 50/60 Hz

GEVE 072-300 - 50/60 Hz

EXVF 018-070 - 60 Hz

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.



Warnings, Cautions and Notices

Warnings, Cautions and Notices. Note that warnings, cautions and notices appear at appropriate intervals throughout this manual. Warnings are provided to alert installing contractors to potential hazards that could result in death or personal injury. Cautions are designed to alert personnel to hazardous situations that could result in personal injury, while notices indicate a situation that could result in equipment or property-damage-only accidents.

Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

Read this manual thoroughly before operating or servicing this unit.

ATTENTION: Warnings, Cautions, and Notices appear at appropriate sections throughout this literature. Read these carefully:

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, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

NOTICE: Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns!

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Responsible Refrigerant Practices!

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified. The Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that

must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

WARNING

Proper Field Wiring and Grounding Required!

All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in **NEC** and your local/state electrical codes. Failure to follow code could result in death or serious injury.

WARNING

Personal Protective Equipment (PPE) Required!

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards.

- Before installing/servicing this unit, technicians **MUST** put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. **ALWAYS** refer to appropriate MSDS sheets and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations.
- If there is a risk of arc or flash, technicians **MUST** put on all Personal Protective Equipment (PPE) in accordance with **NFPA 70E** or other country-specific requirements for arc flash protection, **PRIOR** to servicing the unit.

Failure to follow recommendations could result in death or serious injury.

⚠ WARNING**Equipment Damage From Ultraviolet (UV) Lights!**

Trane does not recommend field installation of ultraviolet lights in its air handling equipment for the intended purpose of improving indoor air quality. High intensity C-band ultraviolet light is known to severely damage polymer (plastic) materials and poses a personal safety risk to anyone exposed to the light without proper personal protective equipment (can cause damage to eyes and skin). Polymer materials commonly found in HVAC equipment that may be susceptible include insulation on electrical wiring, fan belts, thermal insulation, various fasteners and bushings. Degradation of these materials could result in serious damage to the equipment.

Trane accepts no responsibility for the performance or operation of our air handling equipment in which ultraviolet devices were installed outside of the Trane factory.

Revision Summary

WSHP-SVX01M-EN (15 Dec 2013)

- Added BACnet®

WSHP-SVX01M-EN (02 Sep 2013)

- Add 006, 009, 012, 015 sizes to EXHE & EXVE models



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Model Number Description: 1/2–5 Ton

G E H E O O 6 1 1 * 0 1 B O B R D O 1 0 0 0 0 1 0 0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26-36

Digits 1-3 - Unit Configuration

GEH = Standard Efficiency Horizontal
GEV = Standard Efficiency Vertical

Digit 4 - Development Sequence

E = R-410A

Digits 5-7 - Nominal Capacity

006 = 1/2 Ton	030 = 2 1/2 Ton
009 = 3/4 Ton	036 = 3 Ton
012 = 1 Ton	042 = 3 1/2 Ton
015 = 1 1/4 Ton	048 = 4 Ton
018 = 1 1/2 Ton	060 = 5 Ton
024 = 2 Ton	

Digit 8 - Voltage (Volts/Hz/Phase)

0 = 115/60/1	5 = 575/60/3
1 = 208/60/1	6 = 220-240/50/1
2 = 230/60/1	7 = 265/60/1
3 = 208/60/3	8 = 230/60/3
4 = 460/60/3	9 = 380-415/50/3

Digit 9 - Heat Exchanger

1 = Copper-Water Coil
2 = Cupro-Nickel Water Coil
7 = Insulated Copper-Water Coil
8 = Insulated Cupro-Nickel Water Coil

Digit 10 - Current Design Sequence

Digit 11 - Refrigeration Circuit

0 = Heating and Cooling Circuit
2 = Heating and Cooling Circuit with Hot Gas Reheat
3 = Heating and Cooling Circuit with Waterside Economizer

Digit 12 - Blower Configuration

1 = Standard Blower Motor
2 = High Static Blower Motor

Digit 13 - Freeze Protection

A= 20°F Freezestat (extended range geothermal)
B= 35°F Freezestat

Digit 14 - Open Digit = 0

Digit 15 - Supply-Air Arrangement

B = Back Supply-Air Arrangement
F = Front Supply-Air Arrangement
L = Left Supply-Air Arrangement
R = Right Supply-Air Arrangement
T = Top Supply-Air Arrangement

Digit 16 - Return-Air Arrangement

L = Left Return-Air Arrangement
R = Right Return-Air Arrangement

Digit 17 - Control Types

0 = Basic 24V Controls
D = Deluxe 24V Controls
B = Tracer ZN524 Controls
F = UC400
G = UC400 w/ Wireless Comm

Digit 18 - Tstat/Sensor Location

0 = Wall Mounted Location

Digit 19 - Fault Sensors

1 = Condensate Overflow Sensor
3 = Condensate Overflow and Filter Maintenance Timer
6 = Condensate Overflow and Fan Status
J = Fan Status, Filter Maintenance Timer and Condensate Overflow Sensor

Digit 20 - Temperature Sensor

0 = None
1 = Entering Water Sensor

Digit 21 - Open

Digit 22 - Electric Heat

0 = No Electric Heat
1 = Internal Boilerless Electric Heat
4 = External Boilerless Electric Heat

Digit 23 - Open

Digit 24 - Filter Type

1 = 1" Throwaway Filter
2 = 2" Throwaway Filter
4 = MERV 8
5 = MERV 13

Digit 25 - Acoustic Arrangement

0 = Enhanced Sound Attenuation
1 = Deluxe Sound Attenuation

Digits 26-36 - Does Not Apply to GEH or GEV

0000000000 = Digits 26-36 are not applicable to the GEH or GEV products



Model Number Description: 6–25 Ton

G E H E 0 7 2 1 1 * 0 A 0 0 A B D 0 0 0 0 0 0 1 0
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25-36

Digits 1-3 - Unit Configuration

GEH = High Efficiency Horizontal
 GEV = High Efficiency Vertical

Digit 4 - Development Sequence

E = R-410A

Digits 5-7 - Nominal Capacity

072 = 6 Ton 180 = 15 Ton
 090 = 7½ Ton 240 = 20 Ton
 120 = 10 Ton 300 = 25 Ton
 150 = 12½ Ton

Digit 8 - Voltage (Volts/Hz/Phase)

1 = 208/60/1
 2 = 230/60/1
 3 = 208/60/3
 4 = 460/60/3
 5 = 575/60/3
 6 = 220-240/50/1
 7 = 265/60/1
 8 = 230/60/3
 9 = 380-415/50/3

Digit 9 - Heat Exchanger

1 = Copper-Water Coil
 2 = Cupro-Nickel Water Coil
 7 = Insulated Copper-Water Coil
 8 = Insulated Cupro-Nickel Water Coil

Digit 10 - Current Design Sequence

Digit 11 - Refrigeration Circuit

0 = Heating and Cooling Circuit
 2 = Heating and Cooling Circuit with Hot Gas Reheat
 3 = Heating and Cooling Circuit with Waterside Economizer
 4 = Heating and Cooling Circuit with HGR and WSE

Digit 12 - Blower Configuration

A = Drive Package A (GEH/GEV)
 B = Drive Package B (GEH/GEV)
 C = Drive Package C (GEH/GEV)
 D = Drive Package D (GEH/GEV)
 E = Drive Package E (GEH/GEV)
 F = Drive Package F (GEH/GEV)
 G = Drive Package G (GEH/GEV)
 H = Drive Package H (GEH/GEV)
 J = Drive Package J (GEH/GEV)

Digit 13 - Freeze Protection

0 = Standard
 A = 20°F Freezestat
 B = 35°F Freezestat

Digit 14 - Open Digit = 0

Digit 15 - Supply-Air Arrangement

B = Back Supply-Air Arrangement
 F = Front Supply-Air Arrangement
 L = Left Supply-Air Arrangement
 R = Right Supply-Air Arrangement
 T = Top Supply-Air Arrangement

Digit 16 - Return-Air Arrangement

B = Back Supply-Air Arrangement
 F = Front Supply-Air Arrangement
 L = Left Supply-Air Arrangement
 R = Right Supply-Air Arrangement

Digit 17 - Control Types

D = Deluxe 24V Controls
 B = Tracer ZN524 Controls
 F = UC400
 G = UC400 w/Wireless Comm

Digit 18 - Open

0 = Wall Mounted Location

Digit 19 - Fault Sensors

0 = No Fault Sensor
 1 = Condensate Overflow Sensor
 2 = Filter Maintenance Timer
 3 = Condensate Overflow and Filter Maintenance Timer
 4 = Fan Status Sensor
 6 = Condensate Overflow and Fan Status
 H = Fan Status and Filter Maintenance Timer
 J = Fan Status, Filter Maintenance Timer and Condensate Overflow Sensor

Digit 20 - Open

0 = No Additional Temperature Sensor

Digit 21 - Open

Digit 22 - Electric Heat

0 = No Electric Heat
 4 = External Boilerless Electric Heat
 5 = External Supplemental Electric Heat

Digit 23 - Open

Digit 24 - Filter Type

1 = 1 in. Throwaway Filter
 2 = 2 in. Throwaway Filter

Digit 25-36 - Does Not Apply to GEH or GEV

0000000000 = Digits 25-36 are not applicable to the GEH or GEV products



Model Number Description: 1/2–6 Ton

E X H F 0 0 6 1 1 * 0 3 B 0 B R D 0 1 0 0 0 0 1 0 0
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26-36

Digits 1-3 - Unit Configuration

EXH = High Efficiency Horizontal
 EXV = High Efficiency Vertical

Digit 4 - Development Sequence

F

Digits 5-7 - Nominal Capacity

006 - 1/2 ton	030 = 2½ Ton
009 - 3/4 ton	036 = 3 Ton
012 - 1 ton	042 = 3½ Ton
015 - 1 ¼ ton	048 = 4 Ton
018 = 1½ Ton	060 = 5 Ton
024 = 2 Ton	070 = 6Ton

Digit 8 - Voltage (Volts/Hz/Phase)

1 = 208/60/1	4 = 460/60/3
2 = 230/60/1	7 = 265/60/1
3 = 208/60/3	8 = 230/60/3

Digit 9 - Heat Exchanger

1 = Copper-Water Coil
 2 = Cupro-Nickel Water Coil
 7 = Insulated Copper Water Coil/Suction Line
 8 = Insulated Cupro-Nickel Water Coil/Suction Line

Digit 10 - Current Design Sequence

Digit 11 - Refrigeration Circuit

0 = Heating and Cooling Circuit
 2 = Heating and Cooling Circuit with Hot Gas Reheat
 3 = Heating and Cooling Circuit with Waterside Economizer

Digit 12 - Blower Configuration

3 = ECM Motor

Digit 13 - Freeze Protection

A = 20°F freezestat
 B = 35°F freezestat

Digit 14 - Open Digit = 0

Digit 15 - Supply-Air Arrangement

B = Back Supply-Air Arrangement
 L = Left Supply-Air Arrangement
 R = Right Supply-Air Arrangement
 T = Top Supply-Air Arrangement

Digit 16 - Return-Air Arrangement

L = Left Return-Air Arrangement
 R = Right Return-Air Arrangement

Digit 17 - Control Types

D = Deluxe 24V Controls
 C = Tracer™ ZN510 Controls
 B = Tracer™ ZN524 Controls
 F = UC400
 G = UC400 w/Wireless Comm

Digit 18 - Tstat/Sensor Location

0 = Wall Mounted Location

Digit 19 - Fault Sensors

1 = Condensate Overflow Sensor
 3 = Condensate Overflow and Filter Maintenance Timer
 6 = Condensate Overflow and Fan Status
 J = Fan Status, Filter Maintenance Timer and Condensate Overflow Sensor

Digit 20 - Temperature Sensor

0 = No Additional Temperature Sensor
 1 = Entering Water Sensor

Digit 21 - Open Digit

Digit 22 - Electric Heat

0 = No Electric Heat
 1 = Internal Boilerless Electric Heat
 4 = External Boilerless Electric Heat

Digit 23 - Open Digit

Digit 24 - Filter Type

1 = 1" Throwaway Filter
 2 = 2" Throwaway Filter
 4 = MERV 8
 5 = MERV13

Digit 25 - Acoustic Arrangement

0 = Enhanced Sound Attenuation
 1 = Deluxe Sound Attenuation

Digits 26-36 - Does not Apply to EXH or EXV

0000000000 Digits 26-36 are not applicable to the EXH or EXV products



Overview of Manual

Note: *One copy of this document ships with each unit and is customer property. It must be retained by the unit's maintenance personnel.*

This booklet describes proper installation, operation, and maintenance procedures for HVAC systems. By carefully reviewing the information within this manual and following the instructions, the risk of improper operation and/or component damage will be minimized.

Service and maintenance work should be performed by a qualified technician and all electrical service and maintenance work should be performed by a qualified licensed electrician.

Unit Nameplate

The unit nameplate is located on the outside of the control box access panel at the front of the unit. It includes the unit model number, serial number, electrical characteristics, refrigerant charge, and other pertinent unit data.

Compressor Nameplate

The nameplate for the compressors are located on the compressor shell.

Model Number Description

All products are identified by a multiple-character model number that precisely identifies a particular type of unit. Its use will enable the owner/operator, installing contractors, and service engineers to define the operation, specific components, and other options for any specific unit.

When ordering replacement parts or requesting service, be sure to refer to the specific model number and serial number printed on the unit nameplate.

General Information

Unit Description

Before shipment, each unit is leak tested, dehydrated, charged with refrigerant and run tested for proper control operation.

Air-to-Refrigerant Coil

The air-to-refrigerant coil is aluminum fin, mechanically bonded to the copper tubing.

Water-to-Refrigerant Coil

The water-to-refrigerant coil is a copper or cupro-nickel (option) and steel tube (tube-within-a-tube) design, leak tested to assure there is no cross leakage between the water tube (copper/cupro-nickel) and refrigerant gas (steel tube).

Table 1. High/Low pressure switch

	Trip	Recover	Unit
LP	40 +/-4	56 +/-4	psig
HP	650 +/-10	550 +/-10	psig

Controls

The control system offered to control the unit is a Basic 24V control for the ½-5 ton and EXH/V070 sizes, a Deluxe 24V control option for all unit sizes, a Tracer™ ZN510, LonTalk™ certified control option for the ½-5 ton and EXH/V070 unit sizes, or a Tracer ZN524, LonTalk certified control option for all unit sizes.

All power wiring to the equipment is made at the unit contactor for ½-5 ton, 1-phase units. For 3-phase units all power wiring to the equipment is made to the contactor and power block. For EXH/V070 units all power wiring to the equipment is made to the power block. For the GEH/V 6-25 tons units all power wiring is made to the high voltage terminal block. All low-voltage wiring is made at the unit's low voltage terminal board. EXH and EXV 460 V units require a neutral wire.

System Input Devices and Functions

A thermostat, zone sensor, or building automation system is required to operate the water-source heat pump. The flexibility of having several mode capabilities depends upon the type of sensor and/or remote panel selected.

Troubleshooting and connection diagrams for the 24V control systems may be located in the back of this manual. All digital control troubleshooting tips and connection diagrams are located in WSHP-IOP-2 (ZN510) or WSHP-PRB002-EN (ZN524).

Basic 24V Controls

Safety devices for equipment containing the basic 24V control option include a low-pressure switch to prevent compressor operation during low temperature or low suction activity. The switch is set to activate at refrigerant pressure of 40 psig to fit most applications.

A high pressure switch prevents compressor operation during high or excessive discharge pressures exceeding 650 psig.

The lockout relay will disable the compressor on a high or low pressure condition. For units that contain a condensate overflow switch option, a condensate overflow condition will also disable the compressor through the lockout relay. The relay may be reset at the thermostat, or by cycling power to the unit.

General alarm is accomplished through the lockout relay. This feature will drive dry contacts only, and cannot be used to drive field installed control inputs. Trane provides a 3½-minute time delay for compressor control.

Deluxe 24V Controls (option)

Units containing the Deluxe 24V control design will incorporate a microprocessor-based control board. The Trane microprocessor board is factory wired to a terminal strip to provide all necessary terminals for field connection. The deluxe board is equipped with a random start relay, anti-short cycle timer, brown out protection, compressor disable, condensate overflow, unit safety control, diagnostics, and a generic relay (which may be available for field use). See [Table 59, p. 111](#) for diagnostic information and [Figure 58, p. 61](#) and [Figure 59, p. 62](#) for thermostat connections.

Tracer ZN510 Controls (½-5 Ton and EXH/V070 units)

The digital ZN510 controller is designed to support the ½-5 ton water-source heat pumps in either a standalone, peer-to-peer with a Tracer Loop Controller, or as a full building automation (open protocol) system. The ½-5 ton units that incorporate direct digital controls will typically come equipped with the ZN510 control board. The exception to this would be if the equipment contained hot gas reheat, waterside economizer, or boilerless control with electric heat.

Tracer™ UC400

The Tracer™ UC400 is a BTL Listed BACnet® controller that can operate stand-alone or within a Building Automations system such as Tracer™ SC.



General Information

Tracer ZN524 Controls (option)

The digital ZN524 controller is designed to support the ½–25 ton water-source heat pumps in either a standalone, peer-to-peer with a Tracer Loop Controller, or as a full building automation (open protocol) system.

For installation, operation and diagnostics of aforementioned options see the ZN510 and ZN524 WSHP-IOP-2 (ZN510) and/or WSHP-PRB002-EN (ZN524).

Pump Module (field installed accessory)

The pump module shall consist of either a single or dual 1/6 HP bronze pump and a brass 3-way shut-off valve. Cast iron pumps are also acceptable. The pump module kits shall contain the necessary components for the installation, operation and maintenance of the water circuit of a closed-loop distributed pumping application.

Waterside Economizer (Option)

Instructions for mechanical connection of the waterside economizer to the water-source heat pump may be found in the dimensional section of this manual.

The waterside economizer is designed to begin economizing mode when water temperatures fall below the field adjustable temperature of 25, 35, 45, 55 or 65°F (for the Deluxe control option), or below the programmed set-point (for the ZN524 control option).

When the temperature is less than the setpoint, fluid will flow into the economizing coil, while simultaneously halting mechanical operation of the compressor. Mechanical cooling will continue on a call for a second stage from the thermostat or system control. Entering water temperature sensor is factory provided for field installation on the entering water side of the coil.

Boilerless Control/Electric Heat (Option)

Systems that do not contain a boiler may contain a boilerless control with electric heat. Trane offers both a factory mounted electric heat option, and a field mounted duct heater option.

If the ½–5 ton GEH, GEV and EXH/V070 unit incorporates the factory mounted option, the unit will ship from the factory with an internally mounted nichrome open wire heating element, designed to start-up electric heat as the systems primary heat in the event entering water temperature falls below 55°F. Once the entering water temperature rises above 60°F, the boilerless controller returns the unit to normal compressor heating operation, and locks out the electric heater.

For units comprised of the field installed duct heater option, the unit will ship from the factory with controls available to interface with the field provided electric heat selection.

Note: For geothermal applications, the boilerless controller has an adjustable setting of 25, 35, 45, 55, and 60 degrees.

Supplemental or Boilerless Electric Heat (option)

The GEH/V 6-25 ton models which contain boilerless control electric heat or supplemental electric heat will contain the controls interface ONLY for field provided electric heat selection. The heater for this model shall be external to the equipment by the contractor for ease of installation. All power connections for the electric heater will be completely separate from the unit for field supplied electric heat.

Note: When the unit has boilerless control, the electric heat is not used as supplemental electric heat, but as a primary heat.

Hot Gas Reheat (option)

With the reheat option, the return-air from the space is conditioned by the air-to-refrigerant coil, then reheated by the reheat coil to control not only the space temperature, but to also reduce the relative humidity of the space. When operating in the reheat mode (meaning the sensible temperature has been met in the space), the humidistat signals the reheat relay coil to energize, allowing the high pressure refrigerant gas to flow from the compressor through the reheat valve, into the reversing valve, or reheat coil.

A switching relay has been provided for the reheat application to adjust the blower motor from normal operation to low speed when the hot gas reheat is energized (for ½–5 ton and EXH/V070 equipment only).

Note: A high static blower motor is required to support the hot gas reheat option for the GEH/V ½–5 ton.

Note: Units containing the hot gas reheat option should not be used as a make-up air unit.

Table 2. Refrigerant charge

Model (60 Hz)	Heat Pump (oz)/(Kg)		Heat Pump w/HGR (oz)/(Kg)	
	Circuit 1	Circuit 2	Circuit 1	Circuit 2
GEHE006	25.3 / .717	-----	26.8 / .760	-----
GEHE009	26.0 / .737	-----	27.5 / .780	-----
GEHE012	28.5 / .808	-----	30.5 / .865	-----
GEHE015	29.0 / .822	-----	30.5 / .865	-----
GEHE018	36.5 / 1.035	-----	39.5 / 1.120	-----
GEHE024	39.0 / 1.106	-----	42.0 / 1.191	-----
GEHE030	44.0 / 1.247	-----	46.5 / 1.318	-----
GEHE036	50.0 / 1.417	-----	53.5 / 1.517	-----
GEHE042	57.0 / 1.616	-----	60.5 / 1.715	-----
GEHE048	61.0 / 1.729	-----	65.5 / 1.857	-----
GEHE060	73.0 / 2.070	-----	77.5 / 2.197	-----
GEVE006	25.7 / .789	-----	27.2 / .771	-----
GEVE009	26.5 / .751	-----	28.0 / .794	-----
GEVE012	29.5 / .836	-----	31.5 / .893	-----
GEVE015	27.5 / .780	-----	29.5 / .836	-----
GEVE018	37.0 / 1.049	-----	40.0 / 1/134	-----
GEVE024	39.0 / 1.106	-----	41.5 / 1.177	-----
GEVE030	44.5 / 1.262	-----	47.0 / 1.332	-----
GEVE036	51.0 / 1.446	-----	54.5 / 1.545	-----
GEVE042	54.0 / 1.531	-----	57.5 / 1.630	-----
GEVE048	61.0 / 1.729	-----	66.0 / 1.871	-----
GEVE060	74.0 / 2.098	-----	79.5 / 2.254	-----
GEHE072	55 / 1.559	55 / 1.559	59 / 1.673	55 / 1.559
GEHE090	64 / 1.814	54 / 1.531	68 / 1.928	54 / 1.531
GEHE120	86 / 2.438	86 / 2.438	90 / 2.551	86 / 2.438
GEHE150	136 / 3.856	136 / 3.856	144 / 4.082	136 / 3.856
GEHE180	126 / 3.572	126 / 3.572	134 / 3.799	126 / 3.572
GEVE072	58 / 1.644	58 / 1.644	62 / 1.758	58 / 1.644
GEVE090	83 / 2.353	75 / 2.126	87 / 2.466	75 / 2.126
GEVE120	88 / 2.495	88 / 2.495	92 / 2.608	88 / 2.495
GEVE150	122 / 3.459	122 / 3.459	130 / 3.685	122 / 3.459
GEVE180	128 / 3.629	128 / 3.629	136 / 3.856	128 / 3.629
GEVE240	284 / 8.051	284 / 8.051	292 / 8.278	284 / 8.051
GEVE300	260 / 7.371	260 / 7.371	267 / 7.569	260 / 7.371
EXHF006	25.3 / 0.717	-----	26.8 / 0.760	-----
EXHF009	26.0 / 0.737	-----	27.5 / 0.780	-----
EXHF012	28.5 / 0.808	-----	30.5 / 0.865	-----
EXHF015	29.0 / 0.822	-----	30.5 / 0.865	-----
EXHF018	45.0 / 1.276	-----	48.0 / 1.361	-----
EXHF024	50.5 / 1.432	-----	53.0 / 1.503	-----
EXHF030	53.0 / 1.503	-----	56.0 / 1.588	-----
EXHF036	70.0 / 1.984	-----	73.0 / 2.070	-----
EXHF042	81.0 / 2.296	-----	85.5 / 2.424	-----
EXHF048	83.0 / 2.353	-----	87.5 / 2.481	-----
EXHF060	114.0 / 3.232	-----	118.5 / 3.359	-----



General Information

Table 2. Refrigerant charge

Model (60 Hz)	Heat Pump (oz)/(Kg)		Heat Pump w/HGR (oz)/(Kg)	
EXHF070	122.0 / 3.459	-----	127.0 / 3.600	-----
EXVF006	25.7 / 0.729	-----	27.2 / 0.771	-----
EXVF009	26.5 / 0.751	-----	28.0 / 0.794	-----
EXVF012	29.5 / 0.836	-----	31.5 / 0.893	-----
EXVF015	30.0 / 0.850	-----	32.0 / 0.907	-----
EXVF018	45.0 / 1.276	-----	48.0 / 1.361	-----
EXVF024	52.0 / 1.474	-----	54.5 / 1.545	-----
EXVF030	53.0 / 1.503	-----	56.0 / 1.588	-----
EXVF036	70.0 / 1.984	-----	73.0 / 2.070	-----
EXVF042	81.0 / 2.296	-----	86.0 / 2.438	-----
EXVF048	83.0 / 2.353	-----	88.5 / 2.509	-----
EXVF060	114.0 / 3.232	-----	119.5 / 3.388	-----
EXVF070	122.0 / 3.459	-----	128.0 / 3.629	-----

Pre-Installation

⚠ WARNING

Fiberglass Wool!

Product contains fiberglass wool. Disturbing the insulation in this product during installation, maintenance or repair will expose you to airborne particles of glass wool fibers and ceramic fibers known to the state of California to cause cancer through inhalation. Glass wool fibers may also cause respiratory, skin or eye irritation.

Unit Inspection Checklist

- Unpack all components of the kit.
 - Check carefully for any shipping damage. If any damage is found it must be reported immediately and a claim made against the transportation company.
- Important:** *Equipment is shipped FOB (Free on Board) at the manufacturer. Therefore, freight claims for damages against the carrier must be initiated by the receiver.*
- Visually inspect the components for shipping damage as soon as possible after delivery, before it is stored. Concealed damage must be reported within 15 days.
 - If concealed damage is discovered, stop unpacking the shipment.
 - Do not remove damaged material from the receiving location. Take photos of the damage, if possible. The owner must provide reasonable evidence that the damage did not occur after delivery.
 - Notify the carrier's terminal of damage immediately by phone and by mail. Request an immediate joint inspection of the damage by the carrier and the consignee.
 - Do not attempt to repair any damaged parts until the parts are inspected by the carrier's representative.

Jobsite Inspection Checklist

Always perform the following checks before accepting a unit:

- Verify that the nameplate data matches the data on the sales order and bill of lading (including electrical data).
- Verify that the power supply complies with the unit nameplate specifications.
- Visually inspect the exterior of the unit, for signs of shipping damage. Do not sign the bill of lading accepting the unit(s) until inspection has been completed. Check for damage promptly after the unit(s) are unloaded. Once the bill of lading is signed at the jobsite, the unit(s) are now the property of the SOLDTO party and future freight claims MAY NOT be accepted by the freight company.

Jobsite Storage

⚠ WARNING

Microbial Growth!

Wet interior unit insulation can become an amplification site for microbial growth (mold), which may cause odors and serious health related indoor air quality problems. If there is evidence of microbial growth (mold) on the interior insulation, remove or replace the insulation prior to operating the system. Failure to remove microbial growth could result in serious health problems.

This unit is intended for indoor use only. To protect the unit from damage due to the elements, and to prevent possible IAQ contaminant sources from growing, the unit should be stored indoors. If indoor storage is not possible, the following provisions for outdoor storage must be met:

- Place the unit(s) on a dry surface or raise above the ground to assure adequate air circulation beneath the unit.
- Cover the unit(s) with a water proof tarp to protect them from the elements.
- Make provisions for continuous venting of the covered units to prevent moisture from standing on the unit(s) surfaces. Wet interior unit insulation can become an amplification site for microbial growth (mold) which has been determined to be a cause of odors and serious health related indoor air quality problems.
- Store units in the normal UP orientation to maintain oil in the compressor.
- Horizontal units may be stacked no more than three units high. Do not stack the vertical unit configurations.

Unit Dimensions and Weights

GEH and EXH Clearance Dimensions

Access to the unit for service purposes should be provided at installation. All 1/2-5 tons and EXH070 configurations (see Figure 1, p. 14) require an 18 in. (457 mm) surround clearance from other mechanical and electrical equipment (where shown) to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes

require a greater service clearance than listed below. Check all code requirements prior to unit installations.

Equipment containing a same-side supply/return combination requires a 3 in. (229 mm) limitation on one side. Access to the TXV may not be possible with this 3 in. (229 mm) clearance. This configuration is typically applied in a corridor installation, where space limitations force the left or right side of the unit against a wall.

Figure 1. GEH 1/2-5 tons and EXH 1/2-6 tons clearance

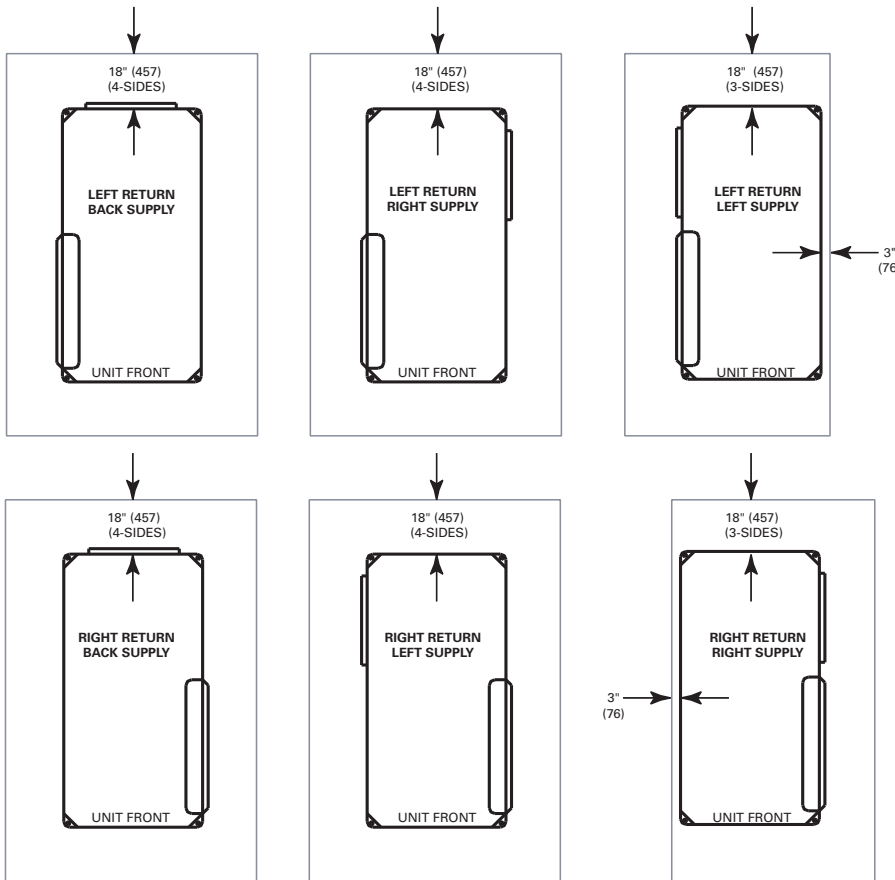
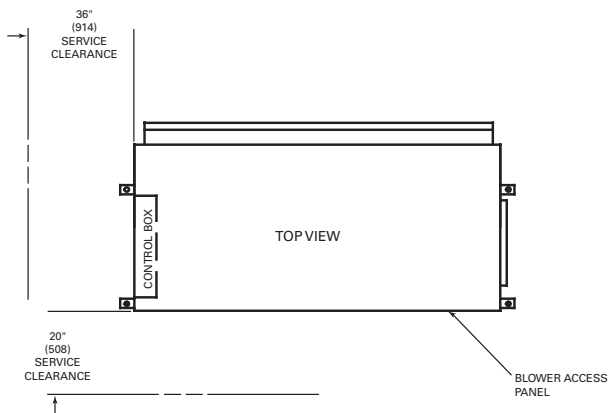


Figure 2. GEH 6-15 tons clearance

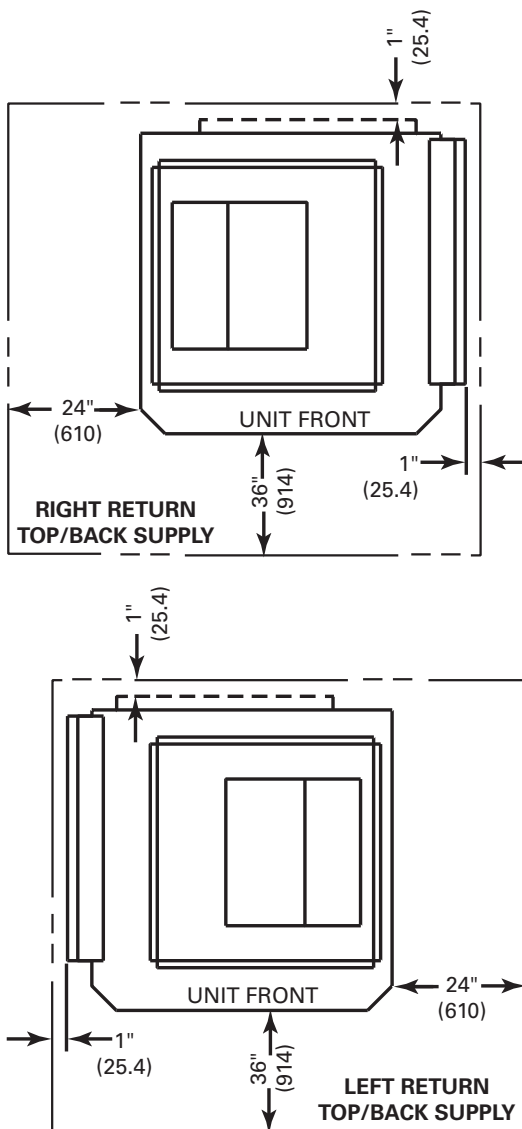


Service clearance dimensions for the GEH 6-15 tons horizontal (see Figure 2, p. 14) includes a two side access appropriate for control and blower motor/wheel access. Some local codes require a greater service clearance than listed below. Check all code requirements prior to unit installations.

GEV 1/2-5 tons and EXV 1/2-6 tons clearance dimensions

Access to the unit for service purposes should be provided at installation. All configurations require an 24 in. (610 mm) surround clearance (see Figure 3, p. 15) from other mechanical and electrical equipment (where shown) to enable panel removal from the unit for service/maintenance ability. Some local codes require a greater service clearance than listed below. Check all code requirements prior to unit installations. Units in a free return application will require more than a 1 in. (25.4 mm) clearance to provide proper air flow to the units air-to-refrigerant coil.

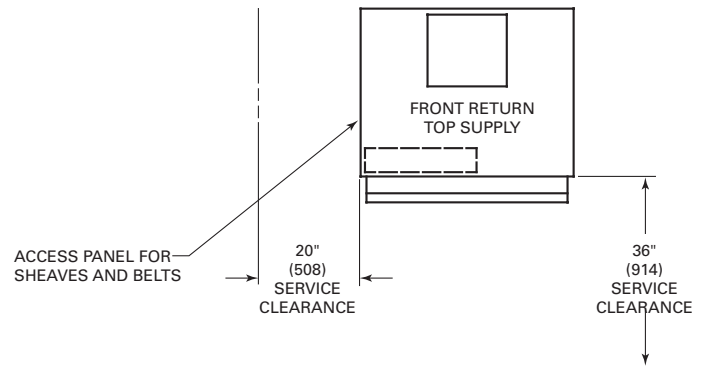
Figure 3. GEV 1/2-5 tons and EXV 1 1/2-6 tons clearance dimensions



GEV 6-10 Tons Clearance Dimensions

Minimum access for service clearances are provided below (see Figure 4, p. 15). Any one unit side other than the control panel or return-air side may be placed against a wall. The unit may be serviced through the three remaining open sides. Some local codes require a greater service clearance than listed below. Check all code requirements prior to unit installations.

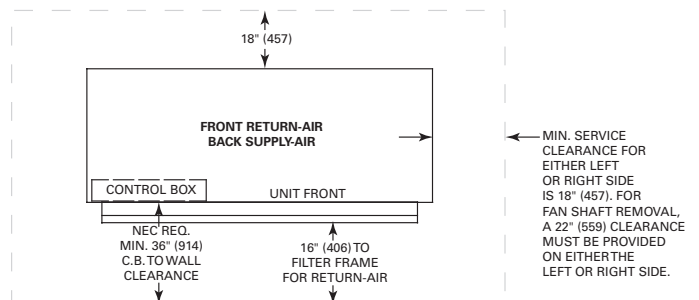
Figure 4. GEV 6-10 tons clearance



GEV 12 1/2-25 Tons Clearance Dimensions

Figure 5, p. 15 outlines the minimum required unit service clearances. Any one unit side other than the control panel or return-air side may be placed against a wall. The unit may be serviced through the three remaining open sides. Some local codes require a greater service clearance than listed below. Check all code requirements prior to unit installations.

Figure 5. GEV 12 1/2-25 tons clearance



Unit Dimensions and Weights

Figure 6. Left return/left supply (GEH/EXH)

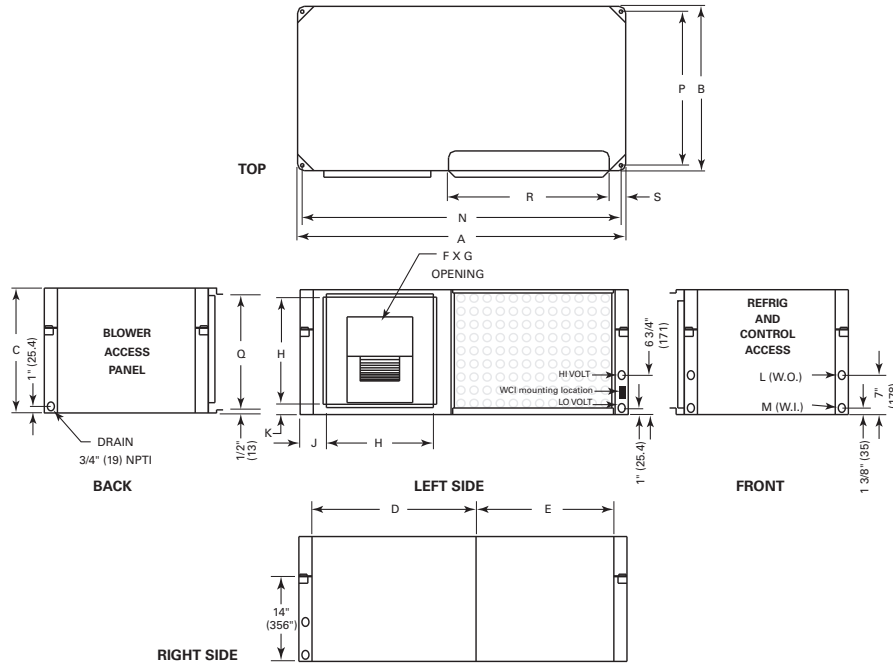


Table 3. Left return/left supply (GEH/EXH)

GEH Unit	A	B	C	D(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R(b)	S
006, 009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012, 015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 9-7/8 (175) x (251)	11-1/2 (292)	4-1/4 (108)	3/4 (19)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 9-3/4 (210) x (248)	13-1/2 (343)	4-3/4 (121)	1-3/8 (35)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
024, 030	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	1-3/8 (35)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
036, 042	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
Std-048	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
Hi-048, 060	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
EXH Unit	A	B	C	D(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R(b)	S
006-009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/4 (108)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012-015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	8-1/4 x 9-3/4 (210) x (248)	13-1/2 (343)	4-1/4 (108)	3/4 (19)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018-024	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	1-3/8 (35)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
030-036	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
042-070	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
070	58 (1473)	39 (991)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	37-3/4 (959)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)

Notes:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Horizontal units require an 18 in. (457 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Equipment containing a same-side supply/return combination requires a 3 in. (229 mm) clearance on one side. Access to the TXV may not be possible with this 3 in. (229 mm) clearance.
- If hot gas reheat is specified for a size 018, 024, the actual cabinet size increases to an 036 cabinet.
- When a horizontal model is ordered with the same side return and supply in a ducted application, bottom filter removal is required due to limited access on either side of the filter.

(a) Return air opening dimension
(b) Filter rack dimension

Figure 7. Left return/back supply (GEH/EXH)

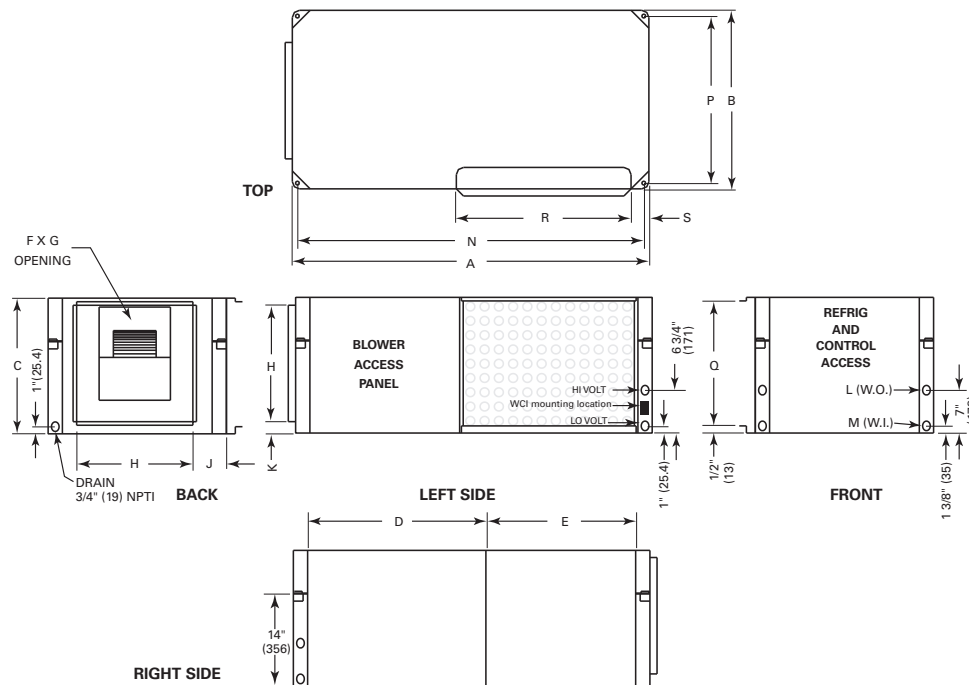


Table 4. Left return/back supply (GEH/EXH)

GEH Unit	A	B	C	D(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R(b)	S
006, 009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012, 015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 9-7/8 (175) x (251)	11-1/2 (292)	4-1/4 (108)	3/4 (19)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 9-3/4 (210) x (248)	13-1/2 (343)	4-3/4 (121)	1-3/8 (35)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
024, 030	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	1-3/8 (35)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
036, 042	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
Std-048	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
Hi-048, 060	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
EXH Unit	A	B	C	D(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R(b)	S
006-009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012-015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	8-1/4 x 9-3/4 (210) x (248)	11-1/2 (292)	4-1/4 (108)	2-3/4 (70)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018-024	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
030-036	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
042-070	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	9-3/4 (248)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
070	58 (1473)	39 (991)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	9-3/4 (248)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	37-3/4 (959)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)

Notes:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Horizontal units require an 18 in. (457 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Equipment containing a same-side supply/return combination requires a 3 in. (229 mm) clearance on one side. Access to the TXV may not be possible with this 3 in. (229 mm) clearance.
- If hot gas reheat is specified for a size 018, 024, the actual cabinet size increases to an 036 cabinet.

(a) Return air opening dimension
(b) Filter rack dimension

Unit Dimensions and Weights

Figure 8. Left return/right supply (GEH/EXH)

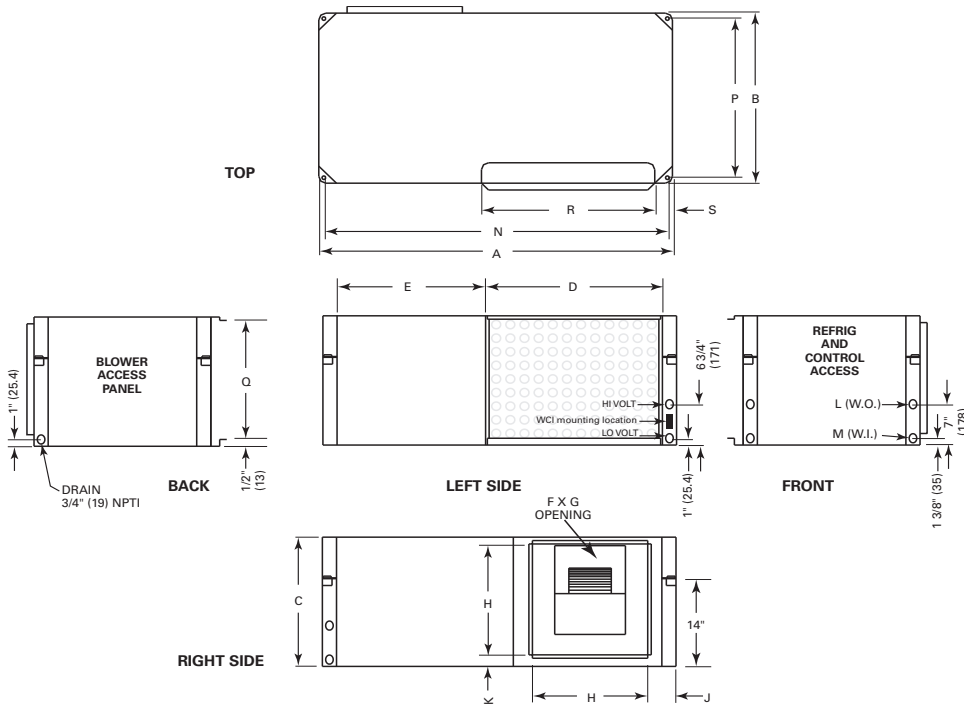


Table 5. Left return/right supply (GEH/EXH)

GEH Unit	A	B	C	D ^(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R ^(b)	S
006, 009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012, 015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 9-7/8 (175) x (251)	11-1/2 (292)	4-1/4 (108)	2-3/4 (70)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 9-3/4 (210) x (248)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
024, 030	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
036, 042	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
Std-048	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
HI-048, 060	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
EXH Unit	A	B	C	D ^(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R ^(b)	S
006-009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012-015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	8-1/4 x 9-3/4 (210) x (248)	11-1/2 (292)	4-1/4 (108)	2-3/4 (70)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018-024	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
030-036	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
042-070	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
070	58 (1473)	39 (991)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	37-3/4 (959)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)

Notes:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Horizontal units require an 18 in. (457 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Equipment containing a same-side supply/return combination requires a 3 in. (229 mm) clearance on one side. Access to the TXV may not be possible with this 3 in. (229 mm) clearance.
- If hot gas reheat is specified for a size 018, 024, the actual cabinet size increases to an 036 cabinet.

(a) Return air opening dimension
 (b) Filter rack dimension

Figure 9. Right return/left supply (GEH/EXH)

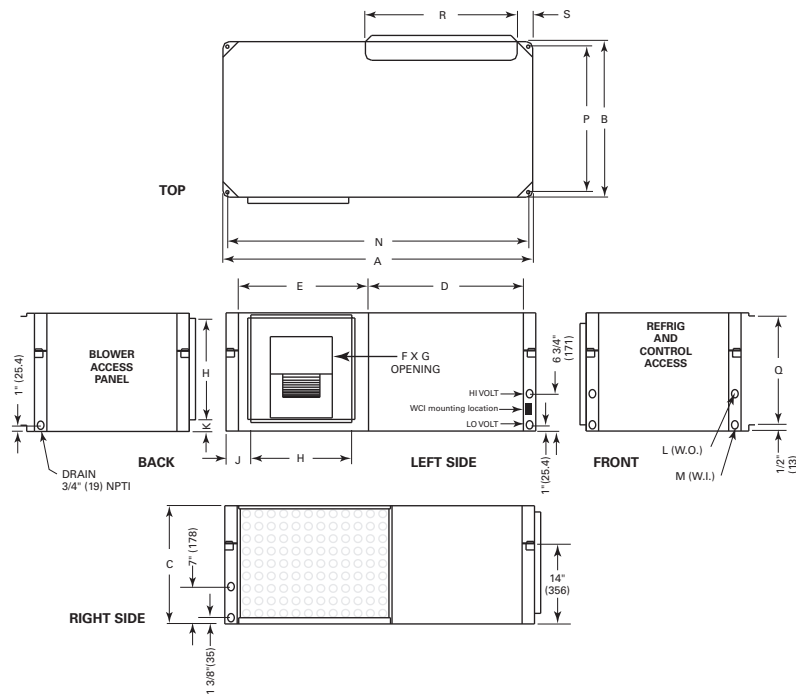


Table 6. Right return/left supply (GEH/EXH)

GEH Unit	A	B	C	D ^(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R ^(b)	S
006, 009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012, 015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 9-7/8 (175) x (251)	11-1/2 (292)	4-1/4 (108)	3/4 (19)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 9-3/4 (210) x (248)	13-1/2 (343)	4-3/4 (121)	1-3/8 (35)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
024, 030	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	1-3/8 (35)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
036, 042	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
Std-048	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
Hi-048, 060	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
EXH Unit	A	B	C	D ^(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R ^(b)	S
006-009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012-015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	8-1/4 x 9-3/4 (210) x (248)	11-1/2 (292)	4-1/4 (108)	3/4 (19)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018-024	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	1-3/8 (35)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
030-036	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
042-070	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
070	58 (1473)	39 (991)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	37-3/4 (959)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)

Notes:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Horizontal units require an 18 in. (457 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Equipment containing a same-side supply/return combination requires a 3 in. (229 mm) clearance on one side. Access to the TXV may not be possible with this 3 in. (229 mm) clearance.
- If hot gas reheat is specified for a size 018, 024, the actual cabinet size increases to an 036 cabinet.

(a) Return air opening dimension
(b) Filter rack dimension

Unit Dimensions and Weights

Figure 10. Right return/back supply (GEH/EXH)

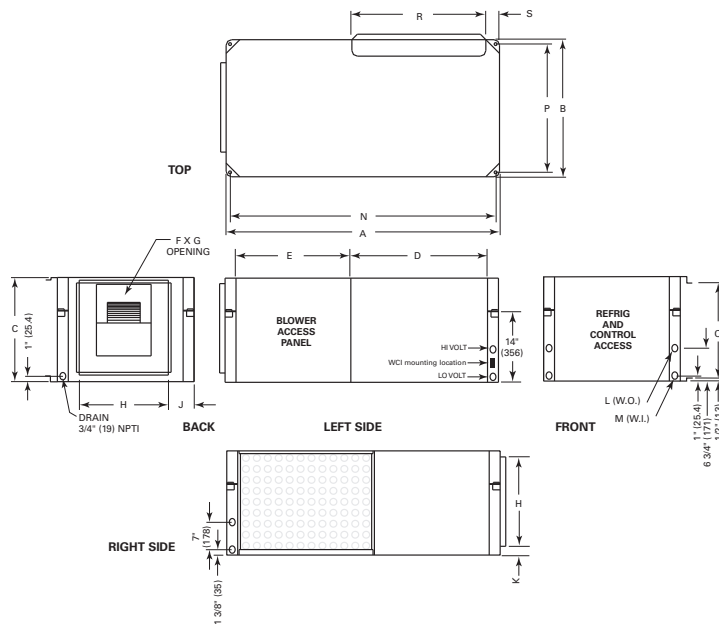


Table 7. Right return/back supply (GEH/EXH)

GEH Unit	A	B	C	D ^(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R ^(b)	S
006,009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	8 x 6-3/4 (203) x (171)	11-1/2 (292)	4-1/2 (114)	1-5/8 (41)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012,015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	9-1/2 x 6-3/4 (241) x (171)	11-1/2 (292)	4-1/2 (114)	1-5/8 (41)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	9-1/2 x 8-1/8 (241) x (206)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
024,030	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	11-1/4 x 8-1/4 (286) x (210)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
036,042	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	13-1/2 x 10-1/2 (343) x (267)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
Std-048	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-1/4 (333) x (286)	18 (457)	5-1/8 (130)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
Hi-048, 060	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/2 x 13-3/4 (343) x (349)	18 (457)	5-1/8 (130)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
EXH Unit	A	B	C	D ^(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R ^(b)	S
006-009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012-015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	8-1/4 x 9-3/4 (210) x (248)	11-1/2 (292)	4-1/4 (108)	2-3/4 (70)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018-024	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
030-036	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
042-070	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	9-3/4 (248)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
070	58 (1473)	39 (991)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	9-3/4 (248)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	37-3/4 (959)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)

Notes:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Horizontal units require an 18 in. (457 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Equipment containing a same-side supply/return combination requires a 3 in. (229 mm) clearance on one side. Access to the TXV may not be possible with this 3 in. (229 mm) clearance.
- If hot gas reheat is specified for a size 018, 024, the actual cabinet size increases to an 036 cabinet.

(a) Return air opening dimension
(b) Filter rack dimension

Figure 11. Right return/right supply (GEH/EXH)

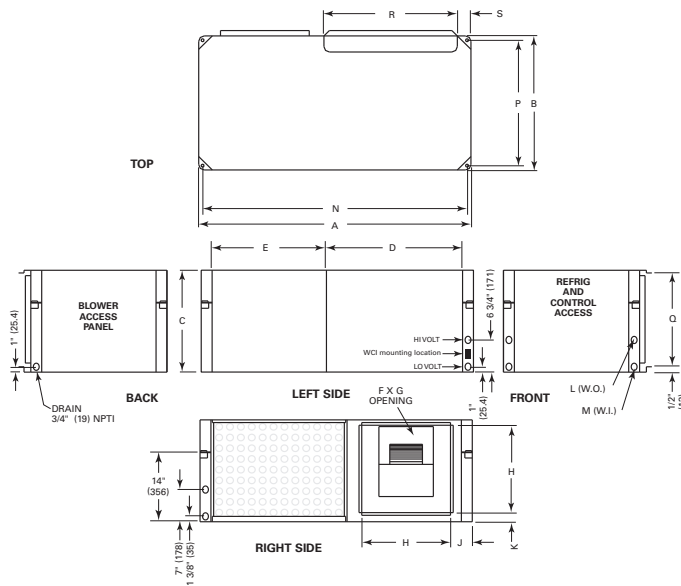


Table 8. Right return/right supply (GEH/EXH)

GEH Unit	A	B	C	D ^(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R ^(b)	S
006, 009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012, 015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 9-7/8 (175) x (251)	11-1/2 (292)	4-1/4 (108)	2-3/4 (70)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 9-3/4 (210) x (248)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
024, 030	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
036, 042	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
Std-048	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
Hi-048, 060	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
EXH Unit	A	B	C	D ^(a)	E	F x G	H	J	K	L NPTI	M NPTI	N	P	Q	R ^(b)	S
006-009	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	6-7/8 x 8 (175) x (203)	11-1/2 (292)	4-1/2 (114)	1-3/4 (45)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
012-015	40 (1016)	20 (508)	15 (381)	20 (508)	15 (381)	8-1/4 x 9-3/4 (210) x (248)	11-1/2 (292)	4-1/4 (108)	2-3/4 (70)	1/2 (13)	1/2 (13)	38-3/4 (984)	18-3/4 (476)	13-5/8 (346)	18-1/2 (470)	3-1/4 (83)
018-024	46 (1168)	23 (584)	18 (457)	23 (584)	18 (457)	8-1/4 x 11-3/8 (210) x (289)	13-1/2 (343)	4-3/4 (121)	3-1/4 (83)	3/4 (19)	3/4 (19)	44-3/4 (1137)	21-3/4 (552)	16-5/8 (422)	18-1/2 (470)	4-1/4 (108)
030-036	50 (1270)	25 (635)	19 (483)	25 (635)	20 (508)	10-1/2 x 13-1/2 (267) x (343)	17 (432)	4 (102)	1 (25)	3/4 (19)	3/4 (19)	48-3/4 (1238)	23-3/4 (603)	17-5/8 (448)	23-1/2 (597)	3-1/4 (83)
042-070	58 (1473)	33 (838)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-1/8 x 11-3/8 (333) x (289)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	31-3/4 (806)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)
070	58 (1473)	39 (991)	21 (533)	29-1/2 (597)	23-1/2 (749)	13-7/8 x 13-7/8 (352) x (352)	18 (457)	5-1/4 (133)	1-1/2 (38)	1 (25)	1 (25)	56-3/4 (1441)	37-3/4 (959)	19-5/8 (498)	23-1/2 (597)	5-1/2 (140)

Notes:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Horizontal units require an 18 in. (457 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Equipment containing a same-side supply/return combination requires a 3 in. (229 mm) clearance on one side. Access to the TXV may not be possible with this 3 in. (229 mm) clearance.
- If hot gas reheat is specified for a size 018, 024, the actual cabinet size increases to an 036 cabinet.
- When a horizontal model is ordered with the same side return and supply in a ducted application, bottom filter removal is required due to limited access on either side of the filter.

