



Product Catalog

Water Source Heat Pump
Axiom™ Horizontal/Vertical – GEH/GEV
6–25 Tons – 60 Hz





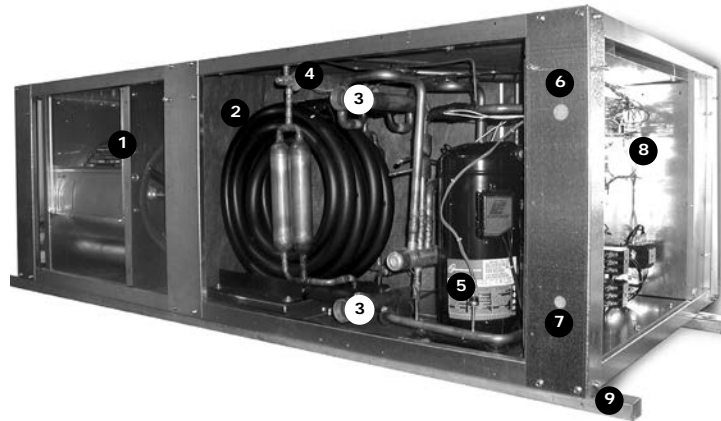
Introduction

The 6 through 25 ton horizontal and vertical water-source heat pump is used in a broad range of applications. Schools, office buildings, health care/rehabilitation facilities, condominiums and retirement facilities are just a few of the types of buildings utilizing the energy conscious water-source design.

Model GEH (pictured below) is a ceiling hung product that provides a serviceability to maintenance components; indoor air quality standards; sound attenuation; and best of all, higher efficiencies rated in accordance to ARI-ISO 13256-1 performance and ASHRAE 90.1 standards.

Trane's design incorporates system advantages such as

- Superior maintenance accessibility
- Dual-sloped, plastic drain pan
- Maximum return-air and supply-air flexibility
- Multiple fan speed motor packages
- Quiet unit design
- Integrated controls
- Dual circuit design
- High and low pressure safeties as standard
- Dehumidification option
- Waterside economizing option
- Supplemental electric heat option



1. Fan Blower Section
2. Co-axial Heat Exchanger
3. Water Connections
4. Thermal Expansion Valve
5. Dual Compressor
6. Low Voltage
7. High Voltage
8. Integrated Controls
9. Hanging Rails

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Revision Summary

WSHP-PRC016D-EN (16 November 2013)

- Added BACnet™

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Features and Benefits

Cabinet Description

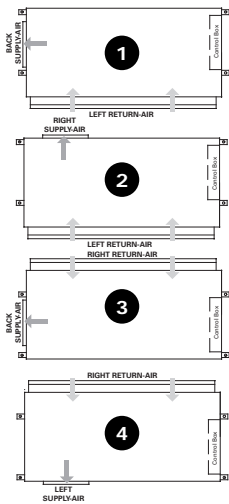
The cabinet design incorporates sturdy (non-painted) galvanized metal for maximum durability and corrosive resistive exterior. The equipment offers superior installation flexibility with service accessibility.

The cabinet front allows service access for the controls. The horizontal and vertical design offers four product variations of return-air and supply-air combinations. All combinations are order specific and may not be modified at the job site. See [Figure 1, p. 4](#) for airside combinations.

Hanging the horizontal configuration is accomplished through the robust metal stiffeners located beneath the unit. Optional vibration isolators are available to help decrease sound vibration during equipment operation.

Airflow Combinations

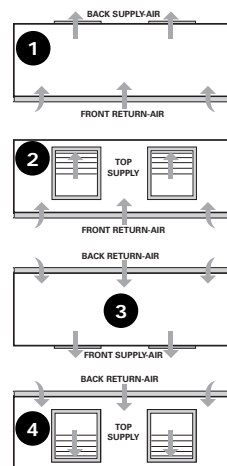
Figure 1. GEH airflow options (left), GEV airflow options (right)



The 6–15 ton horizontal cabinet airflow flexibility includes the following combinations to aid in applications where the equipment is required to hug a corridor or wall.

The four configurations are:

1. Left return-air with back supply-air combination
2. Left return-air with right supply-air combination
3. Right return-air with back supply-air combination
4. Right return-air with left supply-air combination



The sleek, narrow cabinet of the 6–25 ton vertical cabinet is designed to fit through a standard 36 in. doorway for installation during new or retrofit construction. The equipment is available in four supply-air/return-air combinations. These combinations are order specific via the unit model number.

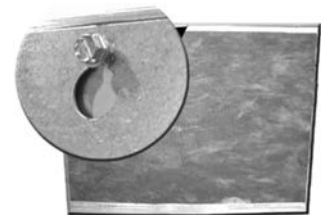
The four configurations are:

1. Front return-air with back supply-air combination
2. Front return-air with top supply-air combination
3. Back return-air with front supply-air combination

Back return-air with top supply-air combination

Access Panels

The upper panels of the 12½–25 ton verticals feature a key hole hanging design for ease of maintenance of the unit, allowing the panel to be hooked into place when attaching the panel to the unit. The panels are also sealed with a rubber gasket at all four edges to help eliminate air from escaping around the panel edge.



Air-side filter

The air-side filter incorporates a 1-inch thick (nominal) or 2-inch thick (nominal), MERV 8 or MERV 13 disposable fiberglass option. These filters include an average synthetic dust weight arrestance of approximately 75%. This dust holding capability includes a colorless, odorless adhesive to retain dirt particles within the filter media after fiber contact.

Blower housing

The blower housing is constructed of non-corrosive galvanized steel. It is a double wide/double inlet, forward curved wheel moved by an integral horsepower motor with sealed bearings.

Cabinet insulation

The cabinet insulation design meets UL 181 requirements. The air-stream surface of the insulation is fabricated of a non-biodegradable source.

Compressor

Dual circuit designs of the GEH and GEV models feature scroll compressors. The compressors are highly efficient and incorporate external vibration isolators and thermal overload protection.

Co-axial Water-to-Refrigerant Coil

The unit's internal heat exchanging water coil is engineered for maximum heat transfer.

The copper or cupro-nickel seamless tubing is a tube within a tube design. The inner-water tube contains a deep fluted curve to enhance heat transfer and minimize fouling and scaling. It is available in either copper or cupro-nickel (selectable option) coil. The outer refrigerant gas tube is made from steel material.

The coil is leak tested to assure there is no cross leakage between the water tube and the refrigerant gas (steel tube) coil. Co-axial heat exchangers are more tolerant to freeze rupture.



Drain pan

The unit drain pan is composed of plastic, corrosive resistive material. The pan is positively sloped to comply with ASHRAE 62 for indoor air quality (IAQ) conformity.

Access to the drain pan is provided through two access panels for cleaning purposes for all models.

Expansion Valve

The refrigerant flow metering is made through the thermal expansion valve (TXV). It allows the unit to operate with an entering fluid temperature from 25°F to 120°F and entering air temperatures from 55°F to 85°F. The valve is designed to meter refrigerant flow through the circuitry to achieve desired heating or cooling.

Unlike cap-tube assemblies, the expansion valve device allows the exact amount of refrigerant required to meet the coil load demands. This precise metering by the TXV increases the efficiency of the unit.



Hanging device

The hanging channel for the horizontal unit runs the length of the equipment. The structural integrity of the design helps ensure that bracket deflection or unit bowing does not occur as a result of the weight of the unit.

Features and Benefits

Isolation for the hanging bracket is provided with a rubber grommet design as an accessory. This isolation device helps prevent sound vibration from reaching the structural support members of the building during compressor start and stop.

Refrigeration piping

Unit copper tubing is created from a 99% pure copper formation that conforms to the American Society of Testing Materials (ASTM) B743 for seamless, light-annealed processing.

The unit's copper refrigeration system is designed to be free from contaminants and conditions such as drilling fragments, dirt, or oil. This excludes the possibility of these contaminants from damaging the compressor motor.

Reversing valve

A system reversing valve (4-way valve) is included with all heating/cooling units. This valve is piped to be energized in the cooling mode to allow the system to provide heat if valve failure were to occur.

Once the valve is energized for cooling, it will remain energized until the control system is turned to the OFF position, or a heating cycle is initiated.

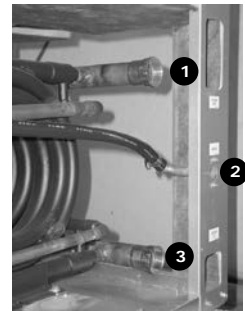


Water Connections

Water hookups for the 6–25 ton units are located internal to the equipment to help alleviate damage to the water copper during shipment or job storage of units prior to installation. Each unit (although dual circuit) contains a single supply and return water connection. The following figure provides large tonnage water hook-up information for model GEV.

1. Water-out
2. Drain
3. Water-in

Fittings for the supply and return are internally threaded.



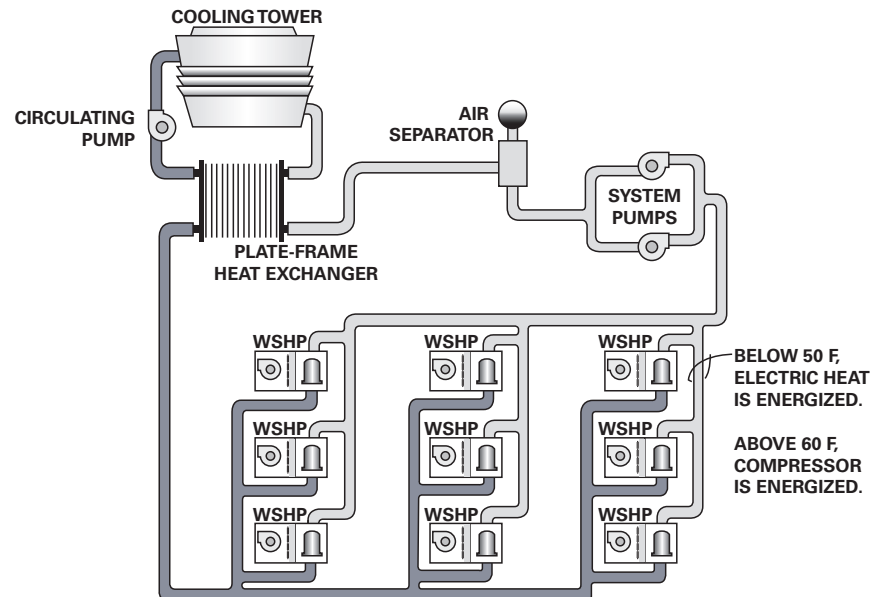
Boilerless control/Electric heat (option)

In cooling dominant regions where heat may be used 15 to 30 days out of the winter season, eliminating the boiler may be an economical advantage to the building owner. Eliminating a boiler from the system reduces costs associated with the mechanical system installation, as well as the maintenance and service of the boiler.

How can heat be provided for the few days of the year when heat is necessary? Through the water-source heat pump of course. The advantage of the water-source heat pump is its ability to provide heat recovery within the closed water-loop. While some WSHPs may be extracting heat from the closed water loop, other WSHPs may be adding heat to the closed water loop. This creates a perfect system balance for heat sharing or movement from one space to another.

But when water temperatures fall in a boilerless system, and no further heat recovery may be made using the closed loop, heat may be added to the space through a boilerless control electric heat option.

Electric heat system



With the boilerless electric heat option, the 6–25 ton models will contain boilerless controls ONLY to interface for a field provided supplemental electric heat selection. The heater for this model shall be placed 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.

How it Works

In heating mode, when the water temperature falls below 55°F (factory setting), the electric heater is energized, locking out the compressor. The systems electric heat source will continue to be utilized for primary heating until the loop temperature rises above 60°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. This maximizes efficiency from the unit during the few days requiring heat from the mechanical system.

For geothermal applications, the boilerless controller has an adjustable setting of 25, 35, 45, 55 and 60°F.

What is NOT available with the boilerless electric heat option?

- Hot gas reheat
- 575 V ratings
- Supplemental or emergency heat applications
- A factory-installed heater

Waterside economizer (option)

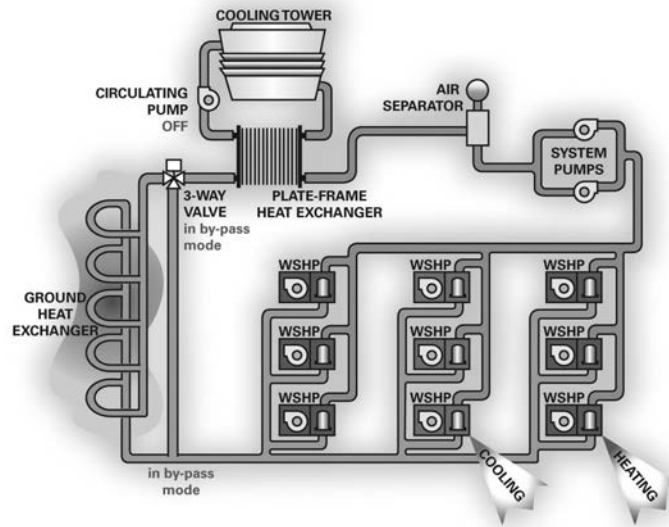
The beauty of the waterside economizer is its ability to take advantage of any loop condition that results in cool water temperatures. A prime example would be during fall, winter, and spring when cooling towers have more capacity than required and could be controlled to lower temperatures for economizer support.

Another more common inexpensive means of free comfort cooling includes buildings systems where perimeter heating and core cooling are needed. In this system, the perimeter units extract heat from the building loop while in the heating mode, forcing the building loop temperature to

Features and Benefits

drop. Where as, the core are of a building may require cooling in summer or in winter based upon lighting, people, and equipment.

Waterside economizer system



If the water-source system design contained an economizing coil option, the moderate temperature loop water circulated through a core water-source system can provide an inexpensive means to satisfy room comfort without operating the water-source heat pump's compressor.

During economizer mode, fluid enters the unit, and passes by a water temperature sensing bulb. This temperature sensing bulb determines whether the two position, three-way valve will direct the water through the waterside economizing coil, and to the heat pump condenser, or through the condenser only. If the water temperature is 55°F or less, fluid will flow into the economizing coil, while simultaneously halting mechanical operation of the compressor. Mechanical cooling will continue on a call for second stage from the thermostat.

The factory built waterside economizer is available on all 6–15 ton GEH models and 6–25 GEV models.

Note: Condensate overflow protection for the waterside economizer coil is field provided.

Hot gas reheat (option)

For space conditioning and climate control, Trane provides an accurate and cost effective dehumidification control through a hot gas reheat option.

With this 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. The moisture removal capability of a specific heat pump is determined by the units latent capacity rating.

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 through the reheat coil for dehumidification.

Trane places an air separation space between the air-to-refrigerant coil, and the reheat coil to allow for maximum moisture removal.

Common reheat applications

The hot gas reheat option is designed to support building applications requiring fresh-air ventilation units delivering unconditioned-air directly to the space. It also provides dehumidification to large latent load spaces such as auditoriums, theaters and classrooms, or anywhere humidity control is a problem.

Dos and Don'ts in Design

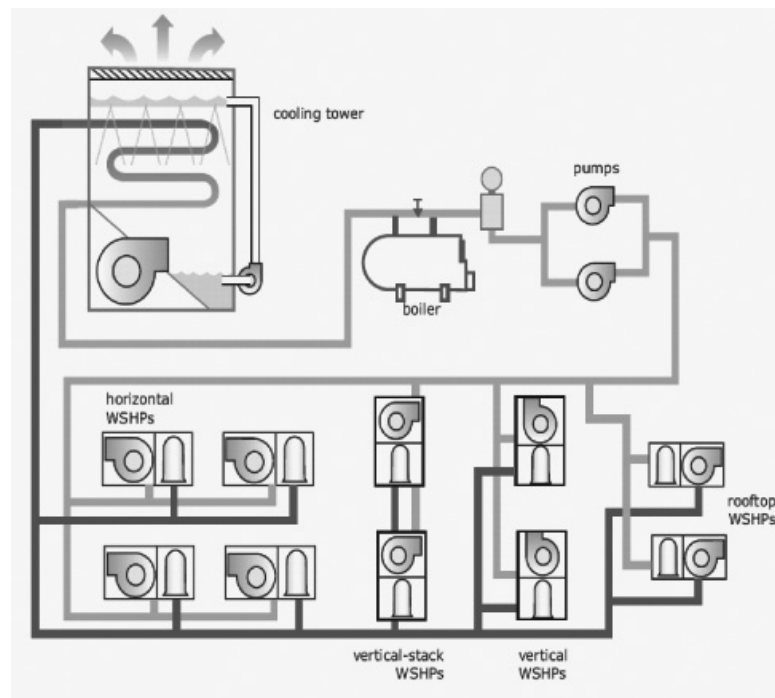
The factory installed hot gas reheat option is available with Deluxe or ZN524 controls packages. Water-source heat pumps with hot gas reheat should not be used as a make-up air unit.

Application Considerations

Water-source heat pump systems are used to provide comfort in a wide range of building types and climates. The system utilizes energy-conserving, heat-recovery capabilities to transfer heat from one area to another to meet individual zone requirements. When used with system design and control strategies, these high-performance systems reduce operating costs for the building owner and improving occupant comfort.

Heat pump units are available in many different configurations and the design simplicity can be adapted to suit almost any building plan. The vertical and horizontal water-source heat pump system is versatile for installation in a boiler/cooling tower applications, as well as ground source (geothermal) applications.

Conventional water-source heat pump system



Boiler/cooling tower

In this type of system, units are distributed throughout the building to provide cooling and heating to the space. Units are connected to a water distribution loop which circulated water throughout the building to transfer heat from one area to another. This common water loop yields what is essentially a heat-recovery system. Units providing heating extract heat from loop water while units providing cooling reject heat to the loop. In effect the system recovers and redistributes heat where needed.

Also connected to this water loop are a “heat rejecter” such as a cooling tower, a “heat adder” such as a boiler, circulation pumps, and related accessories. Typically, outdoor air is conditioned and delivered by a separate, dedicated ventilation system.

During warm weather when all or most of the units are cooling, the cooling tower is used to dissipate heat from the condensing process. The condensing water is cooled for recirculation back to the water-to-refrigerant heat exchanger by using a combination of heat and mass transfer by evaporation.

A boiler is also used to add heat to the water loop during winter months when most units are heating. The boiler is typically enabled when the water loop temperature falls to a minimum value.

During moderate weather, such as spring or fall, the heat pumps serving the sunny side and interior of the building often operate in cooling mode and reject heat into the water loop. The heat pumps serving the shady side of the building often operate in heating mode and absorb heat from the water loop.

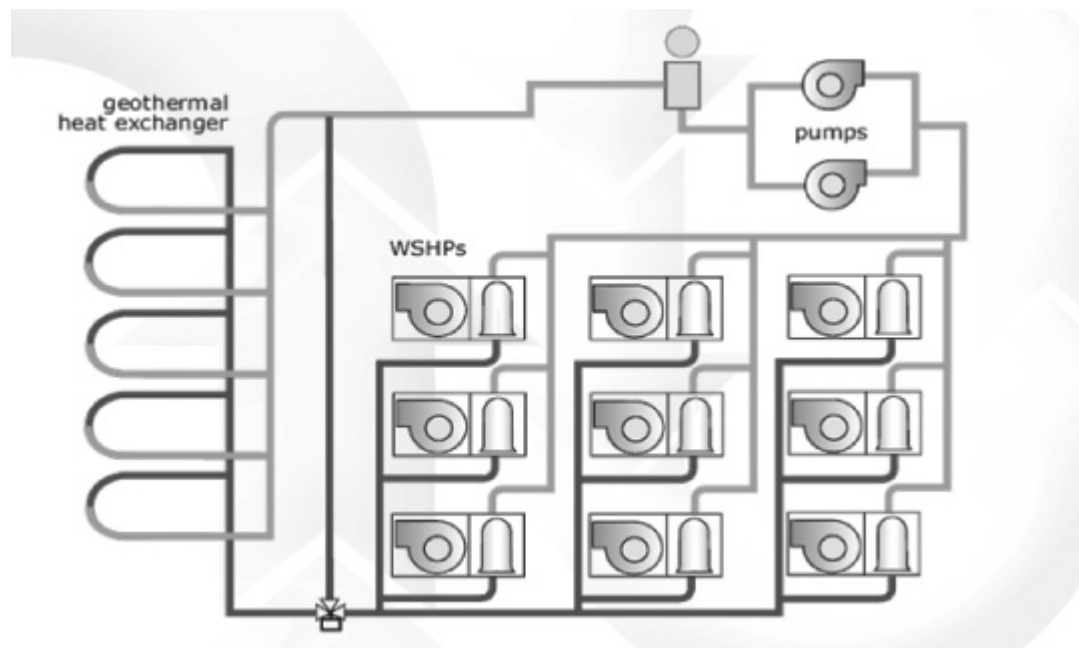
Heat rejected by the units operating in cooling mode is used to offset the heat absorbed by the units in heating mode. In this manner, a WSHP system provides a form of heat recovery and an opportunity to save energy by reducing the need to operate the boiler or cooling tower. For example, if the water temperature stays in the desired range-between 60°F (16°C) and 90°F (32°C)-neither the boiler nor the cooling tower need to operate.

In applications such as office buildings, heat generated by lights, people, and office equipment often results in the need to provide year-round cooling in the interior zones of the building. In these applications, the benefit of this heat recovery further reduces boiler energy use during the winter months.

Ground Source

The advantages of a geothermal heat pump system can literally cut business heating and cooling cost by 30 to 40 percent. In this application the cooling tower and boiler are replaced with a ground heat exchanger. The ground heat exchanger is a series of pipes buried in the earth. The earth is used as an energy storage tank. Ground-source heat pump systems offer the potential for saving energy because they can reduce (or eliminate) the energy needed to operate a cooling tower and/or boiler. Eliminating the cooling tower has architectural and maintenance advantages, and eliminating the boiler frees up floor space in the building.

Ground source heat pump system



Hybrid Systems

Hybrid systems involve adding a small cooling tower or dry cooler to a ground source system that is installed in a cooling-dominated climate or adding a small boiler to a system in a heating-dominated climate. In either case, the geothermal heat exchanger is sized based on the smaller of the two loads: for the total heat absorbed in a cooling-dominated climate or the total heat rejected in a heating-dominated climate. Then, a small cooling tower (or boiler) is added to reject (or add) the remaining heat.

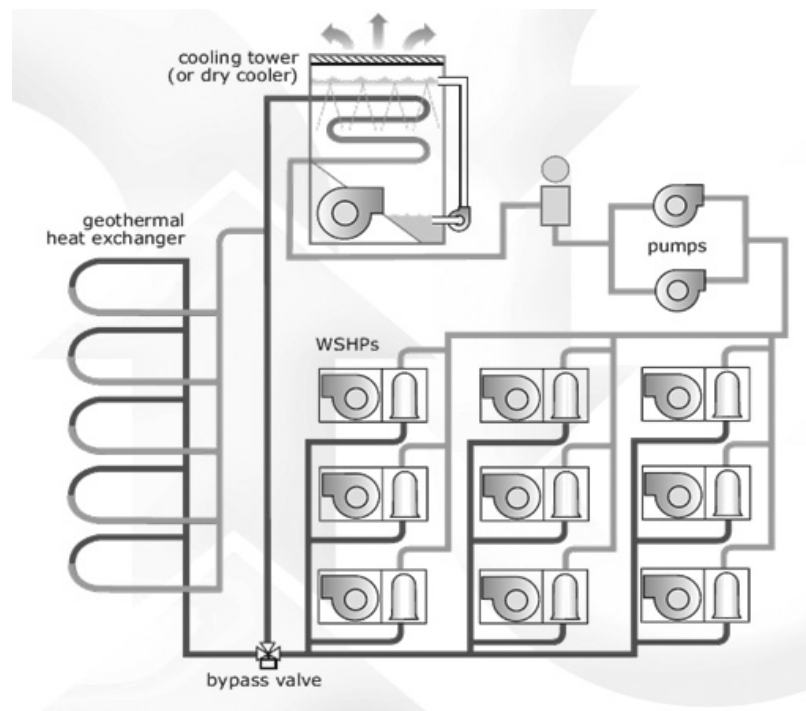
Application Considerations

A hybrid system may also be used in existing buildings with existing ground loops as additional rooms or buildings are added to the system. A cooling tower may be the solution to off-load the peak demand of the new building addition as an example. Other additions may include a requirement for fresh-air ventilation. A fresh-air, air handler, along with a water to water unit may be introduced to the closed loop system to allow tempered fresh-air into the building.

The buildings heating and cooling needs are not based off of one type of component, but perform harmoniously of each other. Heat recovery from the loop itself can be shared with the other major components.

Hybrid systems can often make the system more economical, opening up the possibility to reap the potential energy savings.

Hybrid system



Central Pumping System

A central pumping design involves a single pump design, usually located within a basement or mechanical room to fulfill pumping requirements for the entire building system. An auxiliary pump is typically applied to lessen the likelihood of system downtime if the main pump malfunctions.

Distributed Pumping System

A distributed pumping system contains a single pump module connected directly to the units supply and return. This module is field installed and piped to the unit. This design requires individual pump modules specifically sized for each water-source heat pump.

Model Number Description

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



General Data

Table 1. General data - GEH072-180 (6-15 tons)

Model GEH		072	090	120	150	180
Unit Size	Length (in)	40 3/4	40 3/4	40 3/4	46 3/4	46 3/4
	Height (in)	21	21	21	28	28
	Width (in)	79	79	79	85	85
Compressor Type		Scroll (2)	Scroll (2)	Scroll (2)	Scroll (2)	Scroll (2)
Approximate Weight	with Pallet (lb)	714	724	827	899	997
Approximate Weight	without Pallet (lb)	665	676	785	857	955
Filter Size	Actual (in)	19 5/8 x 24 5/8 (3)	19 5/8 x 24 5/8 (3)	19 5/8 x 24 5/8 (3)	24 5/8 x 24 5/8 (3)	24 5/8 x 24 5/8 (3)
Water in/out size (FPT)	inches	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2
Condensate size (PVC)	inches	1/2	1/2	1/2	1/2	1/2
Blower Wheel Size	Belt Drive (in)	12.62 x 12.62	12.62 x 12.62	12.62 x 12.62	15.00 x 15.00	15.00 x 15.00

Table 2. General data - GEV072-180 (6-15 tons)

Model GEV		072	090	120	150	180
Unit Size	Length (in)	42	42	42	81 5/8	81 5/8
	Height (in)	62 5/8	62 5/8	62 5/8	68	68
	Width (in)	36 1/4	36 1/4	36 1/4	36 1/4	36 1/4
Compressor Type		Scroll (2)	Scroll (2)	Scroll (2)	Scroll (2)	Scroll (2)
Approximate Weight	with Pallet (lb)	630	658	857	1207	1223
Approximate Weight	without Pallet (lb)	890	618	817	1162	1178
Filter Size	Actual (in)	19 5/8 x 19 5/8 (4)	19 5/8 x 19 5/8 (4)	19 5/8 x 19 5/8 (4)	19 5/8 x 24 5/8 (6)	19 5/8 x 24 5/8 (6)
Water in/out size (FPT)	inches	1 1/4 FPT	1 1/4 FPT	1 1/2 FPT	1 1/2 FPT	1 1/2 FPT
Condensate size (PVC)	inches	3/4	3/4	3/4	3/4	3/4
Blower Wheel Size	Belt Drive (in)	12.62 x 12.62	12.62 x 12.62	12.62 x 12.62	15.00 x 15.00	15.00 x 15.00

Table 3. General data - GEV240-300 (20-25 tons)

Model GEV		240	300
Unit Size	Length (in)	81 5/8	81 5/8
	Height (in)	68	68
	Width (in)	36 1/4	36 1/4
Compressor Type		Scroll (2)	Scroll (2)
Approximate Weight	with Pallet (lb)	1644	1665
Approximate Weight	without Pallet (lb)	1609	1640
Filter Size	Actual (in)	19 5/8 x 24 5/8 (6)	19 5/8 x 24 5/8 (6)
Water in/out size (sweat)	inches	2 FPT	2 FPT
Condensate size (NPTI)	inches	3/4	3/4
Blower Wheel Size and quantity (regular-low static/high static)	Belt Drive (in)	(2) 12.62 x 12.62	(2) 15.00 x 11.00/(2) 12.62 x 12.62

Table 4. Air-to-Refrigerant coil (2-compressor circuit) - 6-25 tons

Unit Size	072	090	120	150	180	240	300
Working Pressure	650	650	650	650	650	650	650
Tubes High	(GEH) 18 (GEV) 24	(GEH) 18 (GEV) 28	(GEH) 18 (GEV) 36	(GEH) 24 (GEV) 28	(GEH) 24 (GEV) 32	(GEV) 36	(GEV) 36
Tubes Deep	4	4	4	(GEH) 4 (GEV) 2	(GEH) 4 (GEV) 3	(GEV) 4	(GEV) 4
No. of Circuits	(GEH) 6 refig flow paths (2X) (GEV) 6 refig flow paths (2X)	(GEH) 6 refig flow paths (2X) (GEV) 7 refig flow paths (2X)	(GEH) 9 refig flow paths (2X) (GEV) 9 refig flow paths (2X)	(GEH) 8 refig flow paths (2X) (GEV) 7 refig flow paths (2X)	(GEH) 6 refig flow paths (2X) (GEV) 8 refig flow paths (2X)	(GEV) 18 refig flow paths (2X)	(GEV) 18 refig flow paths (2X)
Finned vol. (h,w,d)	(GEH) 18 x 48 x 3.464 (GEV) 24 x 34 x 3.464	(GEH) 18 x 54 x 3.464 (GEV) 28 x 34 x 3.464	(GEH) 18 x 73 x 3.464 (GEV) 36 x 34 x 3.464	(GEH) 24 x 73 x 3.464 (GEV) 28 x 73 x 1.734	(GEH) 24 x 73 x 3.464 (GEV) 32 x 73 x 2.598	(GEV) 36x 73 x 3.464	(GEV) 36x 73 x 3.464
Coil Surface Area (Ft²)	(GEH) 6.00 (GEV) 5.67	(GEH) 6.75 (GEV) 6.61	(GEH) 9.125 (GEV) 8.50	(GEH) 12.167 (GEV) 14.19	(GEH) 12.167 (GEV) 16.22	(GEV) 18.25	(GEV) 18.25
Fins Per Inch	14	14	14	14	14	14	14
Tube Material	Copper	Copper	Copper	Copper	Copper	Copper	Copper
Tube OD (in)	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Wall Thickness	0.014	0.014	0.014	0.014	0.014	0.014	0.014
Return Bends	Copper	Copper	Copper	Copper	Copper	Copper	Copper



Performance Data

Table 5. ARI-ISO WLHP, GWHP and GLHP performance^(a)

Unit Size	Rated Water Flow(GPM)	Cooling Capacity WLHP (BTUH)	EER WLHP	Heating Capacity WLHP (BTUH)	COP WLHP	Cooling Capacity GWHP(BTUH)	EER GWHP
GEH072	18.0	75,500	13.40	83,800	4.80	83,200	21.90
GEH090	22.5	88,100	14.10	99,200	4.68	94,600	20.67
GEH120	30.0	115,900	13.35	147,100	4.60	129,000	19.30
GEH150	37.5	152,800	14.30	175,000	4.40	166,800	20.60
GEH180	45.0	180,800	13.10	222,700	4.40	204,700	18.50
GEV072	18.0	74,900	15.24	82,800	4.64	84,800	22.85
GEV090	22.5	89,700	15.10	103,600	4.50	98,600	22.91
GEV120	30.0	119,300	14.54	134,300	4.50	131,400	21.05
GEV150	37.5	154,300	15.40	185,300	4.80	170,400	22.20
GEV180	45.0	185,700	14.10	221,500	4.40	205,000	20.10
GEV240	60.0	249,800	15.10	270,800	4.60	280,200	22.10
GEV300	75.0	305,700	13.90	350,400	4.30	339,400	19.50
Unit Size	EER GWHP	Heating Capacity GWHP (BTUH)	COP GWHP	Cooling Capacity GLHP (BTUH)	EER GLHP	Heating Capacity GLHP (BTUH)	COP GLHP
GEH072	21.3	69,100	4.20	74,600	16.00	54,400	3.50
GEH090	20.5	83,000	4.07	88,100	15.80	64,500	3.40
GEH120	17.7	122,600	4.10	120,600	14.90	99,200	3.20
GEH150	20.6	147,800	4.10	158,000	16.40	118,000	3.40
GEH180	18.5	183,100	4.00	188,500	14.70	147,900	3.50
GEV072	25.0	70,200	4.18	78,800	17.50	54,500	3.44
GEV090	22.9	83,600	4.10	92,100	17.40	65,600	3.40
GEV120	23.5	113,900	4.06	123,200	16.60	90,400	3.40
GEV150	22.2	152,900	4.30	158,900	17.30	120,600	3.60
GEV180	20.1	180,400	4.1	192,200	16.1	143,500	3.5
GEV240	22.1	223,800	4.2	258,000	17.0	177,900	3.5
GEV300	19.5	286,400	3.8	315,500	15.7	234,600	3.3

Note: Models with capacities greater than 135,000 BTUH are not included in the ARI water-to-air and brine-to-air heat pump certification program.

(a) Rated in accordance with ISO Standard 13256-1: 1998 (Water Loop Heat Pumps, Ground Water Heat Pumps, Ground Loop Heat Pumps).

Table 6. Gross cooling capacities - 6 tons GEH*072

EWT	GPM	Gross Cap. Mbtuh	Gross Sen. Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	9.0	91.3	67.3	0.74	3.03	101.6	67.6	4.0
45	12.0	92.1	67.6	0.73	2.74	101.5	61.9	6.7
45	15.0	92.6	67.9	0.73	2.56	101.4	58.5	10.0
45	18.0	93.0	68.1	0.73	2.43	101.3	56.3	13.8
45	21.0	93.3	68.1	0.73	2.34	101.3	54.6	18.2
55	9.0	88.0	66.0	0.75	3.68	100.5	77.3	3.9
55	12.0	88.6	66.3	0.75	3.39	100.1	71.7	6.5
55	15.0	88.9	66.4	0.75	3.22	99.9	68.3	9.6
55	18.0	89.2	66.5	0.75	3.10	99.8	66.1	13.3
55	21.0	89.4	66.7	0.75	3.01	99.7	64.5	17.5
59	9.0	86.6	65.5	0.76	3.94	100.1	81.2	3.8
59	12.0	87.2	65.7	0.75	3.65	99.6	75.6	6.4
59	15.0	87.5	65.9	0.75	3.48	99.4	72.3	9.5
GWHP 59	18.0	87.8	66.0	0.75	3.36	99.2	70.0	13.1
59	21.0	87.9	66.0	0.75	3.28	99.1	68.4	17.2
68	9.0	83.6	64.3	0.77	4.56	99.2	90.0	3.7
68	12.0	84.1	64.5	0.77	4.26	98.6	84.4	6.2
68	15.0	84.3	64.6	0.77	4.08	98.3	81.1	9.2
68	18.0	84.5	64.7	0.77	3.96	98.1	78.9	12.7
68	21.0	84.7	64.8	0.76	3.87	97.9	77.3	16.7
77	9.0	80.3	63.0	0.78	5.48	99.0	99.0	3.6
77	12.0	80.8	63.2	0.78	5.09	98.2	93.4	6.0
77	15.0	81.0	63.3	0.78	4.87	97.6	90.0	8.9
GLHP 77	18.0	81.2	63.4	0.78	4.72	97.3	87.8	12.3
77	21.0	81.3	63.4	0.78	4.62	97.1	86.2	16.2
86	9.0	76.9	61.5	0.80	6.11	97.7	107.7	3.5
86	12.0	77.4	61.7	0.80	5.74	97.0	102.2	5.9
86	15.0	77.6	61.8	0.80	5.52	96.5	98.9	8.7
WLHP 86	18.0	77.8	61.9	0.80	5.39	96.2	96.7	12.0
86	21.0	77.9	61.9	0.79	5.29	96.0	95.1	15.7
95	9.0	72.9	60.1	0.82	7.15	97.3	116.6	3.4
95	12.0	73.5	60.5	0.82	6.73	96.4	111.1	5.7
95	15.0	73.8	60.4	0.82	6.48	96.0	107.8	8.5
95	18.0	74.1	60.5	0.82	6.32	95.6	105.6	11.7
95	21.0	74.3	60.3	0.81	6.19	95.4	104.1	15.3
105	9.0	68.7	57.7	0.84	8.230	96.8	126.5	3.1
105	12.0	69.5	58.9	0.85	7.745	95.9	121.0	5.3
105	15.0	70.0	58.4	0.83	7.460	95.5	117.7	7.9
105	18.0	70.2	59.0	0.84	7.281	95.1	115.6	10.9
105	21.0	70.6	58.6	0.83	7.114	94.9	114.0	14.1
115	9.0	64.0	55.7	0.87	9.300	95.7	136.3	2.8
115	12.0	65.0	56.6	0.87	9.000	95.7	131.0	4.6
115	15.0	66.0	56.8	0.86	8.700	95.7	127.8	6.9
115	18.0	66.5	57.5	0.87	8.300	94.8	125.5	9.7
115	21.0	68.0	57.1	0.84	8.100	95.6	124.1	12.5
120	18.0	64.0	56.3	0.88	8.950	94.5	130.5	8.8
120	21.0	65.0	55.9	0.86	8.700	94.7	129.0	11.5

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 18.0 Minimum CFM 1920; Nominal CFM 2400, Maximum CFM 2880



Performance Data

Table 7. Heating capacities (gross) - 6 tons GEH*072

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	9.0	41.5	28.4	3.83	18.7	4.9
25	12.0	44.2	31.1	3.84	19.8	8.0
25	15.0	43.7	30.6	3.84	20.9	11.8
25	18.0	44.2	31.1	3.85	21.5	16.2
25	21.0	44.9	31.7	3.86	22.0	21.2
32	9.0	47.2	33.9	3.90	24.5	4.7
32	12.0	48.8	35.4	3.93	26.1	7.8
32	15.0	49.9	36.5	3.94	27.1	11.4
GLHP 32	18.0	50.7	37.2	3.95	27.9	15.7
32	21.0	51.3	37.8	3.96	28.4	20.6
45	9.0	57.2	43.4	4.04	35.4	4.6
45	12.0	59.2	45.4	4.07	37.4	7.6
45	15.0	60.7	46.7	4.09	38.8	11.1
45	18.0	61.7	47.6	4.11	39.7	15.3
45	21.0	62.4	48.3	4.11	40.4	20.0
50	9.0	62.1	48.0	4.12	39.3	4.5
50	12.0	64.4	50.2	4.15	41.6	7.3
50	15.0	65.8	51.5	4.17	43.1	10.8
GWHP 50	18.0	66.8	52.5	4.18	44.2	14.9
50	21.0	67.6	53.2	4.21	44.9	19.4
55	9.0	66.1	51.8	4.18	43.5	4.4
55	12.0	68.7	54.3	4.23	46.0	7.2
55	15.0	70.5	55.9	4.26	47.5	10.6
55	18.0	71.4	56.8	4.27	48.7	14.6
55	21.0	72.2	57.6	4.28	49.5	19.0
68	9.0	77.2	62.3	4.37	54.2	4.2
68	12.0	80.2	65.2	4.41	57.1	6.9
68	15.0	82.1	67.0	4.44	59.1	10.1
WLHP 68	18.0	83.8	68.5	4.48	60.4	13.9
68	21.0	84.5	69.2	4.48	61.4	18.2
75	9.0	83.2	68.0	4.47	59.9	4.1
75	12.0	86.6	71.1	4.53	63.1	6.7
75	15.0	88.8	73.2	4.56	65.2	9.9
75	18.0	90.1	74.5	4.58	66.7	13.6
75	21.0	91.2	75.5	4.60	67.8	17.7
86	9.0	93.0	77.2	4.65	68.9	3.9
86	12.0	96.6	80.6	4.69	72.6	6.5
86	15.0	99.1	82.9	4.73	74.9	9.5
86	18.0	100.5	84.3	4.75	76.6	13.1
86	21.0	101.7	85.5	4.77	77.9	17.1

Performance data is tabulated for heating at 68°F DB entering air. For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).
 Rated GPM: 18.0 Minimum CFM 1920; Nominal CFM 2400, Maximum CFM 2880

Table 8. Fan correction factors - 6 tons GEH*072

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
1920	0.953	0.879	1.008	0.980	1.082
2160	0.979	0.940	1.004	0.989	1.035
2400	1.000	1.000	1.000	1.000	1.000
2640	1.019	1.060	0.996	1.003	0.967
2880	1.034	1.116	0.994	1.008	0.941

Table 9. Gross cooling capacities - 7½ tons GEH*090

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	11.3	107.5	80.6	0.75	3.31	118.7	66.0	4.7
45	15.0	108.4	80.9	0.75	3.04	118.7	60.8	7.7
45	18.8	109.0	81.2	0.74	2.86	118.8	57.6	11.6
45	22.5	109.4	81.4	0.74	2.75	118.8	55.6	15.9
45	26.3	109.7	81.5	0.74	2.66	118.8	54.0	21.0
55	11.3	104.1	79.4	0.76	3.90	117.4	75.8	4.5
55	15.0	104.9	79.5	0.76	3.62	117.3	70.6	7.4
55	18.8	105.5	79.8	0.76	3.46	117.3	67.5	11.1
55	22.5	105.8	79.9	0.75	3.35	117.2	65.4	15.3
55	26.3	106.0	79.9	0.75	3.27	117.2	63.9	20.2
59	11.3	102.7	78.8	0.77	4.13	116.8	79.7	4.4
59	15.0	103.5	79.1	0.76	3.87	116.7	74.6	7.3
59	18.8	104.0	79.3	0.76	3.70	116.6	71.4	11.0
GWHP 59	22.5	104.3	79.2	0.76	3.59	116.5	69.4	15.1
59	26.3	104.5	79.3	0.76	3.51	116.5	67.9	19.9
68	11.3	99.4	77.4	0.78	4.69	115.3	88.4	4.3
68	15.0	100.1	77.6	0.78	4.41	115.1	83.3	7.1
68	18.8	100.5	77.8	0.77	4.25	115.0	80.2	10.6
68	22.5	100.8	77.8	0.77	4.14	114.9	78.2	14.6
68	26.3	101.0	78.0	0.77	4.07	114.9	76.7	19.2
77	11.3	95.8	75.7	0.79	5.28	113.8	97.2	4.2
77	15.0	96.5	76.0	0.79	5.00	113.6	92.1	6.9
77	18.8	96.9	76.3	0.79	4.83	113.4	89.1	10.3
GLHP 77	22.5	97.2	76.4	0.79	4.71	113.3	87.1	14.2
77	26.3	97.3	76.4	0.79	4.64	113.2	85.6	18.7
86	11.3	91.9	74.4	0.81	5.96	112.2	105.9	4.1
86	15.0	92.5	74.7	0.81	5.65	111.8	100.9	6.7
86	18.8	93.0	74.9	0.81	5.47	111.6	97.9	10.0
WLHP 86	22.5	93.2	74.9	0.80	5.35	111.4	95.9	13.8
86	26.3	93.4	75.1	0.80	5.27	111.3	94.5	18.1
95	11.3	87.9	72.9	0.83	6.70	110.8	114.6	4.0
95	15.0	88.5	73.1	0.83	6.37	110.3	109.7	6.6
95	18.8	88.9	73.3	0.82	6.18	110.0	106.7	9.8
95	22.5	89.1	73.4	0.82	6.06	109.8	104.8	13.4
95	26.3	89.3	73.4	0.82	5.97	109.7	103.3	17.7
105	11.3	83.0	71.9	0.87	7.636	109.1	124.3	3.9
105	15.0	83.6	72.1	0.86	7.291	108.5	119.5	6.4
105	18.8	84.0	71.8	0.85	7.075	108.1	116.5	9.5
105	22.5	84.2	71.9	0.85	6.946	107.9	114.6	13.0
105	26.3	84.5	72.1	0.85	6.852	107.9	113.2	17.2
115	11.3	77.7	69.3	0.89	8.697	107.4	134.0	3.8
115	15.0	78.3	69.6	0.89	8.322	106.7	129.2	6.2
115	18.8	78.6	69.7	0.89	8.105	106.3	126.3	9.3
115	22.5	78.9	70.2	0.89	7.960	106.1	124.4	12.7
115	26.3	79.1	70.2	0.89	7.857	105.9	123.1	16.7
120	22.5	76.1	68.5	0.90	8.539	105.2	129.4	12.6
120	26.3	76.2	68.5	0.90	8.431	105.0	128.0	16.5

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 22.5 Minimum CFM 2400; Nominal CFM 3000, Maximum CFM 3600



Performance Data

Table 10. Heating capacities (gross) - 7½ tons GEH*090

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	11.3	54.8	39.3	4.55	18.0	5.5
25	15.0	56.6	41.0	4.57	19.5	9.1
25	18.8	58.5	42.9	4.58	20.4	13.4
25	22.5	59.6	43.9	4.59	21.1	18.3
25	26.3	60.7	45.0	4.60	21.6	24.1
32	11.3	60.9	45.1	4.62	24.0	5.4
32	15.0	62.3	46.5	4.64	25.8	8.8
32	18.8	64.2	48.3	4.66	26.9	13.0
GLHP 32	22.5	65.2	49.3	4.67	27.6	17.8
32	26.3	65.8	49.8	4.68	28.2	23.4
45	11.3	72.8	56.5	4.77	35.0	5.2
45	15.0	75.5	59.1	4.81	37.1	8.6
45	18.8	77.2	60.7	4.83	38.5	12.7
45	22.5	78.6	62.0	4.86	39.5	17.3
45	26.3	79.3	62.7	4.86	40.2	22.7
50	11.3	79.2	62.5	4.89	38.9	5.1
50	15.0	81.9	65.1	4.92	41.3	8.3
50	18.8	83.8	66.9	4.95	42.9	12.3
GWHP 50	22.5	84.9	68.0	4.96	44.0	16.8
50	26.3	85.8	68.8	4.97	44.8	22.1
55	11.3	84.3	67.3	4.97	43.1	5.0
55	15.0	87.3	70.2	5.01	45.6	8.2
55	18.8	89.2	72.1	5.03	47.3	12.1
55	22.5	90.4	73.2	5.04	48.5	16.5
55	26.3	91.5	74.3	5.06	49.4	21.7
68	11.3	98.4	80.6	5.20	53.7	4.8
68	15.0	102.0	84.1	5.26	56.8	7.8
68	18.8	104.4	86.4	5.28	58.8	11.5
WLHP 68	22.5	106.0	87.9	5.30	60.2	15.7
68	26.3	107.2	89.1	5.32	61.2	20.7
75	11.3	106.1	87.9	5.34	59.4	4.7
75	15.0	110.0	91.6	5.38	62.8	7.6
75	18.8	113.4	94.8	5.45	64.9	11.3
75	22.5	115.1	96.4	5.47	66.4	15.4
75	26.3	116.4	97.7	5.49	67.6	20.2
86	11.3	118.6	99.7	5.55	68.4	4.5
86	15.0	123.8	104.6	5.63	72.1	7.4
86	18.8	127.1	107.7	5.69	74.5	10.9
86	22.5	129.2	109.7	5.72	76.2	14.8
86	26.3	130.7	111.1	5.74	77.5	19.5

Performance data is tabulated for heating at 68°F DB entering air. For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).
 Rated GPM: 22.5 Minimum CFM 2400; Rated CFM 3000, Maximum CFM 3600

Table 11. Fan correction factors - 7½ tons GEH*090

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
2400	0.959	0.878	1.002	0.989	1.090
2700	0.981	0.939	1.002	0.997	1.043
3000	1.000	1.000	1.000	1.000	1.000
3300	1.016	1.059	0.999	1.006	0.968
3600	1.030	1.121	0.996	1.013	0.944

Table 12. Gross cooling capacities - 10 tons - GEH*120

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	15.0	142.9	108.1	0.76	4.54	158.4	66.1	4.7
45	20.0	143.9	108.5	0.75	4.19	158.2	60.8	7.9
45	25.0	144.4	108.7	0.75	3.99	158.0	57.6	11.7
45	30.0	144.8	108.9	0.75	3.85	157.9	55.5	16.2
45	35.0	145.1	109.0	0.75	3.75	157.9	54.0	21.3
55	15.0	138.5	106.2	0.77	5.29	156.5	75.9	4.6
55	20.0	139.4	106.6	0.77	4.94	156.3	70.6	7.6
55	25.0	139.9	106.8	0.76	4.74	156.1	67.5	11.3
55	30.0	140.2	107.0	0.76	4.60	155.9	65.4	15.6
55	35.0	140.5	107.1	0.76	4.51	155.9	63.9	20.5
59	15.0	136.6	105.5	0.77	5.60	155.7	79.8	4.5
59	20.0	137.5	105.8	0.77	5.25	155.4	74.5	7.5
59	25.0	138.0	106.1	0.77	5.05	155.2	71.4	11.1
GWHP 59	30.0	138.4	106.3	0.77	4.91	155.1	69.3	15.4
59	35.0	138.6	106.3	0.77	4.81	155.0	67.9	20.2
68	15.0	132.2	103.6	0.78	6.34	153.8	88.5	4.4
68	20.0	133.1	104.0	0.78	5.97	153.5	83.3	7.3
68	25.0	133.6	104.1	0.78	5.76	153.2	80.3	10.8
68	30.0	133.9	104.3	0.78	5.62	153.1	78.2	14.9
68	35.0	134.1	104.5	0.78	5.52	153.0	76.7	19.6
77	15.0	127.6	101.7	0.80	7.11	151.8	97.2	4.2
77	20.0	128.4	102.0	0.79	6.74	151.4	92.1	7.1
77	25.0	128.9	102.2	0.79	6.53	151.2	89.1	10.5
GLHP 77	30.0	129.2	102.4	0.79	6.39	151.0	87.1	14.5
77	35.0	129.5	102.4	0.79	6.29	150.9	85.6	19.0
86	15.0	122.7	99.6	0.81	7.95	149.8	106.0	4.1
86	20.0	123.5	100.0	0.81	7.57	149.3	100.9	6.9
86	25.0	124.0	100.2	0.81	7.34	149.1	97.9	10.2
WLHP 86	30.0	124.3	100.3	0.81	7.19	148.8	95.9	14.1
86	35.0	124.5	100.4	0.81	7.08	148.7	94.5	18.4
95	15.0	117.5	97.4	0.83	8.86	147.7	114.7	4.0
95	20.0	118.3	97.8	0.83	8.46	147.2	109.7	6.7
95	25.0	118.8	98.0	0.82	8.23	146.9	106.8	9.9
95	30.0	119.1	98.1	0.82	8.08	146.7	104.8	13.7
95	35.0	119.4	98.2	0.82	7.97	146.6	103.4	18.0
105	15.0	110.8	95.9	0.87	9.960	144.8	124.3	3.9
105	20.0	112.3	95.4	0.85	9.576	144.9	119.5	6.5
105	25.0	112.7	95.5	0.85	9.309	144.5	116.6	9.6
105	30.0	113.0	95.6	0.85	9.147	144.2	114.6	13.3
105	35.0	113.2	95.7	0.84	9.033	144.0	113.2	17.5
115	15.0	103.7	93.4	0.90	11.231	142.0	133.9	3.8
115	20.0	104.6	93.6	0.90	10.795	141.4	129.1	6.3
115	25.0	105.1	93.9	0.89	10.539	141.0	126.3	9.4
115	30.0	105.3	94.0	0.89	10.370	140.7	124.4	13.0
115	35.0	105.6	94.0	0.89	10.250	140.5	123.0	17.0
120	30.0	101.7	92.7	0.91	11.030	139.4	129.3	12.8
120	35.0	102.0	92.7	0.91	10.907	139.2	128.0	16.8

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 30.0 Minimum CFM 3200; Nominal CFM 4000, Maximum CFM 4800



Performance Data

Table 13. Heating capacities (gross) - 10 tons GEH*120

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	15.0	71.9	52.7	5.62	18.0	5.6
25	20.0	73.1	53.9	5.63	19.6	9.2
25	25.0	73.7	54.5	5.63	20.6	13.6
25	30.0	74.5	55.3	5.62	21.3	18.7
25	35.0	75.4	56.2	5.62	21.8	24.4
32	15.0	79.2	59.7	5.71	24.0	5.4
32	20.0	80.6	61.1	5.72	25.9	9.0
32	25.0	81.5	62.0	5.72	27.0	13.2
GLHP 32	30.0	81.4	61.9	5.71	27.9	18.1
32	35.0	81.9	62.3	5.72	28.4	23.7
45	15.0	94.3	74.0	5.93	35.1	5.3
45	20.0	95.5	75.3	5.93	37.5	8.7
45	25.0	96.1	75.9	5.93	38.9	12.8
45	30.0	97.3	77.0	5.95	39.9	17.6
45	35.0	96.3	76.1	5.91	40.7	23.0
50	15.0	103.5	82.6	6.10	39.0	5.1
50	20.0	104.4	83.6	6.09	41.6	8.5
50	25.0	104.2	83.5	6.06	43.3	12.5
GWHP 50	30.0	104.1	83.5	6.05	44.4	17.1
50	35.0	103.8	83.2	6.03	45.2	22.4
55	15.0	109.7	88.5	6.21	43.2	5.1
55	20.0	111.4	90.2	6.21	46.0	8.3
55	25.0	110.8	89.7	6.17	47.8	12.2
55	30.0	110.3	89.4	6.14	49.0	16.8
55	35.0	110.0	89.1	6.13	49.9	21.9
68	15.0	127.7	105.5	6.51	53.9	4.8
68	20.0	129.1	106.9	6.51	57.3	7.9
68	25.0	129.2	107.0	6.49	59.4	11.7
WLHP 68	30.0	129.3	107.2	6.48	60.9	16.0
68	35.0	127.7	105.8	6.43	62.0	20.9
75	15.0	137.9	115.0	6.71	59.7	4.7
75	20.0	139.6	116.7	6.72	63.3	7.7
75	25.0	139.8	116.9	6.70	65.6	11.4
75	30.0	140.2	117.3	6.71	67.2	15.6
75	35.0	137.6	115.0	6.63	68.4	20.4
86	15.0	154.9	130.7	7.07	68.6	4.6
86	20.0	157.0	132.8	7.11	72.7	7.5
86	25.0	158.2	133.8	7.13	75.3	11.0
86	30.0	155.3	131.3	7.05	77.2	15.1
86	35.0	153.7	129.8	7.00	78.6	19.7