(a) Return air opening dimension
(b) Filter rack dimension

Note: It is recommended to order a bottom access filter rack with right return/right supply combination due to potential problem with return air filter removal.



Unit Dimensions and Weights

Figure 12. Left return/top supply: GEVE—“A” and later design sequence; EXV—“A” and later design sequence

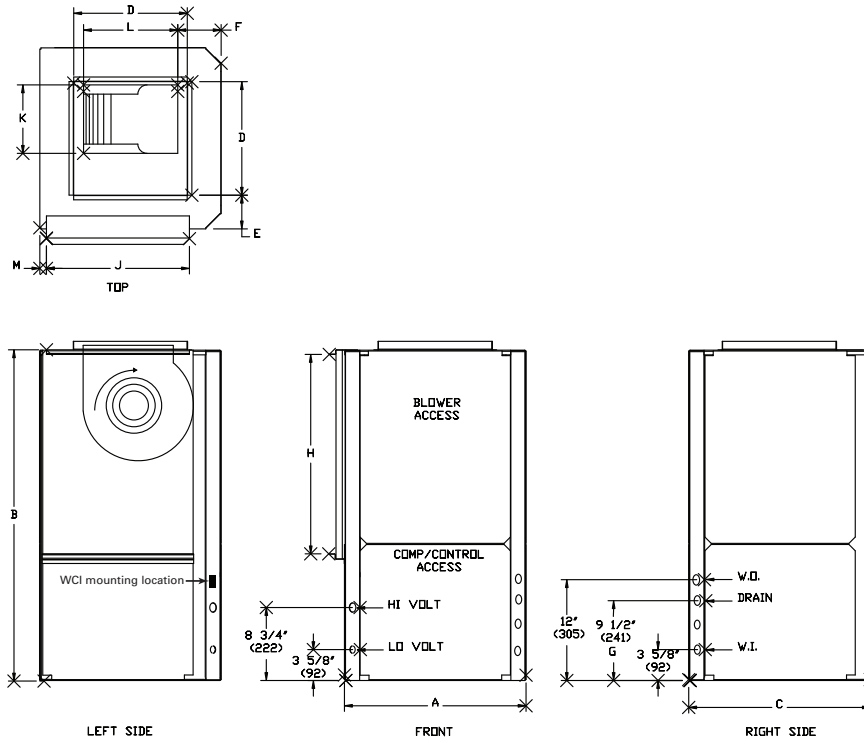


Table 9. Left return/top supply: GEVE—“A” and later design sequence; EXV—“A” and later design sequence

GEV Unit	A	B	C	D	E	F	G	H	J	K	L	M	W.I. NPTI	W.O. NPTI	Drain FPT
006-015	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	4 (102)	5-3/4 (146)	9-1/2 (241)	15 (381)	17 (432)	6-7/8 (175)	8 (203)	3/4 (19)	1/2 (12.7)	1/2 (12.7)	3/4 (19)
018, 024, 030, 032, 040	21-1/2 (546)	39-1/4 (997)	21-1/2 (546)	13-1/2 (343)	4 (102)	4 (102)	9-1/2 (241)	23-3/4 (603)	17 (432)	8-1/4 (368)	9-3/4 (248)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
											11-3/8 (289)				
036, 042	24-1/2 (622)	41-7/8 (1064)	26-1/2 (673)	18 (457)	3-1/4 (83)	5-3/4 (146)	9-1/2 (241)	19 (483)	23 (584)	10-1/2 (267)	13-1/2 (343)	1/4 (6)	3/4 (19)	3/4 (19)	3/4 (19)
Std-048	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-7/8 (352)	13-7/8 (352)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)
Hi-048, 060	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-1/8 (333)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)
EXV Unit	A	B	C	D	E	F	G	H	J	K	L	M	W.I. NPTI	W.O. NPTI	Drain FPT
006-009	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	4 (102)	5-3/4 (146)	9-1/2 (241)	15 (381)	17 (432)	6-7/8 (175)	8 (203)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
012-015	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	5-1/2 (140)	5-5/8 (142)	9-1/2 (241)	15 (381)	17 (432)	8-1/4 (210)	9-3/4 (248)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
018-024	21-1/2 (546)	39-1/4 (997)	21-1/2 (546)	13-1/2 (343)	4 (102)	4 (102)	9-1/2 (241)	23-3/4 (603)	17 (432)	8-1/4 (368)	11-3/8 (289)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
030-036	24-1/2 (622)	41-7/8 (1064)	26-1/2 (673)	18 (457)	3-1/4 (83)	5-3/4 (146)	9-1/2 (241)	19 (483)	23 (584)	10-1/2 (267)	13-1/2 (343)	1/4 (6)	3/4 (19)	3/4 (19)	3/4 (19)
042-060	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-7/8 (352)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)
070	26-1/2 (673)	50-7/8 (1292)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-1/8 (333)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)

Notes:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Vertical units require an 24 in. (610 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Units in a free return application will require more than a 1 in. (25.4 mm) clearance to provide proper air flow to the unit's air-to-refrigerant coil.

Figure 13. Left return/back supply: GEVE—“A” and later design sequence; EXV—“A” and later design sequence

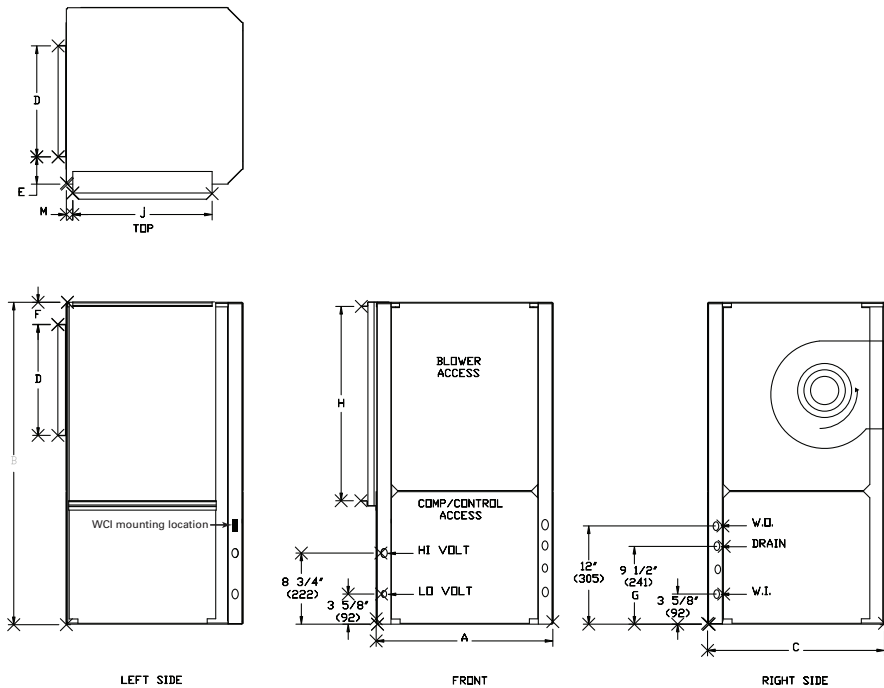


Table 10. Left return/back supply: GEVE—“A” and later design sequence; EXV—“A” and later design sequence

GEV Unit	A	B	C	D	E	F	G	H	J	K	L	M	W.I. NPTI	W.O. NPTI	Drain FPT
006-015	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	4 (102)	1-3/4 (44)	9-1/2 (241)	15 (381)	17 (432)	6-7/8 (175)	8 (203)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
					006-009	006-009									
018, 024, 030, 032, 040	21-1/2 (546)	39-1/4 (997)	21-1/2 (546)	13-1/2 (343)	4 (102)	3-7/8 (98)	9-1/2 (241)	23-3/4 (603)	17 (432)	8-1/4 (368)	9-3/4 (248)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
											11-3/8 (289)				
036, 042	24-1/2 (622)	41-7/8 (1064)	26-1/2 (673)	18 (457)	3-1/4 (83)	1-7/8 (48)	9-1/2 (241)	19 (483)	23 (584)	10-1/2 (267)	13-1/2 (343)	1/4 (6)	3/4 (19)	3/4 (19)	3/4 (19)
Std-048	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-7/8 (352)	13-7/8 (352)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)
Hi-048, 060	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-1/8 (333)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)
EXV Unit	A	B	C	D	E	F	G	H	J	K	L	M	W.I. NPTI	W.O. NPTI	Drain FPT
006-009	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	4 (102)	1-3/4 (44)	9-1/2 (241)	15 (381)	17 (432)	6-7/8 (175)	8 (203)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
012-015	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	5-1/4 (133)	3-3/4 (95)	9-1/2 (241)	15 (381)	17 (432)	8-1/4 (210)	9-3/4 (248)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
018-024	21-1/2 (546)	39-1/4 (997)	21-1/2 (546)	13-1/2 (343)	4 (102)	3-7/8 (98)	9-1/2 (241)	23-3/4 (603)	17 (432)	8-1/4 (368)	11-3/8 (289)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
030-036	24-1/2 (622)	41-7/8 (1064)	26-1/2 (673)	18 (457)	3-1/4 (83)	1-7/8 (48)	9-1/2 (241)	19 (483)	23 (584)	10-1/2 (267)	13-1/2 (343)	1/4 (6)	3/4 (19)	3/4 (19)	3/4 (19)
042-060	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-7/8 (352)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)
070	26-1/2 (673)	50-7/8 (1292)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-1/8 (333)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)

Note:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Vertical units require an 24 in. (610 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Units in a free return application will require more than a 1 in. (25.4 mm) clearance to provide proper air flow to the unit's air-to-refrigerant coil.



Unit Dimensions and Weights

Figure 14. Right return/top supply: GEVE—"A" and later design sequence; EXV—"A" and later design sequence)

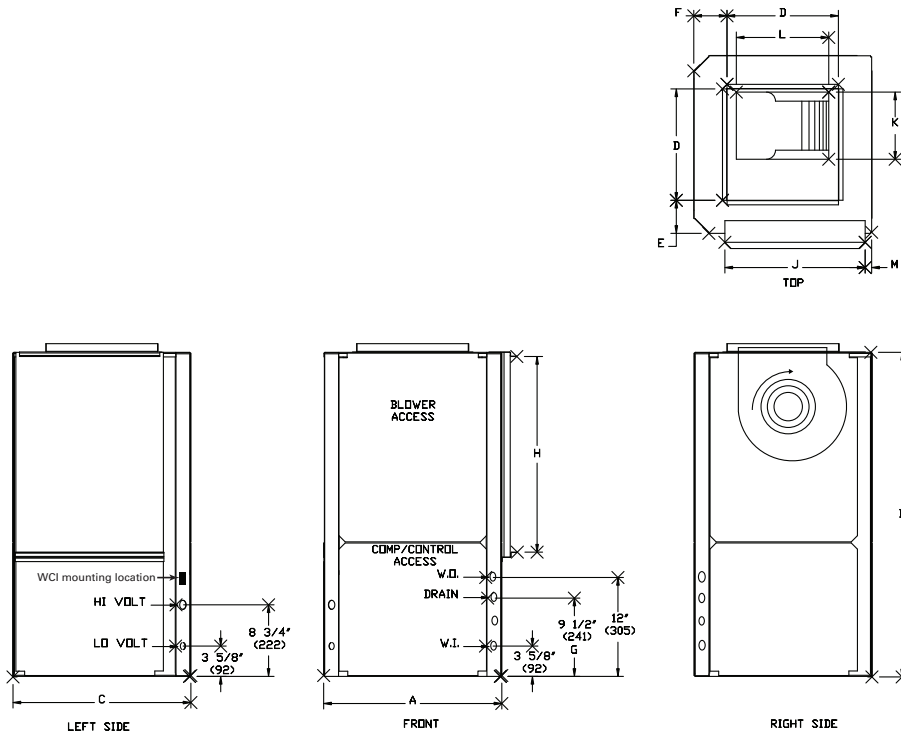


Table 11. Right return/top supply: GEVE—"A" and later design sequence; EXV—"A" and later design sequence

GEV Unit	A	B	C	D	E	F	G	H	J	K	L	M	W.I. NPTI	W.O. NPTI	Drain FPT
006-015	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	4 (102)	5-3/4 (146)	9-1/2 (241)	15 (381)	17 (432)	6-7/8 (175)	8 (203)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
018, 024, 030, 032, 040	21-1/2 (546)	39-1/4 (997)	21-1/2 (546)	13-1/2 (343)	4 (102)	4 (102)	9-1/2 (241)	23-3/4 (603)	17 (432)	8-1/4 (368)	9-3/4 (248) 11-3/8 (289)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
036, 042	24-1/2 (622)	41-7/8 (1064)	26-1/2 (673)	18 (457)	3-1/4 (83)	5-3/4 (146)	9-1/2 (241)	19 (483)	23 (584)	10-1/2 (267)	13-1/2 (343)	1-3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
Std-048	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-7/8 (352)	13-7/8 (352)	1/2 (13)	1 (25)	1 (25)	3/4 (19)
Hi-048, 060	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-1/8 (333)	11-3/8 (289)	1/2 (13)	1 (25)	1 (25)	3/4 (19)
EXV Unit	A	B	C	D	E	F	G	H	J	K	L	M	W.I. NPTI	W.O. NPTI	Drain FPT
006-009	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	4 (102)	5-3/4 (146)	9-1/2 (241)	15 (381)	17 (432)	6-7/8 (175)	8 (203)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
012-015	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	2-1/2 (64)	5-5/8 (143)	9-1/2 (241)	15 (381)	17 (432)	8-1/4 (210)	9-3/4 (248)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
018-024	21-1/2 (546)	39-1/4 (997)	21-1/2 (546)	13-1/2 (343)	4 (102)	4 (102)	9-1/2 (241)	23-3/4 (603)	17 (432)	8-1/4 (368)	11-3/8 (289)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
030-036	24-1/2 (622)	41-7/8 (1064)	26-1/2 (673)	18 (457)	3-1/4 (83)	5-3/4 (146)	9-1/2 (241)	19 (483)	23 (584)	10-1/2 (267)	13-1/2 (343)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
042-060	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-7/8 (352)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)
070	26-1/2 (673)	50-7/8 (1292)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-1/8 (333)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)

Note:

- All dimensions are in inches followed by millimeters in parenthesis.
- Access to the unit for service purposes should be provided at installation. Vertical units require an 24 in. (610 mm) surround clearance from other mechanical and electrical equipment to enable panel removal from the unit for service/maintenance ability. NEC requires 36 in. clearance on the control panel side of the unit. Some local codes require a greater service clearance. Check all code requirements prior to unit installations. Installer is responsible for following all local and NEC code requirements.
- Units in a free return application will require more than a 1 in. (25.4 mm) clearance to provide proper air flow to the unit's air-to-refrigerant coil.

Figure 15. Right return/back supply: GEVE—“A” and later design sequence; EXV—“A” and later design sequence

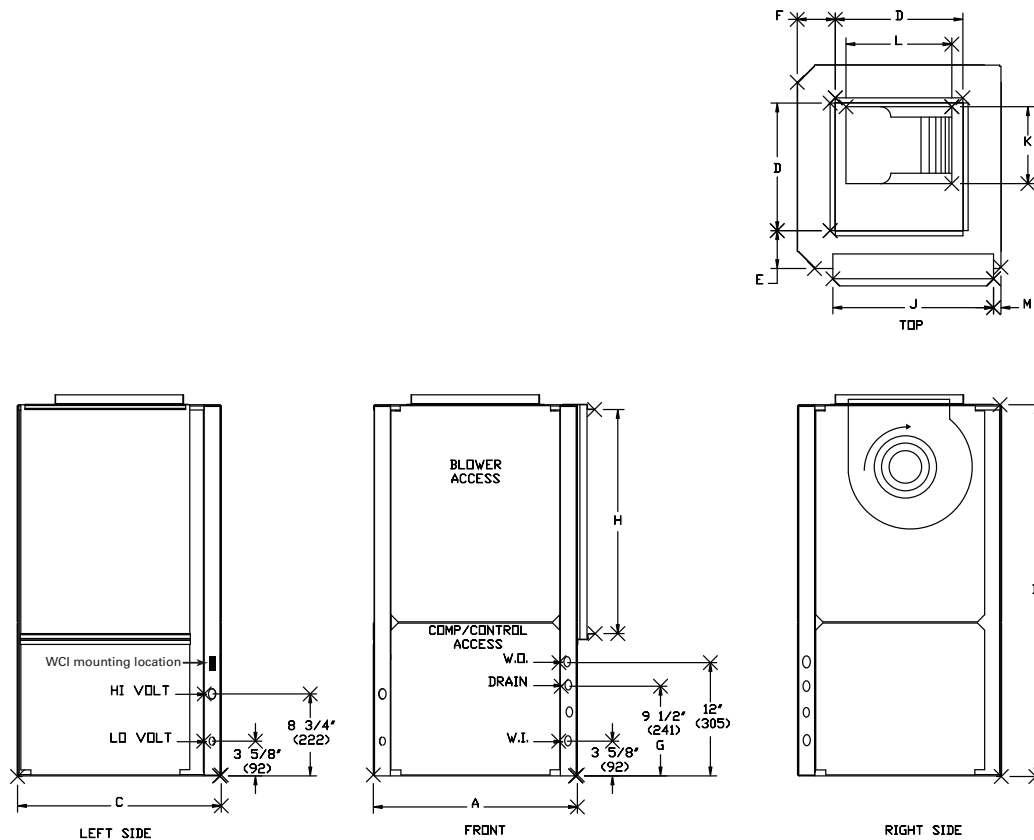


Table 12. Right return/back supply: GEVE—“A” and later design sequence; EXV—“A” and later design sequence

GEV Unit	A	B	C	D	E	F	G	H	J	K	L	M	W.I. NPTI	W.O. NPTI	Drain FPT
006-015	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	4 (102)	1-3/4 (44)	9-1/2 (241)	15 (381)	17 (432)	6-7/8 (175)	8 (203)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
					006-009 6 (152)	006-009 1-1/4 (32)									
018, 024, 030, 032, 040	21-1/2 (546)	39-1/4 (997)	21-1/2 (546)	13-1/2 (343)	4 (102)	3-7/8 (98)	9-1/2 (241)	23-3/4 (603)	17 (432)	8-1/4 (368)	9-3/4 (248)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
											11-3/8 (289)				
036, 042	24-1/2 (622)	41-7/8 (1064)	26-1/2 (673)	18 (457)	3-1/4 (83)	1-7/8 (48)	9-1/2 (241)	19 (483)	23 (584)	10-1/2 (267)	13-1/2 (343)	1-3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
Std-048	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-7/8 (352)	13-7/8 (352)	1/2 (13)	1 (25)	1 (25)	3/4 (19)
Hi-048, 060	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-1/8 (333)	11-3/8 (289)	1/2 (13)	1 (25)	1 (25)	3/4 (19)
EXV Unit	A	B	C	D	E	F	G	H	J	K	L	M	W.I. NPTI	W.O. NPTI	Drain FPT
006-009	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	4 (102)	1-3/4 (44)	9-1/2 (241)	15 (381)	17 (432)	6-7/8 (175)	8 (203)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
012-015	19-1/2 (495)	31-1/4 (794)	21-1/2 (546)	11-1/2 (292)	2 (51)	1-1/4 (32)	9-1/2 (241)	15 (381)	17 (432)	8-1/4 (210)	9-3/4 (248)	3/4 (19)	1/2 (13)	1/2 (13)	3/4 (19)
018-024	21-1/2 (546)	39-1/4 (997)	21-1/2 (546)	13-1/2 (343)	4 (102)	3-7/8 (98)	9-1/2 (241)	23-3/4 (603)	17 (432)	8-1/4 (368)	11-3/8 (289)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
030-036	24-1/2 (622)	41-7/8 (1064)	26-1/2 (673)	18 (457)	3-1/4 (83)	1-7/8 (48)	9-1/2 (241)	19 (483)	23 (584)	10-1/2 (267)	13-1/2 (343)	3/4 (19)	3/4 (19)	3/4 (19)	3/4 (19)
042-060	26-1/2 (673)	46-7/8 (1191)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-7/8 (352)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)
070	26-1/2 (673)	50-7/8 (1292)	30-1/2 (775)	18 (457)	4-1/4 (108)	2 (51)	9-1/2 (241)	29 (737)	27-7/8 (708)	13-1/8 (333)	11-3/8 (289)	1/2 (13)	1 (25.4)	1 (25.4)	3/4 (19)

Note: All dimensions are in inches followed by millimeters in parenthesis.



Unit Dimensions and Weights

Figure 16. GEH 6-10 tons (072-120) 60 Hz; GEH 6-7½ tons (072-090) 50 Hz—right return/left supply

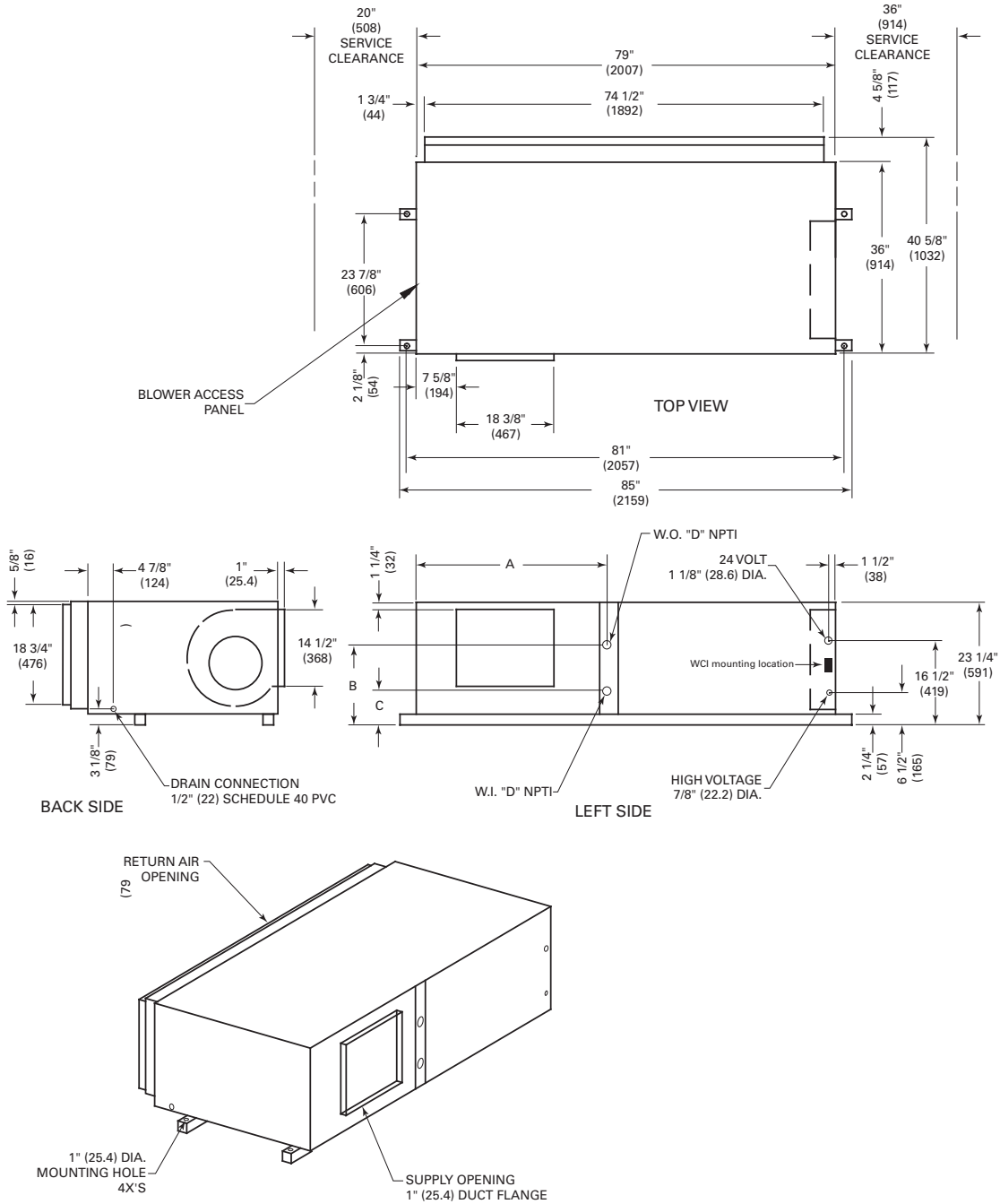


Table 13. GEH 6-10 tons (072-120) 60 Hz; GEH 6-7½ tons (072-090) 50 Hz—right return/left supply

GEH (60 Hz)	GEH (50 Hz)	A	B	C	D
072	—	36-1/4 in. (921 mm)	15-5/8 in. (397 mm)	6-5/8 in. (168 mm)	1-1/4 in. (32 mm)
090	072	36-1/8 in. (917 mm)	12-3/4 in. (324 mm)	6-3/4 in. (171 mm)	1-1/4 in. (32 mm)
120	090	36-1/8 in. (917 mm)	13 in. (330 mm)	7-1/4 in. (184 mm)	1-1/2 in. (38 mm)

Figure 17. GEH 6–10 tons (072–120) 60 Hz; GEH 6–7½ tons (072–090) 50 Hz—right return/back supply

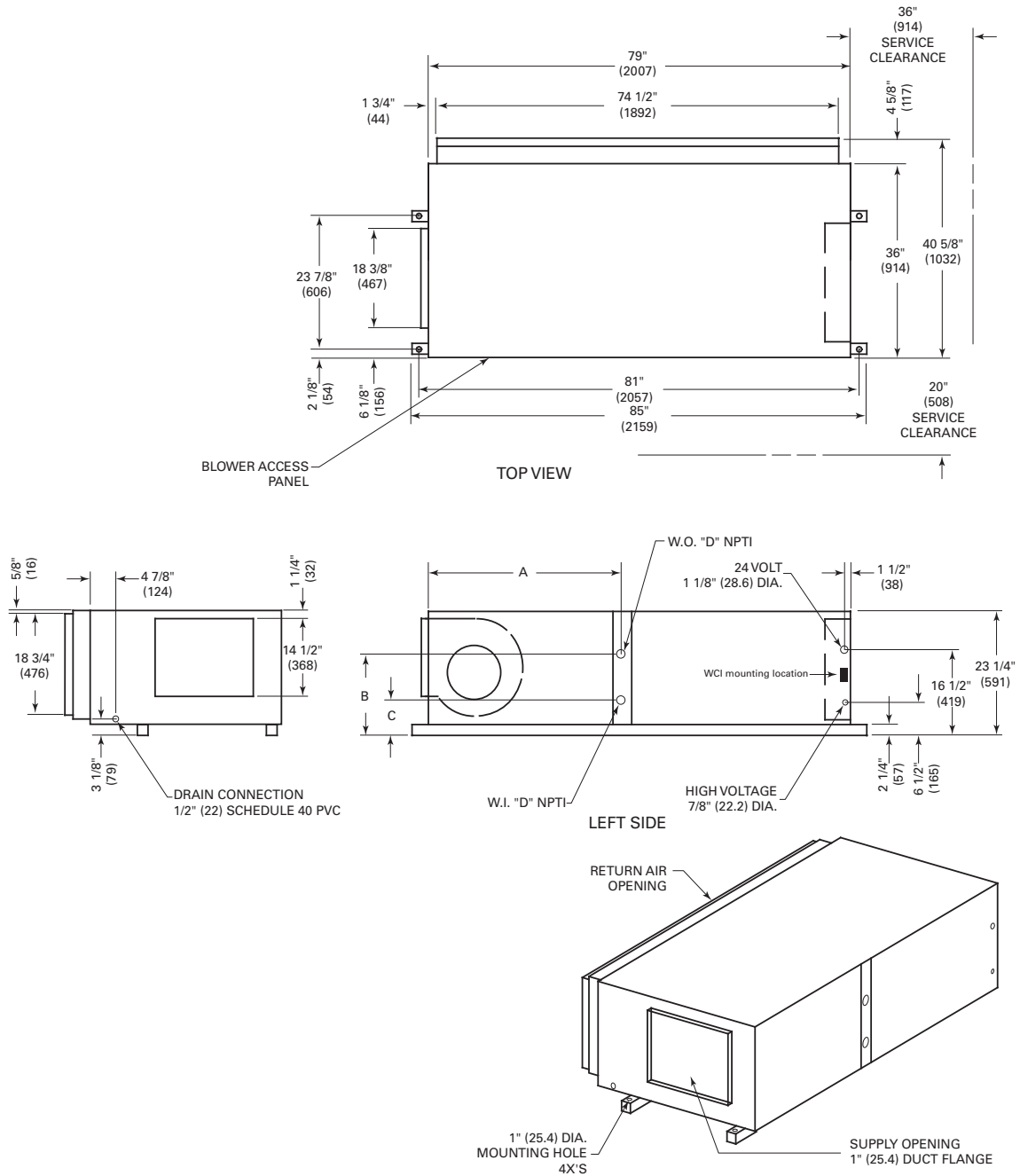


Table 14. GEH 6-10 tons (072-120) 60 Hz; GEH 6-7½ tons (072-090) 50 Hz—right return/back supply

GEH (60 Hz)	GEH (50 Hz)	A	B	C	D
072	—	36-1/4 in. (921 mm)	15-5/8 in. (397 mm)	6-5/8 in. (168 mm)	1-1/4 in. (32 mm)
090	072	36-1/8 in. (917 mm)	12-3/4 in. (324 mm)	6-3/4 in. (171 mm)	1-1/4 in. (32 mm)
120	090	36-1/8 in. (917 mm)	13 in. (330 mm)	7-1/4 in. (184 mm)	1-1/2 in. (38 mm)



Unit Dimensions and Weights

Figure 18. GEH 6-10 tons (072-120) 60 Hz; GEH 6-7½ tons (072-090) 50 Hz - left return/right supply

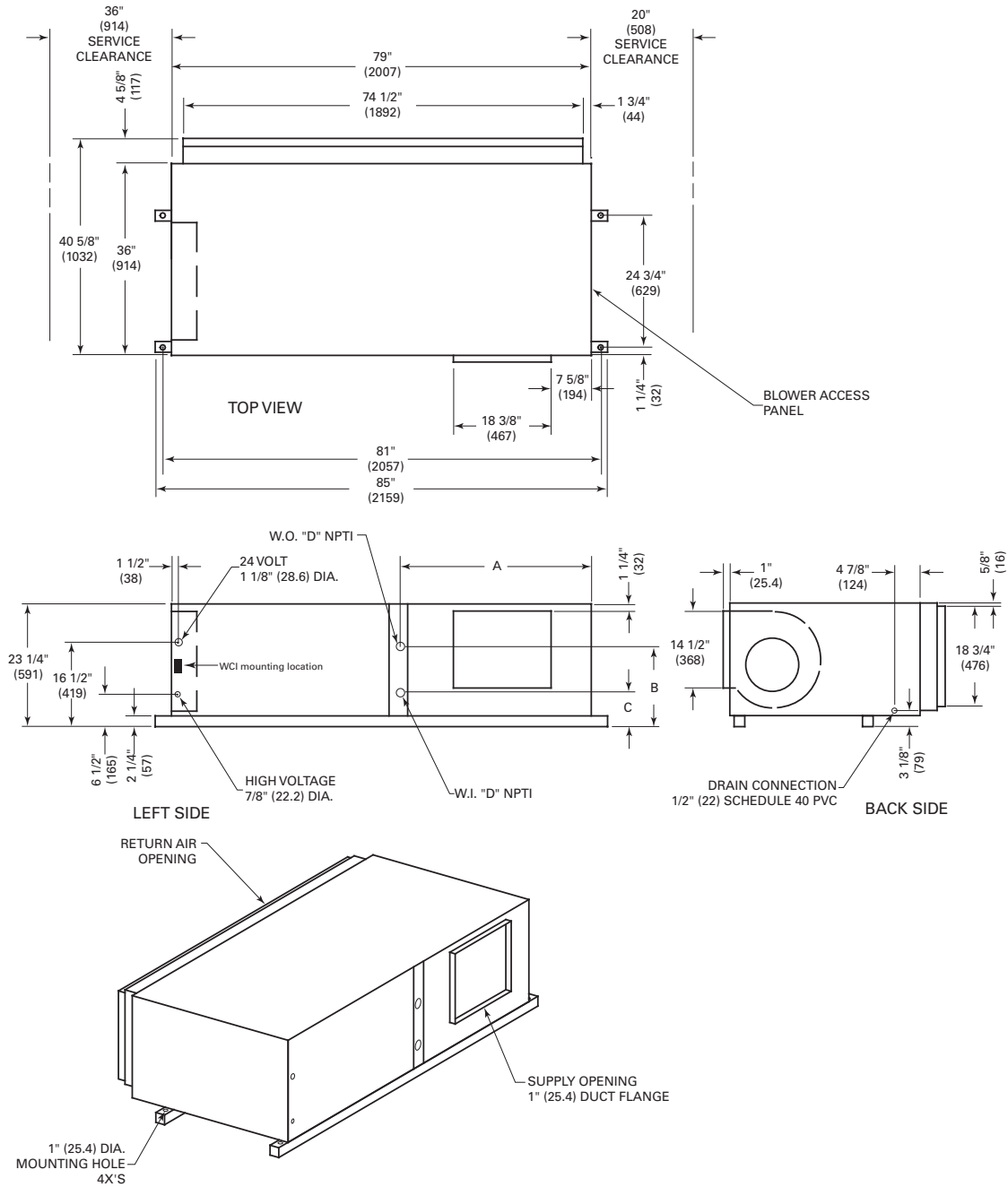


Table 15. GEH 6-10 tons (072-120) 60 Hz; GEH 6-7½ tons (072-090) 50 Hz—left return/right supply

GEH (60 Hz)	GEH (50 Hz)	A	B	C	D
072	—	36-1/8 in. (917 mm)	17 in. (432 mm)	8 in. (203 mm)	1-1/4 in. (32 mm)
090	072	36-1/8 in. (917 mm)	13-3/4 in. (349 mm)	7-3/4 in. (197 mm)	1-1/4 in. (32 mm)
120	090	36-1/8 in. (917 mm)	13 in. (330 mm)	7-1/4 in. (184 mm)	1-1/2 in. (38 mm)

Figure 19. GEH 6-10 tons (072-120) 60 Hz; GEH 6-7½ tons (072-090) 50 Hz—left return/back supply

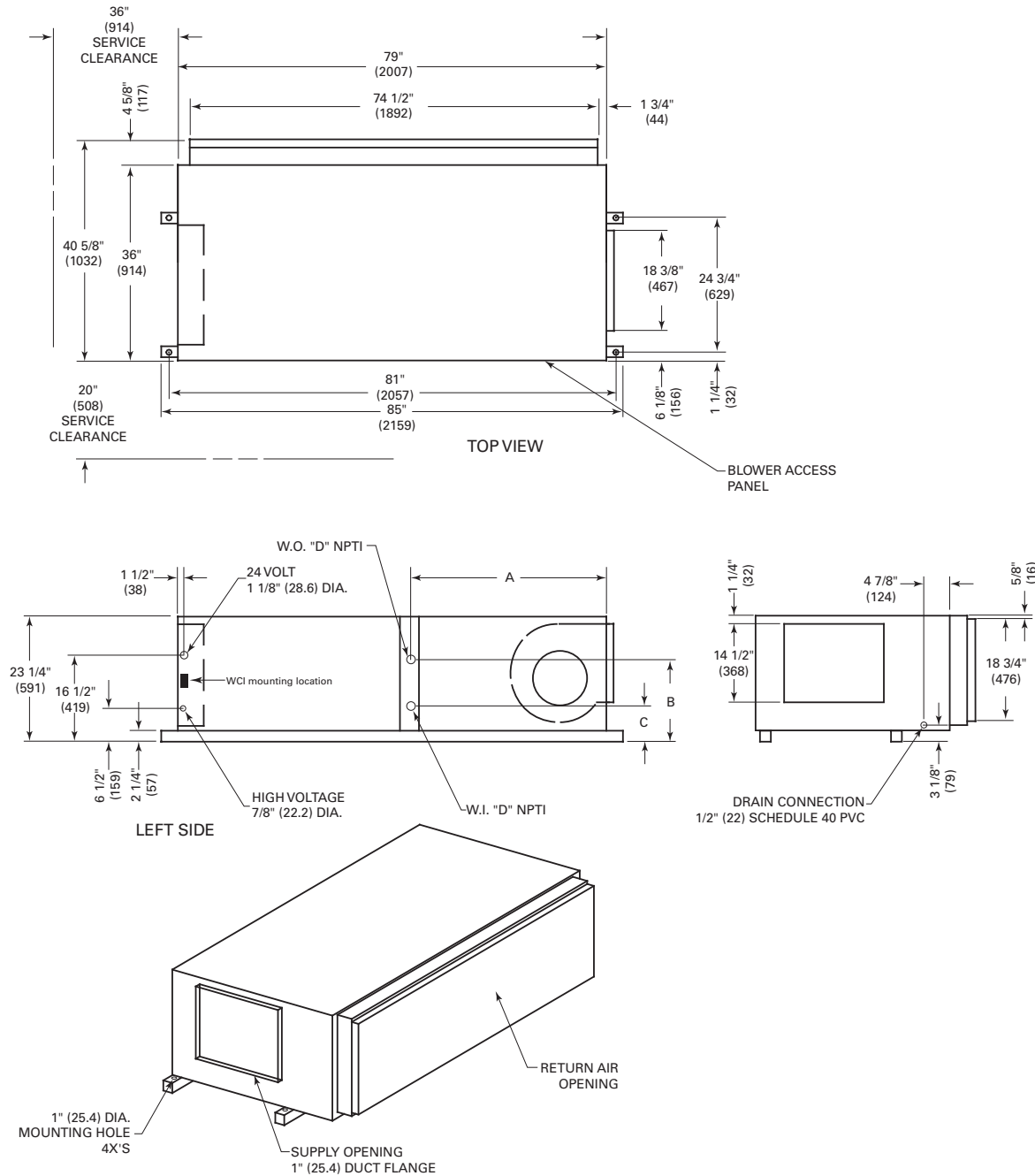


Table 16. GEH 6-10 tons (072-120) 60 Hz; GEH 6-7½ tons (072-090) 50 Hz—left return/back supply

GEH (60 Hz)	GEH (50 Hz)	A	B	C	D
072	—	36-1/8 in. (917 mm)	17 in. (432 mm)	8 in. (203 mm)	1-1/4 in. (32 mm)
090	072	36-1/8 in. (917 mm)	13-3/4 in. (349 mm)	7-3/4 in. (197 mm)	1-1/4 in. (32 mm)
120	090	36-1/8 in. (917 mm)	13 in. (330 mm)	7-1/4 in. (184 mm)	1-1/2 in. (38 mm)



Unit Dimensions and Weights

Figure 20. GEH 12½-15 tons (150-180) 60 Hz; GEH 10-12½ tons (120-150) 50 Hz—right return/left supply

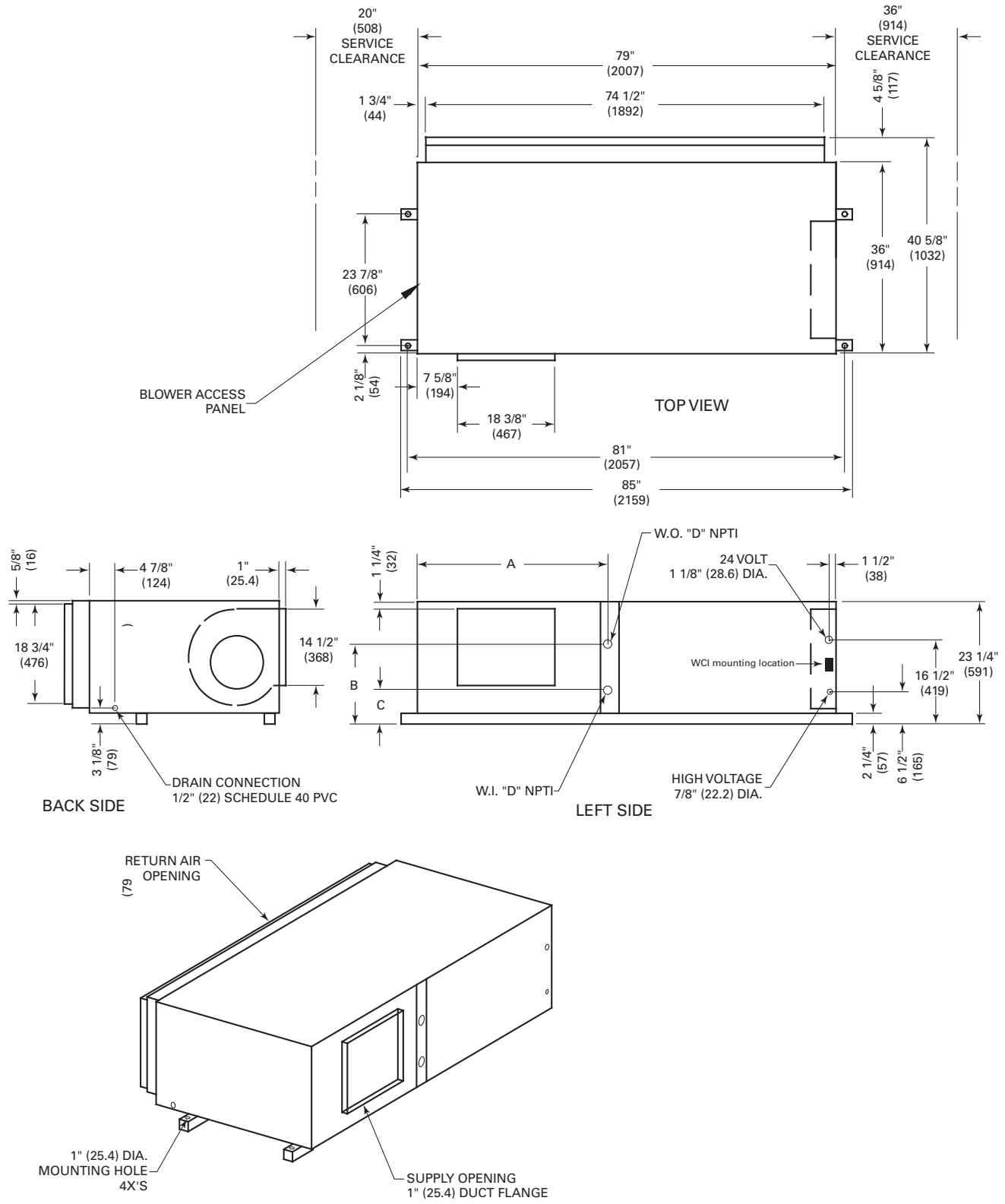
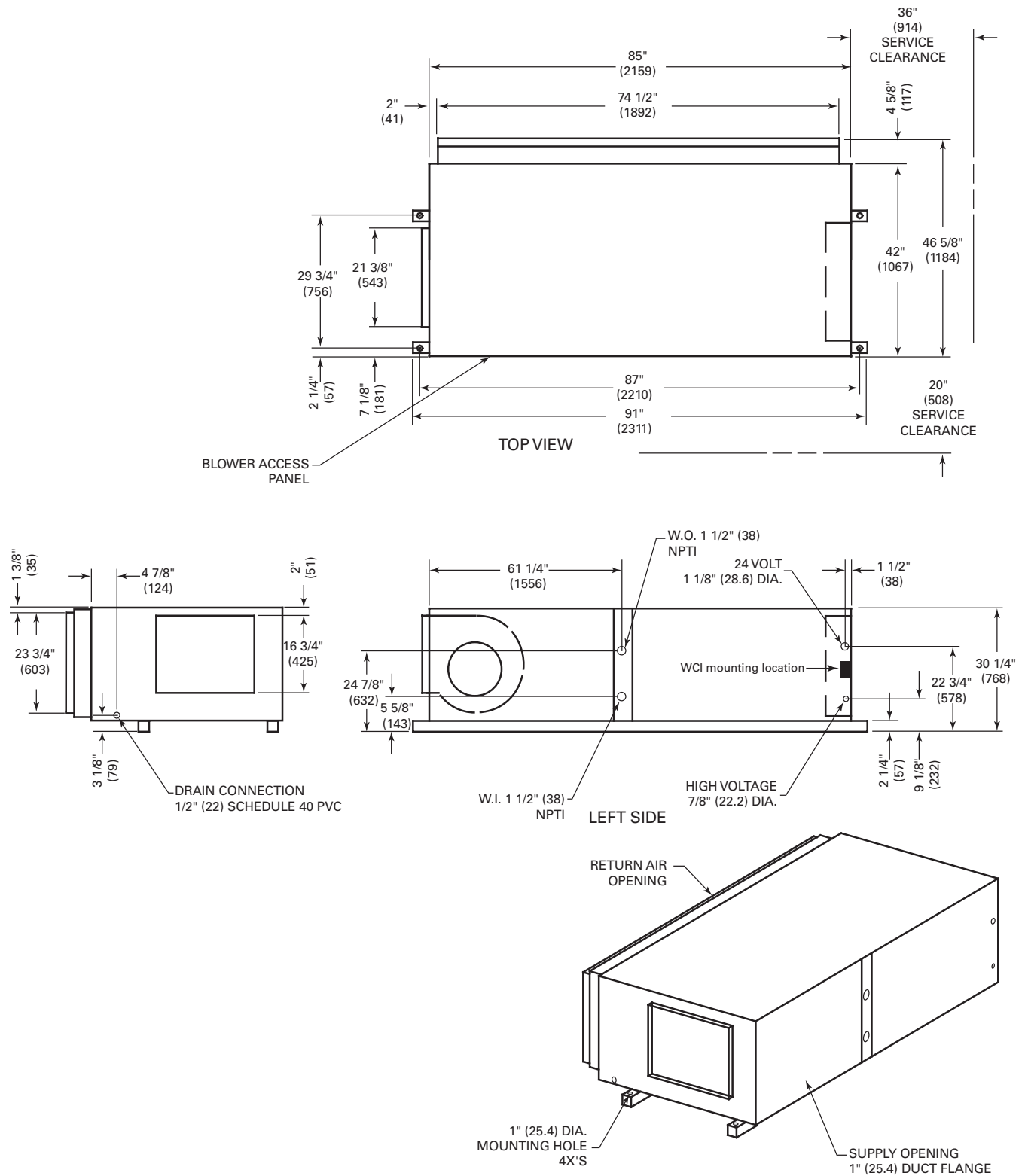


Figure 21. GEH 12½-15 tons (150-180) 60 Hz; GEH 10-12½ tons (120-150) 50 Hz—right return/back supply





Unit Dimensions and Weights

Figure 22. GEH 12½-15 tons (150-180) 60 Hz; GEH 10-12½ tons (120-150) 50 Hz—left return/right supply

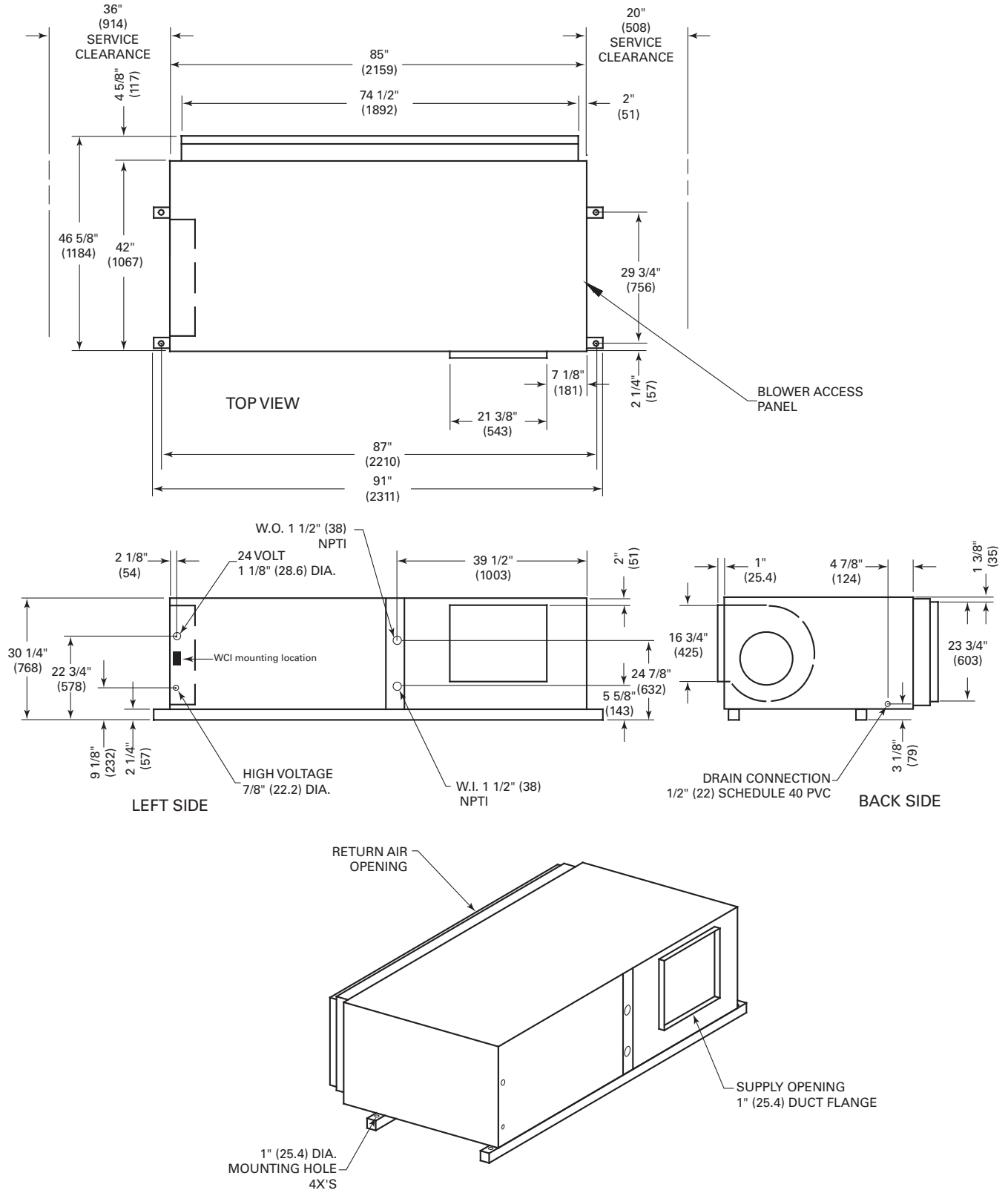
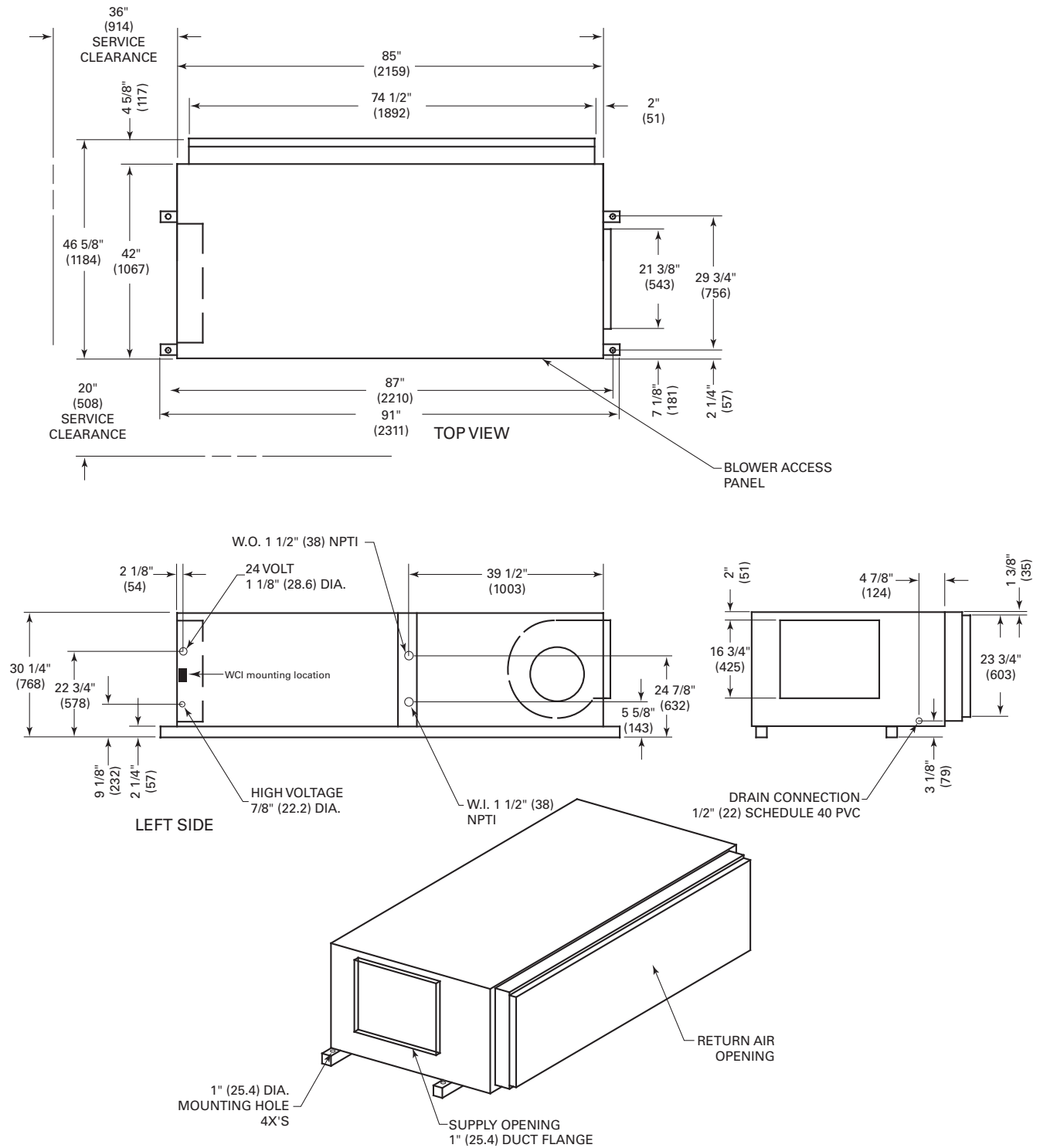


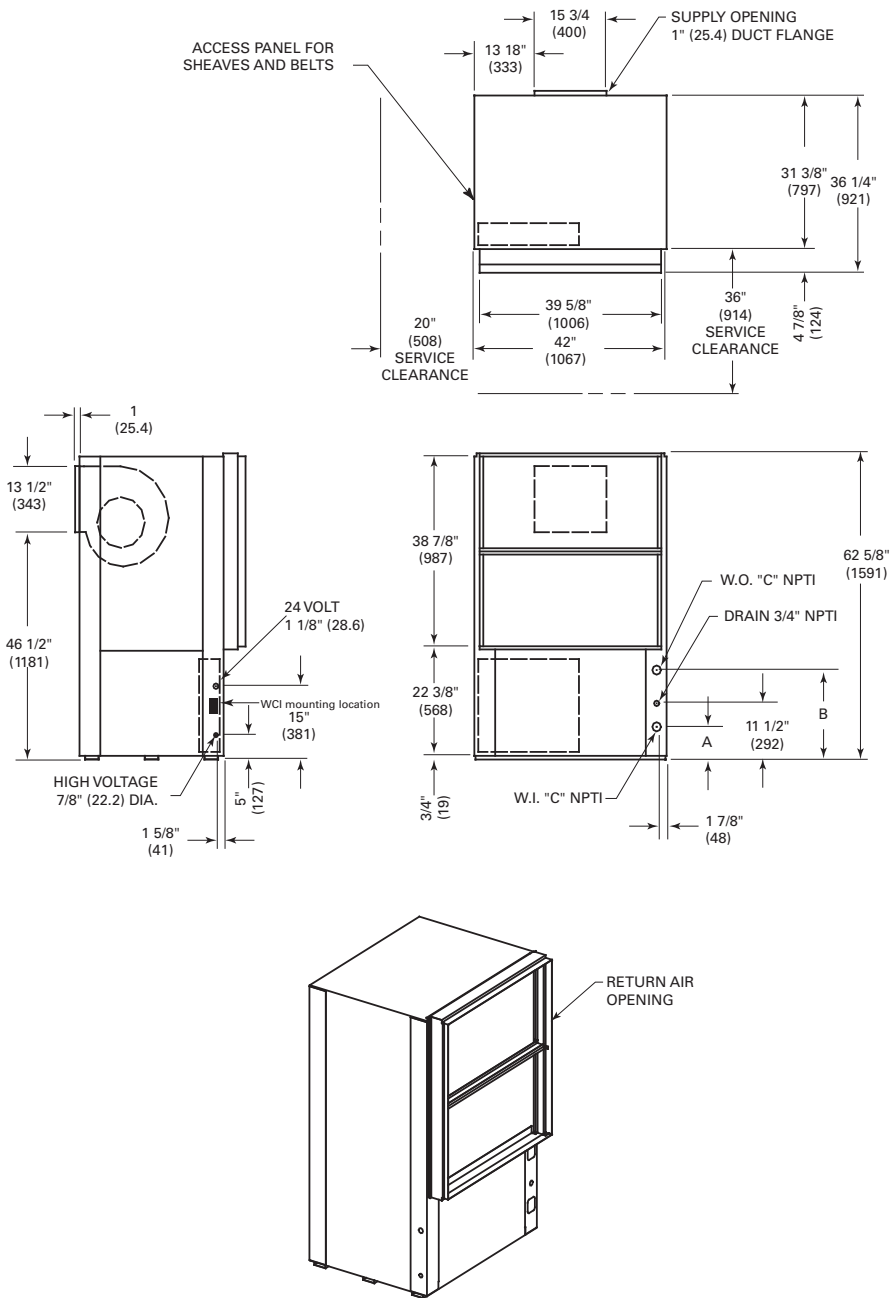
Figure 23. GEH 12½-15 tons (150-180) 60 Hz; GEH 10-12½ tons (120-150) 50 Hz—left return/back supply





Unit Dimensions and Weights

Figure 24. GEV 6-10 tons (072-120) 60 Hz; 6 and 7½ tons (072 and 090) 50 Hz—front return/back supply^(a)

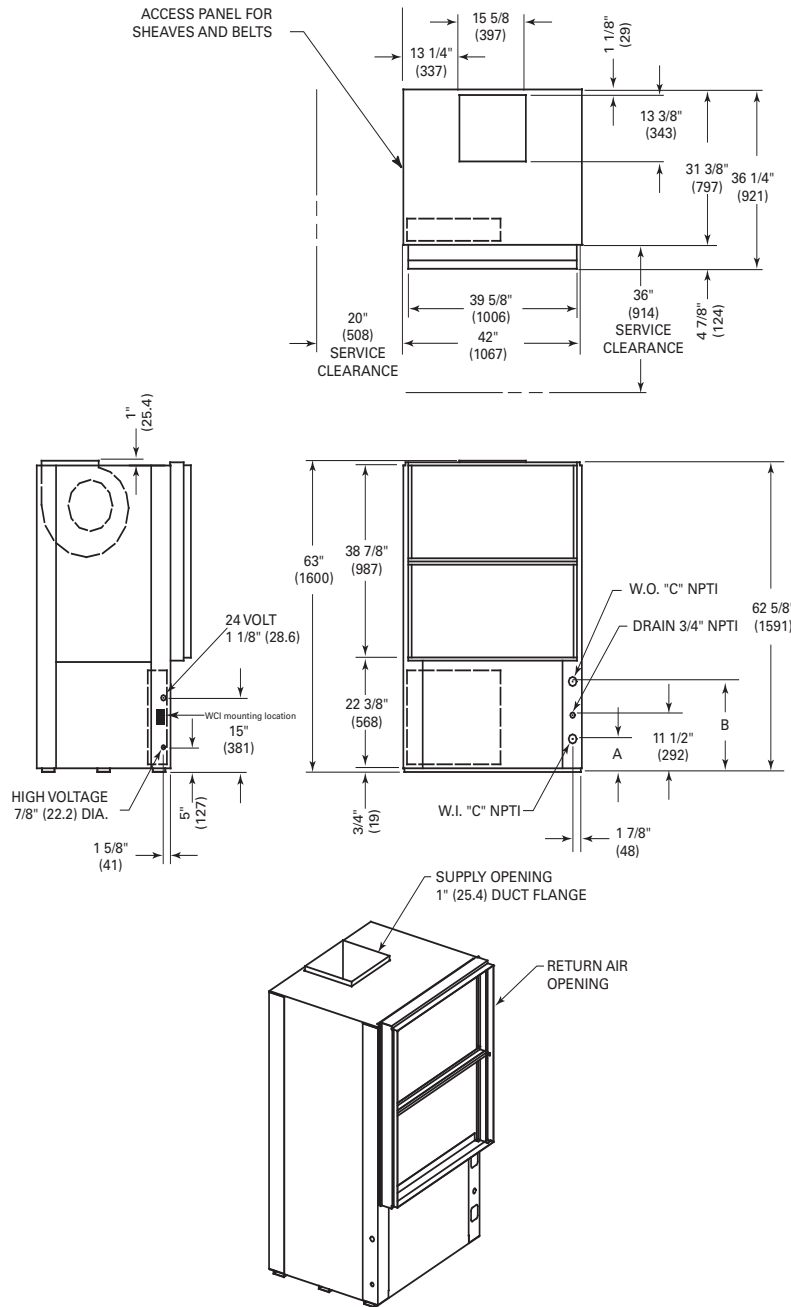


(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

Table 17. GEV 6-10 tons (072-120) 60 Hz; 6 and 7½ tons (072 and 090) 50 Hz—front return/back supply

Unit (60 Hz)	Unit (50 Hz)	A	B	C
6 ton	—	6-5/8 in. (168 mm)	18-3/8 in. (467 mm)	1-1/4 in. (32 mm)
7½ ton	6 ton	6-5/8 in. (168 mm)	18-3/8 in. (403 mm)	1-1/4 in. (32 mm)
10 ton	7½ ton	6-1/2 in. (165 mm)	18-1/2 in. (470 mm)	1-1/2 in. (38 mm)

Figure 25. GEV 6–10 tons (072–120) 60 Hz; 6 and 7½ ton (072 and 090) 50 Hz—front return/top supply^(a)



(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

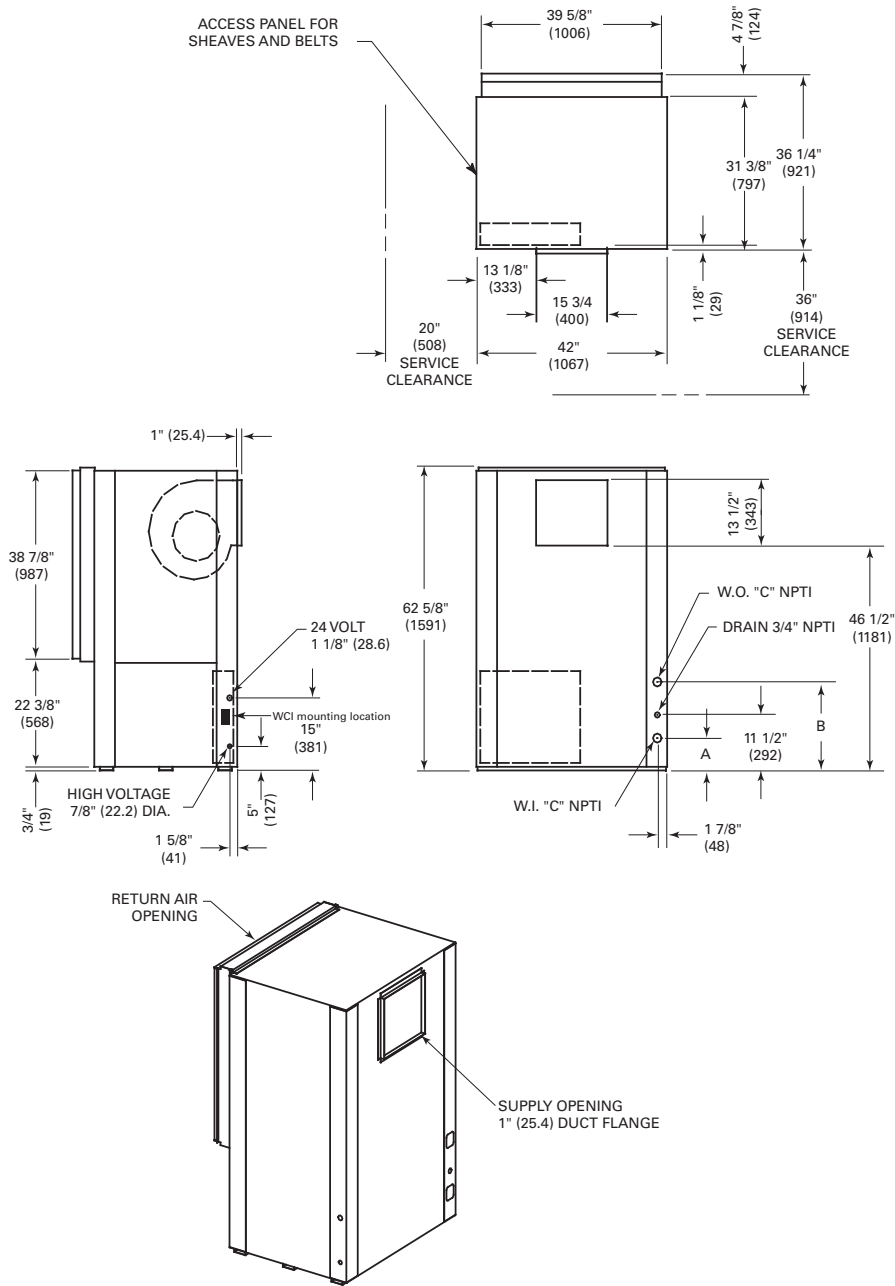
Table 18. GEV 6–10 tons (072-120) 60 Hz; 6 and 7½ ton (072 and 090) 50 Hz—front return/top supply

Unit (60 Hz)	Unit (50 Hz)	A	B	C
6 ton	—	6-5/8 in. (168 mm)	18-3/8 in. (467 mm)	1-1/4 in. (32 mm)
7½ ton	6 ton	6-5/8 in. (168 mm)	18-3/8 in. (403 mm)	1-1/4 in. (32 mm)
10 ton	7½ ton	6-1/2 in. (165 mm)	18-1/2 in. (470 mm)	1-1/2 in. (38 mm)



Unit Dimensions and Weights

Figure 26. GEV 6–10 tons (072-120) 60 Hz; 6 and 7½ ton (072 and 090) 50 Hz—back return/front supply^(a)

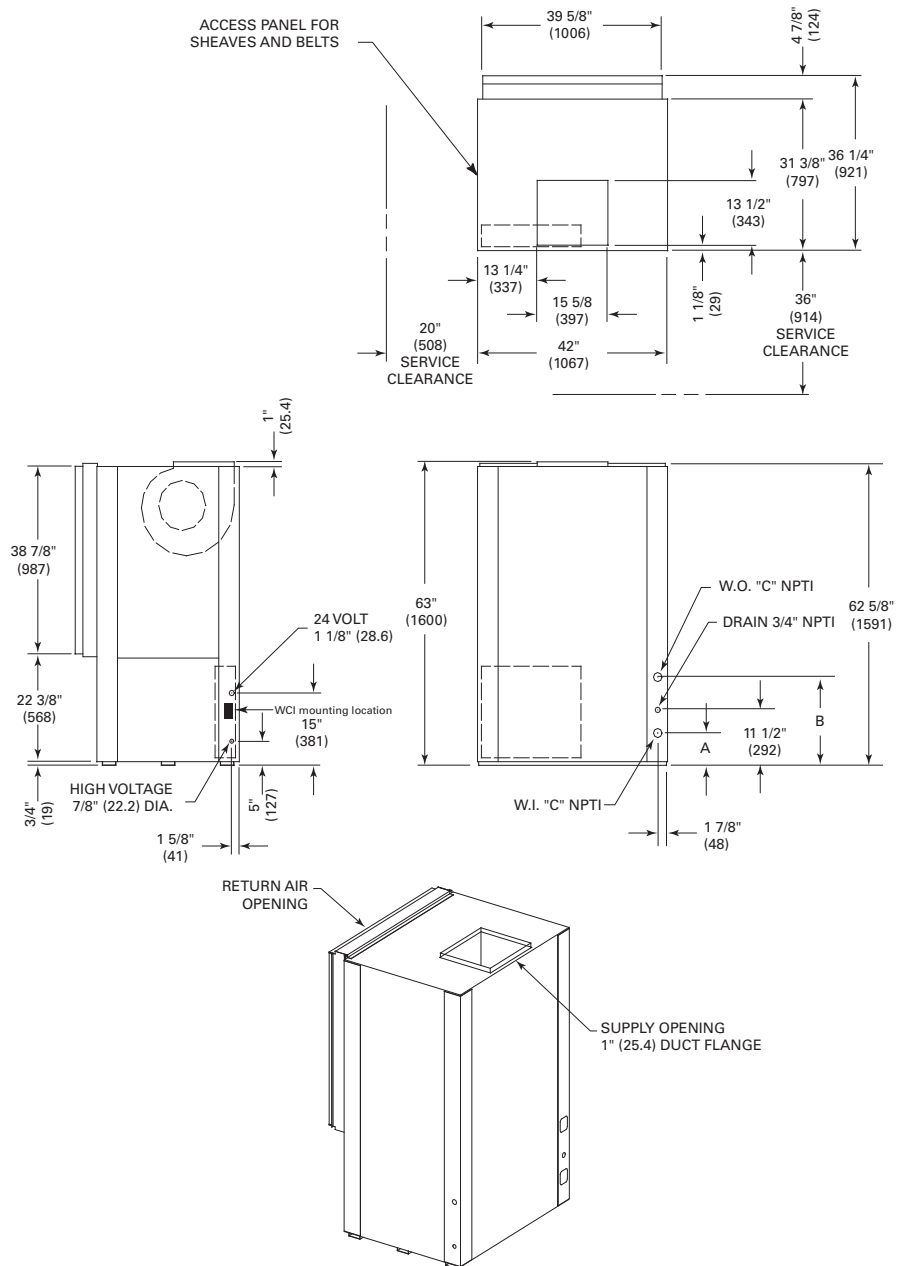


(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

Table 19. GEV 6–10 tons (072-120) 60 Hz; 6 and 7½ ton (072 and 090) 50 Hz—back return/front supply

Unit (60 Hz)	Unit (50 Hz)	A	B	C
6 ton	—	6-5/8 in. (168 mm)	18-3/8 in. (467 mm)	1-1/4 in. (32 mm)
7½ ton	6 ton	6-5/8 in. (168 mm)	18-3/8 in. (403 mm)	1-1/4 in. (32 mm)
10 ton	7½ ton	6-1/2 in. (165 mm)	18-1/2 in. (470 mm)	1-1/2 in. (38 mm)

Figure 27. GEV 6–10 tons (072-120) 60 Hz; 6 and 7½ ton (072 and 090) 50 Hz—back return/top supply^(a)



(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

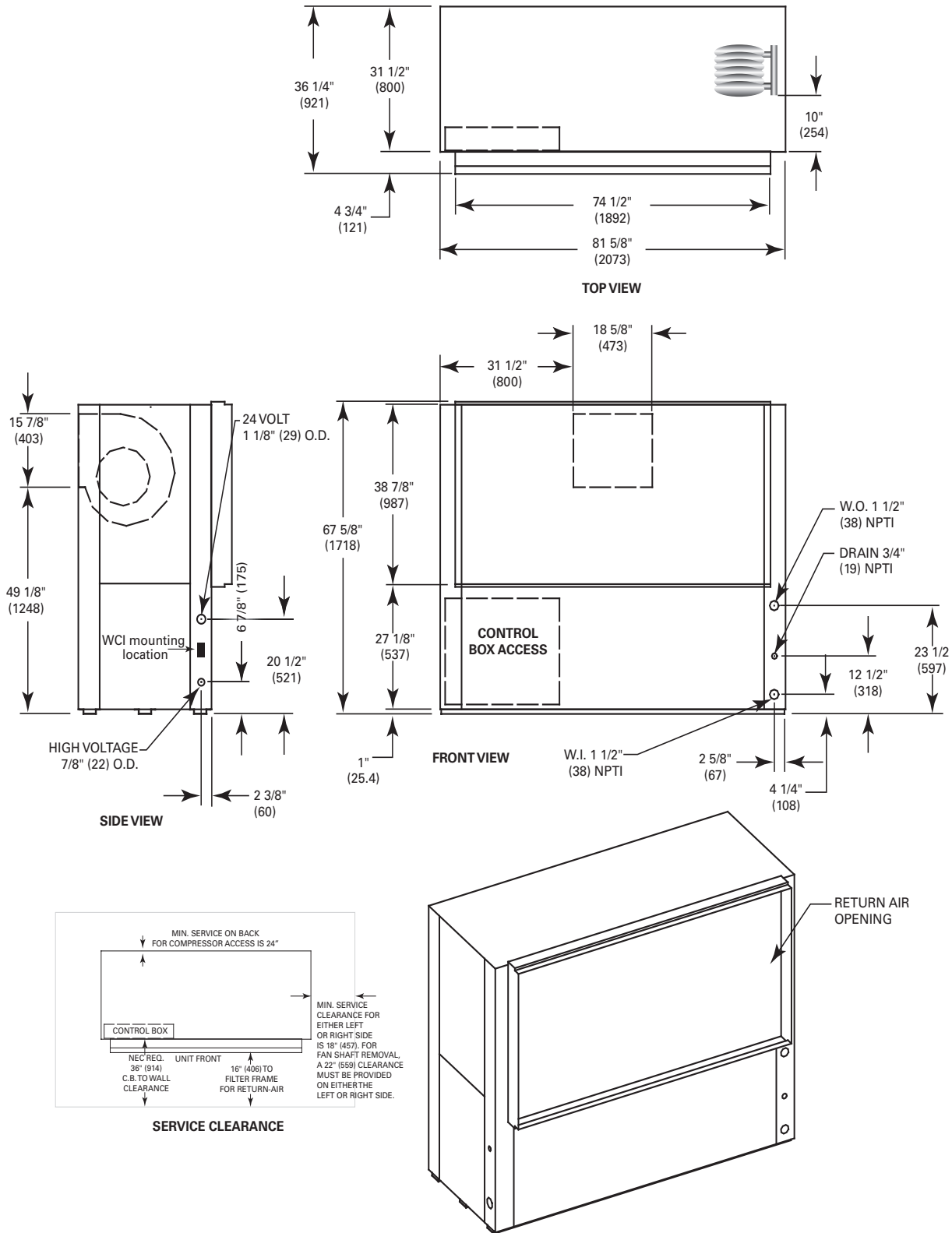
Table 20. GEV 6–10 tons (072-120) 60 Hz; 6 and 7½ ton (072 and 090) 50 Hz—back return/top supply

Unit (60 Hz)	Unit (50 Hz)	A	B	C
6 ton	—	6-5/8 in. (168 mm)	18-3/8 in. (467 mm)	1-1/4 in. (32 mm)
7½ ton	6 ton	6-5/8 in. (168 mm)	18-3/8 in. (403 mm)	1-1/4 in. (32 mm)
10 ton	7½ ton	6-1/2 in. (165 mm)	18-1/2 in. (470 mm)	1-1/2 in. (38 mm)



Unit Dimensions and Weights

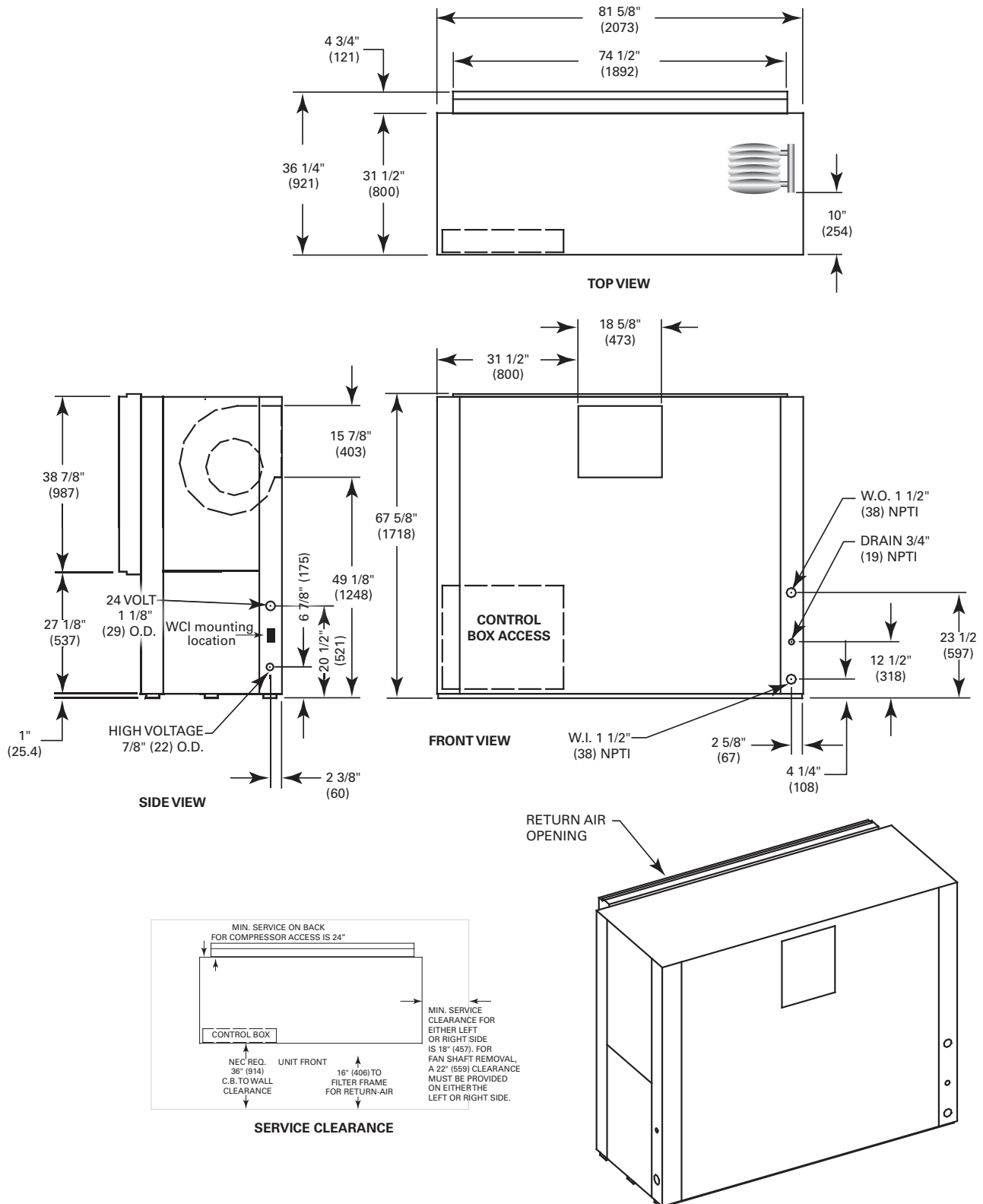
Figure 28. GEV 12½–15 tons (150–180) 60 Hz; GEV 10 and 12½ ton (120 and 150) 50 Hz—front return/back supply^(a)



(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

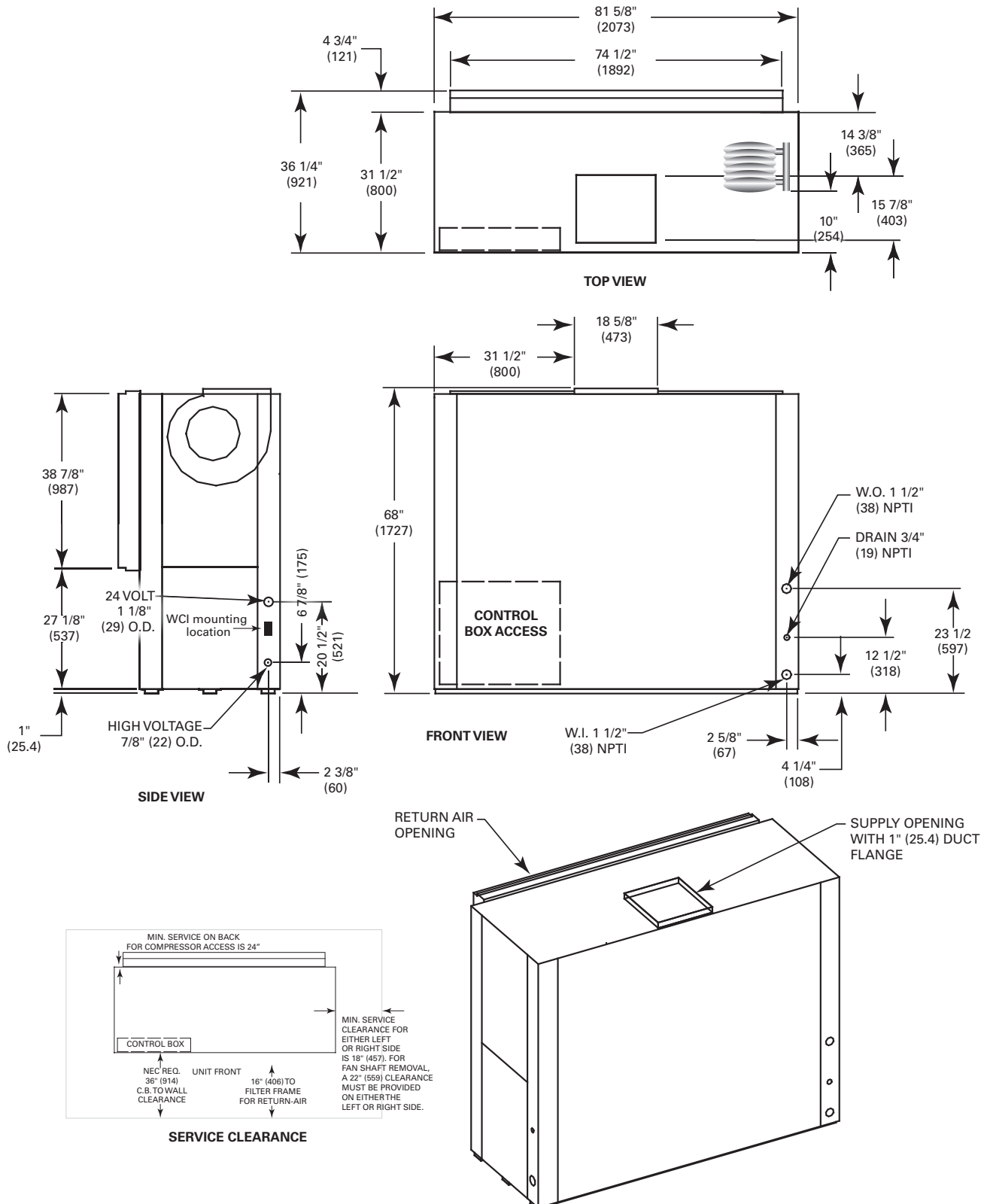
Unit Dimensions and Weights

Figure 29. GEV 12½–15 tons (150–180) 60 Hz; GEV 10 and 12½ ton (120 and 150) 50 Hz—back return/front supply^(a)



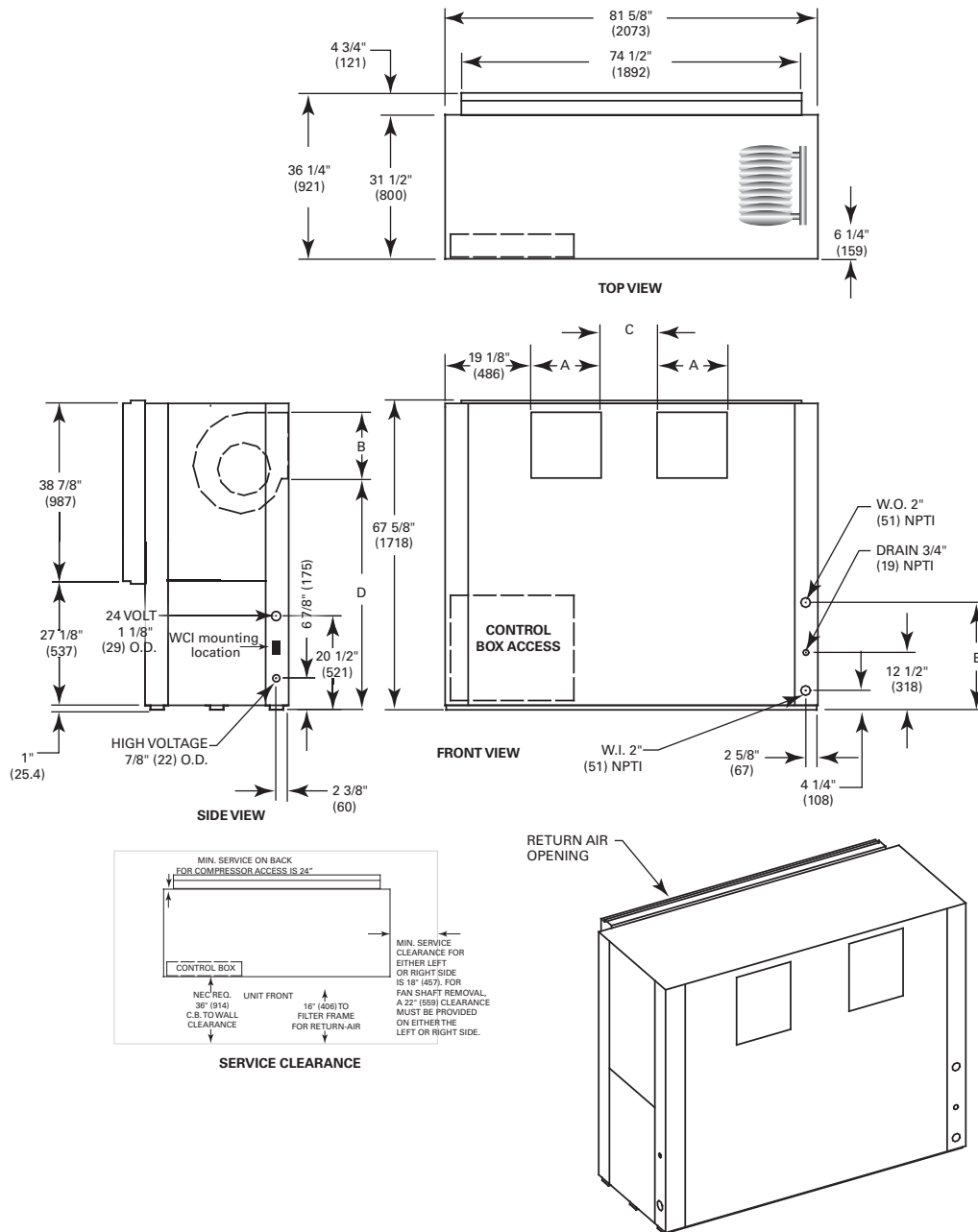
(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

Figure 31. GEV 12½–15 ton (150–180) 60 Hz; GEV 10 and 12½ ton (120 and 150) 50 Hz—back return/top supply^(a)



(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

Figure 33. GEV 20 and 25 ton (240 and 300) 60 Hz; GEV 15 and 20 ton (180 and 240) 50 Hz - back return/front supply^(a)



(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

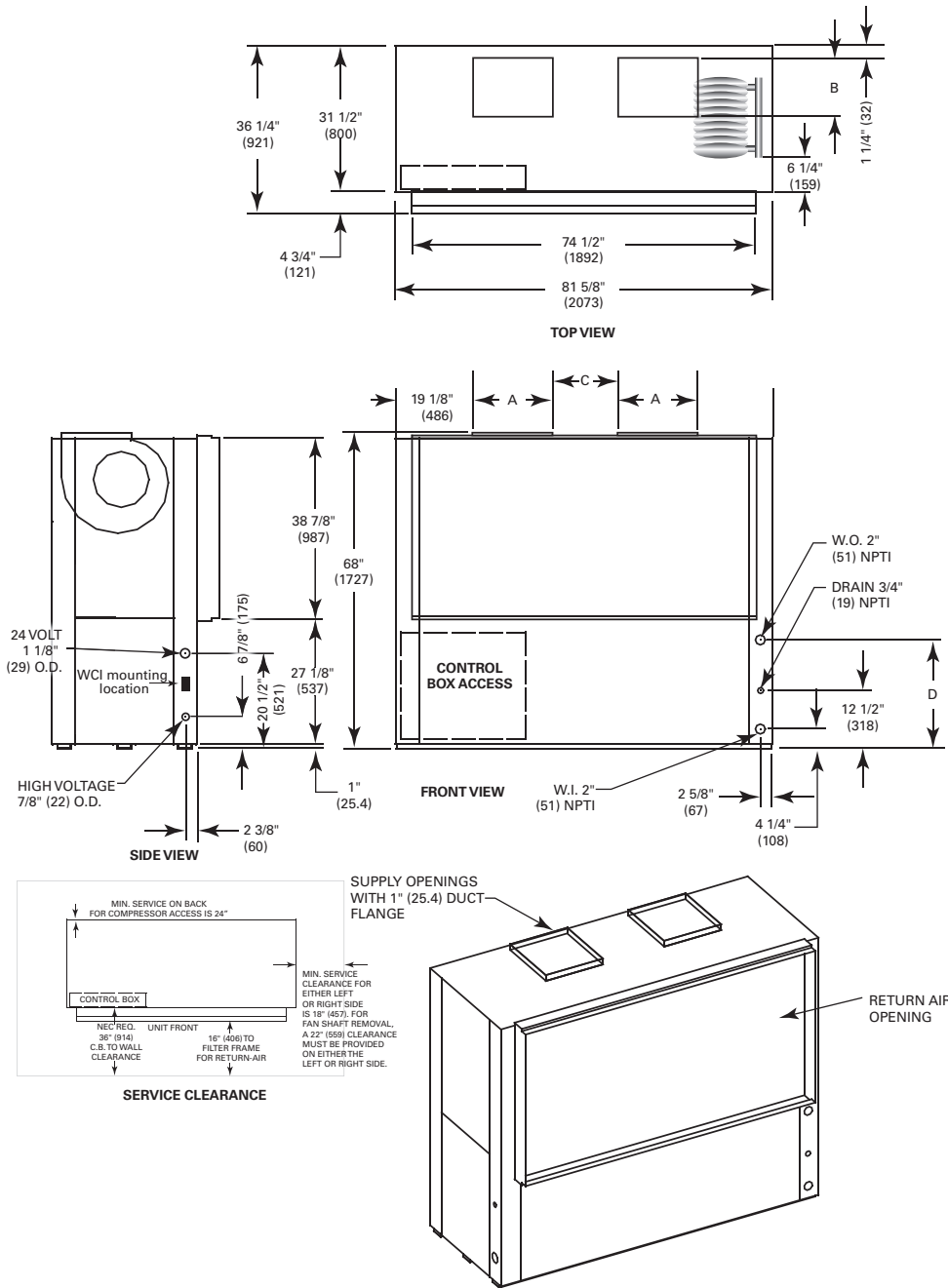
Table 22. GEV 20 and 25 ton (240 and 300) 60 Hz; GEV 15 and 20 ton (180 and 240) 50 Hz—back return/front supply

Unit (60 Hz)	Unit (50 Hz)	A	B	C	D	E
20 ton	15 ton	15-5/8 in. (397 mm)	13-1/2 in. (341 mm)	12 in. (305 mm)	51-5/8 in. (1310 mm)	20-7/8 in. (530 mm)
25 ton Std Static	20 ton Std Static	14-3/4 in. (375 mm)	15-7/8 in. (403 mm)	13-7/8 in. (352 mm)	49-1/8 in. (1248 mm)	23-1/2 in. (597 mm)
25 ton High Static	20 ton High Static	15-5/8 in. (397 mm)	13-1/2 in. (343 mm)	12 in. (305 mm)	51-5/8 in. (1311 mm)	23-1/2 in. (597 mm)



Unit Dimensions and Weights

Figure 34. GEV 20 and 25 ton (240 and 300) 60 Hz; GEV 15 and 20 ton (180 and 240) 50 Hz—front return/top supply^(a)



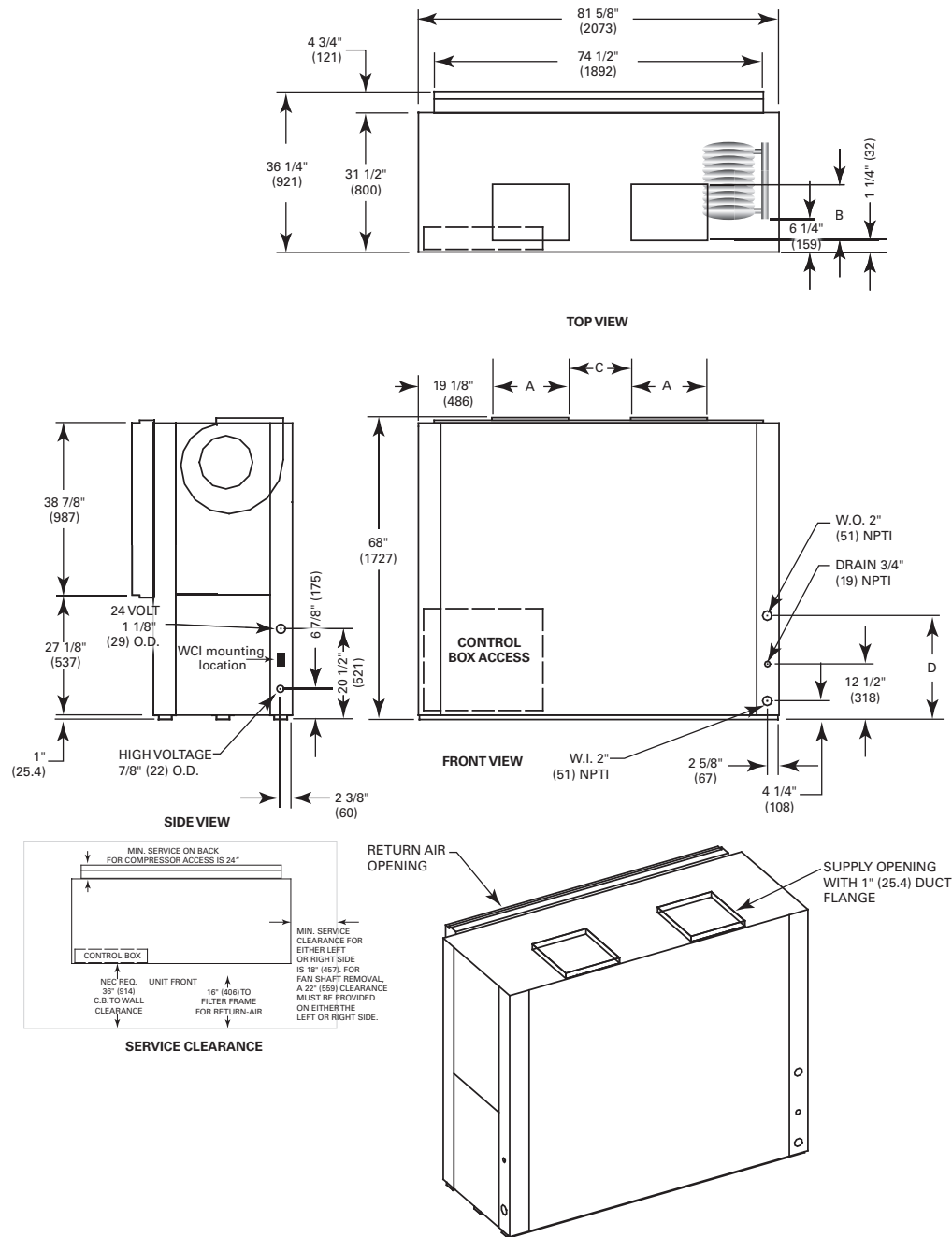
(a) NEC requires that the GEV072-300 front return must be a non-ducted return.

Table 23. GEV 20 and 25 ton (240 and 300) 60 Hz; GEV 15 and 20 ton (180 and 240) 50 Hz—front return/top supply

Unit (60 Hz)	Unit (50 Hz)	A	B	C	D
20 ton	15 ton	15-5/8 in. (397 mm)	13-1/2 in. (341 mm)	12 in. (305 mm)	20-7/8 in. (530 mm)
25 ton Std Static	20 ton Std Static	14-3/4 in. (375 mm)	15-7/8 in. (403 mm)	13-7/8 in. (352 mm)	23-1/2 in. (597 mm)
25 ton High Static	20 ton High Static	15-5/8 in. (397 mm)	13-1/2 in. (343 mm)	12 in. (305 mm)	23-1/2 in. (597 mm)

Unit Dimensions and Weights

Figure 35. GEV 20 and 25 ton (240 and 300) 60 Hz; GEV 15 and 20 ton (180 and 240) 50 Hz—back return/top supply^(a)



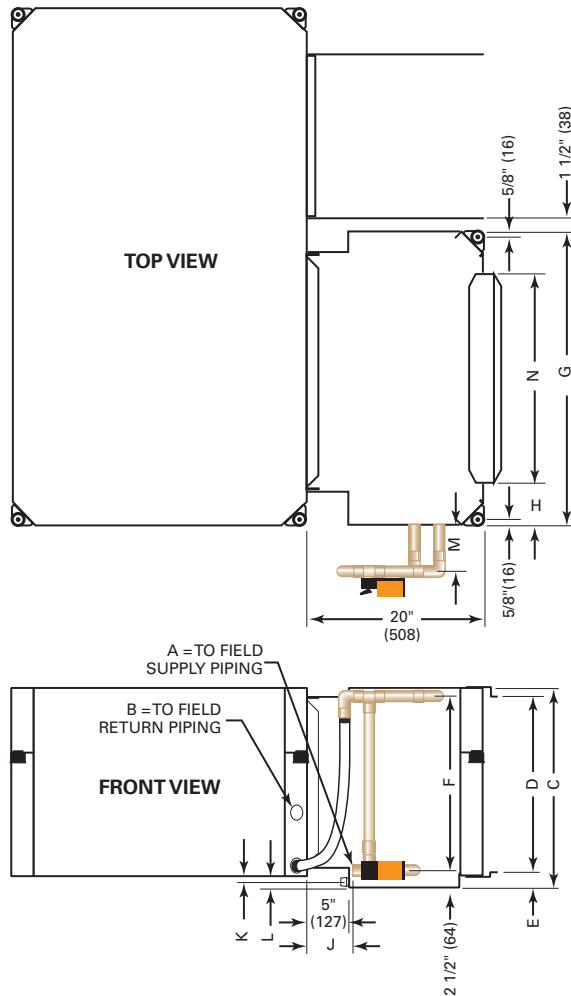
(a) NEC requires GEV072-300 front return must be non-ducted return.

Table 24. GEV 20 and 25 ton (240 and 300) 60 Hz; GEV 15 and 20 ton (180 and 240) 50 Hz—back return/top supply

Unit (60 Hz)	Unit (50 Hz)	A	B	C	D
20 ton	15 ton	15-5/8 in. (397 mm)	13-1/2 in. (341 mm)	12 in. (305 mm)	20-7/8 in. (530 mm)
25 ton Std Static	20 ton Std Static	14-3/4 in. (375 mm)	15-7/8 in. (403 mm)	13-7/8 in. (352 mm)	23-1/2 in. (597 mm)
25 ton High Static	20 ton High Static	15-5/8 in. (397 mm)	13-1/2 in. (343 mm)	12 in. (305 mm)	23-1/2 in. (597 mm)

Unit Dimensions and Weights

Figure 36. GEH and EXH waterside economizer^(a)



(a) Waterside economizer installation requires field piping.

Table 25. GEH and EXH waterside economizer

GEH (60 Hz)	GEH (50 Hz)	A NPTI	B NPTI	C	D	E	F	G	H	J	K	L	M	N
006-015	006-012	1/2 (12.7)	1/2 (12.7)	16-1/8 (410)	13-5/8 (346)	1-1/2 (38)	10-3/4 (273)	23 (584)	2-1/4 (57)	7-1/2 (191)	1/2 (12.7)	1 (25.4)	4 (102)	18-1/2 (470)
018-030	015-024	3/4 (19)	3/4 (19)	18-1/2 (470)	15-5/8 (397)	1-1/2 (38)	13-3/4 (349)	26 (660)	3-1/4 (83)	6-7/8 (175)	1/2 (12.7)	1 (25.4)	4 (102)	18-1/2 (470)
036-042	030-036	3/4 (19)	3/4 (19)	21 (533)	17-5/8 (448)	2-1/4 (57)	16-1/2 (419)	30 (762)	3-3/4 (95)	6-1/4 (159)	1-1/4 (32)	2 (50.8)	4-1/2 (114)	23-1/2 (597)
048-060	042-060	1 (25.4)	1 (25.4)	23-1/8 (587)	19-5/8 (498)	2-1/2 (64)	19-1/2 (495)	34 (864)	5-1/4 (133)	5-7/8 (149)	1-1/4 (32)	2 (50.8)	4-1/2 (114)	23-1/2 (597)
EXH (60 Hz)	GEH (50 Hz)	A NPTI	B NPTI	C	D	E	F	G	H	J	K	L	M	N
006-015	----	1/2 (12.7)	1/2 (12.7)	16-1/8 (410)	13-5/8 (346)	1-1/2 (38)	10-3/4 (273)	23 (584)	2-1/4 (57)	7-1/2 (191)	1/2 (12.7)	1 (25.4)	4 (102)	18-1/2 (470)
018-024	----	3/4 (19)	3/4 (19)	18-1/2 (470)	15-5/8 (397)	1-1/2 (38)	13-3/4 (349)	26 (660)	3-1/4 (83)	6-7/8 (175)	1/2 (12.7)	1 (25.4)	4 (102)	18-1/2 (470)
030-036	----	3/4 (19)	3/4 (19)	21 (533)	17-5/8 (448)	2-1/4 (57)	16-1/2 (419)	30 (762)	3-3/4 (95)	6-1/4 (159)	1-1/4 (32)	2 (50.8)	4-1/2 (114)	23-1/2 (597)
042-070	----	1 (25.4)	1 (25.4)	23-1/8 (587)	19-5/8 (498)	2-1/2 (64)	19-1/2 (495)	34 (864)	5-1/4 (133)	5-7/8 (149)	1-1/4 (32)	2 (50.8)	4-1/2 (114)	23-1/2 (597)

Figure 37. GEH and EXH hanging unit waterside economizer

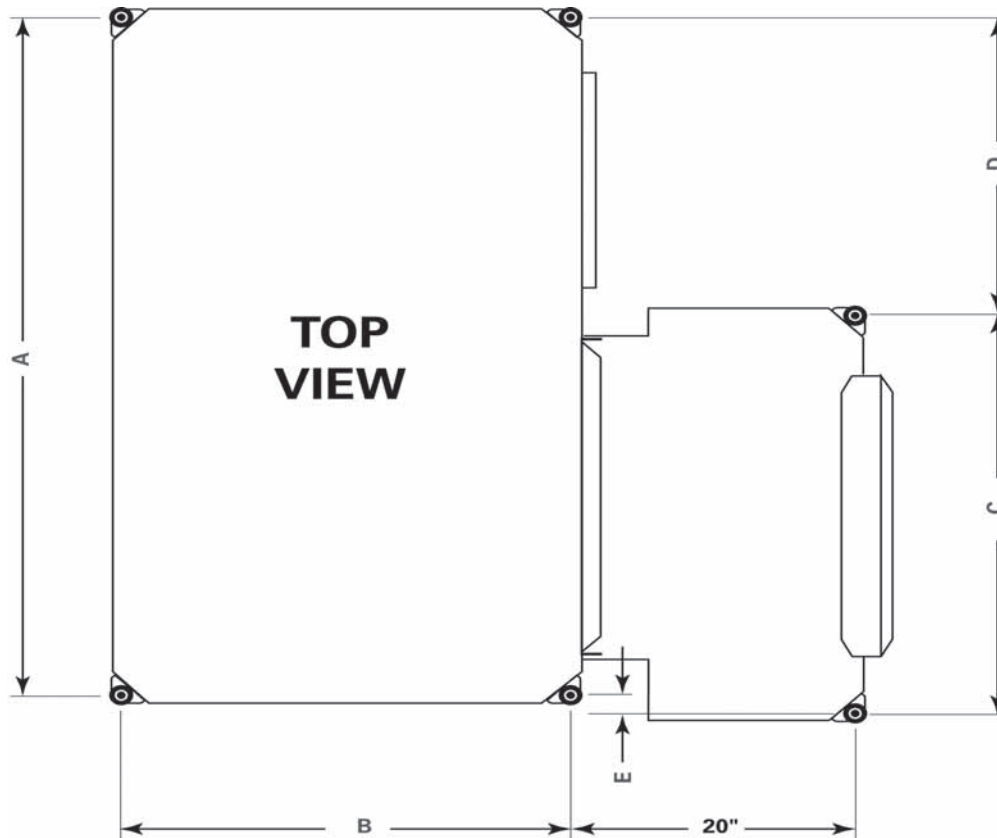


Table 26. GEH and EXH hanging unit waterside economizer

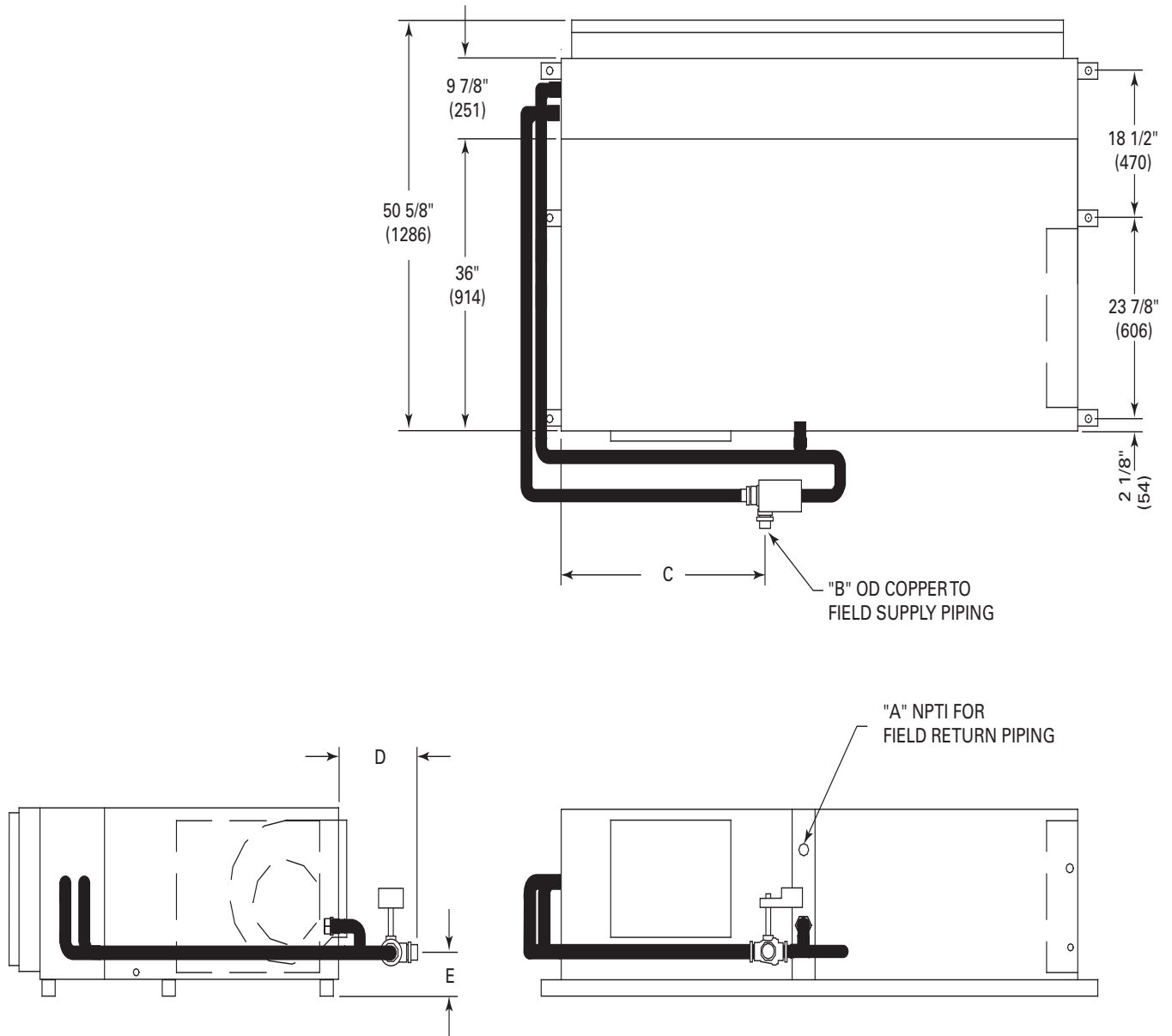
GEH Unit (60 Hz)	GEH Unit (50 Hz)	A	B	C	D	E	Hanging Weight	Shipping Weight
006-015	006-012	38-3/4 (984)	18-3/4 (476)	21-3/4 (552)	17 (432)	0	54 lbs (24.5 kg)	84 lbs (38.2 kg)
018-030	015-024	44-3/4 (1137)	21-3/4 (552)	24-3/4 (629)	21 (533)	1 (25.4)	65 lbs (29.5 kg)	95 lbs (43.2 kg)
036-042	030-036	48-3/4 (1238)	23-3/4 (603)	28-3/4 (730)	21 (533)	2 (50.8)	76 lbs (35 kg)	106 lbs (48 kg)
048-060	042-060	56-3/4 (1442)	31-3/4 (806)	32-3/4 (832)	25 (635)	1 (25.4)	97 lbs (44 kg)	127 lbs (58 kg)
EXH Unit (60 Hz)	EXH Unit (50 Hz)	A	B	C	D	E	Hanging Weight	Shipping Weight
018	—	44-3/4 (1137)	21-3/4 (552)	24-3/4 (629)	21 (533)	1 (25.4)	264 lb (120 kg)	284 lb (129 kg)
024		269 lb (122 kg)	301 lb (137 kg)					
030	—	48-3/4 (1238)	23-3/4 (603)	28-3/4 (730)	21 (533)	2 (50.8)	299 lb (136 kg)	329 lb (149 kg)
036		313 lb (142 kg)	343 lb (156 kg)					
042	—	56-3/4 (1442)	31-3/4 (806)	32-3/4 (832)	25 (635)	1 (25.4)	431 lb (196 kg)	461 lb (209 kg)
048		424 lb (192 kg)	454 lb (206 kg)					
060		444 lb (201 kg)	474 lb (215 kg)					
070		484 lb (220 kg)	514 lb (233 kg)					

Note: All dimensions are in inches followed by millimeters in parenthesis.