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 30.0 Minimum CFM 3200; Nominal CFM 4000, Maximum CFM 4800

Table 14. Fan correction factors - 10 tons GEH*120

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
3200	0.958	0.881	0.999	0.971	0.961
3600	0.981	0.941	1.001	0.986	0.928
4000	1.000	1.000	1.000	1.000	1.000
4400	1.016	1.057	1.001	1.003	0.876
4800	1.031	1.112	1.001	1.019	0.860

Table 15. Gross cooling capacities - 12½ tons GEH*150

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	18.8	182.2	135.2	0.74	6.52	204.5	66.8	4.5
45	25.0	183.8	135.8	0.74	6.16	204.9	61.4	7.5
45	31.3	184.8	136.2	0.74	5.94	205.1	58.1	11.2
45	37.5	185.5	136.5	0.74	5.80	205.3	56.0	15.4
45	43.8	186.1	136.7	0.73	5.70	205.5	54.4	20.3
55	18.8	177.1	133.3	0.75	7.34	202.2	76.5	4.4
55	25.0	178.6	133.8	0.75	6.94	202.2	71.2	7.2
55	31.3	179.5	134.2	0.75	6.71	202.4	67.9	10.8
55	37.5	180.1	134.4	0.75	6.57	202.5	65.8	14.9
55	43.8	180.5	134.6	0.75	6.46	202.6	64.2	19.6
59	18.8	175.0	132.4	0.76	7.68	201.2	80.4	4.3
59	25.0	176.4	133.0	0.75	7.29	201.3	75.1	7.1
59	31.3	177.2	133.3	0.75	7.04	201.3	71.9	10.6
GWHP 59	37.5	177.8	133.5	0.75	6.89	201.3	69.7	14.6
59	43.8	178.2	133.7	0.75	6.79	201.4	68.2	19.3
68	18.8	169.9	130.5	0.77	8.52	199.0	89.2	4.2
68	25.0	171.2	131.0	0.77	8.10	198.8	83.9	6.9
68	31.3	172.0	131.3	0.76	7.85	198.8	80.7	10.3
68	37.5	172.5	131.5	0.76	7.69	198.8	78.6	14.2
68	43.8	172.9	131.6	0.76	7.58	198.7	77.1	18.7
77	18.8	164.4	128.4	0.78	9.44	196.6	97.9	4.0
77	25.0	165.7	128.9	0.78	9.00	196.4	92.7	6.7
77	31.3	166.4	129.2	0.78	8.72	196.2	89.5	10.0
GLHP 77	37.5	166.9	129.3	0.78	8.56	196.1	87.5	13.8
77	43.8	167.2	129.5	0.77	8.43	196.0	85.9	18.1
86	18.8	158.5	126.3	0.80	10.47	194.2	106.7	3.9
86	25.0	159.7	126.7	0.79	9.99	193.8	101.5	6.5
86	31.3	160.4	127.0	0.79	9.71	193.6	98.4	9.7
WLHP 86	37.5	160.9	127.1	0.79	9.52	193.4	96.3	13.4
86	43.8	161.2	127.3	0.79	9.39	193.3	94.8	17.6
95	18.8	152.0	123.9	0.82	11.55	191.4	115.4	3.8
95	25.0	153.2	124.3	0.81	11.07	191.0	110.3	6.4
95	31.3	153.9	124.6	0.81	10.78	190.7	107.2	9.5
95	37.5	154.3	124.7	0.81	10.59	190.5	105.2	13.0
95	43.8	154.6	124.8	0.81	10.46	190.3	103.7	17.1
105	18.8	144.1	121.2	0.84	12.896	188.1	125.0	3.7
105	25.0	145.3	121.6	0.84	12.377	187.6	120.0	6.2
105	31.3	146.0	121.9	0.83	12.072	187.2	117.0	9.2
105	37.5	146.5	122.0	0.83	11.874	187.0	115.0	12.7
105	43.8	146.8	122.1	0.83	11.733	186.9	113.5	16.7
115	18.8	135.4	118.4	0.87	14.355	184.4	134.6	3.6
115	25.0	136.7	118.8	0.87	13.828	183.9	129.7	6.0
115	31.3	137.4	119.0	0.87	13.511	183.5	126.7	9.0
115	37.5	137.9	119.2	0.86	13.306	183.3	124.8	12.3
115	43.8	138.2	119.3	0.86	13.158	183.1	123.4	16.2
120	37.5	133.2	117.7	0.88	14.081	181.2	129.7	12.2
120	43.8	133.5	117.8	0.88	13.959	181.2	128.3	16.0

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 37.5 Minimum CFM 4000; Nominal CFM 5000, Maximum CFM 6000



Performance Data

Table 16. Heating capacities (gross) - 12½ tons GEH*150

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	18.8	98.9	70.2	8.41	17.5	5.2
25	25.0	102.2	73.4	8.45	19.1	8.5
25	31.3	104.1	75.2	8.47	20.2	12.6
25	37.5	105.2	76.3	8.47	20.9	17.3
25	43.8	106.1	77.2	8.48	21.5	22.6
32	18.8	109.0	79.7	8.58	23.5	5.1
32	25.0	112.6	83.2	8.62	25.3	8.3
32	31.3	114.8	85.3	8.64	26.6	12.2
GLHP 32	37.5	116.4	86.9	8.64	27.4	16.8
32	43.8	117.6	88.1	8.65	28.0	22.0
45	18.8	128.7	98.9	8.74	34.5	4.9
45	25.0	133.3	103.3	8.79	36.7	8.1
45	31.3	136.2	106.2	8.82	38.2	11.9
45	37.5	138.4	108.2	8.84	39.2	16.3
45	43.8	139.9	109.7	8.85	40.0	21.4
50	18.8	138.7	108.3	8.91	38.5	4.8
50	25.0	143.6	113.1	8.94	41.0	7.8
50	31.3	146.8	116.2	8.96	42.6	11.6
GWHP 50	37.5	148.9	118.2	8.98	43.7	15.8
50	43.8	150.4	119.7	9.00	44.5	20.8
55	18.8	147.1	116.4	9.00	42.6	4.7
55	25.0	152.6	121.7	9.06	45.3	7.7
55	31.3	156.1	125.0	9.09	47.0	11.4
55	37.5	158.4	127.3	9.12	48.2	15.5
55	43.8	160.2	129.0	9.13	49.1	20.4
68	18.8	170.4	138.5	9.33	53.3	4.5
68	25.0	177.2	145.1	9.40	56.4	7.3
68	31.3	181.7	149.5	9.44	58.4	10.8
WLHP 68	37.5	184.9	152.5	9.47	59.9	14.8
68	43.8	187.1	154.7	9.49	60.9	19.4
75	18.8	183.2	150.8	9.50	59.0	4.4
75	25.0	191.1	158.3	9.61	62.3	7.2
75	31.3	196.6	163.5	9.69	64.6	10.6
75	37.5	200.6	167.3	9.75	66.1	14.5
75	43.8	203.1	169.9	9.75	67.2	19.0
86	18.8	205.2	171.4	9.89	67.8	4.2
86	25.0	214.9	180.8	10.01	71.5	6.9
86	31.3	221.3	186.8	10.09	74.1	10.2
86	37.5	225.6	191.0	10.14	75.8	14.0
86	43.8	228.8	194.1	10.17	77.1	18.3

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 37.5 Minimum CFM 4000; Nominal CFM 5000, Maximum CFM 6000

Table 17. Fan correction factors - 12½ tons GEH*150

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
4000	0.959	0.880	1.003	1.075	1.144
4500	0.981	0.940	1.003	0.987	1.040
5000	1.000	1.000	1.000	1.000	1.000
5500	1.016	1.059	0.999	1.011	0.968
6000	1.030	1.118	0.997	1.020	0.943

Table 18. Gross cooling capacities - 15 tons GEH*180

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	22.5	218.6	160.0	0.73	8.99	249.3	67.2	6.2
45	30.0	219.2	160.2	0.73	8.63	248.6	61.6	10.2
45	37.5	219.9	160.7	0.73	8.33	248.3	58.2	14.8
45	45.0	220.5	161.0	0.73	8.16	248.3	56.0	20.8
45	52.5	221.2	161.3	0.73	8.03	248.6	54.5	27.0
55	22.5	215.1	159.4	0.74	9.79	248.5	77.1	5.9
55	30.0	215.6	159.6	0.74	9.32	247.4	71.5	9.8
55	37.5	215.9	159.7	0.74	9.04	246.8	68.2	14.6
55	45.0	216.3	159.8	0.74	8.86	246.5	66.0	20.2
55	52.5	216.4	159.8	0.74	8.73	246.2	64.4	26.6
59	22.5	212.2	158.2	0.75	10.22	247.1	81.0	5.8
59	30.0	212.9	158.5	0.74	9.73	246.1	75.4	9.7
59	37.5	213.5	158.7	0.74	9.45	245.7	72.1	14.4
GWHP 59	45.0	213.6	158.5	0.74	9.27	245.2	69.9	19.9
59	52.5	213.9	158.9	0.74	9.13	245.1	68.3	26.2
68	22.5	205.6	155.7	0.76	11.26	244.0	89.7	5.6
68	30.0	206.8	155.8	0.75	10.74	243.4	84.2	9.4
68	37.5	207.0	156.2	0.75	10.42	242.6	80.9	14.0
68	45.0	207.5	156.1	0.75	10.23	242.4	78.8	19.3
68	52.5	207.3	156.3	0.75	10.09	241.7	77.2	25.4
77	22.5	198.8	153.2	0.77	12.44	241.2	98.4	5.5
77	30.0	199.7	153.5	0.77	11.85	240.1	93.0	9.1
77	37.5	200.1	153.6	0.77	11.51	239.4	89.8	13.6
GLHP 77	45.0	200.4	153.8	0.77	11.30	239.0	87.6	18.7
77	52.5	200.6	153.8	0.77	11.14	238.7	86.1	24.6
86	22.5	191.1	150.3	0.79	13.70	237.8	107.1	5.3
86	30.0	192.6	150.9	0.78	13.09	237.2	101.8	8.9
86	37.5	193.2	151.1	0.78	12.73	236.6	98.6	13.2
WLHP 86	45.0	192.6	150.9	0.78	12.49	235.2	96.5	18.2
86	52.5	193.3	151.2	0.78	12.35	235.4	95.0	23.9
95	22.5	183.3	147.8	0.81	15.20	235.1	115.9	5.2
95	30.0	184.1	148.0	0.80	14.53	233.7	110.6	8.7
95	37.5	184.6	148.2	0.80	14.13	232.9	107.4	12.9
95	45.0	185.0	148.3	0.80	13.87	232.3	105.3	17.7
95	52.5	185.2	148.3	0.80	13.70	231.9	103.8	23.3
105	22.5	174.0	144.8	0.83	17.109	232.4	125.7	5.1
105	30.0	174.9	145.1	0.83	16.361	230.7	120.4	8.4
105	37.5	175.3	145.2	0.83	15.925	229.7	117.2	12.5
105	45.0	175.6	145.3	0.83	15.659	229.1	115.2	17.2
105	52.5	175.8	145.4	0.83	15.460	228.6	113.7	22.6
115	22.5	164.0	141.8	0.86	19.355	230.1	135.5	4.9
115	30.0	164.7	141.9	0.86	18.532	227.9	130.2	8.2
115	37.5	165.5	142.3	0.86	18.060	227.1	127.1	12.2
115	45.0	165.7	142.4	0.86	17.758	226.3	125.1	16.8
115	52.5	165.8	142.3	0.86	17.538	225.6	123.6	22.0
120	45.0	160.1	140.5	0.88	18.972	224.8	130.0	16.6
120	52.5	160.4	140.6	0.88	18.741	224.3	128.5	21.8

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 45.0 Minimum CFM 4800; Nominal CFM 6000, Maximum CFM 7200



Performance Data

Table 19. Heating capacities (gross) - 15 tons GEH*180

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	22.5	129.1	95.6	9.82	16.5	7.1
25	30.0	130.4	96.6	9.89	18.6	11.7
25	37.5	131.9	98.0	9.95	19.8	17.2
25	45.0	133.1	99.1	9.98	20.6	23.6
25	52.5	133.9	99.8	9.99	21.2	30.9
32	22.5	138.7	104.2	10.11	22.7	6.9
32	30.0	142.6	107.8	10.18	24.8	11.3
32	37.5	144.3	109.5	10.20	26.2	16.7
GLHP 32	45.0	145.9	111.0	10.22	27.1	22.9
32	52.5	146.3	111.5	10.21	27.8	30.0
45	22.5	161.7	125.6	10.56	33.8	6.7
45	30.0	166.5	130.2	10.65	36.3	11.0
45	37.5	169.2	132.7	10.70	37.9	16.3
45	45.0	170.7	134.1	10.73	39.0	22.3
45	52.5	171.6	134.9	10.74	39.9	29.2
50	22.5	175.2	138.1	10.86	37.7	6.5
50	30.0	179.9	142.5	10.94	40.5	10.7
50	37.5	182.3	144.8	10.99	42.3	15.8
GWHP 50	45.0	183.5	145.9	11.02	43.5	21.7
50	52.5	184.2	146.5	11.03	44.4	28.3
55	22.5	185.4	147.6	11.08	41.9	6.4
55	30.0	190.7	152.4	11.20	44.8	10.5
55	37.5	193.3	154.9	11.26	46.7	15.5
55	45.0	194.6	156.1	11.29	48.1	21.3
55	52.5	195.4	156.9	11.30	49.0	27.8
68	22.5	214.2	173.9	11.80	52.5	6.1
68	30.0	220.6	179.8	11.96	56.0	10.0
68	37.5	223.9	182.8	12.03	58.3	14.8
WLHP 68	45.0	225.9	184.7	12.07	59.8	20.3
68	52.5	226.9	185.6	12.10	60.9	26.5
75	22.5	230.8	189.1	12.23	58.2	6.0
75	30.0	238.4	196.1	12.41	61.9	9.8
75	37.5	243.0	200.2	12.54	64.3	14.4
75	45.0	244.2	201.3	12.58	66.1	19.8
75	52.5	244.9	201.9	12.60	67.3	25.9
86	22.5	258.1	213.8	12.97	67.0	5.8
86	30.0	266.8	221.8	13.18	71.2	9.5
86	37.5	271.5	226.0	13.33	73.9	13.9
86	45.0	273.5	227.8	13.39	75.9	19.1
86	52.5	274.2	228.3	13.43	77.3	25.0

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 45.0 Minimum CFM 4800; Nominal CFM 6000, Maximum CFM 7200

Table 20. Fan correction factors - 15 tons GEH*180

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
4800	0.960	0.877	1.002	0.978	1.080
5400	0.983	0.939	1.003	0.991	1.002
6000	1.000	1.000	1.000	1.000	1.000
6600	1.018	1.063	1.002	1.007	0.940
7200	1.034	1.126	1.003	1.011	0.917

Table 21. Gross cooling capacities - 6 tons GEV*072

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	9.0	88.8	65.9	0.74	2.56	97.5	66.7	4.0
45	12.0	90.5	66.5	0.74	2.30	98.3	61.4	6.7
45	15.0	91.4	67.0	0.73	2.14	98.7	58.2	10.0
45	18.0	92.0	67.2	0.73	2.02	98.9	56.0	13.8
45	21.0	92.9	67.5	0.73	1.94	99.6	54.5	18.2
55	9.0	85.5	64.6	0.76	3.11	96.2	76.4	3.9
55	12.0	87.0	65.1	0.75	2.86	96.7	71.1	6.5
55	15.0	87.9	65.5	0.74	2.71	97.1	68.0	9.6
55	18.0	88.6	65.7	0.74	2.61	97.5	65.8	13.3
55	21.0	88.9	65.8	0.74	2.54	97.6	64.3	17.5
59	9.0	84.3	64.1	0.76	3.33	95.6	80.3	3.8
59	12.0	85.6	64.6	0.75	3.08	96.2	75.0	6.4
59	15.0	86.5	64.9	0.75	2.94	96.5	71.9	9.5
GWHP 59	18.0	87.1	65.2	0.75	2.84	96.8	69.8	13.1
59	21.0	87.6	65.3	0.75	2.76	97.0	68.2	17.2
68	9.0	81.5	63.1	0.77	3.84	94.6	89.0	3.7
68	12.0	82.7	63.5	0.77	3.59	95.0	83.8	6.2
68	15.0	83.5	63.8	0.76	3.44	95.3	80.7	9.2
68	18.0	84.0	64.0	0.76	3.34	95.4	78.6	12.7
68	21.0	84.4	64.2	0.76	3.28	95.6	77.1	16.7
77	9.0	78.6	62.1	0.79	4.37	93.6	97.8	3.6
77	12.0	79.8	62.5	0.78	4.13	93.9	92.7	6.0
77	15.0	80.5	62.7	0.78	3.98	94.1	89.5	8.9
GLHP 77	18.0	81.0	63.0	0.78	3.87	94.2	87.5	12.3
77	21.0	81.4	63.0	0.77	3.80	94.3	86.0	16.2
86	9.0	75.9	61.2	0.81	4.96	92.8	106.6	3.5
86	12.0	77.0	61.6	0.80	4.69	93.0	101.5	5.9
86	15.0	77.6	61.8	0.80	4.54	93.1	98.4	8.7
WLHP 86	18.0	78.0	61.9	0.79	4.44	93.1	96.3	12.0
86	21.0	78.4	62.1	0.79	4.36	93.3	94.9	15.7
95	9.0	72.7	60.0	0.83	5.60	91.8	115.4	3.4
95	12.0	73.8	60.4	0.82	5.32	91.9	110.3	5.7
95	15.0	74.4	60.6	0.81	5.16	92.0	107.3	8.5
95	18.0	75.0	60.9	0.81	5.05	92.2	105.2	11.7
95	21.0	75.3	61.0	0.81	4.97	92.2	103.8	15.3
105	9.0	69.1	58.9	0.85	6.389	90.9	125.2	3.3
105	12.0	70.1	59.2	0.84	6.093	90.9	120.1	5.5
105	15.0	70.7	59.4	0.84	5.920	90.9	117.1	8.2
105	18.0	71.1	59.5	0.84	5.806	90.9	115.1	11.4
105	21.0	71.3	59.6	0.84	5.726	90.9	113.7	14.9
115	9.0	64.9	57.6	0.89	7.290	89.8	135.0	3.2
115	12.0	66.0	57.9	0.88	6.975	89.8	130.0	5.4
115	15.0	66.6	58.1	0.87	6.789	89.7	127.0	8.0
115	18.0	66.9	58.3	0.87	6.661	89.7	125.0	11.1
115	21.0	67.2	58.3	0.87	6.581	89.7	123.5	14.5
120	18.0	64.7	57.6	0.89	7.145	89.1	129.9	10.9
120	21.0	64.9	57.6	0.89	7.056	89.0	128.5	14.3

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 18.0 Minimum CFM 1920; Nominal CFM 2400, Maximum CFM 2880



Performance Data

Table 22. Heating capacities (gross) - 6 tons GEV*072

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	9.0	44.1	30.7	3.92	18.2	4.9
25	12.0	45.3	31.8	3.95	19.7	8.0
25	15.0	46.2	32.7	3.96	20.6	11.8
25	18.0	47.1	33.6	3.97	21.3	16.2
25	21.0	47.8	34.2	3.98	21.7	21.2
32	9.0	49.1	35.5	3.98	24.1	4.7
32	12.0	50.9	37.2	4.01	25.8	7.8
32	15.0	51.8	38.1	4.01	26.9	11.5
GLHP 32	18.0	52.6	38.9	4.02	27.7	15.7
32	21.0	53.1	39.4	4.03	28.3	20.6
45	9.0	58.9	44.9	4.11	35.0	4.6
45	12.0	61.2	47.0	4.14	37.2	7.6
45	15.0	62.5	48.3	4.16	38.6	11.1
45	18.0	63.4	49.2	4.17	39.5	15.3
45	21.0	64.1	49.8	4.18	40.3	20.0
50	9.0	64.0	49.7	4.19	39.0	4.5
50	12.0	66.4	52.0	4.23	41.3	7.3
50	15.0	67.6	53.1	4.24	42.9	10.8
GWHP 50	18.0	68.6	54.1	4.26	44.0	14.9
50	21.0	69.3	54.7	4.27	44.8	19.4
55	9.0	68.2	53.6	4.26	43.1	4.4
55	12.0	70.7	56.0	4.30	45.7	7.2
55	15.0	72.2	57.4	4.32	47.3	10.6
55	18.0	73.2	58.4	4.33	48.5	14.6
55	21.0	73.8	59.0	4.34	49.4	19.0
68	9.0	79.4	64.3	4.44	53.7	4.2
68	12.0	82.4	67.1	4.49	56.8	6.9
68	15.0	84.2	68.8	4.51	58.8	10.1
WLHP 68	18.0	85.4	69.9	4.53	60.2	13.9
68	21.0	86.2	70.7	4.54	61.3	18.2
75	9.0	85.6	70.1	4.55	59.4	4.1
75	12.0	88.9	73.2	4.60	62.8	6.7
75	15.0	90.7	75.0	4.61	65.0	9.9
75	18.0	92.1	76.3	4.63	66.5	13.6
75	21.0	93.0	77.2	4.65	67.7	17.7
86	9.0	95.4	79.3	4.71	68.4	3.9
86	12.0	99.0	82.8	4.76	72.2	6.5
86	15.0	101.1	84.8	4.79	74.7	9.5
86	18.0	102.5	86.1	4.81	76.4	13.1
86	21.0	103.3	86.9	4.81	77.7	17.1

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 18.0 Minimum CFM 1920; Nominal CFM 2400, Maximum CFM 2800

Table 23. Fan correction factors - 6 tons GEV*072

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
1920	0.962	0.880	1.004	0.978	1.098
2160	0.983	0.939	1.003	0.994	1.068
2400	1.000	1.000	1.000	1.000	1.000
2640	1.013	1.059	0.997	1.008	0.986
2880	1.026	1.122	0.996	1.015	0.957

Table 24. Gross cooling capacities - 7½ tons - GEV*090

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	11.3	108.3	80.0	0.74	3.40	119.9	66.2	4.5
45	15.0	109.3	80.4	0.74	3.13	120.0	61.0	7.5
45	18.8	109.9	80.6	0.73	2.96	120.0	57.8	11.3
45	22.5	110.4	80.8	0.73	2.85	120.1	55.7	15.5
45	26.3	110.7	80.9	0.73	2.77	120.1	54.1	20.4
55	11.3	105.1	78.8	0.75	3.98	118.7	76.0	4.4
55	15.0	106.0	79.1	0.75	3.72	118.7	70.8	7.3
55	18.8	106.5	79.3	0.74	3.54	118.6	67.6	10.8
55	22.5	106.9	79.5	0.74	3.44	118.7	65.5	14.9
55	26.3	107.2	79.6	0.74	3.36	118.7	64.0	19.6
59	11.3	103.8	78.4	0.76	4.22	118.2	79.9	4.3
59	15.0	104.6	78.6	0.75	3.95	118.1	74.7	7.2
59	18.8	105.1	78.8	0.75	3.79	118.1	71.6	10.7
GWHP 59	22.5	105.5	78.9	0.75	3.68	118.1	69.5	14.7
59	26.3	105.7	79.0	0.75	3.60	118.0	68.0	19.4
68	11.3	100.6	77.1	0.77	4.77	116.9	88.7	4.2
68	15.0	101.3	77.4	0.76	4.49	116.7	83.6	6.9
68	18.8	101.8	77.6	0.76	4.33	116.6	80.4	10.4
68	22.5	102.1	77.7	0.76	4.22	116.5	78.4	14.2
68	26.3	102.3	77.7	0.76	4.15	116.5	76.9	18.7
77	11.3	97.2	76.0	0.78	5.38	115.5	97.5	4.1
77	15.0	97.9	76.2	0.78	5.09	115.3	92.4	6.7
77	18.8	98.3	76.3	0.78	4.91	115.1	89.2	10.0
GLHP 77	22.5	98.6	76.4	0.77	4.80	115.0	87.2	13.8
77	26.3	98.8	76.5	0.77	4.72	114.9	85.7	18.2
86	11.3	93.4	74.5	0.80	6.05	114.1	106.2	4.0
86	15.0	94.1	74.8	0.79	5.74	113.7	101.2	6.6
86	18.8	94.5	74.9	0.79	5.54	113.5	98.1	9.8
WLHP 86	22.5	94.8	75.0	0.79	5.43	113.3	96.1	13.4
86	26.3	95.0	75.1	0.79	5.34	113.2	94.6	17.7
95	11.3	89.6	73.3	0.82	6.81	112.8	115.0	3.9
95	15.0	90.2	73.4	0.81	6.47	112.3	110.0	6.4
95	18.8	90.6	73.5	0.81	6.28	112.0	106.9	9.5
95	22.5	90.8	73.6	0.81	6.15	111.8	104.9	13.1
95	26.3	91.0	73.7	0.81	6.05	111.7	103.5	17.2
105	11.3	85.0	71.8	0.84	7.770	111.5	124.7	3.8
105	15.0	85.6	71.8	0.84	7.409	110.9	119.8	6.2
105	18.8	86.0	72.0	0.84	7.187	110.5	116.8	9.3
105	22.5	86.2	72.1	0.84	7.050	110.3	114.8	12.7
105	26.3	86.4	72.2	0.84	6.951	110.1	113.4	16.7
115	11.3	80.0	69.9	0.87	8.904	110.4	134.5	3.7
115	15.0	80.7	70.3	0.87	8.504	109.7	129.6	6.1
115	18.8	81.1	70.5	0.87	8.261	109.3	126.6	9.0
115	22.5	81.3	70.6	0.87	8.111	109.0	124.7	12.4
115	26.3	81.5	70.7	0.87	8.008	108.8	123.3	16.3
120	22.5	78.6	69.6	0.89	8.722	108.4	129.6	12.2
120	26.3	78.7	69.7	0.88	8.611	108.1	128.2	16.1

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 22.5 Minimum CFM 2400; Nominal CFM 3000, Maximum CFM 3600



Performance Data

Table 25. Heating capacities (gross) - 7½ tons GEV*090

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	11.3	53.3	37.6	4.60	18.3	5.4
25	15.0	54.8	39.1	4.6	19.8	8.8
25	18.8	55.7	40.0	4.61	20.7	13.1
25	22.5	57.0	41.2	4.62	21.3	17.9
25	26.3	58.9	43.1	4.63	21.7	23.4
32	11.3	59.1	43.2	4.66	24.3	5.2
32	15.0	61.1	45.1	4.68	26.0	8.6
32	18.8	62.4	62.4	0.00	25.4	12.7
GLHP 32	22.5	63.3	47.3	4.70	27.8	17.4
32	26.3	64.5	64.5	0.00	27.1	22.8
45	11.3	70.7	54.4	4.78	35.4	5.1
45	15.0	73.1	56.6	4.81	37.4	8.3
45	18.8	74.7	58.2	4.82	38.8	12.3
45	22.5	75.8	59.2	4.84	39.7	16.9
45	26.3	76.7	60.1	4.85	40.4	22.1
50	11.3	76.3	59.7	4.86	39.4	5.0
50	15.0	79.0	62.3	4.89	41.7	8.1
50	18.8	80.8	64.0	4.91	43.2	12.0
GWHP 50	22.5	82.0	65.1	4.93	44.2	16.4
50	26.3	82.8	65.9	4.94	45.0	21.5
55	11.3	81.1	64.3	4.92	43.6	4.9
55	15.0	84.0	67.1	4.96	46.1	8.0
55	18.8	85.9	68.9	4.99	47.7	11.8
55	22.5	87.1	70.1	5.00	48.8	16.1
55	26.3	88.0	70.9	5.01	49.6	21.1
68	11.3	94.0	76.6	5.11	54.4	4.7
68	15.0	97.6	80.0	5.15	57.3	7.6
68	18.8	99.9	82.2	5.18	59.3	11.2
WLHP 68	22.5	101.4	83.6	5.20	60.6	15.3
68	26.3	102.6	84.8	5.21	61.6	20.1
75	11.3	101.2	83.4	5.21	60.2	4.5
75	15.0	105.1	87.1	5.26	63.4	7.4
75	18.8	107.6	89.5	5.29	65.5	11.0
75	22.5	109.2	91.1	5.32	66.9	15.0
75	26.3	110.4	92.2	5.33	68.0	19.6
86	11.3	112.6	94.3	5.39	69.3	4.4
86	15.0	116.9	98.4	5.44	72.9	7.2
86	18.8	120.0	101.2	5.49	75.2	10.6
86	22.5	121.9	103.0	5.51	76.8	14.5
86	26.3	122.7	103.9	5.52	78.1	18.9

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 22.5 Minimum CFM 2400; Nominal CFM 3000, Maximum CFM 3600

Table 26. Fan correction factors - 7½ tons GEV*090

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
2400	0.960	0.876	1.006	0.978	1.091
2700	0.982	0.938	1.003	0.990	1.039
3000	1.000	1.000	1.000	1.000	1.000
3300	1.016	1.062	0.999	1.009	0.968
3600	1.031	1.124	0.997	1.016	0.942

Table 27. Gross cooling capacities - 10 tons GEV*120

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	15.0	144.4	105.4	0.73	4.25	158.9	66.2	4.7
45	20.0	145.9	106.0	0.73	3.87	159.1	60.9	7.9
45	25.0	146.8	106.4	0.72	3.65	159.3	57.7	11.7
45	30.0	147.4	106.6	0.72	3.50	159.4	55.6	16.2
45	35.0	147.9	106.8	0.72	3.40	159.5	54.1	21.3
55	15.0	139.9	103.8	0.74	5.02	157.1	75.9	4.6
55	20.0	141.4	104.3	0.74	4.68	157.4	70.7	7.6
55	25.0	142.3	104.6	0.74	4.46	157.5	67.6	11.3
55	30.0	142.9	104.8	0.73	4.32	157.6	65.5	15.6
55	35.0	143.3	105.0	0.73	4.22	157.7	64.0	20.5
59	15.0	138.0	102.9	0.75	5.34	156.2	79.8	4.5
59	20.0	139.4	103.5	0.74	4.99	156.4	74.6	7.5
59	25.0	140.4	103.9	0.74	4.79	156.7	71.5	11.1
GWHP 59	30.0	141.0	104.1	0.74	4.65	156.8	69.5	15.4
59	35.0	141.4	104.3	0.74	4.54	156.9	68.0	20.2
68	15.0	133.4	101.3	0.76	6.05	154.0	88.5	4.4
68	20.0	134.8	101.8	0.76	5.71	154.3	83.4	7.3
68	25.0	135.8	102.3	0.75	5.50	154.6	80.4	10.8
68	30.0	136.3	102.5	0.75	5.37	154.6	78.3	14.9
68	35.0	136.7	102.5	0.75	5.27	154.7	76.8	19.6
77	15.0	128.7	99.5	0.77	6.81	152.0	97.3	4.2
77	20.0	130.1	99.9	0.77	6.46	152.1	92.2	7.1
77	25.0	130.9	100.2	0.77	6.25	152.2	89.2	10.5
GLHP 77	30.0	131.4	100.5	0.76	6.11	152.3	87.2	14.5
77	35.0	131.8	100.6	0.76	6.02	152.3	85.7	19.0
86	15.0	123.8	97.9	0.79	7.62	149.8	106.0	4.1
86	20.0	125.1	98.3	0.79	7.26	149.9	101.0	6.9
86	25.0	125.9	98.5	0.78	7.04	149.9	98.0	10.2
WLHP 86	30.0	126.4	98.7	0.78	6.90	150.0	96.0	14.1
86	35.0	126.8	98.9	0.78	6.80	150.0	94.6	18.4
95	15.0	118.5	96.1	0.81	8.51	147.5	114.7	4.0
95	20.0	119.9	96.6	0.81	8.13	147.6	109.8	6.7
95	25.0	120.6	96.8	0.80	7.92	147.7	106.8	9.9
95	30.0	121.2	96.9	0.80	7.77	147.7	104.8	13.7
95	35.0	121.5	97.0	0.80	7.65	147.6	103.4	18.0
105	15.0	112.1	94.0	0.84	9.555	144.7	124.3	3.9
105	20.0	113.6	94.6	0.83	9.174	144.9	119.5	6.5
105	25.0	114.4	94.8	0.83	8.947	144.9	116.6	9.6
105	30.0	114.9	95.0	0.83	8.798	144.9	114.7	13.3
105	35.0	115.3	95.1	0.83	8.696	145.0	113.3	17.5
115	15.0	105.2	91.8	0.87	10.713	141.8	133.9	3.8
115	20.0	106.6	92.4	0.87	10.316	141.8	129.2	6.3
115	25.0	107.4	92.6	0.86	10.093	141.9	126.3	9.4
115	30.0	107.9	92.6	0.86	9.930	141.8	124.5	13.0
115	35.0	108.3	92.8	0.86	9.821	141.8	123.1	17.0
120	30.0	104.2	91.5	0.88	10.546	140.2	129.3	12.8
120	35.0	104.6	91.7	0.88	10.437	140.2	128.0	16.8

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 30.0 Minimum CFM 3200; Nominal CFM 4000, Maximum CFM 4800



Performance Data

Table 28. Heating capacities (gross) - 10 tons GEV*120

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	15.0	70.9	50.6	5.94	18.2	5.6
25	20.0	73.3	52.9	5.97	19.7	9.2
25	25.0	74.7	54.2	5.99	20.7	13.6
25	30.0	75.8	55.3	6.01	21.3	18.7
25	35.0	76.5	56.0	6.02	21.8	24.4
32	15.0	78.5	57.9	6.03	24.3	5.4
32	20.0	81.1	60.4	6.06	26.0	9.0
32	25.0	82.8	62.1	6.08	27.0	13.2
GLHP 32	30.0	84.0	63.2	6.10	27.8	18.1
32	35.0	84.9	64.0	6.11	28.3	23.7
45	15.0	93.1	71.9	6.21	35.4	5.3
45	20.0	96.2	74.9	6.25	37.5	8.7
45	25.0	98.5	77.1	6.28	38.8	12.8
45	30.0	100.0	78.5	6.30	39.8	17.6
45	35.0	101.2	79.6	6.33	40.5	23.1
50	15.0	101.3	79.6	6.34	39.4	5.1
50	20.0	104.8	83.0	6.41	41.7	8.5
50	25.0	106.9	85.0	6.44	43.2	12.5
GWHP 50	30.0	108.6	86.5	6.47	44.2	17.1
50	35.0	109.7	87.6	6.49	45.0	22.4
55	15.0	107.7	85.7	6.46	43.6	5.0
55	20.0	111.3	89.0	6.51	46.1	8.3
55	25.0	113.8	91.4	6.56	47.7	12.2
55	30.0	115.4	92.9	6.58	48.8	16.8
55	35.0	116.6	94.1	6.60	49.6	22.0
68	15.0	124.6	101.6	6.74	54.5	4.8
68	20.0	129.1	105.8	6.82	57.4	7.9
68	25.0	132.0	108.5	6.87	59.3	11.7
WLHP 68	30.0	133.9	110.3	6.91	60.6	16.0
68	35.0	135.2	111.6	6.93	61.6	20.9
75	15.0	134.3	110.6	6.93	60.3	4.7
75	20.0	139.2	115.2	7.02	63.5	7.7
75	25.0	142.4	118.2	7.09	65.5	11.4
75	30.0	144.5	120.1	7.13	67.0	15.6
75	35.0	145.8	121.4	7.13	68.1	20.4
86	15.0	149.7	125.0	7.24	69.3	4.5
86	20.0	155.3	130.2	7.36	73.0	7.5
86	25.0	158.8	133.4	7.44	75.3	11.0
86	30.0	161.1	135.5	7.49	77.0	15.1
86	35.0	162.7	137.0	7.53	78.2	19.7

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 30.0 Minimum CFM 3200; Nominal CFM 4000, Maximum CFM 4800

Table 29. Fan correction factors - 10 tons GEV*120

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
3200	0.960	0.873	0.998	0.980	1.086
3600	0.981	0.936	0.999	0.991	1.038
4000	1.000	1.000	1.000	1.000	1.000
4400	1.016	1.063	1.001	1.008	0.970
4800	1.031	1.127	1.001	1.017	0.947

Table 30. Gross cooling capacities - 12½ tons GEV*150

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	18.8	183.1	131.4	0.72	6.72	206.0	66.9	4.5
45	25.0	184.8	132.1	0.71	6.31	206.4	61.5	7.5
45	31.3	186.0	132.6	0.71	6.08	206.8	58.2	11.2
45	37.5	186.8	132.9	0.71	5.93	207.0	56.0	15.4
45	43.8	188.2	133.8	0.71	5.61	207.3	54.5	20.1
55	18.8	177.3	129.4	0.73	7.47	202.8	76.6	4.4
55	25.0	179.0	130.0	0.73	7.06	203.1	71.2	7.2
55	31.3	180.1	130.4	0.72	6.81	203.3	68.0	10.8
55	37.5	180.8	130.6	0.72	6.65	203.5	65.9	14.9
55	43.8	181.3	130.8	0.72	6.54	203.6	64.3	19.6
59	18.8	174.9	128.6	0.74	7.79	201.5	80.4	4.3
59	25.0	176.6	129.2	0.73	7.38	201.8	75.1	7.1
59	31.3	177.6	129.5	0.73	7.13	202.0	71.9	10.6
GWHP 59	37.5	178.3	129.8	0.73	6.96	202.1	69.8	14.6
59	43.8	178.8	129.9	0.73	6.85	202.2	68.2	19.3
68	18.8	169.5	126.8	0.75	8.60	198.8	89.1	4.2
68	25.0	171.0	127.3	0.74	8.14	198.8	83.9	6.9
68	31.3	172.0	127.6	0.74	7.88	198.9	80.7	10.3
68	37.5	172.6	127.8	0.74	7.71	198.9	78.6	14.2
68	43.8	173.1	128.0	0.74	7.58	199.0	77.1	18.7
77	18.8	163.7	124.8	0.76	9.47	196.0	97.9	4.0
77	25.0	165.2	125.4	0.76	9.00	196.0	92.7	6.7
77	31.3	166.2	125.7	0.76	8.72	195.9	89.5	10.0
GLHP 77	37.5	166.8	125.9	0.75	8.53	195.9	87.4	13.8
77	43.8	167.2	126.0	0.75	8.40	195.8	85.9	18.1
86	18.8	157.4	122.9	0.78	10.43	193.0	106.5	3.9
86	25.0	159.1	123.4	0.78	9.96	193.1	101.4	6.5
86	31.3	160.0	123.7	0.77	9.64	192.9	98.3	9.7
WLHP 86	37.5	160.6	123.9	0.77	9.46	192.8	96.3	13.4
86	43.8	161.0	124.0	0.77	9.32	192.8	94.8	17.6
95	18.8	150.5	120.1	0.80	11.46	189.6	115.2	3.8
95	25.0	152.1	121.1	0.80	10.95	189.5	110.2	6.4
95	31.3	152.8	120.9	0.79	10.66	189.2	107.1	9.5
95	37.5	153.6	121.3	0.79	10.47	189.3	105.1	13.0
95	43.8	154.3	121.8	0.79	10.32	189.5	103.7	17.1
105	18.8	142.5	117.7	0.83	12.691	185.8	124.8	3.7
105	25.0	144.1	118.1	0.82	12.178	185.6	119.9	6.2
105	31.3	145.0	118.3	0.82	11.871	185.5	116.9	9.2
105	37.5	145.7	118.6	0.81	11.670	185.5	114.9	12.7
105	43.8	146.0	118.7	0.81	11.522	185.3	113.5	16.7
115	18.8	133.5	114.8	0.86	14.028	181.4	134.3	3.6
115	25.0	135.4	115.3	0.85	13.513	181.5	129.5	6.0
115	31.3	136.3	115.7	0.85	13.197	181.4	126.6	9.0
115	37.5	137.0	116.0	0.85	12.986	181.3	124.7	12.4
115	43.8	137.4	116.1	0.85	12.834	181.2	123.3	16.2
120	37.5	132.2	114.4	0.87	13.689	178.9	129.5	12.2
120	43.8	133.1	114.7	0.86	13.543	179.3	128.2	16.0

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 37.5 Minimum CFM 4000; Nominal CFM 5000, Maximum CFM 6000



Performance Data

Table 31. Heating capacities (gross) - 12½ tons GEV*150

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	18.8	101.0	72.1	8.48	17.3	5.2
25	25.0	103.8	74.8	8.51	19.0	8.5
25	31.3	106.0	76.8	8.54	20.1	12.6
25	37.5	107.2	78.0	8.54	20.8	17.3
25	43.8	108.3	79.1	8.56	21.4	22.6
32	18.8	111.2	81.9	8.60	23.3	5.1
32	25.0	114.8	85.4	8.63	25.2	8.3
32	31.3	116.5	87.0	8.62	26.4	12.3
GLHP 32	37.5	118.1	88.6	8.65	27.3	16.8
32	43.8	119.1	89.6	8.65	27.9	22.0
45	18.8	131.3	101.2	8.83	34.2	4.9
45	25.0	135.4	105.1	8.87	36.6	8.1
45	31.3	138.0	107.7	8.88	38.1	11.9
45	37.5	139.5	109.2	8.89	39.2	16.3
45	43.8	140.7	110.4	8.90	40.0	21.4
50	18.8	142.2	111.5	8.99	38.1	4.8
50	25.0	146.7	115.9	9.05	40.7	7.8
50	31.3	149.4	118.5	9.07	42.4	11.6
GWHP 50	37.5	151.0	120.0	9.08	43.6	15.9
50	43.8	151.9	120.9	9.08	44.5	20.8
55	18.8	150.8	119.7	9.12	42.3	4.7
55	25.0	155.9	124.5	9.18	45.0	7.7
55	31.3	158.6	127.2	9.21	46.9	11.4
55	37.5	160.1	128.7	9.22	48.1	15.5
55	43.8	161.3	129.8	9.22	49.1	20.4
68	18.8	174.1	141.7	9.49	52.9	4.5
68	25.0	180.1	147.4	9.56	56.2	7.3
68	31.3	183.6	150.9	9.59	58.4	10.8
WLHP 68	37.5	185.7	152.9	9.61	59.8	14.8
68	43.8	186.9	154.1	9.62	61.0	19.4
75	18.8	187.3	154.2	9.70	58.6	4.4
75	25.0	194.0	160.6	9.79	62.2	7.2
75	31.3	198.1	164.5	9.83	64.5	10.6
75	37.5	200.4	166.8	9.86	66.1	14.5
75	43.8	201.5	167.9	9.84	67.3	19.0
86	18.8	209.0	174.6	10.06	67.4	4.2
86	25.0	217.2	182.4	10.18	71.4	6.9
86	31.3	222.0	187.1	10.25	74.0	10.2
86	37.5	224.5	189.4	10.27	75.9	14.0
86	43.8	225.7	190.6	10.27	77.3	18.3

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 37.5 Minimum CFM 4000; Nominal CFM 5000, Maximum CFM 6000

Table 32. Fan correction factors - 12½ tons GEV*150

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
4000	0.958	0.873	0.998	0.980	1.086
4500	0.980	0.936	0.999	0.991	1.038
5000	1.000	1.000	1.000	1.000	1.000
5500	1.017	1.063	1.001	1.008	0.970
6000	1.032	1.127	1.001	1.017	0.947

Table 33. Gross cooling capacities - 15 tons GEV*180

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	22.5	221.9	156.8	0.71	8.71	251.6	67.4	6.1
45	30.0	222.5	157.2	0.71	8.26	250.7	61.7	10.2
45	37.5	222.9	157.1	0.71	7.82	249.6	58.3	15.0
45	45.0	223.4	157.3	0.70	7.61	249.4	56.1	20.8
45	52.5	223.8	157.6	0.70	7.43	249.2	54.5	27.0
55	22.5	216.0	154.7	0.72	9.69	249.1	77.1	5.9
55	30.0	216.9	155.1	0.72	9.23	248.4	71.6	9.8
55	37.5	217.3	155.3	0.71	8.93	247.8	68.2	14.6
55	45.0	217.6	155.2	0.71	8.75	247.4	66.0	20.2
55	52.5	217.8	155.5	0.71	8.63	247.2	64.4	26.6
59	22.5	213.4	153.7	0.72	10.09	247.9	81.0	5.8
59	30.0	214.3	154.0	0.72	9.62	247.2	75.5	9.7
59	37.5	214.8	154.4	0.72	9.35	246.7	72.2	14.4
GWHP 59	45.0	215.1	154.5	0.72	9.17	246.4	70.0	19.9
59	52.5	215.3	154.4	0.72	9.03	246.1	68.4	26.2
68	22.5	207.3	151.8	0.73	11.06	245.1	89.8	5.6
68	30.0	208.2	151.9	0.73	10.56	244.3	84.3	9.4
68	37.5	208.8	152.3	0.73	10.27	243.8	81.0	14.0
68	45.0	209.1	152.2	0.73	10.08	243.5	78.8	19.3
68	52.5	209.3	152.5	0.73	9.94	243.2	77.3	25.4
77	22.5	200.6	149.6	0.75	12.18	242.1	98.5	5.5
77	30.0	201.2	149.4	0.74	11.61	240.8	93.1	9.1
77	37.5	202.1	150.2	0.74	11.29	240.7	89.8	13.6
GLHP 77	45.0	202.5	150.2	0.74	11.08	240.3	87.7	18.7
77	52.5	202.7	150.3	0.74	10.94	240.0	86.1	24.6
86	22.5	192.8	146.5	0.76	13.39	238.5	107.2	5.3
86	30.0	193.8	146.8	0.76	12.81	237.5	101.8	8.9
86	37.5	194.3	147.0	0.76	12.47	236.9	98.6	13.2
WLHP 86	45.0	194.7	147.0	0.76	12.26	236.5	96.5	18.2
86	52.5	194.9	147.1	0.75	12.11	236.2	95.0	23.9
95	22.5	185.1	144.0	0.78	14.76	235.5	115.9	5.2
95	30.0	186.1	144.3	0.78	14.13	234.3	110.6	8.7
95	37.5	186.6	144.5	0.77	13.76	233.6	107.5	12.9
95	45.0	187.0	144.6	0.77	13.53	233.2	105.4	17.7
95	52.5	187.2	144.7	0.77	13.36	232.8	103.9	23.3
105	22.5	176.0	141.3	0.80	16.496	232.3	125.6	5.1
105	30.0	177.0	141.6	0.80	15.809	231.0	120.4	8.4
105	37.5	177.6	141.8	0.80	15.411	230.2	117.3	12.5
105	45.0	177.9	141.9	0.80	15.150	229.6	115.2	17.2
105	52.5	178.2	141.9	0.80	14.980	229.3	113.7	22.6
115	22.5	166.1	138.4	0.83	18.418	228.9	135.4	4.9
115	30.0	167.1	138.7	0.83	17.737	227.7	130.2	8.2
115	37.5	167.7	138.9	0.83	17.308	226.7	127.1	12.2
115	45.0	168.0	139.0	0.83	17.026	226.1	125.1	16.8
115	52.5	168.2	139.1	0.83	16.828	225.7	123.6	22.0
120	45.0	162.6	137.3	0.84	18.090	224.4	130.0	16.6
120	52.5	162.9	137.4	0.84	17.881	223.9	128.5	21.8

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 45.0 Minimum CFM 4800; Nominal CFM 6000, Maximum CFM 7200



Performance Data

Table 34. Heating capacities (gross) - 15 tons GEV*180

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	22.5	128.1	94.3	9.91	16.6	7.1
25	30.0	129.0	95.0	9.94	18.7	11.7
25	37.5	130.8	96.8	9.97	19.8	17.2
25	45.0	132.2	98.1	9.99	20.6	23.6
25	52.5	133.2	99.1	10.01	21.2	30.9
32	22.5	137.3	102.7	10.13	22.9	6.9
32	30.0	141.0	106.1	10.20	24.9	11.3
32	37.5	143.6	108.6	10.25	26.2	16.7
GLHP 32	45.0	144.8	109.8	10.26	27.1	22.9
32	52.5	145.9	110.8	10.28	27.8	30.0
45	22.5	160.8	124.5	10.63	33.9	6.7
45	30.0	165.4	128.8	10.71	36.4	11.0
45	37.5	168.5	131.7	10.77	38.0	16.3
45	45.0	170.3	133.4	10.81	39.1	22.3
45	52.5	171.4	134.5	10.84	39.9	29.2
50	22.5	173.3	136.0	10.93	37.9	6.5
50	30.0	178.7	141.0	11.03	40.6	10.7
50	37.5	181.7	143.8	11.09	42.3	15.8
GWHP 50	45.0	183.5	145.4	11.14	43.5	21.7
50	52.5	184.5	146.5	11.15	44.4	28.3
55	22.5	183.6	145.5	11.16	42.1	6.4
55	30.0	189.5	150.9	11.30	44.9	10.5
55	37.5	192.8	154.0	11.37	46.8	15.5
55	45.0	194.6	155.7	11.41	48.1	21.3
55	52.5	195.4	156.5	11.42	49.0	27.8
68	22.5	211.7	171.2	11.88	52.8	6.1
68	30.0	219.1	177.9	12.07	56.1	10.0
68	37.5	223.2	181.6	12.18	58.3	14.8
WLHP 68	45.0	225.3	183.6	12.22	59.8	20.3
68	52.5	227.3	185.5	12.25	60.9	26.5
75	22.5	227.8	185.7	12.32	58.5	6.0
75	30.0	236.7	194.0	12.53	62.1	9.8
75	37.5	241.4	198.2	12.66	64.4	14.4
75	45.0	244.1	200.7	12.73	66.1	19.8
75	52.5	245.5	201.9	12.77	67.3	25.9
86	22.5	254.7	210.2	13.06	67.3	5.8
86	30.0	264.8	219.2	13.35	71.4	9.5
86	37.5	270.3	224.3	13.48	74.0	13.9
86	45.0	273.3	227.0	13.57	75.9	19.1
86	52.5	274.6	228.1	13.61	77.3	25.0

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 45.0 Minimum CFM 4800; Nominal CFM 6000, Maximum CFM 7200

Table 35. Fan correction factors - 15 tons GEV*180

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
4800	0.955	0.877	1.004	0.976	1.083
5400	0.980	0.938	1.001	0.989	1.036
6000	1.000	1.000	1.000	1.000	1.000
6600	1.018	1.061	0.998	1.008	0.971
7200	1.032	1.123	0.997	1.016	0.947

Table 36. Gross cooling capacities - 20 tons GEV*240

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	30.0	296.8	219.9	0.74	9.96	330.8	67.1	4.7
45	40.0	298.7	220.8	0.74	9.40	330.8	61.5	7.9
45	50.0	299.5	220.7	0.74	9.11	330.6	58.2	11.5
45	60.0	301.5	221.7	0.74	8.82	331.6	56.1	16.2
45	70.0	303.2	222.2	0.73	8.59	332.5	54.5	20.8
55	30.0	288.5	217.3	0.75	11.23	326.9	76.8	4.5
55	40.0	290.6	218.1	0.75	10.65	326.9	71.3	7.6
55	50.0	291.9	218.5	0.75	10.30	327.0	68.1	11.3
55	60.0	292.7	218.8	0.75	10.07	327.1	65.9	15.6
55	70.0	293.4	219.0	0.75	9.91	327.2	64.3	20.5
59	30.0	285.2	215.9	0.76	11.78	325.4	80.7	4.5
59	40.0	287.2	216.8	0.75	11.16	325.3	75.3	7.5
59	50.0	288.3	217.0	0.75	10.81	325.2	72.0	11.1
GWHP 59	60.0	289.1	217.5	0.75	10.58	325.2	69.8	15.4
59	70.0	289.7	217.5	0.75	10.42	325.2	68.3	20.2
68	30.0	277.5	213.1	0.77	13.04	322.0	89.5	4.3
68	40.0	279.1	213.7	0.77	12.42	321.5	84.1	7.3
68	50.0	280.2	214.1	0.76	12.04	321.3	80.9	10.8
68	60.0	280.8	214.3	0.76	11.81	321.1	78.7	14.9
68	70.0	281.3	214.5	0.76	11.64	321.0	77.2	19.5
77	30.0	269.1	210.1	0.78	14.44	318.4	98.2	4.2
77	40.0	270.7	210.6	0.78	13.78	317.7	92.9	7.0
77	50.0	271.5	210.9	0.78	13.40	317.3	89.7	10.5
GLHP 77	60.0	272.2	211.1	0.78	13.15	317.0	87.6	14.4
77	70.0	272.6	211.3	0.78	12.97	316.8	86.1	19.0
86	30.0	260.0	206.8	0.80	15.98	314.6	107.0	4.1
86	40.0	261.5	207.3	0.79	15.23	313.5	101.7	6.9
86	50.0	262.4	207.6	0.79	14.82	312.9	98.5	10.2
WLHP 86	60.0	262.9	207.8	0.79	14.55	312.6	96.4	14.0
86	70.0	263.3	207.9	0.79	14.36	312.3	94.9	18.4
95	30.0	250.2	203.5	0.81	17.68	310.6	115.7	4.0
95	40.0	251.6	204.0	0.81	16.92	309.4	110.5	6.7
95	50.0	252.4	204.3	0.81	16.48	308.7	107.3	9.9
95	60.0	253.0	204.5	0.81	16.20	308.2	105.3	13.7
95	70.0	253.3	204.6	0.81	16.00	307.9	103.8	17.9
105	30.0	238.2	199.5	0.84	19.841	305.9	125.4	3.9
105	40.0	239.6	200.0	0.83	18.996	304.4	120.2	6.5
105	50.0	240.4	200.2	0.83	18.516	303.6	117.1	9.6
105	60.0	240.9	200.4	0.83	18.205	303.0	115.1	13.3
105	70.0	241.3	200.5	0.83	17.987	302.7	113.6	17.4
115	30.0	224.7	195.4	0.87	22.283	300.8	135.1	3.8
115	40.0	226.3	195.9	0.87	21.396	299.3	130.0	6.3
115	50.0	227.1	196.2	0.86	20.879	298.4	126.9	9.4
115	60.0	227.6	196.4	0.86	20.540	297.7	124.9	13.0
115	70.0	228.0	196.5	0.86	20.303	297.3	123.5	17.0
120	60.0	220.2	193.9	0.88	21.893	294.9	129.8	12.8
120	70.0	219.9	193.9	0.88	21.602	293.6	128.4	16.8