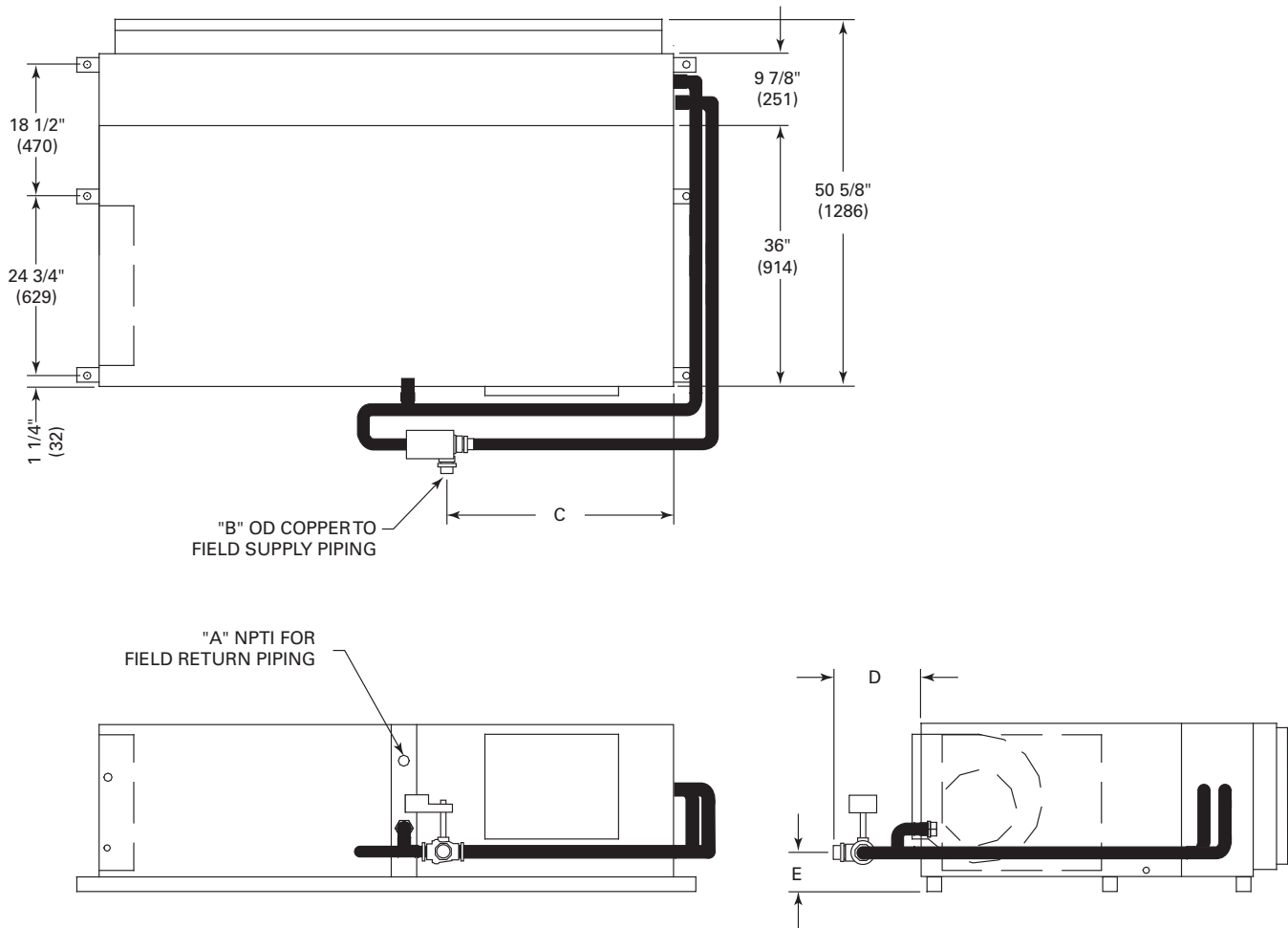
Unit Dimensions and Weights

Figure 38. GEH 6-10 tons (072-120) 60 Hz, right return; GEH 6-7½ tons (072-090) 50 Hz, right return, waterside economizer^{(a)(b)}



- (a) Entering water is on the AB port.
- (b) Field piping required on waterside economizer.

Figure 39. GEH 6-10 tons (072-120) 60 Hz, left return; GEH 6-7½ tons (072-090) 50 Hz, left return, waterside economizer^{(a)(b)}



- (a) Entering water is on the AB port.
- (b) Field piping required on waterside economizer.

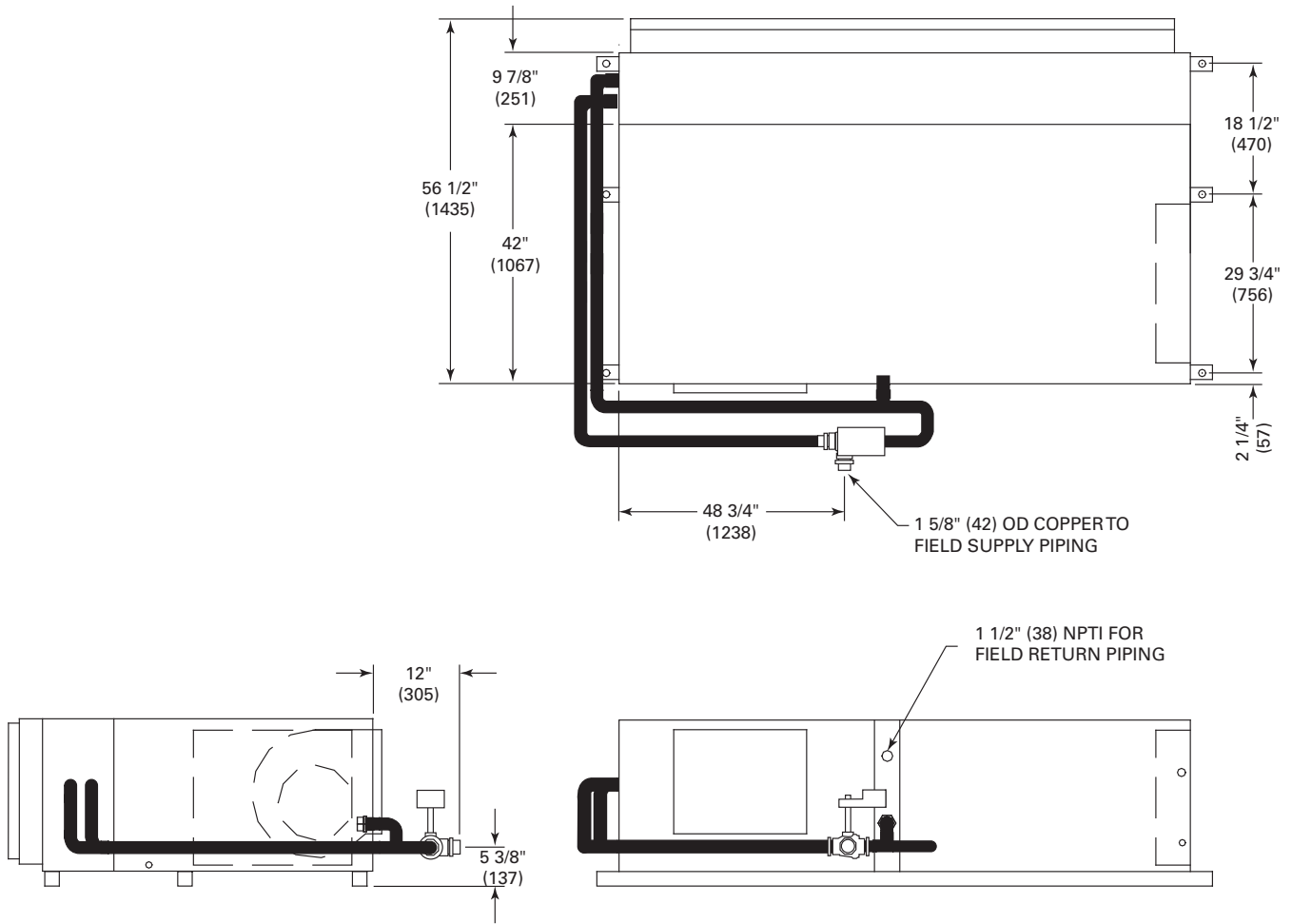
Table 27. GEH 6-10 tons (072-120) 60 Hz, left return; GEH 6-7½ tons (072-090) 50 Hz, left return, waterside economizer

GEH (60 Hz)	GEH (50 Hz)	A	B	C	D	E
072-090	072	1-1/4 (32)	1-3/8 (35)	31 (787)	9-7/8 (251)	3-7/8 (98)
120	090	1-1/2 (38)	1-5/8 (41)	30-3/4 (781)	12-1/2 (318)	4-1/2 (114)

Note: All dimensions are in inches followed by millimeters in parenthesis.

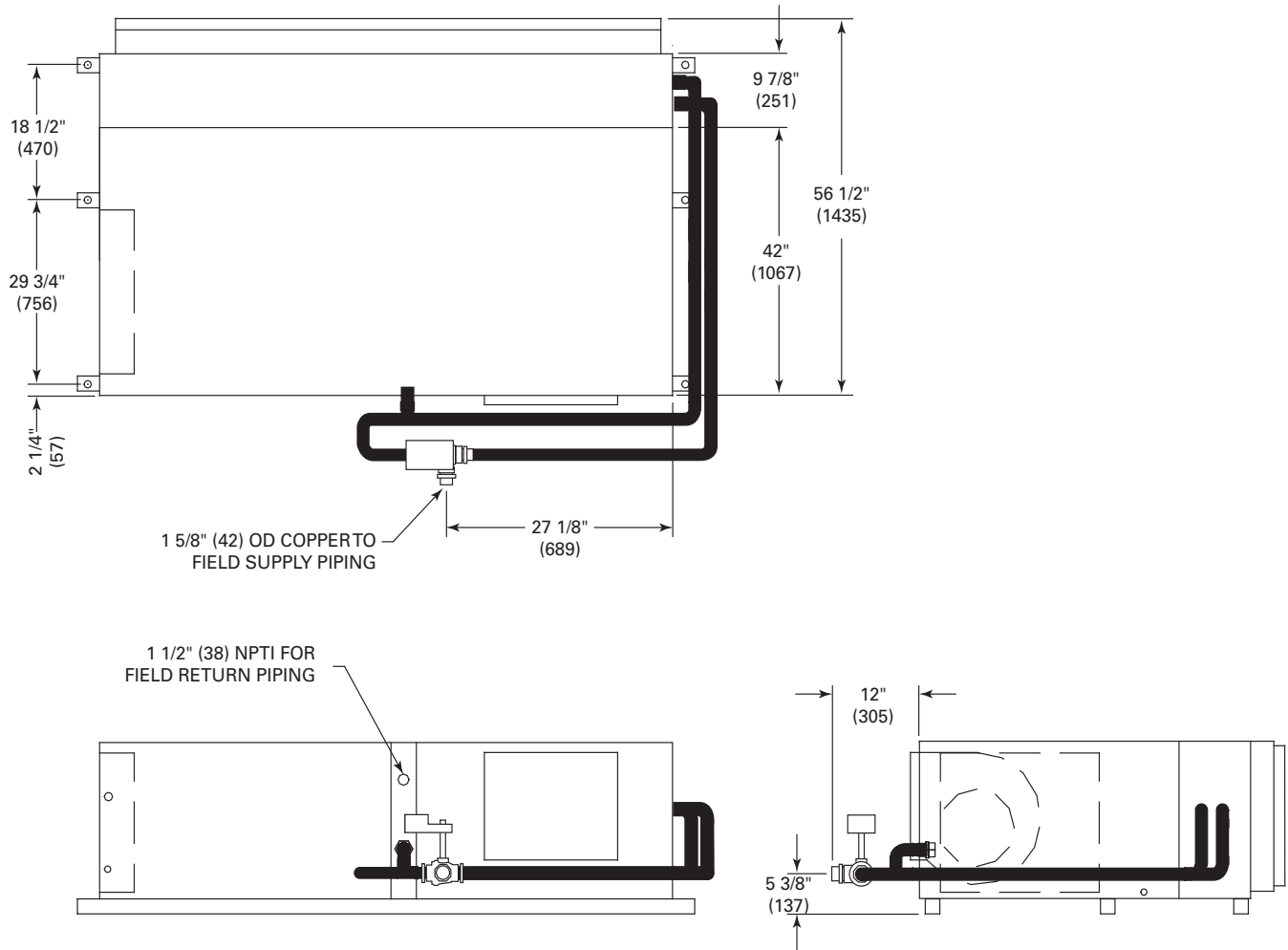
Unit Dimensions and Weights

Figure 40. GEH 12½-15 tons (150-180) 60 Hz, right return; GEH 10-12½ tons (120-150) 50 Hz, right return, waterside economizer^{(a)(b)}



- (a) Entering water is on the AB port.
- (b) Field piping required on waterside economizer.

Figure 41. GEH 12½-15 tons (150-180) 60 Hz, left return; GEH 10-12½ tons (120-150) 50 Hz, left return, waterside economizer^{(a)(b)}

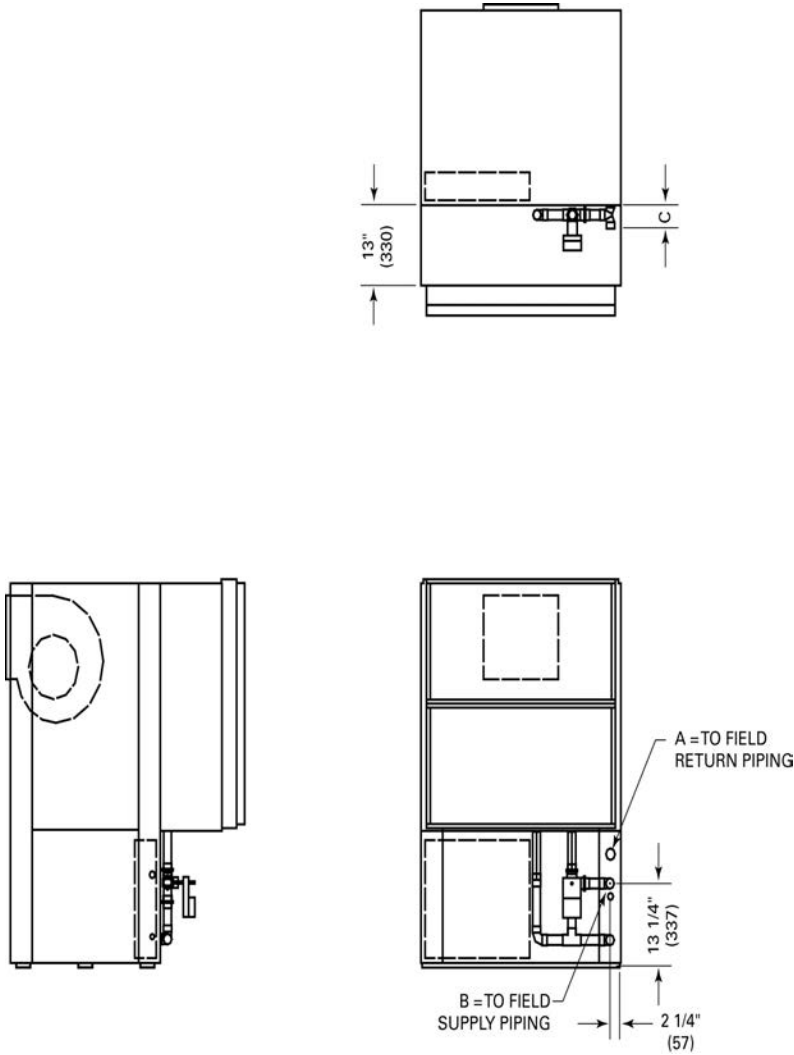


- (a) Entering water is on the AB port.
- (b) Field piping required on waterside economizer.



Unit Dimensions and Weights

Figure 42. GEV 6-10 tons (072-120) 60 Hz; 6 and 7½ ton (072 and 090) 50 Hz, waterside economizer^(a)



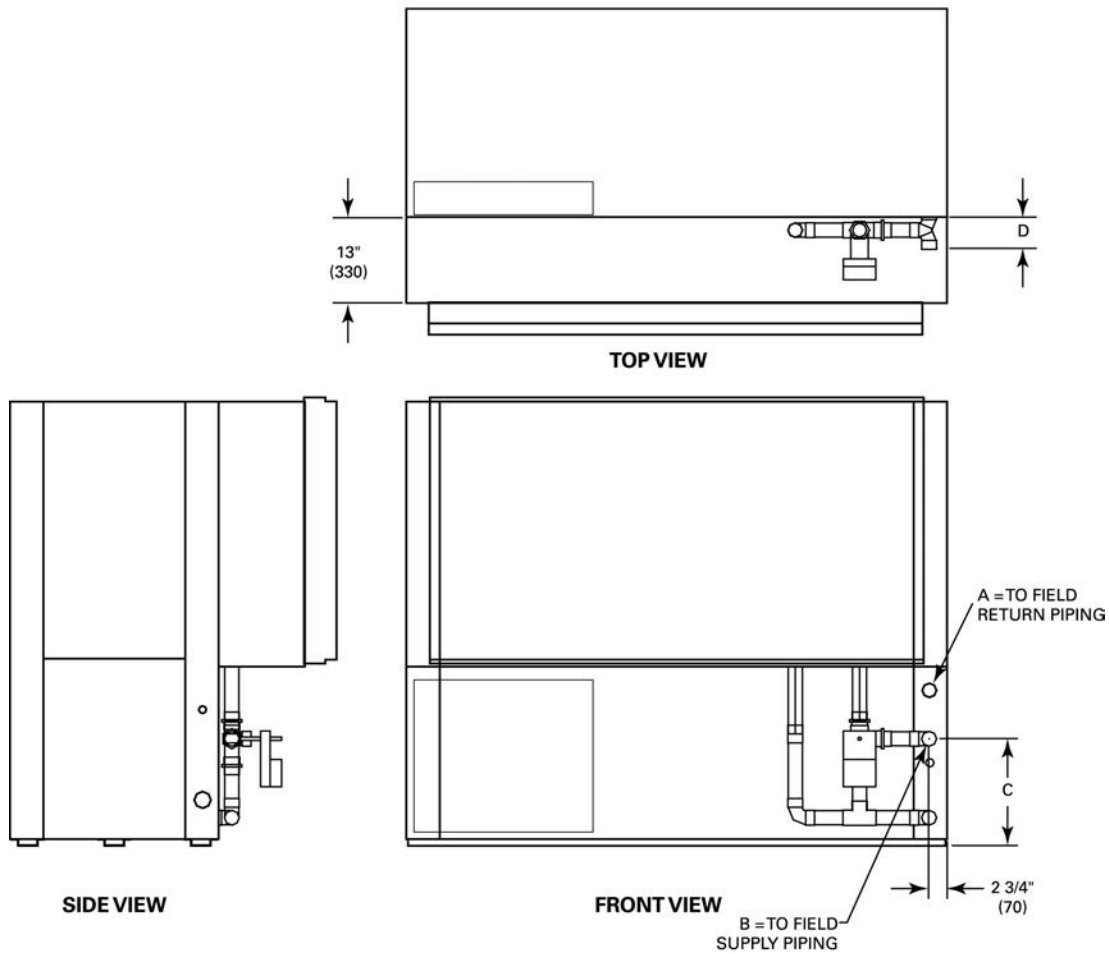
(a) Entering water is on the AB port.

Table 28. GEV 6-10 tons (072-120) 60 Hz; 6 and 7½ ton (072 and 090) 50 Hz, waterside economizer

Unit (60 Hz)	Unit (50 Hz)	A	B	C
6	—	1-1/4 (32)	1-3/8 (35)	4 (102)
7-1/2 ton	6 ton	1-1/4 (32)	1-1/4 (32)	4 (102)
10 ton	7-1/2 ton	1-1/2 (39)	1-5/8 (41)	4-3/8 (111)

Note: All dimensions are in inches followed by millimeters in parenthesis.

Figure 43. GEV 12½-25 tons (150-300), waterside economizer^(a)



(a) Entering water is on the AB port.

Table 29. GEV 12½-25 tons (150-300), waterside economizer

Unit (60 Hz)	Unit (50 Hz)	A NPTI	B I.D.	C	D	Operating Weight
12-1/2, 15 ton	10, 12-1/2 ton	1-1/2 (38)	1-5/8 (41)	15-7/8 (403)	4-3/8 (111)	275 lb (125 kg)
20 ton	15 ton	2 (51)	2-1/8 (54)	16-1/4 (413)	4-7/8 (124)	310 lb (141 kg)
25 ton	20 ton					395 lb (179)

Note: All dimensions are in inches followed by millimeters in parenthesis.

Table 30. Unit weights GEH006-060 (60 Hz)

GEH	006	009	012	015	018	024	030	036	042	048	060
Net Weight (lbs.)	165	165	173	173	248	253	253	288	288	398	398
Ship Weight (lbs.)	195	195	203	203	268	285	285	318	318	428	428

Table 31. Unit weights GEV006-060 (60 Hz)

Model GEV	006	009	012	015	018	024	030	032	036	040	042	048	060
Net Weight (lbs.)	165	165	173	173	248	253	253	253	288	253	288	348	349
Ship Weight (lbs.)	195	195	203	203	268	285	285	285	308	285	308	396	396



Unit Dimensions and Weights

Table 32. Unit weights EXV ½-6 ton

EXV (60 Hz)	Shipping Weight with pallet (lbs)	Unit Weight without pallet (lbs)
006	165	195
009	165	195
012	173	203
015	173	203
018	264	284
024	269	301
030	299	319
036	313	333
042	381	402
048	374	422
060	394	442
070	434	482
006	195	165
009	195	165
012	203	173
015	203	173
018	284	264
024	301	269
030	329	299
036	343	313
042	461	431
048	454	424
060	474	444
070	514	484

Weight Distribution for Hanging the GEH and EXH Model

⚠ WARNING

Improper Unit Lift!

Test lift unit approximately 24 inches to verify proper center of gravity lift point. To avoid dropping of unit, reposition lifting point if unit is not level. Failure to properly lift unit could result in death or serious injury or possible equipment or property-only damage.

Approximate weight distribution for proper hanging of the GEH and EXH unit is indicated by weight distribution ½-6 ton GEH/EXH Figure 44, p. 54.

Tolerance on the weights determined are ±15%.

Total weights for each unit size are listed in Table 30, p. 53 and Table 32, p. 54.

Figure 44. Weight distribution ½-6 ton GEH/EXH

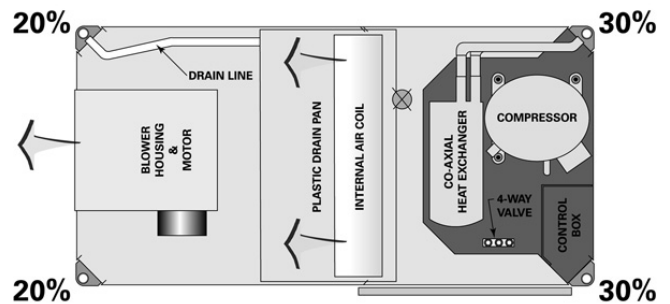
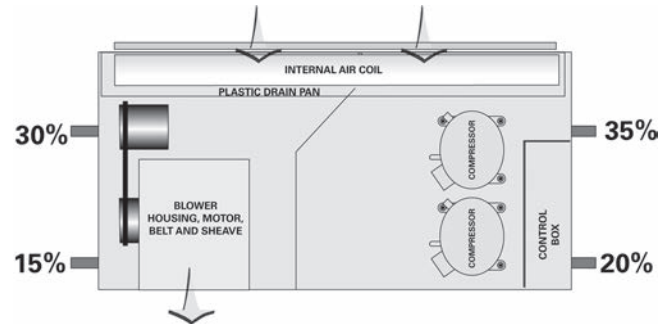


Figure 45. Weight distribution GEH 6-15 ton



Installation

⚠ WARNING

Proper Field Wiring and Grounding Required!

All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in **NEC** and your local/state electrical codes. Failure to follow codes could result in death or serious injury.

General Installation Checks

The checklist below is a summary of the steps required to successfully install a commercial unit. This checklist is intended to acquaint the installing personnel with what is required in the installation process. It does not replace the detailed instructions that are in the applicable sections of this manual.

1. Remove packaging and inspect the unit. Check the unit for shipping damage and material shortage; file a freight claim and notify appropriate sales representation.

Note: The GEH/V ½-5 ton and EXH/V ½-6 ton units have been tied to the skid by (2) shipping bolts. The removal of these bolts will require a 3/8 (9.7 mm) ratchet with a ½ (12.7 mm) socket.

The GEV 6–25 ton units have been anchored to the skid with (4) angle brackets. Remove these brackets before lifting unit into place.

The GEH 6–15 ton units are anchored to the cross brace of the skid with (4) wood screws. Remove these screws prior to lifting the unit into place.

2. Verify the correct model, options and voltage from the unit nameplate.
3. Pull out all field attached parts (i.e. filter rack, duct collar, filter and mounting screws) from the unit packaging for field mounting.
4. Verify the installation location of the unit will provide the required clearance for proper operation.
5. Remove refrigeration access panel and inspect the unit. Be certain the refrigerant tubing has clearance from adjacent parts.
6. Fabricate and install duct work
7. Install and connect a condensate drain line and trap to the drain connection.

Main Electrical

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

1. Verify the power supply complies with the unit nameplate specifications.
2. Inspect all control panel components; tighten any loose connections.
3. Connect properly sized and protected power supply wiring to a field-supplied/installed disconnect switch and to the main compressor contactor/power block 1K1 (compressor contactor on the ½-5 ton) for GEH/V ½-5 ton and EXH/V ½-6 ton units or 1TB1 for GEH/V 6-25 ton equipment in the unit control panel.
4. Install proper grounding wires to an earth ground. EXH and EXV 460 V units require a neutral (a four wire system).

Note: All field-installed wiring must comply with **NEC** and applicable local codes.

Electric Heat Requirements

5. Verify that the power supply complies with the electric heater specifications on the unit and heater nameplate.
6. Inspect the heater junction box and control panel; tighten any loose connections.
7. Check electric heat circuits for continuity.

Low Voltage Wiring (AC) Requirements

8. Install the zone sensor or thermostat.
9. Connect properly sized control wiring to the proper termination points between the zone thermostat or sensor and the unit control panel.

Filter Installation

Each unit ships with 1 (25.4 mm) or 2 (50.8 mm) 2 in. MERV 8 or 2 in. MERV 13 filters. The quantity of filters is determined by unit size. The GEH ½- 5 ton and EXH units requires a field installation of the 1/2 filter rack. All sheet metal bracket, filter and hardware are in a box located on the side of the unit within the unit packaging. All ½-25 ton verticals and GEH 6–15 ton horizontal units ship with the filter rack and filters factory installed.

Note: Do not operate the unit without filters.

Supply-Air Ductwork

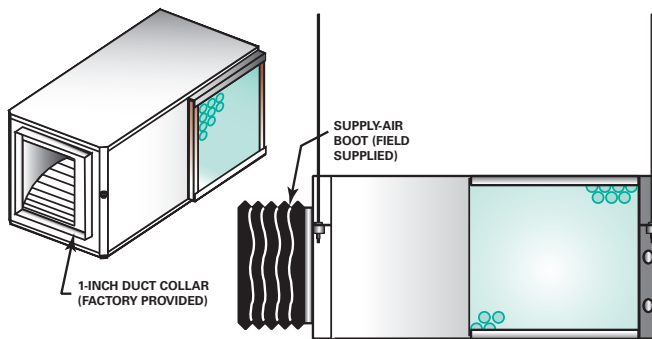
Horizontal 1/2-6 ton and EXHF units require duct flanges to be field installed. The duct flange ships in a box on the side of the unit. Install the flange with (8) 3/8 in. (213 mm) factory supplied screws.

Install the 1 in. (25.4 mm) supply-air duct flange to the vertical and horizontal equipment with the (8) 5/16 in. (7.94 mm) factory-supplied head screws. The duct collar assembly for each unit is shipped with the unit in the same box where the IOM manual is located.

When attaching the field ductwork to the unit, provide a watertight flexible connector at the unit to prevent operating sounds from transmitting through the ductwork. See [Figure 46, p. 56](#).

Elbows with turning vanes or splitters are recommended to minimize air noise due to turbulence and to reduce static pressure.

Figure 46. Flexible supply-air connector (field provided)



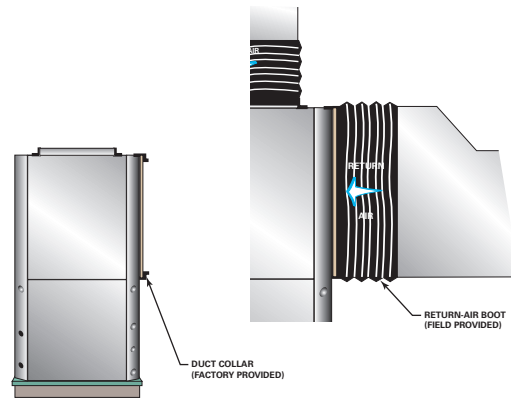
Return-Air Ductwork

Install the 1/2 (25.4 mm/50.8 mm) adjustable filter rack to the horizontal equipment only with the use of (4) 5/16 in. (7.94 mm) factory supplied head screws. The vertical equipment factory ships with the filter rack and filter(s) installed.

When attaching the field ductwork to the unit, provide a water-tight flexible connector at the unit to prevent operating sounds from transmitting through the ductwork. See.

Elbows with turning vanes or splitters are recommended to minimize air noise due to turbulence and to reduce static pressure.

Figure 47. Flexible return-air connector (field provided)



Ducted Panel

The return-air arrangement may be easily converted from a free return-air system, to a ducted return-air system with the addition of a return-air side panel. By replacing the filter racks with the return-air panel, a complete seal from the duct to the unit is possible. The 1 1/2 duct flange facilitates ease of field connection to the mechanical system. This accessory is typically used when the return-air filter is placed in a built-in ceiling grille, or placed within a field provided filter rack assembly.

Figure 48. Return-air duct panel

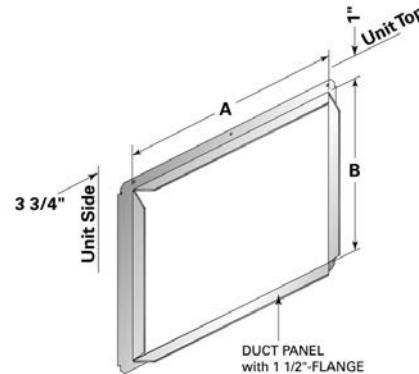
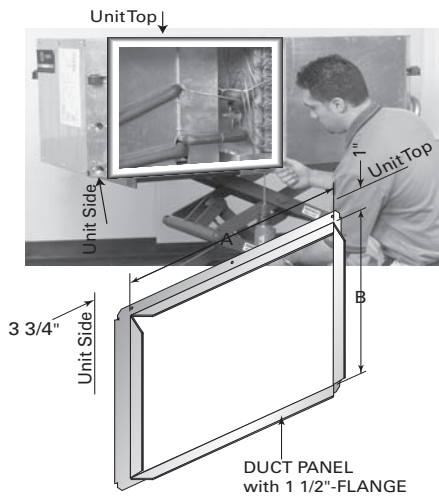


Table 33. Opening size and part number GEH

Unit Size (60 Hz)	Unit Size (50 Hz)	A	B	Duct Collar Part Number
006-015	006-012	17 1/2 in. (445 mm)	13 in. (330 mm)	4474 1133 0100
018-030	015-024	20 1/2 in. (521 mm)	16 in. (406 mm)	4474 5628 0100
036-042	030-036	22 1/2 in. (572 mm)	17 in. (432 mm)	4474 1135 0100
048-060	042-060	26 1/2 in. (673 mm)	19 in. (483 mm)	4474 1136 0100

Figure 49. Install return-air duct panel



Install the return-air duct panel to the return-air opening with the six head screws provided for the filter rack assembly.

Table 34. Opening size and part number EXH

EXH (60 hz)	A (in.)	B (in.)	Duct Collar Part Number
006-015	17-1/2	13	447411330100
018-024	20-1/2	16	447456280100
030-036	22-1/2	17	447411350100
042-070	26-1/2	19	447411360100

Ducted Filter Rack

When it is necessary to have filter access at the unit in a ducted return, a ducted filter rack is available. This option allows access to the filter at the unit. Vertical unit filter racks are available in right or left access configurations. Horizontal units are available in top, bottom or side access configurations.

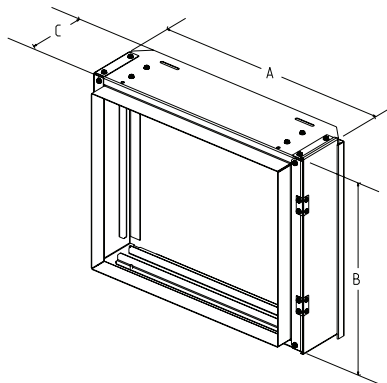


Table 35. Ducted filter opening size

Unit Size	A (in.)	B (in.)	C (in.)
GEH 006-015	21.1	15.4	5.4
GEH 018-030	24.5	18.4	5.6
GEH 036-042	26.4	19.4	5.5
GEH 048-060	30.7	21.4	5.5
GEV 006-015	20.7	17.1	5.5
GEV 018-040	20.7	23.1	5.5
GEV 036-042	25.7	22.4	4.3

Table 35. Ducted filter opening size

Unit Size	A (in.)	B (in.)	C (in.)
GEV 048-060	30.7	26.6	5.5
EXH 006-015	21.1	15.4	5.4
EXH 018-030	24.5	18.4	5.6
EXH 036-042	26.4	19.4	5.5
EXH 048-070	30.7	21.4	5.5
EXV 006-015	20.7	17.1	5.5
EXV 018-030	20.7	23.1	5.5
EXV 036-042	25.7	22.4	4.3
EXV 048-070	30.7	26.6	5.5

Note: All dimensions in inches

Dual Filtration (GEH 1/2-5 ton and EXH 1 1/2-6 ton)

Note: The dual-filtration design is typically used in a free-return application.

The horizontal, GEH and EXH model, allows the installer flexibility in design applications such as a dual filtration option. With the dual filtration design, the unit will contain a lower static which translates into a decrease in filter maintenance. For installation of a dual filtration accessory for the GEH and EXH model, verify that an extra set of return-air filter racks and filter have been ordered from the factory. This accessory will be shipped separate from the unit, and should be located in a separate box than the unit.

1. Remove the return-air side panel from the GEH and EXH unit. This panel is held in place by screws.

Figure 50. Side panel



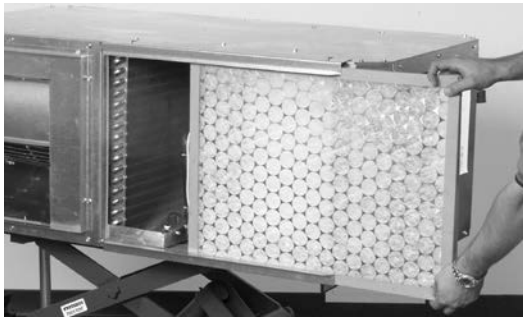
2. Install the top/bottom filter rack at the new opening. The 1/2 (25.4 mm/50.8 mm) adjustable filter rack is held in place with four screws that once held the panel.

Figure 51. Install top/bottom filter rack



3. Install the 1/2 (25.4 mm/50.8 mm) filter.

Figure 52. Install filter



Sound Attenuation Pad

For sound-sensitive installations, a vibration pad (field provided) should be placed beneath the horizontal or vertical equipment. For the horizontal unit, the pad should be approximately twice the size of the unit foot print. For the vertical unit, the pad should be 1/2 in. (12.7 mm) thick, and equal to the overall unit foot print.

Hanging the Horizontal Unit

⚠ WARNING

Risk of Unit Dropping!

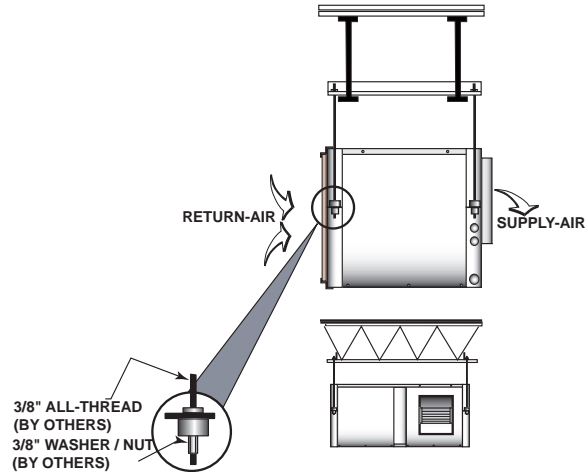
You MUST mount the unit to an area of the ceiling strong enough to support the weight of that unit. If unsure, you MUST confirm with a structural engineer. Failure to do so could result in unit dropping from the ceiling which could result in death or serious injury, and equipment damage.

To hang the horizontal configuration (see [Figure 53, p. 58](#)):

1. Install the hanging isolators (located in the return-air section of the unit) into the four hanging brackets.
2. Secure the equipment to a joist, concrete, etc. with the use of 3/8 in. (9.7 mm) field provided (all-thread) rod. Each corner should contain field provided nuts and washers to complete the hanging installation.

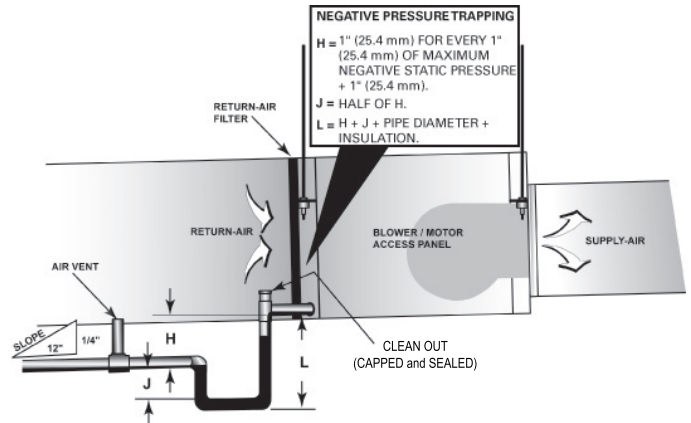
3. Slope horizontal units in two directions. The unit should contain a dual 1/4-12 pitch toward the drain connection. This will insure proper drainage of the unit. All plumbing to the unit should conform per national and local codes and is the responsibility of the contractor.

Figure 53. Hanging the unit



Condensate Drain Connection

Figure 54. Negative pressure system



Install proper trapping to the equipment. The unit drain connection is 3/4 in. NPT for all GEV and 1/2 - 5 ton GEH and EXH/V 1 1/2-6 ton models. For 6-15 ton GEH models, the drain connection is 1/2 in. PVC schedule 40 pipe.

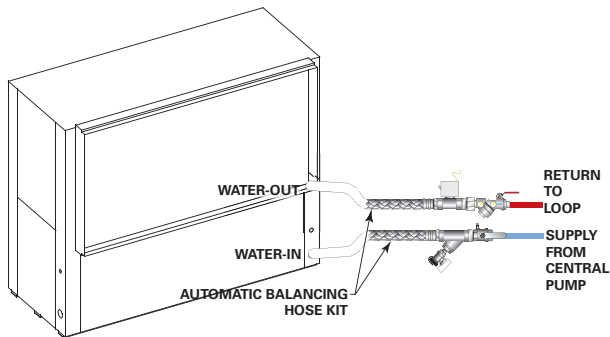
When designing the condensate trap for the water-source system, it is important to consider the unit draw-thru design requiring negative pressure trapping.

In a properly trapped system, when condensate forms during normal operation, the water level in the trap rises until there is a constant flow. It is imperative to maintain water in the trap and not allow the trap to dry out during heating season. Keeping trap primed at all times will enable the water to flow properly. See [Figure 54, p. 58](#) for

appropriate dimensions required in a negative pressure system.

Supply/Return Pipe Connections

Figure 55. Supply/return pipe connections



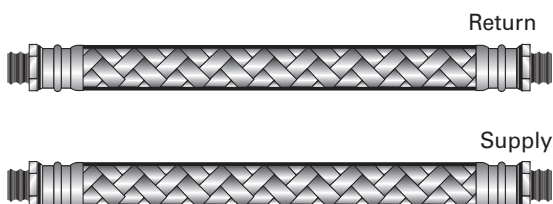
Connect the supply and return hoses to the water-inlet (from supply) and water-outlet (to return) of the unit. For vibration isolation, it is recommended that flexible steel braided hoses be installed instead of hard piping the equipment to the main loop system. [Figure 55, p. 59](#) shows connection of a Hays Measurflo® balancing hose kit to the water-in and water-out of a vertical unit.

Note: [Figure 55, p. 59](#) example incorporates the Hays Measurflo® balancing hose kit and a 2-position isolation valve into the system design. An isolation valve is often used in variable speed pumping applications. The isolation valve is designed to stop water flow to the unit during non operation times. This allows the loop water pumps to run only when a requirement for pumping is needed for greater energy efficiency of the overall system design.

Types of Hose Connections

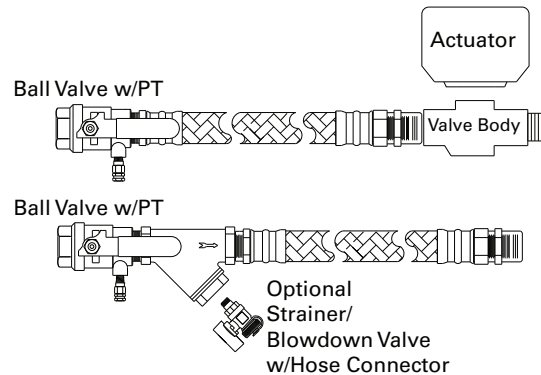
Whether installing the units in a central pump (main/ auxiliary pump for the entire zone) design, or as a distributed pump (1-pump per unit) design, a shut-off device and flexible hose is recommended to transition from the hard piping of the closed or open loop water system to the unit. There are multiple hose combinations which may be used to fit the design or specification criteria for the installation.

Flexible hoses



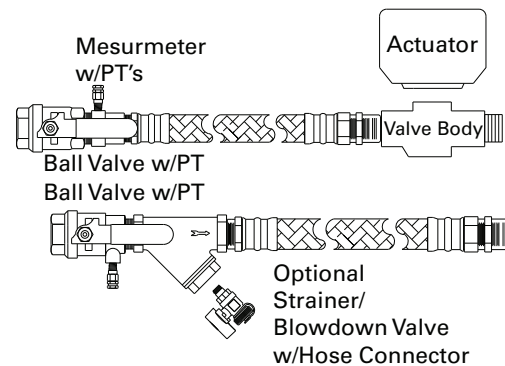
A steel braided hose without a shut-off device is the least expensive means of connecting the heat pump to the supply/return water loop.

Deluxe ball valve hose kit



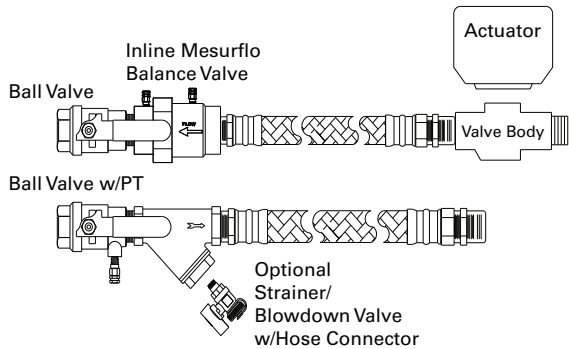
With the addition of a shut-off device on the supply and return of the system, the unit may be isolated during service or maintenance situation. This system may be installed as a wide open (full water flow to the equipment) design, or manually balanced by utilizing the pressure/ temperature ports on the top of the ball valve/shut-off device.

Manual balance hose kit



A circuit setter provides a means of manually balancing the water flow to the heat pump. This manual in-line balancing method is accurate up to $\pm 20\%$. In order to determine flow rate, the user must record both handle position, and differential pressure drop. Then, the user must consult a chart containing both pieces of information and make the necessary adjustments to the circuit setter.

Automatic balance hose kit



For self balancing flow control, a Hays Measurflo® balancing hose kit provides a constant flow rate over the pressure differential range of 2 – 80 psid. As system pressures change (through the addition of heat pumps, for example) each individual flow control valve will automatically adjust to the new system conditions.

Additional accessories, such as a strainer are recommended for use to eliminate contaminants from entering the co-axial water-to-refrigerant heat exchanger.

Cleaning and Flushing the Water Loop

After the piping system is complete, the flexible hose connectors should be doubled back to complete the water circuit external to the unit (avoiding trash settle-out in the condenser). An extra pipe may be necessary to connect the hose kits.

1. Water circulation system should be filled with clean water using the water make up connections.

Note: Air vents should be open during filling.

2. With the air vents closed, start the circulating pump and then crack the air vents to bleed off the trapped air, assuring circulation through all components of the system.

Note: Make up water must be available to the system to replace the volume formerly occupied by the air that is bled off.

3. With the air vented and the water circulating, the entire system should be checked for leaks with repairs made as required.
4. Operate the supplementary heat system (boiler) making checks per manufacturer's instructions. During this operation, visual checks should be made for leaks that may have occurred due to increased heat. Repair as required.
5. Open the system at the lowest point for the initial blow down (making sure the make up water is equal to the water being dumped). Continue blow down until the water leaving the drain runs clear, but not less than 2 hours.

6. Shut down pumps and supplementary heat system. Reconnect the hoses placing the water-to-refrigerant heat exchanger in the water circulating system.

Note: Vents should be open when the pumps and supplementary heat system are shut down.

Field Installed Power Wiring

⚠ WARNING

Proper Field Wiring and Grounding Required!

All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes. Failure to follow codes could result in death or serious injury.

NOTICE:

Use Copper Conductors Only!

Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors could result in equipment damage.

Verify that the power supply available is compatible with the unit's nameplate. Use only copper conductors to connect the power supply to the unit.

Main Unit Power Wiring

⚠ WARNING

Proper Field Wiring and Grounding Required!

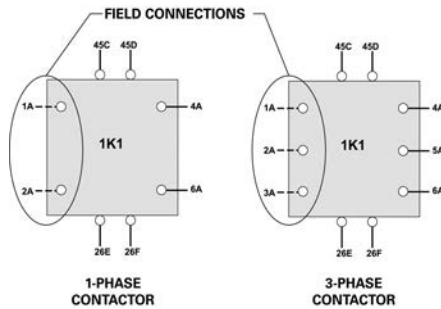
All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes. Failure to follow codes could result in death or serious injury.

A field supplied disconnect switch must be installed at or near the unit in accordance with the National Electric Code (NEC latest edition).

Location of the applicable electric service entrance for HIGH (line voltage) may be found in the Dimensions section of this manual.

The high-voltage connection is made at the 1K1 contactor or 1TB power block inside the unit control box. See [Figure 56, p. 61](#). Refer to the customer connection diagram that is shipped with the unit for specific termination points.

Provide proper grounding for the unit in accordance with the local and national codes.

Figure 56. Power wiring example


Control Power Transformer

The 24 V control power transformers are to be used only with the accessories called out in this manual. A 50 VA transformer is externally fused. Transformers rated greater than 50 VA are equipped with circuit breakers. If a circuit breaker trips, turn OFF all power to the unit before attempting to reset it.

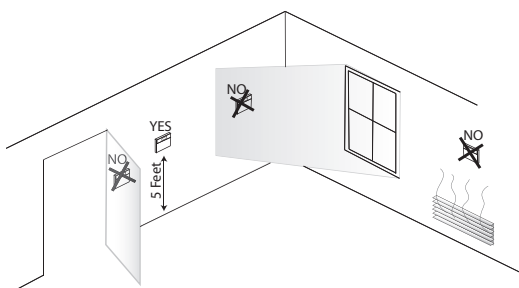
⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

The transformer is located in the control panel. See [Figure 56, p. 61](#) for power wiring example.

Thermostat Location

Figure 57. Thermostat/sensor location


Location of the thermostat or zone sensor is an important element of effective room control.

Areas where the thermostat or zone sensor should not be located include:

- Behind doors or corners
- Near hot or cold air ducts
- Near radiant heat (heat emitted from appliances or the sun)
- Near concealed pipes or chimneys

- On outside walls or other non conditioned surfaces
- In air-flows from adjacent zones or other units.

Controls Using 24 VAC

Before installing any wire, refer to the electrical access locations in the “Unit Dimensions and Weights,” p. 14 of this manual.

Ensure that the AC control wiring between the controls and the unit termination point does not exceed 3 Ohms/ conductor for the length of the run.

NOTICE:

Component Failure!

Resistance in excess of 3 Ohms per conductor could result in component failure due to insufficient AC voltage supply.

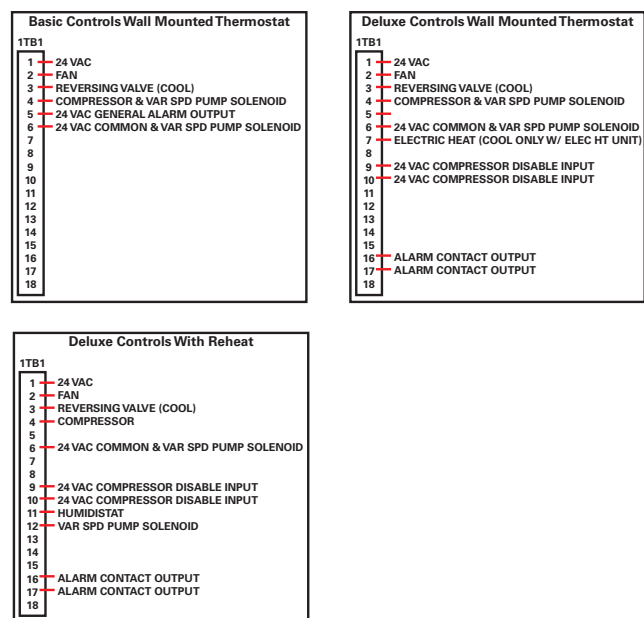
Check all loads and conductors for grounds, shorts, and mis-wiring.

Use copper conductors unless otherwise specified.

Do not run the AC low-voltage wiring in the same conduit with the high voltage power wiring.

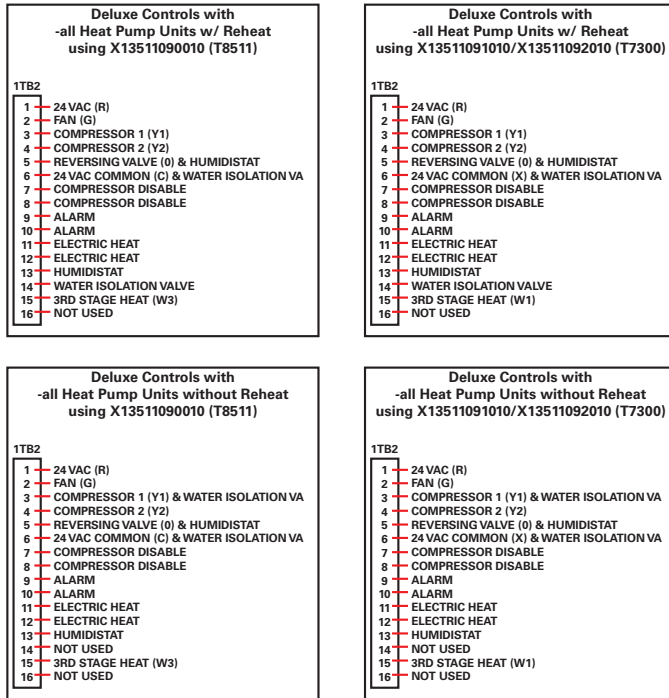
Table 36. 24V AC conductors

Distance from unit to control	Recommended wire size
000-460 ft	18 gauge
461-732 ft	16 gauge
733-1000 ft	14 gauge

Figure 58. Low-voltage connection (GEH/V ½-5 ton and EXH/V ½-6 ton equipment)


Low-voltage connection diagrams for basic and deluxe 24 V control packages mounted on ½-5 ton equipment sizes are shown in [Figure 58, p. 61](#).

Figure 59. Low-voltage connection (GEH/V 6-25 ton)



Low-voltage connection diagrams for deluxe 24V control packages for these thermostats mounted on 6-25 ton equipment sizes are shown in Figure 59, p. 62.

For controls using DC analog input/outputs, see appropriate installation, operation and diagnostic manuals for connection. WSHP-IOP-2 (ZN510) and WSHP-PRB002-EN (ZN524).

Blower Motor Speed-Tap Retrofit

Note: For GEH/V ½-5 ton units only.

Motors installed in the unit include 4-speed and 3-speed configurations. All voltages include a 4-speed configuration, with the exception of 380V, 415V, 460V which contain a 3-speed arrangement and 575V which contains a 2-speed arrangement. To modify the rpm of the motor, the following steps must be followed.

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

⚠ WARNING

Proper Field Wiring and Grounding Required!

All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes. Failure to follow codes could result in death or serious injury.

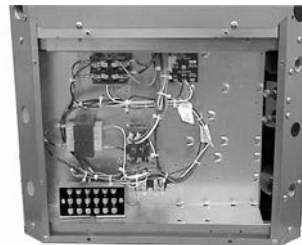
1. Remove service access panel at the unit front.

Figure 60. Service access panel



2. Find the blower motor relay. The relay is located in Figure 61, p. 62. The relay location is consistent in all control configurations.

Figure 61. Relay location



Removing Speed-tap Wire

3. **For units w/o Hot Gas Reheat:** Remove undesired speed-tap wire from 1K4 relay at spade 3. Wire tie the lead, to eliminate a short.
4. **For units with Hot Gas Reheat:** Remove undesired speed-tap wire from 1K8 relay at spade 6. Wire tie the lead, to eliminate a short. Hot Gas Reheat requires both speed taps to be adjusted to enable reheat as the lower speed tap.

Figure 62. Wiring change



Connecting Desired Speed-tap Wire

5. **For units without Hot Gas Reheat:** Select desired speed-tap wire. Connect desired speed tap wire to 1K4 relay at spade 3.
6. **For units with Hot Gas Reheat** Select desired speed-tap wire. Connect desired speed tap wire to 1K8 relay at spade 6.

Figure 63. Connecting speed-tap wire



7. Install service front panel. Reconnect power to the unit.

Table 37. 4-speed motor (115, 208, 230, 265)

Lead Colors				
Lead	Black	Blue	Orange	Red
Speed	High	Medium High	Medium Low	Low

Table 38. 3-speed motor (380, 415, 460)

Lead Colors			
Lead	Black	Blue	Orange
Speed	High	Medium	Low

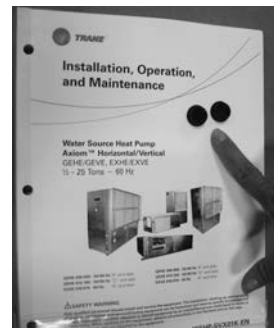
Note: When using the medium or low speed tap, the purple wire must be jumpered to the high speed tap (blk).

Table 39. 2-speed motor (575)

Lead Colors		
Lead	Black	Blue
Speed	High	Low

Hole Plug Installation

Figure 64. Hole plug installation



1. Locate two Hayco plastic plugs enclosed with the Installation, Operation and Maintenance manual.
2. Use these plugs to plug the two shipping bolt holes in the bottom of the GEVE/EVXVE units after shipping bolt removal.

Air Flow Adjustment

Note: GEH/V 6-25 ton units only.

To increase cfm, loosen the turns open set screw on the sheave, and turn the sheave clockwise. To decrease cfm, Loosen the turns open set screw on the sheave, and turn the sheave counterclockwise.

To increase belt tension, loosen the adjustment bolt and pull motor mounting plate back until the belt is tight. Tighten the adjustment bolt after the belt has reached the desired tension.

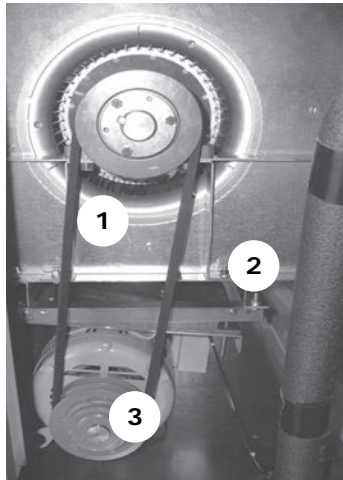
See Figure 65, p. 64 for fan motor and sheave adjustment

⚠ WARNING

Rotating Components!