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 60.0 Minimum CFM 6400; Nominal CFM 8000, Maximum CFM 9600



Performance Data

Table 37. Heating capacities (gross) - 20 tons GEV*240

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	30.0	147.5	106.2	12.09	17.9	5.6
25	40.0	152.0	110.4	12.18	19.5	9.2
25	50.0	154.9	113.2	12.24	20.5	13.6
25	60.0	157.0	115.1	12.29	21.2	18.7
25	70.0	158.6	116.5	12.33	21.7	24.4
32	30.0	162.8	120.7	12.36	24.0	5.4
32	40.0	168.1	125.6	12.45	25.7	9.0
32	50.0	171.6	128.8	12.51	26.8	13.2
GLHP 32	60.0	173.9	131.1	12.54	27.6	18.1
32	70.0	175.7	132.8	12.58	28.2	23.7
45	30.0	192.9	149.1	12.82	35.1	5.3
45	40.0	199.9	155.7	12.95	37.2	8.7
45	50.0	204.5	160.0	13.04	38.6	12.8
45	60.0	207.7	163.0	13.10	39.6	17.6
45	70.0	210.1	165.3	13.14	40.3	23.1
50	30.0	208.1	163.2	13.14	39.1	5.1
50	40.0	215.5	170.2	13.26	41.5	8.5
50	50.0	220.3	174.7	13.35	43.0	12.5
GWHP 50	60.0	223.7	177.9	13.43	44.1	17.1
50	70.0	226.3	180.3	13.48	44.8	22.4
55	30.0	221.0	175.4	13.38	43.3	5.1
55	40.0	229.2	183.0	13.54	45.8	8.3
55	50.0	234.6	188.1	13.64	47.5	12.2
55	60.0	238.4	191.6	13.72	48.6	16.8
55	70.0	241.3	194.2	13.78	49.5	22.0
68	30.0	256.8	208.6	14.13	54.1	4.8
68	40.0	267.2	218.3	14.33	57.1	7.9
68	50.0	274.1	224.7	14.48	59.0	11.7
WLHP 68	60.0	279.1	229.3	14.60	60.4	16.0
68	70.0	282.8	232.7	14.69	61.4	21.0
75	30.0	277.2	227.5	14.56	59.8	4.7
75	40.0	289.1	238.4	14.85	63.1	7.7
75	50.0	297.2	245.8	15.05	65.2	11.4
75	60.0	302.7	250.8	15.19	66.6	15.7
75	70.0	307.0	254.7	15.31	67.7	20.5
86	30.0	310.9	258.3	15.42	68.8	4.6
86	40.0	325.4	271.5	15.77	72.4	7.5
86	50.0	334.7	280.0	16.03	74.8	11.0
86	60.0	341.1	285.8	16.21	76.5	15.1
86	70.0	345.9	290.1	16.35	77.7	19.7

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 60.0 Minimum CFM 6400; Nominal CFM 8000, Maximum CFM 9600

Table 38. Fan correction factors - 20 tons GEV*240

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
6400	0.958	0.872	0.997	0.973	1.074
7200	0.981	0.936	0.998	0.988	1.031
8000	1.000	1.000	1.000	1.000	1.000
8800	1.017	1.065	1.001	1.010	0.975
9600	1.032	1.130	1.003	1.018	0.955

Table 39. Gross cooling capacities - 25 tons GEV*300

EWT	GPM	Gross Cap Mbtuh	Gross Sen Mbtuh	SHR	Comp Power kW	Reject Mbtuh	LWT	Feet Head
45	37.5	368.3	268.9	0.73	13.6	414.6	67.1	4.4
45	50.0	372.3	270.5	0.73	13.0	416.6	61.7	7.4
45	62.5	374.9	271.4	0.72	12.6	418.0	58.4	11.1
45	75.0	376.6	272.1	0.72	12.4	418.9	56.2	15.3
45	87.5	377.9	272.5	0.72	12.3	419.7	54.6	20.1
55	37.5	356.8	264.6	0.74	14.9	407.8	76.7	4.3
55	50.0	360.5	266.3	0.74	14.3	409.2	71.4	7.2
55	62.5	362.7	267.2	0.74	13.9	410.1	68.1	10.6
55	75.0	364.2	267.3	0.73	13.6	410.8	66.0	14.7
55	87.5	365.4	268.0	0.73	13.5	411.4	64.4	19.3
59	37.5	352.1	263.4	0.75	15.5	405.0	80.6	4.2
59	50.0	355.7	264.6	0.74	14.8	406.3	75.3	7.1
59	62.5	357.8	265.4	0.74	14.4	407.1	72.0	10.5
GWHP 59	75.0	359.3	265.9	0.74	14.2	407.8	69.9	14.5
59	87.5	360.4	266.3	0.74	14.0	408.2	68.3	19.0
68	37.5	341.1	259.3	0.76	17.0	399.2	89.3	4.1
68	50.0	344.6	260.7	0.76	16.3	400.1	84.0	6.8
68	62.5	346.5	261.3	0.75	15.8	400.5	80.8	10.2
68	75.0	347.9	261.8	0.75	15.5	400.8	78.7	14.0
68	87.5	348.8	262.1	0.75	15.3	401.1	77.2	18.4
77	37.5	329.5	255.2	0.77	18.6	393.0	98.0	4.0
77	50.0	332.8	256.5	0.77	17.8	393.6	92.7	6.6
77	62.5	334.8	257.2	0.77	17.4	394.0	89.6	9.9
GLHP 77	75.0	336.0	257.7	0.77	17.1	394.3	87.5	13.6
77	87.5	336.9	257.9	0.77	16.9	394.5	86.0	17.9
86	37.5	317.1	251.0	0.79	20.5	387.0	106.6	3.9
86	50.0	320.4	252.1	0.79	19.6	387.2	101.5	6.5
86	62.5	322.3	252.7	0.78	19.1	387.4	98.4	9.6
WLHP 86	75.0	323.4	253.1	0.78	18.7	387.3	96.3	13.2
86	87.5	324.3	253.5	0.78	18.5	387.5	94.9	17.4
95	37.5	303.9	246.7	0.81	22.4	380.4	115.3	3.8
95	50.0	307.1	247.7	0.81	21.5	380.6	110.2	6.3
95	62.5	309.0	248.3	0.80	21.0	380.7	107.2	9.3
95	75.0	310.2	248.7	0.80	20.7	380.8	105.2	12.9
95	87.5	311.0	249.0	0.80	20.5	380.8	103.7	16.9
105	37.5	288.2	241.9	0.84	24.9	373.0	124.9	3.7
105	50.0	291.4	242.9	0.83	23.9	373.1	119.9	6.1
105	62.5	293.2	243.4	0.83	23.4	373.0	116.9	9.1
105	75.0	294.4	243.8	0.83	23.0	373.0	114.9	12.5
105	87.5	295.3	244.0	0.83	22.8	373.0	113.5	16.5
115	37.5	270.7	236.8	0.87	27.5	364.7	134.5	3.6
115	50.0	274.1	237.8	0.87	26.6	364.9	129.6	6.0
115	62.5	276.1	238.3	0.86	26.0	364.8	126.7	8.9
115	75.0	277.3	238.7	0.86	25.6	364.8	124.7	12.2
115	87.5	278.1	239.0	0.86	25.4	364.7	123.3	16.0
120	75.0	267.9	236.0	0.88	27.1	360.3	129.6	12.1
120	87.5	268.8	236.2	0.88	26.8	360.2	128.2	15.8

Performance data is tabulated for cooling at 80.6°F DB/66.2°F WB entering air.
 For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the *cooling correction factors* for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#). The minimum gpm/ton is 3.0 when the EWT is greater than 115°F and the EAT is less than 67°F WB.
 Rated GPM: 75.0 Minimum CFM 8000; Nominal CFM 10000, Maximum CFM 12000



Performance Data

Table 40. Heating capacities (gross) - 25 tons GEV*300

EWT	GPM	Gross Cap Mbtuh	Absorb Mbtuh	Comp Power kW	LWT	Feet Head
25	37.5	196.7	139.7	16.7	17.5	5.2
25	50.0	202.7	145.2	16.8	19.2	8.5
25	62.5	206.6	148.8	16.9	20.2	12.6
25	75.0	209.3	151.3	17.0	21.0	17.3
25	87.5	211.4	153.1	17.1	21.5	22.6
32	37.5	216.0	157.8	17.04	23.6	5.0
32	50.0	223.0	164.3	17.22	25.4	8.3
32	62.5	227.6	168.5	17.33	26.6	12.2
GLHP 32	75.0	230.9	171.4	17.41	27.4	16.8
32	87.5	233.3	173.7	17.48	28.0	21.9
45	37.5	254.4	193.5	17.83	34.7	4.9
45	50.0	263.6	202.1	18.02	36.9	8.1
45	62.5	269.6	207.6	18.17	38.4	11.9
45	75.0	273.7	211.5	18.25	39.4	16.3
45	87.5	276.9	214.4	18.31	40.1	21.3
50	37.5	273.9	211.1	18.41	38.7	4.8
50	50.0	283.6	220.1	18.62	41.2	7.8
50	62.5	289.9	225.9	18.74	42.8	11.5
GWHP 50	75.0	294.2	230.0	18.83	43.9	15.8
50	87.5	297.6	233.0	18.90	44.7	20.7
55	37.5	290.3	226.2	18.77	42.9	4.7
55	50.0	300.9	236.1	19.00	45.6	7.7
55	62.5	307.8	242.5	19.14	47.2	11.3
55	75.0	312.7	247.0	19.26	48.4	15.5
55	87.5	316.5	250.5	19.34	49.3	20.3
68	37.5	335.3	267.4	19.87	53.7	4.5
68	50.0	348.7	279.8	20.19	56.8	7.3
68	62.5	357.6	287.9	20.40	58.8	10.8
WLHP 68	75.0	363.7	293.6	20.56	60.2	14.8
68	87.5	368.2	297.7	20.66	61.2	19.4
75	37.5	360.7	290.6	20.55	59.5	4.4
75	50.0	375.8	304.5	20.90	62.8	7.2
75	62.5	385.6	313.5	21.15	65.0	10.5
75	75.0	392.4	319.7	21.28	66.5	14.5
75	87.5	397.4	324.4	21.41	67.6	18.9
86	37.5	402.2	328.3	21.65	68.5	4.2
86	50.0	419.9	344.4	22.13	72.2	6.9
86	62.5	432.0	355.2	22.49	74.6	10.2
86	75.0	440.0	362.5	22.71	76.3	14.0
86	87.5	445.9	368.0	22.83	77.6	18.3

Performance data is tabulated for heating at 68°F DB entering air.

For conditions other than what is tabulated, multipliers must be used to correct performance. See the *fan correction factors table* for CFM other than rated and the heating correction factors for variations in entering air temperature. WLHP data shown in bold type is performance data at ARI/ISO 13256-1. The bold type for GLHP is a rating point only. For ARI 13256-1 GLHP conditions, apply 15% methanol by volume per the antifreeze correction factors found on [Table 76, p. 66](#).

Rated GPM: 75.0 Minimum CFM 8000; Nominal CFM 10000, Maximum CFM 12000

Table 41. Fan correction factors - 25 tons GEV*300

Entering CFM	Cooling Capacity	Sensible Capacity	Cooling Input Watts	Heating Capacity	Heating Input Watts
8000	0.958	0.872	0.997	0.973	1.074
9000	0.981	0.936	0.998	0.988	1.031
10000	1.000	1.000	1.000	1.000	1.000
11000	1.017	1.065	1.001	1.010	0.975
12000	1.032	1.130	1.003	1.018	0.955

Table 42. Correction factors for variation in entering air temperature - 6 tons GEH*072

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.926	0.982	0.951	1.020	1.092	*	*	43	1.048	0.703
49.4	0.926	0.982	0.952	1.021	1.093	*	*	48	1.038	0.760
56.3	0.927	0.982	0.798	0.997	1.094	*	*	53	1.028	0.817
60.3	0.928	0.983	0.619	0.835	1.049	*	*	58	1.018	0.879
63.2	0.953	0.989	0.492	0.705	0.922	1.140	*	63	1.009	0.938
66.2	1.000	1.000	—	0.573	0.789	1.000	1.208	68	1.000	1.000
72.1	1.114	1.020	—	—	0.518	0.731	0.945	73	0.989	1.065
77.1	1.214	1.029	—	—	—	0.496	0.713	78	0.980	1.134

1. * = Sensible equals total capacity

Table 43. Correction factors for variation in entering air temperature - 7½ tons GEH*090

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.934	0.977	0.963	1.027	1.094	*	*	43	1.056	0.728
49.4	0.934	0.977	0.963	1.028	1.094	*	*	48	1.043	0.779
56.3	0.935	0.978	0.801	1.002	1.095	*	*	53	1.033	0.831
60.3	0.938	0.979	0.612	0.835	1.045	*	*	58	1.022	0.887
63.2	0.957	0.987	0.477	0.698	0.921	1.124	*	63	1.012	0.943
66.2	1.000	1.000	—	0.555	0.779	1.000	1.195	68	1.000	1.000
72.1	1.100	1.024	—	—	0.490	0.718	0.937	73	0.988	1.061
77.1	1.188	1.039	—	—	—	0.466	0.695	78	0.976	1.123

1. * = Sensible equals total capacity

Table 44. Correction factors for variation in entering air temperature - 10 tons GEH*120

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.937	0.987	0.966	1.029	1.094	*	*	43	1.119	0.748
49.4	0.937	0.987	0.967	1.029	1.095	*	*	48	1.088	0.794
56.3	0.938	0.987	0.803	1.005	1.096	*	*	53	1.065	0.843
60.3	0.939	0.987	0.618	0.838	1.047	*	*	58	1.041	0.893
63.2	0.954	0.992	0.479	0.702	0.922	1.130	*	63	1.021	0.946
66.2	1.000	1.000	—	0.557	0.780	1.000	1.202	68	1.000	1.000
72.1	1.096	1.016	—	—	0.489	0.714	0.937	73	0.967	1.049
77.1	1.184	1.028	—	—	—	0.461	0.687	78	0.940	1.103

1. * = Sensible equals total capacity

Table 45. Correction factors for variation in entering air temperature - 15 tons GEH*150

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.934	0.994	0.991	1.053	1.117	*	*	43	1.050	0.748
49.4	0.935	0.994	0.991	1.054	1.118	*	*	48	1.040	0.793
56.3	0.936	0.995	0.810	1.031	1.119	*	*	53	1.030	0.840
60.3	0.936	0.995	0.621	0.842	1.064	*	*	58	1.020	0.891
63.2	0.957	0.996	0.476	0.701	0.924	1.148	1.252	63	1.010	0.945
66.2	1.000	1.000	—	0.553	0.778	1.000	1.225	68	1.000	1.000
72.1	1.098	1.009	—	—	0.480	0.704	0.929	73	0.990	1.060
77.1	1.189	1.016	—	—	—	0.442	0.673	78	0.980	1.124

1. * = Sensible equals total capacity



Performance Data

Table 46. Correction factors for variation in entering air temperature - 15 tons GEH*180

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.940	0.985	1.004	1.067	1.132	*	*	43	1.052	0.783
49.4	0.941	0.985	1.005	1.068	1.133	*	*	48	1.041	0.821
56.3	0.942	0.986	0.808	1.038	1.135	*	*	53	1.032	0.862
60.3	0.943	0.986	0.607	0.839	1.072	*	*	58	1.021	0.907
63.2	0.962	0.991	0.461	0.689	0.923	1.158	*	63	1.011	0.953
66.2	1.000	1.000	—	0.536	0.766	1.000	1.238	68	1.000	1.000
72.1	1.094	1.022	—	—	0.457	0.687	0.922	73	0.986	1.051
77.1	1.185	1.038	—	—	—	0.419	0.648	78	0.972	1.103

1. * = Sensible equals total capacity

Table 47. Correction factors for variation in entering air temperature - 6 tons GEV*072

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.949	0.983	1.005	1.068	1.131	*	*	43	1.063	0.692
49.4	0.950	0.983	1.005	1.068	1.132	*	*	48	1.047	0.748
56.3	0.951	0.983	0.813	1.040	1.134	*	*	53	1.035	0.808
60.3	0.951	0.984	0.623	0.843	1.070	*	*	58	1.023	0.869
63.2	0.962	0.989	0.481	0.702	0.924	1.154	*	63	1.012	0.934
66.2	1.000	1.000	—	0.553	0.775	1.000	1.233	68	1.000	1.000
72.1	1.083	1.019	—	—	0.477	0.700	0.922	73	0.989	1.068
77.1	1.154	1.030	—	—	—	0.437	0.658	78	0.976	1.143

1. * = Sensible equals total capacity

Table 48. Correction factors for variation in entering air temperature - 7½ tons GEV*090

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.943	0.981	0.994	1.058	1.125	*	*	43	1.068	0.713
49.4	0.944	0.981	0.995	1.059	1.125	*	*	48	1.057	0.768
56.3	0.945	0.981	0.806	1.020	1.127	*	*	53	1.042	0.824
60.3	0.946	0.982	0.615	0.837	1.067	*	*	58	1.028	0.880
63.2	0.963	0.988	0.459	0.690	0.920	1.140	*	63	1.014	0.938
66.2	1.000	1.000	—	0.535	0.767	1.000	1.210	68	1.000	1.000
72.1	1.088	1.023	—	—	0.455	0.688	0.920	73	0.988	1.066
77.1	1.169	1.037	—	—	—	0.415	0.652	78	0.974	1.133

1. * = Sensible equals total capacity

Table 49. Correction factors for variation in entering air temperature - 10 tons GEV*120

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.943	0.997	1.007	1.073	1.140	*	*	43	1.077	0.718
49.4	0.944	0.997	1.008	1.073	1.141	*	*	48	1.057	0.769
56.3	0.945	0.997	0.803	1.041	1.142	*	*	53	1.042	0.824
60.3	0.946	0.997	0.594	0.834	1.077	*	*	58	1.030	0.881
63.2	0.962	0.997	0.439	0.679	0.920	1.164	*	63	1.015	0.941
66.2	1.000	1.000	—	0.515	0.756	1.000	1.245	68	1.000	1.000
72.1	1.088	1.004	—	—	0.430	0.672	0.913	73	0.985	1.062
77.1	1.169	1.010	—	—	—	0.385	0.630	78	0.970	1.126

1. * = Sensible equals total capacity

Table 50. Correction factors for variation in entering air temperature - 12½ tons GEV*150

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.936	0.994	1.018	1.081	1.147	*	*	43	1.056	0.763
49.4	0.937	0.994	1.018	1.214	1.147	*	*	48	1.047	0.807
56.3	0.938	0.994	0.809	1.047	1.149	*	*	53	1.035	0.851
60.3	0.938	0.994	0.603	0.841	1.077	*	*	58	1.023	0.897
63.2	0.961	0.996	0.449	0.683	0.924	1.162	*	63	1.015	0.951
66.2	1.000	1.000	—	0.522	0.758	1.000	1.240	68	1.000	1.000
72.1	1.088	1.008	—	—	0.431	0.672	0.908	73	0.987	1.054
77.1	1.171	1.015	—	—	—	0.383	0.625	78	0.975	1.111

1. * = Sensible equals total capacity

Table 51. Correction factors for variation in entering air temperature - 15 tons GEV*180

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.938	0.995	1.041	1.105	1.172	*	*	48	1.052	0.783
49.4	0.938	0.995	1.041	1.105	1.173	*	*	53	1.043	0.822
56.3	0.939	0.995	0.814	1.055	1.176	*	*	58	1.033	0.865
60.3	0.940	0.995	0.601	0.841	1.087	*	*	63	1.025	0.908
63.2	0.965	0.994	0.444	0.683	0.923	1.174	*	68	1.011	0.951
66.2	1.000	1.000	—	0.517	0.758	1.000	1.253	73	1.000	1.000
72.1	1.095	1.004	—	—	0.423	0.677	0.903	78	0.987	1.049
77.1	1.174	1.010	—	—	—	0.377	0.643	83	0.975	1.102

1. * = Sensible equals total capacity

Table 52. Correction factors for variation in entering air temperature - 20 tons GEV*240

Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.941	0.991	0.996	1.059	1.124	*	*	43	1.059	0.769
49.4	0.942	0.991	0.997	1.060	1.125	*	*	48	1.047	0.811
56.3	0.943	0.991	0.805	1.036	1.126	*	*	53	1.036	0.856
60.3	0.943	0.991	0.610	0.838	1.068	*	*	58	1.024	0.903
63.2	0.958	0.993	0.468	0.690	0.922	1.155	*	63	1.012	0.950
66.2	1.000	1.000	—	0.549	0.770	1.000	1.234	68	1.000	1.000
72.1	1.102	1.019	—	—	0.459	0.702	0.927	73	0.988	1.055
77.1	1.188	1.032	—	—	—	0.423	0.674	78	0.977	1.112

1. * = Sensible equals total capacity

Table 53. Correction factors for variation in entering air temperature - 25 tons GEV*300

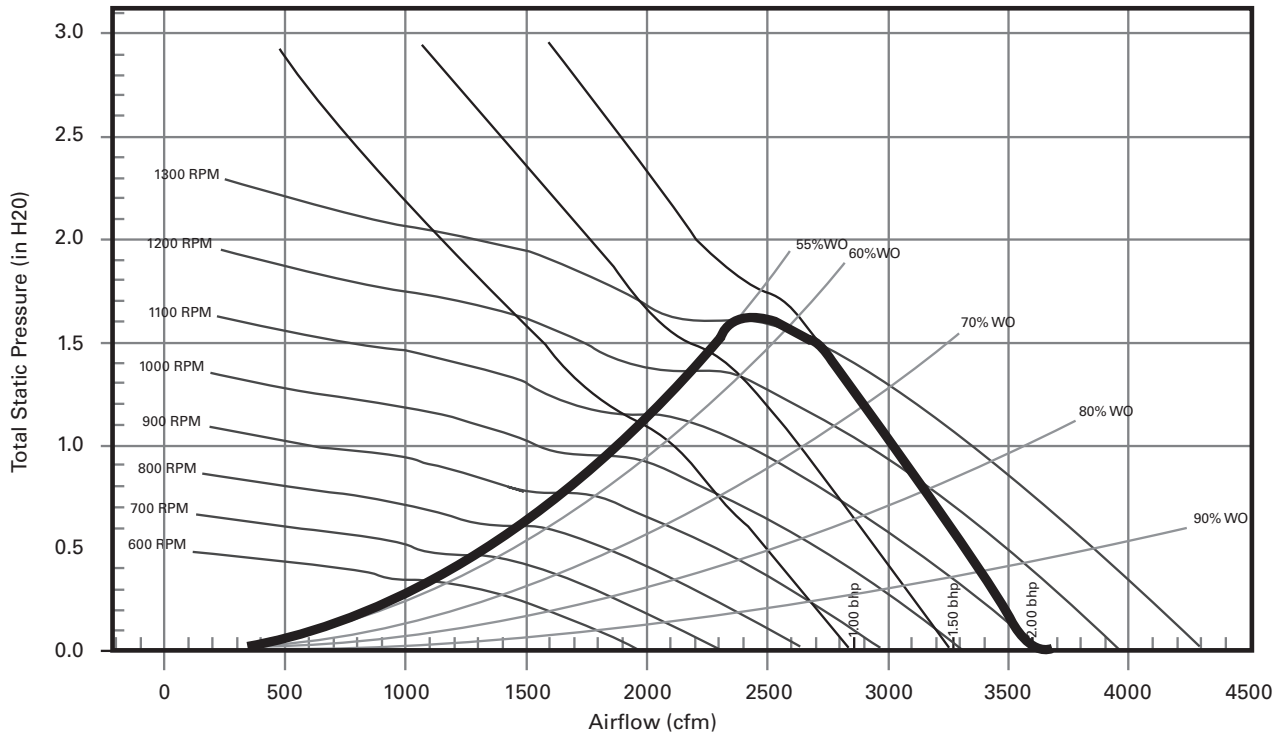
Cooling Entering Air WB F	Cooling Capacity	Cooling Comp Power Watts	Sensible vs. Entering Dry Bulb Multipliers					Heating Entering Air DB F	Heating Capacity	Heating Comp Power Watts
			65.6	70.6	75.6	80.6	85.6			
44.5	0.939	0.993	1.014	1.075	1.137	*	*	43	1.059	0.775
49.4	0.940	0.993	1.015	1.076	1.138	*	*	48	1.048	0.816
56.3	0.941	0.992	0.812	1.047	1.139	*	*	53	1.035	0.857
60.3	0.942	0.993	0.606	0.841	1.077	*	*	58	1.023	0.901
63.2	0.962	0.994	0.457	0.688	0.923	1.161	*	63	1.011	0.949
66.2	1.000	1.000	—	0.532	0.764	1.000	1.237	68	1.000	1.000
72.1	1.093	1.012	—	—	0.452	0.687	0.919	73	0.988	1.053
77.1	1.177	1.024	—	—	—	0.421	0.653	78	0.977	1.109

1. * = Sensible equals total capacity



Fan Performance Data

Figure 2. Fan performance curve - GEH*072(a)



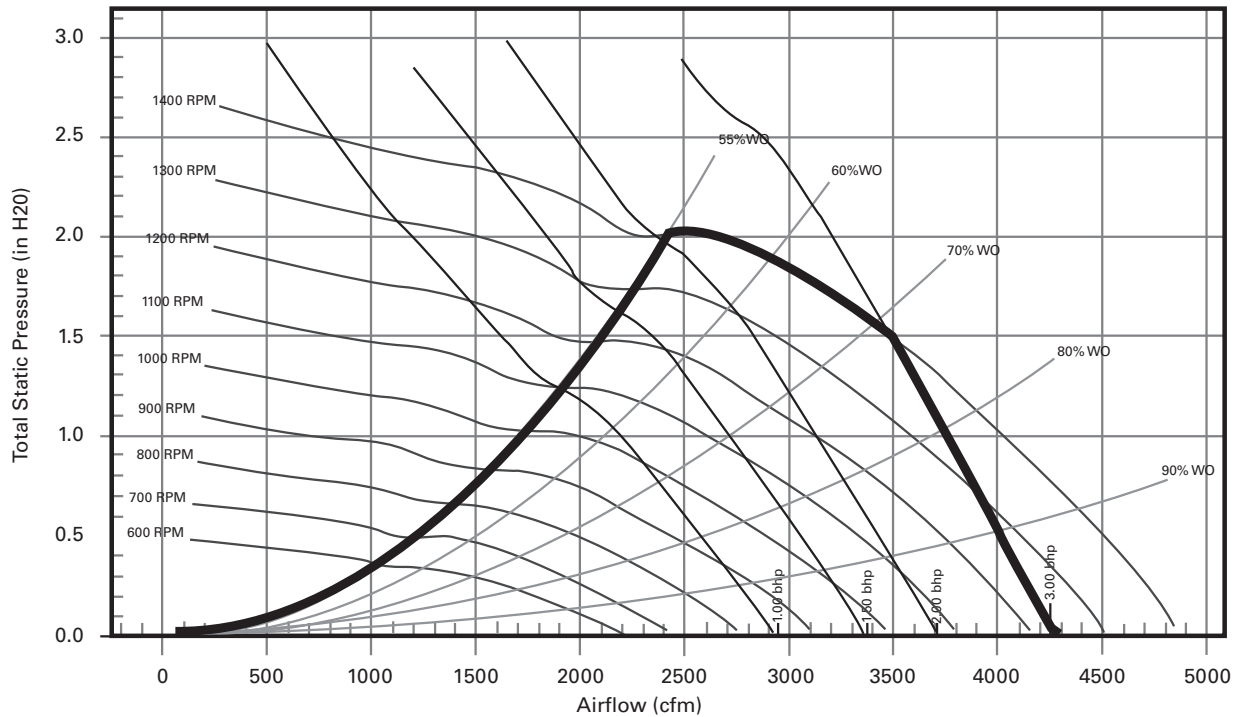
(a) Includes wet coil, no filter

Table 54. Fan performance curve - GEH*072 (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1920	632 ^(a)	0.35 ^(a)	682 ^(a)	0.40 ^(a)	729 ^(a)	0.46 ^(a)	774 ^(a)	0.51 ^(a)	818 ^(a)	0.57 ^(a)	860 ^(a)	0.62 ^(a)	901 ^(a)	0.68 ^(a)
2160	699 ^(a)	0.49 ^(a)	745 ^(a)	0.55 ^(a)	787 ^(a)	0.60 ^(a)	829 ^(a)	0.66 ^(a)	869 ^(a)	0.72 ^(a)	907 ^(a)	0.79 ^(a)	945 ^(c)	0.85 ^(c)
2400	767 ^(a)	0.66 ^(a)	808 ^(a)	0.72 ^(a)	848 ^(a)	0.78 ^(a)	886 ^(a)	0.85 ^(a)	923 ^(a)	0.91 ^(a)	959 ^(c)	0.98 ^(c)	994 ^(b)	1.05 ^(b)
2640	836 ^(a)	0.86 ^(a)	874 ^(a)	0.93 ^(a)	911 ^(a)	1.00 ^(a)	946 ^(b)	1.07 ^(b)	980 ^(b)	1.14 ^(b)	1014 ^(b)	1.21 ^(b)	1047 ^(b)	1.28 ^(b)
2880	905 ^(b)	1.10 ^(b)	940 ^(b)	1.17 ^(b)	974 ^(b)	1.25 ^(b)	1008 ^(b)	1.33 ^(b)	1039 ^(b)	1.40 ^(b)	1071 ^(b)	1.48 ^(b)	1102 ^(d)	1.56 ^(d)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)													
	0.8		0.9		1.0		1.1		1.2		1.3			
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1920	941 ^(c)	0.74 ^(c)	979 ^(c)	0.80 ^(c)	1027 ^(c)	0.89 ^(c)	1077 ^(c)	0.98 ^(c)	1120 ^(b)	1.06 ^(b)	1159 ^(b)	1.14 ^(b)	—	—
2160	982 ^(c)	0.91 ^(c)	1018 ^(c)	0.98 ^(c)	1053 ^(b)	1.05 ^(b)	1087 ^(b)	1.12 ^(b)	1122 ^(b)	1.19 ^(b)	1171 ^(b)	1.30 ^(b)	—	—
2400	1029 ^(b)	1.12 ^(b)	1062 ^(b)	1.19 ^(b)	1095 ^(b)	1.26 ^(b)	1128 ^(b)	1.33 ^(b)	1159 ^(b)	1.41 ^(b)	1191 ^(b)	1.49 ^(b)	—	—
2640	1078 ^(b)	1.36 ^(b)	1111 ^(b)	1.44 ^(b)	1142 ^(d)	1.51 ^(d)	1171 ^(d)	1.59 ^(d)	1202 ^(d)	1.67 ^(d)	1231 ^(d)	1.75 ^(d)	—	—
2880	1132 ^(d)	1.64 ^(d)	1161 ^(d)	1.72 ^(d)	1191 ^(d)	1.80 ^(d)	1220 ^(d)	1.89 ^(d)	1248 ^(d)	1.97 ^(d)	—	—	—	—

- (a) Package A
- (b) Package C
- (c) Package B
- (d) Package D

Figure 3. Fan performance curve - GEH*090(a)



(a) Includes wet coil, no filter

Table 55. Fan performance curve - GEH*090 (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	727 ^(a)	0.59 ^(a)	769 ^(a)	0.65 ^(a)	810 ^(a)	0.72 ^(a)	849 ^(a)	0.78 ^(a)	886 ^(a)	0.84 ^(a)	923 ^(a)	0.90 ^(a)	958 ^(a)	0.96 ^(a)	993 ^(c)	1.03 ^(c)
2700	809 ^(a)	0.82 ^(a)	845 ^(a)	0.89 ^(a)	883 ^(a)	0.96 ^(a)	919 ^(b)	1.03 ^(b)	953 ^(b)	1.10 ^(b)	986 ^(c)	1.17 ^(c)	1018 ^(c)	1.24 ^(c)	1051 ^(c)	1.31 ^(c)
3000	891 ^(b)	1.11 ^(b)	924 ^(b)	1.19 ^(b)	957 ^(b)	1.26 ^(b)	991 ^(c)	1.34 ^(c)	1023 ^(c)	1.42 ^(c)	1053 ^(c)	1.50 ^(c)	1083 ^(d)	1.57 ^(d)	1113 ^(d)	1.65 ^(d)
3300	975 ^(b)	1.47 ^(b)	1003 ^(d)	1.54 ^(d)	1033 ^(d)	1.63 ^(d)	1064 ^(d)	1.71 ^(d)	1095 ^(d)	1.80 ^(d)	1124 ^(d)	1.89 ^(d)	1152 ^(d)	1.97 ^(d)	1179 ^(e)	2.06 ^(e)
3600	1059 ^(d)	1.89 ^(d)	1084 ^(d)	1.97 ^(d)	1111 ^(e)	2.06 ^(e)	1140 ^(e)	2.15 ^(e)	1168 ^(e)	2.25 ^(e)	1196 ^(e)	2.35 ^(e)	1222 ^(e)	2.44 ^(e)	1248 ^(e)	2.53 ^(e)

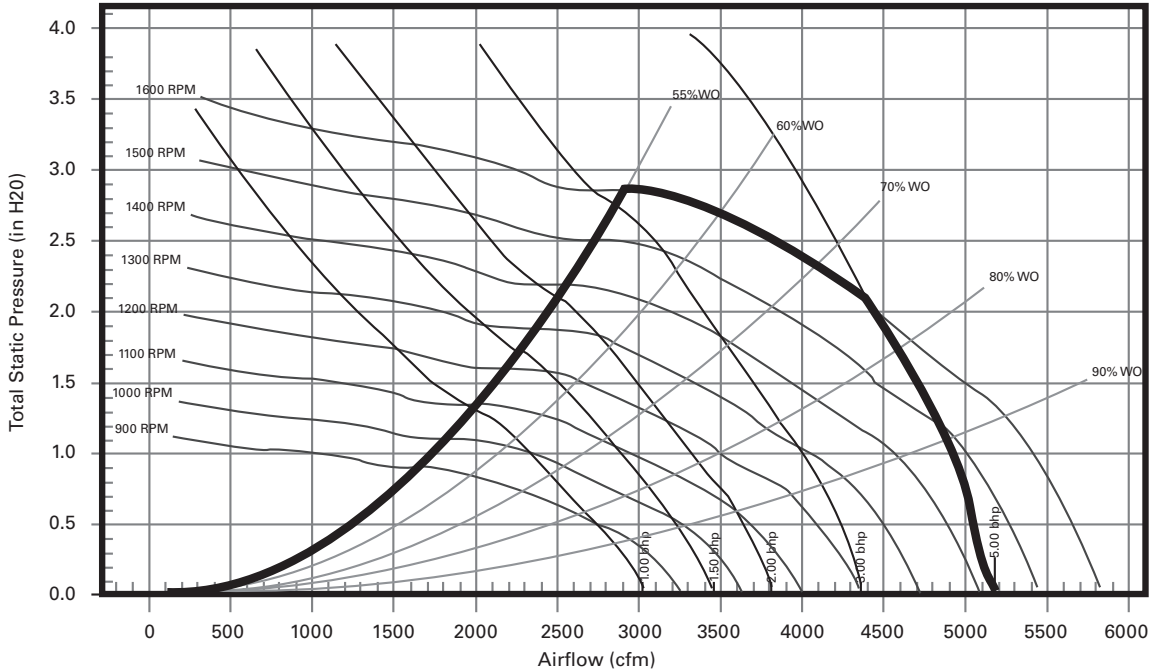
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)													
	0.9		1.0		1.1		1.2		1.3		1.4		1.5	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	1026 ^(c)	1.09 ^(c)	1059 ^(c)	1.16 ^(c)	1091 ^(c)	1.23 ^(c)	1123 ^(c)	1.30 ^(c)	1154 ^(c)	1.37 ^(c)	1185 ^(c)	1.45 ^(c)	1217 ^(d)	1.53 ^(d)
2700	1082 ^(c)	1.38 ^(c)	1113 ^(c)	1.45 ^(c)	1143 ^(d)	1.53 ^(d)	1172 ^(d)	1.60 ^(d)	1202 ^(d)	1.68 ^(d)	1230 ^(d)	1.76 ^(d)	1257 ^(d)	1.83 ^(d)
3000	1143 ^(d)	1.73 ^(d)	1171 ^(d)	1.81 ^(d)	1199 ^(d)	1.89 ^(d)	1228 ^(d)	1.97 ^(d)	1255 ^(e)	2.05 ^(e)	1281 ^(e)	2.13 ^(e)	1308 ^(e)	2.21 ^(e)
3300	1206 ^(e)	2.14 ^(e)	1233 ^(e)	2.22 ^(e)	1259 ^(e)	2.31 ^(e)	1286 ^(e)	2.40 ^(e)	1312 ^(e)	2.49 ^(e)	1337 ^(e)	2.57 ^(e)	1362 ^(e)	2.66 ^(e)
3600	1273 ^(e)	2.62 ^(e)	1298 ^(e)	2.71 ^(e)	1323 ^(e)	2.81 ^(e)	1348 ^(e)	2.90 ^(e)	1372 ^(e)	2.99 ^(e)	—	—	—	—

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package E



Fan Performance Data

Figure 4. Fan performance curve - GEH*120(a)



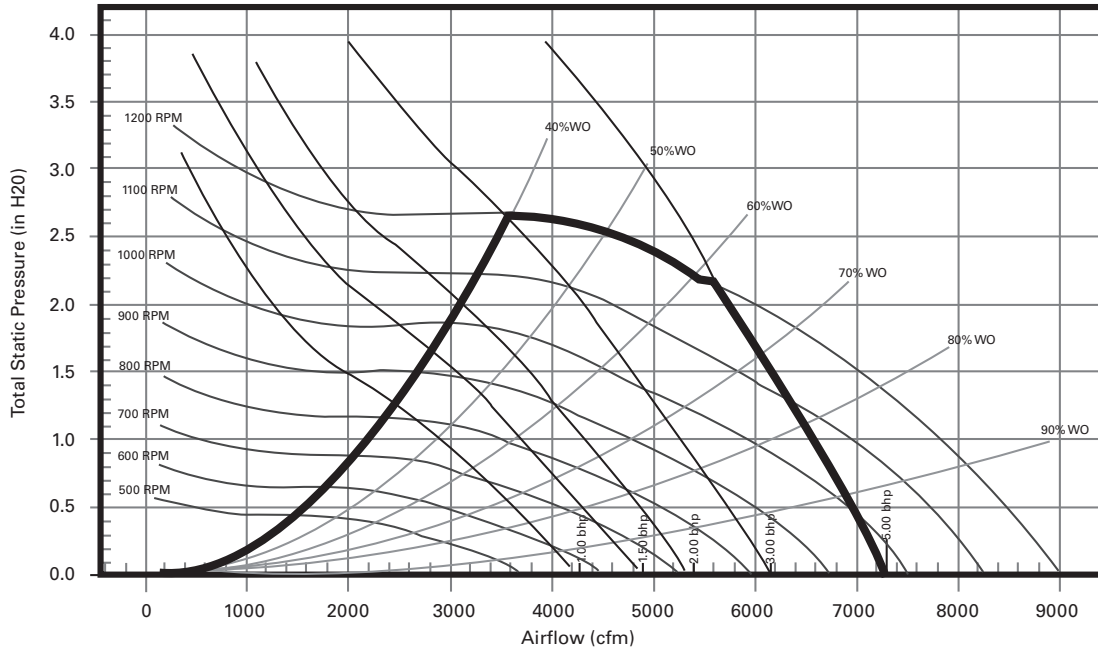
(a) Includes wet coil, no filter

Table 56. Fan performance curve - GEH*120 - (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	897 ^(a)	1.23 ^(a)	916 ^(a)	1.27 ^(a)	935 ^(a)	1.31 ^(a)	958 ^(a)	1.36 ^(a)	987 ^(a)	1.43 ^(a)	1018 ^(b)	1.51 ^(b)	1051 ^(b)	1.60 ^(b)	1081 ^(b)	1.68 ^(b)
3600	1005 ^(b)	1.74 ^(b)	1022 ^(b)	1.78 ^(b)	1038 ^(b)	1.83 ^(b)	1055 ^(b)	1.87 ^(b)	1076 ^(b)	1.94 ^(b)	1102 ^(c)	2.01 ^(c)	1129 ^(c)	2.10 ^(c)	1158 ^(c)	2.20 ^(c)
4000	1114 ^(c)	2.37 ^(c)	1128 ^(c)	2.42 ^(c)	1143 ^(c)	2.47 ^(c)	1158 ^(c)	2.52 ^(c)	1173 ^(c)	2.57 ^(c)	1192 ^(c)	2.64 ^(c)	1214 ^(c)	2.72 ^(c)	1238 ^(c)	2.82 ^(c)
4400	1222 ^(e)	3.15 ^(e)	1235 ^(e)	3.20 ^(e)	1249 ^(e)	3.26 ^(e)	1262 ^(e)	3.31 ^(e)	1276 ^(e)	3.37 ^(e)	1290 ^(e)	3.42 ^(e)	1306 ^(e)	3.49 ^(e)	1326 ^(e)	3.58 ^(e)
4800	1331 ^(e)	4.08 ^(e)	1343 ^(d)	4.14 ^(f)	1355 ^(f)	4.19 ^(f)	1368 ^(f)	4.25 ^(f)	1380 ^(f)	4.31 ^(f)	1392 ^(f)	4.37 ^(f)	1405 ^(f)	4.43 ^(f)	1419 ^(f)	4.50 ^(f)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.9		1.0		1.1		1.2		1.3		1.4		1.5		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	1109 ^(b)	1.76 ^(b)	1138 ^(b)	1.84 ^(b)	1164 ^(b)	1.92 ^(b)	1192 ^(c)	2.01 ^(c)	1219 ^(c)	2.09 ^(c)	1246 ^(c)	2.17 ^(c)	1272 ^(c)	2.25 ^(c)	1298 ^(c)	2.34 ^(c)
3600	1186 ^(c)	2.29 ^(c)	1213 ^(c)	2.39 ^(c)	1239 ^(c)	2.48 ^(c)	1264 ^(c)	2.57 ^(c)	1288 ^(c)	2.65 ^(c)	1312 ^(c)	2.74 ^(c)	1336 ^(f)	2.83 ^(f)	1361 ^(f)	2.93 ^(f)
4000	1264 ^(c)	2.92 ^(c)	1289 ^(e)	3.02 ^(e)	1315 ^(d)	3.13 ^(d)	1340 ^(d)	3.24 ^(d)	1363 ^(d)	3.34 ^(d)	1385 ^(d)	3.43 ^(d)	1408 ^(d)	3.54 ^(d)	1429 ^(d)	3.63 ^(d)
4400	1347 ^(d)	3.68 ^(d)	1369 ^(d)	3.78 ^(d)	1392 ^(d)	3.90 ^(d)	1416 ^(d)	4.02 ^(d)	1440 ^(d)	4.13 ^(d)	1463 ^(d)	4.25 ^(d)	1484 ^(d)	4.36 ^(d)	1505 ^(d)	4.47 ^(d)
4800	1437 ^(d)	4.60 ^(d)	1455 ^(d)	4.70 ^(d)	1475 ^(d)	4.81 ^(d)	1496 ^(d)	4.93 ^(d)	—	—	—	—	—	—	—	—
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	1.7		1.8		1.9		2.0									
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP								
3200	1323 ^(f)	2.42 ^(f)	1349 ^(f)	2.51 ^(f)	1374 ^(f)	2.60 ^(f)	1398 ^(f)	2.68 ^(f)								
3600	1384 ^(d)	3.02 ^(d)	1408 ^(d)	3.12 ^(d)	1431 ^(d)	3.21 ^(d)	1454 ^(d)	3.30 ^(d)								
4000	1452 ^(d)	3.74 ^(d)	1474 ^(d)	3.84 ^(d)	1496 ^(d)	3.94 ^(d)	1517 ^(d)	4.04 ^(d)								
4400	1526 ^(d)	4.58 ^(d)	1546 ^(d)	4.69 ^(d)	1565 ^(d)	4.80 ^(d)	1586 ^(d)	4.91 ^(d)								
4800	—	—	—	—	—	—	—	—								

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package F
- (e) Packaged E
- (f) Package D

Figure 5. Fan performance curve - GEH*150(a)



(a) Includes wet coil, no filter

Table 57. Fan performance curve - GEH*150 - (includes wet coil, no filter)

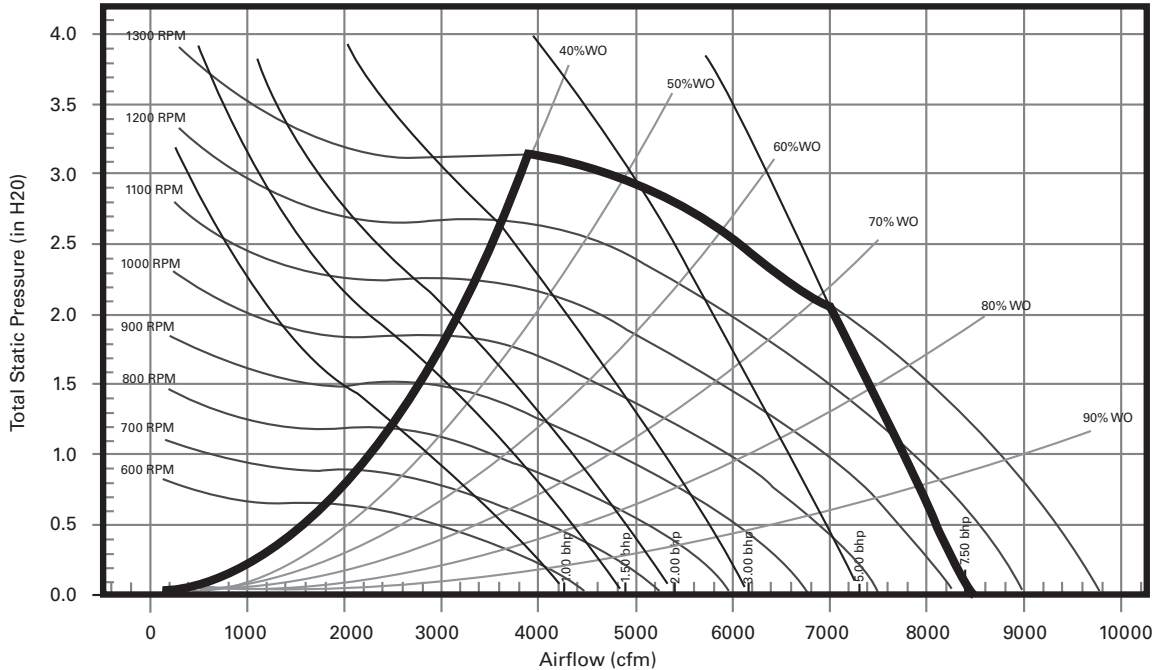
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	559 ^(a)	0.89 ^(a)	590 ^(a)	0.96 ^(a)	622 ^(a)	1.05 ^(a)	654 ^(a)	1.14 ^(a)	685 ^(a)	1.23 ^(a)	717 ^(a)	1.32 ^(a)	749 ^(a)	1.42 ^(a)	779 ^(b)	1.52 ^(b)
4500	622 ^(a)	1.24 ^(a)	648 ^(a)	1.33 ^(a)	677 ^(a)	1.42 ^(a)	706 ^(b)	1.52 ^(b)	734 ^(b)	1.62 ^(b)	761 ^(b)	1.72 ^(b)	790 ^(b)	1.82 ^(b)	819 ^(b)	1.93 ^(b)
5000	686 ^(b)	1.69 ^(b)	709 ^(b)	1.77 ^(b)	734 ^(b)	1.87 ^(b)	760 ^(b)	1.98 ^(b)	786 ^(c)	2.09 ^(c)	811 ^(c)	2.20 ^(c)	836 ^(c)	2.31 ^(c)	861 ^(c)	2.42 ^(c)
5500	750 ^(c)	2.23 ^(c)	771 ^(c)	2.32 ^(c)	793 ^(c)	2.42 ^(c)	816 ^(c)	2.53 ^(c)	840 ^(c)	2.65 ^(c)	863 ^(c)	2.77 ^(c)	886 ^(c)	2.89 ^(c)	909 ^(d)	3.02 ^(d)
6000	815 ^(c)	2.88 ^(c)	833 ^(c)	2.97 ^(c)	853 ^(d)	3.08 ^(d)	874 ^(d)	3.20 ^(d)	895 ^(d)	3.32 ^(d)	917 ^(d)	3.45 ^(d)	939 ^(d)	3.58 ^(d)	960 ^(d)	3.71 ^(d)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.9		1.0		1.1		1.2		1.3		1.4		1.5		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	807 ^(b)	1.61 ^(b)	833 ^(b)	1.71 ^(b)	857 ^(b)	1.80 ^(b)	881 ^(b)	1.89 ^(b)	905 ^(b)	1.98 ^(b)	928 ^(e)	2.07 ^(e)	951 ^(e)	2.16 ^(e)	974 ^(d)	2.26 ^(d)
4500	846 ^(c)	2.04 ^(c)	872 ^(c)	2.15 ^(c)	898 ^(c)	2.26 ^(c)	921 ^(e)	2.36 ^(e)	944 ^(e)	2.46 ^(e)	965 ^(d)	2.56 ^(d)	987 ^(d)	2.66 ^(d)	1009 ^(d)	2.77 ^(d)
5000	887 ^(c)	2.54 ^(c)	912 ^(e)	2.66 ^(e)	937 ^(e)	2.78 ^(e)	962 ^(e)	2.91 ^(e)	985 ^(d)	3.03 ^(d)	1007 ^(d)	3.14 ^(d)	1027 ^(f)	3.26 ^(f)	1047 ^(f)	3.37 ^(f)
5500	932 ^(d)	3.14 ^(d)	954 ^(d)	3.26 ^(d)	978 ^(d)	3.40 ^(d)	1002 ^(d)	3.53 ^(d)	1024 ^(f)	3.66 ^(f)	1047 ^(f)	3.80 ^(f)	1068 ^(f)	3.93 ^(f)	1090 ^(f)	4.07 ^(f)
6000	981 ^(d)	3.85 ^(d)	1002 ^(d)	3.98 ^(d)	1022 ^(f)	4.11 ^(f)	1044 ^(f)	4.26 ^(f)	1065 ^(f)	4.40 ^(f)	1086 ^(f)	4.54 ^(f)	1108 ^(f)	4.69 ^(f)	1128 ^(f)	4.83 ^(f)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	1.7		1.8		1.9		2.0									
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP								
4000	996 ^(e)	2.36 ^(e)	1018 ^(e)	2.46 ^(e)	1040 ^(e)	2.57 ^(e)	1061 ^(e)	2.67 ^(e)								
4500	1030 ^(e)	2.88 ^(e)	1049 ^(e)	2.97 ^(e)	1069 ^(f)	3.08 ^(f)	1090 ^(f)	3.19 ^(f)								
5000	1067 ^(f)	3.48 ^(f)	1087 ^(f)	3.60 ^(f)	1106 ^(f)	3.71 ^(f)	1125 ^(f)	3.83 ^(f)								
5500	1109 ^(f)	4.19 ^(f)	1127 ^(f)	4.32 ^(f)	1146 ^(f)	4.44 ^(f)	1164 ^(f)	4.57 ^(f)								
6000	1148 ^(f)	4.98 ^(f)	—	—	—	—	—	—								

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package E
- (e) Package D
- (f) Package F