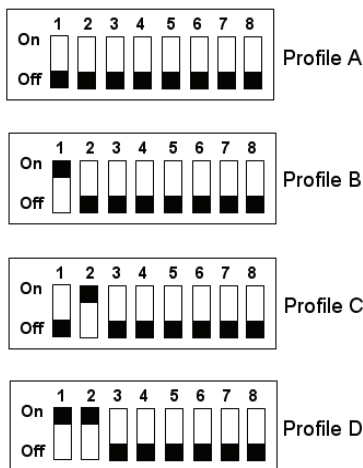
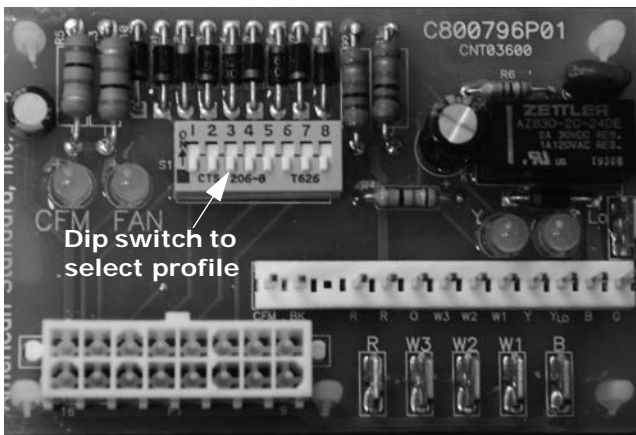
Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

Figure 65. Fan motor and sheave adjustment



1. Belt
2. Adjustment Bolt and Plate
3. Fan Sheave

Figure 66. ECM control board and dip switch setting



Note: EXH/V 1½ -6 ton high efficiency units only:
Units are shipped from the factory on profile setting B.

To adjust the cfm, disconnect the power to the unit. Set the DIP switch located in the control box to the desired profile

setting. Connect the power to the unit. If the power is not disconnected when the DIP switch is set, the motor will not be programmed to the new setting.

Profile A = 110% of rated air flow

Profile B = 100% of rated air flow

Profile C = 90% of rated air flow

Profile D = 80% of rated air flow

Waterside Economizer Installation

Note: GEH ½-5 and EXH 1½-6 ton units.

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

⚠ WARNING

Proper Field Wiring and Grounding Required!

All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes. Failure to follow codes could result in death or serious injury.

The following steps were sequenced to aid in the installation and mating of a water side economizer to a water-source heat pump (GEH ½-5 ton) and (EXH 1½-5 ton).

1. Remove the control side service panel of the water-source heat pump unit.
2. Remove rubber isolation grommets from the return-air section. Place them in a convenient location.
3. Attach ducted panel to the water-source heat pump unit with six factory provided head screws. This panel is shipped loose with the water-source heat pump but must be field installed to the unit.

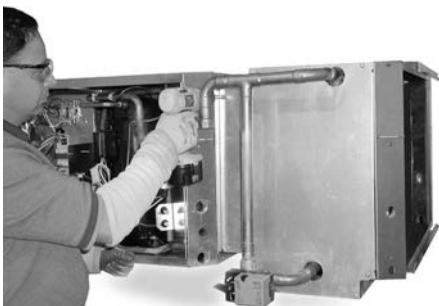
Figure 67. Step 3



- Attach the water side economizing unit to the ducted panel of the water-source heat pump with 10-factory provided head screws. The economizing package fits to the outside of the of the water-source heat pump. Trane recommends the mating of the systems be made via 3-screws spaced evenly across the top, 3-screws spaced evenly across the bottom (installed immediately after hanging the unit), and 2-screws on each side.

Note: Waterside economizer option is configured for right return. Left return requires additional field piping.

Figure 68. Step 4



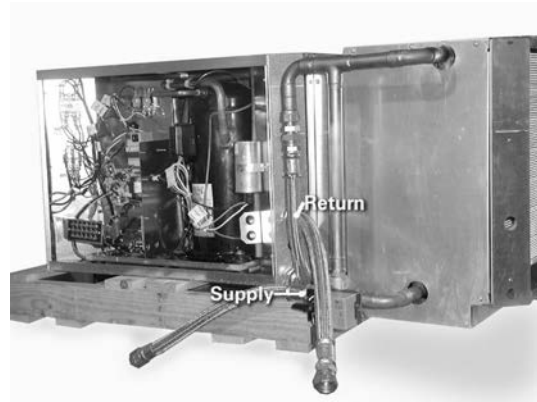
- Install the 18-inch steel braided hose between the upper most piping connection of the economizer, and the water-in of the heat pump. The hose is shipped loose with the water-side economizer.

Figure 69. Step 5



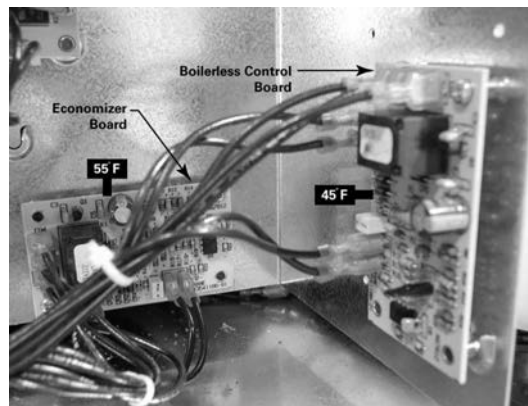
- Install the SUPPLY and RETURN hoses to the (1) 2-position valve's threaded connection (2) water-out threaded connection of the water-source heat pump.

Figure 70. Step 6

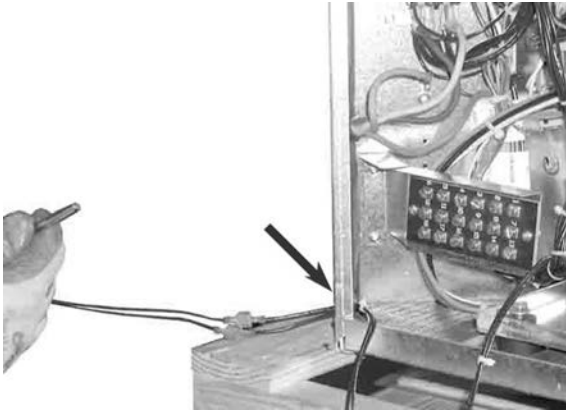


- Verify the control board for the water side economizer is located at the back of the control box. The temperature rating of this board is factory set to 55°F. For units with boilerless (electric heat) control and water side economizer, the boilerless control board is factory set to 45°F.

Figure 71. Step 7



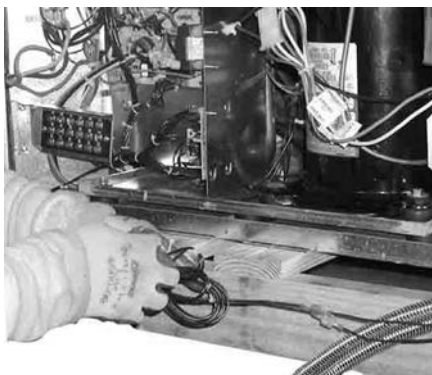
- Thread the bulb and wire through the low voltage hole of the water-source heat pump. See [Figure 72, p. 66](#).

Figure 72. Step 8


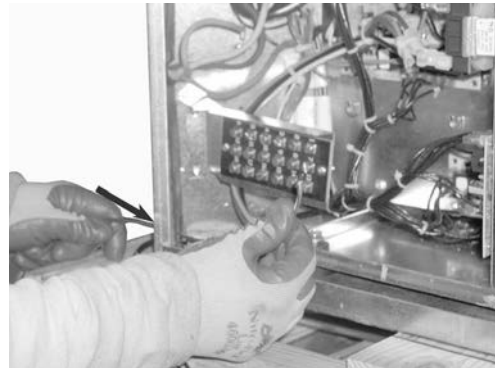
9. Wire-tie the sensor to the water SUPPLY side of the piping (ON, or BEFORE) the 2-position valve. See [Figure 73, p. 66.](#)

Figure 73. Step 9


10. Bundle excess sensor wire, and wire tie the bundle neatly. See [Figure 74, p. 66.](#)

Figure 74. Step 10


11. Thread the valve's wire lead through the low voltage hole of the heat pump. See [Figure 75, p. 66.](#)

Figure 75. Step 11


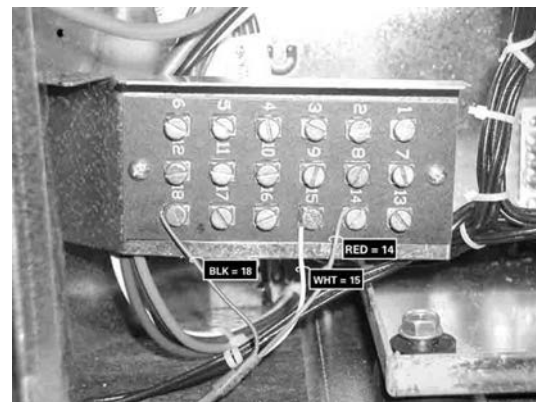
12. Wire the valve to the terminal strip according to the unit wire diagram located on the service control panel.

RED = 1TB1-14

BLK = 1TB1-18

WHT = 1TB1-15

See [Figure 76, p. 66.](#)

Figure 76. Step 12


13. Bundle excess valve wire, and wire tie the bundle neatly. See [Figure 77, p. 66.](#)

Figure 77. Step 13


14. Install control side service panel.

15. Install the hanging isolation grommets (see [Figure 78, p. 67](#)) into the hanging brackets. The unit isolators were located in the return-air section of the unit. See [Step 2](#). Isolators for the economizing package are located with the economizer.

Note: GEH 1/2-5 ton and EXH 1 1/2-6 ton.

Figure 78. Step 15



16. Insulate the economizing piping package and the supply/return/by-pass hoses (3-hoses) via field provided pipe insulation. Insulating the piping will stop condensation from forming on the pipe and dripping onto the ceiling tiles.

Note: Trane does not provide insulation on the economizing piping package. This insulation must be field provided and field installed.

Note: Trane does not provide condensate overflow protection of the waterside economizer. This must be field provided and installed.

17. Install filter rack (top and bottom) to the economizing package. The filter rack is located in the unit's packaging along with the filter.

18. Hang unit. See [Figure 53, p. 58](#) for hanging of the packaged unit. Bottom screws referenced in [Step 4](#) must be installed at this time.

19. Field pipe the drain lines of the waterside economizer and water-source heat pump together prior to installing a condensate trap (see [Figure 79, p. 67](#)). See [Figure 54, p. 58](#) for proper trapping of condensation.

Figure 79. Step 19



Table 40. Economizer part numbers

GEH Unit 60 Hz	GEH Unit 50 Hz	Waterside Economizer Part Number
006-015	006-012	4474 1690 0100
018-030	015-024	4474 7072 0100
036-042	030-036	4474 1692 0100
048-060	042-060	4474 1693 0100
EXH Unit 60 Hz	GEH Unit 50 Hz	Waterside Economizer Part Number
006-015	—	4474 1690 0100
018-024	—	4474 7072 0100
030-036	—	4474 1692 0100

Waterside Economizer Installation for GEH and GEV 6 - 25 Ton Models

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

⚠ WARNING

Proper Field Wiring and Grounding Required!

All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in **NEC** and your local/state electrical codes. Failure to follow codes could result in death or serious injury.

1. Remove the filter frame from the unit.
2. Remove the waterside service panel from the unit.
3. Remove the control box service panel from the unit.
4. Remove the economizer and miscellaneous mounting parts from its packaging.
5. **GEV ONLY:** Mount the economizer support angle (4475 1637 0100) found in the economizer packaging in the same holes of the return air filter frame removed in [Step 1](#). The support angle screws into the unit roof.
6. **GEV ONLY:** Hang the economizer assembly from the economizer support angle mounted in [Step 5](#).
7. Secure the economizer to the unit using the four plates (4475 1630 0100) found in the economizer packaging. Two plates should be applied to each economizer side. **GEV ONLY:** Secure the bracket on the bottom of the economizer cabinet to the unit compressor compartment center post.
8. Install the field portion of the water piping and the 3-way valve together.

Note: *Entering water is on the AB port.*
9. Verify the control board for the waterside economizer is located at the back of the control box. The temperature rating of this board is factory set to 55°F.
10. Thread the economizer's entering water temperature sensor (4RT1) through the water-in line of the water-source heat pump upstream from the valve. This sensor is used by the economizer's 3-way valve to determine if water flow should be directed through the waterside economizing coil.
11. Tie wrap the thermistor to the water line (supply side) upstream of the water pipe to the economizer. The thermistor must be situated so that the thermistor is capable of reading the actual entering water temperature regardless of the economizer's on or off situation.
12. Insulate the thermistor with tubing insulation.
13. Tie wrap each end of the tubing insulation to prevent air filtration. The tie wraps and insulation are located in a bag and shipped inside of the unit.
14. Thread the factory wire harness through the low voltage hole of the heat pump to the 3-way valve's wire harness.
15. Connect the factory installed wire harness to the to the wire harness supplied with the 3-way valve (see [Table 41, p. 68](#)).

Table 41. Actuator/factory harness wire table

Actuator Wire # Color		Factory Harness Wire # Color
1 BLK	=	25L-Black
2 WHT	=	23T-White
3 WHT	=	73A-White

16. Bundle excess valve wire, and wire tie the bundle neatly.
17. Install control side service panel to the heat pump.
18. Install the unit filter frame to the economizing inlet.
19. Insulate the economizing piping package with field supplied pipe insulation. Insulating the piping will help stop condensation from forming on the pipe.

Note: *Trane does not provide insulation on the economizing piping package. This insulation must be field provided and field installed.*

Note: *Trane does not provide condensate overflow protection of the waterside economizer. This must be field provided and field installed.*
20. Install waterside service panel to the heat pump.
21. The economizer condensate line must be trapped prior to the unit's drain line. This helps prevent air from being sucked through the drain line causing condensate to spit or build-up in the economizer or unit drain pans. Field pipe the drain lines of the waterside economizer and water-source heat pump together prior to installing a condensate trap. See page ["Condensate Drain Connection," p. 58](#) for proper trapping of condensation.

Economizer Start-Up Sequence

1. Set the thermostat to the highest position.
2. Set the thermostat system switch to COOL with the fan control to AUTO. The compressor should NOT run.
3. Reduce the thermostat setting until the compressor, reversing valve, solenoid valve, and loop pump are energized. Adjust water flow utilizing pressure/temperature plugs and comparing to tables contained in specification sheet data. Water leaving the heat exchanger should be warmer than the entering water temperature (approximately 9-12°F); blower operation should be smooth; compressor and blower amps should be within data plate ratings; the suction line should be cool with no frost observed in the refrigerant circuit.
4. Check the cooling refrigerant pressures against values in [Table 48, p. 85](#).
Note: *If cooling mode is activated, and the entering water temperature of the heat pump falls below 55°F, the 2-position, water side economizing valve will become energized (open) and compressor operation will halt allowing for free cooling in the space.*
5. Turn the thermostat system switch to the OFF position. Unit should stop running and the reversing valve should de-energize.
6. Leave unit off for approximately FIVE minutes to allow for pressure equalization.
7. Turn the thermostat to the lowest setting.
8. Set the thermostat system switch to the HEAT position.
9. Adjust the temperature setting upward until the unit is energized. Warm air should blow from the register. A water temperature decrease of approximately 5-9°F leaving the heat exchanger should be noted. The blower and compressor operation should be smooth with no frost observed in the refrigeration circuit.
10. Check the heating refrigerant pressures against values in [Table 48, p. 85](#).
Note: *For units with boilerless electric heat option: In heating mode, if the entering water temperature of the heat pump falls below 45°F, the electric heater will be energized, and compressor operation will halt. Once the entering water temperature rises above 50°F, the boilerless controls returns the unit to normal operation.*
11. Set the thermostat to maintain the desired space temperature.
12. Instruct the owner on system operation.



Economizer Start-Up Sequence

Table 42. Waterside economizing three-way valve specifications

Unit Size (60 Hz)	Unit Size (50 Hz)	Valve Conn. Size	Valve Pres. Rating	"Valve Close-off pressure	Valve Temp. Range	Actuator
GEH006-015	GEH006-012	1/2 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 10 Cv at full port
GEH018-042	GEH015-036	3/4 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 30 Cv at full port
GEH048-060	GEH042-060	1 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 23 Cv at full port
GEV/GEH 6-7 1/2 Ton	GEV 6 Ton	1 1/4 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 33 Cv at full port
GEV/GEH 10-15 Ton	GEV/GEH 7 1/2-12 1/2 Ton	1 1/2 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 37 Cv at full port
GEV 20 & 25 Ton	GEV 15 & 20 Ton	2 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 57 Cv at full port
EXH006-015	—	1/2 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 10 Cv at full port
EXH 018-036	—	3/4 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 30 Cv at full port
EXH 0042-070	—	1 FPT	600 psi	200 psi	0°F to 212°F -18°C to 121°C	Non-spring return type 24 VAC +/- 20% 135 second stroke time 23 Cv at full port

Note: The valve body is constructed from forged brass with nickel plating, with the ball and stem constructed of stainless steel. For other information pertaining to the economizing water valve, see the valve's data plate.



Electrical Data

Table 43. Electrical data: Standard static motors, ½–5 tons

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Comp MCC	Blower Motor FLA	Blower Motor hp	Fan Motor Num.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
GEHE/GEVE													
006	115/60/1	6.8	5.6	30.0	1	7.5	1.20	1/12	1	8.20	15	0.0	0.0
006	208/60/1	3.9	3.3	14.0	1	4.2	0.60	1/12	1	4.73	15	0.0	0.0
006	208/60/1	4.5	3.3	14.0	1	4.2	0.60	1/12	1	5.68	15	0.8	3.9
006	230/60/1	3.8	3.2	15.0	1	4.2	0.60	1/12	1	4.60	15	0.0	0.0
006	230/60/1	4.9	3.2	15.0	1	4.2	0.60	1/12	1	6.18	15	1.0	4.3
006	220-240/50/1	3.4	2.9	17.0	1	4.0	0.52	1/12	1	4.15	15	0.0	0.0
006	220-240/50/1	7.4	2.9	17.0	1	4.0	0.52	1/12	1	9.19	15	1.6	6.8
006	265/60/1	3.0	2.5	11.0	1	3.5	0.52	1/12	1	3.65	15	0.0	0.0
006	265/60/1	5.5	2.5	11.0	1	3.5	0.52	1/12	1	6.92	15	1.3	5.0
009	115/60/1	7.6	6.4	36.0	1	8.6	1.20	1/12	1	9.20	15	0.0	0.0
009	208/60/1	4.3	3.7	16.0	1	4.8	0.60	1/12	1	5.23	15	0.0	0.0
009	208/60/1	6.5	3.7	16.0	1	4.8	0.60	1/12	1	8.14	15	1.2	5.9
009	230/60/1	4.1	3.5	17.0	1	4.8	0.60	1/12	1	4.98	15	0.0	0.0
009	230/60/1	7.1	3.5	17.0	1	4.8	0.60	1/12	1	8.90	15	1.5	6.5
009	220-240/50/1	6.0	5.3	23.0	1	7.4	0.72	1/8	1	7.35	15	0.0	0.0
009	220-240/50/1	9.8	5.3	23.0	1	7.4	0.72	1/8	1	12.20	15	2.2	9.0
009	265/60/1	3.3	2.8	13.0	1	3.7	0.52	1/12	1	4.02	15	0.0	0.0
009	265/60/1	8.1	2.8	13.0	1	3.7	0.52	1/12	1	10.08	15	2.0	7.5
012	115/60/1	13.7	12.1	58.0	1	16.9	1.57	1/8	1	16.70	25	0.0	0.0
012	208/60/1	7.0	6.3	30.0	1	8.8	0.70	1/8	1	8.58	15	0.0	0.0
012	208/60/1	8.5	6.3	27.0	1	8.8	0.70	1/8	1	10.67	15	1.6	7.8
012	230/60/1	7.0	6.3	30.0	1	8.8	0.70	1/8	1	8.58	15	0.0	0.0
012	230/60/1	9.4	6.3	30.0	1	8.8	0.70	1/8	1	11.74	15	2.0	8.7
012	220-240/50/1	7.4	6.7	30.0	1	9.4	0.72	1/8	1	9.10	15	0.0	0.0
012	220-240/50/1	12.0	6.7	30.0	1	9.4	0.72	1/8	1	14.96	15	2.7	11.3
012	265/60/1	5.7	5.0	23.0	1	7.0	0.72	1/8	1	6.97	15	0.0	0.0
012	265/60/1	10.7	5.0	23.0	1	7.0	0.72	1/8	1	13.40	15	2.7	10.0
015	208/60/1	8.6	7.9	36.0	1	11.1	0.70	1/8	1	10.58	15	0.0	0.0
015	208/60/1	10.3	7.9	36.0	1	11.1	0.70	1/8	1	12.89	15	2.0	9.6
015	230/60/1	8.6	7.9	36.0	1	11.1	0.70	1/8	1	10.58	15	0.0	0.0
015	230/60/1	11.6	7.9	36.0	1	11.1	0.70	1/8	1	14.46	15	2.5	10.9
015	220-240/50/1	9.0	8.2	36.0	1	11.5	0.80	1/8	1	11.05	15	0.0	0.0
015	220-240/50/1	14.5	8.2	36.0	1	11.5	0.80	1/8	1	18.08	20	3.3	13.7
015	265/60/1	7.1	6.4	30.0	1	9.0	0.72	1/8	1	8.72	15	0.0	0.0
015	265/60/1	13.2	6.4	30.0	1	9.0	0.72	1/8	1	16.47	20	3.3	12.5
018	208/60/1	10.5	9.6	42.0	1	13.4	0.90	1/8	1	12.90	20	0.0	0.0
018	208/60/1	12.7	9.6	42.0	1	13.4	0.90	1/8	1	15.91	20	2.5	11.8
018	230/60/1	10.5	9.6	42.0	1	13.4	0.90	1/8	1	12.90	20	0.0	0.0
018	230/60/1	13.9	9.6	42.0	1	13.4	0.90	1/8	1	17.43	20	3.0	13.0



Electrical Data

Table 43. Electrical data: Standard static motors, ½–5 tons (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Comp MCC	Blower Motor FLA	Blower Motor hp	Fan Motor Num.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
GEHE/GEVE													
018	220-240/50/1	11.1	9.6	54.0	1	15.0	1.53	1/3	1	13.53	20	0.0	0.0
018	220-240/50/1	19.7	9.6	54.0	1	15.0	1.53	1/3	1	24.57	25	4.4	18.1
018	265/60/1	8.5	7.7	35.0	1	10.8	0.80	1/8	1	10.43	15	0.0	0.0
018	265/60/1	15.9	7.7	35.0	1	10.8	0.80	1/8	1	19.87	20	4.0	15.1
018	380-415/50/3	5.2	4.2	28.0	1	6.5	0.95	1/3	1	6.20	15	0.0	0.0
018	380-415/50/3	7.0	3.6	28.0	1	5.6	0.95	1/3	1	8.75	15	4.4	6.1
024	208/60/1	14.9	12.8	58.3	1	20.0	2.10	1/3	1	18.10	30	0.0	0.0
024	208/60/1	17.8	12.8	58.3	1	20.0	2.10	1/3	1	22.22	30	3.3	15.7
024	230/60/1	14.9	12.8	58.3	1	20.0	2.10	1/3	1	18.10	30	0.0	0.0
024	230/60/1	19.5	12.8	58.3	1	20.0	2.10	1/3	1	24.36	30	4.0	17.4
024	220-240/50/1	12.7	11.2	60.0	1	17.5	1.53	1/3	1	15.53	25	0.0	0.0
024	220-240/50/1	24.0	11.2	60.0	1	17.5	1.53	1/3	1	30.04	35	5.4	22.5
024	265/60/1	11.1	9.6	54.0	1	15.0	1.53	1/3	1	13.53	20	0.0	0.0
024	265/60/1	21.5	9.6	54.0	1	15.0	1.53	1/3	1	26.91	30	5.3	20.0
024	208/60/3	9.2	7.7	53.7	1	12.0	1.53	1/3	1	11.16	15	0.0	0.0
024	208/60/3	10.6	7.7	53.7	1	12.0	1.53	1/3	1	13.22	15	3.3	9.0
024	230/60/3	9.8	7.7	53.7	1	12.0	2.10	1/3	1	11.73	15	0.0	0.0
024	230/60/3	12.1	7.7	53.7	1	12.0	2.10	1/3	1	15.18	20	4.0	10.0
024	380-415/50/3	5.2	4.2	28.0	1	6.5	0.95	1/3	1	6.20	15	0.0	0.0
024	380-415/50/3	8.5	4.2	28.0	1	6.5	0.95	1/3	1	10.58	15	5.4	7.5
024	460/60/3	4.6	3.6	28.0	1	5.6	0.95	1/3	1	5.45	15	0.0	0.0
024	460/60/3	7.6	3.6	28.0	1	5.6	0.95	1/3	1	9.50	15	5.3	6.7
030	208/60/1	16.2	14.1	73.0	1	22.0	2.10	1/3	1	19.73	30	0.0	0.0
030	208/60/1	21.8	14.1	73.0	1	22.0	2.10	1/3	1	27.26	30	4.1	19.7
030	230/60/1	16.2	14.1	73.0	1	22.0	2.10	1/3	1	19.73	30	0.0	0.0
030	230/60/1	23.8	14.1	73.0	1	22.0	2.10	1/3	1	29.80	30	5.0	21.7
030	220-240/50/1	19.5	16.7	79.0	1	26.0	2.77	1/2	1	23.65	40	0.0	0.0
030	220-240/50/1	29.9	13.5	72.0	1	21.0	2.77	1/2	1	37.42	40	6.5	27.2
030	265/60/1	12.7	11.2	60.0	1	17.5	1.53	1/3	1	15.53	25	0.0	0.0
030	265/60/1	26.4	11.2	60.0	1	17.5	1.53	1/3	1	33.04	35	6.6	24.9
030	208/60/3	11.0	8.9	58.0	1	13.9	2.10	1/3	1	13.23	20	0.0	0.0
030	208/60/3	13.5	8.9	58.0	1	13.9	2.10	1/3	1	16.85	20	4.1	11.4
030	230/60/3	11.0	8.9	58.0	1	13.9	2.10	1/3	1	13.23	20	0.0	0.0
030	230/60/3	14.7	8.9	58.0	1	13.9	2.10	1/3	1	18.31	20	5.0	12.6
030	380-415/50/3	7.5	5.8	38.0	1	9.0	1.70	1/2	1	8.95	15	0.0	0.0
030	380-415/50/3	10.8	5.8	38.0	1	9.0	1.70	1/2	1	13.46	15	6.5	9.1
030	460/60/3	5.2	4.2	28.0	1	6.5	0.95	1/3	1	6.20	15	0.0	0.0
030	460/60/3	9.2	4.2	28.0	1	6.5	0.95	1/3	1	11.54	15	6.6	8.3

Table 43. Electrical data: Standard static motors, ½–5 tons (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Comp MCC	Blower Motor FLA	Blower Motor hp	Fan Motor Num.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
GEHE/GEVE													
036	208/60/1	20.3	16.7	79.0	1	26.0	3.60	1/2	1	24.48	40	0.0	0.0
036	208/60/1	27.2	16.7	79.0	1	26.0	3.60	1/2	1	33.95	40	4.9	23.6
036	230/60/1	20.3	16.7	79.0	1	26.0	3.60	1/2	1	24.48	40	0.0	0.0
036	230/60/1	29.7	16.7	79.0	1	26.0	3.60	1/2	1	37.11	40	6.0	26.1
036	265/60/1	16.3	13.5	72.0	1	21.0	2.77	1/2	1	19.65	30	0.0	0.0
036	265/60/1	32.8	13.5	72.0	1	21.0	2.77	1/2	1	40.96	45	8.0	30.0
036	208/60/3	14.0	10.4	73.0	1	16.3	3.60	1/2	1	16.60	25	0.0	0.0
036	208/60/3	17.2	10.4	73.0	1	16.3	3.60	1/2	1	21.50	25	4.9	13.6
036	230/60/3	14.0	10.4	73.0	1	16.3	3.60	1/2	1	16.60	25	0.0	0.0
036	230/60/3	18.7	10.4	73.0	1	16.3	3.60	1/2	1	23.33	25	6.0	15.1
036	380-415/50/3	7.7	6.0	44.0	1	9.3	1.70	1/2	1	9.20	15	0.0	0.0
036	380-415/50/3	11.6	6.0	44.0	1	9.3	1.70	1/2	1	14.56	15	7.2	9.9
036	460/60/3	7.5	5.8	38.0	1	9.0	1.70	1/2	1	8.95	15	0.0	0.0
036	460/60/3	11.7	5.8	38.0	1	9.0	1.70	1/2	1	14.60	15	8.0	10.0
042	208/60/1	21.5	17.9	112.0	1	28.0	3.60	1/2	1	25.98	40	0.0	0.0
042	208/60/1	31.0	17.9	112.0	1	28.0	3.60	1/2	1	38.75	40	5.7	27.4
042	230/60/1	21.5	17.9	112.0	1	28.0	3.60	1/2	1	25.98	40	0.0	0.0
042	230/60/1	34.0	17.9	112.0	1	28.0	3.60	1/2	1	42.54	45	7.0	30.4
042	208/60/3	17.1	13.5	88.0	1	21.1	3.60	1/2	1	20.48	30	0.0	0.0
042	208/60/3	19.4	13.5	88.0	1	21.1	3.60	1/2	1	24.28	30	5.7	15.8
042	230/60/3	17.1	13.5	88.0	1	21.1	3.60	1/2	1	20.48	30	0.0	0.0
042	230/60/3	21.2	13.5	88.0	1	21.1	3.60	1/2	1	26.46	30	7.0	17.6
042	380-415/50/3	7.7	6.3	55.0	1	9.9	1.40	1/2	1	9.28	15	0.0	0.0
042	380-415/50/3	13.4	6.3	55.0	1	9.9	1.40	1/2	1	16.71	20	8.6	12.0
042	460/60/3	7.7	6.0	44.0	1	9.3	1.70	1/2	1	9.20	15	0.0	0.0
042	460/60/3	13.4	6.0	44.0	1	9.3	1.70	1/2	1	16.72	20	9.3	11.7
042	575/60/3	6.2	4.9	34.0	1	7.7	1.31	1/2	1	7.44	15	0.0	0.0
048	208/60/1	24.2	21.4	135.0	1	33.4	2.80	1/2	1	29.55	50	0.0	0.0
048	208/60/1	34.1	21.4	135.0	1	33.4	2.80	1/2	1	42.56	50	6.5	31.3
048	230/60/1	24.2	21.4	135.0	1	33.4	2.80	1/2	1	29.55	50	0.0	0.0
048	230/60/1	37.6	21.4	135.0	1	33.4	2.80	1/2	1	46.98	50	8.0	34.8
048	208/60/3	17.3	14.5	98.0	1	22.6	2.80	1/2	1	20.93	35	0.0	0.0
048	208/60/3	20.8	14.5	98.0	1	22.6	2.80	1/2	1	26.05	35	6.5	18.0
048	230/60/3	17.3	14.5	98.0	1	22.6	2.80	1/2	1	20.93	35	0.0	0.0
048	230/60/3	22.9	14.5	98.0	1	22.6	2.80	1/2	1	28.60	35	8.0	20.1
048	380-415/50/3	10.5	7.8	52.0	1	12.1	2.70	1	1	12.45	20	0.0	0.0
048	380-415/50/3	14.7	7.8	52.0	1	12.1	2.70	1	1	18.33	20	8.6	12.0
048	460/60/3	7.7	6.3	55.0	1	9.9	1.40	1/2	1	9.28	15	0.0	0.0
048	460/60/3	14.7	6.3	55.0	1	9.9	1.40	1/2	1	18.38	20	10.6	13.3
048	575/60/3	7.4	6.0	41.0	1	9.4	1.40	1/2	1	8.90	15	0.0	0.0
060	208/60/1	31.7	26.3	134.0	1	41.0	5.40	1	1	38.28	60	0.0	0.0
060	208/60/1	36.7	26.3	134.0	1	41.0	5.40	1	1	45.81	60	6.5	31.3
060	230/60/1	31.7	26.3	134.0	1	41.0	5.40	1	1	38.28	60	0.0	0.0
060	230/60/1	40.2	26.3	134.0	1	41.0	5.40	1	1	50.23	60	8.0	34.8



Electrical Data

Table 43. Electrical data: Standard static motors, ½–5 tons (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor hp	Fan Motor Num.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
GEHE/GEVE													
060	208/60/3	21.0	15.6	110.0	1	24.4	5.40	1	1	24.90	40	0.0	0.0
060	208/60/3	23.4	15.6	110.0	1	24.4	5.40	1	1	29.30	40	6.5	18.0
060	230/60/3	21.0	15.6	110.0	1	24.4	5.40	1	1	24.90	40	0.0	0.0
060	230/60/3	25.5	15.6	110.0	1	24.4	5.40	1	1	31.85	40	8.0	20.1
060	380-415/50/3	12.3	9.6	75.0	1	15.0	2.70	1	1	14.70	20	0.0	0.0
060	380-415/50/3	14.7	9.6	75.0	1	15.0	2.70	1	1	18.33	20	8.6	12.0
060	460/60/3	10.5	7.8	52.0	1	12.1	2.70	1	1	12.45	20	0.0	0.0
060	460/60/3	16.0	7.8	52.0	1	12.1	2.70	1	1	20.01	25	10.6	13.3
060	575/60/3	8.0	5.8	38.9	1	9.1	2.20	1	1	9.45	15	0.0	0.0

Table 44. Electrical data - high static motors - ½-5 tons GEHE/GEVE

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor hp	Fan Motor Num.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
GEHE/GEVE													
006	115/60/1	6.8	5.6	30.0	1	7.5	1.20	1/12	1	8.20	15	0.0	0.0
006	208/60/1	3.9	3.3	14.0	1	4.2	0.60	1/12	1	4.73	15	0.0	0.0
006	208/60/1	4.5	3.3	14.0	1	4.2	0.60	1/12	1	5.68	15	0.8	3.9
006	230/60/1	3.8	3.2	15.0	1	4.2	0.60	1/12	1	4.60	15	0.0	0.0
006	230/60/1	4.9	3.2	15.0	1	4.2	0.60	1/12	1	6.18	15	1.0	4.3
006	220-240/50/1	3.4	2.9	17.0	1	4.0	0.52	1/12	1	4.15	15	0.0	0.0
006	220-240/50/1	7.4	2.9	17.0	1	4.0	0.52	1/12	1	9.19	15	1.6	6.8
006	265/60/1	3.0	2.5	11.0	1	3.5	0.52	1/12	1	3.65	15	0.0	0.0
006	265/60/1	5.5	2.5	11.0	1	3.5	0.52	1/12	1	6.92	15	1.3	5.0
009	115/60/1	7.6	6.4	36.0	1	8.6	1.20	1/12	1	9.20	15	0.0	0.0
009	208/60/1	4.3	3.7	16.0	1	4.8	0.60	1/12	1	5.23	15	0.0	0.0
009	208/60/1	6.5	3.7	16.0	1	4.8	0.60	1/12	1	8.14	15	1.2	5.9
009	230/60/1	4.1	3.5	17.0	1	4.8	0.60	1/12	1	4.98	15	0.0	0.0
009	230/60/1	7.1	3.5	17.0	1	4.8	0.60	1/12	1	8.90	15	1.5	6.5
009	220-240/50/1	6.0	5.3	23.0	1	7.4	0.72	1/8	1	7.35	15	0.0	0.0
009	220-240/50/1	9.8	5.3	23.0	1	7.4	0.72	1/8	1	12.20	15	2.2	9.0
009	265/60/1	3.3	2.8	13.0	1	3.7	0.52	1/12	1	4.02	15	0.0	0.0
009	265/60/1	8.1	2.8	13.0	1	3.7	0.52	1/12	1	10.08	15	2.0	7.5
012	115/60/1	13.7	12.1	58.0	1	16.9	1.57	1/8	1	16.70	25	0.0	0.0
012	208/60/1	7.0	6.3	30.0	1	8.8	0.70	1/8	1	8.58	15	0.0	0.0
012	208/60/1	8.5	6.3	27.0	1	8.8	0.70	1/8	1	10.67	15	1.6	7.8
012	230/60/1	7.0	6.3	30.0	1	8.8	0.70	1/8	1	8.58	15	0.0	0.0
012	230/60/1	9.4	6.3	30.0	1	8.8	0.70	1/8	1	11.74	15	2.0	8.7
012	220-240/50/1	7.4	6.7	30.0	1	9.4	0.72	1/8	1	9.10	15	0.0	0.0
012	220-240/50/1	12.0	6.7	30.0	1	9.4	0.72	1/8	1	14.96	15	2.7	11.3
012	265/60/1	5.7	5.0	23.0	1	7.0	0.72	1/8	1	6.97	15	0.0	0.0
012	265/60/1	10.7	5.0	23.0	1	7.0	0.72	1/8	1	13.40	15	2.7	10.0
015	208/60/1	8.6	7.9	36.0	1	11.1	0.70	1/8	1	10.58	15	0.0	0.0

Table 44. Electrical data - high static motors - ½-5 tons GEHE/GEVE (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Comp MCC	Blower Motor FLA	Blower Motor hp	Fan Motor Num.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
015	208/60/1	10.3	7.9	36.0	1	11.1	0.70	1/8	1	12.89	15	2.0	9.6
015	230/60/1	8.6	7.9	36.0	1	11.1	0.70	1/8	1	10.58	15	0.0	0.0
015	230/60/1	11.6	7.9	36.0	1	11.1	0.70	1/8	1	14.46	15	2.5	10.9
015	220-240/50/1	9.7	8.2	36.0	1	11.5	1.53	1/3	1	11.78	15	0.0	0.0
015	220-240/50/1	15.2	8.2	36.0	1	11.5	1.53	1/3	1	19.00	20	3.3	13.7
015	265/60/1	7.1	6.4	30.0	1	9.0	0.72	1/8	1	8.72	15	0.0	0.0
015	265/60/1	13.2	6.4	30.0	1	9.0	0.72	1/8	1	16.47	20	3.3	12.5
018	208/60/1	11.7	9.6	42.0	1	13.4	2.10	1/3	1	14.10	20	0.0	0.0
018	208/60/1	13.9	9.6	42.0	1	13.4	2.10	1/3	1	17.41	20	2.5	11.8
018	230/60/1	11.7	9.6	42.0	1	13.4	2.10	1/3	1	14.10	20	0.0	0.0
018	230/60/1	15.1	9.6	42.0	1	13.4	2.10	1/3	1	18.93	20	3.0	13.0
018	220-240/50/1	11.1	9.6	54.0	1	15.0	1.53	1/3	1	13.53	20	0.0	0.0
018	220-240/50/1	19.7	9.6	54.0	1	15.0	1.53	1/3	1	24.57	25	4.4	18.1
018	265/60/1	9.2	7.7	35.0	1	10.8	1.53	1/3	1	11.16	15	0.0	0.0
018	265/60/1	16.6	7.7	35.0	1	10.8	1.53	1/3	1	20.78	25	4.0	15.1
018	380-415/50/3	5.2	4.2	28.0	1	6.5	0.95	1/3	1	6.20	15	0.0	0.0
018	380-415/50/3	7.0	3.6	28.0	1	5.6	0.95	1/3	1	8.75	15	4.4	6.1
024	208/60/1	14.9	12.8	58.3	1	20.0	2.10	1/3	1	18.10	30	0.0	0.0
024	208/60/1	17.8	12.8	58.3	1	20.0	2.10	1/3	1	22.22	30	3.3	15.7
024	230/60/1	14.9	12.8	58.3	1	20.0	2.10	1/3	1	18.10	30	0.0	0.0
024	230/60/1	19.5	12.8	58.3	1	20.0	2.10	1/3	1	24.36	30	4.0	17.4
024	220-240/50/1	12.7	11.2	60.0	1	17.5	1.53	1/3	1	15.53	25	0.0	0.0
024	220-240/50/1	24.0	11.2	60.0	1	17.5	1.53	1/3	1	30.04	35	5.4	22.5
024	265/60/1	11.1	9.6	54.0	1	15.0	1.53	1/3	1	13.53	20	0.0	0.0
024	265/60/1	21.5	9.6	54.0	1	15.0	1.53	1/3	1	26.91	30	5.3	20.0
024	208/60/3	9.2	7.7	53.7	1	12.0	1.53	1/3	1	11.16	15	0.0	0.0
024	208/60/3	10.6	7.7	53.7	1	12.0	1.53	1/3	1	13.22	15	3.3	9.0
024	230/60/3	9.8	7.7	53.7	1	12.0	2.10	1/3	1	11.73	15	0.0	0.0
024	230/60/3	12.1	7.7	53.7	1	12.0	2.10	1/3	1	15.18	20	4.0	10.0
024	380-415/50/3	5.2	4.2	28.0	1	6.5	0.95	1/3	1	6.20	15	0.0	0.0
024	380-415/50/3	8.5	4.2	28.0	1	6.5	0.95	1/3	1	10.58	15	5.4	7.5
024	460/60/3	4.6	3.6	28.0	1	5.6	0.95	1/3	1	5.45	15	0.0	0.0
024	460/60/3	7.6	3.6	28.0	1	5.6	0.95	1/3	1	9.50	15	5.3	6.7
030	208/60/1	16.2	14.1	73.0	1	22.0	2.10	1/3	1	19.73	30	0.0	0.0
030	208/60/1	21.8	14.1	73.0	1	22.0	2.10	1/3	1	27.26	30	4.1	19.7
030	230/60/1	16.2	14.1	73.0	1	22.0	2.10	1/3	1	19.73	30	0.0	0.0
030	230/60/1	23.8	14.1	73.0	1	22.0	2.10	1/3	1	29.80	30	5.0	21.7
030	220-240/50/1	19.5	16.7	79.0	1	26.0	2.77	1/2	1	23.65	40	0.0	0.0
030	220-240/50/1	29.9	13.5	72.0	1	21.0	2.77	1/2	1	37.42	40	6.5	27.2
030	265/60/1	12.7	11.2	60.0	1	17.5	1.53	1/3	1	15.53	25	0.0	0.0
030	265/60/1	26.4	11.2	60.0	1	17.5	1.53	1/3	1	33.04	35	6.6	24.9
030	208/60/3	11.0	8.9	58.0	1	13.9	2.10	1/3	1	13.23	20	0.0	0.0
030	208/60/3	13.5	8.9	58.0	1	13.9	2.10	1/3	1	16.85	20	4.1	11.4
030	230/60/3	11.0	8.9	58.0	1	13.9	2.10	1/3	1	13.23	20	0.0	0.0
030	230/60/3	14.7	8.9	58.0	1	13.9	2.10	1/3	1	18.31	20	5.0	12.6



Electrical Data

Table 44. Electrical data - high static motors - ½-5 tons GEHE/GEVE (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor hp	Fan Motor Num.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
030	380-415/50/3	7.5	5.8	38.0	1	9.0	1.70	1/2	1	8.95	15	0.0	0.0
030	380-415/50/3	10.8	5.8	38.0	1	9.0	1.70	1/2	1	13.46	15	6.5	9.1
030	460/60/3	5.2	4.2	28.0	1	6.5	0.95	1/3	1	6.20	15	0.0	0.0
030	460/60/3	9.2	4.2	28.0	1	6.5	0.95	1/3	1	11.54	15	6.6	8.3
036	208/60/1	20.3	16.7	79.0	1	26.0	3.60	1/2	1	24.48	40	0.0	0.0
036	208/60/1	27.2	16.7	79.0	1	26.0	3.60	1/2	1	33.95	40	4.9	23.6
036	230/60/1	20.3	16.7	79.0	1	26.0	3.60	1/2	1	24.48	40	0.0	0.0
036	230/60/1	29.7	16.7	79.0	1	26.0	3.60	1/2	1	37.11	40	6.0	26.1
036	265/60/1	16.3	13.5	72.0	1	21.0	2.77	1/2	1	19.65	30	0.0	0.0
036	265/60/1	32.8	13.5	72.0	1	21.0	2.77	1/2	1	40.96	45	8.0	30.0
036	208/60/3	14.0	10.4	73.0	1	16.3	3.60	1/2	1	16.60	25	0.0	0.0
036	208/60/3	17.2	10.4	73.0	1	16.3	3.60	1/2	1	21.50	25	4.9	13.6
036	230/60/3	14.0	10.4	73.0	1	16.3	3.60	1/2	1	16.60	25	0.0	0.0
036	230/60/3	18.7	10.4	73.0	1	16.3	3.60	1/2	1	23.33	25	6.0	15.1
036	380-415/50/3	7.7	6.0	44.0	1	9.3	1.70	1/2	1	9.20	15	0.0	0.0
036	380-415/50/3	11.6	6.0	44.0	1	9.3	1.70	1/2	1	14.56	15	7.2	9.9
036	460/60/3	7.5	5.8	38.0	1	9.0	1.70	1/2	1	8.95	15	0.0	0.0
036	460/60/3	11.7	5.8	38.0	1	9.0	1.70	1/2	1	14.60	15	8.0	10.0
042	208/60/1	21.5	17.9	112.0	1	28.0	3.60	1/2	1	25.98	40	0.0	0.0
042	208/60/1	31.0	17.9	112.0	1	28.0	3.60	1/2	1	38.75	40	5.7	27.4
042	230/60/1	21.5	17.9	112.0	1	28.0	3.60	1/2	1	25.98	40	0.0	0.0
042	230/60/1	34.0	17.9	112.0	1	28.0	3.60	1/2	1	42.54	45	7.0	30.4
042	208/60/3	17.1	13.5	88.0	1	21.1	3.60	1/2	1	20.48	30	0.0	0.0
042	208/60/3	19.4	13.5	88.0	1	21.1	3.60	1/2	1	24.28	30	5.7	15.8
042	230/60/3	17.1	13.5	88.0	1	21.1	3.60	1/2	1	20.48	30	0.0	0.0
042	230/60/3	21.2	13.5	88.0	1	21.1	3.60	1/2	1	26.46	30	7.0	17.6
042	380-415/50/3	9.0	6.3	55.0	1	9.9	2.70	1	1	10.58	15	0.0	0.0
042	380-415/50/3	14.7	6.3	55.0	1	9.9	2.70	1	1	18.33	20	8.6	12.0
042	460/60/3	7.7	6.0	44.0	1	9.3	1.70	1/2	1	9.20	15	0.0	0.0
042	460/60/3	13.4	6.0	44.0	1	9.3	1.70	1/2	1	16.72	20	9.3	11.7
042	575/60/3	6.2	4.9	34.0	1	7.7	1.31	1/2	1	7.44	15	0.0	0.0
048	208/60/1	26.8	21.4	135.0	1	33.4	5.40	1	1	32.15	50	0.0	0.0
048	208/60/1	36.7	21.4	135.0	1	33.4	5.40	1	1	45.81	50	6.5	31.3
048	230/60/1	26.8	21.4	135.0	1	33.4	5.40	1	1	32.15	50	0.0	0.0
048	230/60/1	40.2	21.4	135.0	1	33.4	5.40	1	1	50.23	60	8.0	34.8
048	208/60/3	19.9	14.5	98.0	1	22.6	5.40	1	1	23.53	35	0.0	0.0
048	208/60/3	23.4	14.5	98.0	1	22.6	5.40	1	1	29.30	35	6.5	18.0
048	230/60/3	19.9	14.5	98.0	1	22.6	5.40	1	1	23.53	35	0.0	0.0
048	230/60/3	25.5	14.5	98.0	1	22.6	5.40	1	1	31.85	35	8.0	20.1
048	380-415/50/3	10.5	7.8	52.0	1	12.1	2.70	1	1	12.45	20	0.0	0.0
048	380-415/50/3	14.7	7.8	52.0	1	12.1	2.70	1	1	18.33	20	8.6	12.0
048	460/60/3	9.0	6.3	55.0	1	9.9	2.70	1	1	10.58	15	0.0	0.0
048	460/60/3	16.0	6.3	55.0	1	9.9	2.70	1	1	20.01	25	10.6	13.3
048	575/60/3	8.2	6.0	41.0	1	9.4	2.20	1	1	9.70	15	0.0	0.0
060	208/60/1	31.7	26.3	134.0	1	41.0	5.40	1	1	38.28	60	0.0	0.0

Table 44. Electrical data - high static motors - ½-5 tons GEHE/GEVE (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor hp	Fan Motor Num.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
060	208/60/1	36.7	26.3	134.0	1	41.0	5.40	1	1	45.81	60	6.5	31.3
060	230/60/1	31.7	26.3	134.0	1	41.0	5.40	1	1	38.28	60	0.0	0.0
060	230/60/1	40.2	26.3	134.0	1	41.0	5.40	1	1	50.23	60	8.0	34.8
060	208/60/3	21.0	15.6	110.0	1	24.4	5.40	1	1	24.90	40	0.0	0.0
060	208/60/3	23.4	15.6	110.0	1	24.4	5.40	1	1	29.30	40	6.5	18.0
060	230/60/3	21.0	15.6	110.0	1	24.4	5.40	1	1	24.90	40	0.0	0.0
060	230/60/3	25.5	15.6	110.0	1	24.4	5.40	1	1	31.85	40	8.0	20.1
060	380-415/50/3	12.3	9.6	75.0	1	15.0	2.70	1	1	14.70	20	0.0	0.0
060	380-415/50/3	14.7	9.6	75.0	1	15.0	2.70	1	1	18.33	20	8.6	12.0
060	460/60/3	10.5	7.8	52.0	1	12.1	2.70	1	1	12.45	20	0.0	0.0
060	460/60/3	16.0	7.8	52.0	1	12.1	2.70	1	1	20.01	25	10.6	13.3
060	575/60/3	8.0	5.8	38.9	1	9.1	2.20	1	1	9.45	15	0.0	0.0

Table 45. Electrical data - ECM motors - ½-6 tons

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	Blower Motor FLA	Blower Motor hp	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
EXH006	208/60/1	3.70	3.3	14.0	0.40	1/3	4.53	15	0.0	0.0
	208/60/1	4.34	3.3	14.0	0.40	1/3	5.43	15	0.8	3.9
	230/60/1	3.60	3.2	15.0	0.40	1/3	4.40	15	0.0	0.0
	230/60/1	4.75	3.2	15.0	0.40	1/3	5.93	15	1.0	4.3
	265/60/1	2.90	2.5	11.0	0.40	1/3	3.53	15	0.0	0.0
	265/60/1	5.42	2.5	11.0	0.40	1/3	6.77	15	1.3	5.0
EXH009	208/60/1	4.30	3.7	16.0	0.60	1/3	5.23	15	0.0	0.0
	208/60/1	6.51	3.7	16.0	0.60	1/3	8.14	15	1.2	5.9
	230/60/1	4.10	3.5	17.0	0.60	1/3	4.98	15	0.0	0.0
	230/60/1	7.12	3.5	17.0	0.60	1/3	8.90	15	1.5	6.5
	265/60/1	3.40	2.8	13.0	0.60	1/3	4.10	15	0.0	0.0
	265/60/1	8.15	2.8	13.0	0.60	1/3	10.18	15	2.0	7.5
EXH012	208/60/1	7.02	6.3	30.0	0.72	1/3	8.60	15	0.0	0.0
	208/60/1	8.56	6.3	27.0	0.72	1/3	10.70	15	1.6	7.8
	230/60/1	7.02	6.3	30.0	0.72	1/3	8.60	15	0.0	0.0
	230/60/1	9.42	6.3	30.0	0.72	1/3	11.77	15	2.0	8.7
	265/60/1	5.72	5.0	23.0	0.72	1/3	6.97	15	0.0	0.0
	265/60/1	10.72	5.0	23.0	0.72	1/3	13.40	15	2.7	10.0
EXH015	208/60/1	8.79	7.9	36.0	0.89	1/3	10.77	15	0.0	0.0
	208/60/1	10.51	7.9	36.0	0.89	1/3	13.13	15	2.0	9.6
	230/60/1	8.79	7.9	36.0	0.89	1/3	10.77	15	0.0	0.0
	230/60/1	11.76	7.9	36.0	0.89	1/3	14.70	15	2.5	10.9
	265/60/1	7.29	6.4	30.0	0.89	1/3	8.89	15	0.0	0.0
	265/60/1	13.34	6.4	30.0	0.89	1/3	16.68	20	3.3	12.5



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Table 45. Electrical data - ECM motors - 1/2-6 tons (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	Blower Motor FLA	Blower Motor hp	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
EXH018	208/60/1	11.10	9.6	42.0	1.50	1/2	13.50	20	0.0	0.0
	208/60/1	13.33	9.6	42.0	1.50	1/2	16.66	20	2.5	11.8
	230/60/1	11.10	9.6	42.0	1.50	1/2	13.50	20	0.0	0.0
	230/60/1	14.54	9.6	42.0	1.50	1/2	18.18	20	3.0	13.0
	265/60/1	9.00	7.7	35.0	1.30	1/2	10.93	15	0.0	0.0
	265/60/1	16.39	7.7	35.0	1.30	1/2	20.49	25	4.0	15.1
EXH024	208/60/1	15.70	13.5	58.3	2.20	1/2	19.08	30	0.0	0.0
	208/60/1	17.87	13.5	58.3	2.20	1/2	22.34	30	3.3	15.7
	230/60/1	15.70	13.5	58.3	2.20	1/2	19.08	30	0.0	0.0
	230/60/1	19.59	13.5	58.3	2.20	1/2	24.49	30	4.0	17.4
	265/60/1	10.10	9.0	54.0	1.10	1/2	12.35	20	0.0	0.0
	265/60/1	21.10	9.0	54.0	1.10	1/2	26.38	30	5.3	20.0
EXH030	208/60/1	17.30	14.1	77.0	3.20	1/2	20.83	30	0.0	0.0
	208/60/1	26.76	14.1	77.0	3.20	1/2	33.45	35	4.9	23.6
	230/60/1	17.30	14.1	77.0	3.20	1/2	20.83	30	0.0	0.0
	230/60/1	29.29	14.1	77.0	3.20	1/2	36.61	40	6.0	26.1
	265/60/1	13.70	10.9	60.0	2.80	1/2	16.43	25	0.0	0.0
	265/60/1	32.80	10.9	60.0	2.80	1/2	41.00	45	8.0	30.0
EXH036	208/60/1	18.10	14.1	77.0	4.00	3/4	21.63	35	0.0	0.0
	208/60/1	27.56	14.1	77.0	4.00	3/4	34.45	35	4.9	23.6
	230/60/1	18.10	14.1	77.0	4.00	3/4	21.63	35	0.0	0.0
	230/60/1	30.09	14.1	77.0	4.00	3/4	37.61	40	6.0	26.1
	265/60/1	15.70	12.2	72.0	3.50	3/4	18.75	30	0.0	0.0
	265/60/1	33.50	12.2	72.0	3.50	3/4	41.88	45	8.0	30.0
	208/60/3	13.00	9.0	71.0	4.00	3/4	15.25	20	0.0	0.0
	208/60/3	17.60	9.0	71.0	4.00	3/4	22.00	25	4.9	13.6
	230/60/3	13.00	9.0	71.0	4.00	3/4	15.25	20	0.0	0.0
	230/60/3	19.06	9.0	71.0	4.00	3/4	23.83	25	6.0	15.1
	460/60/3	9.10	5.6	38.0	3.50	3/4	10.50	15	0.0	0.0
	460/60/3	13.48	5.6	38.0	3.50	3/4	16.85	20	8.0	10.0
EXH042	208/60/1	22.30	17.9	112.0	4.40	3/4	26.78	40	0.0	0.0
	208/60/1	35.65	17.9	112.0	4.40	3/4	44.56	45	6.5	31.3
	230/60/1	22.30	17.9	112.0	4.40	3/4	26.78	40	0.0	0.0
	230/60/1	39.18	17.9	112.0	4.40	3/4	48.98	50	8.0	34.8
	208/60/3	17.60	13.2	88.0	4.40	3/4	20.90	30	0.0	0.0
	208/60/3	22.44	13.2	88.0	4.40	3/4	28.05	30	6.5	18.0
	230/60/3	17.60	13.2	88.0	4.40	3/4	20.90	30	0.0	0.0
	230/60/3	24.48	13.2	88.0	4.40	3/4	30.60	35	8.0	20.1
	460/60/3	9.80	6.0	44.0	3.80	3/4	11.30	15	0.0	0.0
	460/60/3	17.10	6.0	44.0	3.80	3/4	21.38	25	10.6	13.3