Fan Performance Data

Figure 6. Fan performance curve - GEH*180(a)



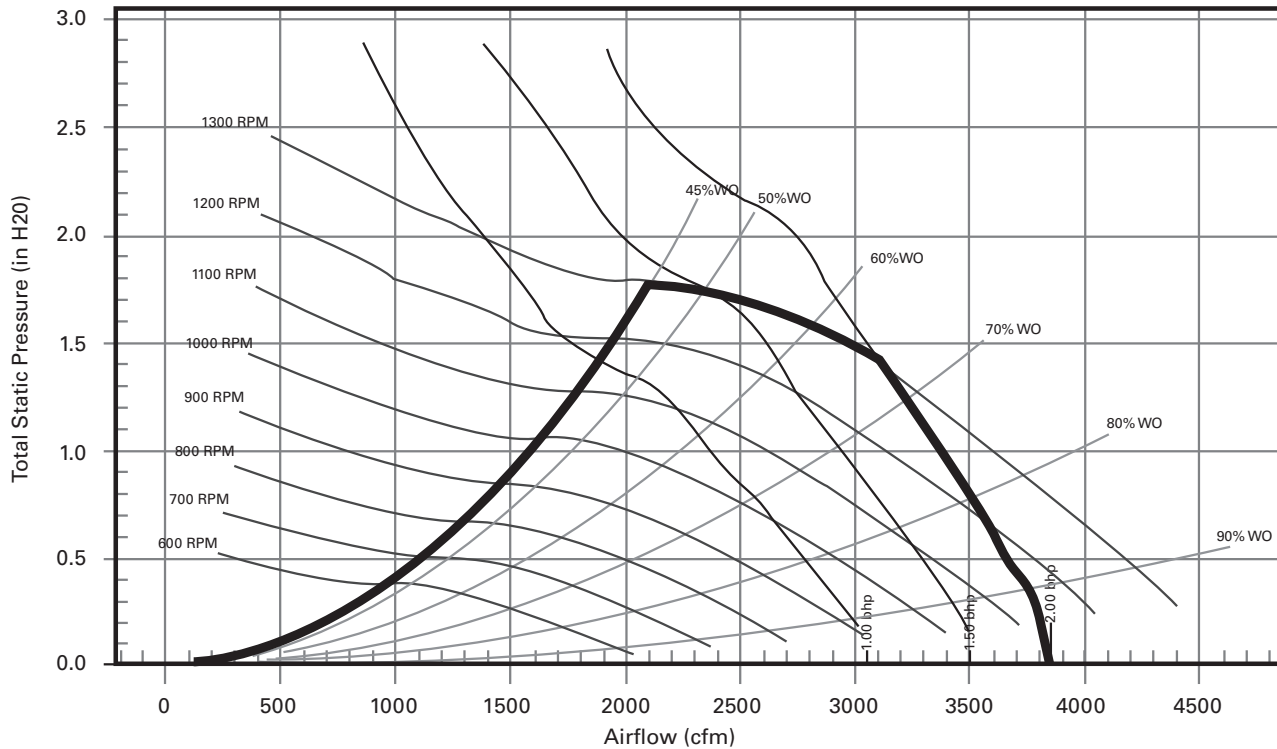
(a) Includes wet coil, no filter

Table 58. Fan performance curve - GEH*180 - (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4800	660 ^(a)	1.50 ^(a)	685 ^(a)	1.58 ^(a)	711 ^(a)	1.68 ^(a)	738 ^(a)	1.78 ^(a)	765 ^(a)	1.89 ^(a)	791 ^(a)	1.99 ^(a)	817 ^(b)	2.10 ^(b)	844 ^(b)	2.22 ^(b)
5400	737 ^(c)	2.11 ^(c)	758 ^(c)	2.20 ^(c)	781 ^(c)	2.30 ^(c)	805 ^(c)	2.41 ^(c)	828 ^(c)	2.53 ^(c)	853 ^(b)	2.65 ^(b)	876 ^(b)	2.77 ^(b)	899 ^(b)	2.89 ^(b)
6000	815 ^(c)	2.88 ^(c)	833 ^(c)	2.97 ^(c)	853 ^(d)	3.08 ^(d)	874 ^(d)	3.20 ^(d)	895 ^(d)	3.32 ^(d)	917 ^(d)	3.45 ^(d)	939 ^(d)	3.58 ^(d)	960 ^(d)	3.71 ^(d)
6600	892 ^(d)	3.81 ^(d)	909 ^(d)	3.91 ^(d)	927 ^(d)	4.02 ^(d)	945 ^(d)	4.14 ^(d)	965 ^(d)	4.27 ^(d)	984 ^(d)	4.41 ^(d)	1004 ^(d)	4.55 ^(d)	1023 ^(e)	4.69 ^(e)
7200	971 ^(d)	4.92 ^(d)	986 ^(f)	5.03 ^(f)	1002 ^(f)	5.15 ^(f)	1018 ^(f)	5.27 ^(f)	1036 ^(f)	5.41 ^(f)	1053 ^(f)	5.55 ^(f)	1071 ^(f)	5.70 ^(f)	1089 ^(f)	5.86 ^(f)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.9		1.0		1.1		1.2		1.3		1.4		1.5		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4800	870 ^(b)	2.33 ^(b)	896 ^(b)	2.45 ^(b)	921 ^(b)	2.56 ^(b)	946 ^(b)	2.68 ^(b)	969 ^(b)	2.79 ^(b)	990 ^(b)	2.90 ^(b)	1011 ^(b)	3.00 ^(b)	1031 ^(e)	3.12 ^(e)
5400	922 ^(d)	3.01 ^(d)	946 ^(d)	3.14 ^(d)	969 ^(d)	3.26 ^(d)	993 ^(d)	3.40 ^(d)	1016 ^(d)	3.53 ^(d)	1039 ^(e)	3.66 ^(e)	1060 ^(e)	3.79 ^(e)	1081 ^(e)	3.92 ^(e)
6000	981 ^(d)	3.85 ^(d)	1002 ^(d)	3.98 ^(d)	1022 ^(e)	4.11 ^(e)	1044 ^(e)	4.26 ^(e)	1065 ^(e)	4.40 ^(e)	1086 ^(e)	4.54 ^(e)	1108 ^(e)	4.69 ^(e)	1128 ^(e)	4.83 ^(e)
6600	1043 ^(e)	4.84 ^(e)	1062 ^(e)	4.99 ^(e)	1081 ^(f)	5.13 ^(f)	1100 ^(f)	5.28 ^(f)	1119 ^(f)	5.43 ^(f)	1138 ^(f)	5.58 ^(f)	1157 ^(g)	5.74 ^(g)	1177 ^(g)	5.90 ^(g)
7200	1107 ^(f)	6.01 ^(f)	1125 ^(f)	6.17 ^(f)	1143 ^(f)	6.33 ^(f)	1160 ^(g)	6.49 ^(g)	1178 ^(g)	6.65 ^(g)	1195 ^(g)	6.81 ^(g)	1212 ^(g)	6.97 ^(g)	1229 ^(g)	7.13 ^(g)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	1.7		1.8		1.9		2.0									
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP								
4800	1051 ^(e)	3.23 ^(e)	1071 ^(e)	3.34 ^(e)	1091 ^(e)	3.45 ^(e)	1111 ^(e)	3.56 ^(e)								
5400	1100 ^(e)	4.04 ^(e)	1119 ^(e)	4.16 ^(e)	1138 ^(e)	4.29 ^(e)	1156 ^(e)	4.41 ^(e)								
6000	1148 ^(e)	4.98 ^(e)	1168 ^(g)	5.13 ^(g)	1187 ^(g)	5.27 ^(g)	1205 ^(g)	5.41 ^(g)								
6600	1196 ^(g)	6.05 ^(g)	1215 ^(g)	6.22 ^(g)	1234 ^(g)	6.37 ^(g)	1253 ^(g)	6.54 ^(g)								
7200	1248 ^(g)	7.31 ^(g)	1266 ^(g)	7.48 ^(g)	—	—	—	—								

- (a) Package A
- (b) Package C
- (c) Package B
- (d) Package D
- (e) Package E
- (f) Package F
- (g) Package G

Figure 7. Fan performance curve (top supply) - GEV*072(a)



(a) Includes wet coil, no filter

Table 59. Fan performance curve (top supply) - GEV*072 - (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1920	595 ^(a)	0.27 ^(a)	649 ^(a)	0.32 ^(a)	698 ^(a)	0.36 ^(a)	744 ^(a)	0.40 ^(a)	788 ^(a)	0.45 ^(a)	830 ^(a)	0.50 ^(a)	871 ^(a)	0.55 ^(a)
2160	655 ^(a)	0.37 ^(a)	705 ^(a)	0.42 ^(a)	751 ^(a)	0.47 ^(a)	794 ^(a)	0.52 ^(a)	835 ^(a)	0.57 ^(a)	874 ^(a)	0.63 ^(a)	912 ^(b)	0.68 ^(b)
2400	717 ^(a)	0.50 ^(a)	763 ^(a)	0.56 ^(a)	806 ^(a)	0.61 ^(a)	846 ^(a)	0.67 ^(a)	884 ^(a)	0.72 ^(a)	921 ^(b)	0.78 ^(b)	957 ^(b)	0.83 ^(b)
2640	780 ^(a)	0.65 ^(a)	822 ^(a)	0.71 ^(a)	862 ^(a)	0.78 ^(a)	900 ^(b)	0.84 ^(b)	937 ^(b)	0.90 ^(b)	971 ^(b)	0.96 ^(b)	1005 ^(c)	1.02 ^(c)
2880	844 ^(a)	0.84 ^(a)	882 ^(a)	0.90 ^(a)	920 ^(b)	0.97 ^(b)	956 ^(c)	1.04 ^(c)	990 ^(c)	1.10 ^(c)	1023 ^(c)	1.17 ^(c)	1055 ^(c)	1.23 ^(c)

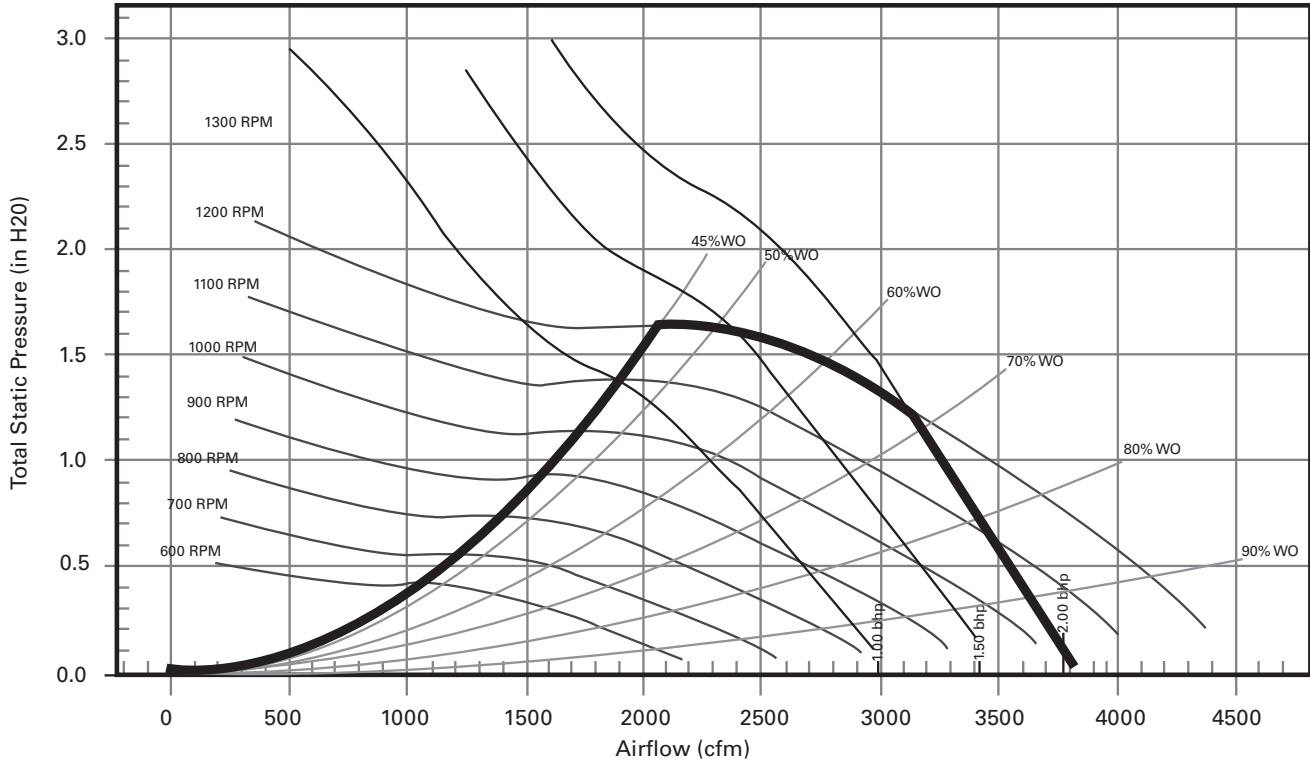
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)											
	0.8		0.9		1.0		1.1		1.2		1.3	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1920	912 ^(b)	0.60 ^(b)	953 ^(b)	0.65 ^(b)	993 ^(b)	0.70 ^(b)	1034 ^(b)	0.76 ^(b)	1072 ^(b)	0.84 ^(b)	1111 ^(b)	0.92 ^(b)
2160	949 ^(b)	0.74 ^(b)	985 ^(b)	0.79 ^(b)	1021 ^(b)	0.85 ^(b)	1058 ^(b)	0.90 ^(b)	1094 ^(b)	0.95 ^(b)	1129 ^(c)	1.02 ^(c)
2400	991 ^(b)	0.89 ^(b)	1024 ^(b)	0.96 ^(b)	1057 ^(c)	1.02 ^(c)	1091 ^(c)	1.08 ^(c)	1123 ^(c)	1.14 ^(c)	1157 ^(c)	1.20 ^(c)
2640	1038 ^(c)	1.08 ^(c)	1069 ^(c)	1.15 ^(c)	1100 ^(c)	1.21 ^(c)	1130 ^(c)	1.28 ^(c)	1161 ^(c)	1.35 ^(c)	1191 ^(c)	1.42 ^(c)
2880	1086 ^(c)	1.30 ^(c)	1116 ^(c)	1.36 ^(c)	1145 ^(c)	1.43 ^(c)	1175 ^(d)	1.51 ^(d)	1203 ^(d)	1.58 ^(d)	1231 ^(d)	1.66 ^(d)

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D



Fan Performance Data

Figure 8. Fan performance curve (front/back supply) - GEV*072(a)



(a) Includes wet coil, no filter

Table 60. Fan performance curve (front/back supply) - GEV*072 - (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1920	559 ^(a)	0.30 ^(a)	611 ^(a)	0.34 ^(a)	660 ^(a)	0.39 ^(a)	706 ^(a)	0.44 ^(a)	749 ^(a)	0.48 ^(a)	790 ^(a)	0.53 ^(a)	831 ^(a)	0.59 ^(a)
2160	616 ^(a)	0.41 ^(a)	663 ^(a)	0.46 ^(a)	708 ^(a)	0.51 ^(a)	751 ^(a)	0.56 ^(a)	792 ^(a)	0.62 ^(a)	830 ^(a)	0.67 ^(a)	867 ^(a)	0.73 ^(a)
2400	674 ^(a)	0.55 ^(a)	717 ^(a)	0.60 ^(a)	759 ^(a)	0.66 ^(a)	799 ^(a)	0.72 ^(a)	837 ^(a)	0.78 ^(a)	873 ^(a)	0.84 ^(a)	909 ^(b)	0.90 ^(b)
2640	733 ^(a)	0.71 ^(a)	773 ^(a)	0.78 ^(a)	811 ^(a)	0.84 ^(a)	849 ^(a)	0.90 ^(a)	884 ^(a)	0.97 ^(a)	919 ^(c)	1.03 ^(c)	953 ^(c)	1.10 ^(c)
2880	793 ^(a)	0.91 ^(a)	830 ^(a)	0.98 ^(a)	865 ^(c)	1.05 ^(c)	900 ^(c)	1.12 ^(c)	934 ^(c)	1.19 ^(c)	966 ^(c)	1.26 ^(c)	998 ^(c)	1.33 ^(c)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)													
	0.8		0.9		1.0		1.1		1.2		1.3			
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
1920	869 ^(a)	0.64 ^(a)	907 ^(b)	0.70 ^(b)	947 ^(b)	0.76 ^(b)	988 ^(b)	0.83 ^(b)	1030 ^(b)	0.90 ^(b)	1068 ^(b)	0.97 ^(b)		
2160	904 ^(b)	0.78 ^(b)	939 ^(b)	0.84 ^(b)	974 ^(b)	0.91 ^(b)	1008 ^(b)	0.97 ^(b)	1042 ^(c)	1.04 ^(c)	1079 ^(c)	1.11 ^(c)		
2400	943 ^(b)	0.96 ^(b)	975 ^(c)	1.02 ^(c)	1007 ^(c)	1.08 ^(c)	1040 ^(c)	1.15 ^(c)	1071 ^(c)	1.22 ^(c)	1102 ^(c)	1.29 ^(c)		
2640	985 ^(c)	1.16 ^(c)	1016 ^(c)	1.23 ^(c)	1046 ^(c)	1.29 ^(c)	1076 ^(c)	1.36 ^(c)	1106 ^(c)	1.43 ^(c)	1135 ^(d)	1.51 ^(d)		
2880	1029 ^(c)	1.40 ^(c)	1060 ^(c)	1.47 ^(c)	1088 ^(d)	1.54 ^(d)	1116 ^(d)	1.61 ^(d)	1144 ^(d)	1.69 ^(d)	1172 ^(d)	1.77 ^(d)		

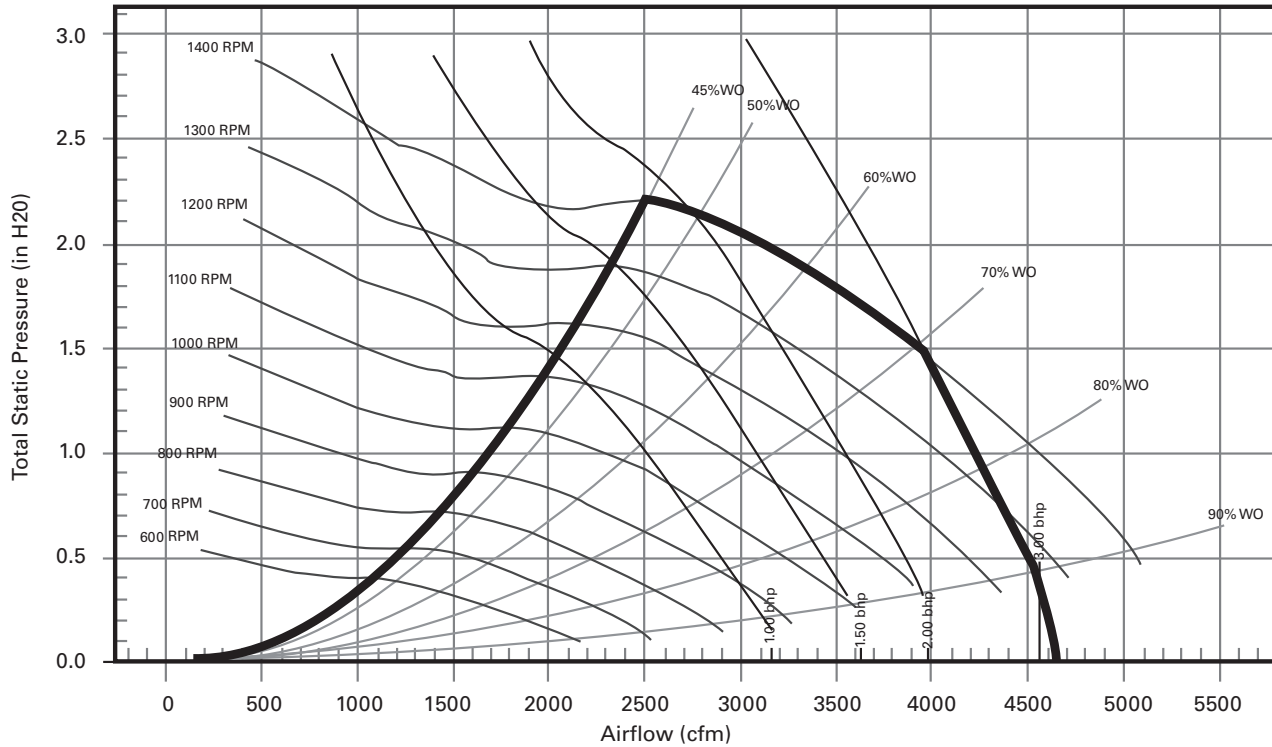
(a) Package A

(b) Package B

(c) Package C

(d) Package D

Figure 9. Fan performance curve (top supply) - GEV*090(a)



(a) Includes wet coil, no filter

Table 61. Fan performance curve (top supply) - GEV*090 - (includes wet coil, no filter)

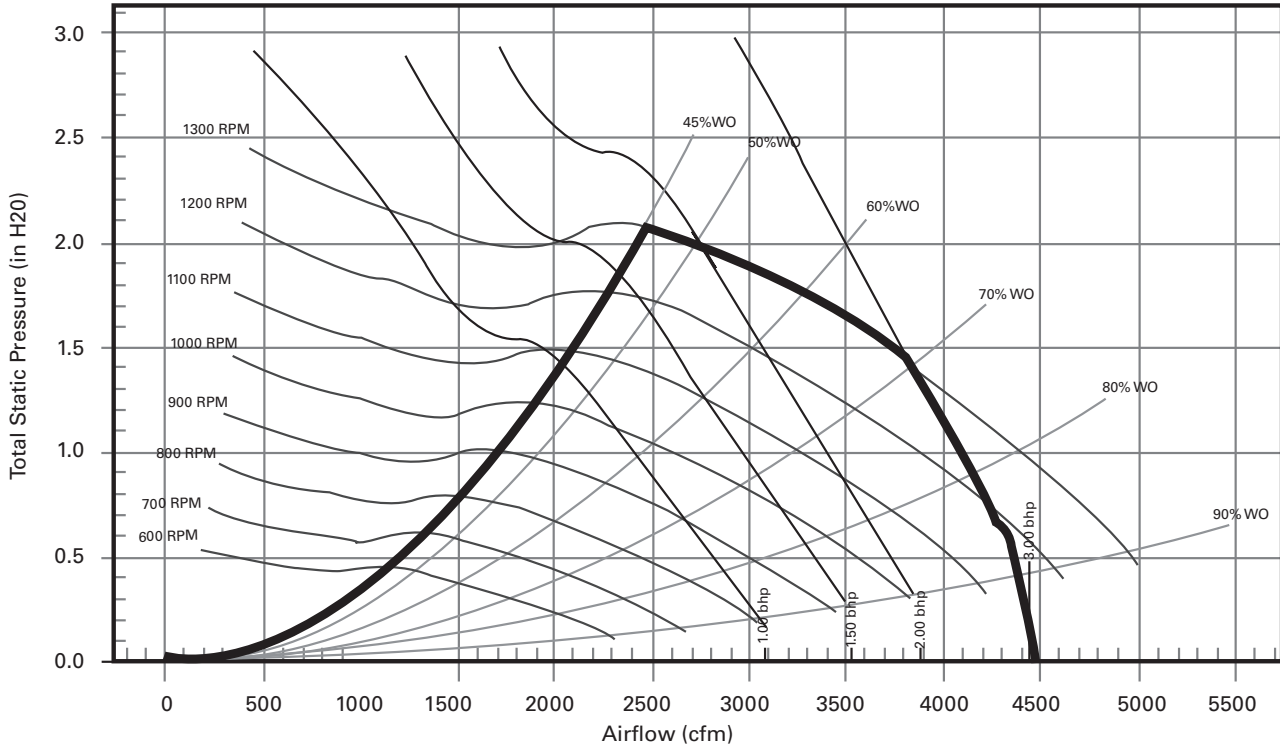
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	655 ^(a)	0.44 ^(a)	703 ^(a)	0.49 ^(a)	748 ^(a)	0.54 ^(a)	790 ^(a)	0.59 ^(a)	830 ^(a)	0.64 ^(a)	868 ^(b)	0.70 ^(b)	905 ^(b)	0.75 ^(b)	941 ^(b)	0.81 ^(b)
2700	725 ^(a)	0.61 ^(a)	768 ^(a)	0.66 ^(a)	809 ^(a)	0.72 ^(a)	849 ^(b)	0.78 ^(b)	886 ^(b)	0.84 ^(b)	922 ^(b)	0.90 ^(b)	957 ^(b)	0.96 ^(b)	990 ^(c)	1.02 ^(c)
3000	797 ^(a)	0.82 ^(a)	836 ^(a)	0.88 ^(a)	873 ^(b)	0.94 ^(b)	910 ^(c)	1.01 ^(c)	945 ^(c)	1.07 ^(c)	979 ^(c)	1.14 ^(c)	1012 ^(c)	1.20 ^(c)	1043 ^(d)	1.27 ^(d)
3300	869 ^(c)	1.07 ^(c)	904 ^(c)	1.14 ^(c)	939 ^(c)	1.21 ^(c)	973 ^(c)	1.28 ^(c)	1006 ^(c)	1.35 ^(c)	1039 ^(c)	1.43 ^(c)	1069 ^(d)	1.50 ^(d)	1099 ^(e)	1.57 ^(e)
3600	942 ^(c)	1.38 ^(c)	974 ^(c)	1.45 ^(c)	1007 ^(e)	1.53 ^(e)	1038 ^(e)	1.61 ^(e)	1069 ^(e)	1.68 ^(e)	1099 ^(e)	1.76 ^(e)	1129 ^(e)	1.84 ^(e)	1157 ^(e)	1.92 ^(e)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.9		1.0		1.1		1.2		1.3		1.4		1.5			
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	977 ^(b)	0.86 ^(b)	1012 ^(b)	0.92 ^(b)	1045 ^(b)	0.98 ^(b)	1078 ^(d)	1.04 ^(d)	1111 ^(d)	1.11 ^(d)	1144 ^(d)	1.17 ^(d)	1177 ^(d)	1.24 ^(d)		
2700	1023 ^(c)	1.08 ^(c)	1055 ^(d)	1.14 ^(d)	1087 ^(d)	1.21 ^(d)	1118 ^(d)	1.27 ^(d)	1147 ^(d)	1.34 ^(d)	1178 ^(d)	1.41 ^(d)	1207 ^(d)	1.47 ^(d)		
3000	1074 ^(d)	1.33 ^(d)	1104 ^(d)	1.40 ^(d)	1133 ^(d)	1.47 ^(d)	1162 ^(e)	1.54 ^(e)	1191 ^(e)	1.61 ^(e)	1219 ^(e)	1.68 ^(e)	1246 ^(e)	1.76 ^(e)		
3300	1128 ^(e)	1.64 ^(e)	1157 ^(e)	1.71 ^(e)	1184 ^(e)	1.79 ^(e)	1211 ^(e)	1.86 ^(e)	1238 ^(e)	1.94 ^(e)	1265 ^(f)	2.01 ^(f)	1291 ^(f)	2.09 ^(f)		
3600	1185 ^(e)	1.99 ^(e)	1212 ^(f)	2.07 ^(f)	1239 ^(f)	2.15 ^(f)	1264 ^(f)	2.23 ^(f)	1290 ^(f)	2.31 ^(f)	1315 ^(f)	2.39 ^(f)	1340 ^(f)	2.48 ^(f)		

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package E
- (f) Package F



Fan Performance Data

Figure 10. Fan performance curve (front/back supply) - GEV*090(a)



(a) Includes wet coil, no filter

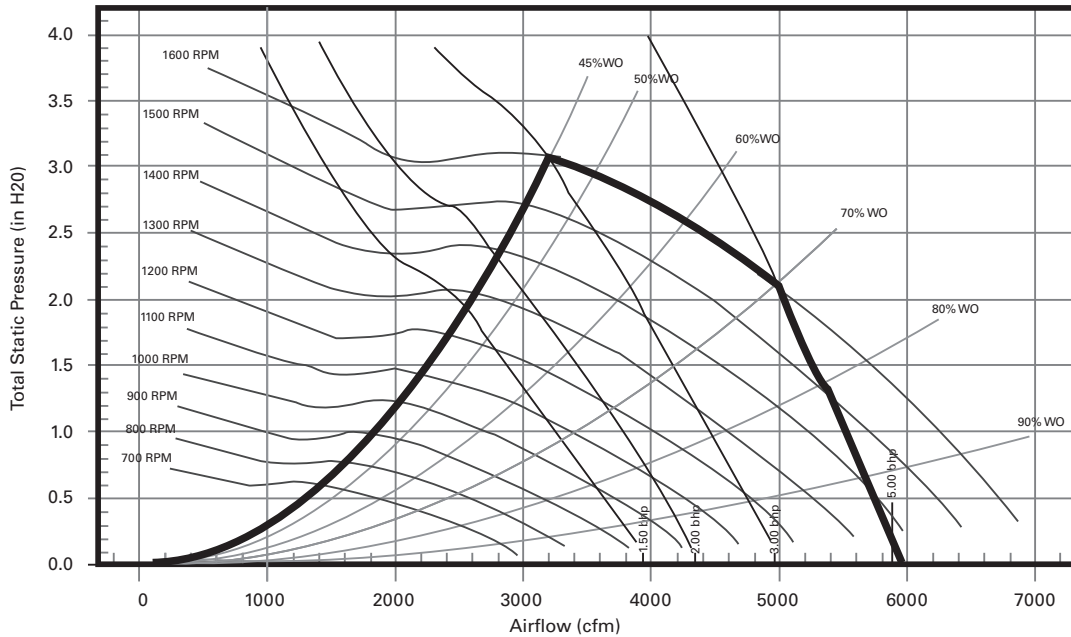
Table 62. Fan performance curve (front/back supply) - GEV*090 - (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	620 ^(a)	0.47 ^(a)	666 ^(a)	0.53 ^(a)	709 ^(a)	0.58 ^(a)	750 ^(a)	0.64 ^(a)	790 ^(a)	0.70 ^(a)	828 ^(a)	0.76 ^(a)	864 ^(a)	0.82 ^(a)	900 ^(a)	0.88 ^(a)
2700	687 ^(a)	0.66 ^(a)	728 ^(a)	0.72 ^(a)	767 ^(a)	0.78 ^(a)	805 ^(a)	0.84 ^(a)	842 ^(a)	0.91 ^(a)	877 ^(a)	0.97 ^(a)	912 ^(c)	1.04 ^(c)	945 ^(c)	1.11 ^(c)
3000	754 ^(a)	0.88 ^(a)	792 ^(a)	0.95 ^(a)	828 ^(b)	1.02 ^(b)	863 ^(b)	1.09 ^(b)	897 ^(b)	1.16 ^(b)	930 ^(c)	1.23 ^(c)	962 ^(c)	1.31 ^(c)	993 ^(c)	1.38 ^(c)
3300	822 ^(b)	1.16 ^(b)	857 ^(b)	1.24 ^(b)	890 ^(b)	1.31 ^(b)	922 ^(c)	1.39 ^(c)	954 ^(c)	1.46 ^(c)	984 ^(d)	1.54 ^(d)	1015 ^(d)	1.62 ^(d)	1044 ^(d)	1.70 ^(d)
3600	891 ^(b)	1.49 ^(b)	922 ^(d)	1.57 ^(d)	954 ^(d)	1.66 ^(d)	984 ^(d)	1.74 ^(d)	1013 ^(d)	1.82 ^(d)	1042 ^(d)	1.90 ^(d)	1070 ^(d)	1.98 ^(d)	1098 ^(e)	2.07 ^(e)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)													
	0.9		1.0		1.1		1.2		1.3		1.4		1.5	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	934 ^(a)	0.95 ^(a)	966 ^(c)	1.01 ^(c)	999 ^(c)	1.07 ^(c)	1031 ^(c)	1.13 ^(c)	1063 ^(c)	1.19 ^(c)	1093 ^(c)	1.25 ^(c)	1124 ^(c)	1.31 ^(c)
2700	977 ^(c)	1.18 ^(c)	1008 ^(c)	1.25 ^(c)	1039 ^(c)	1.32 ^(c)	1068 ^(c)	1.39 ^(c)	1098 ^(c)	1.46 ^(c)	1126 ^(d)	1.53 ^(d)	1154 ^(d)	1.59 ^(d)
3000	1024 ^(c)	1.46 ^(c)	1053 ^(d)	1.53 ^(d)	1083 ^(d)	1.61 ^(d)	1111 ^(d)	1.69 ^(d)	1138 ^(d)	1.77 ^(d)	1166 ^(d)	1.84 ^(d)	1192 ^(d)	1.92 ^(d)
3300	1074 ^(d)	1.78 ^(d)	1102 ^(d)	1.86 ^(d)	1129 ^(d)	1.95 ^(d)	1156 ^(e)	2.03 ^(e)	1182 ^(e)	2.12 ^(e)	1208 ^(e)	2.20 ^(e)	1233 ^(e)	2.28 ^(e)
3600	1125 ^(e)	2.16 ^(e)	1152 ^(e)	2.25 ^(e)	1178 ^(e)	2.34 ^(e)	1204 ^(e)	2.43 ^(e)	1230 ^(e)	2.52 ^(e)	1255 ^(e)	2.61 ^(e)	1279 ^(e)	2.70 ^(e)

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package E

Figure 11. Fan performance curve (top supply) - GEV*120(a)



(a) Includes wet coil, no filter

Table 63. Fan performance curve (top supply) - GEV*120 - (includes wet coil, no filter)

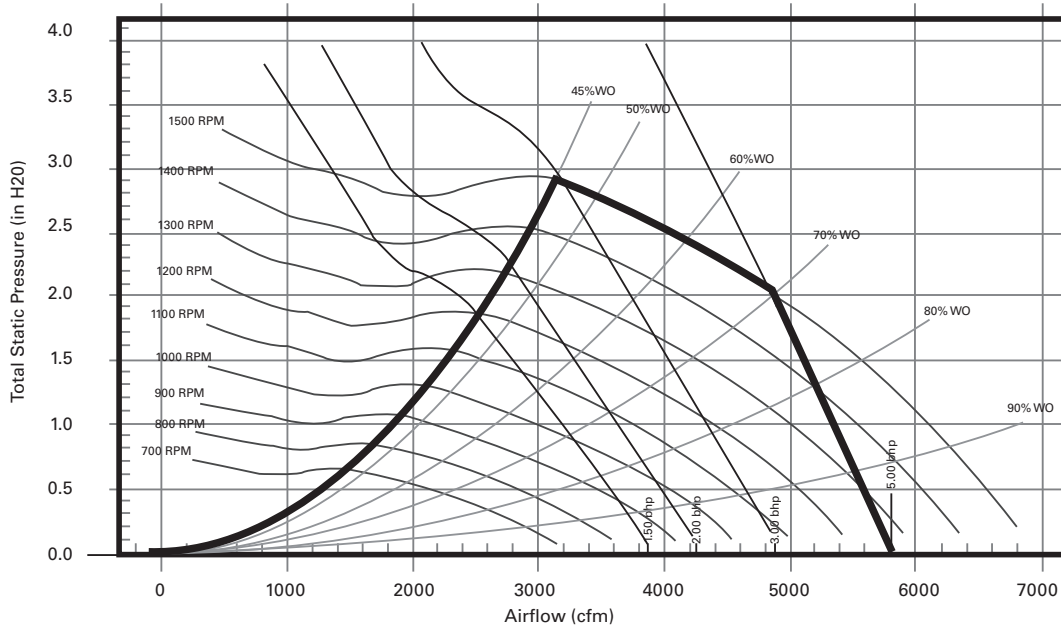
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	759 ^(a)	0.83 ^(a)	797 ^(a)	0.89 ^(a)	833 ^(a)	0.95 ^(a)	868 ^(a)	1.01 ^(a)	903 ^(a)	1.08 ^(a)	937 ^(a)	1.16 ^(a)	970 ^(a)	1.22 ^(a)	1003 ^(a)	1.29 ^(a)
3600	845 ^(a)	1.16 ^(a)	878 ^(a)	1.23 ^(a)	912 ^(a)	1.30 ^(a)	944 ^(a)	1.36 ^(a)	975 ^(a)	1.44 ^(a)	1006 ^(b)	1.51 ^(b)	1036 ^(c)	1.59 ^(c)	1066 ^(c)	1.68 ^(c)
4000	932 ^(b)	1.58 ^(b)	962 ^(b)	1.66 ^(b)	992 ^(b)	1.73 ^(b)	1021 ^(b)	1.80 ^(b)	1050 ^(b)	1.87 ^(b)	1079 ^(b)	1.95 ^(b)	1106 ^(d)	2.04 ^(d)	1134 ^(d)	2.13 ^(d)
4400	1019 ^(d)	2.08 ^(d)	1046 ^(d)	2.17 ^(d)	1074 ^(d)	2.25 ^(d)	1101 ^(d)	2.33 ^(d)	1128 ^(d)	2.41 ^(d)	1154 ^(d)	2.49 ^(d)	1180 ^(d)	2.58 ^(d)	1205 ^(d)	2.67 ^(d)
4800	1108 ^(d)	2.69 ^(d)	1132 ^(d)	2.78 ^(d)	1157 ^(d)	2.87 ^(d)	1182 ^(d)	2.96 ^(d)	1207 ^(e)	3.05 ^(e)	1232 ^(e)	3.14 ^(e)	1256 ^(e)	3.22 ^(e)	1279 ^(e)	3.31 ^(e)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.9		1.0		1.1		1.2		1.3		1.4		1.5		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	1035 ^(a)	1.35 ^(a)	1065 ^(a)	1.42 ^(a)	1095 ^(a)	1.49 ^(a)	1124 ^(c)	1.56 ^(c)	1153 ^(c)	1.63 ^(c)	1181 ^(c)	1.70 ^(c)	1208 ^(c)	1.77 ^(c)	1234 ^(c)	1.84 ^(c)
3600	1096 ^(c)	1.75 ^(c)	1125 ^(c)	1.82 ^(c)	1154 ^(c)	1.89 ^(c)	1181 ^(c)	1.97 ^(c)	1207 ^(d)	2.04 ^(d)	1234 ^(d)	2.13 ^(d)	1260 ^(d)	2.21 ^(d)	1285 ^(d)	2.29 ^(d)
4000	1161 ^(d)	2.22 ^(d)	1188 ^(d)	2.32 ^(d)	1215 ^(d)	2.40 ^(d)	1241 ^(d)	2.47 ^(d)	1266 ^(d)	2.55 ^(d)	1293 ^(d)	2.63 ^(d)	1316 ^(d)	2.71 ^(d)	1341 ^(f)	2.81 ^(f)
4400	1230 ^(d)	2.76 ^(d)	1255 ^(d)	2.87 ^(d)	1280 ^(d)	2.97 ^(d)	1304 ^(e)	3.07 ^(e)	1329 ^(e)	3.16 ^(e)	1353 ^(g)	3.25 ^(g)	1376 ^(g)	3.33 ^(g)	1399 ^(g)	3.41 ^(g)
4800	1303 ^(e)	3.41 ^(e)	1326 ^(e)	3.51 ^(e)	1349 ^(e)	3.62 ^(e)	1371 ^(g)	3.73 ^(g)	1394 ^(g)	3.85 ^(g)	1417 ^(g)	3.96 ^(g)	1439 ^(g)	4.06 ^(g)	1461 ^(g)	4.16 ^(g)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	1.7		1.8		1.9		2.0									
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP								
3200	1261 ^(c)	1.91 ^(c)	1286 ^(c)	1.98 ^(c)	1313 ^(d)	2.06 ^(d)	1336 ^(f)	2.13 ^(f)								
3600	1310 ^(d)	2.37 ^(d)	1335 ^(d)	2.45 ^(d)	1359 ^(f)	2.52 ^(f)	1382 ^(f)	2.60 ^(f)								
4000	1365 ^(f)	2.90 ^(f)	1387 ^(f)	2.99 ^(f)	1411 ^(g)	3.08 ^(g)	1434 ^(g)	3.16 ^(g)								
4400	1422 ^(g)	3.50 ^(g)	1445 ^(g)	3.60 ^(g)	1467 ^(g)	3.69 ^(g)	1488 ^(g)	3.79 ^(g)								
4800	1483 ^(g)	4.25 ^(g)	1505 ^(g)	4.34 ^(g)	1525 ^(g)	4.43 ^(g)	1547 ^(g)	4.52 ^(g)								

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package E
- (f) Package F
- (g) Package G



Fan Performance Data

Figure 12. Fan performance curve (front/back supply) - GEV*120(a)



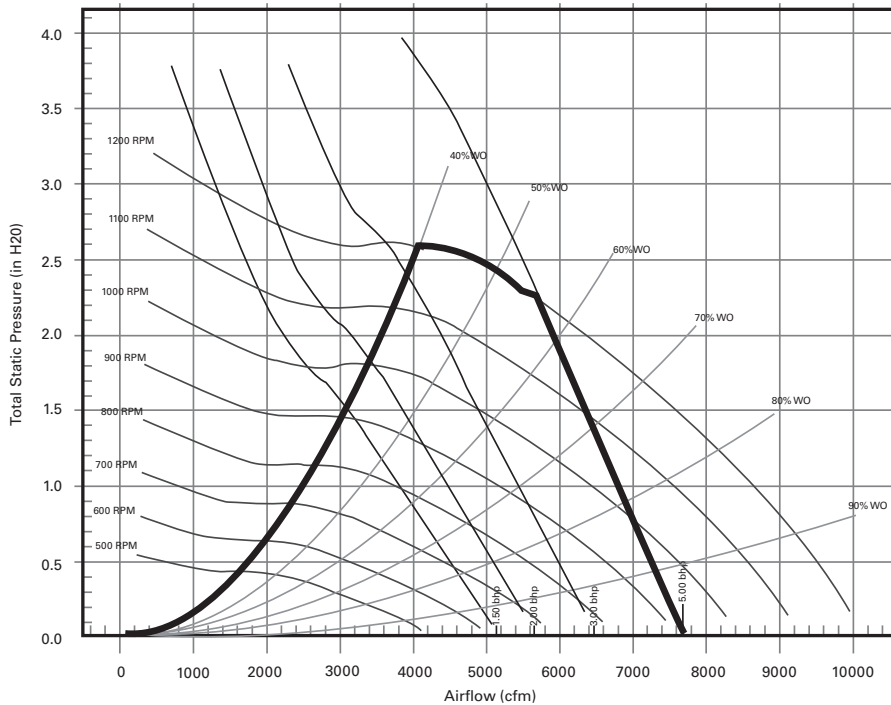
(a) Includes wet coil, no filter

Table 64. Fan performance curve (front/back supply) - GEV*120 - (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	727 ^(a)	0.90 ^(a)	761 ^(a)	0.96 ^(a)	794 ^(a)	1.03 ^(a)	829 ^(a)	1.10 ^(a)	863 ^(a)	1.17 ^(a)	896 ^(a)	1.24 ^(a)	929 ^(a)	1.31 ^(a)	962 ^(a)	1.38 ^(a)
3600	809 ^(a)	1.26 ^(a)	840 ^(a)	1.33 ^(a)	870 ^(a)	1.41 ^(a)	900 ^(a)	1.48 ^(a)	931 ^(b)	1.56 ^(b)	961 ^(b)	1.64 ^(b)	991 ^(b)	1.71 ^(b)	1021 ^(c)	1.79 ^(c)
4000	893 ^(b)	1.71 ^(b)	920 ^(b)	1.79 ^(b)	947 ^(b)	1.87 ^(b)	974 ^(b)	1.96 ^(b)	1001 ^(d)	2.04 ^(d)	1029 ^(d)	2.12 ^(d)	1057 ^(d)	2.21 ^(d)	1084 ^(d)	2.30 ^(d)
4400	977 ^(d)	2.25 ^(d)	1002 ^(d)	2.34 ^(d)	1027 ^(d)	2.44 ^(d)	1051 ^(d)	2.53 ^(d)	1076 ^(d)	2.62 ^(d)	1100 ^(d)	2.71 ^(d)	1126 ^(d)	2.80 ^(d)	1151 ^(d)	2.90 ^(d)
4800	1061 ^(d)	2.91 ^(d)	1084 ^(e)	3.01 ^(e)	1107 ^(e)	3.11 ^(e)	1130 ^(e)	3.21 ^(e)	1152 ^(e)	3.30 ^(e)	1175 ^(e)	3.40 ^(e)	1198 ^(e)	3.51 ^(e)	1220 ^(e)	3.61 ^(e)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	0.9		1.0		1.1		1.2		1.3		1.4		1.5		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	993 ^(a)	1.45 ^(a)	1023 ^(c)	1.52 ^(c)	1053 ^(c)	1.60 ^(c)	1081 ^(c)	1.67 ^(c)	1109 ^(c)	1.74 ^(c)	1136 ^(c)	1.81 ^(c)	1162 ^(c)	1.88 ^(c)	1189 ^(c)	1.96 ^(c)
3600	1049 ^(c)	1.87 ^(c)	1078 ^(c)	1.95 ^(c)	1106 ^(d)	2.03 ^(d)	1133 ^(d)	2.11 ^(d)	1160 ^(d)	2.20 ^(d)	1187 ^(d)	2.28 ^(d)	1212 ^(d)	2.36 ^(d)	1237 ^(d)	2.44 ^(d)
4000	1111 ^(d)	2.38 ^(d)	1138 ^(d)	2.47 ^(d)	1163 ^(d)	2.56 ^(d)	1190 ^(d)	2.65 ^(d)	1214 ^(d)	2.74 ^(d)	1239 ^(d)	2.83 ^(d)	1264 ^(f)	2.92 ^(f)	1288 ^(f)	3.01 ^(f)
4400	1176 ^(d)	2.99 ^(d)	1201 ^(e)	3.09 ^(e)	1225 ^(e)	3.18 ^(e)	1248 ^(e)	3.28 ^(e)	1273 ^(g)	3.38 ^(g)	1296 ^(g)	3.47 ^(g)	1319 ^(g)	3.57 ^(g)	1343 ^(g)	3.67 ^(g)
4800	1243 ^(e)	3.71 ^(e)	1266 ^(g)	3.81 ^(g)	1289 ^(g)	3.91 ^(g)	1311 ^(g)	4.02 ^(g)	1334 ^(g)	4.12 ^(g)	1356 ^(g)	4.23 ^(g)	1378 ^(g)	4.33 ^(g)	1399 ^(g)	4.44 ^(g)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, No Drive Loss Included & No Return Air Filter)															
	1.7		1.8		1.9		2.0									
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP								
3200	1214 ^(d)	2.03 ^(d)	1239 ^(d)	2.11 ^(d)	1264 ^(f)	2.18 ^(f)	1289 ^(f)	2.27 ^(f)								
3600	1260 ^(f)	2.52 ^(f)	1284 ^(f)	2.60 ^(f)	1308 ^(f)	2.68 ^(f)	1332 ^(f)	2.77 ^(f)								
4000	1311 ^(g)	3.10 ^(g)	1335 ^(g)	3.19 ^(g)	1357 ^(g)	3.28 ^(g)	1378 ^(g)	3.37 ^(g)								
4400	1365 ^(g)	3.77 ^(g)	1387 ^(g)	3.87 ^(g)	1409 ^(g)	3.97 ^(g)	1430 ^(g)	4.07 ^(g)								
4800	1422 ^(g)	4.55 ^(g)	1443 ^(g)	4.66 ^(g)	1463 ^(g)	4.76 ^(g)	1483 ^(g)	4.87 ^(g)								

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package F
- (f) Package E
- (g) Package G

Figure 13. Fan performance curve (top supply) - GEV*150(a)



(a) Includes wet coil, no filter

Table 65. Fan performance curve (top supply) - GEV*150 - (includes wet coil, no filter)

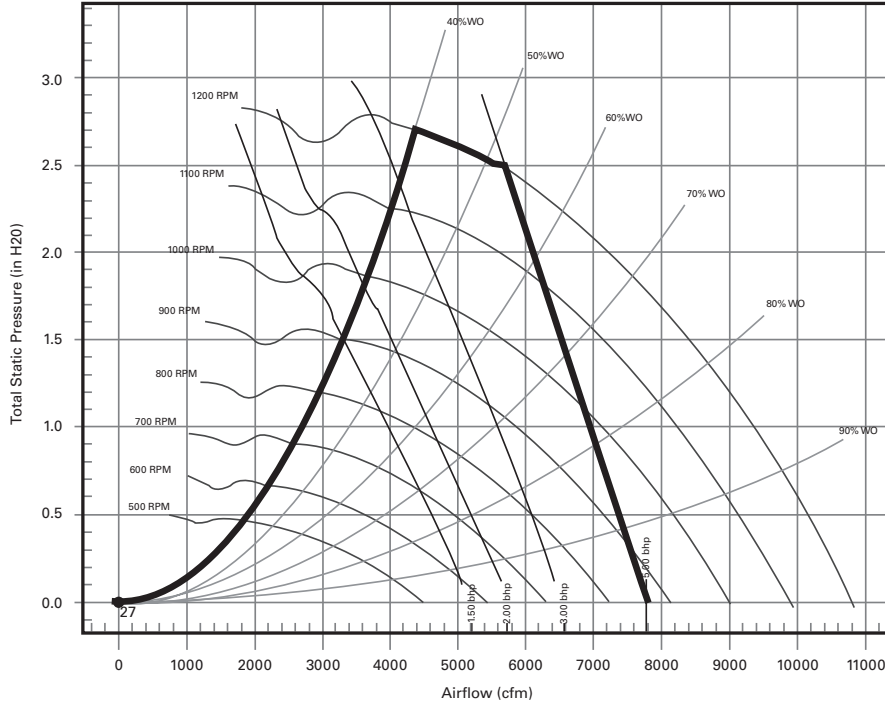
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	—	—	—	—	—	—	626 ^(a)	1.07 ^(a)	660 ^(a)	1.16 ^(a)	692 ^(a)	1.25 ^(a)	724 ^(a)	1.34 ^(a)
4500	—	—	607 ^(a)	1.22 ^(a)	639 ^(a)	1.31 ^(a)	671 ^(a)	1.41 ^(a)	702 ^(a)	1.52 ^(a)	733 ^(a)	1.62 ^(a)	762 ^(a)	1.72 ^(a)
5000	630 ^(a)	1.50 ^(a)	661 ^(a)	1.62 ^(a)	690 ^(a)	1.72 ^(a)	718 ^(a)	1.83 ^(a)	747 ^(a)	1.94 ^(a)	776 ^(b)	2.06 ^(b)	803 ^(b)	2.17 ^(b)
5500	686 ^(a)	1.96 ^(a)	716 ^(b)	2.10 ^(b)	742 ^(b)	2.22 ^(b)	768 ^(b)	2.33 ^(b)	794 ^(b)	2.45 ^(b)	820 ^(b)	2.58 ^(b)	847 ^(b)	2.71 ^(b)
6000	743 ^(b)	2.52 ^(b)	771 ^(b)	2.68 ^(b)	796 ^(b)	2.81 ^(b)	820 ^(b)	2.94 ^(b)	—	—	—	—	892 ^(c)	3.33 ^(c)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.8		0.9		1.0		1.1		1.2		1.3		1.4	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	754 ^(a)	1.43 ^(a)	783 ^(a)	1.52 ^(a)	810 ^(a)	1.62 ^(a)	837 ^(a)	1.72 ^(a)	864 ^(a)	1.81 ^(a)	890 ^(a)	1.90 ^(a)	915 ^(d)	1.99 ^(d)
4500	791 ^(a)	1.82 ^(a)	818 ^(a)	1.92 ^(a)	845 ^(a)	2.02 ^(a)	871 ^(b)	2.12 ^(b)	896 ^(b)	2.23 ^(b)	920 ^(b)	2.34 ^(b)	943 ^(d)	2.45 ^(d)
5000	830 ^(b)	2.29 ^(b)	856 ^(b)	2.40 ^(b)	882 ^(b)	2.51 ^(b)	906 ^(b)	2.62 ^(b)	931 ^(b)	2.73 ^(b)	954 ^(d)	2.84 ^(d)	977 ^(d)	2.96 ^(d)
5500	872 ^(b)	2.83 ^(b)	897 ^(b)	2.96 ^(b)	921 ^(c)	3.08 ^(c)	944 ^(c)	3.21 ^(c)	967 ^(c)	3.33 ^(c)	990 ^(c)	3.45 ^(c)	1013 ^(c)	3.57 ^(c)
6000	916 ^(c)	3.47 ^(c)	939 ^(c)	3.61 ^(c)	962 ^(c)	3.75 ^(c)	985 ^(c)	3.88 ^(c)	1007 ^(c)	4.02 ^(c)	1028 ^(c)	4.15 ^(c)	1050 ^(c)	4.29 ^(c)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	1.5		1.6		1.7		1.8		1.9		2.0			
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
4000	939 ^(d)	2.09 ^(d)	963 ^(d)	2.19 ^(d)	987 ^(d)	2.29 ^(d)	1010 ^(d)	2.39 ^(d)	1034 ^(d)	2.50 ^(d)	1059 ^(d)	2.61 ^(d)	—	—
4500	967 ^(d)	2.56 ^(d)	991 ^(d)	2.19 ^(d)	1013 ^(d)	2.76 ^(d)	1035 ^(d)	2.87 ^(d)	1057 ^(d)	2.98 ^(d)	1077 ^(c)	3.09 ^(c)	—	—
5000	999 ^(c)	3.08 ^(c)	1021 ^(c)	3.21 ^(c)	1043 ^(c)	3.33 ^(c)	1065 ^(c)	3.45 ^(c)	1085 ^(c)	3.56 ^(c)	1106 ^(c)	3.68 ^(c)	—	—
5500	1034 ^(c)	3.69 ^(c)	1056 ^(c)	3.82 ^(c)	1076 ^(c)	3.95 ^(c)	1097 ^(c)	4.09 ^(c)	1117 ^(c)	4.22 ^(c)	1136 ^(c)	4.35 ^(c)	—	—
6000	1070 ^(c)	4.42 ^(c)	1091 ^(c)	4.55 ^(c)	1111 ^(c)	4.68 ^(c)	1131 ^(c)	4.81 ^(c)	—	—	—	—	—	—