Table 45. Electrical data - ECM motors - ½-6 tons (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	Blower Motor FLA	Blower Motor hp	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
EXH048	208/60/1	25.00	19.9	109.0	5.10	3/4	29.98	45	0.0	0.0
	208/60/1	36.35	19.9	109.0	5.10	3/4	45.44	50	6.5	31.3
	230/60/1	25.00	19.9	109.0	5.10	3/4	29.98	45	0.0	0.0
	230/60/1	39.88	19.9	109.0	5.10	3/4	49.85	50	8.0	34.8
	208/60/3	18.20	13.1	83.1	5.10	3/4	21.48	30	0.0	0.0
	208/60/3	23.14	13.1	83.1	5.10	3/4	28.93	30	6.5	18.0
	230/60/3	18.20	13.1	83.1	5.10	3/4	21.48	30	0.0	0.0
	230/60/3	25.18	13.1	83.1	5.10	3/4	31.48	35	8.0	20.1
	460/60/3	10.50	6.1	41.0	4.40	3/4	12.03	15	0.0	0.0
460/60/3	17.70	6.1	41.0	4.40	3/4	22.13	25	10.6	13.3	
EXH060	208/60/1	34.40	26.4	134.0	8.00	1	41.00	60	0.0	0.0
	208/60/1	39.25	26.4	134.0	8.00	1	49.06	60	6.5	31.3
	230/60/1	34.40	26.4	134.0	8.00	1	41.00	60	0.0	0.0
	230/60/1	42.78	26.4	134.0	8.00	1	53.48	60	8.0	34.8
	208/60/3	24.00	16.0	110.0	8.00	1	28.00	40	0.0	0.0
	208/60/3	26.04	16.0	110.0	8.00	1	32.55	40	6.5	18.0
	230/60/3	24.00	16.0	110.0	8.00	1	28.00	40	0.0	0.0
	230/60/3	28.08	16.0	110.0	8.00	1	35.10	40	8.0	20.1
	460/60/3	14.70	7.8	52.0	6.90	1	16.65	20	0.0	0.0
460/60/3	20.20	7.8	52.0	6.90	1	25.26	30	10.6	13.3	
EXH070	208/60/1	37.10	30.1	158.0	7.00	1	44.63	70	0.0	0.0
	208/60/1	38.25	30.1	158.0	7.00	1	47.81	70	6.5	31.3
	230/60/1	37.10	30.1	158.0	7.00	1	44.63	70	0.0	0.0
	230/60/1	41.78	30.1	158.0	7.00	1	52.23	70	8.0	34.8
	208/60/3	27.50	20.5	155.0	7.00	1	32.63	50	0.0	0.0
	208/60/3	27.50	20.5	155.0	7.00	1	32.63	50	6.5	18.0
	230/60/3	27.50	20.5	155.0	7.00	1	32.63	50	0.0	0.0
	230/60/3	27.50	20.5	155.0	7.00	1	33.85	50	8.0	20.1
	460/60/3	15.70	9.6	75.0	6.10	1	18.10	25	0.0	0.0
460/60/3	19.40	9.6	75.0	6.10	1	24.26	25	10.6	13.3	
EXV006	208/60/1	3.76	3.3	14.0	0.46	1/3	4.59	15	0.0	0.0
	208/60/1	4.40	3.3	14.0	0.46	1/3	5.50	15	0.8	3.9
	230/60/1	3.66	3.2	15.0	0.46	1/3	4.46	15	0.0	0.0
	230/60/1	4.81	3.2	15.0	0.46	1/3	6.01	15	1.0	4.3
	265/60/1	2.96	2.5	11.0	0.46	1/3	3.59	15	0.0	0.0
	265/60/1	5.48	2.5	11.0	0.46	1/3	6.85	15	1.3	5.0
EXV009	208/60/1	4.31	3.7	16.0	0.61	1/3	5.24	15	0.0	0.0
	208/60/1	6.52	3.7	16.0	0.61	1/3	8.15	15	1.2	5.9
	230/60/1	4.11	3.5	17.0	0.61	1/3	4.99	15	0.0	0.0
	230/60/1	7.13	3.5	17.0	0.61	1/3	8.91	15	1.5	6.5
	265/60/1	3.41	2.8	13.0	0.61	1/3	4.11	15	0.0	0.0
	265/60/1	8.16	2.8	13.0	0.61	1/3	10.20	15	2.0	7.5



Electrical Data

Table 45. Electrical data - ECM motors - ½-6 tons (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	Blower Motor FLA	Blower Motor hp	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
EXV012	208/60/1	6.91	6.3	30.0	0.61	1/3	8.49	15	0.0	0.0
	208/60/1	8.45	6.3	27.0	0.61	1/3	10.56	15	1.6	7.8
	230/60/1	6.91	6.3	30.0	0.61	1/3	8.49	15	0.0	0.0
	230/60/1	9.31	6.3	30.0	0.61	1/3	11.63	15	2.0	8.7
	265/60/1	5.61	5.0	23.0	0.61	1/3	6.86	15	0.0	0.0
	265/60/1	10.61	5.0	23.0	0.61	1/3	13.26	15	2.7	10.0
EXV015	208/60/1	8.73	7.9	36.0	0.83	1/3	10.71	15	0.0	0.0
	208/60/1	10.45	7.9	36.0	0.83	1/3	13.06	15	2.0	9.6
	230/60/1	8.73	7.9	36.0	0.83	1/3	10.71	15	0.0	0.0
	230/60/1	11.70	7.9	36.0	0.83	1/3	14.62	15	2.5	10.9
	265/60/1	7.23	6.4	30.0	0.83	1/3	8.83	15	0.0	0.0
	265/60/1	13.28	6.4	30.0	0.83	1/3	16.60	20	3.3	12.5
EXV018	208/60/1	11.10	9.6	42.0	1.50	1/2	13.50	20	0.0	0.0
	208/60/1	13.33	9.6	42.0	1.50	1/2	16.66	20	2.5	11.8
	230/60/1	11.10	9.6	42.0	1.50	1/2	13.50	20	0.0	0.0
	230/60/1	14.54	9.6	42.0	1.50	1/2	18.18	20	3.0	13.0
	265/60/1	9.00	7.7	35.0	1.30	1/2	10.93	15	0.0	0.0
	265/60/1	16.39	7.7	35.0	1.30	1/2	20.49	25	4.0	15.1
EXV024	208/60/1	15.70	13.5	58.3	2.20	1/2	19.08	30	0.0	0.0
	208/60/1	17.87	13.5	58.3	2.20	1/2	22.34	30	3.3	15.7
	230/60/1	15.70	13.5	58.3	2.20	1/2	19.08	30	0.0	0.0
	230/60/1	19.59	13.5	58.3	2.20	1/2	24.49	30	4.0	17.4
	265/60/1	10.10	9.0	54.0	1.10	1/2	12.35	20	0.0	0.0
	265/60/1	21.10	9.0	54.0	1.10	1/2	26.38	30	5.3	20.0
EXV030	208/60/1	17.30	14.1	77.0	3.20	1/2	20.83	30	0.0	0.0
	208/60/1	26.76	14.1	77.0	3.20	1/2	33.45	35	4.9	23.6
	230/60/1	17.30	14.1	77.0	3.20	1/2	20.83	30	0.0	0.0
	230/60/1	29.29	14.1	77.0	3.20	1/2	36.61	40	6.0	26.1
	265/60/1	13.70	10.9	60.0	2.80	1/2	16.43	25	0.0	0.0
	265/60/1	32.80	10.9	60.0	2.80	1/2	41.00	45	8.0	30.0
EXV036	208/60/1	18.10	14.1	77.0	4.00	3/4	21.63	35	0.0	0.0
	208/60/1	27.56	14.1	77.0	4.00	3/4	34.45	35	4.9	23.6
	230/60/1	18.10	14.1	77.0	4.00	3/4	21.63	35	0.0	0.0
	230/60/1	30.09	14.1	77.0	4.00	3/4	37.61	40	6.0	26.1
	265/60/1	15.70	12.2	72.0	3.50	3/4	18.75	30	0.0	0.0
	265/60/1	33.50	12.2	72.0	3.50	3/4	41.88	45	8.0	30.0
	208/60/3	13.00	9.0	71.0	4.00	3/4	15.25	20	0.0	0.0
	208/60/3	17.60	9.0	71.0	4.00	3/4	22.00	25	4.9	13.6
	230/60/3	13.00	9.0	71.0	4.00	3/4	15.25	20	0.0	0.0
	230/60/3	19.06	9.0	71.0	4.00	3/4	23.83	25	6.0	15.1
	460/60/3	9.10	5.6	38.0	3.50	3/4	10.50	15	0.0	0.0
	460/60/3	13.48	5.6	38.0	3.50	3/4	16.85	20	8.0	10.0

Table 45. Electrical data - ECM motors - ½-6 tons (continued)

Model No.	Volts	Total Unit FLA	Comp RLA (ea)	Comp LRA (ea)	Blower Motor FLA	Blower Motor hp	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device	Electric Heat kW	Electric Heat Amps
EXV042	208/60/1	22.30	17.9	112.0	4.40	3/4	26.78	40	0.0	0.0
	208/60/1	35.65	17.9	112.0	4.40	3/4	44.56	45	6.5	31.3
	230/60/1	22.30	17.9	112.0	4.40	3/4	26.78	40	0.0	0.0
	230/60/1	39.18	17.9	112.0	4.40	3/4	48.98	50	8.0	34.8
	208/60/3	17.60	13.2	88.0	4.40	3/4	20.90	30	0.0	0.0
	208/60/3	22.44	13.2	88.0	4.40	3/4	28.05	30	6.5	18.0
	230/60/3	17.60	13.2	88.0	4.40	3/4	20.90	30	0.0	0.0
	230/60/3	24.48	13.2	88.0	4.40	3/4	30.60	35	8.0	20.1
	460/60/3	9.80	6.0	44.0	3.80	3/4	11.30	15	0.0	0.0
460/60/3	17.10	6.0	44.0	3.80	3/4	21.38	25	10.6	13.3	
EXV048	208/60/1	25.00	19.9	109.0	5.10	3/4	29.98	45	0.0	0.0
	208/60/1	36.35	19.9	109.0	5.10	3/4	45.44	50	6.5	31.3
	230/60/1	25.00	19.9	109.0	5.10	3/4	29.98	45	0.0	0.0
	230/60/1	39.88	19.9	109.0	5.10	3/4	49.85	50	8.0	34.8
	208/60/3	18.20	13.1	83.1	5.10	3/4	21.48	30	0.0	0.0
	208/60/3	23.14	13.1	83.1	5.10	3/4	28.93	30	6.5	18.0
	230/60/3	18.20	13.1	83.1	5.10	3/4	21.48	30	0.0	0.0
	230/60/3	25.18	13.1	83.1	5.10	3/4	31.48	35	8.0	20.1
	460/60/3	10.50	6.1	41.0	4.40	3/4	12.03	15	0.0	0.0
460/60/3	17.70	6.1	41.0	4.40	3/4	22.13	25	10.6	13.3	
EXV060	208/60/1	34.40	26.4	134.0	8.00	1	41.00	60	0.0	0.0
	208/60/1	39.25	26.4	134.0	8.00	1	49.06	60	6.5	31.3
	230/60/1	34.40	26.4	134.0	8.00	1	41.00	60	0.0	0.0
	230/60/1	42.78	26.4	134.0	8.00	1	53.48	60	8.0	34.8
	208/60/3	24.00	16.0	110.0	8.00	1	28.00	40	0.0	0.0
	208/60/3	26.04	16.0	110.0	8.00	1	32.55	40	6.5	18.0
	230/60/3	24.00	16.0	110.0	8.00	1	28.00	40	0.0	0.0
	230/60/3	28.08	16.0	110.0	8.00	1	35.10	40	8.0	20.1
	460/60/3	14.70	7.8	52.0	6.90	1	16.65	20	0.0	0.0
460/60/3	20.20	7.8	52.0	6.90	1	25.26	30	10.6	13.3	
EXV070	208/60/1	37.10	30.1	158.0	7.00	1	44.63	70	0.0	0.0
	208/60/1	38.25	30.1	158.0	7.00	1	47.81	70	6.5	31.3
	230/60/1	37.10	30.1	158.0	7.00	1	44.63	70	0.0	0.0
	230/60/1	41.78	30.1	158.0	7.00	1	52.23	70	8.0	34.8
	208/60/3	27.50	20.5	155.0	7.00	1	32.63	50	0.0	0.0
	208/60/3	27.50	20.5	155.0	7.00	1	32.63	50	6.5	18.0
	230/60/3	27.50	20.5	155.0	7.00	1	32.63	50	0.0	0.0
	230/60/3	27.50	20.5	155.0	7.00	1	33.85	50	8.0	20.1
	460/60/3	15.70	9.6	75.0	6.10	1	18.10	25	0.0	0.0
460/60/3	19.40	9.6	75.0	6.10	1	24.26	25	10.6	13.3	



Electrical Data

Table 46. Electrical minimum and maximum

Digit 8	Rated Voltage	Hz	Ph	Min Utiliz. Volts	Max Utiliz. Volts
0	115	60	1	104	126
1	208	60	1	197	229
2	230	60	1	207	253
3	208	60	3	187	229
4	460	60	3	414	506
5	575	60	3	518	633
6	220-240	50	1	198	264
7	265	60	1	239	292
8	230	60	3	207	253
9	380-415	60	3	342	456

Pre-Start Checklist

Before energizing the unit, the following system devices must be checked:

- Is the high voltage power supply correct and in accordance with the nameplate ratings?
- Is phasing of the unit correct per compressor rotation (scroll compressor only)?
- Is the field wiring and circuit protection the correct size?
- Is the low voltage control circuit wiring correct per the unit wiring diagram?
- Is the piping system clean/complete and correct? (A recommendation of all system flushing of debris from the water-to-refrigerant heat exchanger, along with air purging from the water-to-refrigerant heat exchanger be done in accordance with the Closed-Loop/Ground Source Heat Pump Systems Installation Guide).
- Is vibration isolation provided? (i.e. unit isolation pad, hose kits)
- Is unit serviceable? (See clearance specifications in ["Unit Dimensions and Weights," p. 14](#)).
- Are the low/high-side pressure temperature caps secure and in place?
- Are all the unit access panels secure and in place?
- Is the thermostat in the OFF position?
- Is the water flow established and circulating through all the units?
- Is the duct work correctly sized, run, taped, insulated and weather proofed with proper unit arrangement?
- Is the condensate line properly sized, run, trapped, pitched and primed?
- Is the zone sensor correctly wired and in a good location?
- Does the indoor blower turn freely without rubbing?
- Has all work been done in accordance with applicable local and national codes?

Has heat transfer fluid been added in the proper mix to prevent freezing in closed system application?



Start-Up

Initial Unit Start-up

Note: Start-up with the heat pump thermostat is included below:

1. Set the thermostat to the highest position.
2. Set the thermostat system switch to COOL with the fan control to AUTO. The compressor should NOT run.
3. Reduce the thermostat setting until the compressor, reversing valve, solenoid valve, and loop pump are energized. Adjust water flow utilizing pressure/temperature plugs and comparing to tables contained in specification sheet data.

Water leaving the heat exchanger should be warmer than the entering water temperature (approximately 9-12°F); blower operation should be smooth; compressor and blower amps should be within data plate ratings; the suction line should be cool with no frost observed in the refrigerant circuit.
4. Check the cooling refrigerant pressures against values in [Table 48, p. 85](#).
5. Turn the thermostat system switch to the OFF position. Unit should stop running and the reversing valve should de-energize.
6. Leave unit off for approximately FIVE minutes to allow for pressure equalization.
7. Turn the thermostat to the lowest setting.
8. Set the thermostat system switch to the HEAT position.
9. Adjust the temperature setting upward until the unit is energized. Warm air should blow from the register. A water temperature decrease of approximately 5-9°F leaving the heat exchanger should be noted. The blower and compressor operation should be smooth with no frost observed in the refrigeration circuit.
10. Check the heating refrigerant pressures against values in [Table 48, p. 85](#).
11. Set the thermostat to maintain the desired space temperature.
12. Instruct the owner on system operation.

Table 47. Checklist

MODE	Heat	Cool
Entering fluid temperature	_____F	_____F
Leaving fluid temperature	_____F	_____F
Temperature differential	_____F	_____F
Return-air temperature DB/WB	_____F	_____F
Supply-air temperature DB/WB	_____F	_____F
Temperature differential	_____F	_____F
Water coil heat exchanger (Water Pressure IN)	_____PSIG	_____PSIG
Water coil heat exchanger (Water Pressure OUT)	_____PSIG	_____PSIG
Pressure Differential	_____PSI G	_____PSI G
COMPRESSOR		
Amps		
Volts		
Discharge line temperature (after 10 minutes)	_____F	_____F

Start-Up Checklist and Log

Installing Contractor: Use this checklist to thoroughly check-out the system and units before and during start-up. (This form need not be returned to the factory unless requested during technical service support).

Job Name: _____

Model Number: _____

Date: _____

Serial Number: _____

In order to minimize troubleshooting and costly system failures, complete the following checks and data entries before the system is put into full operation.

Operating Pressures

There are many variables (airflow, air temperatures) in an air conditioning system that will affect operating refrigerant pressures and temperatures. The charts below shows approximate conditions and is based on air flow at the rated SCFM, entering air at 80.6°F(DB), 66.2°F(WB) in cooling, 68°F(DB) in heating. (+)Heating data with 35°F EWT is based on the use of an anti-freeze solution having a freezing point 20°F lower than the minimum expected entering temperature.

Table 48. Operating pressures in cooling/heating for GE* units

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE/GEVE										
006 (60 Hz)	35	1.4	—	—	—	—	94-108	279-355	6-8	23-29
006 (60 Hz)	35	1.7	—	—	—	—	96-110	281-357	5-6	23-29
006 (60 Hz)	45	1.4	143-165	190-243	13-16	24-30	110-127	297-377	7-9	26-34
006 (60 Hz)	45	1.7	143-164	184-235	11-13	24-31	113-130	300-382	6-8	27-34
006 (60 Hz)	55	1.4	145-167	217-277	13-16	23-30	128-147	317-404	8-10	30-39
006 (60 Hz)	55	1.7	144-166	210-268	11-13	24-30	131-151	320-407	7-9	31-39
006 (60 Hz)	68	1.4	148-171	254-324	12-15	23-29	154-177	345-439	10-12	35-45
006 (60 Hz)	68	1.7	147-170	244-312	10-13	23-29	158-182	349-444	8-10	36-45
006 (60 Hz)	75	1.4	148-171	281-358	12-15	23-29	169-195	361-459	10-13	38-48
006 (60 Hz)	75	1.7	148-170	273-348	10-13	23-29	175-201	366-466	9-11	38-48
006 (60 Hz)	86	1.4	149-172	328-418	12-15	22-28	197-226	388-494	11-15	41-52
006 (60 Hz)	86	1.7	149-172	320-407	10-13	23-29	203-234	395-502	10-12	41-52
006 (60 Hz)	95	1.4	151-173	373-474	12-15	22-28	—	—	—	—
006 (60 Hz)	95	1.7	150-173	363-462	10-13	22-28	—	—	—	—
009 (60Hz) 006 (50 Hz)	35	1.7	—	—	—	—	93-107	272-346	6-7	20-26
009 (60Hz) 006 (50 Hz)	35	2.1	—	—	—	—	95-110	274-348	5-6	21-27
009 (60Hz) 006 (50 Hz)	45	1.7	142-164	187-238	13-16	22-28	109-126	288-366	7-9	24-30
009 (60Hz) 006 (50 Hz)	45	2.1	142-164	181-230	11-14	22-27	112-129	291-370	6-7	24-31
009 (60Hz) 006 (50 Hz)	55	1.7	144-166	214-272	12-15	21-27	127-146	305-388	8-10	27-34
009 (60Hz) 006 (50 Hz)	55	2.1	144-166	207-263	10-13	21-27	130-150	309-393	7-8	27-35
009 (60Hz) 006 (50 Hz)	68	1.7	146-168	258-328	12-15	20-26	153-176	330-420	9-12	31-39
009 (60Hz) 006 (50 Hz)	68	2.1	146-168	250-318	10-12	21-26	157-181	335-427	8-10	32-40
009 (60Hz) 006 (50 Hz)	75	1.7	147-169	286-363	12-15	20-25	168-193	345-439	10-13	33-42
009 (60Hz) 006 (50 Hz)	75	2.1	147-169	277-352	9-12	20-26	174-200	350-446	8-11	34-43
009 (60Hz) 006 (50 Hz)	86	1.7	149-171	336-427	12-15	19-25	195-224	370-471	11-14	36-46
009 (60Hz) 006 (50 Hz)	86	2.1	148-171	326-415	9-12	20-25	202-232	375-477	9-12	37-47
009 (60Hz) 006 (50 Hz)	95	1.7	149-172	386-491	12-15	19-24	—	—	—	—
009 (60Hz) 006 (50 Hz)	95	2.1	149-172	375-477	9-12	19-24	—	—	—	—
012 (60Hz) 009 (50 Hz)	35	2.2	—	—	—	—	92-106	288-367	10-13	21-27
012 (60Hz) 009 (50 Hz)	35	2.8	—	—	—	—	95-109	290-370	8-11	21-27



Start-Up

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE/GEVE										
012 (60Hz) 009 (50 Hz)	45	2.2	142-163	183-233	12-15	22-28	108-125	304-387	12-15	24-30
012 (60Hz) 009 (50 Hz)	45	2.8	142-163	175-223	9-12	23-29	111-128	307-391	9-12	24-31
012 (60Hz) 009 (50 Hz)	55	2.2	143-164	212-270	12-15	21-27	126-145	322-410	13-16	26-33
012 (60Hz) 009 (50 Hz)	55	2.8	143-164	204-260	9-12	22-27	130-149	325-413	10-13	27-34
012 (60Hz) 009 (50 Hz)	68	2.2	144-166	257-327	12-15	21-26	152-174	346-441	14-18	29-37
012 (60Hz) 009 (50 Hz)	68	2.8	144-166	248-316	9-12	21-26	157-180	352-448	11-15	29-37
012 (60Hz) 009 (50 Hz)	75	2.2	145-167	284-361	12-15	20-26	167-192	361-460	15-19	30-38
012 (60Hz) 009 (50 Hz)	75	2.8	145-167	274-349	9-12	20-26	173-199	366-466	12-15	30-39
012 (60Hz) 009 (50 Hz)	86	2.2	146-168	332-422	12-15	19-25	194-223	384-489	16-21	32-40
012 (60Hz) 009 (50 Hz)	86	2.8	146-168	321-409	9-12	20-25	201-231	390-497	13-17	32-41
012 (60Hz) 009 (50 Hz)	95	2.2	147-170	376-478	12-15	19-24	—	—	—	—
012 (60Hz) 009 (50 Hz)	95	2.8	147-170	365-465	9-12	19-24	—	—	—	—
015 (60Hz) 012 (50 Hz)	35	2.8	—	—	—	—	91-105	296-377	6-7	20-25
015 (60Hz) 012 (50 Hz)	35	3.5	—	—	—	—	93-107	299-380	5-6	20-26
015 (60Hz) 012 (50 Hz)	45	2.8	138-159	180-230	11-14	22-28	107-123	313-398	7-8	23-29
015 (60Hz) 012 (50 Hz)	45	3.5	138-158	174-221	9-11	22-27	109-126	316-402	5-7	23-30
015 (60Hz) 012 (50 Hz)	55	2.8	139-159	210-267	11-14	21-27	124-143	332-423	8-10	26-33
015 (60Hz) 012 (50 Hz)	55	3.5	138-159	203-258	9-11	21-27	128-147	336-427	6-8	27-34
015 (60Hz) 012 (50 Hz)	68	2.8	140-161	254-324	11-14	20-26	150-172	358-456	9-11	30-38
015 (60Hz) 012 (50 Hz)	68	3.5	140-161	246-313	9-11	21-26	154-178	364-463	7-9	30-39
015 (60Hz) 012 (50 Hz)	75	2.8	141-162	281-358	11-14	20-25	165-190	373-475	10-12	32-40
015 (60Hz) 012 (50 Hz)	75	3.5	140-162	272-347	9-11	20-26	171-196	379-483	8-10	32-41
015 (60Hz) 012 (50 Hz)	86	2.8	142-163	328-417	11-14	19-25	191-220	399-508	11-14	34-43
015 (60Hz) 012 (50 Hz)	86	3.5	142-163	318-405	9-11	20-25	198-228	405-515	9-11	34-44

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE/GEVE										
015 (60Hz) 012 (50 Hz)	95	2.8	143-165	371-472	11-14	19-24	—	—	—	—
015 (60Hz) 012 (50 Hz)	95	3.5	143-165	361-459	9-11	19-24	—	—	—	—
018 (60Hz) 015 (50 Hz)	35	3.3	—	—	—	—	89-102	276-351	6-7	21-26
018 (60Hz) 015 (50 Hz)	35	4.2	—	—	—	—	91-105	279-354	5-6	21-27
018 (60Hz) 015 (50 Hz)	45	3.3	142-163	186-237	12-15	23-29	104-120	292-372	7-9	24-30
018 (60Hz) 015 (50 Hz)	45	4.2	142-163	179-227	9-12	23-29	107-123	295-376	5-7	24-31
018 (60Hz) 015 (50 Hz)	55	3.3	142-163	216-275	12-15	23-29	121-139	310-395	8-10	27-34
018 (60Hz) 015 (50 Hz)	55	4.2	142-163	207-264	9-12	23-29	125-143	313-399	6-8	27-35
018 (60Hz) 015 (50 Hz)	68	3.3	142-163	262-333	12-15	22-28	146-168	334-425	9-12	31-39
018 (60Hz) 015 (50 Hz)	68	4.2	142-163	252-321	9-12	22-28	151-174	338-430	7-9	32-40
018 (60Hz) 015 (50 Hz)	75	3.3	142-164	289-368	12-15	21-27	161-185	347-441	10-13	33-42
018 (60Hz) 015 (50 Hz)	75	4.2	142-164	280-356	9-12	21-27	167-192	351-447	8-10	34-43
018 (60Hz) 015 (50 Hz)	86	3.3	143-165	338-430	12-15	20-26	188-216	365-464	11-14	36-46
018 (60Hz) 015 (50 Hz)	86	4.2	143-165	327-416	9-12	20-26	195-225	370-471	9-11	37-47
018 (60Hz) 015 (50 Hz)	95	3.3	144-166	383-488	12-15	19-24	—	—	—	—
018 (60Hz) 015 (50 Hz)	95	4.2	144-166	372-473	9-12	19-25	—	—	—	—
GEHEO24										
024 (60Hz) 018 (50Hz)	35	—	—	—	—	—	76-88	279-355	6-7	21-30
024 (60Hz) 018 (50Hz)	35	—	—	—	—	—	78-89	280-357	5-6	21-31
024 (60Hz) 018 (50Hz)	45	4.5	114-131	172-219	12-16	20-26	89-103	290-369	7-9	24-34
024 (60Hz) 018 (50Hz)	45	5.6	114-131	165-211	10-13	20-26	91-105	292-371	6-7	24-34
024 (60Hz) 018 (50Hz)	55	4.5	115-132	200-255	12-15	20-26	106-122	307-390	8-10	27-37
024 (60Hz) 018 (50Hz)	55	5.6	115-132	193-246	10-12	20-26	108-125	309-394	6-8	28-38
024 (60Hz) 018 (50Hz)	68	4.5	120-139	239-304	12-15	19-25	124-143	326-415	9-12	31-42
024 (60Hz) 018 (50Hz)	68	5.6	120-138	231-294	10-12	20-25	129-148	330-420	7-9	32-43



Start-Up

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE024										
024 (60Hz) 018 (50Hz)	75	4.5	121-140	264-336	12-15	19-25	139-159	340-432	10-13	34-44
024 (60Hz) 018 (50Hz)	75	5.6	121-139	256-325	9-12	19-25	143-165	343-437	8-10	34-45
024 (60Hz) 018 (50Hz)	86	4.5	124-143	305-389	12-15	18-24	163-188	363-462	11-14	38-49
024 (60Hz) 018 (50Hz)	86	5.6	124-143	297-378	9-12	19-24	169-195	368-468	9-12	39-50
024 (60Hz) 018 (50Hz)	95	4.5	126-145	344-437	12-15	18-24	—	—	—	—
024 (60Hz) 018 (50Hz)	95	5.6	126-145	335-426	9-12	18-24	—	—	—	—
GEVE024										
024 (60Hz) 018 (50Hz)	35	—	—	—	—	—	76-87	270-344	6-7	21-30
024 (60Hz) 018 (50Hz)	35	—	—	—	—	—	78-89	272-346	5-6	21-31
024 (60Hz) 018 (50Hz)	45	4.5	114-132	173-221	12-16	20-26	88-102	283-360	7-9	24-34
024 (60Hz) 018 (50Hz)	45	5.6	114-131	167-212	10-12	20-26	90-104	285-362	6-7	24-34
024 (60Hz) 018 (50Hz)	55	4.5	116-133	202-258	12-15	20-25	105-121	299-381	8-10	27-37
024 (60Hz) 018 (50Hz)	55	5.6	116-133	195-249	10-12	20-26	107-124	301-384	6-8	28-38
024 (60Hz) 018 (50Hz)	68	4.5	122-140	242-308	12-15	20-26	123-141	315-401	9-12	31-41
024 (60Hz) 018 (50Hz)	68	5.6	122-140	234-298	10-12	20-26	127-146	318-405	7-9	32-42
024 (60Hz) 018 (50Hz)	75	4.5	123-141	268-341	12-15	19-25	137-158	327-417	10-13	34-44
024 (60Hz) 018 (50Hz)	75	5.6	123-141	259-330	10-12	20-25	142-163	331-421	8-10	34-45
024 (60Hz) 018 (50Hz)	86	4.5	126-145	310-394	12-15	19-25	161-186	349-444	11-14	38-49
024 (60Hz) 018 (50Hz)	86	5.6	125-144	301-383	9-12	19-25	167-193	353-449	9-12	39-50
024 (60Hz) 018 (50Hz)	95	4.5	127-146	349-445	12-15	19-25	—	—	—	—
024 (60Hz) 018 (50Hz)	95	5.6	127-146	340-433	9-12	19-25	—	—	—	—
GEHE030										
030 (60 Hz) 024 (50 Hz)	35	—	—	—	—	—	77-89	276-351	6-7	21-30
030 (60 Hz) 024 (50 Hz)	35	—	—	—	—	—	79-90	277-352	4-6	21-30
030 (60 Hz) 024 (50 Hz)	45	5.6	120-138	171-218	12-15	22-27	91-104	290-369	7-8	24-34
030 (60 Hz) 024 (50 Hz)	45	7.0	120-138	165-210	10-12	22-28	93-107	292-371	5-7	24-34

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE030										
030 (60 Hz) 024 (50 Hz)	55	5.6	121-140	200-254	12-15	21-27	108-124	307-390	8-10	27-37
030 (60 Hz) 024 (50 Hz)	55	7.0	121-139	193-245	9-12	22-27	111-127	309-393	6-8	28-38
030 (60 Hz) 024 (50 Hz)	68	5.6	122-140	249-317	12-15	20-26	128-148	329-419	9-11	32-42
030 (60 Hz) 024 (50 Hz)	68	7.0	122-140	241-306	9-12	20-26	133-152	333-423	7-9	32-43
030 (60 Hz) 024 (50 Hz)	75	5.6	123-141	275-350	12-15	20-26	143-164	342-436	10-12	34-45
030 (60 Hz) 024 (50 Hz)	75	7.0	123-141	267-340	9-12	20-26	148-170	346-440	8-10	35-46
030 (60 Hz) 024 (50 Hz)	86	5.6	126-146	310-395	11-14	20-26	168-193	365-465	11-14	38-49
030 (60 Hz) 024 (50 Hz)	86	7.0	126-145	302-384	9-11	20-26	174-200	370-470	9-11	39-50
030 (60 Hz) 024 (50 Hz)	95	5.6	128-148	350-446	11-14	19-25	—	—	—	—
030 (60 Hz) 024 (50 Hz)	95	7.0	128-147	341-434	9-11	19-25	—	—	—	—
GEVE030										
030 (60 Hz) 024 (50 Hz)	35	—	—	—	—	—	76-88	266-338	6-7	21-30
030 (60 Hz) 024 (50 Hz)	35	—	—	—	—	—	78-90	268-341	5-6	22-31
030 (60 Hz) 024 (50 Hz)	45	5.6	115-132	172-218	12-15	21-27	87-100	275-351	6-8	24-33
030 (60 Hz) 024 (50 Hz)	45	7.0	115-132	165-210	9-12	21-27	90-103	278-354	5-7	24-34
030 (60 Hz) 024 (50 Hz)	55	5.6	116-134	201-256	12-15	20-26	104-119	292-371	8-10	27-37
030 (60 Hz) 024 (50 Hz)	55	7.0	116-134	194-247	9-12	21-26	107-123	295-375	6-8	28-38
030 (60 Hz) 024 (50 Hz)	68	5.6	121-139	242-308	11-15	20-26	122-141	311-396	9-11	31-41
030 (60 Hz) 024 (50 Hz)	68	7.0	120-138	234-298	9-12	20-26	126-145	314-400	7-9	32-42
030 (60 Hz) 024 (50 Hz)	75	5.6	122-140	268-341	11-14	20-26	136-157	324-412	9-12	34-44
030 (60 Hz) 024 (50 Hz)	75	7.0	122-140	260-331	9-12	20-26	141-162	328-418	8-10	34-45
030 (60 Hz) 024 (50 Hz)	86	5.6	124-142	311-396	11-14	19-25	161-185	345-439	11-14	38-49
030 (60 Hz) 024 (50 Hz)	86	7.0	123-142	303-385	9-11	19-25	167-192	350-445	9-11	39-50
030 (60 Hz) 024 (50 Hz)	95	5.6	125-144	351-447	11-14	19-25	—	—	—	—
030 (60 Hz) 024 (50 Hz)	95	7.0	125-144	342-436	9-11	19-25	—	—	—	—



Start-Up

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE036										
036 (60 Hz) 030 (50 Hz)	35	—	—	—	—	—	76-88	294-375	6-8	21-30
036 (60 Hz) 030 (50 Hz)	45	6.7	115-132	174-222	12-15	20-26	89-102	306-390	7-9	24-34
036 (60 Hz) 030 (50 Hz)	45	8.4	115-132	168-214	9-12	20-26	91-105	309-394	6-7	24-34
036 (60 Hz) 030 (50 Hz)	55	6.7	117-134	203-259	11-15	19-25	106-122	327-416	8-11	27-37
036 (60 Hz) 030 (50 Hz)	55	8.4	116-134	196-250	9-12	20-25	108-125	329-419	7-9	28-38
036 (60 Hz) 030 (50 Hz)	68	6.7	120-138	244-311	11-14	19-25	126-145	351-446	10-12	32-42
036 (60 Hz) 030 (50 Hz)	68	8.4	119-137	237-301	9-11	19-25	130-150	354-450	8-10	32-43
036 (60 Hz) 030 (50 Hz)	75	6.7	121-139	270-343	11-14	19-25	141-162	367-468	10-13	34-45
036 (60 Hz) 030 (50 Hz)	75	8.4	121-139	262-333	9-11	19-25	145-167	372-473	9-11	35-46
036 (60 Hz) 030 (50 Hz)	86	6.7	124-142	312-397	11-14	18-24	165-190	395-503	12-15	39-50
036 (60 Hz) 030 (50 Hz)	86	8.4	124-142	303-386	9-11	19-24	172-197	399-508	10-12	40-51
036 (60 Hz) 030 (50 Hz)	95	6.7	126-145	351-447	11-14	18-24	—	—	—	—
036 (60 Hz) 030 (50 Hz)	95	8.4	126-144	342-435	9-11	18-24	—	—	—	—
GEVE036										
036 (60 Hz) 030 (50 Hz)	35	—	—	—	—	—	77-88	286-364	6-8	22-31
036 (60 Hz) 030 (50 Hz)	35	—	—	—	—	—	78-90	288-366	5-6	22-31
036 (60 Hz) 030 (50 Hz)	45	6.7	116-134	169-215	12-15	20-26	89-103	296-377	7-9	25-34
036 (60 Hz) 030 (50 Hz)	45	8.4	116-134	163-208	10-12	21-26	91-105	298-380	6-7	25-35
036 (60 Hz) 030 (50 Hz)	55	6.7	118-136	198-251	12-15	20-26	106-122	315-401	8-10	28-38
036 (60 Hz) 030 (50 Hz)	55	8.4	118-135	191-243	10-12	20-26	109-125	318-404	7-8	29-39
036 (60 Hz) 030 (50 Hz)	68	6.7	121-139	238-303	12-15	20-25	128-147	341-434	10-12	33-43
036 (60 Hz) 030 (50 Hz)	68	8.4	121-139	231-294	10-12	20-26	132-151	344-437	8-10	33-44
036 (60 Hz) 030 (50 Hz)	75	6.7	122-141	263-335	12-15	19-25	143-164	357-454	10-13	36-46
036 (60 Hz) 030 (50 Hz)	75	8.4	122-140	255-325	9-12	19-25	147-169	360-458	9-11	36-47
036 (60 Hz) 030 (50 Hz)	86	6.7	125-144	304-387	12-15	19-25	168-193	383-488	12-15	40-51

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEVE036										
036 (60 Hz) 030 (50 Hz)	86	8.4	125-143	296-377	9-12	19-25	174-200	387-492	10-12	41-52
036 (60 Hz) 030 (50 Hz)	95	6.7	127-146	342-436	11-15	19-24	—	—	—	—
036 (60 Hz) 030 (50 Hz)	95	8.4	127-146	334-425	9-12	19-25	—	—	—	—
GEHE042										
042 (60 Hz) 036 (50 Hz)	35	—	—	—	—	—	74-86	269-342	6-7	20-30
042 (60 Hz) 036 (50 Hz)	35	—	—	—	—	—	76-87	270-344	5-6	21-30
042 (60 Hz) 036 (50 Hz)	45	7.8	116-134	173-220	12-16	21-27	86-99	281-358	7-8	23-33
042 (60 Hz) 036 (50 Hz)	45	9.8	116-134	167-212	10-13	21-27	88-101	283-360	5-7	24-33
042 (60 Hz) 036 (50 Hz)	55	7.8	118-135	201-256	12-15	21-26	102-118	298-379	8-10	27-36
042 (60 Hz) 036 (50 Hz)	55	9.8	118-135	194-247	10-12	21-26	105-121	300-382	6-8	27-37
042 (60 Hz) 036 (50 Hz)	68	7.8	122-140	242-308	12-15	20-26	121-140	317-403	9-11	31-41
042 (60 Hz) 036 (50 Hz)	68	9.8	121-140	235-299	10-12	21-26	125-144	321-408	7-9	31-42
042 (60 Hz) 036 (50 Hz)	75	7.8	123-141	267-340	12-15	20-26	135-156	331-422	10-12	33-44
042 (60 Hz) 036 (50 Hz)	75	9.8	123-141	259-330	9-12	20-26	140-161	336-427	8-10	34-45
042 (60 Hz) 036 (50 Hz)	86	7.8	125-144	308-392	12-15	20-25	159-183	355-451	11-14	38-49
042 (60 Hz) 036 (50 Hz)	86	9.8	125-144	300-382	9-12	20-26	165-190	359-457	9-12	39-50
042 (60 Hz) 036 (50 Hz)	95	7.8	127-146	346-441	11-15	19-25	—	—	—	—
042 (60 Hz) 036 (50 Hz)	95	9.8	127-146	338-430	9-12	19-25	—	—	—	—
GEVE042										
042 (60 Hz) 036 (50 Hz)	35	—	—	—	—	—	75-86	268-341	6-7	20-30
042 (60 Hz) 036 (50 Hz)	35	—	—	—	—	—	76-87	268-341	5-6	21-30
042 (60 Hz) 036 (50 Hz)	45	7.8	116-133	173-220	12-16	21-26	86-99	283-360	7-9	23-33
042 (60 Hz) 036 (50 Hz)	45	9.8	116-133	167-212	10-12	21-27	88-102	283-360	6-7	24-33
042 (60 Hz) 036 (50 Hz)	55	7.8	117-135	201-256	12-15	20-26	103-118	298-380	8-10	27-37
042 (60 Hz) 036 (50 Hz)	55	9.8	117-135	194-247	10-12	20-26	105-121	301-383	6-8	27-37



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Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEVE042										
042 (60 Hz) 036 (50 Hz)	68	7.8	122-140	242-308	12-15	20-26	122-140	318-404	9-12	31-41
042 (60 Hz) 036 (50 Hz)	68	9.8	121-140	234-298	9-12	20-26	126-144	321-409	7-9	31-42
042 (60 Hz) 036 (50 Hz)	75	7.8	123-141	267-340	12-15	20-25	136-156	331-422	10-13	33-44
042 (60 Hz) 036 (50 Hz)	75	9.8	122-141	259-330	9-12	20-26	140-161	336-427	8-10	34-45
042 (60 Hz) 036 (50 Hz)	86	7.8	126-144	307-390	11-15	19-25	160-184	355-452	11-14	38-49
042 (60 Hz) 036 (50 Hz)	86	9.8	125-144	299-380	9-12	19-25	166-190	359-457	9-12	39-50
042 (60 Hz) 036 (50 Hz)	95	7.8	127-147	345-439	11-14	18-24	—	—	—	—
042 (60 Hz) 036 (50 Hz)	95	9.8	127-146	337-428	9-11	18-24	—	—	—	—
GEHE048										
048 (60 Hz) 042 (50 Hz)	35	—	—	—	—	—	74-85	263-334	6-8	20-29
048 (60 Hz) 042 (50 Hz)	35	—	—	—	—	—	76-87	265-337	5-6	20-29
048 (60 Hz) 042 (50 Hz)	45	9.0	120-138	184-234	13-16	23-29	85-98	273-348	7-9	23-32
048 (60 Hz) 042 (50 Hz)	45	11.2	120-138	176-225	10-13	23-29	87-100	275-350	6-7	23-33
048 (60 Hz) 042 (50 Hz)	55	9.0	121-140	214-273	13-16	23-28	101-117	289-368	8-10	26-36
048 (60 Hz) 042 (50 Hz)	55	11.2	121-139	206-262	10-13	23-28	104-120	292-372	6-8	26-36
048 (60 Hz) 042 (50 Hz)	68	9.0	125-144	256-326	13-16	22-28	117-135	305-388	9-12	30-40
048 (60 Hz) 042 (50 Hz)	68	11.2	125-144	247-315	10-13	23-28	122-140	310-394	7-10	30-41
048 (60 Hz) 042 (50 Hz)	75	9.0	126-146	282-359	12-16	22-28	131-151	318-405	10-13	32-43
048 (60 Hz) 042 (50 Hz)	75	11.2	126-145	273-348	10-13	22-28	136-156	322-410	8-10	33-44
048 (60 Hz) 042 (50 Hz)	86	9.0	129-148	324-412	12-15	21-27	154-177	339-431	11-14	36-47
048 (60 Hz) 042 (50 Hz)	86	11.2	128-147	314-400	10-12	22-27	160-184	344-437	9-12	37-48
048 (60 Hz) 042 (50 Hz)	95	9.0	130-150	364-463	12-15	21-27	—	—	—	—
048 (60 Hz) 042 (50 Hz)	95	11.2	130-149	354-451	10-12	21-27	—	—	—	—

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEVE048										
048 (60 Hz) 042 (50 Hz)	35	—	—	—	—	—	63-73	248-315	5-7	19-28
048 (60 Hz) 042 (50 Hz)	35	—	—	—	—	—	64-74	249-316	4-5	19-28
048 (60 Hz) 042 (50 Hz)	45	9.0	120-138	184-234	13-16	22-28	72-82	257-327	6-8	21-30
048 (60 Hz) 042 (50 Hz)	45	11.2	119-137	177-225	10-13	22-28	73-84	259-329	5-6	21-30
048 (60 Hz) 042 (50 Hz)	55	9.0	121-139	214-272	13-16	22-27	86-99	270-344	7-9	24-33
048 (60 Hz) 042 (50 Hz)	55	11.2	121-139	206-262	10-13	22-27	88-101	272-347	6-7	24-34
048 (60 Hz) 042 (50 Hz)	68	9.0	125-144	255-325	12-16	21-27	102-118	287-366	8-10	27-37
048 (60 Hz) 042 (50 Hz)	68	11.2	125-144	246-314	10-13	21-27	105-120	290-369	7-8	28-38
048 (60 Hz) 042 (50 Hz)	75	9.0	126-145	281-358	12-16	21-27	114-131	299-381	9-11	30-40
048 (60 Hz) 042 (50 Hz)	75	11.2	126-145	272-346	10-13	21-27	117-135	302-384	7-9	30-41
048 (60 Hz) 042 (50 Hz)	86	9.0	129-149	323-412	12-16	20-26	136-156	318-405	10-13	34-44
048 (60 Hz) 042 (50 Hz)	86	11.2	129-148	314-399	10-12	21-26	140-161	321-409	8-10	34-45
048 (60 Hz) 042 (50 Hz)	95	9.0	131-151	363-462	12-15	20-26	—	—	—	—
048 (60 Hz) 042 (50 Hz)	95	11.2	131-150	353-449	10-12	20-26	—	—	—	—
GEHE060										
060(60 Hz) 048 (50 Hz)	35	—	—	—	—	—	69-79	265-337	6-7	20-30
060(60 Hz) 048 (50 Hz)	35	—	—	—	—	—	70-81	267-339	5-6	21-30
060(60 Hz) 048 (50 Hz)	45	11.2	111-128	176-225	13-16	21-26	79-91	274-348	6-8	23-32
060(60 Hz) 048 (50 Hz)	45	14.0	108-124	170-217	10-13	21-27	81-93	275-350	5-7	23-32
060(60 Hz) 048 (50 Hz)	55	11.2	113-129	205-261	12-16	20-26	95-109	290-369	7-9	26-36
060(60 Hz) 048 (50 Hz)	55	14.0	112-129	198-252	10-13	20-26	97-111	291-371	6-8	26-36
060(60 Hz) 048 (50 Hz)	68	11.2	117-135	243-309	12-16	20-26	115-132	311-396	9-11	30-40
060(60 Hz) 048 (50 Hz)	68	14.0	117-134	235-300	10-12	20-26	118-136	314-399	7-9	31-41
060(60 Hz) 048 (50 Hz)	75	11.2	118-136	268-342	12-15	20-25	128-147	324-412	10-12	33-43
060(60 Hz) 048 (50 Hz)	75	14.0	118-136	260-331	10-12	20-26	132-152	327-416	8-10	33-44



Start-Up

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE060										
060(60 Hz) 048 (50 Hz)	86	11.2	121-139	309-393	12-15	19-25	151-174	347-442	11-14	37-48
060(60 Hz) 048 (50 Hz)	86	14.0	121-139	301-383	10-12	19-25	157-180	351-447	9-11	38-49
060(60 Hz) 048 (50 Hz)	95	11.2	123-141	348-442	12-15	19-25	—	—	—	—
060(60 Hz) 048 (50 Hz)	95	14.0	122-141	339-431	9-12	19-25	—	—	—	—
GEVE060										
060(60 Hz) 048 (50 Hz)	35	—	—	—	—	—	70-81	261-332	6-7	20-30
060(60 Hz) 048 (50 Hz)	35	—	—	—	—	—	72-82	262-333	5-6	20-30
060(60 Hz) 048 (50 Hz)	45	11.2	115-133	178-227	13-16	21-27	80-92	269-342	6-8	23-32
060(60 Hz) 048 (50 Hz)	45	14.0	115-132	172-219	10-13	21-27	82-94	270-344	5-7	23-32
060(60 Hz) 048 (50 Hz)	55	11.2	117-134	207-264	12-16	20-26	95-110	284-362	7-10	26-36
060(60 Hz) 042 (50 Hz)	55	14.0	117-134	200-255	10-13	21-26	97-112	286-364	6-8	26-36
060(60 Hz) 048 (50 Hz)	68	11.2	122-140	248-315	12-16	20-26	116-134	304-387	9-11	31-41
060(60 Hz) 048 (50 Hz)	68	14.0	121-140	240-305	10-13	21-26	120-138	308-392	7-9	31-42
060(60 Hz) 048 (50 Hz)	75	11.2	123-141	273-347	12-16	20-26	129-149	318-404	10-12	33-44
060(60 Hz) 048 (50 Hz)	75	14.0	123-141	265-337	10-12	20-26	134-154	321-408	8-10	34-45
060(60 Hz) 048 (50 Hz)	86	11.2	125-144	313-399	12-15	20-25	153-176	341-434	11-14	38-49
060(60 Hz) 048 (50 Hz)	86	14.0	125-144	305-388	10-12	20-25	158-182	344-438	9-12	38-50
060(60 Hz) 048 (50 Hz)	95	11.2	127-146	352-447	12-15	19-25	—	—	—	—
060(60 Hz) 048 (50 Hz)	95	14.0	127-146	343-436	9-12	19-25	—	—	—	—
GEHE/GEVE										
072 (60 Hz)	32	12	—	—	—	—	67 - 77	250 - 319	6 - 8	20 - 24
072 (60 Hz)	32	18	—	—	—	—	70 - 80	253 - 322	4 - 5	20 - 25
072 (60 Hz)	45	12	129 - 148	176 - 224	15 - 18	25 - 30	85 - 97	266 - 338	8 - 10	24 - 29
072 (60 Hz)	45	18	128 - 148	163 - 208	10 - 12	25 - 31	89 - 103	269 - 342	5 - 7	25 - 30
072 (60 Hz)	55	12	130 - 150	205 - 260	14 - 18	24 - 30	102 - 117	281 - 357	8 - 11	28 - 35
072 (60 Hz)	55	18	130 - 149	191 - 243	10 - 12	24 - 30	107 - 123	285 - 362	6 - 7	29 - 35
072 (60 Hz)	68	12	133 - 153	247 - 314	14 - 18	23 - 29	125 - 144	300 - 382	10 - 13	34 - 42
072 (60 Hz)	68	18	132 - 152	232 - 296	9 - 12	24 - 29	133 - 153	305 - 388	7 - 9	35 - 43
072 (60 Hz)	77	12	134 - 155	286 - 363	15 - 18	23 - 28	139 - 160	311 - 396	11 - 14	37 - 45

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE/GEVE										
072 (60 Hz)	77	18	134 - 154	268 - 341	10 - 12	23 - 29	148 - 170	317 - 403	8 - 10	38 - 47
072 (60 Hz)	86	12	136 - 156	317 - 403	14 - 17	22 - 28	163 - 188	329 - 419	13 - 16	41 - 50
072 (60 Hz)	86	18	135 - 155	300 - 382	9 - 12	23 - 28	175 - 201	335 - 427	9 - 11	43 - 53
072 (60 Hz)	95	12	137 - 158	356 - 453	13 - 17	22 - 27	—	—	—	—
072 (60 Hz)	95	18	137 - 157	340 - 432	9 - 11	22 - 27	—	—	—	—
090 (60 Hz) 072 (50 Hz)	32	15	—	—	—	—	65 - 75	245 - 312	6 - 8	22 - 27
090 (60 Hz) 072 (50 Hz)	32	22.5	—	—	—	—	68 - 78	248 - 316	4 - 5	23 - 28
090 (60 Hz) 072 (50 Hz)	45	15	125 - 144	183 - 233	15 - 19	24 - 30	83 - 95	260 - 331	8 - 10	26 - 31
090 (60 Hz) 072 (50 Hz)	45	22.5	124 - 143	170 - 216	10 - 12	24 - 30	87 - 101	263 - 335	5 - 7	26 - 32
090 (60 Hz) 072 (50 Hz)	55	15	126 - 145	213 - 271	14 - 18	24 - 29	100 - 115	274 - 348	8 - 11	29 - 36
090 (60 Hz) 072 (50 Hz)	55	22.5	126 - 145	198 - 252	10 - 12	24 - 29	105 - 121	277 - 353	6 - 7	30 - 37
090 (60 Hz) 072 (50 Hz)	68	15	128 - 148	257 - 327	14 - 18	23 - 28	123 - 142	291 - 370	10 - 13	34 - 42
090 (60 Hz) 072 (50 Hz)	68	22.5	128 - 147	241 - 307	9 - 12	23 - 29	131 - 150	296 - 376	7 - 9	35 - 43
090 (60 Hz) 072 (50 Hz)	77	15	130 - 150	298 - 379	15 - 19	23 - 28	137 - 158	301 - 383	11 - 14	37 - 45
090 (60 Hz) 072 (50 Hz)	77	22.5	130 - 149	279 - 355	10 - 12	23 - 28	146 - 168	306 - 390	8 - 10	38 - 47
090 (60 Hz) 072 (50 Hz)	86	15	131 - 151	328 - 418	14 - 17	22 - 27	161 - 185	317 - 403	13 - 16	40 - 50
090 (60 Hz) 072 (50 Hz)	86	22.5	131 - 151	311 - 396	9 - 12	22 - 28	173 - 199	324 - 412	9 - 11	42 - 52
090 (60 Hz) 072 (50 Hz)	95	15	133 - 153	370 - 471	13 - 17	22 - 27	—	—	—	—
090 (60 Hz) 072 (50 Hz)	95	22.5	133 - 153	352 - 448	9 - 11	22 - 27	—	—	—	—
120 (60 Hz) 090 (50 Hz)	32	20	—	—	—	—	65 - 75	246 - 313	6 - 7	25 - 30
120 (60 Hz) 090 (50 Hz)	32	30	—	—	—	—	68 - 79	248 - 316	4 - 5	25 - 31
120 (60 Hz) 090 (50 Hz)	45	20	124 - 143	174 - 221	14 - 18	23 - 29	84 - 96	259 - 330	7 - 9	28 - 34
120 (60 Hz) 090 (50 Hz)	45	30	123 - 142	162 - 206	9 - 12	23 - 29	88 - 101	263 - 335	5 - 6	28 - 34
120 (60 Hz) 090 (50 Hz)	55	20	125 - 144	202 - 258	14 - 18	23 - 29	101 - 116	274 - 349	8 - 10	30 - 37
120 (60 Hz) 090 (50 Hz)	55	30	125 - 144	189 - 241	9 - 12	23 - 29	106 - 122	279 - 355	6 - 7	31 - 38
120 (60 Hz) 090 (50 Hz)	68	20	127 - 146	244 - 311	13 - 17	23 - 28	124 - 143	292 - 372	10 - 12	34 - 42
120 (60 Hz) 090 (50 Hz)	68	30	127 - 146	230 - 293	9 - 11	23 - 28	132 - 152	297 - 378	7 - 8	35 - 43
120 (60 Hz) 090 (50 Hz)	77	20	129 - 148	281 - 358	14 - 18	23 - 28	139 - 159	303 - 385	10 - 13	37 - 45



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Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE/GEVE										
120 (60 Hz) 090 (50 Hz)	77	30	128 - 148	265 - 337	9 - 12	23 - 28	147 - 170	308 - 392	7 - 9	37 - 46
120 (60 Hz) 090 (50 Hz)	86	20	130 - 150	311 - 396	13 - 16	22 - 27	163 - 187	320 - 407	12 - 15	40 - 50
120 (60 Hz) 090 (50 Hz)	86	30	130 - 150	296 - 376	9 - 11	22 - 27	174 - 200	326 - 415	8 - 11	41 - 51
120 (60 Hz) 090 (50 Hz)	95	20	132 - 152	348 - 443	13 - 16	22 - 27	—	—	—	—
120 (60 Hz) 090 (50 Hz)	95	30	132 - 152	333 - 423	8 - 11	22 - 27	—	—	—	—
150 (60 Hz) 120 (50 Hz)	32	25	—	—	—	—	66 - 75	256 - 326	7 - 8	23 - 29
150 (60 Hz) 120 (50 Hz)	32	37.5	—	—	—	—	69 - 79	258 - 329	5 - 6	24 - 30
150 (60 Hz) 120 (50 Hz)	45	25	120 - 138	187 - 238	15 - 19	22 - 29	84 - 96	272 - 346	8 - 10	26 - 32
150 (60 Hz) 120 (50 Hz)	45	37.5	120 - 138	172 - 219	10 - 12	22 - 29	88 - 102	275 - 350	6 - 7	26 - 32
150 (60 Hz) 120 (50 Hz)	55	25	122 - 140	216 - 275	14 - 18	22 - 28	101 - 116	290 - 369	9 - 11	28 - 35
150 (60 Hz) 120 (50 Hz)	55	37.5	121 - 140	200 - 255	10 - 12	22 - 28	107 - 123	293 - 372	6 - 8	29 - 37
150 (60 Hz) 120 (50 Hz)	68	25	124 - 143	259 - 329	14 - 18	22 - 28	124 - 143	310 - 395	11 - 14	32 - 40
150 (60 Hz) 120 (50 Hz)	68	37.5	124 - 142	242 - 308	9 - 12	22 - 28	132 - 152	315 - 401	7 - 9	33 - 42
150 (60 Hz) 120 (50 Hz)	77	25	126 - 145	300 - 382	14 - 18	22 - 28	138 - 159	323 - 411	12 - 15	34 - 43
150 (60 Hz) 120 (50 Hz)	77	37.5	125 - 144	280 - 356	10 - 12	22 - 28	148 - 170	328 - 418	8 - 10	36 - 45
150 (60 Hz) 120 (50 Hz)	86	25	128 - 147	328 - 417	13 - 17	21 - 27	162 - 187	344 - 438	13 - 17	37 - 47
150 (60 Hz) 120 (50 Hz)	86	37.5	127 - 146	309 - 393	9 - 11	22 - 27	174 - 201	351 - 446	9 - 12	39 - 49
150 (60 Hz) 120 (50 Hz)	95	25	129 - 149	366 - 466	13 - 17	21 - 27	—	—	—	—
150 (60 Hz) 120 (50 Hz)	95	37.5	129 - 148	348 - 442	9 - 11	21 - 27	—	—	—	—
180 (60 Hz) 150 (50 Hz)	32	30	—	—	—	—	62 - 71	260 - 331	7 - 9	23 - 29
180 (60 Hz) 150 (50 Hz)	32	45	—	—	—	—	65 - 75	263 - 334	5 - 6	24 - 30
180 (60 Hz) 150 (50 Hz)	45	30	119 - 136	189 - 240	15 - 19	22 - 29	79 - 91	277 - 352	8 - 10	26 - 32
180 (60 Hz) 150 (50 Hz)	45	45	118 - 136	172 - 219	10 - 13	22 - 29	84 - 97	280 - 356	6 - 7	27 - 33
180 (60 Hz) 150 (50 Hz)	55	30	120 - 138	220 - 280	15 - 19	22 - 28	96 - 111	294 - 375	9 - 11	29 - 36
180 (60 Hz) 150 (50 Hz)	55	45	120 - 138	205 - 261	10 - 12	22 - 28	102 - 117	297 - 378	6 - 8	30 - 37
180 (60 Hz) 150 (50 Hz)	68	30	122 - 140	266 - 338	14 - 18	22 - 28	119 - 137	316 - 402	11 - 14	32 - 41

Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE/GEVE										
180 (60 Hz) 150 (50 Hz)	68	45	121 - 140	249 - 317	10 - 12	22 - 28	127 - 146	320 - 407	7 - 9	34 - 43
180 (60 Hz) 150 (50 Hz)	77	30	123 - 142	308 - 392	15 - 19	22 - 28	133 - 153	329 - 419	12 - 15	35 - 43
180 (60 Hz) 150 (50 Hz)	77	45	123 - 141	288 - 367	10 - 13	22 - 28	142 - 163	334 - 425	8 - 10	36 - 46
180 (60 Hz) 150 (50 Hz)	86	30	124 - 143	340 - 432	14 - 18	21 - 27	156 - 179	351 - 447	13 - 17	38 - 48
180 (60 Hz) 150 (50 Hz)	86	45	124 - 143	321 - 409	9 - 12	21 - 27	167 - 192	357 - 455	9 - 12	40 - 50
180 (60 Hz) 150 (50 Hz)	95	30	126 - 145	381 - 485	14 - 17	21 - 27	—	—	—	—
180 (60 Hz) 150 (50 Hz)	95	45	126 - 145	363 - 461	9 - 12	21 - 27	—	—	—	—
240 (60 Hz) 180 (50 Hz)	32	40	—	—	—	—	64 - 73	256 - 326	6 - 8	25 - 31
240 (60 Hz) 180 (50 Hz)	32	60	—	—	—	—	67 - 77	259 - 329	4 - 5	26 - 32
240 (60 Hz) 180 (50 Hz)	45	40	126 - 145	178 - 226	15 - 19	23 - 29	82 - 94	270 - 344	7 - 9	27 - 34
240 (60 Hz) 180 (50 Hz)	45	60	125 - 144	165 - 210	10 - 12	23 - 29	86 - 99	274 - 349	5 - 7	28 - 35
240 (60 Hz) 180 (50 Hz)	55	40	127 - 146	208 - 265	14 - 18	23 - 29	99 - 113	285 - 362	8 - 10	29 - 37
240 (60 Hz) 180 (50 Hz)	55	60	127 - 146	194 - 247	10 - 12	23 - 29	104 - 120	289 - 368	6 - 7	30 - 38
240 (60 Hz) 180 (50 Hz)	68	40	129 - 148	253 - 321	14 - 18	22 - 29	122 - 140	303 - 386	10 - 13	33 - 41
240 (60 Hz) 180 (50 Hz)	68	60	129 - 148	237 - 301	9 - 12	23 - 29	129 - 149	309 - 394	7 - 9	34 - 42
240 (60 Hz) 180 (50 Hz)	77	40	131 - 150	294 - 374	15 - 19	22 - 28	135 - 156	315 - 400	11 - 14	34 - 43
240 (60 Hz) 180 (50 Hz)	77	60	130 - 150	275 - 350	10 - 12	22 - 28	144 - 166	322 - 409	8 - 10	36 - 45
240 (60 Hz) 180 (50 Hz)	86	40	132 - 152	325 - 414	14 - 17	22 - 28	159 - 183	334 - 425	12 - 16	37 - 47
240 (60 Hz) 180 (50 Hz)	86	60	132 - 152	308 - 392	9 - 12	22 - 28	170 - 196	342 - 436	9 - 11	39 - 49
240 (60 Hz) 180 (50 Hz)	95	40	134 - 154	367 - 467	13 - 17	22 - 27	—	—	—	—
240 (60 Hz) 180 (50 Hz)	95	60	134 - 154	349 - 444	9 - 11	22 - 28	—	—	—	—
300 (60 Hz) 240 (50 Hz)	32	50	—	—	—	—	62 - 71	275 - 350	6 - 8	24 - 30
300 (60 Hz) 240 (50 Hz)	32	75	—	—	—	—	65 - 75	279 - 355	4 - 6	25 - 31
300 (60 Hz) 240 (50 Hz)	45	50	120 - 138	181 - 231	15 - 19	22 - 28	80 - 92	291 - 370	8 - 10	26 - 33
300 (60 Hz) 240 (50 Hz)	45	75	119 - 137	169 - 215	10 - 13	22 - 28	84 - 97	295 - 376	5 - 7	27 - 34
300 (60 Hz) 240 (50 Hz)	55	50	121 - 140	209 - 267	14 - 18	22 - 28	96 - 111	309 - 394	8 - 11	29 - 36



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Table 48. Operating pressures in cooling/heating for GE* units (continued)

Operating Data										
Model No.	Entering Water Temp (°F)	Water Flow (GPM)	Cooling				Heating			
			Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Rise (°F)	Air Temp Drop (°F DB)	Suction Pressure (psig)	Discharge Pressure (psig)	Water Temp Drop (°F)	Air Temp Rise (°F DB)
GEHE/GEVE										
300 (60 Hz) 240 (50 Hz)	55	75	121 - 139	196 - 249	10 - 12	22 - 28	102 - 117	314 - 399	6 - 8	30 - 37
300 (60 Hz) 240 (50 Hz)	68	50	124 - 142	251 - 320	14 - 18	22 - 27	119 - 137	330 - 420	10 - 13	32 - 40
300 (60 Hz) 240 (50 Hz)	68	75	123 - 142	236 - 301	9 - 12	22 - 27	127 - 146	335 - 427	7 - 9	33 - 42
300 (60 Hz) 240 (50 Hz)	77	50	126 - 145	289 - 368	15 - 18	21 - 27	133 - 153	342 - 435	11 - 14	34 - 43
300 (60 Hz) 240 (50 Hz)	77	75	125 - 144	272 - 346	10 - 12	21 - 27	142 - 163	348 - 443	8 - 10	35 - 45
300 (60 Hz) 240 (50 Hz)	86	50	127 - 147	319 - 406	13 - 17	21 - 27	156 - 180	362 - 461	13 - 16	37 - 46
300 (60 Hz) 240 (50 Hz)	86	75	127 - 146	302 - 385	9 - 11	21 - 27	168 - 193	371 - 472	9 - 11	39 - 49
300 (60 Hz) 240 (50 Hz)	95	50	130 - 149	357 - 454	13 - 17	21 - 26	—	—	—	—
300 (60 Hz) 240 (50 Hz)	95	75	129 - 148	340 - 433	9 - 11	21 - 26	—	—	—	—

Table 49. Operating pressures in cooling/heating for EX units

Operating Data										
Model	Entering water temp (°F)	Water flow (GPM)	Cooling				Heating			
			Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXHF006 (60 Hz)	35	1.4	—	—	—	—	94-108	279-355	6-8	23-29
	35	1.7	—	—	—	—	96-110	281-357	5-6	23-29
	45	1.4	143-165	190-243	13-16	24-30	110-127	297-377	7-9	26-34
	45	1.7	143-164	184-235	11-13	24-31	113-130	300-382	6-8	27-34
	55	1.4	145-167	217-277	13-16	23-30	128-147	317-404	8-10	30-39
	55	1.7	144-166	210-268	11-13	24-30	131-151	320-407	7-9	31-39
	68	1.4	148-171	254-324	12-15	23-29	154-177	345-439	10-12	35-45
	68	1.7	147-170	244-312	10-13	23-29	158-182	349-444	8-10	36-45
	75	1.4	148-171	281-358	12-15	23-29	169-195	361-459	10-13	38-48
	75	1.7	148-170	273-348	10-13	23-29	175-201	366-466	9-11	38-48
	86	1.4	149-172	328-418	12-15	22-28	197-226	388-494	11-15	41-52
	86	1.7	149-172	320-407	10-13	23-29	203-234	395-502	10-12	41-52
	95	1.4	151-173	373-474	12-15	22-28	—	—	—	—
	95	1.7	150-173	363-462	10-13	22-28	—	—	—	—
35	1.7	—	—	—	—	93-107	272-346	6-7	20-26	

Table 49. Operating pressures in cooling/heating for EX units (continued)

Operating Data										
Model	Cooling						Heating			
	Entering water temp (°F)	Water flow (GPM)	Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXHF009 (60 Hz)	35	2.1	—	—	—	—	95-110	274-348	5-6	21-27
	45	1.7	142-164	187-238	13-16	22-28	109-126	288-366	7-9	24-30
	45	2.1	142-164	181-230	11-14	22-27	112-129	291-370	6-7	24-31
	55	1.7	144-166	214-272	12-15	21-27	127-146	305-388	8-10	27-34
	55	2.1	144-166	207-263	10-13	21-27	130-150	309-393	7-8	27-35
	68	1.7	146-168	258-328	12-15	20-26	153-176	330-420	9-12	31-39
	68	2.1	146-168	250-318	10-12	21-26	157-181	335-427	8-10	32-40
	75	1.7	147-169	286-363	12-15	20-25	168-193	345-439	10-13	33-42
	75	2.1	147-169	277-352	9-12	20-26	174-200	350-446	8-11	34-43
	86	1.7	149-171	336-427	12-15	19-25	195-224	370-471	11-14	36-46
	86	2.1	148-171	326-415	9-12	20-25	202-232	375-477	9-12	37-47
	95	1.7	149-172	386-491	12-15	19-24	—	—	—	—
95	2.1	149-172	375-477	9-12	19-24	—	—	—	—	
EXHF012 (60 Hz)	35	2.2	—	—	—	—	92-106	288-367	10-13	21-27
	35	2.8	—	—	—	—	95-109	290-370	8-11	21-27
	45	2.2	142-163	183-233	12-15	22-28	108-125	304-387	12-15	24-30
	45	2.8	142-163	175-223	9-12	23-29	111-128	307-391	9-12	24-31
	55	2.2	143-164	212-270	12-15	21-27	126-145	322-410	13-16	26-33
	55	2.8	143-164	204-260	9-12	22-27	130-149	325-413	10-13	27-34
	68	2.2	144-166	257-327	12-15	21-26	152-174	346-441	14-18	29-37
	68	2.8	144-166	248-316	9-12	21-26	157-180	352-448	11-15	29-37
	75	2.2	145-167	284-361	12-15	20-26	167-192	361-460	15-19	30-38
	75	2.8	145-167	274-349	9-12	20-26	173-199	366-466	12-15	30-39
	86	2.2	146-168	332-422	12-15	19-25	194-223	384-489	16-21	32-40
	86	2.8	146-168	321-409	9-12	20-25	201-231	390-497	13-17	32-41
95	2.2	147-170	376-478	12-15	19-24	—	—	—	—	
95	2.8	147-170	365-465	9-12	19-24	—	—	—	—	
EXHF015 (60 Hz)	35	2.8	—	—	—	—	91-105	296-377	6-7	20-25
	35	3.5	—	—	—	—	93-107	299-380	5-6	20-26
	45	2.8	138-159	180-230	11-14	22-28	107-123	313-398	7-8	23-29
	45	3.5	138-158	174-221	9-11	22-27	109-126	316-402	5-7	23-30
	55	2.8	139-159	210-267	11-14	21-27	124-143	332-423	8-10	26-33
	55	3.5	138-159	203-258	9-11	21-27	128-147	336-427	6-8	27-34
	68	2.8	140-161	254-324	11-14	20-26	150-172	358-456	9-11	30-38
	68	3.5	140-161	246-313	9-11	21-26	154-178	364-463	7-9	30-39
	75	2.8	141-162	281-358	11-14	20-25	165-190	373-475	10-12	32-40
	75	3.5	140-162	272-347	9-11	20-26	171-196	379-483	8-10	32-41
	86	2.8	142-163	328-417	11-14	19-25	191-220	399-508	11-14	34-43
	86	3.5	142-163	318-405	9-11	20-25	198-228	405-515	9-11	34-44
95	2.8	143-165	371-472	11-14	19-24	—	—	—	—	
95	3.5	143-165	361-459	9-11	19-24	—	—	—	—	



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Table 49. Operating pressures in cooling/heating for EX units (continued)

Operating Data										
Model	Cooling						Heating			
	Entering water temp (°F)	Water flow (GPM)	Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXHF018 (60 Hz)	35	3.3	—	—	—	—	91-104	282-357	6-7	21-26
	35	4.2	—	—	—	—	93-107	285-360	5-6	21-27
	45	3.3	143-164	158-206	12-15	23-29	106-122	306-385	7-9	24-30
	45	4.2	142-164	151-197	9-12	23-29	109-125	309-388	5-7	24-31
	55	3.3	142-164	186-242	12-15	23-29	123-141	323-407	8-10	27-34
	55	4.2	143-164	179-233	9-12	23-29	127-146	326-411	6-8	27-35
	68	3.3	143-164	226-294	12-15	22-28	148-171	357-447	9-12	31-39
	68	4.2	142-164	218-283	9-12	22-28	153-176	361-452	8-10	32-40
	75	3.3	143-164	252-326	12-15	21-27	164-188	370-464	10-13	33-42
	75	4.2	143-164	243-315	9-12	21-27	169-195	375-470	8-10	34-43
	86	3.3	143-165	295-382	12-15	20-26	191-219	389-488	11-14	36-46
	86	4.2	143-165	286-370	9-12	20-26	198-228	392-492	9-11	37-47
	95	3.3	144-166	336-433	12-15	19-24	—	—	—	—
	95	4.2	144-166	326-421	9-12	19-25	—	—	—	—
EXHF024 (60 Hz)	35	4.4	—	—	—	—	84-97	276-348	5-7	21-27
	35	5.6	—	—	—	—	86-99	278-350	4-5	22-28
	45	4.4	134-154	164-214	12-15	23-30	99-114	296-372	6-8	25-32
	45	5.6	132-152	157-205	9-12	23-30	101-116	298-375	5-6	26-32
	55	4.4	134-154	191-249	12-15	22-28	115-132	311-391	7-9	29-36
	55	5.6	134-154	184-239	9-12	22-29	118-136	314-395	6-7	29-37
	68	4.4	135-156	231-300	12-15	21-27	139-160	342-428	9-11	33-42
	68	5.6	135-155	224-290	9-12	22-28	143-165	346-433	7-9	33-42
	75	4.4	136-157	256-331	12-15	21-27	153-176	355-444	9-12	35-44
	75	5.6	136-156	248-321	9-12	21-27	159-182	360-450	8-10	35-45
	86	4.4	137-158	298-385	11-14	20-26	178-205	376-471	11-13	37-47
	86	5.6	137-158	289-374	9-11	20-26	185-213	380-476	9-11	38-48
	95	4.4	139-160	336-434	11-14	19-25	—	—	—	—
	95	5.6	138-159	328-422	9-11	20-25	—	—	—	—
EXHF030 (60 Hz)	35	5.5	—	—	—	—	88-102	269-342	5-7	20-25
	35	7.0	—	—	—	—	91-105	271-344	4-6	20-26
	45	5.5	138-159	164-214	12-15	22-28	104-120	287-364	7-8	23-29
	45	7.0	140-161	157-205	10-12	22-27	107-123	290-367	5-7	23-30
	55	5.5	142-164	191-249	12-15	21-27	121-139	303-384	8-10	26-33
	55	7.0	142-163	184-240	9-12	21-27	125-144	307-388	6-8	27-34
	68	5.5	144-165	230-299	12-15	20-26	146-168	333-420	9-11	30-38
	68	7.0	143-165	222-289	9-12	21-26	151-174	337-426	7-9	30-39
	75	5.5	144-166	255-331	12-15	20-25	161-185	347-438	10-13	32-40
	75	7.0	143-165	248-322	9-12	20-26	167-192	352-444	8-10	32-41
	86	5.5	146-168	297-384	11-15	19-25	187-215	368-465	11-14	34-43
	86	7.0	145-167	288-373	9-11	20-25	194-223	374-473	9-11	34-44
	95	5.5	147-169	336-434	11-14	19-24	—	—	—	—
	95	7.0	146-169	327-423	9-11	19-24	—	—	—	—

Table 49. Operating pressures in cooling/heating for EX units (continued)

Operating Data										
Model	Cooling						Heating			
	Entering water temp (°F)	Water flow (GPM)	Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXHF036 (60 Hz)	35	6.6	—	—	—	—	88-102	289-364	6-7	19-24
	35	8.4	—	—	—	—	90-104	291-366	5-6	19-24
	45	6.6	135-156	168-217	12-15	21-26	103-119	307-386	7-8	23-29
	45	8.4	135-155	161-209	9-12	21-26	106-122	309-388	5-7	23-29
	55	6.6	136-157	196-252	12-15	20-26	120-139	324-408	8-10	26-33
	55	8.4	136-157	189-244	9-12	21-26	124-143	327-411	6-8	26-34
	68	6.6	138-159	234-302	12-15	20-25	145-167	359-450	9-12	30-39
	68	8.4	138-159	226-292	9-12	20-26	150-173	363-454	7-9	31-39
	75	6.6	140-161	259-333	11-15	20-25	160-184	373-468	10-13	33-42
	75	8.4	139-160	251-323	9-11	20-26	166-191	377-472	8-10	33-42
	86	6.6	141-163	300-386	11-14	20-25	185-213	398-499	11-14	35-45
	86	8.4	141-162	292-375	9-11	20-26	193-222	402-505	9-12	36-45
	95	6.6	143-164	338-434	11-14	20-25	—	—	—	—
	95	8.4	143-164	329-423	9-11	20-26	—	—	—	—
EXHF042 (60 Hz)	35	7.8	—	—	—	—	86-99	281-353	6-7	22-27
	35	9.8	—	—	—	—	88-101	282-354	4-6	22-28
	45	7.8	138-159	161-212	12-15	21-27	101-116	297-372	7-8	25-31
	45	9.8	138-159	155-204	10-12	21-27	103-119	299-375	5-7	25-32
	55	7.8	139-160	190-249	12-15	21-27	117-135	312-392	8-10	28-35
	55	9.8	139-160	183-240	10-12	21-27	120-139	314-395	6-8	29-35
	68	7.8	140-161	230-300	12-15	21-26	142-163	348-434	9-11	32-40
	68	9.8	140-161	222-290	9-12	21-26	146-168	351-438	7-9	33-41
	75	7.8	141-162	255-332	12-15	20-26	156-180	361-450	10-12	35-43
	75	9.8	141-162	247-322	9-12	20-26	161-186	365-456	8-10	35-44
	86	7.8	143-164	298-387	11-14	19-25	181-209	384-480	11-14	37-46
	86	9.8	142-164	290-376	9-12	19-25	188-216	388-485	9-11	37-47
	95	7.8	144-166	337-437	11-14	19-24	—	—	—	—
	95	9.8	144-165	329-426	9-11	19-24	—	—	—	—
EXHF048 (60 Hz)	35	8.8	—	—	—	—	88-101	287-362	6-7	20-25
	35	11.2	—	—	—	—	90-103	289-364	5-6	20-26
	45	8.8	136-156	173-224	12-15	21-27	103-118	303-382	7-9	23-29
	45	11.2	136-156	167-215	10-12	22-28	106-122	305-385	5-7	23-30
	55	8.8	137-158	202-261	12-15	21-27	120-138	319-402	8-10	26-33
	55	11.2	137-158	195-251	9-12	21-27	123-142	323-407	6-8	27-34
	68	8.8	139-160	245-315	12-15	20-26	145-166	353-443	9-12	30-38
	68	11.2	139-160	237-305	9-12	21-26	150-172	357-448	7-9	31-39
	75	8.8	140-161	270-347	12-15	20-25	159-183	367-461	10-13	32-40
	75	11.2	140-161	262-337	9-12	20-26	165-190	371-466	8-10	32-41
	86	8.8	142-163	312-401	11-14	19-25	185-213	392-492	11-14	33-42
	86	11.2	142-163	303-390	9-11	19-25	192-221	398-500	9-12	34-43
	95	8.8	144-165	351-451	11-14	19-24	—	—	—	—
	95	11.2	143-165	342-440	9-11	19-24	—	—	—	—



Start-Up

Table 49. Operating pressures in cooling/heating for EX units (continued)

Operating Data										
Model	Cooling						Heating			
	Entering water temp (°F)	Water flow (GPM)	Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXHF060 (60 Hz)	35	11.6	—	—	—	—	88-102	314-395	6-7	21-27
	35	14.0	—	—	—	—	90-103	315-397	5-6	21-27
	45	11.6	130-150	171-221	12-15	21-27	103-119	340-426	7-8	24-31
	45	14.0	130-150	166-214	10-13	21-26	106-122	341-428	6-7	24-31
	55	11.6	132-152	199-256	12-15	20-26	121-139	360-452	8-10	27-35
	55	14.0	132-151	193-249	10-12	21-26	123-142	364-457	6-8	28-35
	68	11.6	134-154	237-306	11-15	20-26	146-168	398-499	9-12	31-40
	68	14.0	134-154	231-298	9-12	20-26	150-172	402-503	8-10	32-40
	75	11.6	135-155	262-337	11-14	20-25	161-185	416-521	10-12	33-42
	75	14.0	135-155	256-330	9-12	20-26	165-190	421-528	8-11	34-43
	86	11.6	137-157	304-391	11-14	20-25	186-214	449-564	11-14	36-45
	86	14.0	137-157	298-383	9-12	20-25	192-221	454-570	9-12	36-46
	95	11.6	138-159	342-440	11-14	19-24	—	—	—	—
	95	14.0	138-159	335-431	9-11	19-25	—	—	—	—
EXHF070 (60 Hz)	35	12.3	—	—	—	—	85-98	296-373	6-7	20-25
	35	15.4	—	—	—	—	87-100	298-375	5-6	20-26
	45	12.3	132-151	167-216	12-16	22-28	100-115	322-403	7-8	23-29
	45	15.4	132-151	161-209	10-12	22-28	103-118	324-406	5-7	23-30
	55	12.3	132-152	195-252	12-15	21-27	117-134	341-427	8-10	26-33
	55	15.4	132-152	188-244	10-12	21-27	120-138	343-431	6-8	26-34
	68	12.3	134-154	235-304	12-15	21-27	141-162	374-468	9-12	30-39
	68	15.4	134-154	228-294	10-12	21-27	145-167	378-473	8-10	31-39
	75	12.3	135-155	259-335	12-15	21-26	155-179	390-488	10-13	33-42
	75	15.4	135-155	252-325	9-12	21-26	160-185	395-494	8-10	34-43
	86	12.3	136-157	297-384	12-15	20-26	180-207	418-524	11-15	37-47
	86	15.4	136-157	289-374	9-12	20-26	186-215	423-530	9-12	38-48
	95	12.3	138-159	334-431	11-15	20-25	—	—	—	—
	95	15.4	138-159	326-421	9-12	20-25	—	—	—	—
EXVF006 (60 Hz)	35	1.4	—	—	—	—	94-108	279-355	6-8	23-29
	35	1.7	—	—	—	—	96-110	281-357	5-6	23-29
	45	1.4	143-165	190-243	13-16	24-30	110-127	297-377	7-9	26-34
	45	1.7	143-164	184-235	11-13	24-31	113-130	300-382	6-8	27-34
	55	1.4	145-167	217-277	13-16	23-30	128-147	317-404	8-10	30-39
	55	1.7	144-166	210-268	11-13	24-30	131-151	320-407	7-9	31-39
	68	1.4	148-171	254-324	12-15	23-29	154-177	345-439	10-12	35-45
	68	1.7	147-170	244-312	10-13	23-29	158-182	349-444	8-10	36-45
	75	1.4	148-171	281-358	12-15	23-29	169-195	361-459	10-13	38-48
	75	1.7	148-170	273-348	10-13	23-29	175-201	366-466	9-11	38-48
	86	1.4	149-172	328-418	12-15	22-28	197-226	388-494	11-15	41-52
	86	1.7	149-172	320-407	10-13	23-29	203-234	395-502	10-12	41-52
	95	1.4	151-173	373-474	12-15	22-28	—	—	—	—
	95	1.7	150-173	363-462	10-13	22-28	—	—	—	—

Table 49. Operating pressures in cooling/heating for EX units (continued)

Operating Data										
Model	Cooling						Heating			
	Entering water temp (°F)	Water flow (GPM)	Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXVF009 (60 Hz)	35	1.7	—	—	—	—	93-107	272-346	6-7	20-26
	35	2.1	—	—	—	—	95-110	274-348	5-6	21-27
	45	1.7	142-164	187-238	13-16	22-28	109-126	288-366	7-9	24-30
	45	2.1	142-164	181-230	11-14	22-27	112-129	291-370	6-7	24-31
	55	1.7	144-166	214-272	12-15	21-27	127-146	305-388	8-10	27-34
	55	2.1	144-166	207-263	10-13	21-27	130-150	309-393	7-8	27-35
	68	1.7	146-168	258-328	12-15	20-26	153-176	330-420	9-12	31-39
	68	2.1	146-168	250-318	10-12	21-26	157-181	335-427	8-10	32-40
	75	1.7	147-169	286-363	12-15	20-25	168-193	345-439	10-13	33-42
	75	2.1	147-169	277-352	9-12	20-26	174-200	350-446	8-11	34-43
	86	1.7	149-171	336-427	12-15	19-25	195-224	370-471	11-14	36-46
	86	2.1	148-171	326-415	9-12	20-25	202-232	375-477	9-12	37-47
	95	1.7	149-172	386-491	12-15	19-24	—	—	—	—
	95	2.1	149-172	375-477	9-12	19-24	—	—	—	—
EXVF012 60 Hz)	35	2.2	—	—	—	—	92-106	288-367	10-13	21-27
	35	2.8	—	—	—	—	95-109	290-370	8-11	21-27
	45	2.2	142-163	183-233	12-15	22-28	108-125	304-387	12-15	24-30
	45	2.8	142-163	175-223	9-12	23-29	111-128	307-391	9-12	24-31
	55	2.2	143-164	212-270	12-15	21-27	126-145	322-410	13-16	26-33
	55	2.8	143-164	204-260	9-12	22-27	130-149	325-413	10-13	27-34
	68	2.2	144-166	257-327	12-15	21-26	152-174	346-441	14-18	29-37
	68	2.8	144-166	248-316	9-12	21-26	157-180	352-448	11-15	29-37
	75	2.2	145-167	284-361	12-15	20-26	167-192	361-460	15-19	30-38
	75	2.8	145-167	274-349	9-12	20-26	173-199	366-466	12-15	30-39
	86	2.2	146-168	332-422	12-15	19-25	194-223	384-489	16-21	32-40
	86	2.8	146-168	321-409	9-12	20-25	201-231	390-497	13-17	32-41
	95	2.2	147-170	376-478	12-15	19-24	—	—	—	—
	95	2.8	147-170	365-465	9-12	19-24	—	—	—	—
EXVF015 (60 Hz)	35	2.8	—	—	—	—	91-105	296-377	6-7	20-25
	35	3.5	—	—	—	—	93-107	299-380	5-6	20-26
	45	2.8	138-159	180-230	11-14	22-28	107-123	313-398	7-8	23-29
	45	3.5	138-158	174-221	9-11	22-27	109-126	316-402	5-7	23-30
	55	2.8	139-159	210-267	11-14	21-27	124-143	332-423	8-10	26-33
	55	3.5	138-159	203-258	9-11	21-27	128-147	336-427	6-8	27-34
	68	2.8	140-161	254-324	11-14	20-26	150-172	358-456	9-11	30-38
	68	3.5	140-161	246-313	9-11	21-26	154-178	364-463	7-9	30-39
	75	2.8	141-162	281-358	11-14	20-25	165-190	373-475	10-12	32-40
	75	3.5	140-162	272-347	9-11	20-26	171-196	379-483	8-10	32-41
	86	2.8	142-163	328-417	11-14	19-25	191-220	399-508	11-14	34-43
	86	3.5	142-163	318-405	9-11	20-25	198-228	405-515	9-11	34-44
	95	2.8	143-165	371-472	11-14	19-24	—	—	—	—
	95	3.5	143-165	361-459	9-11	19-24	—	—	—	—



Start-Up

Table 49. Operating pressures in cooling/heating for EX units (continued)

Operating Data										
Model	Cooling						Heating			
	Entering water temp (°F)	Water flow (GPM)	Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXVFO18 (60 Hz)	35	3.3	—	—	—	—	91-104	280-353	6-8	21-26
	35	4.2	—	—	—	—	92-106	281-355	5-6	21-27
	45	3.3	142-163	158-206	11-15	23-29	106-122	301-379	7-9	24-30
	45	4.2	141-163	151-197	9-11	23-29	108-125	304-383	6-7	24-31
	55	3.3	141-162	187-243	12-15	23-29	123-142	319-401	8-10	27-34
	55	4.2	141-162	179-233	9-12	23-29	126-145	322-405	6-8	27-35
	68	3.3	141-163	227-295	12-15	22-28	149-171	352-441	10-12	31-39
	68	4.2	141-163	219-284	9-12	22-28	153-176	356-446	8-10	32-40
	75	3.3	142-163	253-328	12-15	21-27	165-189	364-456	10-13	33-42
	75	4.2	142-163	245-317	9-12	21-27	170-196	368-461	8-10	34-43
	86	3.3	143-165	298-385	12-15	20-26	192-221	383-480	11-14	36-46
	86	4.2	143-164	288-372	9-12	20-26	199-229	386-484	9-11	37-47
	95	3.3	144-166	339-437	12-15	19-24	—	—	—	—
	95	4.2	144-166	329-424	9-12	19-25	—	—	—	—
EXVFO24 (60 Hz)	35	4.4	—	—	—	—	85-98	278-351	6-7	21-27
	35	5.6	—	—	—	—	87-100	280-353	4-6	22-28
	45	4.4	136-156	165-215	12-15	23-30	100-115	299-375	7-8	25-32
	45	5.6	135-156	158-206	10-12	23-30	103-118	301-378	5-7	26-32
	55	4.4	137-158	193-251	12-15	22-28	117-134	314-395	8-10	29-36
	55	5.6	137-157	186-241	9-12	22-29	120-138	318-399	6-8	29-37
	68	4.4	138-159	234-304	12-15	21-27	141-162	346-433	9-11	33-42
	68	5.6	138-159	226-293	9-12	22-28	145-167	350-438	7-9	33-42
	75	4.4	139-160	260-336	12-15	21-27	155-179	358-449	10-12	35-44
	75	5.6	139-160	251-325	9-12	21-27	161-185	363-454	8-10	35-45
	86	4.4	141-162	303-391	12-15	20-26	180-207	380-476	11-14	37-47
	86	5.6	141-162	294-379	9-12	20-26	187-215	385-482	9-11	38-48
	95	4.4	142-164	343-442	11-15	19-25	—	—	—	—
	95	5.6	142-163	334-430	9-11	20-25	—	—	—	—
EXVFO30 (60 Hz)	35	5.5	—	—	—	—	87-101	266-337	6-7	20-25
	35	7.0	—	—	—	—	89-103	267-340	4-6	20-26
	45	5.5	137-158	164-214	12-15	22-28	102-118	284-359	7-8	23-29
	45	7.0	137-157	158-206	9-12	22-27	105-121	286-362	5-7	23-30
	55	5.5	138-159	192-250	12-15	21-27	119-137	299-379	8-10	26-33
	55	7.0	138-159	185-241	9-12	21-27	122-141	302-382	6-8	27-34
	68	5.5	140-161	231-301	11-15	20-26	143-165	328-413	9-12	30-38
	68	7.0	140-161	223-291	9-11	21-26	148-170	332-419	7-9	30-39
	75	5.5	141-162	257-334	11-14	20-25	158-182	341-430	10-13	32-40
	75	7.0	141-162	249-323	9-11	20-26	164-188	346-436	8-10	32-41
	86	5.5	143-164	300-388	11-14	19-25	183-211	364-460	11-14	34-43
	86	7.0	142-164	291-377	9-11	20-25	190-219	368-465	9-11	34-44
	95	5.5	144-165	340-440	11-14	19-24	—	—	—	—
	95	7.0	144-165	331-428	9-11	19-24	—	—	—	—

Table 49. Operating pressures in cooling/heating for EX units (continued)

Operating Data										
Model	Cooling						Heating			
	Entering water temp (°F)	Water flow (GPM)	Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXVF036 (60 Hz)	35	6.6	—	—	—	—	88-101	292-368	6-7	19-24
	35	8.4	—	—	—	—	89-103	293-369	5-6	19-24
	45	6.6	133-153	169-218	12-15	20-26	103-118	310-390	7-8	23-29
	45	8.4	132-152	162-210	9-12	21-26	105-121	311-392	5-7	23-29
	55	6.6	134-154	197-254	12-15	20-26	119-137	327-412	8-10	26-33
	55	8.4	134-154	190-245	9-12	20-26	122-141	330-415	6-8	26-34
	68	6.6	136-156	236-304	12-15	20-25	144-166	362-454	9-12	30-39
	68	8.4	136-156	228-295	9-12	20-25	148-171	365-457	7-9	31-39
	75	6.6	137-158	261-336	11-14	20-25	159-183	378-474	10-13	33-42
	75	8.4	137-158	253-326	9-11	20-25	164-189	382-479	8-10	33-42
	86	6.6	139-160	303-390	11-14	19-24	184-212	403-506	11-15	35-45
	86	8.4	139-160	295-379	9-11	19-24	191-219	409-514	9-12	36-45
	95	6.6	141-162	342-439	11-14	19-24	—	—	—	—
	95	8.4	141-162	333-428	9-11	19-24	—	—	—	—
EXVF042 (60 Hz)	35	7.8	—	—	—	—	84-97	285-358	5-7	19-24
	35	9.8	—	—	—	—	86-99	286-359	4-6	19-25
	45	7.8	134-155	160-210	12-15	21-27	99-114	300-377	6-8	22-28
	45	9.8	134-154	153-202	10-12	21-27	101-116	302-379	5-7	22-29
	55	7.8	135-156	189-247	12-15	21-27	115-132	315-396	7-9	25-32
	55	9.8	135-156	182-238	9-12	21-27	118-136	319-400	6-8	26-32
	68	7.8	137-158	229-299	12-15	21-26	139-160	352-438	9-11	29-37
	68	9.8	137-158	221-289	9-12	21-26	143-165	354-442	7-9	30-38
	75	7.8	138-159	255-332	12-15	20-26	154-177	365-456	10-12	32-40
	75	9.8	138-159	247-322	9-12	20-26	158-182	369-460	8-10	32-41
	86	7.8	140-161	299-389	11-15	19-25	179-205	388-485	11-14	34-43
	86	9.8	140-161	291-379	9-12	19-25	184-212	392-490	9-11	34-44
	95	7.8	142-163	341-442	11-14	19-24	—	—	—	—
	95	9.8	142-163	332-430	9-11	19-24	—	—	—	—
EXVF048 (60 Hz)	35	8.8	—	—	—	—	87-101	285-359	6-7	20-25
	35	11.2	—	—	—	—	90-103	287-362	5-6	20-26
	45	8.8	135-156	172-222	12-15	21-27	103-118	300-378	7-8	23-29
	45	11.2	135-155	165-214	9-12	22-28	105-121	303-382	5-7	23-30
	55	8.8	136-157	201-259	12-15	21-27	120-138	316-398	8-10	26-33
	55	11.2	136-157	193-249	9-12	21-27	123-142	320-403	6-8	27-34
	68	8.8	138-159	243-313	12-15	20-26	144-166	348-437	9-12	30-38
	68	11.2	138-159	235-303	9-12	21-26	149-171	352-442	7-9	31-39
	75	8.8	139-160	269-345	11-15	20-25	159-183	363-455	10-13	32-40
	75	11.2	139-160	260-334	9-11	20-26	165-189	367-461	8-10	32-41
	86	8.8	141-162	310-399	11-14	19-25	184-212	386-485	11-14	33-42
	86	11.2	141-162	301-387	9-11	19-25	191-220	392-493	9-12	34-43
	95	8.8	143-164	349-448	11-14	19-24	—	—	—	—
	95	11.2	143-164	340-437	9-11	19-24	—	—	—	—



Start-Up

Table 49. Operating pressures in cooling/heating for EX units (continued)

Operating Data										
Model	Cooling						Heating			
	Entering water temp (°F)	Water flow (GPM)	Suction pressure (psig)	Discharge pressure (psig)	Water temp rise (°F)	Air temp drop (°F DB)	Suction pressure (psig)	Discharge pressure (psig)	Water Temp drop (°F)	Air temp rise (°F DB)
EXVF060 (60 Hz)	35	11.6	—	—	—	—	89-102	300-377	6-7	21-27
	35	14.0	—	—	—	—	90-104	301-379	5-6	21-27
	45	11.6	132-152	169-219	12-15	21-27	104-120	324-406	7-9	24-31
	45	14.0	132-152	164-212	10-13	21-26	106-122	325-407	6-7	24-31
	55	11.6	133-153	197-254	12-15	20-26	121-139	343-430	8-10	27-35
	55	14.0	133-153	192-247	10-12	21-26	124-142	344-432	7-8	28-35
	68	11.6	135-156	235-303	12-15	20-26	146-168	377-472	9-12	31-40
	68	14.0	135-156	229-296	10-12	20-26	150-172	380-476	8-10	32-40
	75	11.6	136-157	260-335	11-14	20-25	161-185	394-493	10-13	33-42
	75	14.0	136-157	253-326	9-12	20-26	165-190	398-499	9-11	34-43
	86	11.6	138-159	302-388	11-14	20-25	186-214	424-532	12-15	36-45
	86	14.0	138-159	295-379	9-12	20-25	192-221	429-538	10-12	36-46
	95	11.6	140-161	339-436	11-14	19-24	—	—	—	—
	95	14.0	140-161	332-427	9-12	19-25	—	—	—	—
EXVF070 (60 Hz)	35	12.32	—	—	—	—	86-100	294-371	6-7	20-26
	35	15.4	—	—	—	—	88-102	296-373	5-6	21-26
	45	12.32	131-150	166-216	12-15	21-27	101-117	320-401	7-9	23-29
	45	15.4	131-150	160-208	10-12	21-27	104-119	322-404	6-7	24-30
	55	12.32	131-151	194-252	12-15	21-27	118-136	338-424	8-10	26-33
	55	15.4	131-151	188-243	10-12	21-27	121-139	340-427	6-8	27-34
	68	12.32	133-153	235-303	12-15	20-26	142-164	374-467	9-12	31-39
	68	15.4	133-153	228-294	9-12	21-26	146-168	376-470	8-10	31-40
	75	12.32	134-154	259-335	12-15	20-26	157-180	389-487	10-13	33-42
	75	15.4	134-154	252-325	9-12	20-26	162-186	393-492	8-11	34-43
	86	12.32	136-156	297-384	11-15	20-25	181-209	417-523	12-15	37-47
	86	15.4	136-156	289-374	9-12	20-25	188-216	422-529	9-12	38-48
	95	12.32	137-158	335-432	11-14	19-25	—	—	—	—
	95	15.4	137-158	327-422	9-12	19-25	—	—	—	—

Water Pressure Drop

Table 50, p. 106 should be used to define feet of head/pressure drop. Please note the feet of pressure (ft/head) provided is at ARI/ISO standard.

To calculate feet of head, when using gauges that read in PSIG, multiply PSI by 2.31.

Table 50. Cooling water pressure drops (WPD) in feet of head for GE units

Unit Size (60 Hz)	Unit Size (50 Hz)	EWT °F	GPM	Ft. Pressure
GEH006	—	86	1.8	3.9
GEH009	GEH006	86	2.1	3.7
GEH012	GEH009	86	2.8	3.8
GEH015	GEH012	86	3.5	5.4

Table 50. Cooling water pressure drops (WPD) in feet of head for GE units (continued)

Unit Size (60 Hz)	Unit Size (50 Hz)	EWT °F	GPM	Ft. Pressure
GEH018	GEH015	86	4.2	6.8
GEH024	GEH018	86	5.6	13.2
GEH030	GEH024	86	7.0	11.1
GEH036	GEH030	86	8.4	11.5
GEH042	GEH036	86	9.8	13.6
GEH048	GEH042	86	11.2	6.8
GEH060	GEH048	86	14.0	12.3
—	GEH060	86	14.0	11.4
GEV006	—	86	1.8	3.0
GEV009	GEV006	86	2.1	3.9
GEV012	GEV009	86	2.8	3.8
GEV015	GEV012	86	3.5	5.3

Table 50. Cooling water pressure drops (WPD) in feet of head for GE units (continued)

Unit Size (60 Hz)	Unit Size (50 Hz)	EWT °F	GPM	Ft. Pressure
GEV018	GEV015	86	4.2	6.3
GEV024	GEV018	86	5.6	12.9
GEV030	GEV024	86	7.0	12.2
GEV036	GEV030	86	8.4	12.5
GEV042	GEV036	86	9.8	14.5
GEV048	GEV042	86	11.2	5.7
GEV060	GEV048	86	14.0	12.0
—	GEV060	86	14.0	10.8

Table 51. Cooling water pressure drops (WPD) in feet of head for EX units

Unit Size (60 Hz)	Unit Size (50 Hz)	EWT °F	GPM	Ft. Pressure
EXH006	—	86	1.8	3.9
EXH009	—	86	2.1	3.7
EXH012	—	86	2.8	3.8
EXH015	—	86	3.5	5.4
EXH018	—	86	4.2	4.1
EXH024	—	86	5.6	6.1
EXH030	—	86	7	9.2
EXH036	—	86	8.4	5.5
EXH042	—	86	9.8	7.8
EXH048	—	86	11.2	8.2
EXH060	—	86	14	7.2
EXH070	—	86	15.4	6.3
EXV006	—	86	1.8	3.0
EXV009	—	86	2.1	3.9
EXV012	—	86	2.8	3.8
EXV015	—	86	3.5	5.3
EXV018	—	86	4.2	3.7
EXV024	—	86	5.6	6.5
EXV030	—	86	7	8.5
EXV036	—	86	8.4	6.3
EXV042	—	86	9.8	8.5
EXV 48	—	86	11.2	7.9
EXV060	—	86	14	7.4
EXV070	—	86	15.4	6.6

Table 52. Heating water pressure drops (WPD) in feet of head for GE units

Unit Size (60 Hz)	Unit Size (50 Hz)	EWT °F	GPM	Ft. Pressure
GEH006	—	68	1.8	4.2
GEH009	GEH006	68	2.1	3.9
GEH012	GEH009	68	2.8	4.1
GEH015	GEH012	68	3.5	5.7

Table 52. Heating water pressure drops (WPD) in feet of head for GE units (continued)

Unit Size (60 Hz)	Unit Size (50 Hz)	EWT °F	GPM	Ft. Pressure
GEH018	GEH015	68	4.2	7.2
GEH024	GEH018	68	5.6	14
GEH030	GEH024	68	7.0	11.8
GEH036	GEH030	68	8.4	12.1
GEH042	GEH036	68	9.8	14.5
GEH048	GEH042	68	11.2	7.2
GEH060	GEH048	68	14.0	13.1
—	GEH060	68	14.0	12.1
GEV006	—	68	1.8	3.2
GEV009	GEV006	68	2.1	4.2
GEV012	GEV009	68	2.8	4.1
GEV015	GEV012	68	3.5	5.6
GEV018	GEV015	68	4.2	6.7
GEV024	GEV018	68	5.6	13.7
GEV030	GEV024	68	7.0	12.9
GEV036	GEV030	68	8.4	13.2
GEV042	GEV036	68	9.8	15.4
GEV048	GEV042	68	11.2	6.1
GEV060	GEV048	68	14.0	12.7
—	GEV060	68	14.0	11.5

Table 53. Heating water pressure drops (WPD) in feet of head for EX units

Unit Size (60 Hz)	Unit Size (50 Hz)	EWT °F	GPM	Ft. Pressure
EXH006	—	68	1.8	4.2
EXH009	—	68	2.1	3.9
EXH012	—	68	2.8	4.1
EXH015	—	68	3.5	5.7
EXH018	—	68	4.2	5.0
EXH024	—	68	5.6	7.9
EXH030	—	68	7.0	11.2
EXH036	—	68	8.4	6.5
EXH042	—	68	9.8	9.4
EXH048	—	68	11.2	9.4
EXH060	—	68	14.0	7.1
EXH070	—	68	15.4	7.2
EXV006	—	68	1.8	4.2
EXV009	—	68	2.1	3.9
EXV012	—	68	2.8	4.1
EXV015	—	68	3.5	5.7



Start-Up

Table 53. Heating water pressure drops (WPD) in feet of head for EX units (continued)

Unit Size (60 Hz)	Unit Size (50 Hz)	EWT °F	GPM	Ft. Pressure
EXV018	—	68	4.2	4.5
EXV024	—	68	5.6	8.2
EXV030	—	68	7.0	10.2
EXV036	—	68	8.4	7.5
EXV042	—	68	9.8	9.8
EXV048	—	68	11.2	9.1
EXV060	—	68	14.0	7.2
EXV070	—	68	15.4	7.6

Water Volume

Table 54, p. 108 is provided for use in calculating glycol requirements for the unit.

Table 54. Water volume for GE units

Unit Size (60 Hz)	Unit Size (50 Hz)	Water Side Volume Cubic In.	Water Side Volume Cubic Ft.	Water Side Volume Gallons
006		13.6	0.008	0.059
009	006	13.6	0.008	0.059
012	009	28.2	0.016	0.122
015	012	36.0	0.021	0.156
018	015	28.2	0.016	0.122
024	018	37.8	0.022	0.164
030	024	49.1	0.028	0.213
036	030	70.4	0.041	0.305
042	036	79.0	0.046	0.342
048	042	71.7	0.041	0.310
060	048	91.8	0.053	0.397
—	060	91.8	0.053	0.397
072	—	181	0.105	0.783
090	072	214	0.125	0.927
120	090	390	0.227	1.690
150, 180	120, 150	508	0.296	2.201

Table 55. Water volume for EX units

Unit Size (60 Hz)	Unit Size (50 Hz)	Water Side Volume (in ³)	Water Side Volume (ft ³)	Water Side Volume (gallons)
EXH006	—	13.6	0.008	0.059
EXH009	—	13.6	0.008	0.059
EXH012	—	28.4	0.016	0.123
EXH015	—	36.0	0.021	0.156
EXH018	—	89.8	0.052	0.389
EXH024	—	89.8	0.052	0.389
EXH030	—	89.8	0.052	0.389

Maintenance

⚠ WARNING

Hazardous Service Procedures!

The maintenance and trouble shooting procedures recommended in this section of the manual could result in exposure to electrical, mechanical or other potential safety hazards. Always refer to the safety warnings provided throughout this manual concerning these procedures. When possible, disconnect all electrical power including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. When necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been trained in handling live electrical components for these tasks. Failure to follow all of the recommended safety warnings provided, could result in death or serious injury.

Preventive Maintenance

Maintenance on the unit is simplified with the following preventive suggestions:

Filter maintenance must be performed to assure proper operation of the equipment. Filters should be inspected at least every three months, and replaced when it is evident they are dirty. Filter sizing is shown in [Table 56, p. 109](#):

Table 56. Filter sizing

Size (60 Hz)	Size (50 Hz)	Filter Size (Actual) inches (mm)
GEH		
006-015	006-012	14 5/8 x 20 1/4 (371 x 514)
018-030	015-024	17 7/8 x 23 7/8 (454 x 607)
036-042	030-036	18 5/8 x 25 3/8 (473 x 645)
048-060	042-060	20 5/8 x 29 3/4 (524 x 755)
072-120	072-090	20 x 25 (3) (508 x 508)
150-180	120-150	25 x 25 (3) (635 x 635)
GEV		
006-015	006-012	15 7/8 x 19 7/8 (403 x 504)
018-030	015-024	19 7/8 x 19 7/8 (505 x 505)
036-042	030-036	19 7/8 x 24 7/8 (504 x 632)
048-060	042-060	23 7/8 x 29 7/8 (606 x 759)
GEV 072-120	090	20 x 20 (4) (508 x 508)
150-300	120-240	19 5/8 x 24 5/8 (6) (498 x 625)
EXH		
006-015	—	14 5/8 x 20 1/4 (371 x 514)
018-024	—	17 7/8 X 23 7/8 (454 X 607)
030-036	—	18 5/8 x 25 3/8 (473 x 645)
042-070	—	20 5/8 x 29 3/4 (524 x 755)
EXV		
006-015	—	15 7/8 x 19 7/8 (403 x 504)
018-024	—	19 7/8 x 19 7/8 (505 x 505)
030-036	—	19 7/8 x 24 7/8 (504 x 632)
042-060	—	23 7/8 x 29 7/8 (606 x 759)
070	—	27 7/8 x 29 7/8 (708 x 759)

Check the contactors and relays within the control panel at least once a year. It is good practice to check the tightness of the various wiring connections within the control panel.

A strainer (60 mesh or greater) must be used on an open loop system to keep debris from entering the unit heat exchanger and to ensure a clean system.

For units on well water, it is important to check the cleanliness of the water-to-refrigerant heat exchanger. Should it become contaminated with dirt and scaling as a result of bad water, the heat exchanger will have to be back flushed and cleaned with a chemical that will remove the scale. This service should be performed by an experienced service person.

⚠ WARNING

Hazardous Chemicals!

Cleaning agents can be either acidic or highly alkaline. Handle chemical carefully. Proper handling should include goggles or face shield, chemical resistant gloves, boots, apron or suit as required. For personal safety, refer to the cleaning agent manufacturers Materials Safety Data Sheet and follow all recommended safe handling practices. Failure to follow all safety instructions could result in death or serious injury.

It should be noted that the water quality should be checked periodically. See [Table 57, p. 109](#).

Table 57. Water quality

Scaling	Amount
Calcium and magnesium (total hardness)	Less than 350 ppm
Corrosion	
pH	7-9.5
Hydrogen Sulfide	Less than 1 ppm
Sulfates	Less than 25 ppm
Chlorides	Less than 125 ppm
Carbon Dioxide	Less than 75 ppm
Total dissolved solids (TDS)	Less than 1000 ppm
Biological Growth	
Iron Bacteria	Low
Erosion	
Suspended Solids	Low

Condensate Trap

For units incorporating a negative trap design, ensure that the condensate system is primed with water at all times. Allowing a negative, pressure condensate system to run dry could cause a break in the condensate seal allowing the fan to draw water from the condensate line to spray moisture into the mechanical system. By maintaining a primed condensate trap, a seal will be created and will help prevent these complications.



Troubleshooting

⚠ WARNING

Hazardous Service Procedures!

The maintenance and trouble shooting procedures recommended in this section of the manual could result in exposure to electrical, mechanical or other potential safety hazards. Always refer to the safety warnings provided throughout this manual concerning these procedures. When possible, disconnect all electrical power including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. When necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been trained in handling live electrical components per these tasks. Failure to follow all of the recommended safety warnings provided, could result in death or serious injury.

Deluxe Controls

Troubleshooting units which contain the deluxe control option may be made easy by using the three LEDs (light emitting diodes). These LEDs are provided for indicating the operating mode of the controller. The LEDs are intended to aid in troubleshooting maintenance. The LEDs are labeled on the circuit board with numbers as referenced in [Table 58, p. 110](#).