(a) Package A
 (b) Package B
 (c) Package D
 (d) Package C



Fan Performance Data

Figure 14. Fan performance curve (front/back supply) - GEV*150(a)



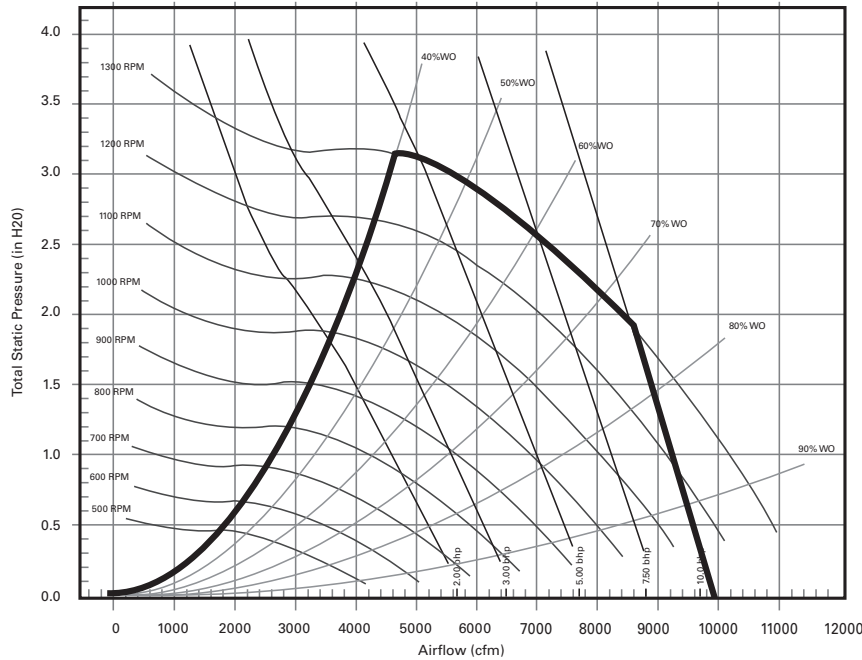
(a) Includes wet coil, no filter

Table 66. Fan performance curve (front/back supply) - GEV*150 - (includes wet coil, no filter)

Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	—	—	—	—	—	—	—	—	626 ^(a)	1.11 ^(a)	658 ^(a)	1.20 ^(a)	689 ^(a)	1.28 ^(a)
4500	—	—	—	—	606 ^(a)	1.28 ^(a)	636 ^(a)	1.37 ^(a)	666 ^(a)	1.46 ^(a)	695 ^(a)	1.55 ^(a)	723 ^(a)	1.64 ^(a)
5000	—	—	626 ^(a)	1.58 ^(a)	654 ^(a)	1.68 ^(a)	681 ^(a)	1.78 ^(a)	708 ^(a)	1.88 ^(a)	735 ^(a)	1.98 ^(a)	761 ^(b)	2.08 ^(b)
5500	652 ^(a)	1.95 ^(a)	677 ^(b)	2.06 ^(b)	703 ^(b)	2.17 ^(b)	728 ^(b)	2.28 ^(b)	753 ^(b)	2.39 ^(b)	778 ^(b)	2.50 ^(b)	802 ^(b)	2.61 ^(b)
6000	707 ^(b)	2.51 ^(b)	730 ^(b)	2.63 ^(b)	753 ^(b)	2.75 ^(b)	777 ^(b)	2.87 ^(b)	800 ^(b)	2.99 ^(b)	—	—	—	—
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.8		0.9		1.0		1.1		1.2		1.3		1.4	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	719 ^(a)	1.36 ^(a)	749 ^(a)	1.45 ^(a)	778 ^(a)	1.54 ^(a)	805 ^(a)	1.62 ^(a)	832 ^(a)	1.71 ^(a)	858 ^(a)	1.80 ^(a)	884 ^(a)	1.89 ^(a)
4500	751 ^(a)	1.74 ^(a)	779 ^(a)	1.84 ^(a)	806 ^(a)	1.93 ^(a)	833 ^(b)	2.03 ^(b)	858 ^(b)	2.12 ^(b)	884 ^(b)	2.22 ^(b)	908 ^(c)	2.32 ^(c)
5000	787 ^(b)	2.19 ^(b)	812 ^(b)	2.29 ^(b)	838 ^(b)	2.40 ^(b)	863 ^(b)	2.51 ^(b)	888 ^(c)	2.62 ^(c)	911 ^(c)	2.72 ^(c)	935 ^(c)	2.83 ^(c)
5500	826 ^(b)	2.72 ^(b)	850 ^(b)	2.83 ^(b)	873 ^(b)	2.95 ^(b)	897 ^(d)	3.07 ^(d)	919 ^(d)	3.18 ^(d)	942 ^(d)	3.30 ^(d)	965 ^(d)	3.42 ^(d)
6000	—	—	890 ^(d)	3.46 ^(d)	912 ^(d)	3.59 ^(d)	933 ^(d)	3.71 ^(d)	955 ^(d)	3.84 ^(d)	976 ^(d)	3.97 ^(d)	997 ^(d)	4.10 ^(d)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	1.5		1.6		1.7		1.8		1.9		2.0			
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	910 ^(c)	1.98 ^(c)	936 ^(c)	2.08 ^(c)	962 ^(c)	2.18 ^(c)	987 ^(c)	2.29 ^(c)	1011 ^(c)	2.39 ^(c)	1035 ^(c)	2.49 ^(c)	—	—
4500	932 ^(c)	2.42 ^(c)	955 ^(c)	2.51 ^(c)	978 ^(c)	2.61 ^(c)	1002 ^(c)	2.72 ^(c)	1025 ^(c)	2.83 ^(c)	1048 ^(c)	2.94 ^(c)	—	—
5000	958 ^(c)	2.93 ^(c)	980 ^(d)	3.04 ^(d)	1002 ^(d)	3.15 ^(d)	1024 ^(d)	3.25 ^(d)	1046 ^(d)	3.37 ^(d)	1067 ^(d)	3.48 ^(d)	—	—
5500	987 ^(d)	3.54 ^(d)	1009 ^(d)	3.65 ^(d)	1030 ^(d)	3.77 ^(d)	1050 ^(d)	3.88 ^(d)	1071 ^(d)	4.00 ^(d)	1091 ^(d)	4.12 ^(d)	—	—
6000	1017 ^(d)	4.22 ^(d)	1038 ^(d)	4.35 ^(d)	1059 ^(d)	4.48 ^(d)	1078 ^(d)	4.60 ^(d)	1099 ^(d)	4.73 ^(d)	1118 ^(d)	4.86 ^(d)	—	—

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D

Figure 15. Fan performance curve (top supply) - GEV*180(a)



(a) Includes wet coil, no filter

Table 67. Fan performance curve (top supply) - GEV*180 - (includes wet coil, no filter)

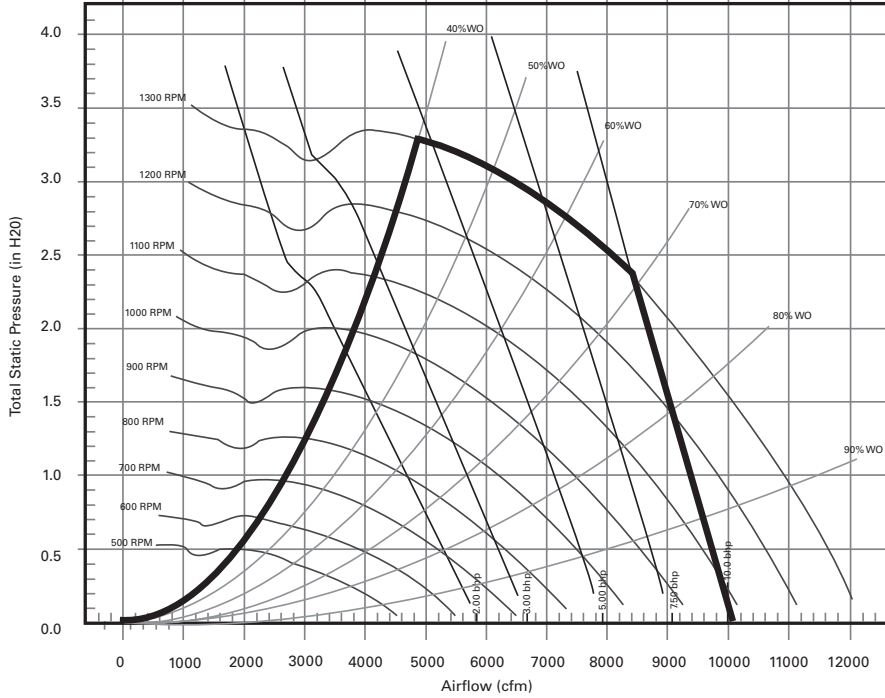
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4800	—	—	—	—	—	—	669 ^(a)	1.55 ^(a)	698 ^(a)	1.66 ^(a)	727 ^(a)	1.77 ^(a)	754 ^(a)	1.87 ^(a)	781 ^(a)	1.98 ^(a)
5400	—	—	670 ^(a)	1.84 ^(a)	698 ^(a)	1.96 ^(a)	724 ^(a)	2.08 ^(a)	750 ^(a)	2.20 ^(a)	777 ^(a)	2.32 ^(a)	802 ^(a)	2.44 ^(a)	827 ^(a)	2.56 ^(a)
6000	710 ^(a)	2.37 ^(a)	731 ^(a)	2.47 ^(a)	758 ^(a)	2.60 ^(a)	782 ^(a)	2.73 ^(a)	806 ^(a)	2.86 ^(a)	830 ^(a)	3.00 ^(a)	853 ^(b)	3.13 ^(b)	877 ^(b)	3.26 ^(b)
6600	—	—	794 ^(b)	3.23 ^(b)	819 ^(b)	3.37 ^(b)	843 ^(b)	3.52 ^(b)	864 ^(b)	3.66 ^(b)	886 ^(b)	3.81 ^(b)	907 ^(b)	3.95 ^(b)	928 ^(b)	4.09 ^(b)
7200	848 ^(b)	4.06 ^(b)	860 ^(b)	4.14 ^(b)	880 ^(b)	4.28 ^(b)	904 ^(b)	4.45 ^(b)	924 ^(b)	4.60 ^(b)	943 ^(b)	4.76 ^(b)	963 ^(b)	4.92 ^(b)	—	—
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)															
	0.9		1.0		1.1		1.2		1.3		1.4		1.5		1.6	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4800	808 ^(a)	2.08 ^(a)	834 ^(a)	2.19 ^(a)	860 ^(a)	2.30 ^(a)	885 ^(a)	2.41 ^(a)	909 ^(c)	2.52 ^(c)	933 ^(c)	2.63 ^(c)	956 ^(c)	2.73 ^(c)	979 ^(c)	2.84 ^(c)
5400	852 ^(a)	2.68 ^(a)	876 ^(a)	2.80 ^(a)	900 ^(c)	2.92 ^(c)	923 ^(c)	3.04 ^(c)	946 ^(b)	3.17 ^(b)	969 ^(b)	3.29 ^(b)	991 ^(b)	3.41 ^(b)	1013 ^(b)	3.53 ^(b)
6000	899 ^(b)	3.40 ^(b)	922 ^(b)	3.53 ^(b)	944 ^(b)	3.66 ^(b)	966 ^(b)	3.80 ^(b)	987 ^(b)	3.93 ^(b)	1008 ^(b)	4.06 ^(b)	1030 ^(d)	4.20 ^(d)	1050 ^(d)	4.34 ^(d)
6600	950 ^(b)	4.24 ^(b)	971 ^(b)	4.39 ^(b)	992 ^(b)	4.54 ^(b)	1012 ^(b)	4.69 ^(b)	1032 ^(d)	4.83 ^(d)	1053 ^(d)	4.98 ^(d)	1072 ^(e)	5.12 ^(e)	1091 ^(e)	5.27 ^(e)
7200	1003 ^(e)	5.23 ^(e)	1023 ^(e)	5.39 ^(e)	1042 ^(e)	5.56 ^(e)	1061 ^(e)	5.72 ^(e)	1080 ^(e)	5.88 ^(e)	1099 ^(e)	6.04 ^(e)	1118 ^(e)	6.20 ^(e)	1136 ^(e)	6.36 ^(e)
Std Airflow CFM	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)															
	1.7		1.8		1.9		2.0									
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP								
4800	1001 ^(c)	2.96 ^(c)	1023 ^(d)	3.07 ^(d)	1045 ^(d)	3.19 ^(d)	1065 ^(d)	3.30 ^(d)								
5400	1034 ^(d)	3.65 ^(d)	1056 ^(d)	3.78 ^(d)	1075 ^(d)	3.89 ^(d)	1096 ^(d)	4.02 ^(d)								
6000	1071 ^(d)	4.47 ^(d)	1091 ^(d)	4.61 ^(d)	1111 ^(d)	4.75 ^(d)	1131 ^(d)	4.88 ^(d)								
6600	1111 ^(e)	5.42 ^(e)	1130 ^(e)	5.57 ^(e)	1149 ^(e)	5.72 ^(e)	1167 ^(e)	5.87 ^(e)								
7200	1154 ^(e)	6.52 ^(e)	1172 ^(e)	6.67 ^(e)	1190 ^(e)	6.83 ^(e)	—	—								

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package E



Fan Performance Data

Figure 16. Fan performance curve (front/back supply) - GEV*180(a)



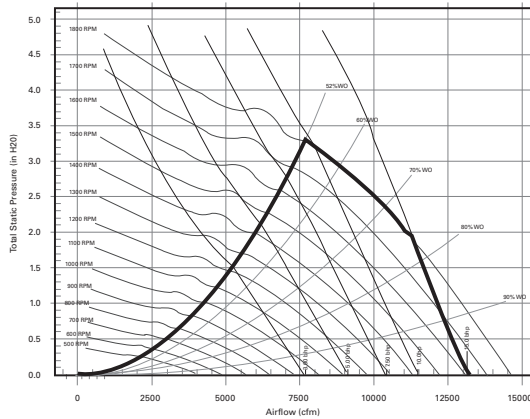
(a) Includes wet coil, no filter

Table 68. Fan performance curve (front/back supply) - GEV*180 - (includes wet coil, no filter)

Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)															
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		0.8	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4800	—	—	—	—	—	—	—	—	668 ^(a)	1.60 ^(a)	696 ^(a)	1.70 ^(a)	724 ^(a)	1.79 ^(a)	750 ^(a)	1.89 ^(a)
5400	—	—	—	—	665 ^(a)	1.92 ^(a)	692 ^(a)	2.03 ^(a)	717 ^(a)	2.13 ^(a)	743 ^(a)	2.24 ^(a)	768 ^(a)	2.35 ^(a)	793 ^(a)	2.46 ^(a)
6000	670 ^(a)	2.28 ^(a)	696 ^(a)	2.41 ^(a)	722 ^(a)	2.54 ^(a)	746 ^(a)	2.66 ^(a)	770 ^(a)	2.78 ^(a)	793 ^(a)	2.91 ^(a)	816 ^(a)	3.02 ^(a)	839 ^(b)	3.14 ^(b)
6600	732 ^(a)	3.01 ^(a)	755 ^(b)	3.15 ^(b)	780 ^(b)	3.30 ^(b)	802 ^(b)	3.43 ^(b)	824 ^(b)	3.56 ^(b)	846 ^(b)	3.70 ^(b)	867 ^(b)	3.83 ^(b)	888 ^(b)	3.96 ^(b)
7200	795 ^(b)	3.89 ^(b)	815 ^(b)	4.03 ^(b)	838 ^(b)	4.19 ^(b)	860 ^(b)	4.35 ^(b)	880 ^(b)	4.49 ^(b)	900 ^(b)	4.63 ^(b)	920 ^(b)	4.78 ^(b)	940 ^(b)	4.93 ^(b)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)															
	0.9		1.0		1.1		1.2		1.3		1.4		1.5		1.6	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4800	776 ^(a)	1.98 ^(a)	802 ^(a)	2.08 ^(a)	827 ^(a)	2.18 ^(a)	853 ^(a)	2.28 ^(a)	878 ^(a)	2.38 ^(a)	902 ^(c)	2.48 ^(c)	925 ^(c)	2.59 ^(c)	949 ^(c)	2.69 ^(c)
5400	818 ^(a)	2.57 ^(a)	841 ^(a)	2.67 ^(a)	864 ^(a)	2.78 ^(a)	887 ^(a)	2.88 ^(a)	910 ^(c)	3.00 ^(c)	934 ^(b)	3.12 ^(b)	955 ^(b)	3.22 ^(b)	978 ^(d)	3.34 ^(d)
6000	861 ^(b)	3.27 ^(b)	884 ^(b)	3.39 ^(b)	906 ^(b)	3.51 ^(b)	927 ^(b)	3.63 ^(b)	947 ^(b)	3.74 ^(b)	969 ^(d)	3.86 ^(d)	990 ^(d)	3.98 ^(d)	1011 ^(d)	4.11 ^(d)
6600	908 ^(b)	4.09 ^(b)	929 ^(b)	4.23 ^(b)	950 ^(b)	4.36 ^(b)	970 ^(d)	4.50 ^(d)	990 ^(d)	4.63 ^(d)	1010 ^(d)	4.76 ^(d)	1029 ^(d)	4.89 ^(d)	1048 ^(d)	5.02 ^(d)
7200	—	—	—	—	—	—	1016 ^(e)	5.50 ^(e)	1035 ^(e)	5.65 ^(e)	1053 ^(e)	5.80 ^(e)	1071 ^(e)	5.94 ^(e)	1090 ^(e)	6.09 ^(e)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)															
	1.7		1.8		1.9		2.0									
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP								
4800	972 ^(c)	2.79 ^(c)	995 ^(c)	2.90 ^(c)	1018 ^(c)	3.01 ^(c)	1040 ^(d)	3.11 ^(d)								
5400	999 ^(d)	3.45 ^(d)	1021 ^(d)	3.57 ^(d)	1041 ^(d)	3.68 ^(d)	1063 ^(d)	3.80 ^(d)								
6000	1031 ^(d)	4.23 ^(d)	1051 ^(d)	4.35 ^(d)	1071 ^(d)	4.48 ^(d)	1090 ^(d)	4.61 ^(d)								
6600	1066 ^(e)	5.14 ^(e)	1085 ^(e)	5.28 ^(e)	1105 ^(e)	5.42 ^(e)	1124 ^(e)	5.56 ^(e)								
7200	1107 ^(e)	6.22 ^(e)	1125 ^(e)	6.36 ^(e)	1142 ^(e)	6.50 ^(e)	1160 ^(e)	6.65 ^(e)								

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package E

Figure 17. Fan performance curve (top supply) - GEV*240(a)



(a) Includes wet coil, no filter

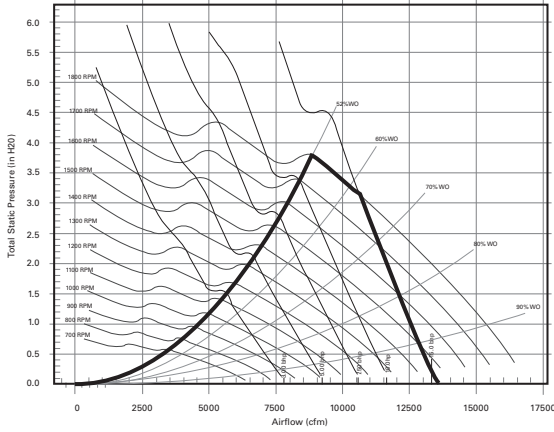
Table 69. Fan performance curve (top supply) - GEV*240 - (includes wet coil, no filter)

Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6400	—	—	893(a)	2.17(a)	928(a)	2.31(a)	962(a)	2.46(a)	995(a)	2.61(a)	1028(a)	2.76(a)	1059(a)	2.91(a)
7200	956(a)	2.83(a)	988(a)	3.00(a)	1019(a)	3.16(a)	1049(a)	3.32(a)	1080(a)	3.49(a)	1110(b)	3.66(b)	1139(b)	3.83(b)
8000	1055(a)	3.84(a)	1085(a)	4.03(a)	1113(b)	4.21(b)	1141(b)	4.39(b)	1168(b)	4.57(b)	1195(b)	4.76(b)	1222(b)	4.95(b)
8800	—	—	—	—	—	—	1234(c)	5.67(c)	1259(c)	5.87(c)	1283(c)	6.07(c)	1308(c)	6.27(c)
9600	1255(c)	6.54(c)	1280(c)	6.76(c)	1305(c)	6.98(c)	1328(c)	7.20(c)	1352(c)	7.42(c)	1374(d)	7.63(d)	1397(d)	7.85(d)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.8		0.9		1.0		1.1		1.2		1.3		1.4	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6400	1091(b)	3.07(b)	1120(b)	3.22(b)	1149(b)	3.37(b)	1179(b)	3.53(b)	1207(b)	3.69(b)	1236(b)	3.85(b)	1263(b)	4.01(b)
7200	1168(b)	4.00(b)	1196(b)	4.17(b)	1224(b)	4.34(b)	1250(b)	4.52(b)	1277(b)	4.69(b)	1302(b)	4.86(b)	1328(b)	5.03(b)
8000	1249(c)	5.13(c)	1275(c)	5.32(c)	1301(c)	5.52(c)	1326(c)	5.70(c)	1352(c)	5.90(c)	1376(c)	6.08(c)	1399(c)	6.28(c)
8800	1333(c)	6.48(c)	1357(c)	6.69(c)	1382(c)	6.90(c)	1405(c)	7.11(c)	1429(c)	7.32(c)	1452(c)	7.53(c)	1474(e)	7.73(e)
9600	1420(d)	8.07(d)	1443(d)	8.30(d)	1465(d)	8.53(d)	1487(e)	8.75(e)	1509(e)	8.98(e)	1531(e)	9.21(e)	1553(e)	9.44(e)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	1.5		1.6		1.7		1.8		1.9		2.0		2.1	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6400	1289(b)	4.17(b)	1317(b)	4.35(b)	1343(b)	4.51(b)	1369(c)	4.68(c)	1394(c)	4.85(c)	1420(c)	5.04(c)	1444(c)	5.21(c)
7200	1353(c)	5.22(c)	1378(c)	5.39(c)	1403(c)	5.57(c)	1428(c)	5.77(c)	1451(c)	5.95(c)	1475(c)	6.13(c)	1498(f)	6.32(f)
8000	1423(c)	6.47(c)	1447(c)	6.66(c)	1469(c)	6.85(c)	1492(e)	7.05(e)	1515(e)	7.25(e)	1537(e)	7.45(e)	1559(e)	7.65(e)
8800	1496(e)	7.94(e)	1519(e)	8.16(e)	1540(e)	8.36(e)	1562(e)	8.58(e)	1583(e)	8.78(e)	1605(e)	9.01(e)	1625(e)	9.22(e)
9600	1574(e)	9.67(e)	1595(e)	9.90(e)	1616(g)	10.12(g)	1637(g)	10.36(g)	1656(g)	10.58(g)	1676(g)	10.80(g)	1696(g)	11.04(g)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	2.2		2.3		2.4		2.5		2.6		2.7		2.8	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6400	1470(c)	5.40(c)	1496(f)	5.59(f)	1523(f)	5.80(f)	—	—	—	—	—	—	—	—
7200	1523(f)	6.52(f)	1545(f)	6.71(f)	1568(f)	6.91(f)	1589(f)	7.10(f)	1612(f)	7.31(f)	1635(f)	7.51(f)	1656(e)	7.71(e)
8000	1581(e)	7.85(e)	1603(e)	8.06(e)	1624(e)	8.26(e)	1647(e)	8.49(e)	1668(e)	8.70(e)	1688(e)	8.91(e)	1708(e)	9.12(e)
8800	1646(e)	9.43(e)	1666(e)	9.65(e)	1687(e)	9.87(e)	1707(g)	10.09(g)	1727(g)	10.32(g)	1747(g)	10.54(g)	1767(g)	10.78(g)
9600	1715(g)	11.26(g)	1735(g)	11.50(g)	1754(g)	11.74(g)	1773(g)	11.96(g)	1793(g)	12.22(g)	—	—	—	—
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	2.9		3.0											
CFM	RPM	BHP	RPM	BHP										
6400	—	—	—	—										
7200	1680(e)	7.94(e)	1704(e)	8.17(e)										
8000	1728(e)	9.33(e)	1748(e)	9.54(e)										
8800	1786(g)	11.00(g)	—	—										
9600	—	—	—	—										

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package E
- (f) Package F
- (g) Package G

Fan Performance Data

Figure 18. Fan performance curve (front/back supply) - GEV*240^(a)



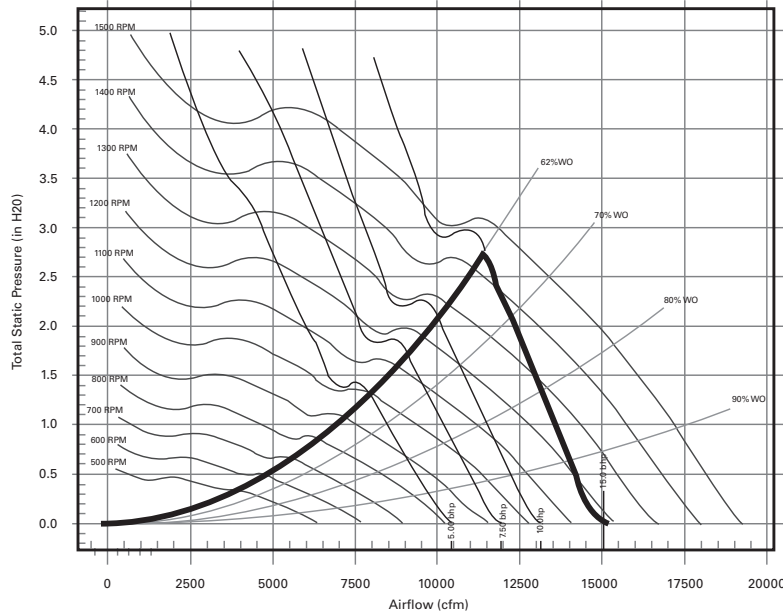
(a) Includes wet coil, no filter

Table 70. Fan performance curve (front/back supply) - GEV*240 - (includes wet coil, no filter)

Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6400	—	—	—	—	—	—	—	—	899 ^(a)	2.43 ^(a)	931 ^(a)	2.57 ^(a)	962 ^(a)	2.70 ^(a)
7200	—	—	—	—	910 ^(a)	2.94 ^(a)	941 ^(a)	3.10 ^(a)	972 ^(a)	3.25 ^(a)	1001 ^(a)	3.41 ^(a)	1030 ^(a)	3.56 ^(a)
8000	933 ^(a)	3.58 ^(a)	962 ^(a)	3.75 ^(a)	990 ^(a)	3.91 ^(a)	1019 ^(a)	4.09 ^(a)	1048 ^(a)	4.26 ^(a)	1075 ^(a)	4.43 ^(a)	1102 ^(b)	4.60 ^(b)
8800	1021 ^(a)	4.73 ^(a)	1047 ^(a)	4.91 ^(a)	1073 ^(a)	5.09 ^(a)	1100 ^(c)	5.28 ^(c)	1126 ^(c)	5.48 ^(c)	1151 ^(c)	5.67 ^(c)	1176 ^(c)	5.86 ^(c)
9600	1109 ^(c)	6.10 ^(c)	1133 ^(c)	6.30 ^(c)	1157 ^(c)	6.50 ^(c)	1181 ^(c)	6.70 ^(c)	1205 ^(c)	6.91 ^(c)	1229 ^(c)	7.12 ^(c)	1253 ^(c)	7.33 ^(c)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.8		0.9		1.0		1.1		1.2		1.3		1.4	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6400	993 ^(a)	2.85 ^(a)	1023 ^(a)	2.99 ^(a)	1052 ^(a)	3.13 ^(a)	1080 ^(a)	3.27 ^(a)	1107 ^(b)	3.41 ^(b)	1134 ^(b)	3.55 ^(b)	1160 ^(b)	3.69 ^(b)
7200	1059 ^(a)	3.72 ^(a)	1086 ^(a)	3.87 ^(a)	1114 ^(b)	4.03 ^(b)	1140 ^(b)	4.19 ^(b)	1166 ^(b)	4.35 ^(b)	1192 ^(b)	4.51 ^(b)	1217 ^(b)	4.66 ^(b)
8000	1128 ^(b)	4.77 ^(b)	1154 ^(b)	4.95 ^(b)	1179 ^(c)	5.12 ^(c)	1204 ^(c)	5.29 ^(c)	1230 ^(c)	5.47 ^(c)	1253 ^(c)	5.64 ^(c)	1277 ^(d)	5.82 ^(d)
8800	1201 ^(c)	6.04 ^(c)	1225 ^(c)	6.23 ^(c)	1249 ^(c)	6.42 ^(c)	1272 ^(d)	6.61 ^(d)	1295 ^(d)	6.79 ^(d)	1317 ^(d)	6.98 ^(d)	1340 ^(d)	7.18 ^(d)
9600	1276 ^(e)	7.54 ^(e)	1298 ^(e)	7.74 ^(e)	1320 ^(e)	7.94 ^(e)	1342 ^(e)	8.14 ^(e)	1364 ^(e)	8.35 ^(e)	1385 ^(e)	8.55 ^(e)	1406 ^(e)	8.76 ^(e)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	1.5		1.6		1.7		1.8		1.9		2.0		2.1	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6400	1186 ^(b)	3.83 ^(b)	1211 ^(b)	3.97 ^(b)	1235 ^(b)	4.10 ^(b)	1258 ^(b)	4.24 ^(b)	1282 ^(b)	4.38 ^(b)	1307 ^(b)	4.54 ^(b)	—	—
7200	1241 ^(b)	4.82 ^(b)	1265 ^(b)	4.97 ^(b)	1288 ^(d)	5.13 ^(d)	1313 ^(d)	5.30 ^(d)	1335 ^(d)	5.45 ^(d)	1357 ^(d)	5.62 ^(d)	1378 ^(d)	5.76 ^(d)
8000	1300 ^(d)	6.00 ^(d)	1323 ^(d)	6.17 ^(d)	1346 ^(d)	6.35 ^(d)	1368 ^(d)	6.52 ^(d)	1390 ^(d)	6.70 ^(d)	1412 ^(d)	6.88 ^(d)	1432 ^(d)	7.05 ^(d)
8800	1362 ^(d)	7.37 ^(d)	1384 ^(e)	7.56 ^(e)	1406 ^(e)	7.76 ^(e)	1426 ^(e)	7.95 ^(e)	1449 ^(e)	8.15 ^(e)	1469 ^(e)	8.34 ^(e)	1489 ^(f)	8.53 ^(f)
9600	1428 ^(e)	8.97 ^(e)	1448 ^(e)	9.18 ^(e)	1470 ^(e)	9.40 ^(e)	1489 ^(f)	9.60 ^(f)	1510 ^(f)	9.82 ^(f)	1529 ^(f)	10.03 ^(f)	1549 ^(g)	10.24 ^(g)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	2.2		2.3		2.4		2.5		2.6		2.7		2.8	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6400	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7200	1399 ^(d)	5.91 ^(d)	1420 ^(d)	6.07 ^(d)	1442 ^(d)	6.24 ^(d)	—	—	—	—	—	—	—	—
8000	1454 ^(d)	7.23 ^(d)	1475 ^(d)	7.41 ^(d)	1494 ^(f)	7.58 ^(f)	1513 ^(f)	7.75 ^(f)	1533 ^(f)	7.92 ^(f)	1551 ^(f)	8.08 ^(f)	1570 ^(f)	8.25 ^(f)
8800	1509 ^(f)	8.72 ^(f)	1529 ^(f)	8.92 ^(f)	1548 ^(f)	9.11 ^(f)	1567 ^(f)	9.30 ^(f)	1587 ^(f)	9.50 ^(f)	1605 ^(f)	9.69 ^(f)	1625 ^(f)	9.89 ^(f)
9600	1568 ^(g)	10.45 ^(g)	1587 ^(g)	10.66 ^(g)	1606 ^(g)	10.87 ^(g)	1624 ^(g)	11.08 ^(g)	1644 ^(g)	11.30 ^(g)	1661 ^(g)	11.50 ^(g)	1679 ^(g)	11.70 ^(g)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	2.9		3.0											
CFM	RPM	BHP	RPM	BHP										
6400	—	—	—	—										
7200	—	—	—	—										
8000	1589 ^(f)	8.43 ^(f)	1608 ^(f)	8.61 ^(f)										
8800	1643 ^(g)	10.08 ^(g)	1662 ^(g)	10.29 ^(g)										
9600	1696 ^(g)	11.91 ^(g)	1715 ^(g)	12.13 ^(g)										

- (a) Package A
- (b) Package B
- (c) Package C
- (d) Package D
- (e) Package E
- (f) Package G
- (g) Package H

Figure 19. Fan performance curve (with 11x15 blower wheel) - GEV*300^(a)



(a) Includes wet coil, no filter

Table 71. Fan performance curve (top supply with 11x15 blower wheel) - GEV*300 - (includes wet coil, no filter)

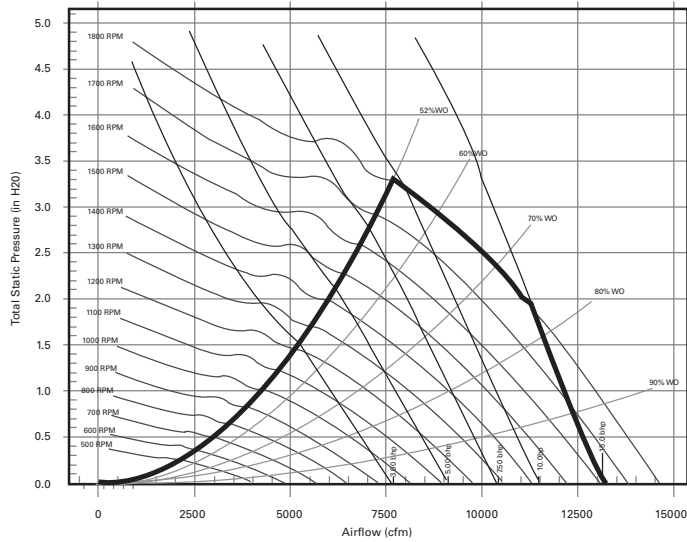
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.1		0.2		0.3		0.4		0.5		0.6		0.7	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	—	—	—	—	—	—	760 ^(a)	3.23 ^(a)	787 ^(a)	3.42 ^(a)	814 ^(a)	3.60 ^(a)	839 ^(a)	3.79 ^(a)
9000	—	—	781 ^(a)	3.98 ^(a)	805 ^(a)	4.17 ^(a)	829 ^(a)	4.36 ^(a)	853 ^(a)	4.57 ^(a)	878 ^(a)	4.79 ^(a)	901 ^(a)	5.00 ^(a)
10000	—	—	858 ^(b)	5.36 ^(b)	879 ^(b)	5.57 ^(b)	901 ^(b)	5.78 ^(b)	923 ^(b)	6.00 ^(b)	945 ^(b)	6.23 ^(b)	966 ^(b)	6.48 ^(b)
11000	917 ^(b)	6.81 ^(b)	936 ^(b)	7.04 ^(b)	955 ^(b)	7.26 ^(b)	975 ^(b)	7.50 ^(b)	994 ^(c)	7.73 ^(c)	1014 ^(c)	7.98 ^(c)	1034 ^(c)	8.23 ^(c)
12000	997 ^(c)	8.79 ^(c)	1015 ^(c)	9.05 ^(c)	1032 ^(c)	9.29 ^(c)	1050 ^(c)	9.54 ^(c)	1068 ^(c)	9.79 ^(c)	1086 ^(d)	10.05 ^(d)	1104 ^(d)	10.31 ^(d)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	0.8		0.9		1.0		1.1		1.2		1.3		1.4	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	866 ^(a)	3.99 ^(a)	891 ^(a)	4.19 ^(a)	916 ^(a)	4.38 ^(a)	939 ^(a)	4.57 ^(a)	963 ^(a)	4.76 ^(a)	987 ^(b)	4.97 ^(b)	1011 ^(b)	5.19 ^(b)
9000	925 ^(b)	5.21 ^(b)	948 ^(b)	5.43 ^(b)	971 ^(b)	5.65 ^(b)	993 ^(b)	5.87 ^(b)	1016 ^(b)	6.10 ^(b)	1037 ^(b)	6.31 ^(b)	1058 ^(b)	6.52 ^(b)
10000	988 ^(b)	6.72 ^(b)	1009 ^(b)	6.95 ^(b)	1030 ^(b)	7.18 ^(b)	1051 ^(b)	7.41 ^(b)	1072 ^(c)	7.66 ^(c)	1092 ^(c)	7.91 ^(c)	1112 ^(c)	8.16 ^(c)
11000	1054 ^(c)	8.50 ^(c)	1074 ^(c)	8.76 ^(c)	1093 ^(c)	9.02 ^(c)	1112 ^(c)	9.27 ^(c)	1131 ^(c)	9.53 ^(c)	1150 ^(c)	9.78 ^(c)	1169 ^(d)	10.06 ^(d)
12000	1122 ^(d)	10.59 ^(d)	1141 ^(d)	10.88 ^(d)	1158 ^(d)	11.17 ^(d)	1177 ^(d)	11.47 ^(d)	1194 ^(d)	11.74 ^(d)	1212 ^(d)	12.02 ^(d)	1229 ^(d)	12.29 ^(d)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	1.5		1.6		1.7		1.8		1.9		2.0		2.1	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	1037 ^(b)	5.43 ^(b)	—	—	—	—	—	—	—	—	—	—	—	—
9000	1080 ^(e)	6.74 ^(e)	1101 ^(e)	6.97 ^(e)	1122 ^(e)	7.21 ^(e)	1144 ^(e)	7.46 ^(e)	—	—	—	—	—	—
10000	1132 ^(c)	8.41 ^(c)	1151 ^(c)	8.65 ^(c)	1170 ^(f)	8.88 ^(f)	1190 ^(f)	9.13 ^(f)	1209 ^(f)	9.37 ^(f)	1227 ^(f)	9.60 ^(f)	1247 ^(f)	9.88 ^(f)
11000	1187 ^(d)	10.32 ^(d)	1206 ^(d)	10.60 ^(d)	1224 ^(d)	10.88 ^(d)	1243 ^(d)	11.16 ^(d)	1261 ^(d)	11.42 ^(d)	1278 ^(d)	11.68 ^(d)	1295 ^(d)	11.94 ^(d)
12000	1247 ^(d)	12.57 ^(d)	1264 ^(d)	12.86 ^(d)	1281 ^(d)	13.15 ^(d)	1298 ^(d)	13.46 ^(d)	1315 ^(d)	13.76 ^(d)	1331 ^(d)	14.04 ^(d)	1349 ^(d)	14.37 ^(d)
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)													
	2.2		2.3											
CFM	RPM	BHP	RPM	BHP										
8000	—	—	—	—										
9000	—	—	—	—										
10000	1266 ^(d)	10.16 ^(d)	1286 ^(d)	10.45 ^(d)										
11000	1313 ^(d)	12.21 ^(d)	1330 ^(d)	12.47 ^(d)										
12000	1365 ^(d)	14.65 ^(d)	1381 ^(d)	14.93 ^(d)										

- (a) Package A
- (b) Package B
- (c) Package D
- (d) Package F
- (e) Package C
- (f) Package E



Fan Performance Data

Figure 20. Fan performance curve (top supply with 12x12 blower wheel) - GEV*300(a)



(a) Includes wet coil, no filter

Table 72. Fan performance curve (top supply with 12x12 blower wheel) - GEV*300 - (includes wet coil, no filter)

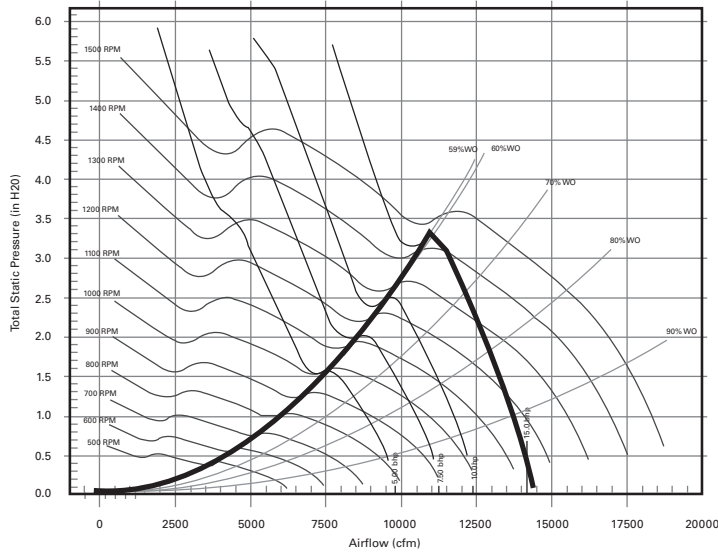
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)															
	1.6		1.7		1.8		1.9		2.0		2.1		2.2		2.3	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	1434 ^(a)	6.56 ^(a)	1458 ^(a)	6.76 ^(a)	1481 ^(a)	6.96 ^(a)	1503 ^(a)	7.14 ^(a)	1525 ^(a)	7.34 ^(a)	1548 ^(a)	7.55 ^(a)	1569 ^(b)	7.74 ^(b)	1592 ^(b)	7.96 ^(b)
9000	—	—	—	—	—	—	1588 ^(b)	9.07 ^(b)	1609 ^(b)	9.29 ^(b)	1629 ^(b)	9.50 ^(b)	1650 ^(b)	9.73 ^(b)	1670 ^(b)	9.94 ^(b)
10000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)															
	2.4		2.5		2.6		2.7		2.8		2.9		3.0			
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	1613 ^(b)	8.16 ^(b)	1657 ^(b)	8.60 ^(b)	1657 ^(b)	8.60 ^(b)	1677 ^(b)	8.80 ^(b)	1698 ^(b)	9.01 ^(b)	1718 ^(b)	9.22 ^(b)	1738 ^(b)	9.43 ^(b)	—	—
9000	1691 ^(b)	10.17 ^(b)	1731 ^(b)	10.63 ^(b)	1731 ^(b)	10.63 ^(b)	1749 ^(b)	10.84 ^(b)	1769 ^(c)	11.07 ^(c)	1790 ^(c)	11.32 ^(c)	—	—	—	—
10000	1775 ^(c)	12.58 ^(c)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(a) Package G

(b) Package H

(c) Package J

Figure 21. Fan performance curve (front/back supply with 11x15 blower wheel) - GEV*300(a)



(a) Includes wet coil, no filter

Table 73. Fan performance curve (front/back supply with 11x15 blower wheel) - GEV*300 - (includes wet coil, no filter)

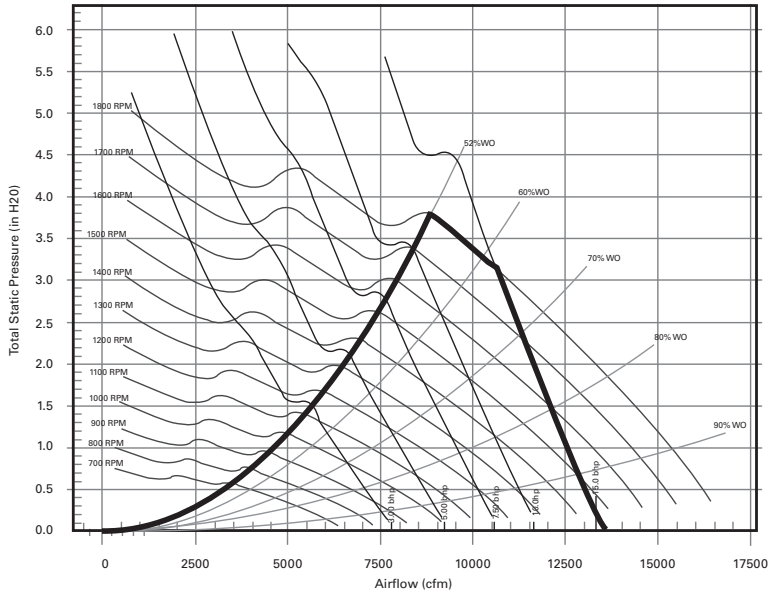
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)														
	0.1		0.2		0.3		0.4		0.5		0.6		0.7		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
8000	—	—	—	—	—	—	—	—	—	—	755 ^(a)	3.42 ^(a)	780 ^(a)	3.59 ^(a)	
9000	—	—	—	—	760 ^(a)	4.18 ^(a)	777 ^(a)	4.31 ^(a)	795 ^(a)	4.44 ^(a)	814 ^(a)	4.58 ^(a)	836 ^(a)	4.75 ^(a)	
10000	—	—	—	—	835 ^(b)	5.64 ^(b)	849 ^(b)	5.78 ^(b)	864 ^(b)	5.92 ^(b)	880 ^(b)	6.06 ^(b)	897 ^(b)	6.21 ^(b)	
11000	885 ^(b)	7.09 ^(b)	898 ^(b)	7.25 ^(b)	910 ^(b)	7.41 ^(b)	923 ^(c)	7.56 ^(c)	936 ^(c)	7.72 ^(c)	950 ^(c)	7.87 ^(c)	965 ^(c)	8.02 ^(c)	
12000	963 ^(c)	9.17 ^(c)	975 ^(c)	9.35 ^(c)	987 ^(c)	9.52 ^(c)	998 ^(c)	9.69 ^(c)	1010 ^(c)	9.86 ^(c)	1022 ^(c)	10.02 ^(c)	—	—	
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)														
	0.8		0.9		1.0		1.1		1.2		1.3		1.4		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
8000	804 ^(a)	3.75 ^(a)	829 ^(a)	3.93 ^(a)	853 ^(a)	4.10 ^(a)	876 ^(a)	4.27 ^(a)	898 ^(a)	4.43 ^(a)	921 ^(a)	4.61 ^(a)	944 ^(a)	4.80 ^(a)	
9000	859 ^(a)	4.95 ^(a)	881 ^(b)	5.14 ^(b)	903 ^(b)	5.33 ^(b)	925 ^(b)	5.52 ^(b)	946 ^(b)	5.71 ^(b)	966 ^(b)	5.90 ^(b)	987 ^(b)	6.09 ^(b)	
10000	916 ^(b)	6.39 ^(b)	936 ^(b)	6.59 ^(b)	957 ^(b)	6.82 ^(b)	976 ^(b)	7.02 ^(b)	996 ^(b)	7.23 ^(b)	1016 ^(b)	7.44 ^(b)	1035 ^(c)	7.65 ^(c)	
11000	980 ^(c)	8.18 ^(c)	996 ^(c)	8.37 ^(c)	1014 ^(c)	8.58 ^(c)	1032 ^(c)	8.81 ^(c)	1050 ^(c)	9.04 ^(c)	1069 ^(c)	9.28 ^(c)	1087 ^(c)	9.51 ^(c)	
12000	—	—	—	—	—	—	—	—	1107 ^(d)	11.16 ^(d)	1124 ^(d)	11.41 ^(d)	1141 ^(d)	11.67 ^(d)	
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)														
	1.5		1.6		1.7		1.8		1.9		2.0		2.1		
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
8000	967 ^(a)	4.99 ^(a)	990 ^(b)	5.21 ^(b)	1015 ^(b)	5.47 ^(b)	—	—	—	—	—	—	—	—	
9000	1008 ^(b)	6.29 ^(b)	1028 ^(b)	6.48 ^(b)	1047 ^(b)	6.67 ^(b)	1067 ^(e)	6.88 ^(e)	1087 ^(e)	7.11 ^(e)	1109 ^(e)	7.36 ^(e)	—	—	
10000	1054 ^(c)	7.87 ^(c)	1073 ^(c)	8.08 ^(c)	1091 ^(c)	8.29 ^(c)	1110 ^(c)	8.52 ^(c)	1127 ^(c)	8.72 ^(c)	1146 ^(f)	8.94 ^(f)	1164 ^(f)	9.16 ^(f)	
11000	1105 ^(c)	9.74 ^(c)	1122 ^(c)	9.97 ^(c)	1140 ^(c)	10.21 ^(c)	1156 ^(d)	10.43 ^(d)	1174 ^(d)	10.67 ^(d)	1190 ^(d)	10.90 ^(d)	1208 ^(d)	11.15 ^(d)	
12000	1158 ^(d)	11.92 ^(d)	1175 ^(d)	12.18 ^(d)	1190 ^(d)	12.42 ^(d)	1207 ^(d)	12.67 ^(d)	1223 ^(d)	12.93 ^(d)	1239 ^(d)	13.18 ^(d)	1255 ^(d)	13.43 ^(d)	
continued on next page															
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)														
	2.2		2.3		2.4		2.5		2.6		2.7				
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
8000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
9000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10000	1182 ^(f)	9.40 ^(f)	1200 ^(f)	9.64 ^(f)	1219 ^(f)	9.91 ^(f)	1238 ^(d)	10.18 ^(d)	—	—	—	—	—	—	
11000	1225 ^(d)	11.38 ^(d)	1240 ^(d)	11.60 ^(d)	1258 ^(d)	11.86 ^(d)	1274 ^(d)	12.10 ^(d)	1290 ^(d)	12.36 ^(d)	1306 ^(d)	12.60 ^(d)	—	—	
12000	1271 ^(d)	13.70 ^(d)	1287 ^(d)	13.95 ^(d)	1302 ^(d)	14.20 ^(d)	1318 ^(d)	14.47 ^(d)	1332 ^(d)	14.71 ^(d)	1347 ^(d)	14.96 ^(d)	—	—	

- (a) Package A
- (b) Package B
- (c) Package D
- (d) Package F
- (e) Package C
- (f) Package E



Fan Performance Data

Figure 22. Fan performance curve (front/back supply with 12x12 blower wheel) - GEV*300(a)



(a) Includes wet coil, no filter

Table 74. GEV 300 - Front/Back Supply - Fan Performance with 12 x 12 Blower Wheel (includes wet coil, no filter)

Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)											
	1.8		1.9		2.0		2.1		2.2		2.3	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	1356 ^(a)	6.25 ^(a)	1379 ^(a)	6.42 ^(a)	1400 ^(a)	6.59 ^(a)	1422 ^(a)	6.76 ^(a)	1443 ^(a)	6.93 ^(a)	1463 ^(a)	7.10 ^(a)
9000	—	—	—	—	—	—	1490 ^(b)	8.55 ^(b)	1510 ^(b)	8.74 ^(b)	1531 ^(b)	8.94 ^(b)
10000	—	—	—	—	—	—	—	—	—	—	—	—
11000	—	—	—	—	—	—	—	—	—	—	—	—
12000	—	—	—	—	—	—	—	—	—	—	—	—
Std Airflow	Unit External Static Pressure inches W.G. (Wet Coil, 3% Drive Loss Included & No Return Air Filter)											
	2.7		2.9		3.0		2.7		2.9		3.0	
CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	1542 ^(b)	7.76 ^(b)	1581 ^(b)	8.11 ^(b)	1600 ^(b)	8.29 ^(b)	1542 ^(b)	7.76 ^(b)	1581 ^(b)	8.11 ^(b)	1600 ^(b)	8.29 ^(b)
9000	1608 ^(b)	9.71 ^(b)	1644 ^(b)	10.08 ^(b)	1662 ^(b)	10.28 ^(b)	1608 ^(b)	9.71 ^(b)	1644 ^(b)	10.08 ^(b)	1662 ^(b)	10.28 ^(b)
10000	1676 ^(c)	11.96 ^(c)	1711 ^(c)	12.38 ^(c)	1729 ^(c)	12.60 ^(c)	1676 ^(c)	11.96 ^(c)	1711 ^(c)	12.38 ^(c)	1729 ^(c)	12.60 ^(c)
11000	—	—	—	—	—	—	—	—	—	—	—	—
12000	—	—	—	—	—	—	—	—	—	—	—	—

(a) Package G

(b) Package H

(c) Package J

Waterside Economizer Performance Data

Table 75. Waterside economizer performance data^(a) (6 to 25 Tons)

Input Data				Output Data								
Tonnage of Heat Pump	Unit Model Number	SCFM	GPM	Air Velocity (SFPM)	Total Capacity (MBh)	Sensible Capacity (MBh)	LVG. Air DB (Deg F)	LVG. Air WB (Deg F)	Standard APD (IN WG)	LVG. Fluid Temp. (Deg F)	Fluid PD Coil In (FT H ₂ O)	Fluid PD Coil Out (FT H ₂ O)
6.00	GEHB072	2400	13.2	400	65.2	52.3	60.1	58.6	0.26	54.8	3.8	1.1
	GEHB072	2400	16.8	400	73.1	55.3	58.9	57.4	0.27	53.7	6.1	1.7
	GEHB072	2400	18.6	400	76.2	56.5	58.5	57.0	0.27	53.2	7.5	2.1
7.50	GEHB090	3000	16.5	444	83.4	52.5	60.0	58.3	0.31	55.1	6.1	1.7
	GEHB090	3000	21.0	444	92.2	55.2	59.0	57.3	0.32	53.8	9.8	2.7
	GEHB090	3000	23.3	444	95.6	56.3	58.6	56.9	0.32	53.2	12.0	3.3
10.00	GEHB120	4000	22.0	438	119.8	54.5	59.2	57.6	0.31	55.9	9.3	1.2
	GEHB120	4000	28.0	438	130.3	57.0	58.3	56.7	0.32	54.3	15.1	1.9
	GEHB120	4000	31.0	438	134.4	58.0	57.9	56.3	0.32	53.6	18.5	2.3
12.50	GEHB150	5000	27.5	411	153.5	116.2	58.7	57.3	0.28	56.1	10.7	1.6
	GEHB150	5000	35.0	411	167.5	121.8	57.7	56.4	0.28	54.5	17.4	2.6
	GEHB150	5000	38.8	411	172.9	123.9	57.3	56.0	0.29	53.9	21.3	3.1
15.00	GEHB180	6000	33.0	493	176.9	135.0	59.4	57.8	0.37	55.7	15.5	2.3
	GEHB180	6000	42.0	493	191.8	140.8	58.5	56.9	0.38	54.1	25.0	3.7
	GEHB180	6000	46.5	493	197.8	143.2	58.2	56.6	0.38	53.5	30.7	4.5
6.00	GEVB072	2400	13.2	424	72.1	55.0	59.1	57.6	0.29	55.9	8.3	1.1
	GEVB072	2400	16.8	424	78.7	57.6	58.1	56.6	0.30	54.3	13.4	1.7
	GEVB072	2400	18.6	424	81.3	58.6	57.7	56.2	0.30	53.7	16.4	2.1
7.50	GEVB090	3000	16.5	454	88.8	67.9	59.3	57.7	0.32	55.7	10.0	1.7
	GEVB090	3000	21.0	454	96.7	71.0	58.4	56.8	0.33	54.2	16.2	2.7
	GEVB090	3000	23.3	454	99.8	72.2	58.0	56.4	0.34	53.6	19.9	3.3
10.00	GEVB120	4000	22.0	471	117.4	89.9	59.4	57.8	0.34	55.6	10.1	1.4
	GEVB120	4000	28.0	471	127.7	94.0	58.5	56.9	0.35	54.1	16.3	2.2
	GEVB120	4000	31.0	471	131.8	95.6	58.2	56.6	0.36	53.5	20.0	2.7
12.50	GEVB150	5000	27.5	308	160.4	120.6	58.0	56.9	0.18	56.6	6.9	0.9
	GEVB150	5000	35.0	308	177.4	127.3	56.7	55.7	0.18	55.1	11.2	1.5
	GEVB150	5000	38.8	308	184.0	130.0	56.2	55.2	0.19	54.5	13.8	1.8
15.00	GEVB180	6000	33.0	370	187.3	141.4	58.5	57.2	0.23	56.3	9.8	1.3
	GEVB180	6000	42.0	370	205.4	148.5	57.4	56.1	0.24	54.8	15.9	2.2
	GEVB180	6000	46.5	370	212.3	151.3	56.9	55.7	0.25	54.1	19.5	2.7
20.00	GEVB240	8000	44.0	438	241.7	183.4	59.0	57.5	0.30	56.0	8.6	0.7
	GEVB240	8000	56.0	438	263.0	191.8	58.1	56.6	0.32	54.4	13.9	1.1
	GEVB240	8000	62.0	438	271.3	195.1	57.7	56.2	0.32	53.7	17.0	1.4
25.00	GEVB300	10000	55.0	548	280.8	219.5	60.1	58.2	0.52	55.2	9.8	1.1
	GEVB300	10000	70.0	548	299.0	228.4	59.3	57.5	0.52	53.5	15.8	1.8
	GEVB300	10000	77.5	548	306.8	232.1	58.9	57.3	0.53	52.9	19.4	2.2

Note: *Rated in compliance with ARI 410

Note: *Airflow is in SCFM

Note: *Entering air DB/WB (80/67)

Note: *Entering fluid 45°F

(a) Performance data is tabulated for cooling at 80°F DB/67°F WB entering air and 45°F entering fluid at ARI 410 rated SCFM.