Table 58. Diagnostic LEDs

Color: Green	Color: Red		Controller Mode
	LED1	LED2	
OFF	OFF	OFF	Control OFF
ON	OFF	OFF	Normal/Compressor OFF
ON	OFF	FLASH	Anti-short cycle
ON	OFF	ON	Normal/Compressor ON
FLASH	ON	OFF	Brownout Condition
ON	FLASH	ON	Soft Lockout (low pressure)
ON	FLASH	FLASH	Soft Lockout (high pressure)
ON	ON	ON	Manual Lockout (low pressure)
ON	ON	FLASH	Manual Lockout (high pressure)
ON	FLASH	OFF	Manual Lockout (condensate overflow)
ON	ON	OFF	Compressor Disable

Table 59. Troubleshooting table

Problem	Heating	Cooling	Cause	Correction
No response to any thermostat setting	X	X	Main power off	Check fuses
	X	X	Defective control transformer	Replace
	X	X	Broken or loose connection	Repair
	X	X	Defective thermostat	Replace
	X	X	Transformer	Reset Transformer
Unit short cycles	X	X	Thermostat or sensor improperly located	Relocate
Blower runs, but compressor does not	X	X	Defective compressor overload	Replace (if external)
	X	X	Defective compressor contactor	Replace
	X	X	Supply Voltage too low	Correct
	X	X	Defective compressor capacitor	Replace
	X	X	Defective windings	Replace
	X	X	Limit switches open	Check cause/Replace or repair
Insufficient capacity	X	X	Dirty filter	Replace/clean
	X	X	Blower RPM too low	Correct
	X	X	Loss of conditioned air due to leaks in ductwork	Repair leaks
		X	Introduction of excessively hot return-air	Correct
	X		Introduction of excessively cold return-air	Correct
	X	X	Low on refrigerant charge	Locate leak, repair and recharge by weight (not by superheat)
	X	X	Restricted thermal expansion valve	Replace
	X	X	Defective reversing valve	See WSHP-IOM-# for touch test chart
	X	X	Thermostat improperly located	Relocate
	X	X	Unit undersized	Recalculate heat gains/losses
	X	X	Inadequate water flow	Increase GPM
	X	X	Scaling in heat exchanger	Clean or replace
		X	Water too hot	Decrease temperature
	X		Water too cold	Increase temperature
	X	X	Filter drier blocked	Replace
High pressure switch open		X	Defective reversing valve	Check or replace
		X	Inadequate GPM	Increase water flow to unit
		X	Water too hot	Decrease temperature
	X		Inadequate air flow	Check, clean blower and coil
	X		Dirty filter	Clean/replace
	X	X	Overcharged with refrigerant	Decrease charge
High head pressure	X	X	Defective pressure switch	Check or replace
		X	Trash in heat exchanger	Backflush
		X	Low water flow	Increase GPM
	X	X	Overcharge of refrigerant	Decrease charge
	X	X	Non-condensable in system	Evacuate and recharge by weight
	X	X	Water too hot	Decrease temperature
	X		Dirty filter	Clean / replace
	X		Inadequate air flow	Check, clean blower and coil
Low suction pressure	X	X	Undercharged	Locate leak, repair and recharge
	X	X	Restricted thermal expansion valve	Repair / replace
		X	Inadequate air flow	Check, clean blower and coil
		X	Dirty filter	Clean/replace
Low pressure switch open	X		Inadequate GPM	Increase GPM
	X		Inadequate GPM	Increase GPM
	X		Water too cold	Increase temperature
		X	Inadequate air flow	Increase CFM
		X	Dirty filter	Clean/replace
	X	X	Undercharged with refrigerant	Increase charge
	X	X	Defective pressure switch	Replace
X	X	Heat transfer fluid too cold	Raise water temperature	



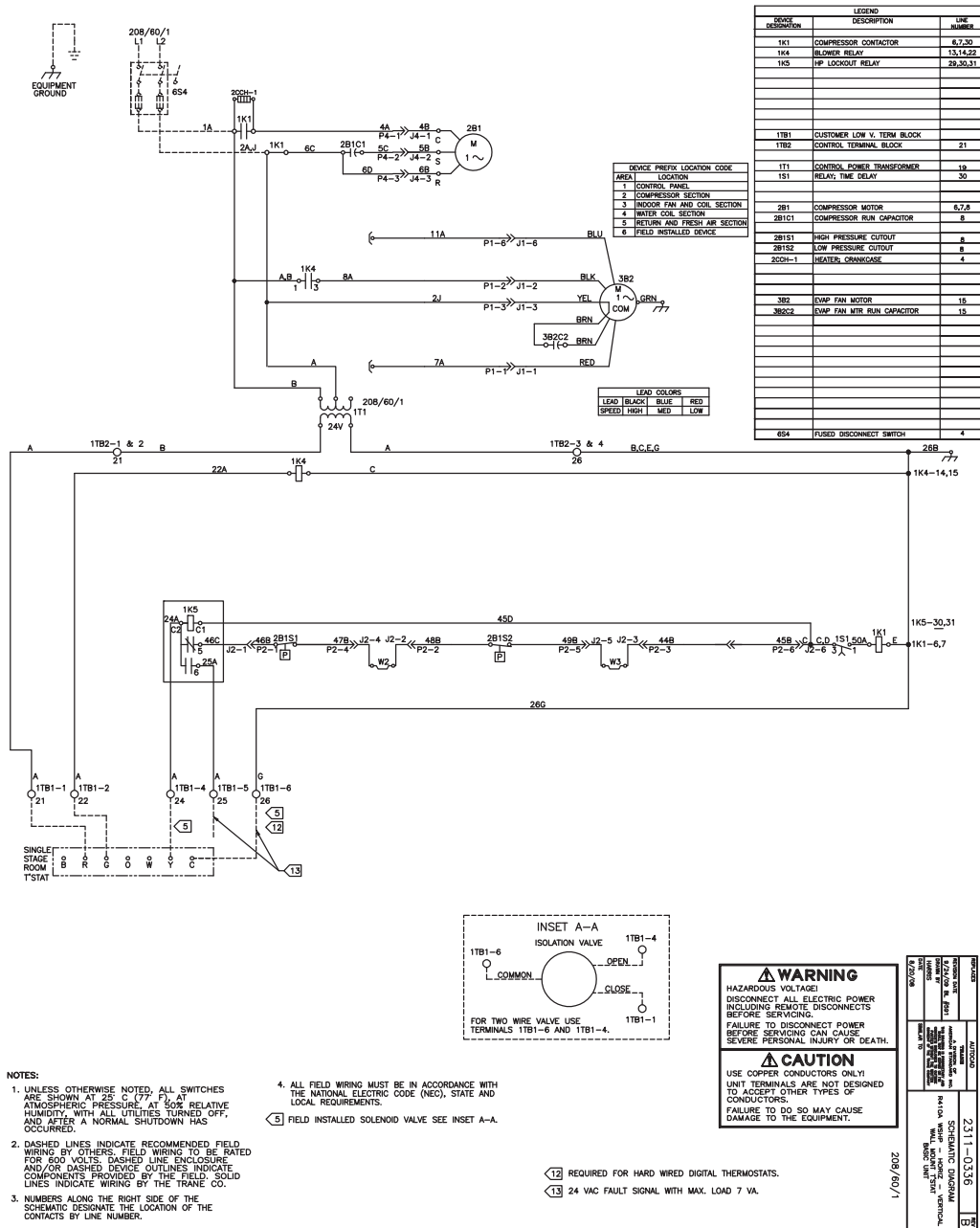
Wiring Diagrams

This section contains wiring diagrams (Figure 80, p. 112–Figure 91, p. 123) and isolation valve wiring connections (Table 60, p. 112).

Table 60. Isolation valve wiring

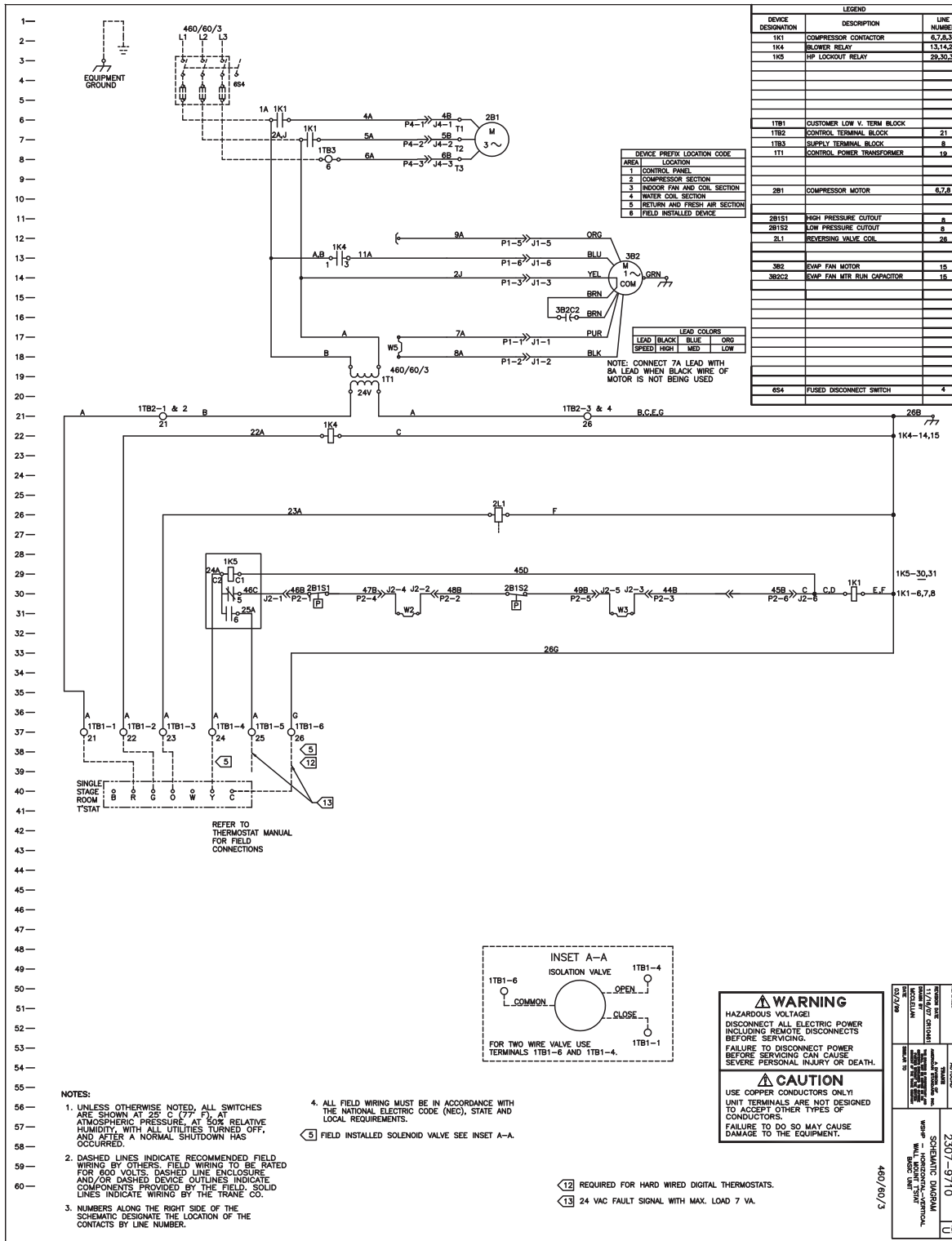
Control type	3-wire Honeywell isolation valve connections		
	Blue	Brown	Black
Basic 24V	1TB1-6	1TB1-1	1TB1-4
Deluxe 24V	1TB1-6	1TB1-1	1TB1-4
ZN510	1TB1-11	1TB2-3	1TB1-12
ZN524	1TB1-18	1TB2-3	1TB1-16

Figure 80. Basic-208V - 60 Hz - 1 ph(a)



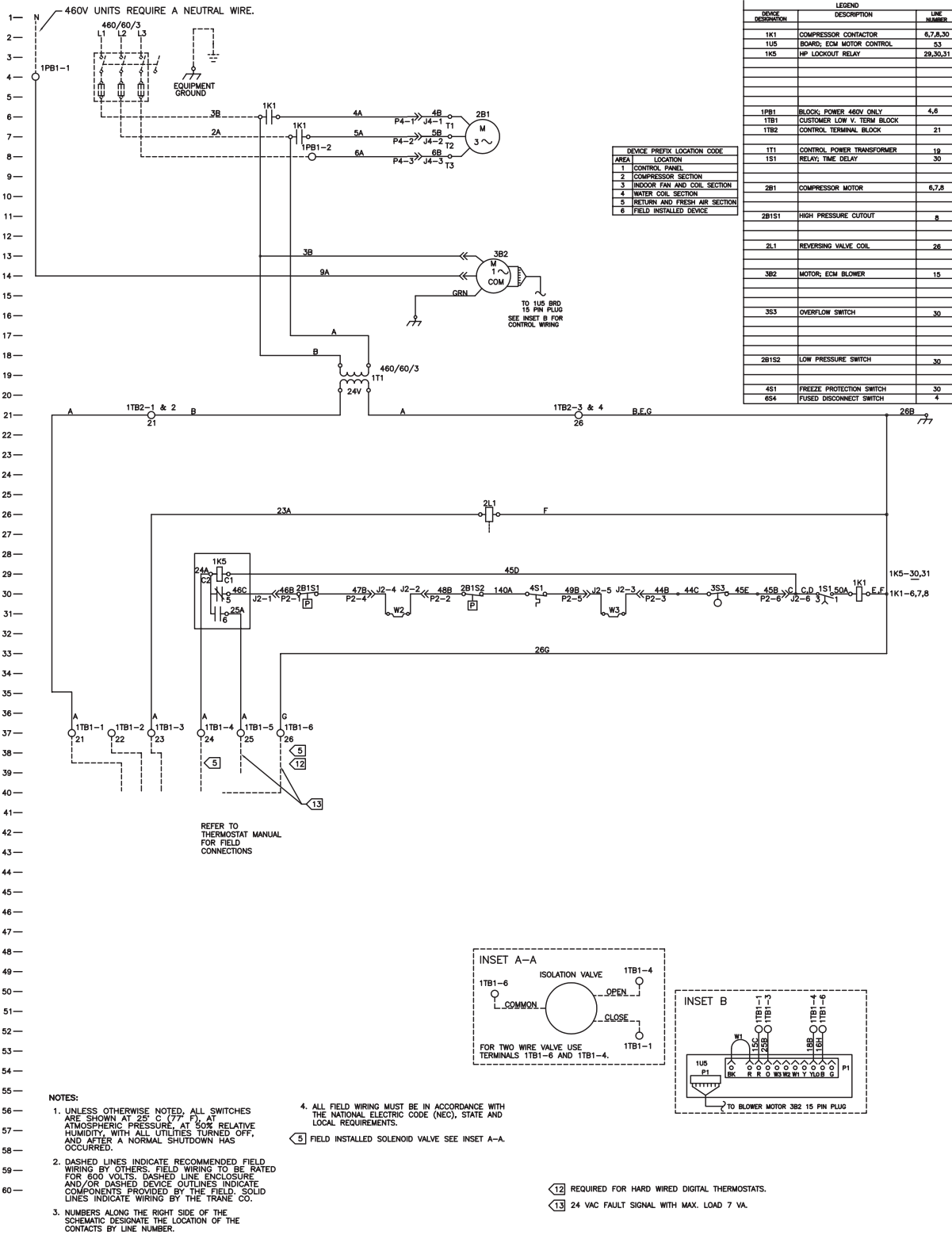
(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.

Figure 81. Basic 24V - 460V-60 Hz - 3 ph(a)



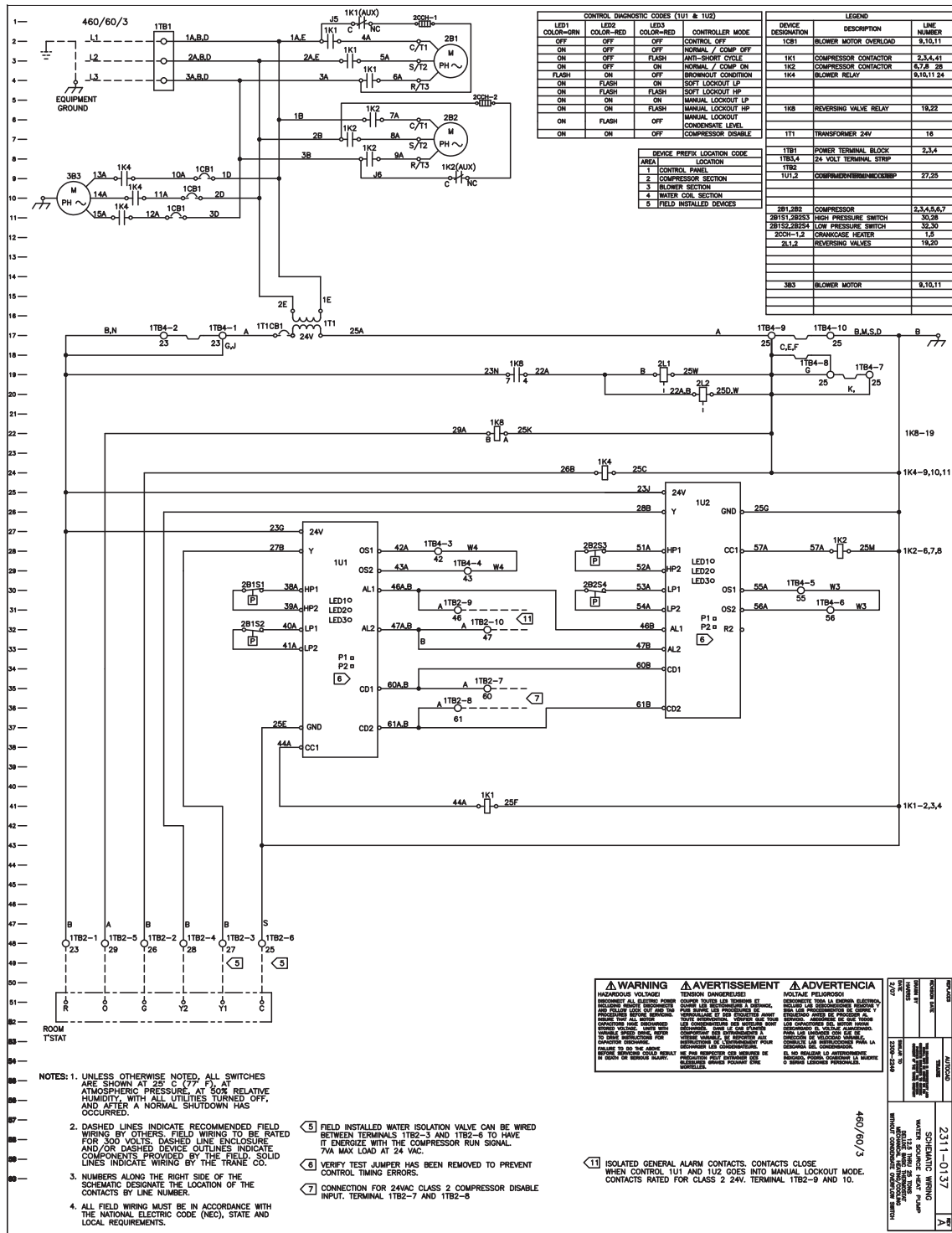
(a) Wiring diagrams provided in the catalog are generic. A unit specific As Built wiring diagram is located on the unit control panel.

Figure 82. Basic 24V - 460V-60 Hz - 3 ph^(a) - EXH/EXV - (ECM Motor Wiring Diagram)



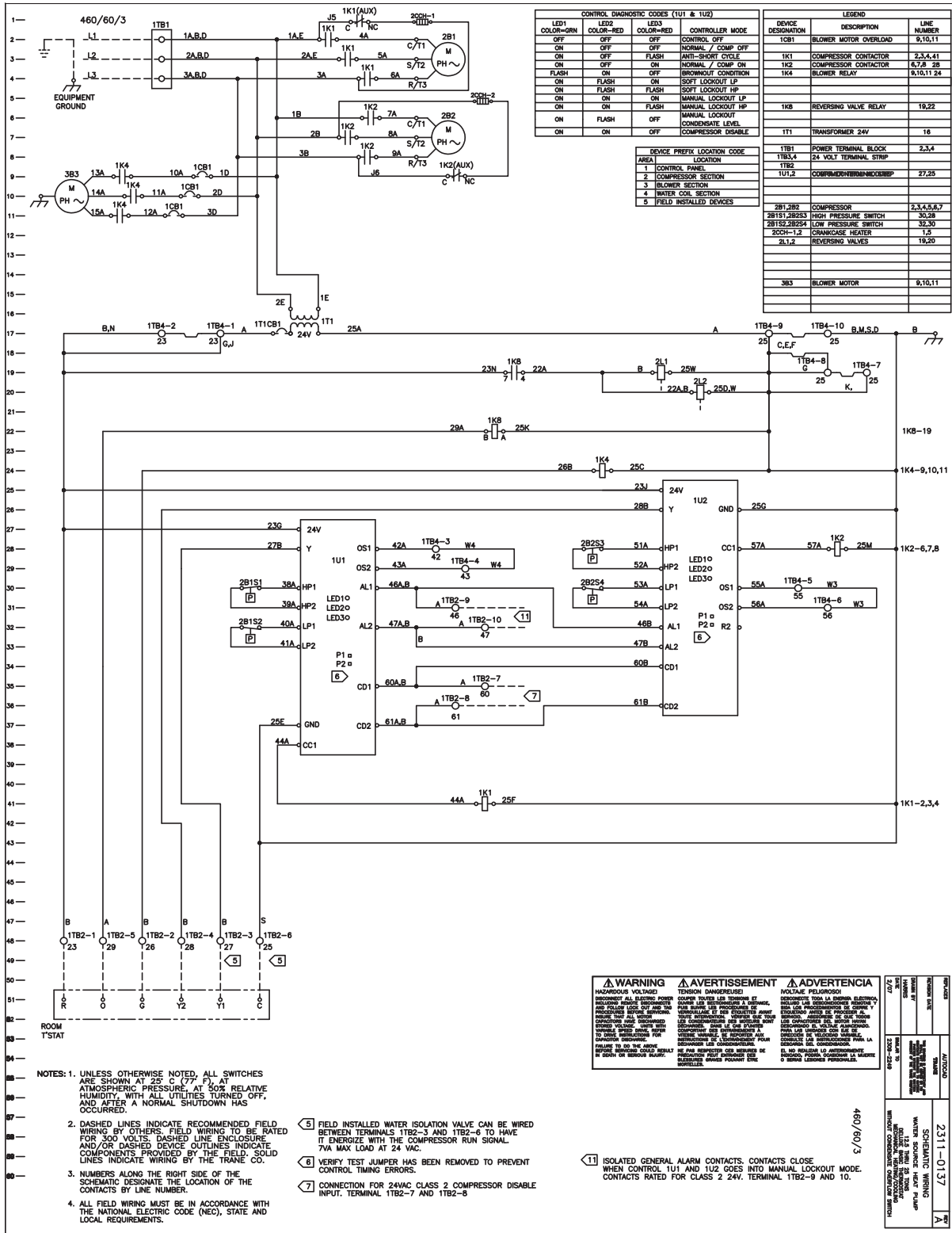
(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.

Figure 83. Deluxe-380-420V - 50 Hz - 3 ph(a)



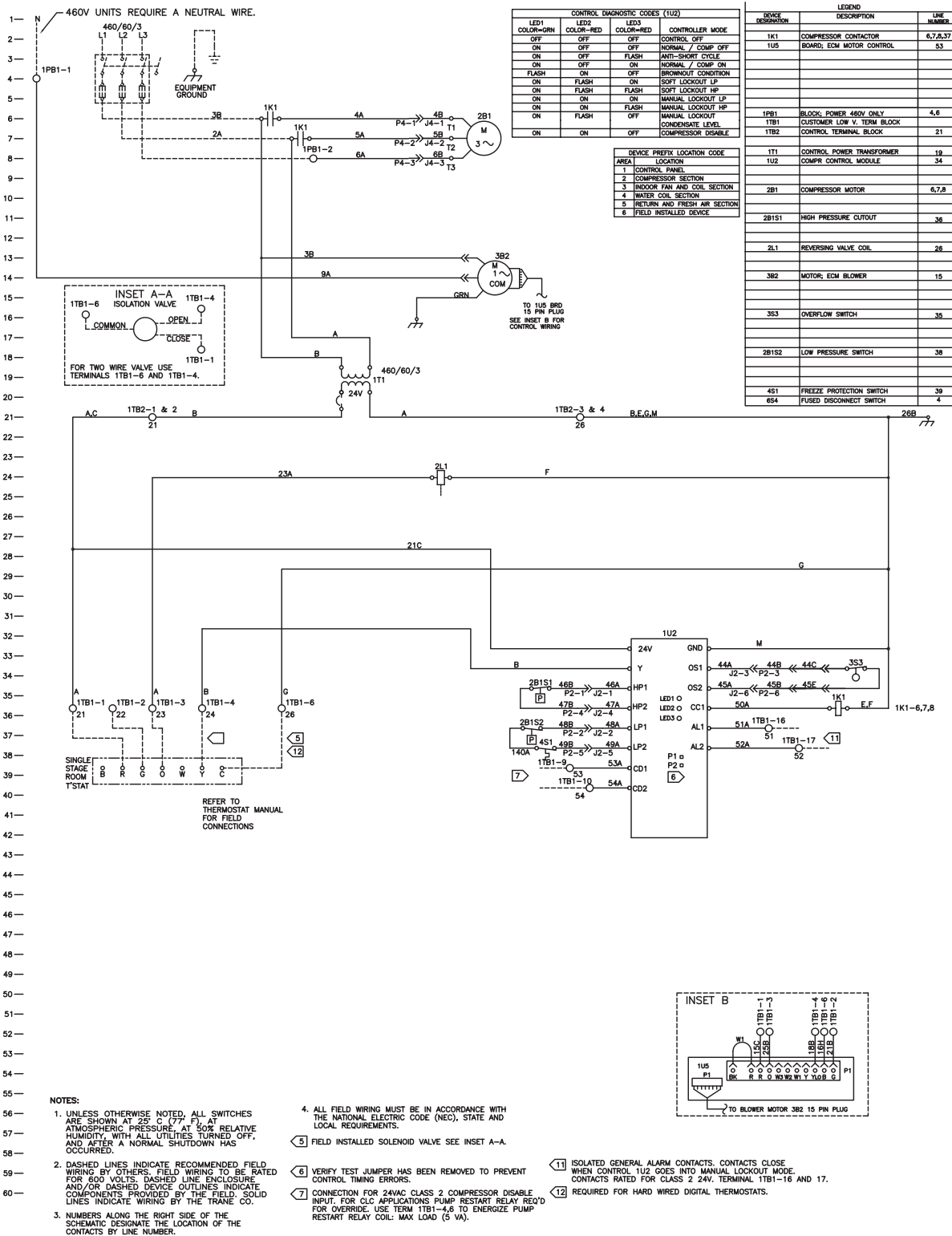
(a) Wiring diagrams provided in the catalog are generic. A unit specific As Built wiring diagram is located on the unit control panel.

Figure 84. Deluxe 24V - 460V-60 Hz - 3 ph(a)



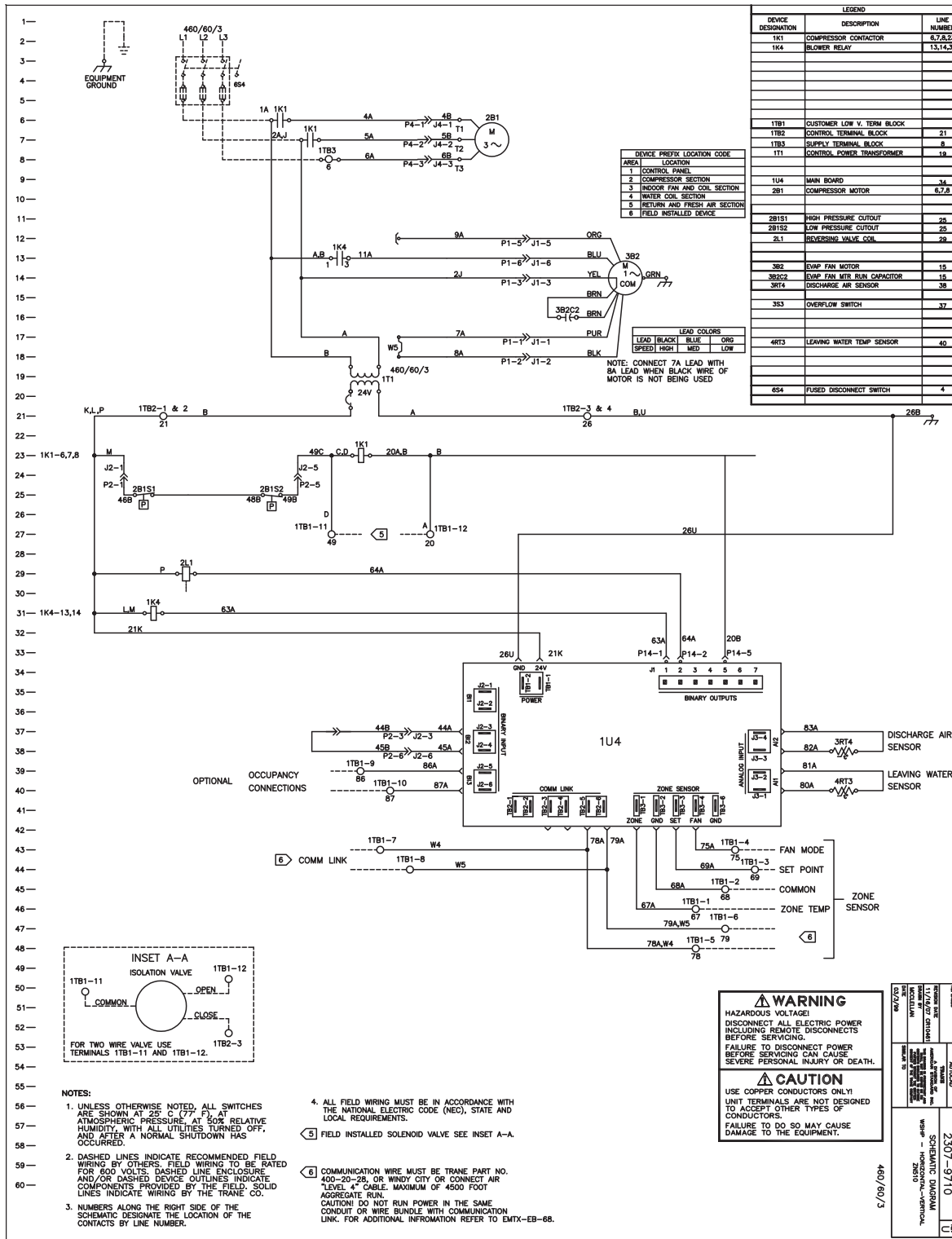
(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.

Figure 85. Deluxe 24V - 460V-60 Hz - 3 ph^(a) - EXH/EXV - (ECM Motor Wiring Diagram)



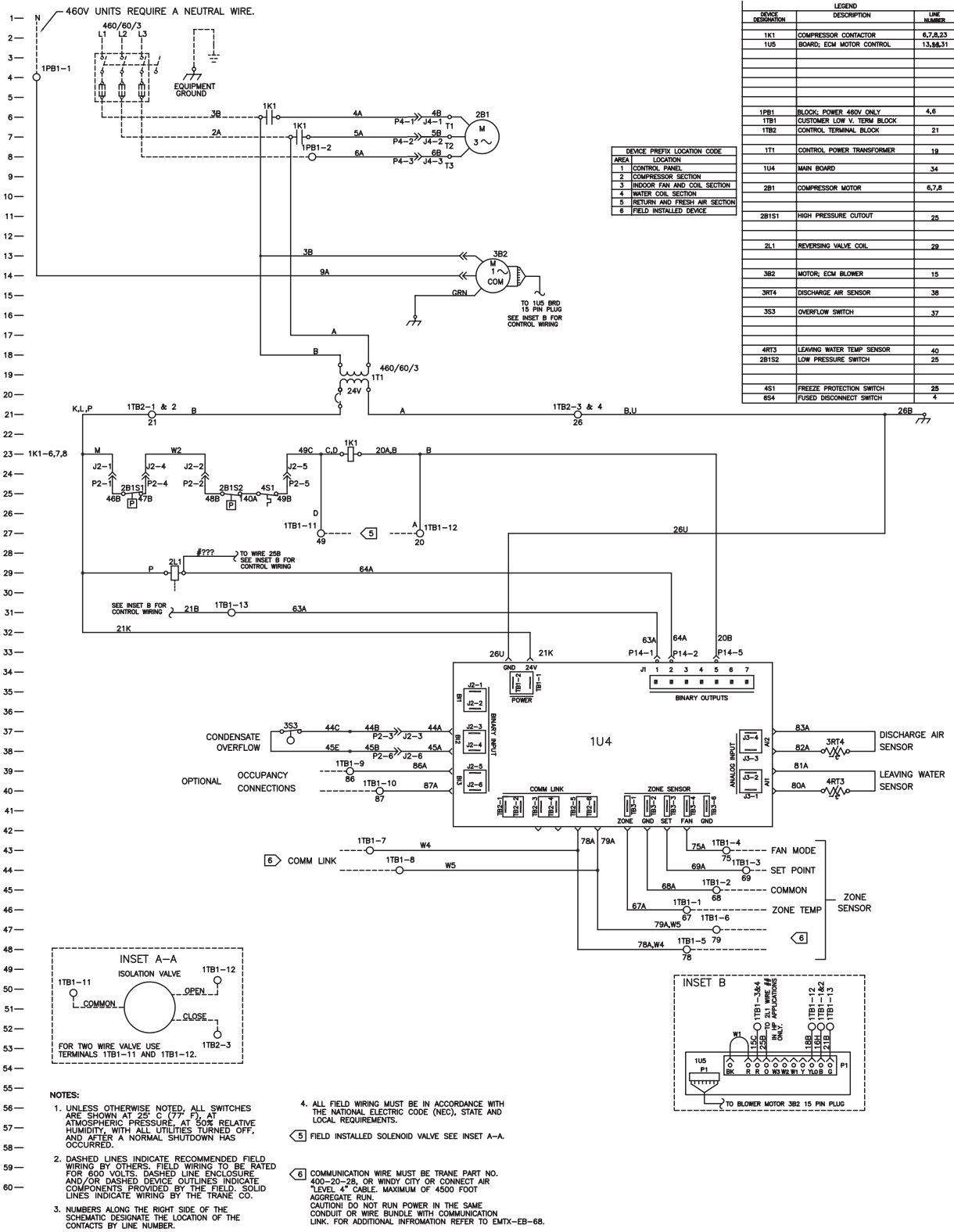
(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.

Figure 87. Tracer ZN510 460V-60 Hz - 3 ph(a)



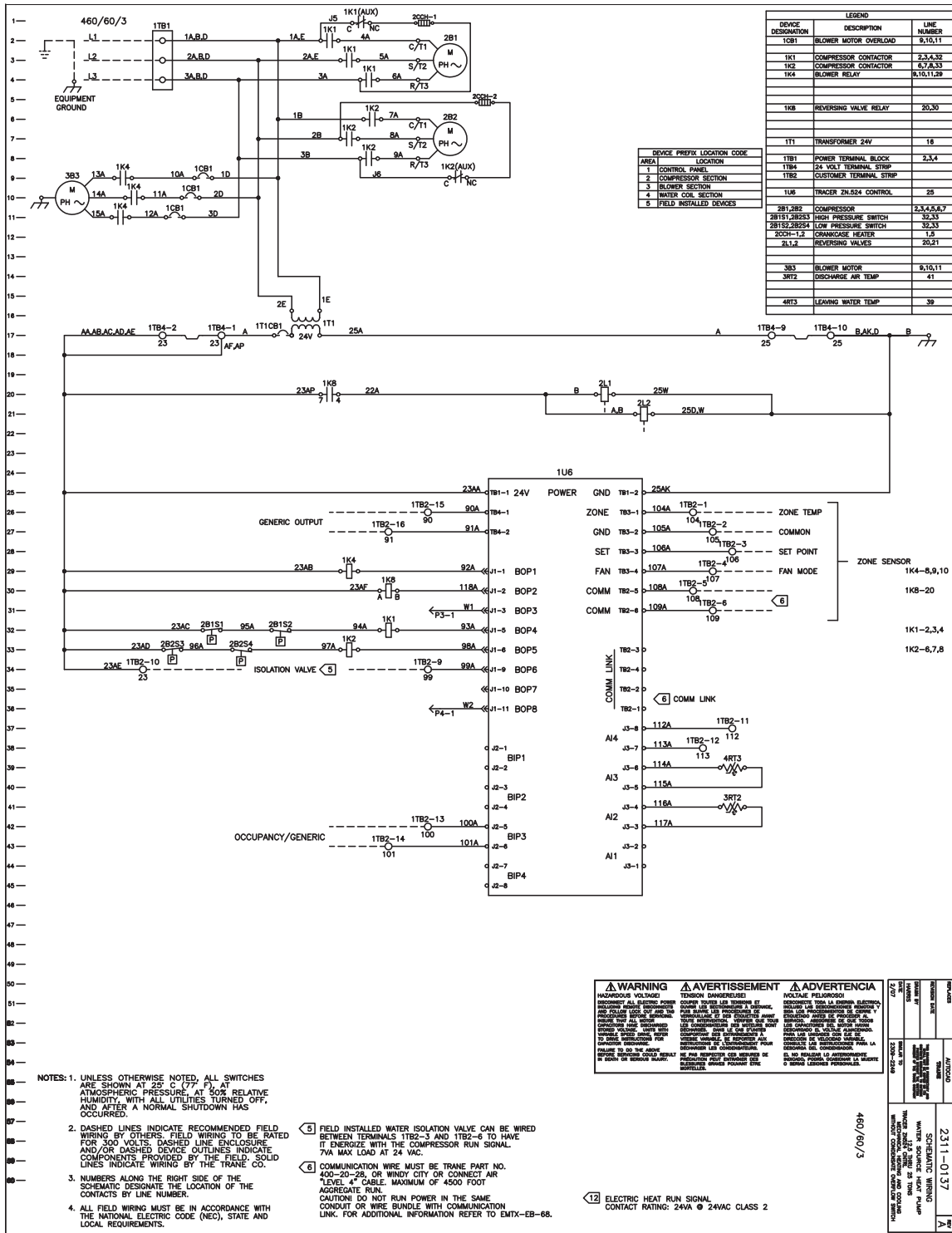
(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.

Figure 88. Tracer ZN510 460V-60 Hz - 3 ph(a) - (ECM Motor Wiring Diagram)



(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.

Figure 89. Tracer ZN524-460V - 60 Hz - 1 ph(a)

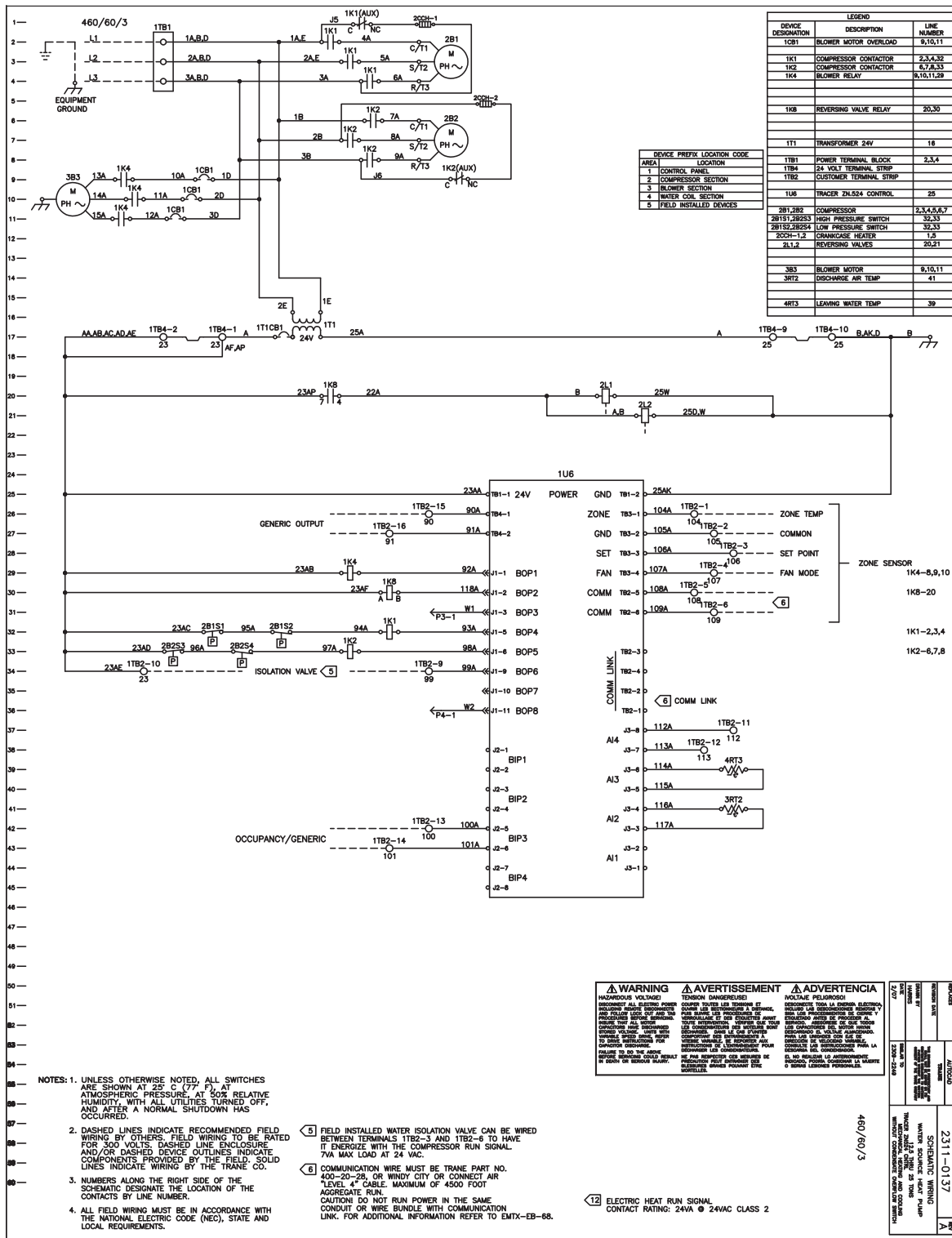


(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.



Wiring Diagrams

Figure 90. Tracer ZN524 460V-60 Hz - 3 ph(a)



NOTES: 1. UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25° C (77° F), AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY, WITH ALL UTILITIES TURNED OFF, AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.

2. DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. FIELD WIRING TO BE RATED FOR 500 VOLTS. DASHED LINE ENCLOSURE AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. SOLID LINES INDICATE WIRING BY THE TRANE CO.

3. NUMBERS ALONG THE RIGHT SIDE OF THE SCHEMATIC DESIGNATE THE LOCATION OF THE CONTACTS BY LINE NUMBER.

4. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL REQUIREMENTS.

5 FIELD INSTALLED WATER ISOLATION VALVE CAN BE WIRED BETWEEN TERMINALS 1TB2-3 AND 1TB2-6 TO HAVE IT ENERGIZE WITH THE COMPRESSOR RUN SIGNAL. 7VA MAX LOAD AT 24 VAC.

6 COMMUNICATION WIRE MUST BE TRANE PART NO. 400-20-28, OR WINDY CITY OR CONNECT AIR *LEVEL 41 CABLE MAXIMUM OF 4500 FOOT AGGREGATE RUN. CAUTION! DO NOT RUN POWER IN THE SAME CONDUIT OR WIRE BUNDLE WITH COMMUNICATION LINK. FOR ADDITIONAL INFORMATION REFER TO EMTX-EB-68.

WARNING HAZARDOUS VOLTAGE!
AVERTISSEMENT TENSION DANGEREUSE!
ADVERTENCIA ¡TENSIÓN PELIGROSA!

12 ELECTRIC HEAT RUN SIGNAL CONTACT RATING: 24VA @ 24VAC CLASS 2

460/60/3

2311-0137

SCHEMATIC WIRING

WARRANTY SOURCE: HEAT PUMP

TRACER ZN524 25 TONS

REVISIONS

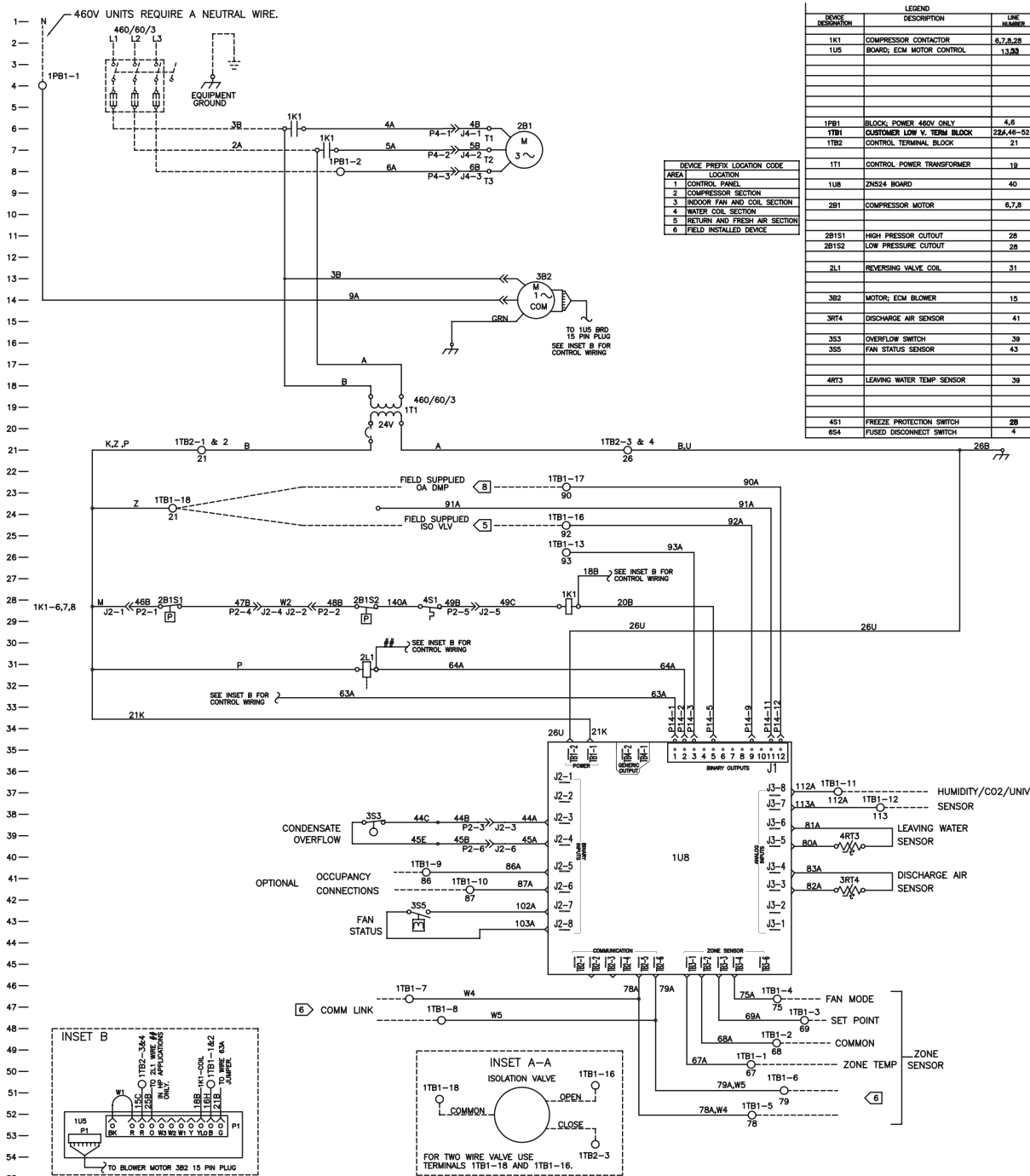
DATE

BY

DESCRIPTION

(a) Wiring diagrams provided in the catalog are generic. A unit specific As Built wiring diagram is located on the unit control panel.

Figure 91. Tracer ZN524 460V-60 Hz - 3 ph^(a) - (ECM Motor Wiring Diagram)



DEVICE DESCRIPTION	LEGEND	LINE NUMBER
1K1 COMPRESSOR CONTACTOR		6,7,8,28
1U8 BOARD; ECM MOTOR CONTROL		13,32
1T1 CONTROL POWER TRANSFORMER		19
2B1 COMPRESSOR MOTOR		6,7,8
3B2 MOTOR; ECM BLOWER		15
3S3 OVERFLOW SWITCH		39
3S5 FAN STATUS SENSOR		43
4RT3 LEAVING WATER TEMP SENSOR		39
451 FREEZE PROTECTION SWITCH		28
654 FUSED DISCONNECT SWITCH		4

DEVICE PREFIX	LOCATION	CODE
1	CONTROL PANEL	
2	COMPRESSOR SECTION	
3	INDOOR FAN AND COIL SECTION	
4	WATER COIL SECTION	
5	RETURN AND FRESH AIR SECTION	
6	FIELD INSTALLED DEVICE	

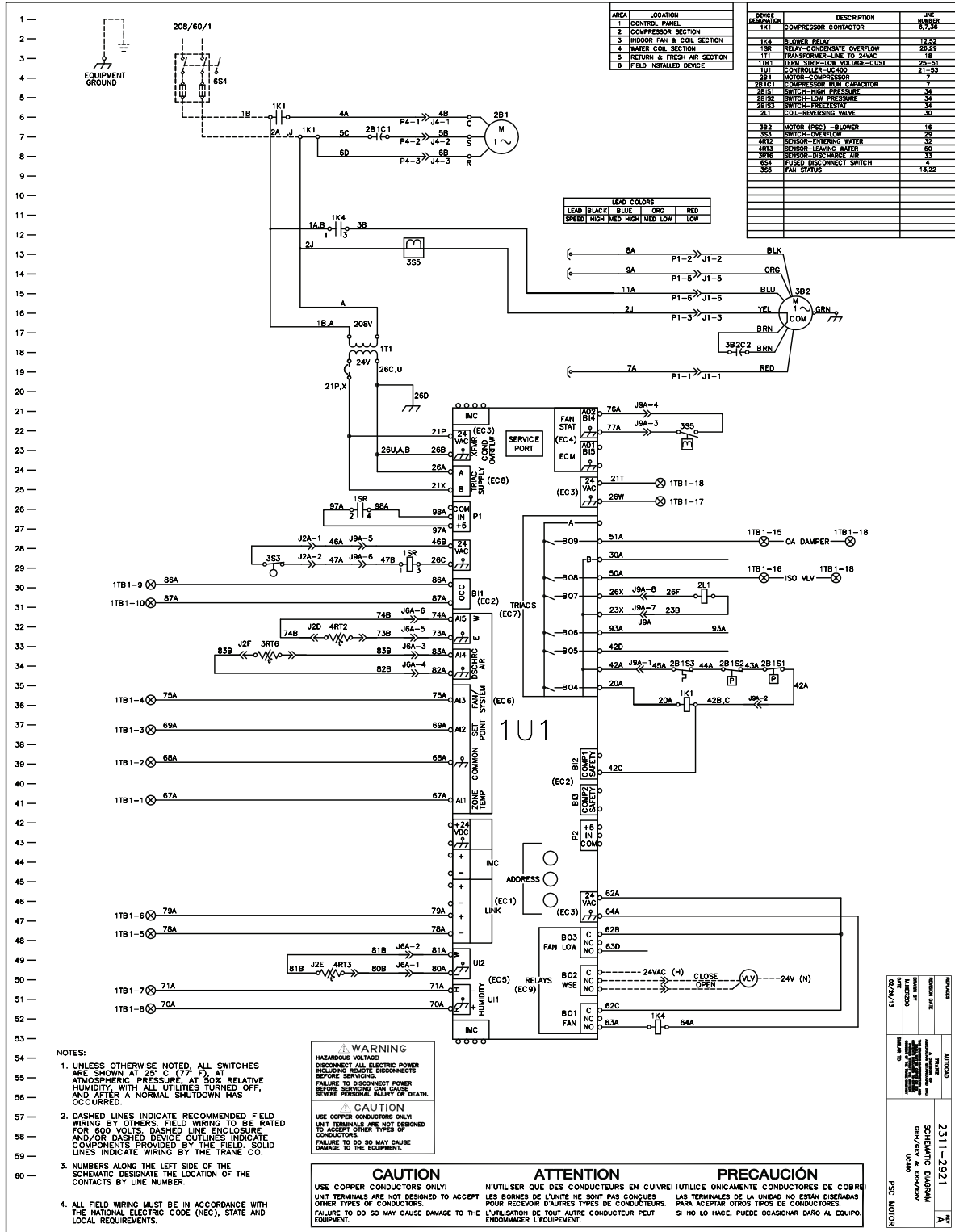
- NOTES:**
- UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25° C (77° F), AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY, WITH ALL UTILITIES TURNED OFF, AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.
 - DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. FIELD WIRING TO BE RATED FOR 600 VOLTS; DASHED LINE ENCLOSURE AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. SOLID LINES INDICATE WIRING BY THE TRANE CO.
 - NUMBERS ALONG THE RIGHT SIDE OF THE SCHEMATIC DESIGNATE THE LOCATION OF THE CONTACTS BY LINE NUMBER.
 - ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL REQUIREMENTS.
 - FIELD INSTALLED SOLENOID VALVE SEE INSET A-A.
 - COMMUNICATION WIRE MUST BE TRANE PART NO. 403-20-28, OR WINDY CITY OR CONNECT AIR "LEVEL 4" CABLE. MAXIMUM OF 4500 FOOT AGGREGATE RUN. CAUTION! DO NOT RUN POWER IN THE SAME CONDUIT OR WIRE BUNDLE WITH COMMUNICATION LINK. FOR ADDITIONAL INFORMATION REFER TO EMTX-EB-68.
 - FIELD INSTALLED 2 POSITION ACTUATOR CAN BE WIRED BETWEEN TERMINALS 1T1-17 AND 1T1-18.

(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.



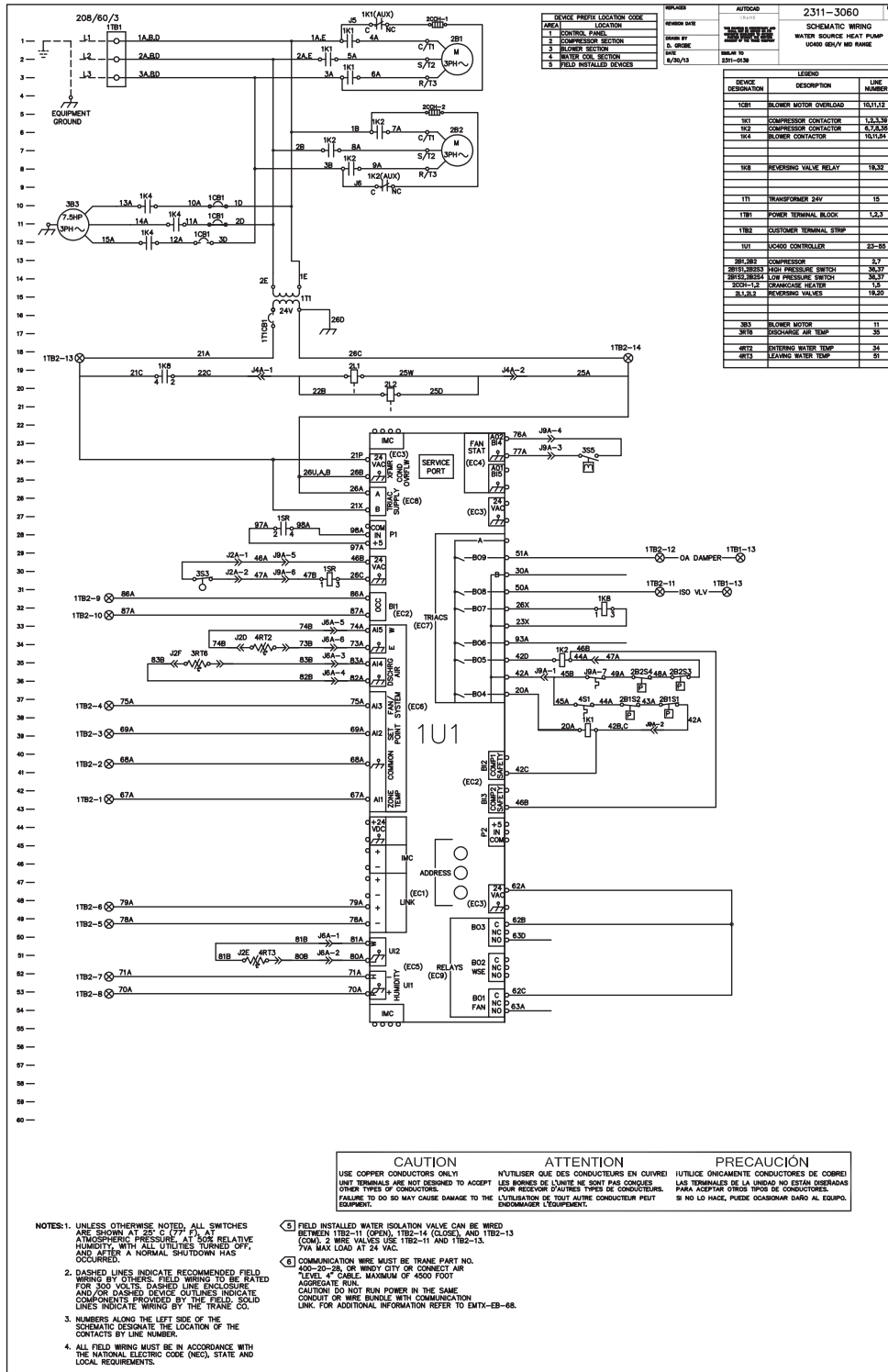
Wiring Diagrams

Figure 92. GEH_V (1/2-6) ton, EXH_V - UC400(a)



(a) Wiring diagrams provided in the catalog are generic. A unit specific As Built wiring diagram is located on the unit control panel.

Figure 93. GEH_V (6-25 tons) - UC400(a)



(a) Wiring diagrams provided in the catalog are generic. A unit specific *As Built* wiring diagram is located on the unit control panel.

Warranty Information

Standard Warranty

The standard water-source heat pump warranty is Trane's parts-only warranty, running 12 months from startup, not to exceed 18-months from shipment.

Extended Warranty

The optional extended warranty is a second through fifth year warranty. The time starts at the end of the standard 1 year coverage through the fifth year.

These extended warranties apply only to new equipment installed in domestic Trane Commercial Systems Group sales territories and must be ordered prior to start-up.



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Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.