Fan Performance Data

Table 76. Antifreeze correction factors

Item	Methanol				
	Concentration by Volume				
	10%	20%	30%	40%	50%
Cool Capacity	.9980	.9965	.9949	.9932	.9915
Heat Capacity	.9950	.9898	.9846	.9794	.9742
Pressure Drop	1.023	1.057	1.091	1.122	1.160
Ethylene Glycol					
Cool Capacity	.9955	.9912	.9870	.9830	.9790
Heat Capacity	.9925	.9848	.9770	.9690	.9610
Pressure Drop	1.024	1.068	1.124	1.188	1.263
Propylene Glycol					
Cool Capacity	.9934	.9869	.9804	.9739	.9681
Heat Capacity	.9863	.9732	.9603	.9477	.9350
Pressure Drop	1.040	1.098	1.174	1.273	1.405

Note: Performance data is tabulated for cooling at 80°F DB/67 F WB entering air and 45°F entering fluid at ARI 410 rated SCFM.

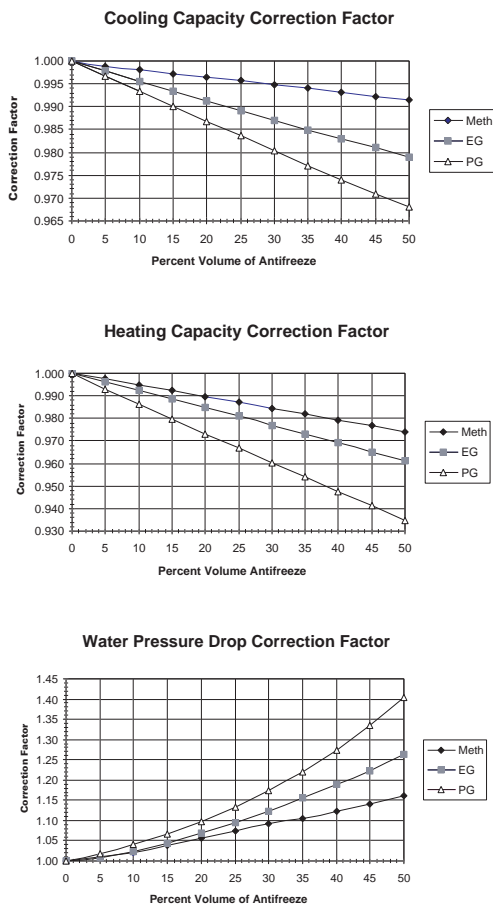
Note: *Rated in Compliance with ARI 410

Note: *Airflow is in SCFM

Note: *Entering Air DB/WB (80/67)

Note: *Entering Fluid 45°F

Figure 23. Correction factors



Example 1 - (Ethylene Glycol): The antifreeze solution is 20% by volume of Ethylene Glycol. Determine the corrected cooling capacity and waterside pressure drop for a GEHE 072 when the EWT is 86°F and the GPM is 18.0.

From the catalog data, the cooling capacity at these conditions with 100% water is 77.8 MBTUH, and the waterside pressure drop is 12.0 feet of head. At 20% Ethylene Glycol, the correction factor for cool capacity is 0.9912 and the pressure drop is 1.068.

The corrected cooling capacity (MBTUH) = $77.8 * 0.9912 = 77.1$. The corrected water side pressure drop (Ft. head) = $12.0 * 1.068 = 12.8$.

Example 2 - (Propylene Glycol): The antifreeze solution is 30% by volume of Propylene Glycol. Determine the corrected heating capacity and waterside pressure drop for a GEHE 072 when the EWT is 45°F and the GPM is 18.0.

From the catalog data, the heating capacity at these conditions with 100% water is 61.7 MBTUH, and the waterside pressure drop is 15.3 feet of head. At 30% Propylene Glycol, the correction factor for heat capacity is 0.9603 and the pressure drop is 1.174.

The corrected cooling capacity (MBTUH) = $61.7 * 0.9603 = 59.3$. The corrected water side pressure drop (Ft. head) = $15.3 * 1.174 = 18.0$.



Electrical Data

Table 77. Electrical data: 6–25 tons

Model No.	Volts	Total FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor HP	Fan Motor No.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
GEH											
072	208/60/1	37.4	15.4	83.0	2	24.0	6.6	1.0	1	41.20	50
072	230/60/1	37.3	15.4	83.0	2	24.0	6.5	1.0	1	41.12	50
072	208/60/1	40.1	15.4	83.0	2	24.0	9.3	1.5	1	43.99	50
072	230/60/1	39.7	15.4	83.0	2	24.0	8.9	1.5	1	43.59	50
072	208/60/1	42.0	15.4	83.0	2	24.0	11.2	2.0	1	45.85	60
072	230/60/1	41.0	15.4	83.0	2	24.0	10.2	2.0	1	44.88	60
072	380-415/50/3	13.9	7.1/5.1	48/35	2	11/8	1.7	0.8	1	15.68	20
072	208/60/3	26.5	11.5	77.0	2	18.0	3.5	1.0	1	29.38	40
072	230/60/3	26.8	11.5	77.0	2	18.0	3.8	1.0	1	29.68	40
072	460/60/3	12.0	5.1	35.0	2	8.0	1.8	1.0	1	13.28	15
072	380-415/50/3	14.3	7.1/5.1	48/35	2	11/8	2.1	1.0	1	16.08	20
072	208/60/3	28.6	11.5	77.0	2	18.0	5.6	1.5	1	31.48	40
072	230/60/3	27.8	11.5	77.0	2	18.0	4.8	1.5	1	30.68	40
072	380-415/50/3	15.2	7.1/5.1	48/35	2	11/8	3.0	1.5	1	16.98	20
072	460/60/3	12.6	5.1	35.0	2	8.0	2.4	1.5	1	13.88	15
072	208/60/3	30.1	11.5	77.0	2	18.0	7.1	2.0	1	32.98	40
072	230/60/3	29.2	11.5	77.0	2	18.0	6.2	2.0	1	32.08	40
072	380-415/50/3	15.6	7.1/5.1	48/35	2	11/8	3.4	2.0	1	17.38	20
072	460/60/3	13.3	5.1	35.0	2	8.0	3.1	2.0	1	14.59	15
072	380-415/50/3	17.7	7.1/5.1	48/35	2	11/8	5.5	3.0	1	19.48	25
GEV											
072	208/60/1	37.4	15.4	83.0	2	24.0	6.6	1.0	1	41.20	50
072	230/60/1	37.3	15.4	83.0	2	24.0	6.5	1.0	1	41.12	50
072	208/60/1	40.1	15.4	83.0	2	24.0	9.3	1.5	1	43.99	50
072	230/60/1	39.7	15.4	83.0	2	24.0	8.9	1.5	1	43.59	50
072	208/60/1	42.0	15.4	83.0	2	24.0	11.2	2.0	1	45.85	60
072	230/60/1	41.0	15.4	83.0	2	24.0	10.2	2.0	1	44.88	60
072	380-415/50/3	13.9	7.1/5.1	48/35	2	11/8	1.7	0.8	1	15.68	20
072	208/60/3	26.5	11.5	77.0	2	18.0	3.5	1.0	1	29.38	40
072	230/60/3	26.8	11.5	77.0	2	18.0	3.8	1.0	1	29.68	40
072	460/60/3	12.0	5.1	35.0	2	8.0	1.8	1.0	1	13.28	15
072	380-415/50/3	14.3	7.1/5.1	48/35	2	11/8	2.1	1.0	1	16.08	20
072	208/60/3	28.6	11.5	77.0	2	18.0	5.6	1.5	1	31.48	40
072	230/60/3	27.8	11.5	77.0	2	18.0	4.8	1.5	1	30.68	40
072	380-415/50/3	15.2	7.1/5.1	48/35	2	11/8	3.0	1.5	1	16.98	20
072	460/60/3	12.6	5.1	35.0	2	8.0	2.4	1.5	1	13.88	15
072	208/60/3	30.1	11.5	77.0	2	18.0	7.1	2.0	1	32.98	40
072	230/60/3	29.2	11.5	77.0	2	18.0	6.2	2.0	1	32.08	40
072	380-415/50/3	15.6	7.1/5.1	48/35	2	11/8	3.4	2.0	1	17.38	20
072	460/60/3	13.3	5.1	35.0	2	8.0	3.1	2.0	1	14.59	15



Electrical Data

Table 77. Electrical data: 6–25 tons (continued)

Model No.	Volts	Total FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor HP	Fan Motor No.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
GEH											
090	208/60/3	31.0	16/11.5	91/77	2	25/18	3.5	1.0	1	35.00	50
090	230/60/3	31.3	16/11.5	91/77	2	25/18	3.8	1.0	1	35.30	50
090	460/60/3	14.0	7.1/5.1	46/35	2	11/8	1.8	1.0	1	15.78	20
090	575/60/3	11.6	5.6/4.3	37/31	2	8.7/6.7	1.7	1.0	1	13.00	15
090	208/60/3	33.1	16/11.5	91/77	2	25/18	5.6	1.5	1	37.10	50
090	230/60/3	32.3	16/11.5	91/77	2	25/18	4.8	1.5	1	36.30	50
090	380-415/50/3	22.2	9.6	64.0	2	15.0	3.0	1.5	1	24.60	30
090	460/60/3	14.6	7.1/5.1	46/35	2	11/8	2.4	1.5	1	16.38	20
090	575/60/3	11.8	5.6/4.3	37/31	2	8.7/6.7	1.9	1.5	1	13.20	15
090	208/60/3	34.6	16/11.5	91/77	2	25/18	7.1	2.0	1	38.60	50
090	230/60/3	33.7	16/11.5	91/77	2	25/18	6.2	2.0	1	37.70	50
090	380-415/50/3	22.6	9.6	64.0	2	15.0	3.4	2.0	1	25.00	30
090	460/60/3	15.3	7.1/5.1	46/35	2	11/8	3.1	2.0	1	17.09	20
090	575/60/3	12.2	5.6/4.3	37/31	2	8.7/6.7	2.3	2.0	1	13.60	15
090	208/60/3	36.9	16/11.5	91/77	2	25/18	9.4	3.0	1	40.90	50
090	230/60/3	35.7	16/11.5	91/77	2	25/18	8.2	3.0	1	39.70	50
090	380-415/50/3	24.7	9.6	64.0	2	15.0	5.5	3.0	1	27.10	35
090	460/60/3	16.3	7.1/5.1	46/35	2	11/8	4.1	3.0	1	18.08	25
090	575/60/3	13.2	5.6/4.3	37/31	2	8.7/6.7	3.3	3.0	1	14.60	20
GEV											
090	380-415/50/3	21.3	9.6	64.0	2	15.0	2.1	1.0	1	23.70	30
090	208/60/3	31.0	16/11.5	91/77	2	25/18	3.5	1.0	1	35.00	50
090	230/60/3	31.3	16/11.5	91/77	2	25/18	3.8	1.0	1	35.30	50
090	460/60/3	14.0	7.1/5.1	46/35	2	11/8	1.8	1.0	1	15.78	20
090	575/60/3	11.6	5.6/4.3	37/31	2	8.7/6.7	1.7	1.0	1	13.00	15
090	208/60/3	33.1	16/11.5	91/77	2	25/18	5.6	1.5	1	37.10	50
090	230/60/3	32.3	16/11.5	91/77	2	25/18	4.8	1.5	1	36.30	50
090	380-415/50/3	22.2	9.6	64.0	2	15.0	3.0	1.5	1	24.60	30
090	460/60/3	14.6	7.1/5.1	46/35	2	11/8	2.4	1.5	1	16.38	20
090	575/60/3	11.8	5.6/4.3	37/31	2	8.7/6.7	1.9	1.5	1	13.20	15
090	208/60/3	34.6	16/11.5	91/77	2	25/18	7.1	2.0	1	38.60	50
090	230/60/3	33.7	16/11.5	91/77	2	25/18	6.2	2.0	1	37.70	50
090	380-415/50/3	22.6	9.6	64.0	2	15.0	3.4	2.0	1	25.00	30
090	460/60/3	15.3	7.1/5.1	46/35	2	11/8	3.1	2.0	1	17.09	20
090	575/60/3	12.2	5.6/4.3	37/31	2	8.7/6.7	2.3	2.0	1	13.60	15
090	208/60/3	36.9	16/11.5	91/77	2	25/18	9.4	3.0	1	40.90	50
090	230/60/3	35.7	16/11.5	91/77	2	25/18	8.2	3.0	1	39.70	50
090	380-415/50/3	24.7	9.6	64.0	2	15.0	5.5	3.0	1	27.10	35
090	460/60/3	16.3	7.1/5.1	46/35	2	11/8	4.1	3.0	1	18.08	25
090	575/60/3	13.2	5.6/4.3	37/31	2	8.7/6.7	3.3	3.0	1	14.60	20

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Table 77. Electrical data: 6–25 tons (continued)

Model No.	Volts	Total FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor HP	Fan Motor No.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
GEH											
120	380-415/50/3	23.3	10.6	74.0	2	16.5	2.1	1.0	1	25.95	35
120	208/60/3	40.8	17.6	123.0	2	27.5	5.6	1.5	1	45.20	60
120	230/60/3	40.0	17.6	123.0	2	27.5	4.8	1.5	1	44.40	60
120	380-415/50/3	24.2	10.6	74.0	2	16.5	3.0	1.5	1	26.85	35
120	460/60/3	21.6	9.6	62.0	2	15.0	2.4	1.5	1	24.00	30
120	575/60/3	14.1	6.1	40.0	2	9.5	1.9	1.5	1	15.63	20
120	208/60/3	42.3	17.6	123.0	2	27.5	7.1	2.0	1	46.70	60
120	230/60/3	41.4	17.6	123.0	2	27.5	6.2	2.0	1	45.80	60
120	380-415/50/3	24.6	10.6	74.0	2	16.5	3.4	2.0	1	27.25	35
120	460/60/3	22.3	9.6	62.0	2	15.0	3.1	2.0	1	24.71	30
120	575/60/3	14.5	6.1	40.0	2	9.5	2.3	2.0	1	16.03	20
120	208/60/3	44.6	17.6	123.0	2	27.5	9.4	3.0	1	49.00	60
120	230/60/3	43.4	17.6	123.0	2	27.5	8.2	3.0	1	47.80	60
120	380-415/50/3	26.7	10.6	74.0	2	16.5	5.5	3.0	1	29.35	35
120	460/60/3	23.3	9.6	62.0	2	15.0	4.1	3.0	1	25.70	35
120	575/60/3	15.5	6.1	40.0	2	9.5	3.3	3.0	1	17.03	20
120	208/60/3	51.2	17.6	123.0	2	27.5	16.0	5.0	1	55.60	70
120	230/60/3	49.2	17.6	123.0	2	27.5	14.0	5.0	1	53.60	70
120	460/60/3	26.2	9.6	62.0	2	15.0	7.0	5.0	1	28.60	35
120	575/60/3	17.4	6.1	40.0	2	9.5	5.2	5.0	1	18.93	25
GEV											
120	208/60/3	40.8	17.6	123.0	2	27.5	5.6	1.5	1	45.20	60
120	230/60/3	40.0	17.6	123.0	2	27.5	4.8	1.5	1	44.40	60
120	460/60/3	21.6	9.6	62.0	2	15.0	2.4	1.5	1	24.00	30
120	575/60/3	14.1	6.1	40.0	2	9.5	1.9	1.5	1	15.63	20
120	208/60/3	42.3	17.6	123.0	2	27.5	7.1	2.0	1	46.70	60
120	230/60/3	41.4	17.6	123.0	2	27.5	6.2	2.0	1	45.80	60
120	460/60/3	22.3	9.6	62.0	2	15.0	3.1	2.0	1	24.71	30
120	575/60/3	14.5	6.1	40.0	2	9.5	2.3	2.0	1	16.03	20
120	208/60/3	44.6	17.6	123.0	2	27.5	9.4	3.0	1	49.00	60
120	230/60/3	43.4	17.6	123.0	2	27.5	8.2	3.0	1	47.80	60
120	460/60/3	23.3	9.6	62.0	2	15.0	4.1	3.0	1	25.70	35
120	575/60/3	15.5	6.1	40.0	2	9.5	3.3	3.0	1	17.03	20
120	208/60/3	51.2	17.6	123.0	2	27.5	16.0	5.0	1	55.60	70
120	230/60/3	49.2	17.6	123.0	2	27.5	14.0	5.0	1	53.60	70
120	460/60/3	26.2	9.6	62.0	2	15.0	7.0	5.0	1	28.60	35
120	575/60/3	17.4	6.1	40.0	2	9.5	5.2	5.0	1	18.93	25
120	380-415/50/3	24.2	10.6	74.0	2	16.5	3.0	1.5	1	26.85	35
120	380-415/50/3	24.6	10.6	74.0	2	16.5	3.4	2.0	1	27.25	35
120	380-415/50/3	26.7	10.6	74.0	2	16.5	5.5	3.0	1	29.35	35

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Electrical Data

Table 77. Electrical data: 6–25 tons (continued)

Model No.	Volts	Total FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor HP	Fan Motor No.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
GEH											
150	208/60/3	50.4	22.4	149.0	2	35.0	5.6	1.5	1	56.00	70
150	230/60/3	49.6	22.4	149.0	2	35.0	4.8	1.5	1	55.20	70
150	380-415/50/3	27.4	12.2	101.0	2	19.0	3.0	1.5	1	30.45	40
150	460/60/3	23.6	10.6	75.0	2	16.5	2.4	1.5	1	26.25	35
150	575/60/3	17.3	7.7	54.0	2	12.0	1.9	1.5	1	19.23	25
150	208/60/3	51.9	22.4	149.0	2	35.0	7.1	2.0	1	57.50	70
150	230/60/3	51.0	22.4	149.0	2	35.0	6.2	2.0	1	56.60	70
150	380-415/50/3	27.8	12.2	101.0	2	19.0	3.4	2.0	1	30.85	40
150	460/60/3	24.3	10.6	75.0	2	16.5	3.1	2.0	1	26.96	35
150	575/60/3	17.7	7.7	54.0	2	12.0	2.3	2.0	1	19.63	25
150	208/60/3	54.2	22.4	149.0	2	35.0	9.4	3.0	1	59.80	80
150	230/60/3	53.0	22.4	149.0	2	35.0	8.2	3.0	1	58.60	80
150	380-415/50/3	29.9	12.2	101.0	2	19.0	5.5	3.0	1	32.95	45
150	460/60/3	25.3	10.6	75.0	2	16.5	4.1	3.0	1	27.95	35
150	575/60/3	18.7	7.7	54.0	2	12.0	3.3	3.0	1	20.63	25
150	208/60/3	60.8	22.4	149.0	2	35.0	16.0	5.0	1	66.40	80
150	230/60/3	58.8	22.4	149.0	2	35.0	14.0	5.0	1	64.40	80
150	380-415/50/3	33.7	12.2	101.0	2	19.0	9.3	5.0	1	36.75	45
150	460/60/3	28.2	10.6	75.0	2	16.5	7.0	5.0	1	30.85	40
150	575/60/3	20.6	7.7	54.0	2	12.0	5.2	5.0	1	22.53	30
GEV											
150	208/60/3	51.9	22.4	149.0	2	35.0	7.1	2.0	1	57.50	70
150	230/60/3	51.0	22.4	149.0	2	35.0	6.2	2.0	1	56.60	70
150	380-415/50/3	27.8	12.2	101.0	2	19.0	3.4	2.0	1	30.85	40
150	460/60/3	24.3	10.6	75.0	2	16.5	3.1	2.0	1	26.96	35
150	575/60/3	17.7	7.7	54.0	2	12.0	2.3	2.0	1	19.63	25
150	208/60/3	54.2	22.4	149.0	2	35.0	9.4	3.0	1	59.80	80
150	230/60/3	53.0	22.4	149.0	2	35.0	8.2	3.0	1	58.60	80
150	380-415/50/3	29.9	12.2	101.0	2	19.0	5.5	3.0	1	32.95	45
150	460/60/3	25.3	10.6	75.0	2	16.5	4.1	3.0	1	27.95	35
150	575/60/3	18.7	7.7	54.0	2	12.0	3.3	3.0	1	20.63	25
150	208/60/3	60.8	22.4	149.0	2	35.0	16.0	5.0	1	66.40	80
150	230/60/3	58.8	22.4	149.0	2	35.0	14.0	5.0	1	64.40	80
150	380-415/50/3	33.7	12.2	101.0	2	19.0	9.3	5.0	1	36.75	45
150	460/60/3	28.2	10.6	75.0	2	16.5	7.0	5.0	1	30.85	40
150	575/60/3	20.6	7.7	54.0	2	12.0	5.2	5.0	1	22.53	30
GEH											
180	208/60/3	57.1	25.0	164.0	2	39.0	7.1	2.0	1	63.35	80
180	230/60/3	56.2	25.0	164.0	2	39.0	6.2	2.0	1	62.45	80

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Table 77. Electrical data: 6–25 tons (continued)

Model No.	Volts	Total FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor HP	Fan Motor No.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
GEH											
180	460/60/3	27.5	12.2	100.0	2	19.0	3.1	2.0	1	30.56	40
180	575/60/3	20.3	9.0	78.0	2	14.0	2.3	2.0	1	22.55	30
180	208/60/3	59.4	25.0	164.0	2	39.0	9.4	3.0	1	65.65	90
180	230/60/3	58.2	25.0	164.0	2	39.0	8.2	3.0	1	64.45	80
180	460/60/3	28.5	12.2	100.0	2	19.0	4.1	3.0	1	31.55	40
180	575/60/3	21.3	9.0	78.0	2	14.0	3.3	3.0	1	23.55	30
180	208/60/3	66.0	25.0	164.0	2	39.0	16.0	5.0	1	72.25	90
180	230/60/3	64.0	25.0	164.0	2	39.0	14.0	5.0	1	70.25	90
180	460/60/3	31.4	12.2	100.0	2	19.0	7.0	5.0	1	34.45	45
180	575/60/3	23.2	9.0	78.0	2	14.0	5.2	5.0	1	25.45	30
180	208/60/3	75.0	25.0	164.0	2	39.0	25.0	7.5	1	81.25	100
180	230/60/3	71.6	25.0	164.0	2	39.0	21.6	7.5	1	77.85	100
180	460/60/3	35.2	12.2	100.0	2	19.0	10.8	7.5	1	38.25	50
180	575/60/3	26.2	9.0	78.0	2	14.0	8.2	7.5	1	28.45	35
GEV											
180	208/60/3	59.4	25.0	164.0	2	39.0	9.4	3.0	1	65.65	90
180	230/60/3	58.2	25.0	164.0	2	39.0	8.2	3.0	1	64.45	80
180	380-415/50/3	38.9	16.7	111.0	2	26.0	5.5	3.0	1	43.08	50
180	460/60/3	28.5	12.2	100.0	2	19.0	4.1	3.0	1	31.55	40
180	575/60/3	21.3	9.0	78.0	2	14.0	3.3	3.0	1	23.55	30
180	208/60/3	66.0	25.0	164.0	2	39.0	16.0	5.0	1	72.25	90
180	230/60/3	64.0	25.0	164.0	2	39.0	14.0	5.0	1	70.25	90
180	380-415/50/3	42.7	16.7	111.0	2	26.0	9.3	5.0	1	46.88	60
180	460/60/3	31.4	12.2	100.0	2	19.0	7.0	5.0	1	34.45	45
180	575/60/3	23.2	9.0	78.0	2	14.0	5.2	5.0	1	25.45	30
180	208/60/3	75.0	25.0	164.0	2	39.0	25.0	7.5	1	81.25	100
180	230/60/3	71.6	25.0	164.0	2	39.0	21.6	7.5	1	77.85	100
180	380-415/50/3	46.4	16.7	111.0	2	26.0	13.0	7.5	1	50.58	60
180	460/60/3	35.2	12.2	100.0	2	19.0	10.8	7.5	1	38.25	50
180	575/60/3	26.2	9.0	78.0	2	14.0	8.2	7.5	1	28.45	35
GEV											
240	380-415/50/3	42.7	18.6	118.0	2	29.0	5.5	3.0	1	47.35	60
240	208/60/3	76.2	30.1	225.0	2	47.0	16.0	5.0	1	83.73	110
240	230/60/3	74.2	30.1	225.0	2	47.0	14.0	5.0	1	81.73	110
240	380-415/50/3	46.5	18.6	118.0	2	29.0	9.3	5.0	1	51.15	60
240	460/60/3	40.4	16.7	114.0	2	26.0	7.0	5.0	1	44.58	60
240	575/60/3	29.6	12.2	80.0	2	19.0	5.2	5.0	1	32.65	40
240	208/60/3	85.2	30.1	225.0	2	47.0	25.0	7.5	1	92.73	110
240	230/60/3	81.8	30.1	225.0	2	47.0	21.6	7.5	1	89.33	110

continued on next page



Electrical Data

Table 77. Electrical data: 6–25 tons (continued)

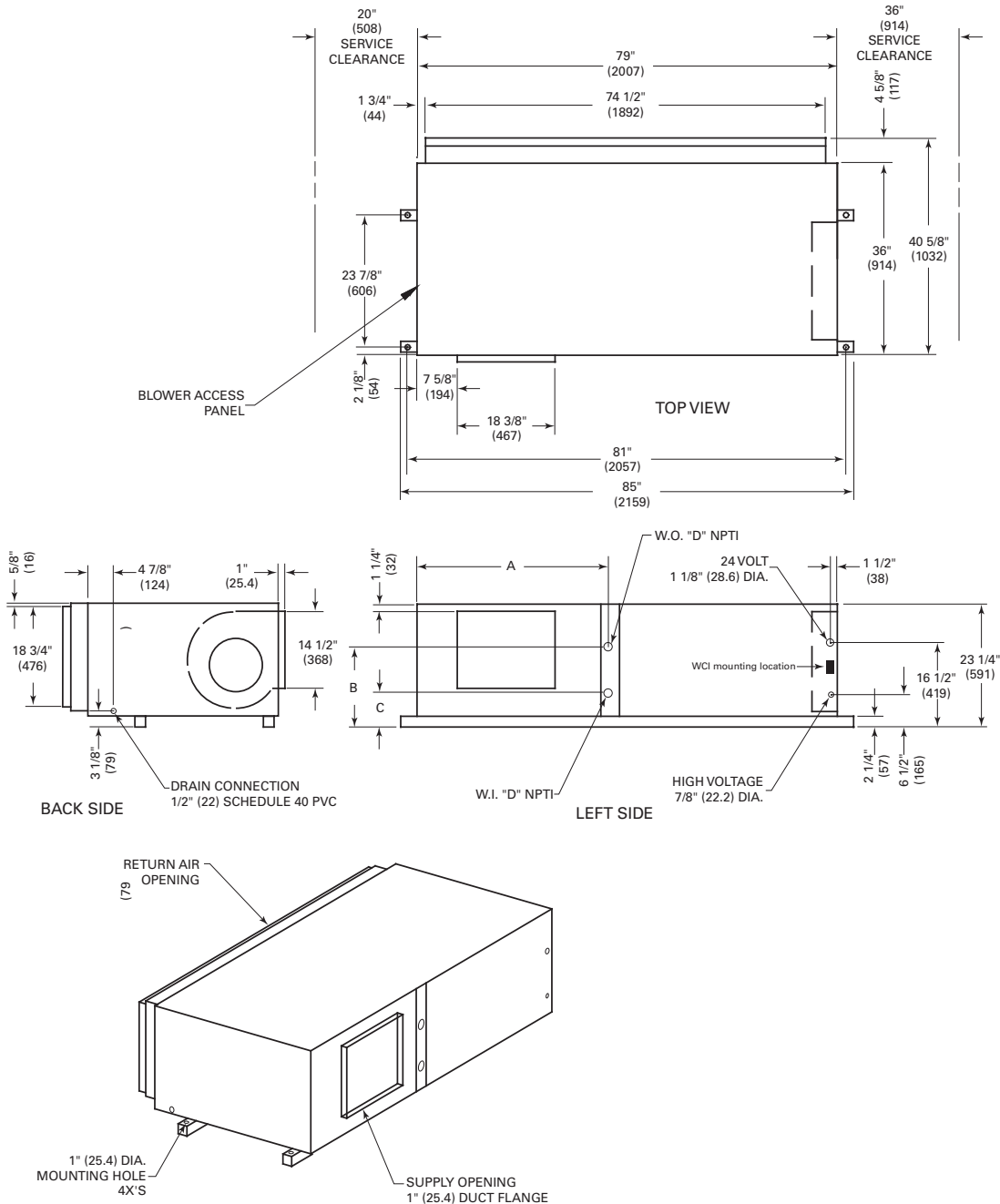
Model No.	Volts	Total FLA	Comp RLA (ea)	Comp LRA (ea)	No. of Comp.	Cmp MCC	Blower Motor FLA	Blower Motor HP	Fan Motor No.	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
GEV											
240	380-415/50/3	50.2	18.6	118.0	2	29.0	13.0	7.5	1	54.85	70
240	460/60/3	44.2	16.7	114.0	2	26.0	10.8	7.5	1	48.38	60
240	575/60/3	32.6	12.2	80.0	2	19.0	8.2	7.5	1	35.65	45
240	208/60/3	93.2	30.1	225.0	2	47.0	33.0	10.0	1	100.73	125
240	230/60/3	88.2	30.1	225.0	2	47.0	28.0	10.0	1	95.73	125
240	460/60/3	47.4	16.7	114.0	2	26.0	14.0	10.0	1	51.58	60
240	575/60/3	35.4	12.2	80.0	2	19.0	11.0	10.0	1	38.45	50
240	208/60/3	105.0	30.1	225.0	2	47.0	44.8	15.0	1	112.53	125
240	230/60/3	100.8	30.1	225.0	2	47.0	40.6	15.0	1	108.33	125
240	380-415/50/3	54.7	18.6	118.0	2	29.0	17.5	10.0	1	59.35	70
240	460/60/3	53.7	16.7	114.0	2	26.0	20.3	15.0	1	57.88	70
240	575/60/3	40.6	12.2	80.0	2	19.0	16.2	15.0	1	43.65	50
GEV 300	208/60/3	112.2	48.1	245.0	2	75.0	16.0	5.0	1	124.23	150
GEV 300	230/60/3	110.2	48.1	245.0	2	75.0	14.0	5.0	1	122.23	150
GEV 300	460/60/3	44.2	18.6	125.0	2	29.0	7.0	5.0	1	48.85	60
GEV 300	575/60/3	34.6	14.7	100.0	2	23.0	5.2	5.0	1	38.28	50
GEV 300	208/60/3	121.2	48.1	245.0	2	75.0	25.0	7.5	1	133.23	175
GEV 300	230/60/3	117.8	48.1	245.0	2	75.0	21.6	7.5	1	129.83	175
GEV 300	460/60/3	48.0	18.6	125.0	2	29.0	10.8	7.5	1	52.65	70
GEV 300	575/60/3	37.6	14.7	100.0	2	23.0	8.2	7.5	1	41.28	50
GEV 300	208/60/3	129.2	48.1	245.0	2	75.0	33.0	10.0	1	141.23	175
GEV 300	230/60/3	124.2	48.1	245.0	2	75.0	28.0	10.0	1	136.23	175
GEV 300	460/60/3	51.2	18.6	125.0	2	29.0	14.0	10.0	1	55.85	70
GEV 300	575/60/3	40.4	14.7	100.0	2	23.0	11.0	10.0	1	44.08	50
GEV 300	208/60/3	141.0	48.1	245.0	2	75.0	44.8	15.0	1	153.03	200
GEV 300	230/60/3	136.8	48.1	245.0	2	75.0	40.6	15.0	1	148.83	175
GEV 300	460/60/3	57.5	18.6	125.0	2	29.0	20.3	15.0	1	62.15	80
GEV 300	575/60/3	45.6	14.7	100.0	2	23.0	16.2	15.0	1	49.28	60

Table 78. 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

Dimensional Data

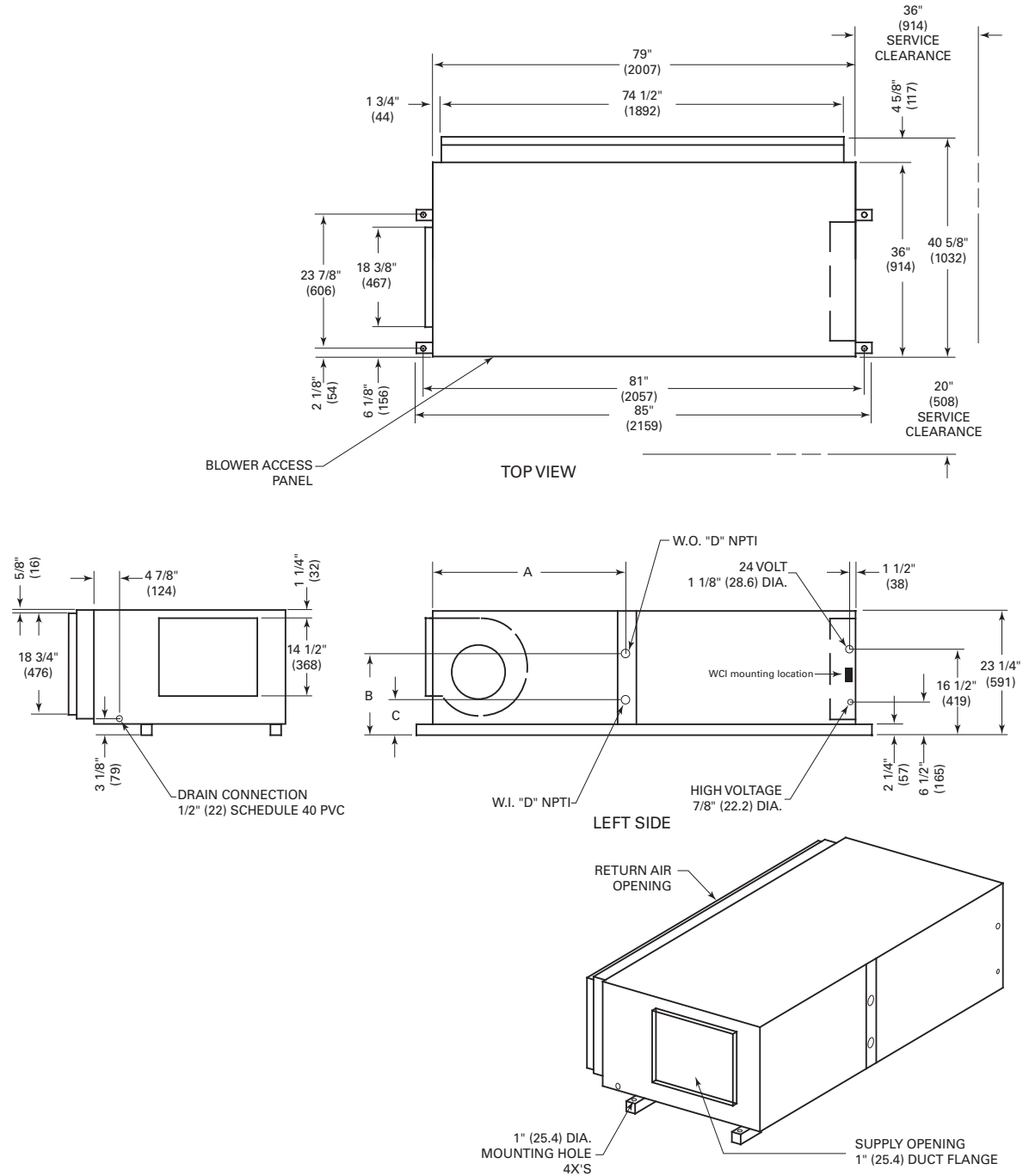
Figure 24. GEH 6-10 tons (072-120)—right return, left supply



Unit GEH	A (in.)	B (in.)	C (in.)	D (in.)
072	36-1/4 (921)	15-3/4 (400)	6-7/8 (175)	1-1/4 (32)
090	36-1/8 (917)	13 (330)	7 (178)	1-1/4 (32)
120	36-1/8 (917)	13-1/4 (337)	7-3/8 (187)	1-1/2 (38)

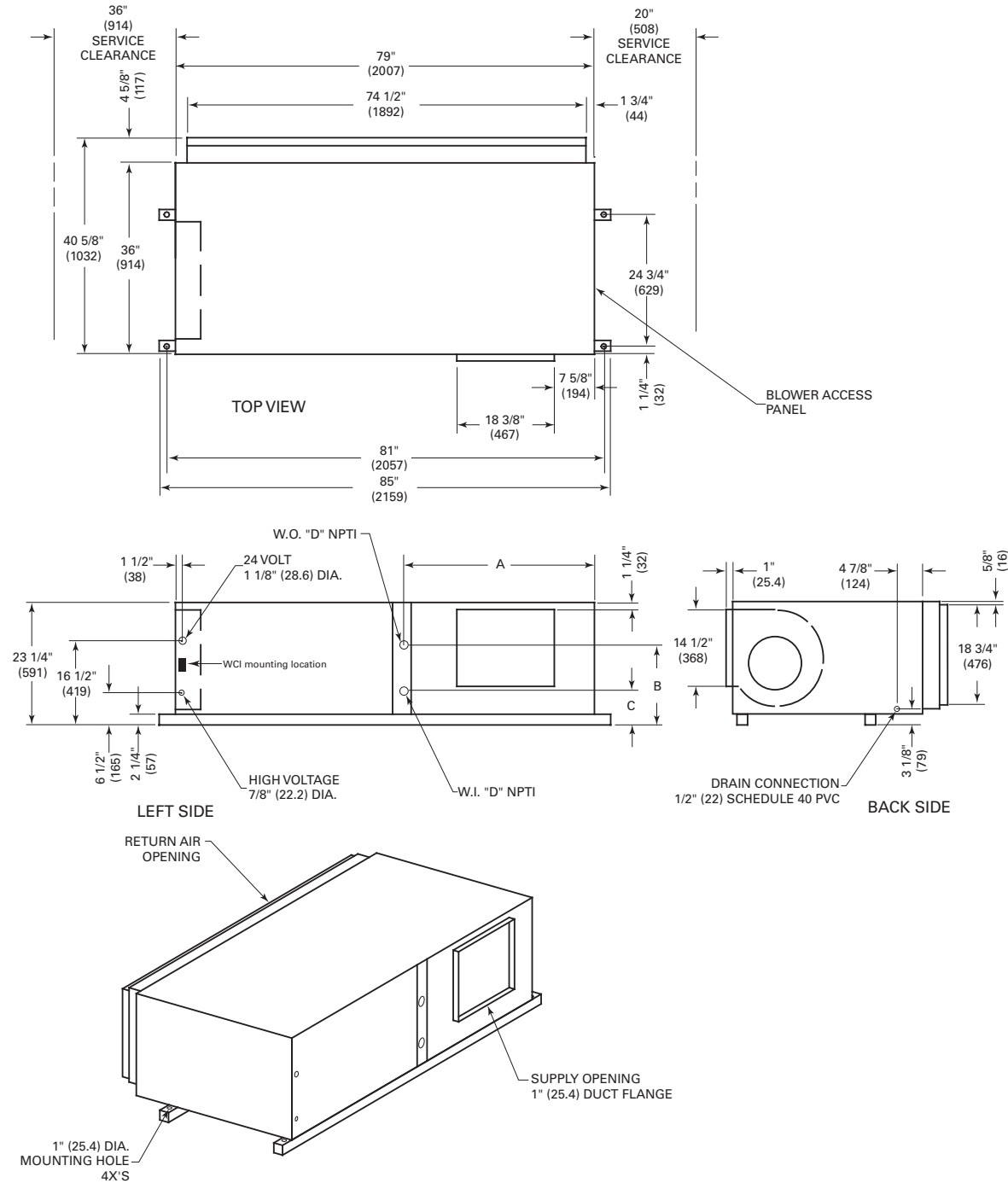
Dimensional Data

Figure 25. GEH 6-10 tons (072-120)—right return/back supply



Unit GEH	A (in.)	B (in.)	C (in.)	D (in.)
072	36-1/4 (921)	15-3/4 (400)	6-7/8 (175)	1-1/4 (32)
090	36-1/8 (917)	13 (330)	7 (178)	1-1/4 (32)
120	36-1/8 (917)	13-1/4 (337)	7-3/8 (187)	1-1/2 (38)

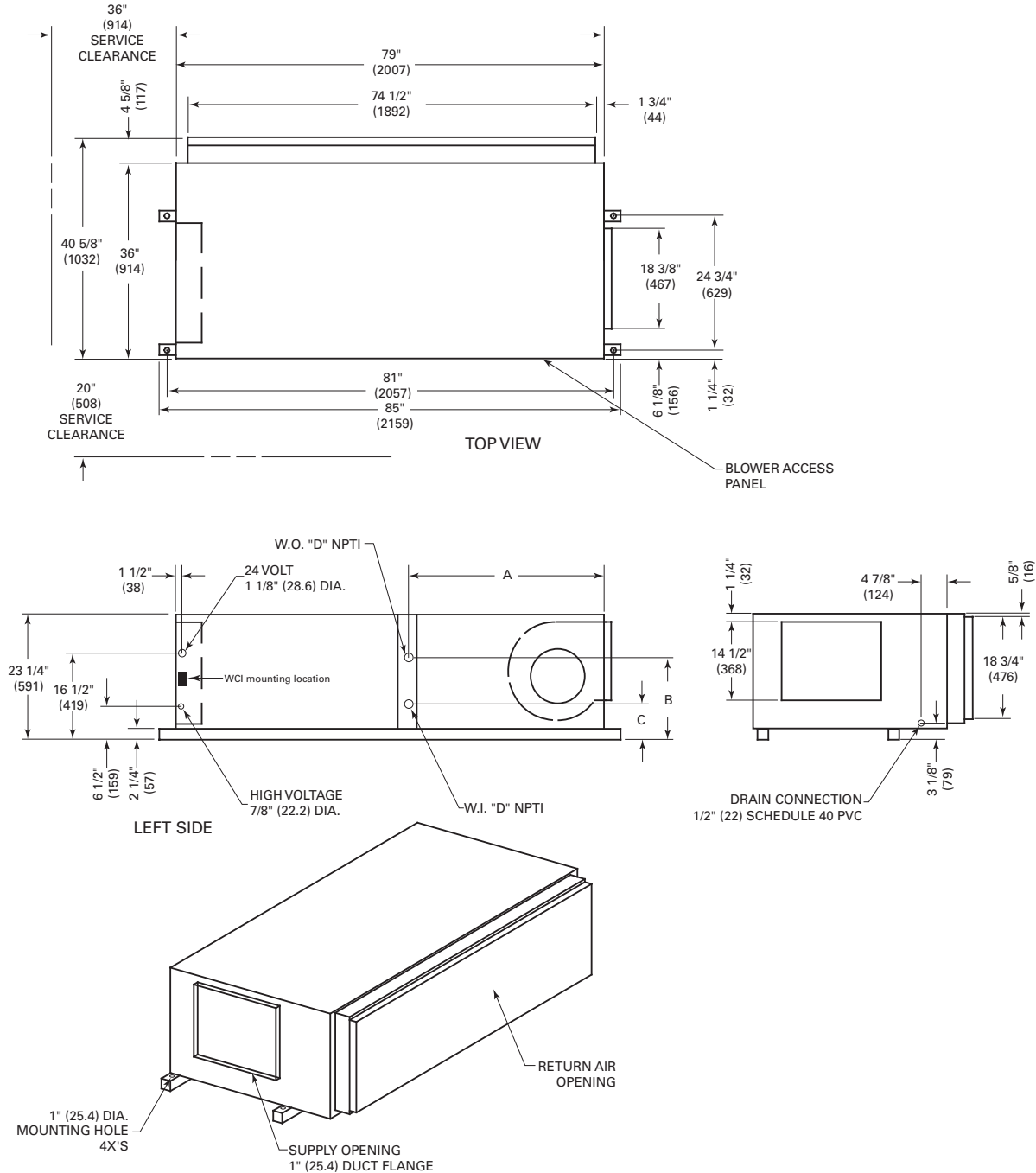
Figure 26. GEH 6-10 tons (072-120) - left return/right supply



Unit GEH	A (in.)	B (in.)	C (in.)	D (in.)
072	36-1/8 (917)	17-1/8 (435)	8-1/8 (206)	1-1/4 (32)
090	36-1/8 (917)	13-7/8 (352)	7-7/8 (200)	1-1/4 (32)
120	36-1/8 (917)	13-1/4 (337)	7-3/8 (187)	1-1/2 (38)

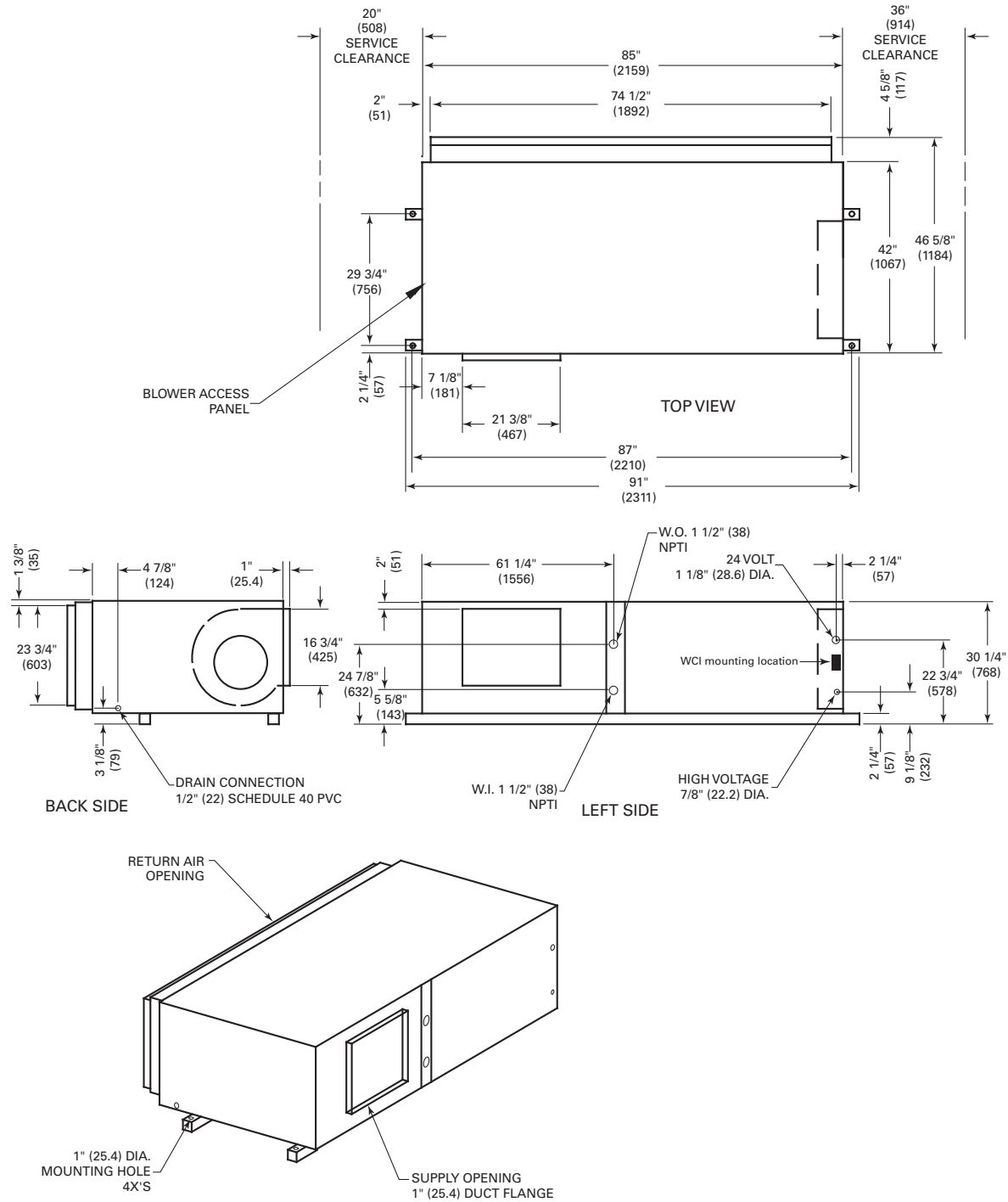
Dimensional Data

Figure 27. GEH 6-10 tons (072-120) - left return/back supply



Unit GEH	A (in.)	B (in.)	C (in.)	D (in.)
072	36-1/8 (917)	17-1/8 (435)	8-1/8 (206)	1-1/4 (32)
090	36-1/8 (917)	13-7/8 (352)	7-7/8 (200)	1-1/4 (32)
120	36-1/8 (917)	13-1/4 (337)	7-3/8 (187)	1-1/2 (38)

Figure 28. GEH 12½-15 tons (150-180) - right return/left supply



Dimensional Data

Figure 29. GEH 12½-15 tons (150-180) - right return/back supply

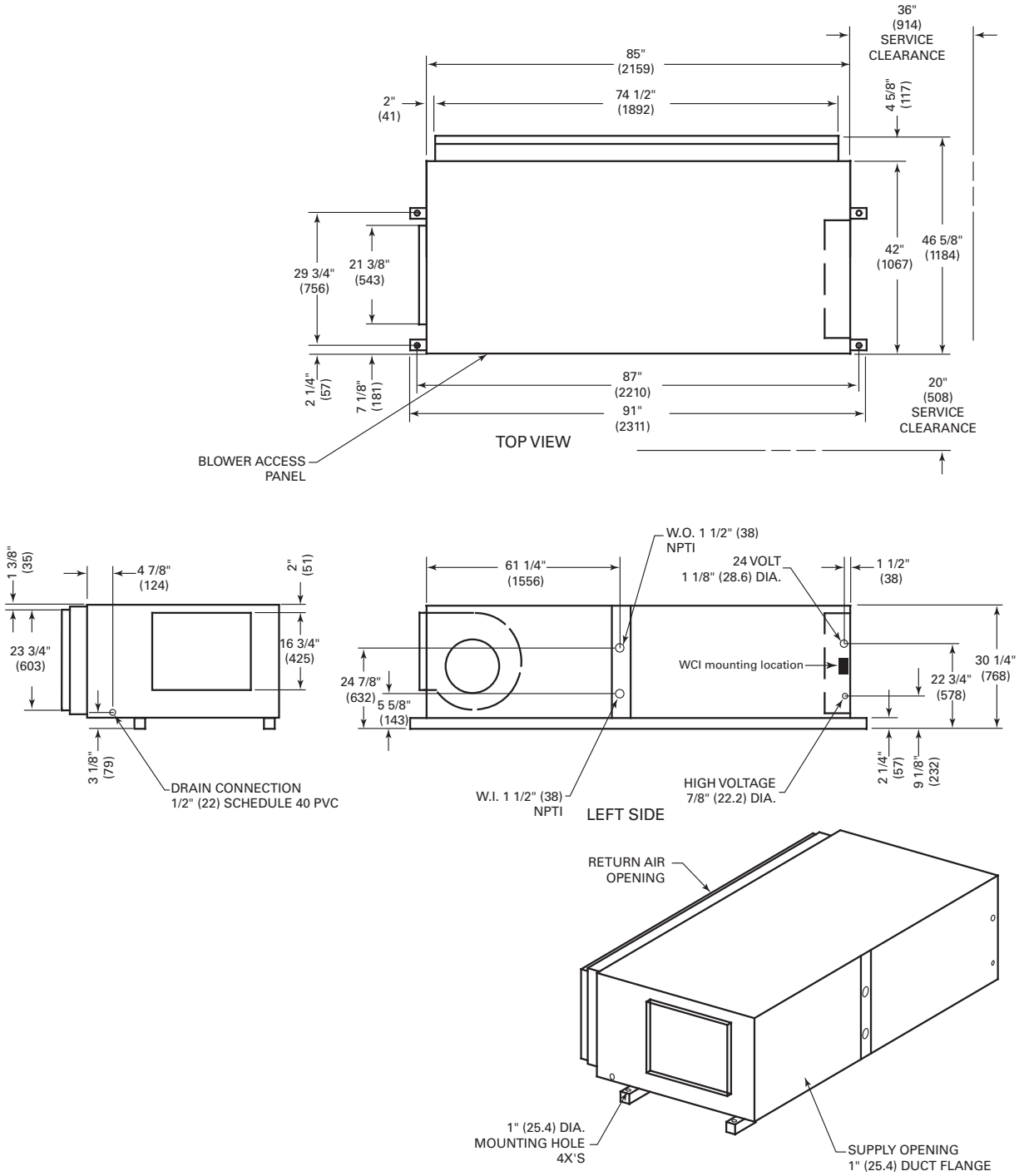
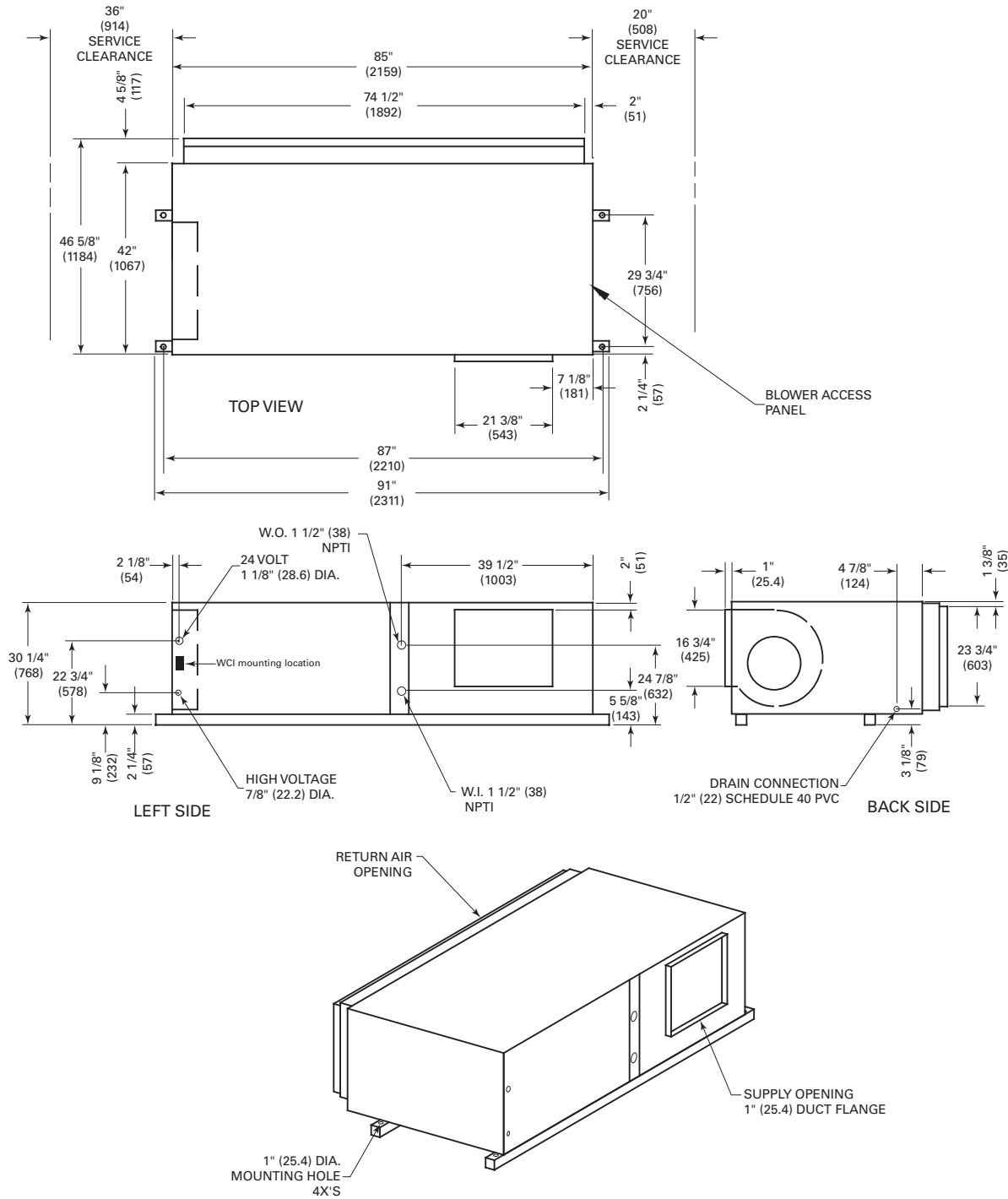


Figure 30. GEH 12½-15 tons (150-180) - left return/right supply



Dimensional Data

Figure 31. GEH 12½-15 tons (150-180) - left return/back supply

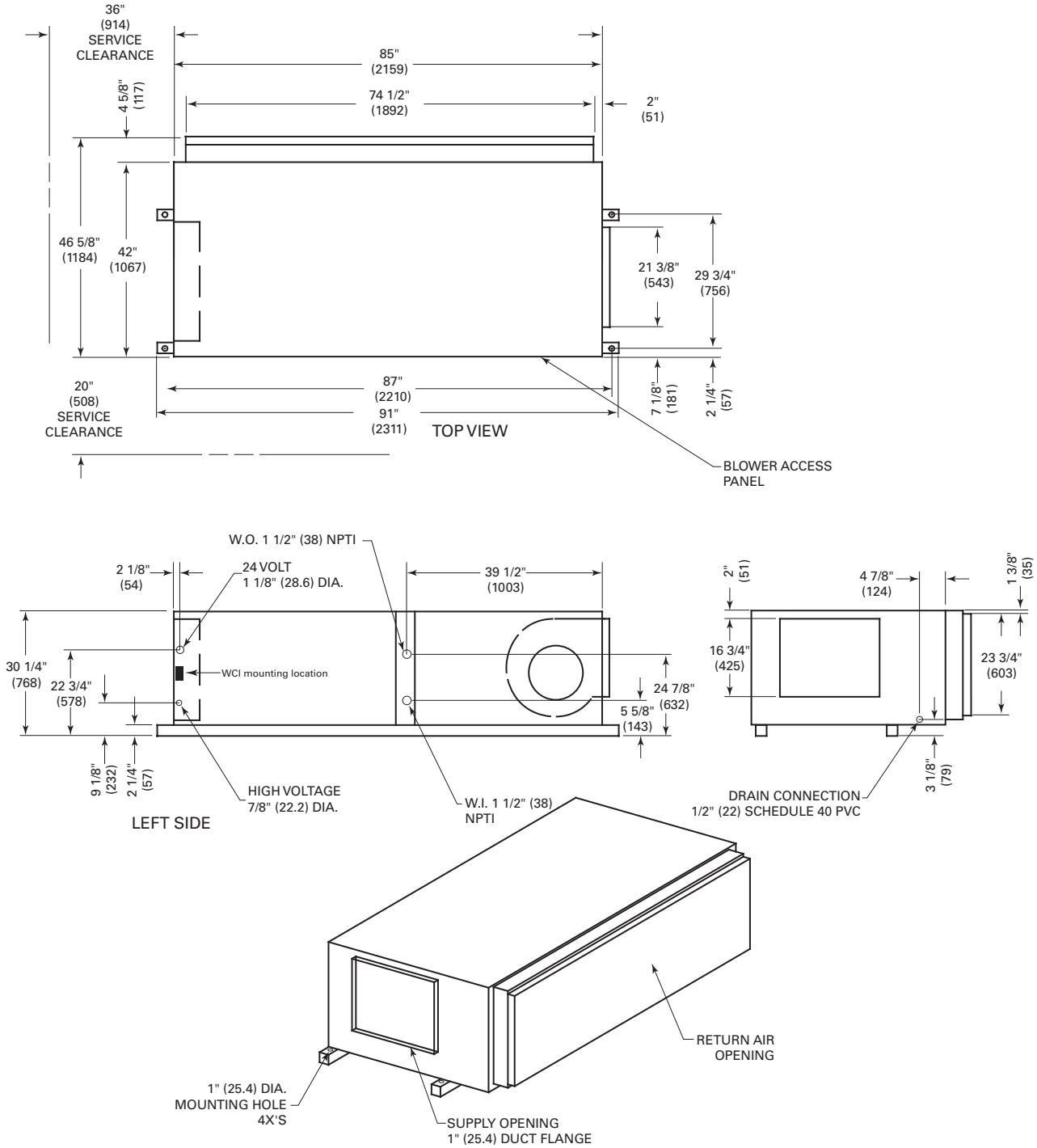


Figure 32. GEH 6-10 tons (072-120) - right return with waterside economizer

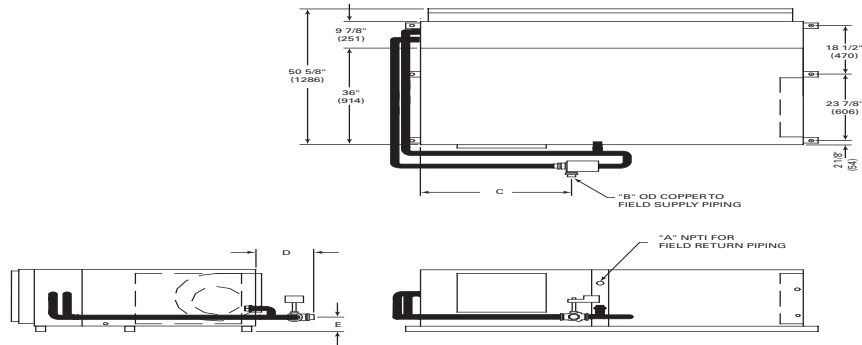
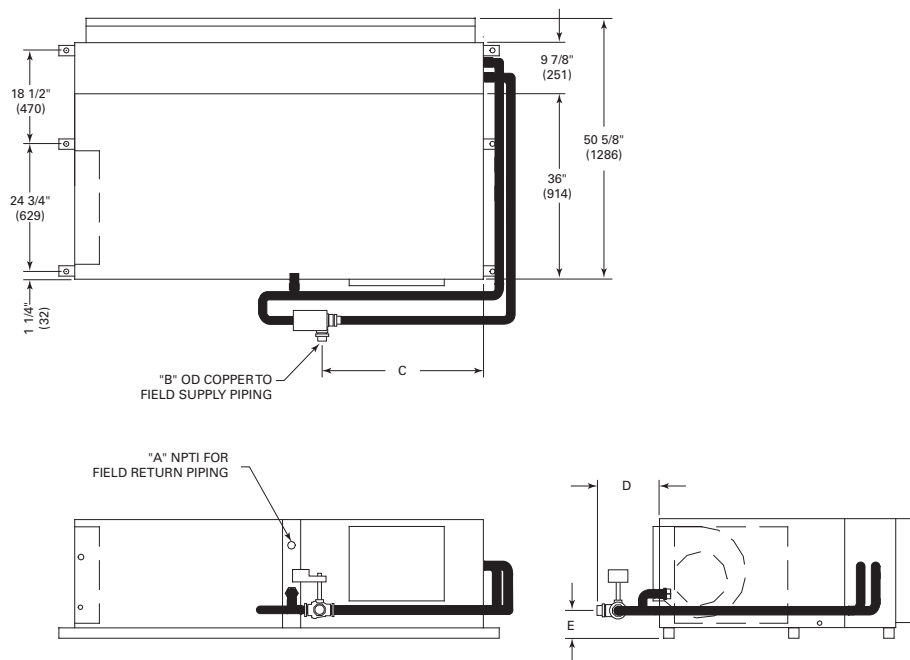


Figure 33. GEH 6-10 tons (072-120) - left return with waterside economizer



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

Figure 34. GEH 12½-15 tons (150-180) - right return with waterside economizer

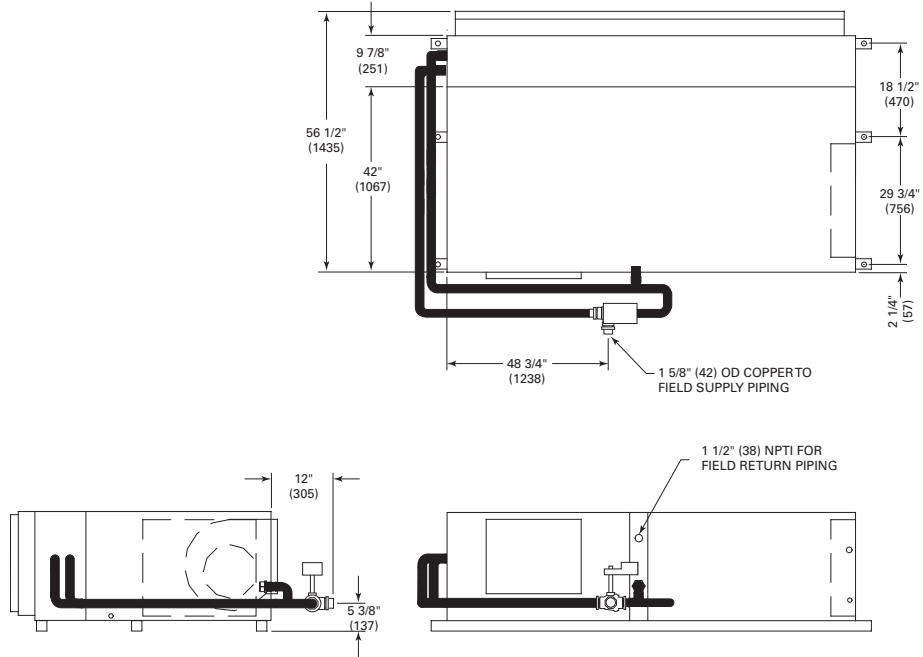


Figure 35. GEH 12½-15 tons (150-180) - left return with waterside economizer

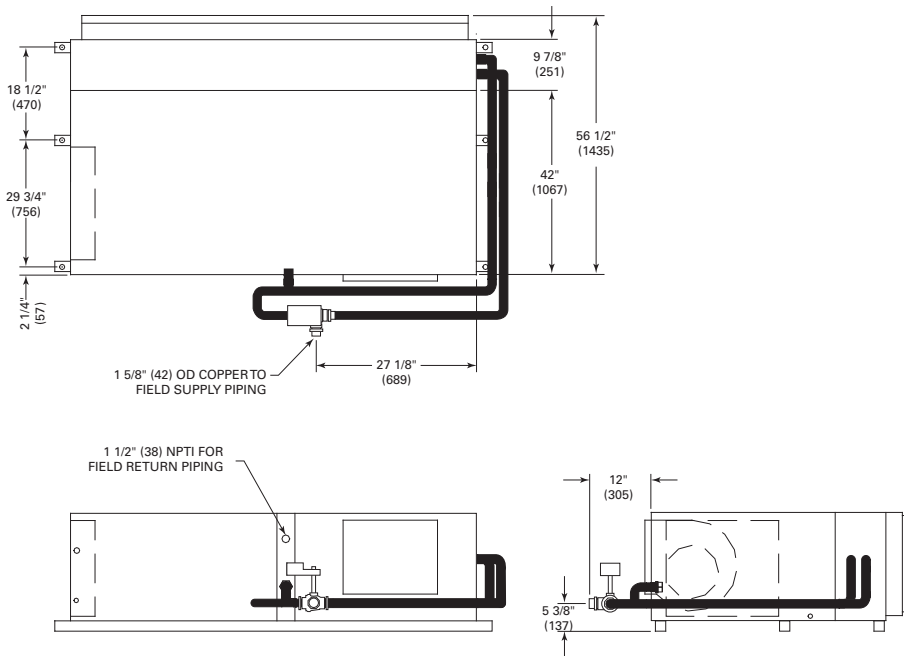
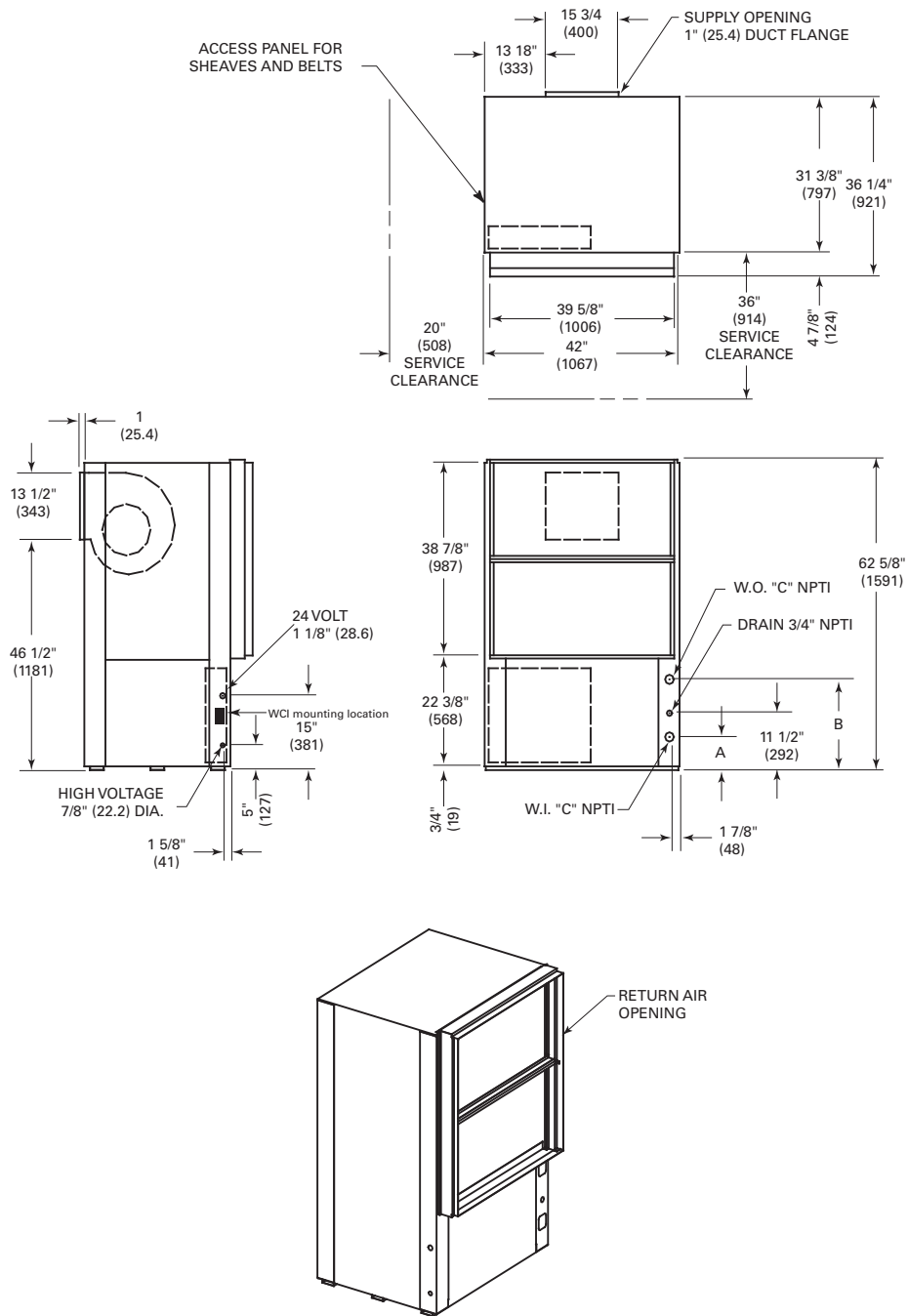


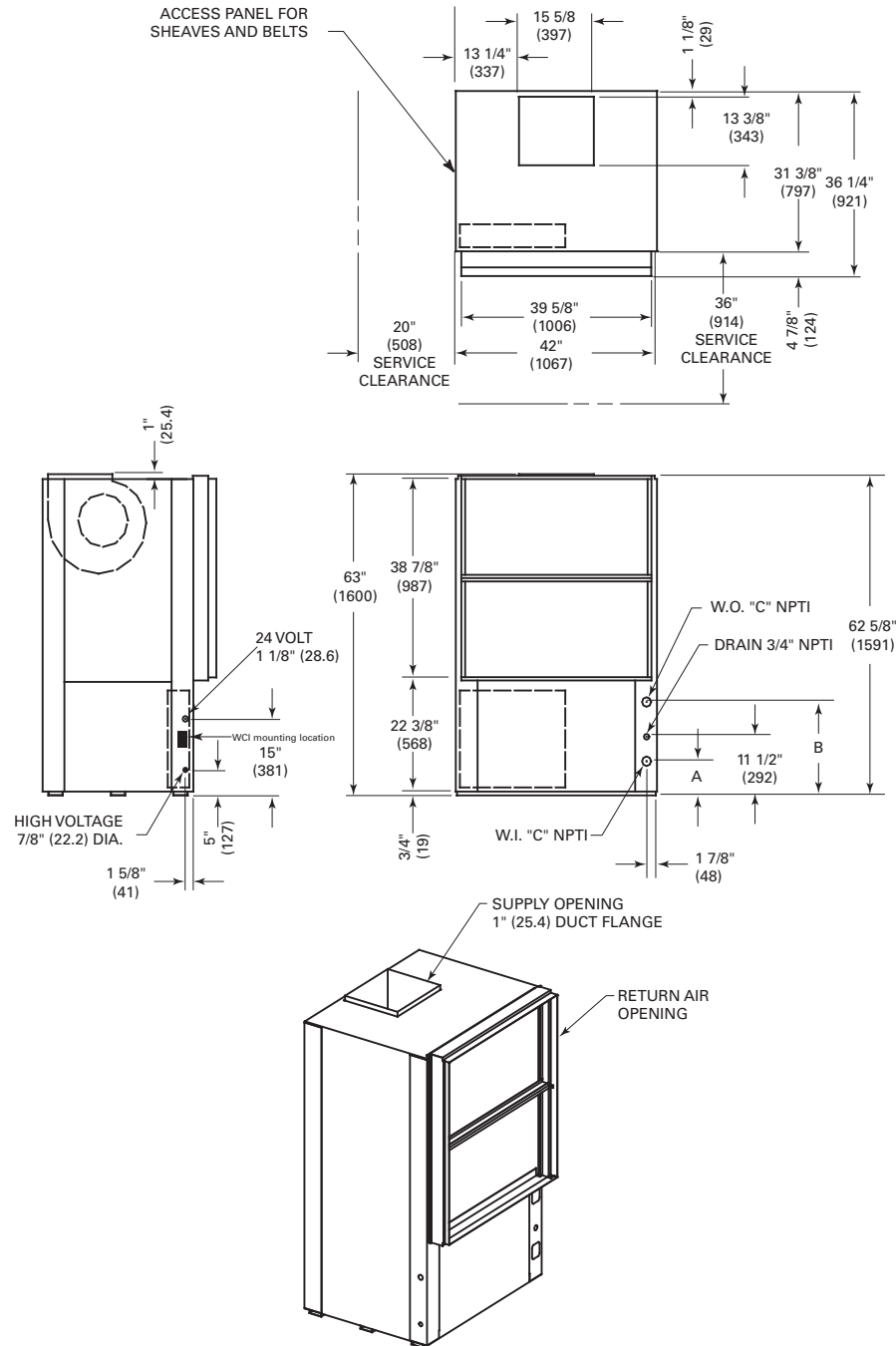
Figure 36. GEV 6-10 tons (072-120) - front return/back supply



Unit GEV	A (in.)	B (in.)	C (in.)
072	6-5/8" (168)	18-3/8 (467)	1-1/4
090	6-5/8 (168)	18-3/8 (467)	1-1/4
120	5-7/8 (149)	18 (457)	1-1/2

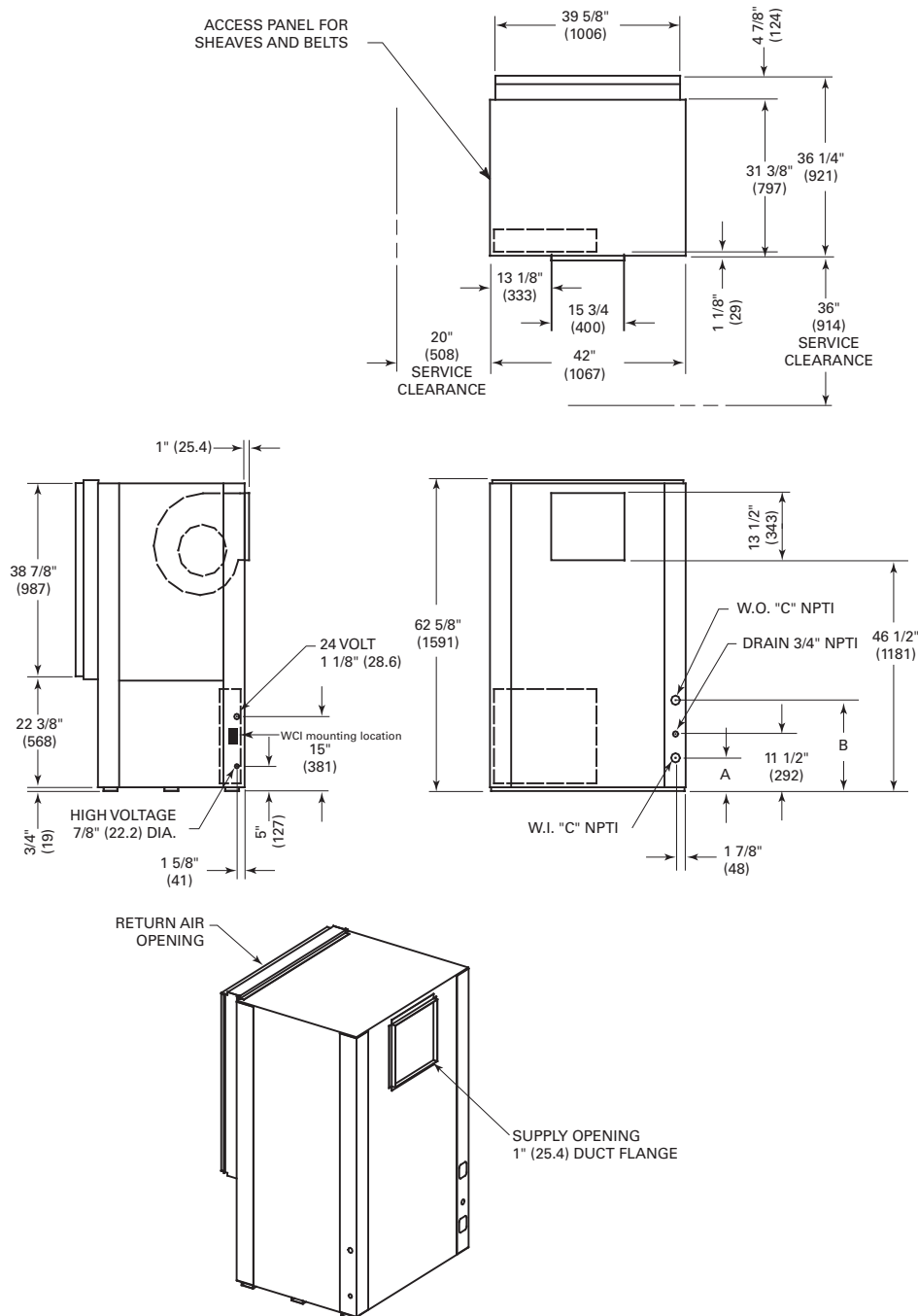
Dimensional Data

Figure 37. GEV 6-10 tons (072-120) - front return/top supply



Unit GEV	A (in.)	B (in.)	C (in.)
072	6-5/8 (168)	18-3/8 (467)	1-1/4
090	6-5/8 (168)	18-3/8 (467)	1-1/4
120	5-7/8 (149)	18 (457)	1-1/2

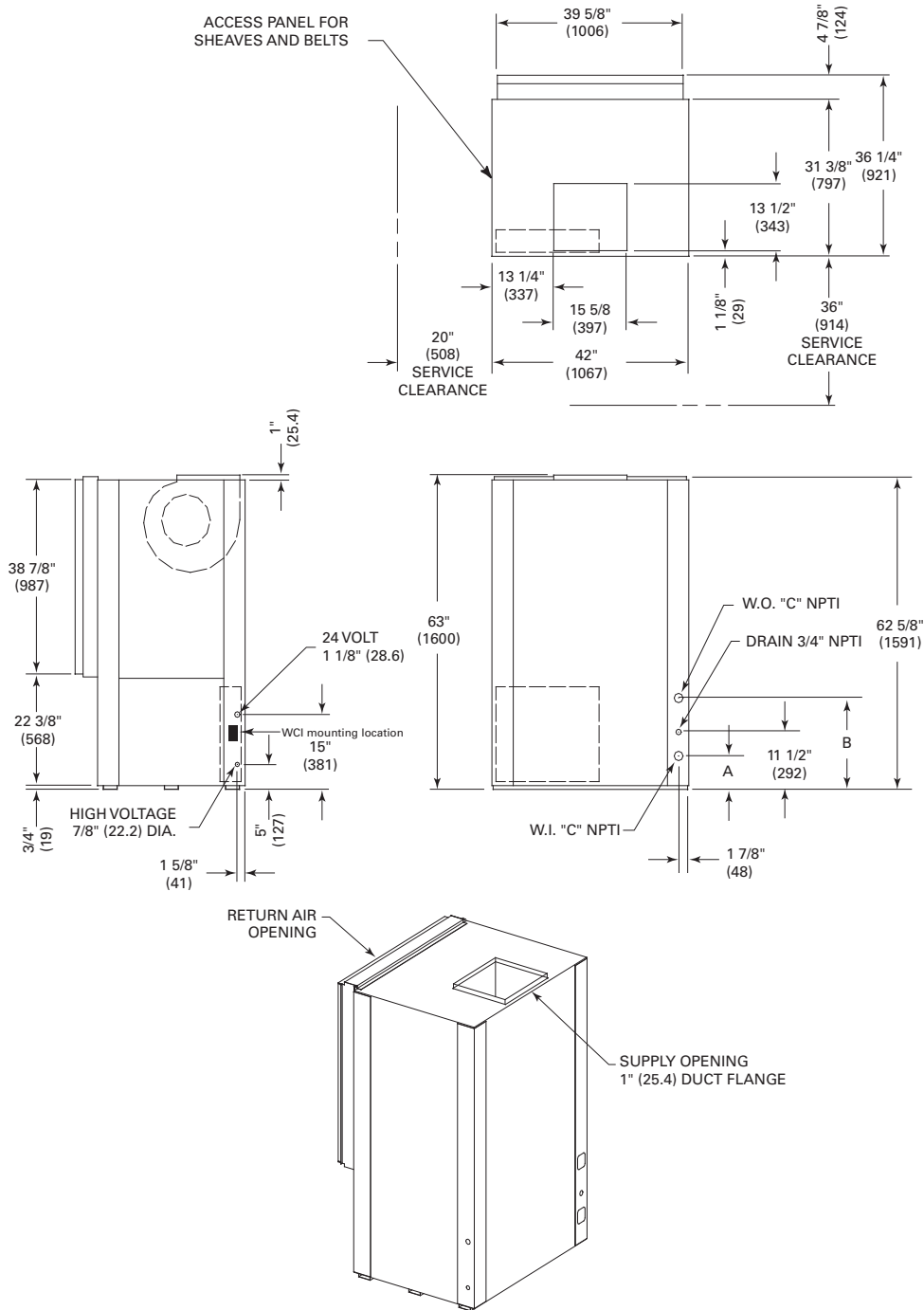
Figure 38. GEV 6-10 tons (072-120) – back return/front supply



Unit GEV	A (in.)	B (in.)	C (in.)
072	6-5/8 (168)	18-3/8 (467)	1-1/4
090	6-5/8 (168)	18-3/8 (467)	1-1/4
120	5-7/8 (149)	18 (457)	1-1/2

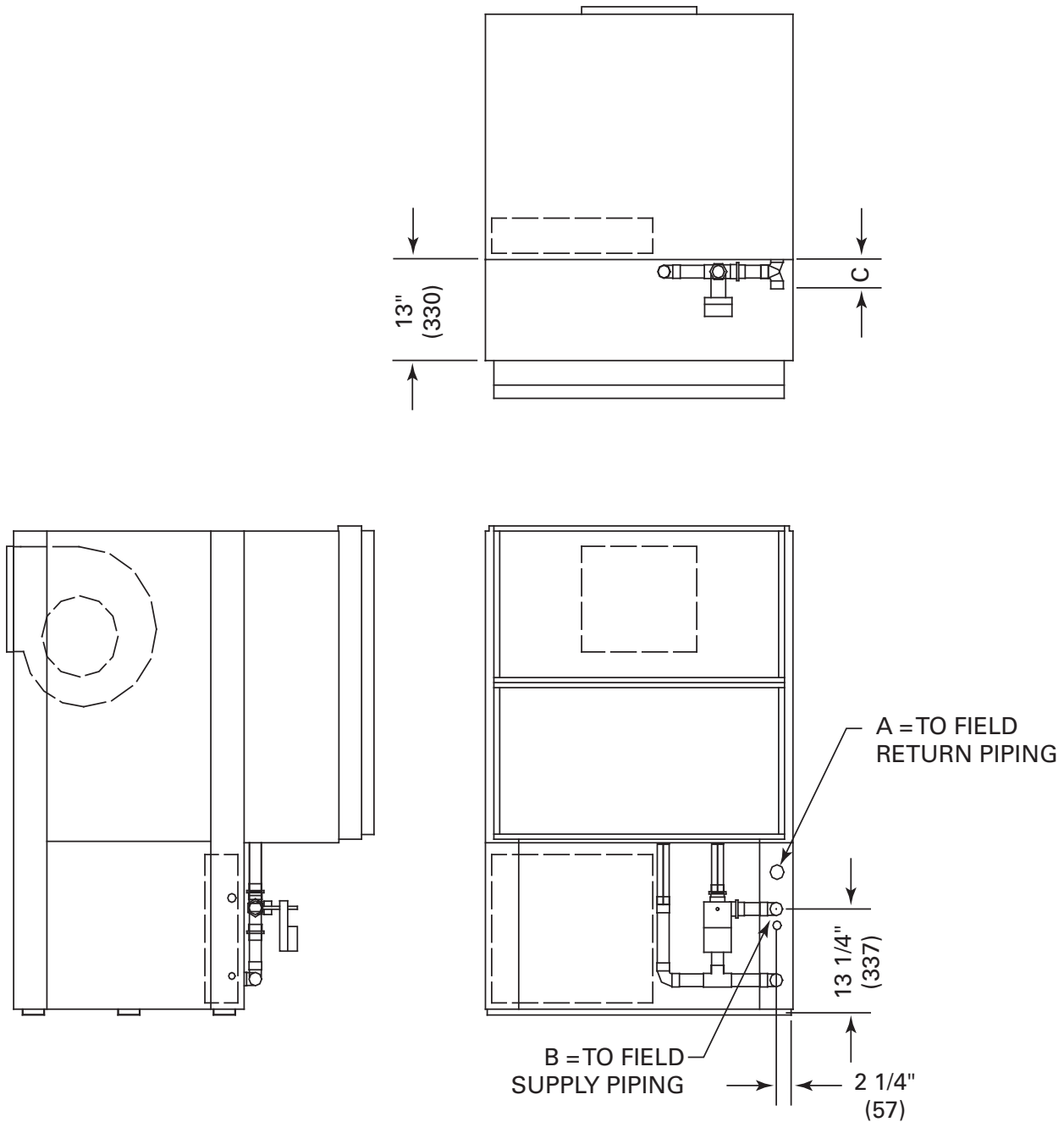
Dimensional Data

Figure 39. GEV 6-10 tons (072-120) - back return/top supply



Unit GEV	A (in.)	B (in.)	C (in.)
072	6-5/8 (168)	18-3/8 (467)	1-1/4
090	6-5/8 (168)	18-3/8 (467)	1-1/4
120	5-7/8 (149)	18 (457)	1-1/2

Figure 40. GEV 6-10 tons (072-120) - waterside economizer



Unit GEV	A (in.)	B (in.)	C (in.)
072,090	1-3/8 (35)	1-3/8 (35)	4 (102)
120	1-5/8 (41)	1-5/8 (41)	4-3/8 (111)

Dimensional Data

Figure 41. GEV 12½-15 tons (150-180) - front return/back supply

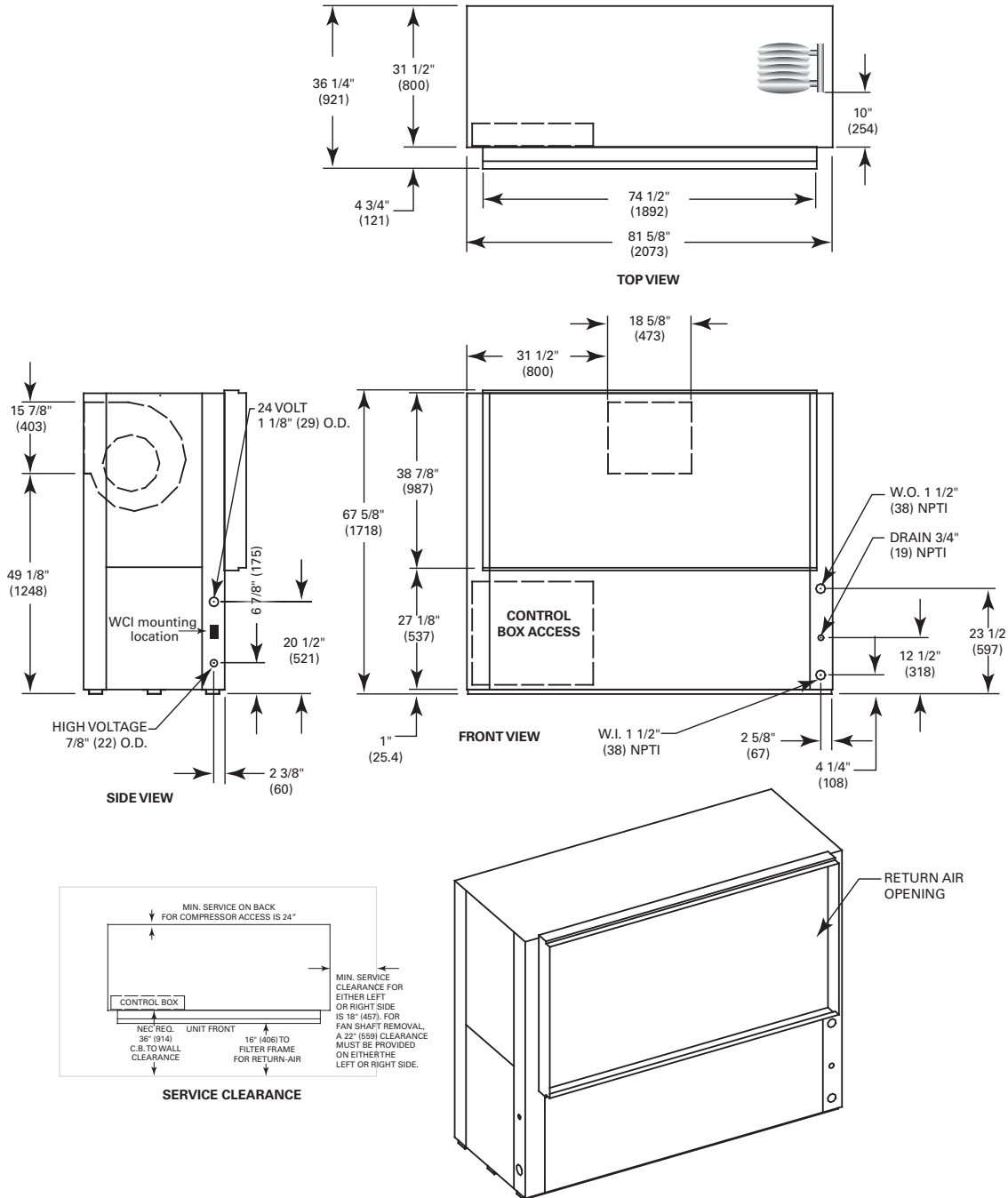
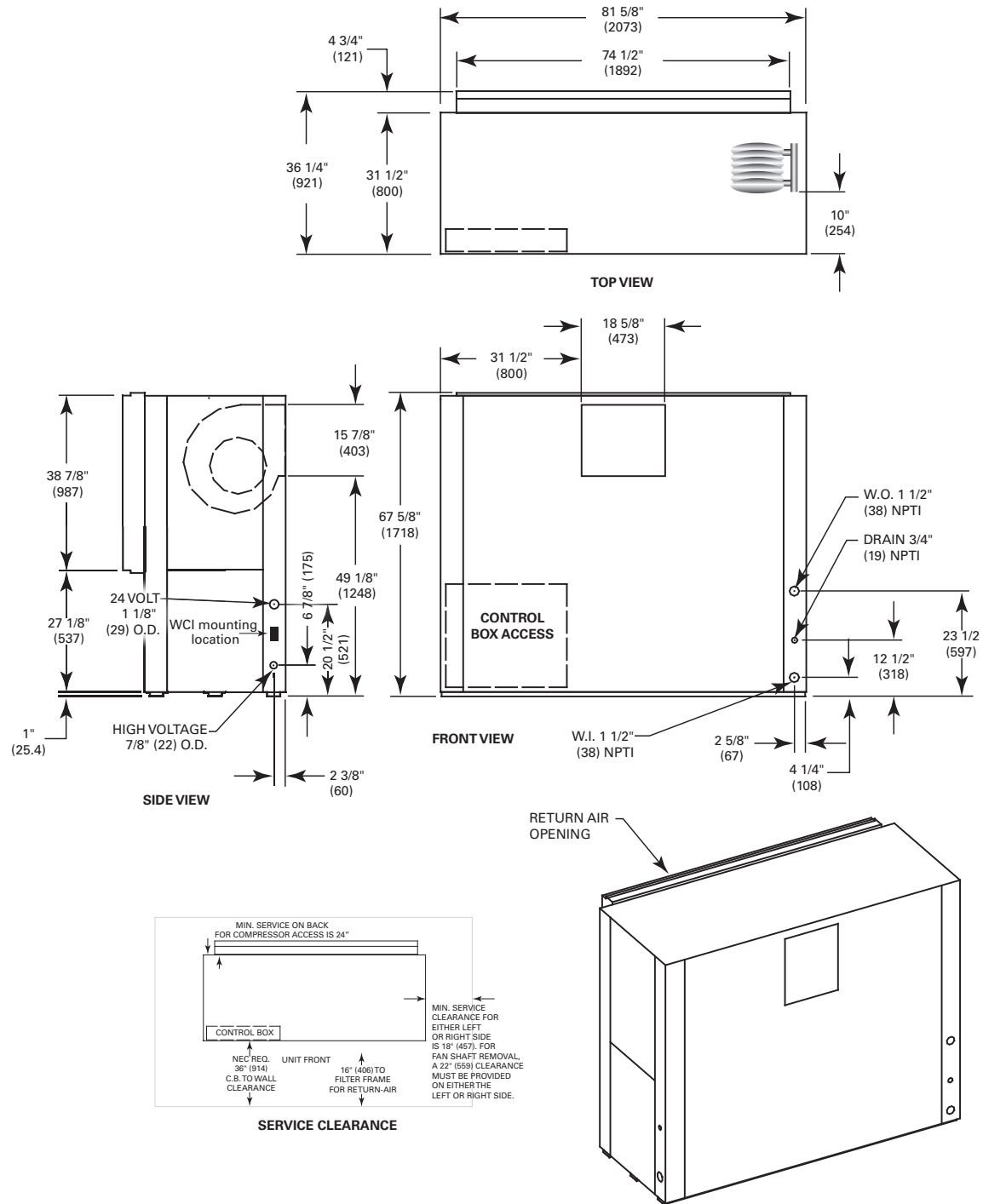


Figure 42. GEV 12½-15 tons (150-180) - back return/front supply



Dimensional Data

Figure 43. GEV 12½-15 tons (150-180) - front return/top supply

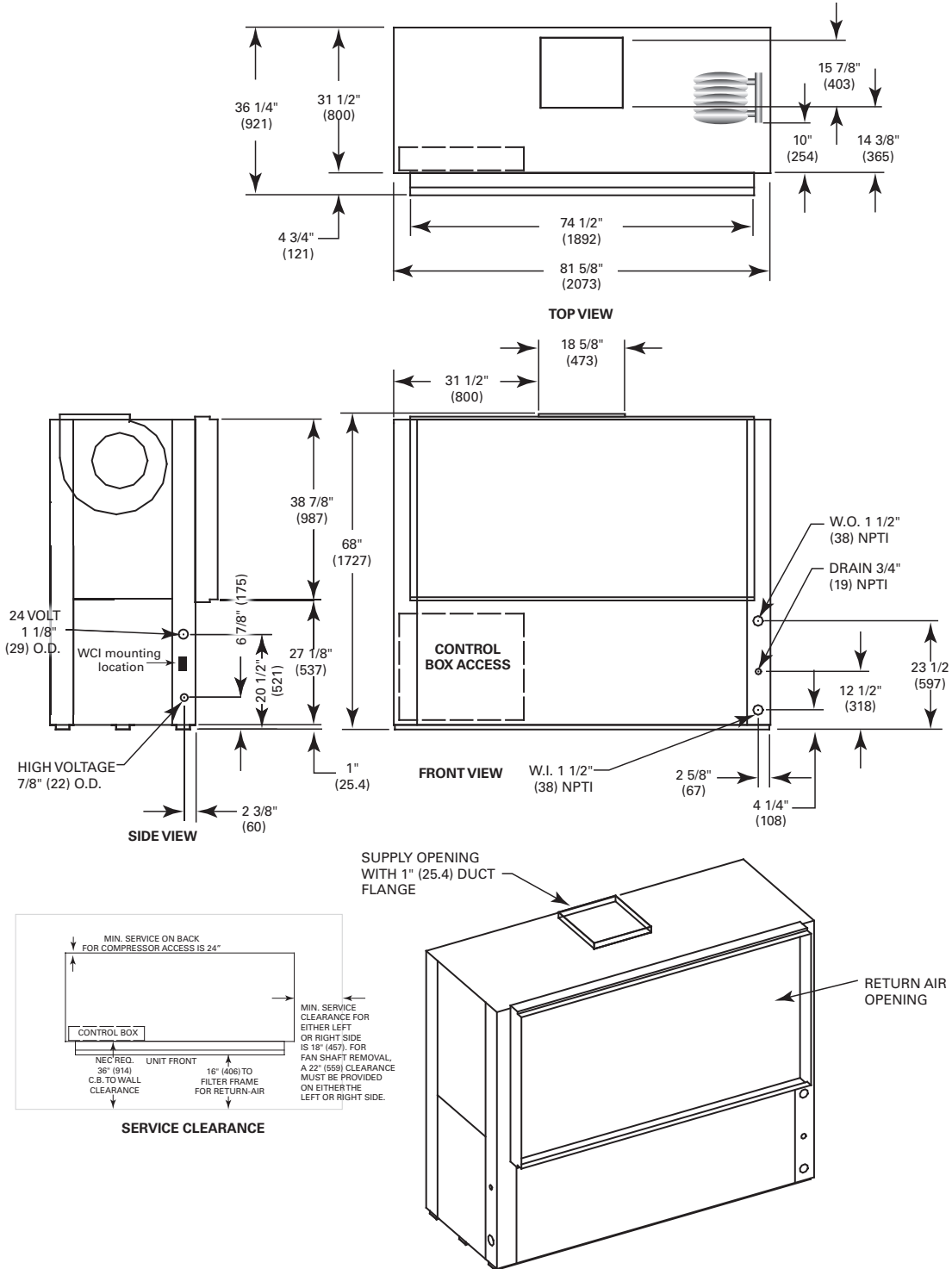
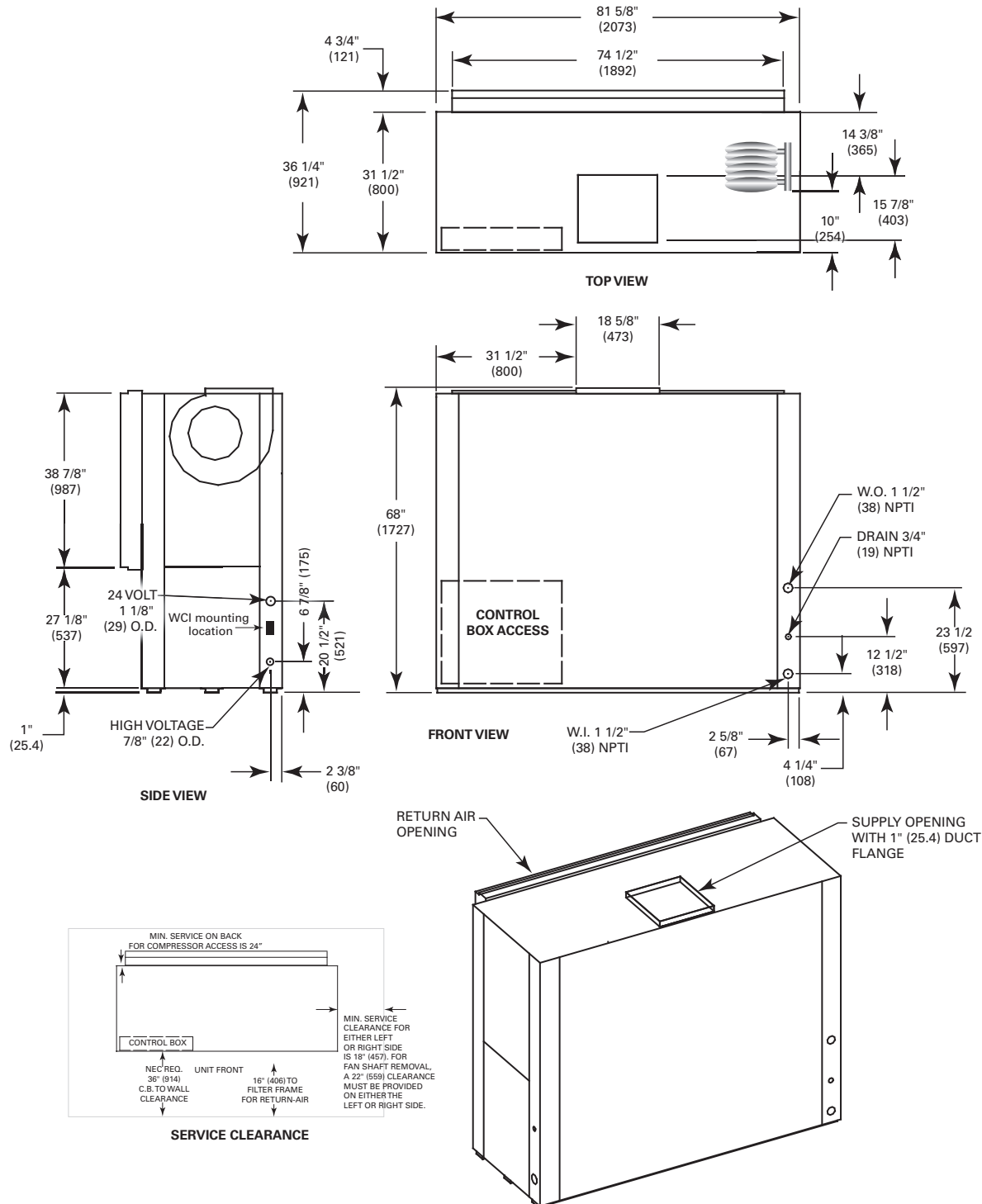


Figure 44. GEV 12½-15 tons (150-180) - back return/top supply



Dimensional Data

Figure 45. GEV 20-25 tons (240-300) - front return/back supply

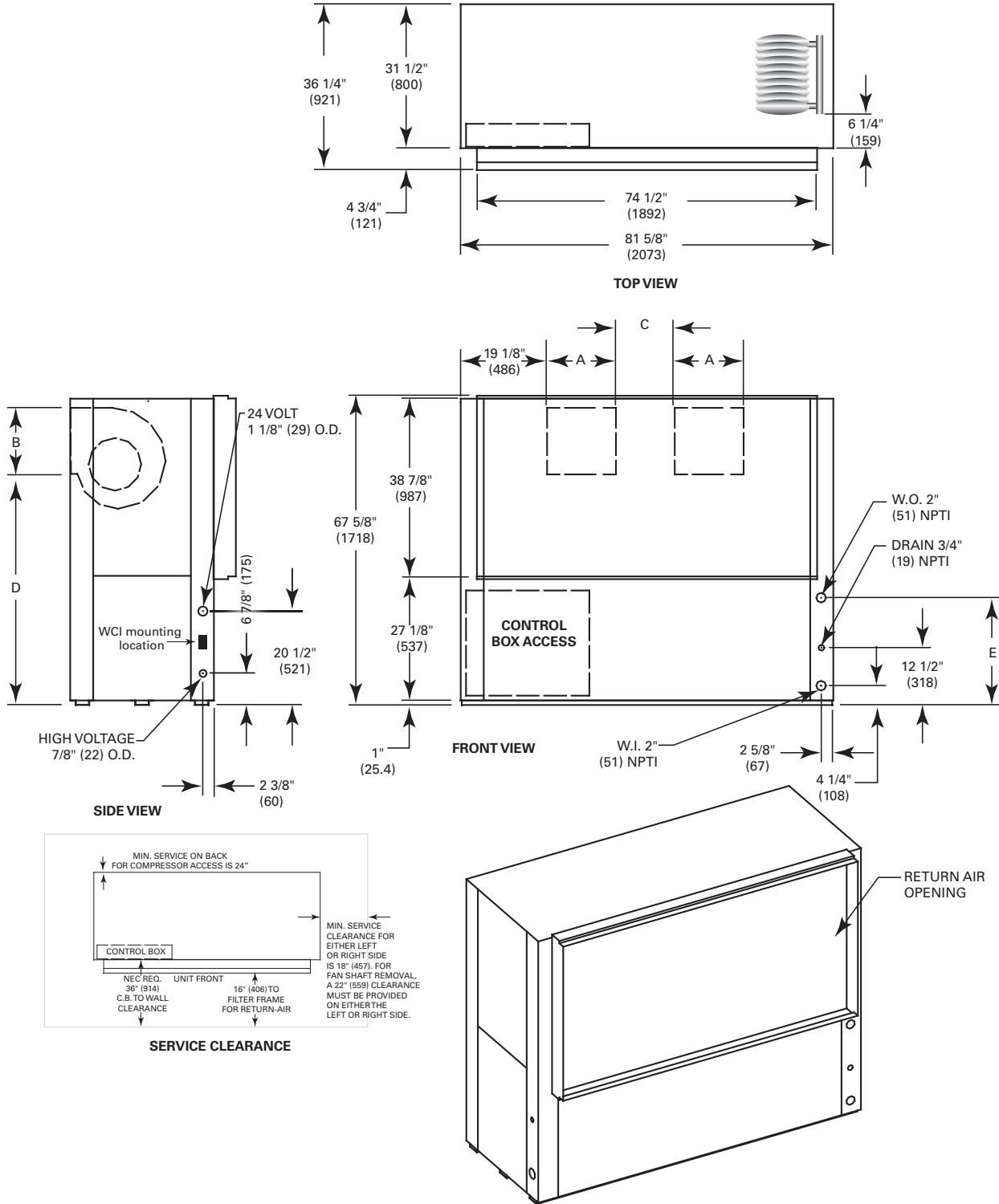
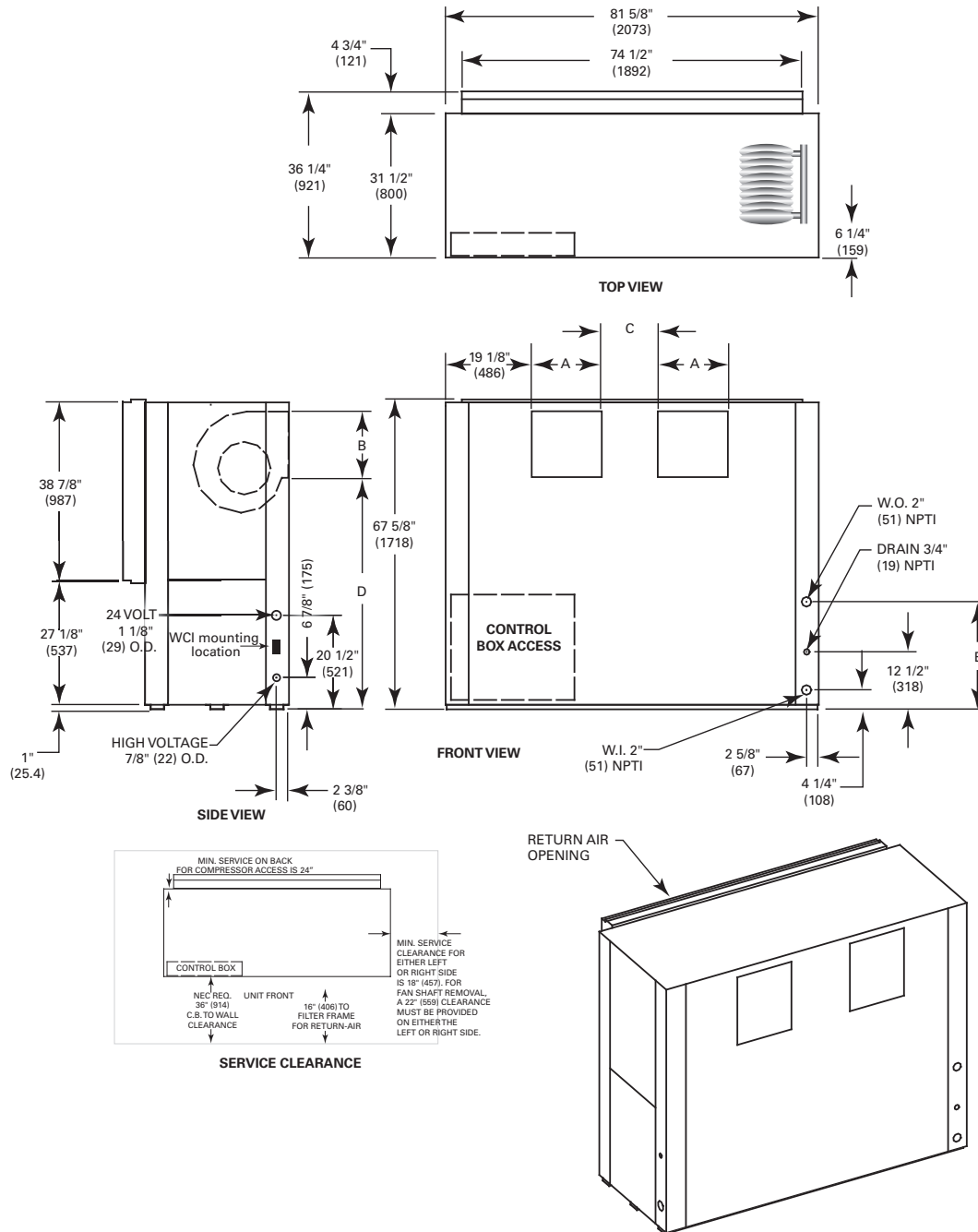


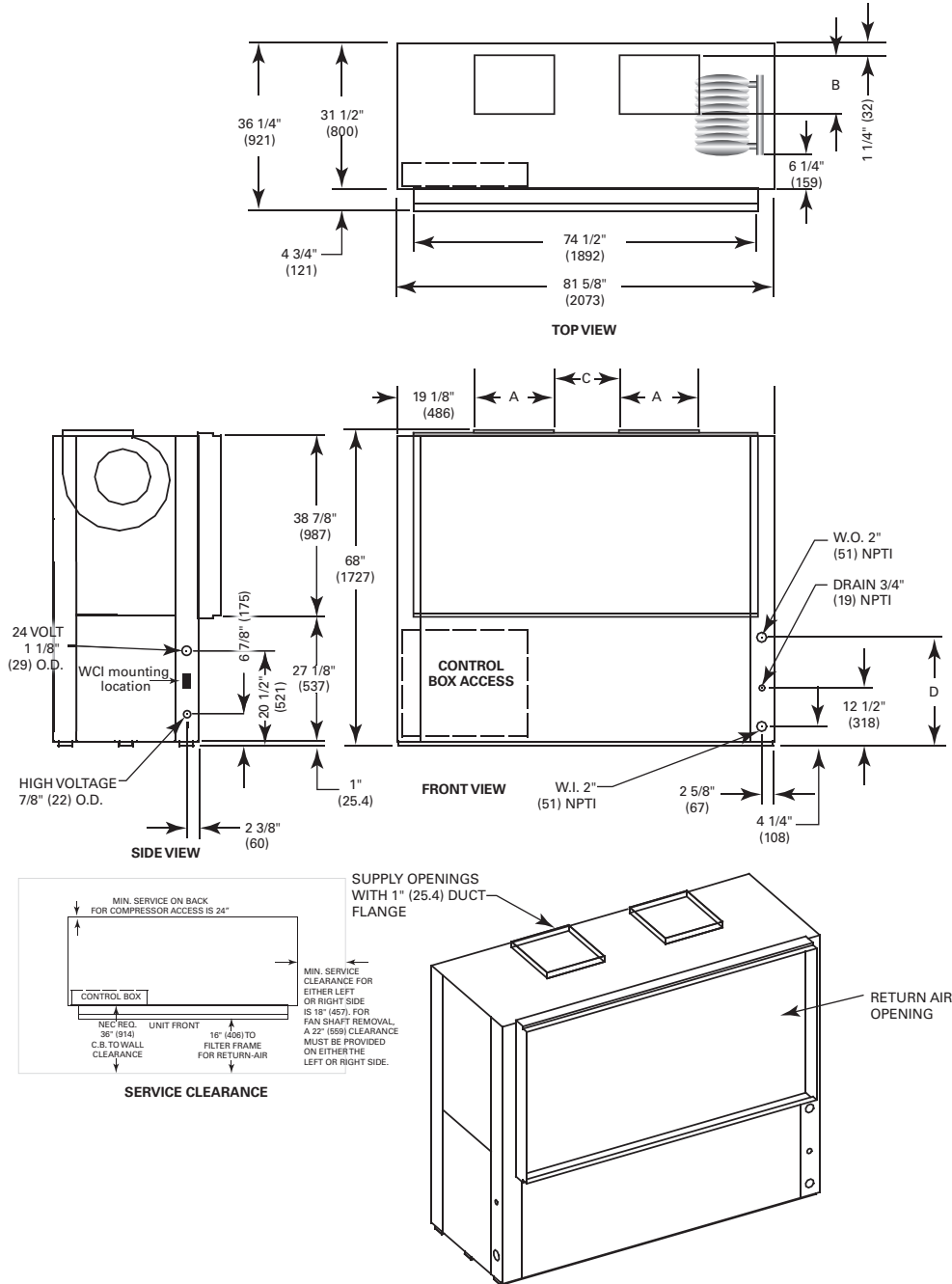
Figure 46. GEV 20-25 tons (240-300) - back return/front supply



Unit GEV	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)
240	15-5/8 (397)	13-1/2 (341)	12 (305)	51-5/8 (1310)	20-7/8 (530)
300 (Std. Static)	14-3/4 (375)	15-7/8 (403)	13-7/8 (352)	49-1/8 (1248)	23-1/2 (597)

Dimensional Data

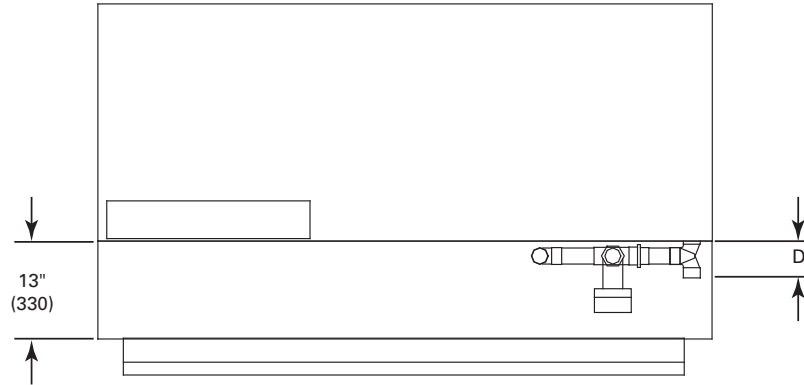
Figure 47. GEV 20-25 tons (240-300) - front return/top supply



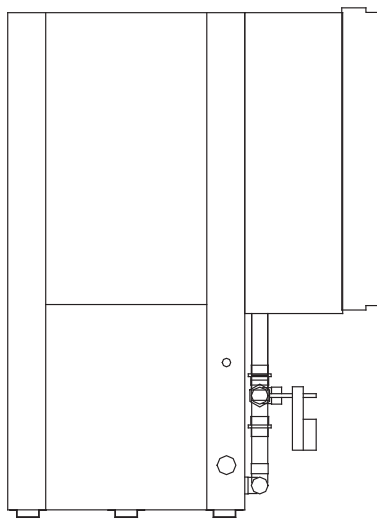
Unit GEV	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)
240	15-5/8 (397)	13-1/2 (341)	12 (305)	51-5/8 (1310)	20-7/8 (530)
300 (Std. Static)	14-3/4 (375)	15-7/8 (403)	13-7/8 (352)	49-1/8 (1248)	23-1/2 (597)
300 (High Static)	15-5/8 (397)	13-1/2 (341)	12 (305)	51-5/8 (1310)	23-1/2 (597)

Dimensional Data

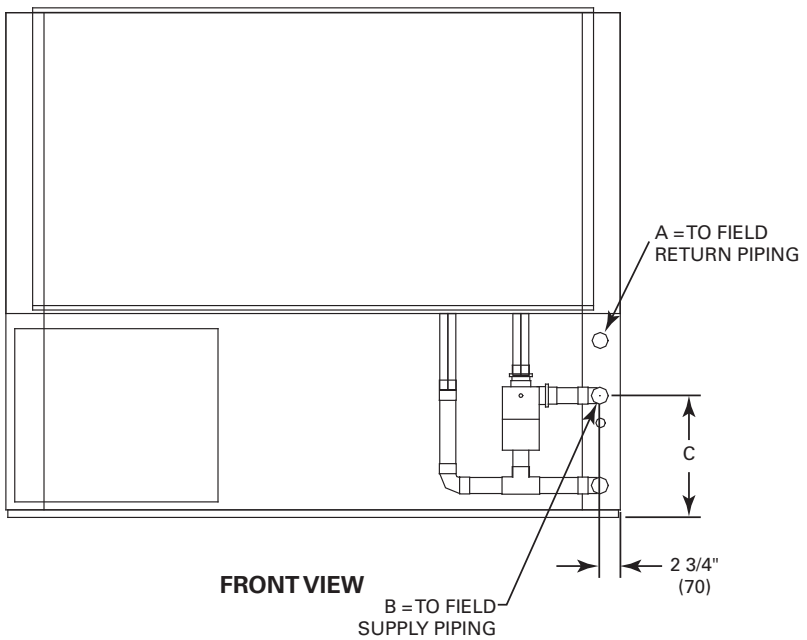
Figure 49. GEV 12½-25 tons (150-300) - waterside economizer



TOP VIEW



SIDE VIEW



FRONT VIEW

Unit GEV	A (in.)	B (in.)	C (in.)	D (in.)	Operating Weight
150,180	1-1/2 (38)	1-5/8 (41)	15-7/8 (403)	4-3/8 (111)	275 lb (125 kg)
240	2 (51)	2-1/8 (54)	16-1/4 (413)	4-7/8 (124)	310 lb (141 kg)
300	2 (51)	2-1/8 (54)	16-1/4 (413)	4-7/8 (124)	395 lb (179 kg)

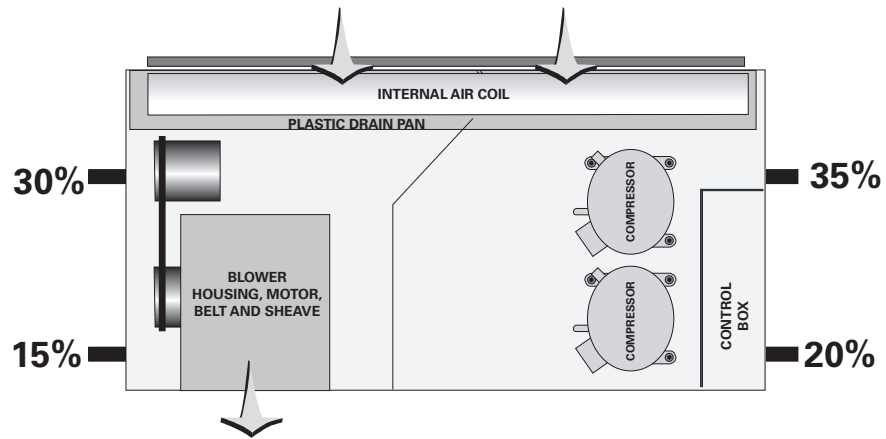
Weights

Weight Distribution

Approximate weight distribution for the GEH model is indicated in the graphic below.

Tolerance on the weights determined are $\pm 15\%$.

Total weights for each unit are available in "General Data," p. 14



Controls

Deluxe 24V Electronic Controls

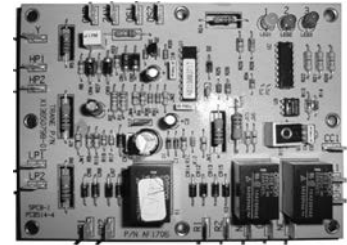
The deluxe 24V electronic unit control provides component protection devices to maximize system performance to extend the system life. Each device, is factory mounted, wired, and tested in the unit. Features include a 75VA transformer, compressor contactor, compressor lockout relay, compressor run capacitor (for 1-phase units only), anti-short cycle compressor protection, random start delay, brown-out protection, low pressure time delay, low pressure switch, high pressure switch, compressor delay on start, reversing valve coil (for heating and cooling units), multi-speed fan motor, soft lockout mode, and 18-pole terminal strip (for low voltage field wiring). Optional features include condensate overflow, hot gas reheat for dehumidification, electric heat and compressor enable.



Deluxe 24V Control Board - Microprocessor Design

The Trane microprocessor board is factory wired to a terminal strip to provide all necessary terminals for field connections.

The 24V deluxe design is a microprocessor-based control board conveniently located in the control box. The board is unique to Trane water-source products and is designed to control the unit as well as provide outputs for unit status and fault detection.



Deluxe 24V features include:

Anti-short Cycle Timer

The anti-short cycle timer provides a three minute time delay between compressor stop and compressor restart.

Brown-out Protection

The brown-out protection function measures the input voltage to the controller and halts the compressor operation. Once a brown-out situation has occurred, the anti-short cycle timer will become energized. The general fault contact will not be affected by this condition. The voltage will continue to be monitored until the voltage increases. The compressors will be enabled at this time if all start-up time delays have expired, and all safeties have been satisfied.

Compressor Disable

The compressor disable relay provides a temporary disable in compressor operation. The signal would be provided from a water loop controller in the system. It would disable the compressor because of low water flow, peak limiting or if the unit goes into an unoccupied state. Once the compressor has been disabled, the anti-short cycle time period will begin. Once the compressor disable signal is no longer present, and all safeties are satisfied, the control will allow the compressor to restart.

Diagnostics

Component device connections to the microprocessor board are referenced in [“Deluxe 24V Control Board - Microprocessor Design,” p. 98](#). Three LEDs (light emitting diodes) are provided for

indicating the operating mode of the controller. See the unit IOM for diagnostics or troubleshooting through the use of the LEDs.

Generic Relay

The generic relay is provided for field use. Night setback or pump restart are two options that may be wired to the available relay.

An external Class II 24VAC signal will energize the relay coil on terminals R1 and R2. Terminals C (common), NO (normally open), and NC (normally closed) will be provided for the relay contacts.

Random Start

The random start relay provides a time delay start-up of the compressor when cycling in the occupied mode. A new start delay time between 3 and 10 seconds is applied each time power is enabled to the unit.

Safety Control

The deluxe microprocessor receives separate input signals from the refrigerant high pressure switch, low suction pressure switch and condensate overflow.

In a high pressure situation, the compressor contactor is de-energized, which suspends compressor operation. The control will go into soft lockout mode initializing a three minute time delay and a random start of 3 to 10 second time delays. Once these delays have expired, the unit will be allowed to run. If a high pressure situation occurs within one hour of the first situation, the control will be placed into a manual lockout mode, halting compressor operation, and initiating the general alarm.

In a low temperature situation, the low pressure switch will transition open after the compressor starts. If the switch is open for 45 seconds during compressor start, the unit will go into soft lockout mode initializing a three minute time delay and a random start of 3 to 10 second time delays. Once these delays have expired, the unit will be allowed to run. If the low pressure situation occurs again within 30 minutes, and the device is open for more than 45 seconds, the control will be placed into a manual lockout mode, halting compressor operation, and initiating the general alarm.

In a condensate overflow situation, the control will go into manual lockout mode, halting compressor operation, and initiating the general alarm.

The general alarm is initiated when the control goes into a manual lockout mode for either high pressure, low pressure or condensate overflow conditions.

Safety Devices



System safety devices are provided through the use of low/high pressure switches in the refrigeration circuit to help prevent compressor damage.

The low pressure switch is set to activate at refrigerant pressures of 40 psig to fit most applications.

In cases where a low charge, or excessive loss of charge occurs, each compressor comes equipped with an external overload device to halt the compressor operation.

The high pressure switch prevents compressor operation during high or excessive discharge pressures that exceed 650 psig.

A lockout relay provides the mechanical communication of the low and high pressure switches to prevent compressor operation if the unit is under low or high refrigerant circuit pressure, or during a condensate overflow condition. The lockout relay may be reset at the thermostat, or by cycling power to the unit.

General alarm is accomplished through the lockout relay and will drive dry contacts only, and cannot be used to drive field installed control inputs.

Stand-alone System



The 24V controller may be applied as a stand-alone control system. The stand-alone design provides accurate temperature control directly through a wall-mounted mercury bulb or electronic thermostat. This system set-up may be utilized in a replacement design where a single unit retrofit is needed. It may be easily interfaced with a field provided control system by way of the factory installed 18-pole terminal strip. This stand-alone control is frequently utilized on small jobs where a building controller may not be necessary, or where field installed direct digital controls are specified. This type of control design does require a constant flow of water to the water source heat pump. With a positive way to sense flow to the unit, the units safety devices will trigger the unit off. The stand-alone system design provides a low cost option of installation while still allowing room control for each unit.

Tracer Direct Digital Controllers DDC Controls



The Tracer UC400 and ZN524 direct digital control (DDC) systems are specifically designed for single and dual circuited water-source equipment to provide control of the entire unit, as well as outputs for unit status and fault detection. Each device is factory installed, commissioned, and tested to ensure the highest level of quality in unit design.

Each of the controller's features and options were selected to coordinate with the unit hardware to provide greater energy efficiency and equipment safety to prolong the equipment life.

Trane WSHP with DDC controllers features include 75 VA transformer, compressor contactor, compressor lockout relay, compressor run capacitor (for 1-phase units only), random start delay, heating/cooling status, occupied/unoccupied mode, low pressure switch, high pressure switch, fan and filter status, reversing valve coil (for heating and cooling units), multi-speed fan motor, 18-pole terminal strip (for low voltage field wiring) and optional: condensate overflow. Additional features include water isolation valve support (for variable speed pumping), as well as optional features including boilerless control for electric heat, waterside economizer and hot gas reheat for dehumidification.

Tracer ZN524 The Tracer ZN524 is LonTalk certified. It is capable of working with, and talking to other LonTalk certified controllers providing the building owner more choices, and the design engineers more flexibility to meet the challenges of building automation.

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.

Tracer UC400 / ZN524 functions include:

Boilerless Control Electric Heat and Supplemental Electric Heat

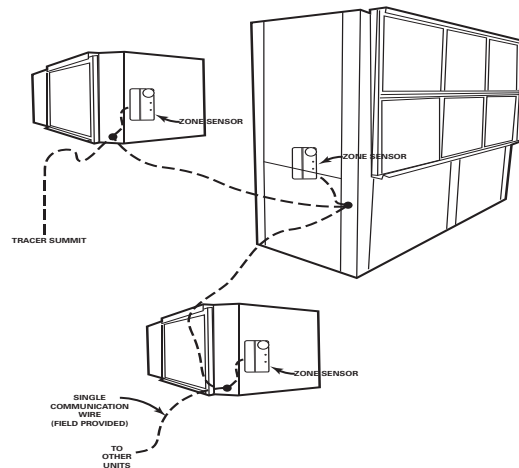
The controller supports a single stage of boilerless electric heat operation or concurrent heating. When the unit is configured for boilerless control, the EWT will be used to determine whether DX heating should be disabled and the electric heater enabled. When these conditions are met, the

isolation valve(s) are driven open for three minutes and the entering water temperature reading is taken. The determination as to whether or not to utilize electric heat will be made and the controller will take appropriate action. If boilerless electric heat is enabled, then the isolation valve will be closed, shutting down the water flow to the unit.

When the unit is configured for concurrent operation of DX heating (compressor in heat pump mode) and electric heat, the electric heat will act as a second stage of heat for single compressor units, and a third stage of heat for dual compressor units.

Note: With concurrent (or supplemental) electric heat, the electric heater is field provided.

Building Control Advantages



The Tracer UC400 or ZN524 controllers have the ability to share information with one or several units on the same communication link. This sharing of information is made possible via a twisted pair of wire and a building automation system or through Trane's Rover™ service tool.

An advantage of installing a UC400 or ZN524 is its capability to work with other BACnet or LonTalk™ certified controllers. This provides greater flexibility to the building owner, as well as greater flexibility in design.

Integrating the controller on water-source equipment, and tying it to a Tracer™ SC or other building automation system provides a complete building management system. With a Building Automation system like a Tracer™ SC, the system can initiate an alarm on a loss of performance on equipment malfunctions; allowing problems to be handled in a timely manner before compromising comfort.

This type of application would most commonly be used for a large space(s) that may require more than one unit. In addition to this application design, the controller provides a way for units located within the same space to share the same zone sensor to prevent units from simultaneously heating and cooling in the same space.

Compressor Operation

The compressor is cycled on and off to meet heating or cooling zone demands. Single and dual compressor units use the unit capacity and pulse width modulation (PWM) logic along with minimum on/off timers to determine the compressor's operation. The compressor is controlled ON for longer periods as capacity increases and shorter periods as capacity decreases.

Condensate Overflow

When condensate reaches the trip point, a condensate overflow signal generates a diagnostic which disables the fan, unit water valves (if present), and compressor. The unit will remain in a halted state until the condensation returns to a normal level. At this time, the switch in the drain pan will automatically reset. However, the controller's condensate overflow diagnostic must be manually reset to clear the diagnostic and restart the unit.

Data Sharing

The Tracer UC400 and ZN524 controller is capable of sending or receiving data (setpoints, fan request, or space temperature) to and from other controllers on the communication link. This

allows multiple units to share a common space temperature sensor in both stand-alone and building automation applications.

Dehumidification

Dehumidification for the single and dual circuited water-source heat pump is applicable with the UC400 and ZN524 controller. The controller is capable of directing one stage of DX cooling in conjunction with one stage of reheat (hot gas reheat).

Dehumidification can only occur when the controller is in the cooling mode. A humidity transmitter is used to measure the zone's relative humidity (RH), then compares the zone relative humidity to the relative humidity enable/disable setpoint parameters. The dehumidification enable and disable points are configurable.

Fan Operation

The supply air fan operates at the factory wired speed in the occupied or occupied standby mode. When switch is set to AUTO, the fan is configured for cycling ON with heating or cooling. In heat mode, the fan will run for 30 seconds beyond compressor shutdown in both occupied and unoccupied mode.

Filter Maintenance Timer

The controller's filter status is based on the unit fan's cumulative run hours. The controller compares the fan run time against an adjustable fan run hours limit and recommends unit maintenance as required.

High and Low Pressure Safety Controls

The Tracer ZN524 controller detects the state of the high pressure or low pressure switches. When a fault is sensed by one of these switches, the corresponding message is sent to the controller to be logged into the fault log. When the circuit returns to normal, the high pressure control and low pressure control automatically reset. If a second fault is detected within a thirty-minute time span, the unit must be manually reset.

Occupancy Modes

The four operations of the Tracer ZN524 controller include occupied, occupied standby, occupied bypass and unoccupied.

In an occupied situation, the controller uses occupied heating and cooling setpoints to provide heating and cooling to the building. This occupied operation is normally used during the daytime hours when the building is at the highest occupancy level.

In an occupied standby situation, the controllers heating and cooling setpoints are usually wider than the occupied setpoints. This occupied standby operation is used during daytime hours when people are not present in the space (such as lunchtime or recess). To determine the space occupancy, an occupancy sensor is applied.

In an unoccupied situation, the controller assumes the building is vacant, which normally falls in evening hours when a space may be empty. In the unoccupied mode, the controller uses the default unoccupied heating and cooling setpoints stored in the controller. When the building is in unoccupied mode, individual units may be manually placed into timed override of the unoccupied mode at the units wall sensor. During timed override, the controller interprets the request and initiates the occupied setpoint operation, then reports the effective occupancy mode as occupied bypass.

In the occupied bypass mode, the controller applies the occupied heating and cooling setpoint for a 120 minute time limit.

Random Start

To prevent all of the units in a building from energizing major loads at the same time, the controller observes a random start from 0 to 25 seconds. This timer halts the controller until the random start time expires.

Reversing Valve Operation

For cooling, the reversing valve output is energized simultaneously with the compressor. It will remain energized until the controller turns on the compressor for heating. At this time, the reversing valve moves to a de-energized state. In the event of a power failure or controller OFF situation, the reversing valve output will default to the heating (de-energized) state.

Entering Water Temperature Sampling

The controller will sample the entering water temperature to determine proper control action for units equipped with boilerless electric heat or waterside economizer.

Waterside Economizer

Entering water temperature (EWT) sampling will automatically occur at power up when the unit is equipped with a waterside economizer (WSE). The EWT is used to determine if economizing is feasible. When the conditions are met, the isolation valve(s) are driven open for three minutes and the EWT reading is taken. The determination as to whether or not the economizer can be enabled will be made and the controller will take appropriate action. The isolation valve will remain open regardless if the WSE or the DX cooling is enabled.

The unit's waterside economizer will contain a 2-position water valve wired to the controller. The economizing water coil will be optimized to provide 100% of the unit capacity at 80.6°F/66.2°F return air temperature with 45°F entering water. The flow rate is established at 86 F entering water temperature and 96°F leaving water temperature.

Low leaving air protection will be furnished to protect the unit against delivering air that is cold enough to sweat discharge air grilles. Coil icing protection will also be provided.

Waterside economizer cooling will be active during occupied, unoccupied and standby cooling modes.

Water Isolation Valves

Variable speed pumping systems are supported by the controller when water isolation valves are present. Up to two isolation valves are supported by the controller (one for each compressor circuit).

The valves are normally closed unless DX heating, DX cooling, waterside economizer or dehumidification is requested. When the isolation valves are driven open for operation, the outputs will be driven for 20 seconds to ensure adequate water flow before the compressor outputs are energized. Once an isolation valve has been opened, it will remain open for a 10 minute minimum to reduce excessive cycling of the valve.

Wireless Comm Interface (WCI)

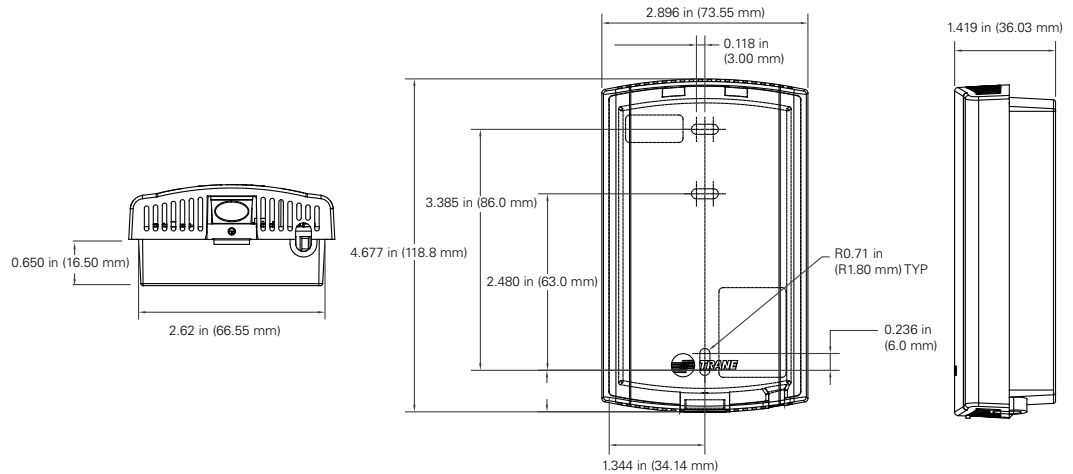
The Trane wireless Comm Interface (WCI) enables wireless communication between system controls, unit controls, and wireless sensors for the new generation of Trane control products. The WCI replaces the need for communication wire in all system applications. Note: *See BAS-SVX40*-EN, Installation, Operation and Maintenance, Wireless Comm for more information.*

Quantity of WCIs per Network. Each Trane® wireless network can have a total of 31 WCIs (30 member WCIs plus 1 coordinator WCI). Each network requires one WCI to function as network coordinator.

Quantity of Networks per Tracer Wireless Zone Sensors. The WCI also communicates with Trane wireless zone sensors, eliminating the need for analog receivers.

Wired Zone Sensors. Systems using Wireless Comm can also use wired zone sensors.

Dimensions



Specifications

Operating Temperature

-40 to 158°F (-40 to 70°C)

Storage temperature

-40 to 185°F (-40 to 85°C)

Storage and operating humidity range

5% to 95% relative humidity (RH), non-condensing

Voltage

24 Vac/Vdc nominal \pm 10%. If using 24 Vac, polarity must be maintained.

Receiver power consumption

<2.5 VA

Housing material

Polycarbonate/ABS (suitable for plenum mounting), UV protected, UL 94: 5 VA flammability rating

Mounting

3.2 in (83 mm) with 2 supplied mounting screws

Range

Open range: 2,500 ft (762 m) with packet error rate of 2%

Indoor: Typical range is 200 ft (61 mm); actual range is dependent on the environment. See BAS-SVX55*-EN for more detail.

Note: Range values are estimated transmission distances for satisfactory operation. Actual distance is job specific and must be determined during site evaluation. Placement of WCI is critical to proper system operation. In most general office space installations, distance is not the limiting factor for proper signal quality. Signal quality is affected by walls, barriers, and general clutter. For more information or available at <http://www.trane.com>.

Output power

North America: 100 mW

Radio frequency

2.4 GHz (IEEE Std 802.15.4-2003 compliant) (2405–2480 MHz, 5 MHz spacing)

Radio channels

16

Address range

Group 0–8, Network 1–9

Mounting

Fits a standard 2 in. by 4 in. junction box (vertical mount only). Mounting holes are spaced 3.2 in. (83 mm) apart on vertical center line. Includes mounting screws for junction box or wall anchors for sheet-rock walls. Overall dimensions: 2.9 in. (74 mm) by 4.7 in. (119 mm)

Wireless protocol

ZigBee PRO—ZigBee Building Automation Profile, ANSI/ASHRAE Standard 135-2008 Addendum q (BACnet™/ZigBee)

Wireless Receiver/Wireless Zone Sensor


The wireless zone sensor system eliminates the wiring problems associated with unit temperature sensors. It provides the flexibility to move zone sensors after the occupants have revised the space floor plan layout. The zone sensor houses the space temperature sensor, local setpoint adjustment thumbwheel, OCCUPIED/UNOCCUPIED button, battery life, signal strength indicators, and spread spectrum transmitter.

The spread spectrum receiver/translator can be field or factory installed and functions as a communication translator between spread spectrum radio communications and the unit communications link.

Specifications
Power Requirements

Receiver: 24 V nominal AC/DC \pm 10% < 1VA

Zone Sensor: (2) AA lithium batteries

Sensor Operating Environments

32 to 122°F, (0 to 50°C); 5 to 95%RH, Non-condensing

Receiver Operating Environments

-40 to 158°F, (-40 to 70°C); 5 to 95%RH, Non-condensing

Storage Environment—Sensor/Receiver

-40 to 185°F, (-40 to 85°C); 5 to 95%RH, Non-condensing

Mounting

Receiver: Suitable for mounting above or below ceiling grid. Requires 24V power. Factory installed receiver comes mounted to the unit with power provided by associated unit controller transformer. Field installed option provided with associated wire harness for similar power and communication connection.

Sensor: Mounts to a 2x4 handi-box or directly to the wall by attaching the backplate and then snapping the sensor body into place.

Dimensions

Receiver/Translator

Enclosure: Plastic
Height: 4.75" (120.6 mm)
Width: 2.90" (73.5 mm)
Depth: 1.08" (27.5 mm)

Sensor/Transmitter

Enclosure: Plastic
Height: 4.78" (121.4 mm)
Width: 2.90" (73.5 mm)
Depth: 1.08" (27.5 mm)

Thermostats and Zone Sensors

Table 79. Thermostat selection for use with the Deluxe Controller







Thermostat	Part Number	Description
	X13511536010	3 Heat/2 Cool, Non-programmable commercial thermostat for conventional (rooftop) air conditioners and heat pumps that are configured with or without auxiliary heat. <ul style="list-style-type: none"> • 3 H/2 C
	X13511537010	3 Heat/2 Cool, Programmable commercial thermostat for conventional (rooftop) air conditioners and heat pumps that are configured with or without auxiliary heat. <ul style="list-style-type: none"> • 3 H/2 C
	X13511538010	3Heat/2 Cool, Programmable touch screen thermostat for conventional air conditioners and heat pump systems. The thermostat will provide the human interface, zone temperature sensing both local and optional remote temperature sensing, and set point scheduling on a daily/weekly basis. This thermostat can also display humidity with a control signal for dehumidification with a local humidity sensor or optional remote humidity sensor. <ul style="list-style-type: none"> • 3 H/2 C

Table 80. Zone sensor selection for use with Tracer ZN524 and UC400 Controller

Sensor	Part Number	Description
	X13790886010	Wired temperature sensor with an LCD display <ul style="list-style-type: none"> • Allows an occupant to control the temperature setpoint, request timed override of system operation, and provides a COMM module to service technicians. Tracer ZN524 and UC400 Compatible
	X13651467020	Communication Module <ul style="list-style-type: none"> • Sold in packs of 12 • Provides local RJ22 connection to Trane service tools for easy, low cost maintenance.
	X13511529010	Zone Sensor <ul style="list-style-type: none"> • Tracer UC400 and ZN524 compatible • External setpoint adjustment wheel

Thermostats and Zone Sensors

Table 80. Zone sensor selection for use with Tracer ZN524 and UC400 Controller (continued)








Sensor	Part Number	Description
	X13511527010	Zone Sensor <ul style="list-style-type: none"> • Tracer UC400 and ZN524 compatible • External setpoint adjustment wheel • ON and CANCEL buttons
	X1379084501	Zone Sensor <ul style="list-style-type: none"> • Tracer UC400 and ZN524 compatible • External setpoint adjustment wheel • ON and CANCEL buttons • Fan switch AUTO-OFF
	X1379044401	<ul style="list-style-type: none"> • Temperature and relative humidity sensor • Tracer UC400 and ZN524 compatible

Table 81. Wireless zone sensor selection for use with Tracer UC400 controller

Sensor	Part Number	Description
	X1379082201	Universal Display Sensor <ul style="list-style-type: none"> • Clear and simple monitoring and control Tracer™ UC400 Compatible
	X13790492	Wireless Zone Sensor <ul style="list-style-type: none"> • Local control • Limited occupant temp. control Timed occupancy overrides
	X13790821	Wireless Zone Sensor <ul style="list-style-type: none"> • Simplicity Eliminates local temperature control when higher control level is required
		WCI - UC400 compatible <p>Provides wireless communication between the Tracer™ SC, Tracer™ Unit Controllers, and BACnet® Communication Interface (BCI) modules</p>

Accessories

Automatic and Manual Balancing Kits

Superior circuit balancing of the HVAC equipment is an important aspect to the overall layout and design of the HVAC system. Proper balance of the system can protect the WSHP equipment while providing a longer equipment life.

Trane provides three hose kit selections for equipment balancing.

- Ball valve flow control (manual)
- Circuit setter flow control (manual)
- Automatic, Self Balancing Flow Control Hose Kit

Each selection provides some accuracy in equipment balancing. Range of accuracy consist of $\pm 25\%$ for the ball valve method, $\pm 20\%$ for the manual flow control method, and $\pm 10\%$ for the automatic flow control method.

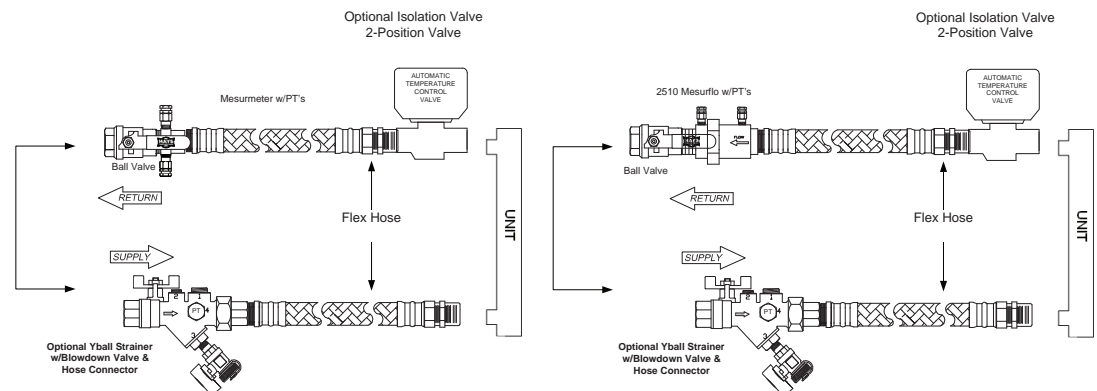
Utilizing the ball valve flow control method, the pressure/temperature measurement on the leaving and entering side of the heat pump is measured within the water piping. The ball valve is then throttled to change the amount of flow to the unit to reach the desired temperature or pressure differential.

The circuit setter manual flow control method uses an in-line flow measurement device and an adjustment feature to measure and set flow rates at each heat pump.

For automatic system balancing of a water source heat pump, the Mesurflo® self-balancing hose kit provides a constant flow rate over the pressure differential range of 2 to 80 psid. As system pressure changes (through further addition of heat pumps, for example) each individual flow control valve will automatically adjust to the new system conditions. In variable water volume applications, a self-balancing hose kit can provide continuous balancing because of its ability to automatically adjust to the varying system conditions.

Note: At low differential pressure the flow area required to achieve higher flow can exceed the flow area available for the respective series. Therefore, the minimum pressure differential requirement is increased for the higher flow ranges of each series Mesurflo valve.

Figure 50. Ball valve kit (manual)/MesurfloVac kit (automatic)



Motorized water valve

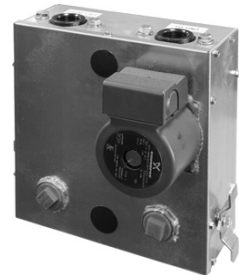
The motorized water valve is installed on the return line of the water loop system between the loop and the loop's pump module. This isolation device is less expensive and a very effective alternative to the water regulating valve.

When the compressor begins running, the valve will open, allowing water to flow through the unit. As the compressor shuts down, the valve slowly closes off. The main purpose of the motorized valve is to shut-off the flow of water through the unit when the unit is off, thus reducing water consumption. The motorized valve is fast opening to prevent compressor trip-out, and slow closing to prevent water hammer.



Pump module

The pump module and hose kit make a complete self-contained pumping package for distributed pumping systems. These kits contain all the necessary components for the installation, operation and maintenance of the water circuit of a closed loop geothermal application. Standard pump module features include insulated Grundfos pumps, insulated cabinet, bronze or cast iron pump, and 3-way brass valves. Literature number WSHPC-IN-5 will provide electrical and dimensional requirements for the PMCA and PMBA products.



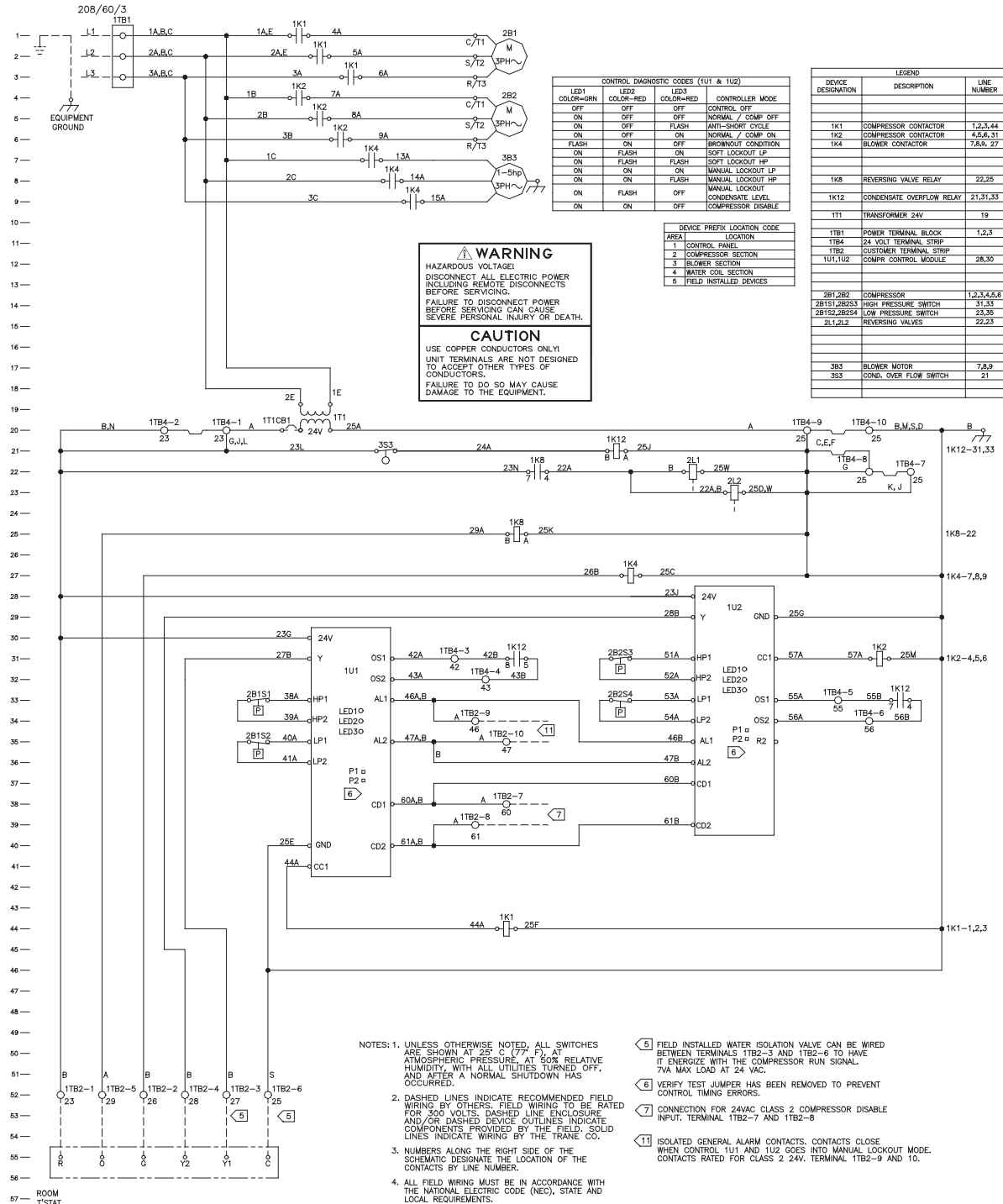
Pump module hose kit

The pump module hose kit consists of two brass, 3/4 or 1-inch male pipe thread (MPT) -by-barb fittings; two brass 90° 1-inch, MPT-by-barb elbows with pressure/temperature ports; and 10 feet of rubber hose with 4 hose clamps. The pump module hose kit is available separately from the pump module.



Control Wiring

Figure 51. Deluxe 24V - 208-230V-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.

Control Wiring

Figure 52. Tracer ZN524 460V-60 Hz - 3 ph(a)

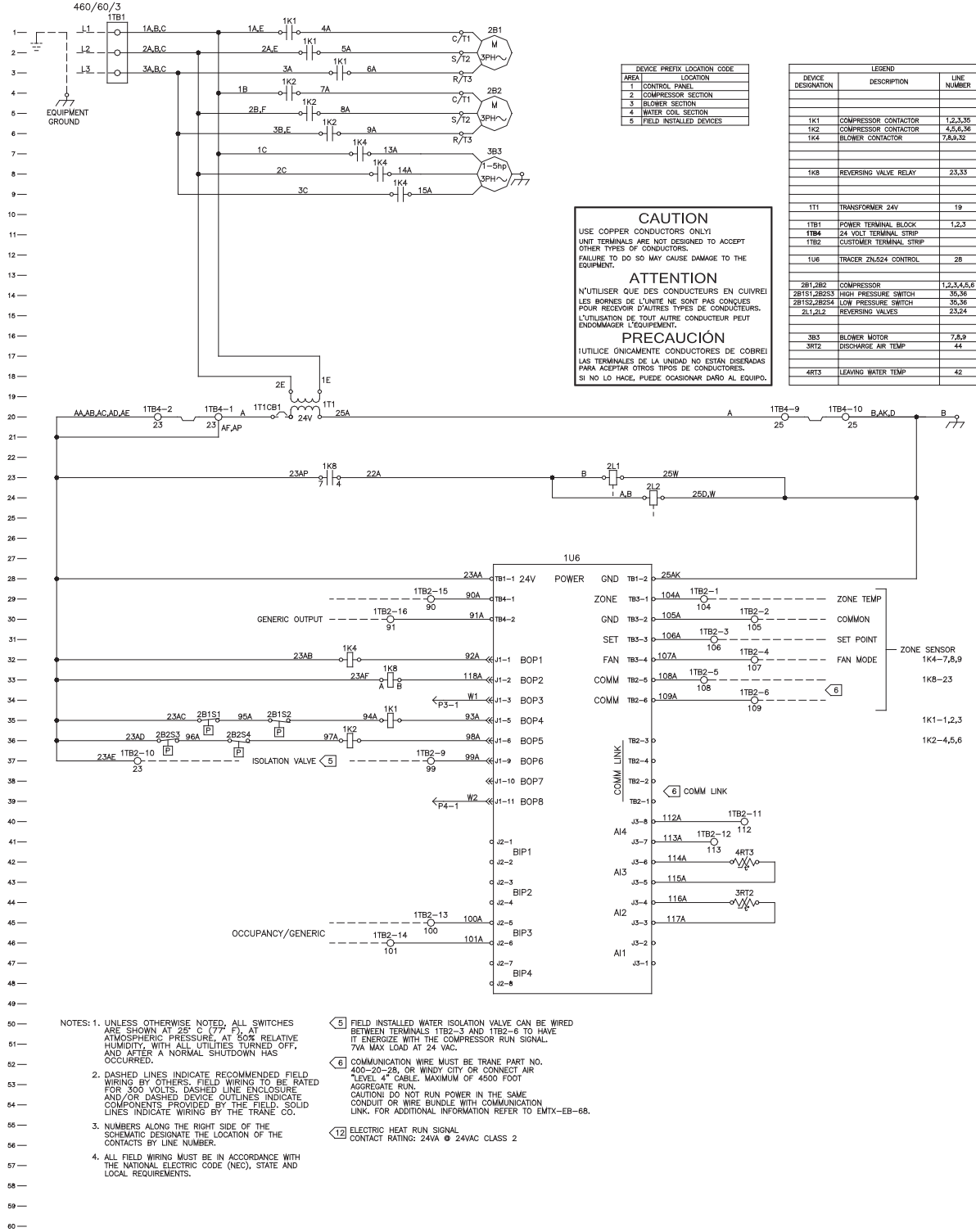
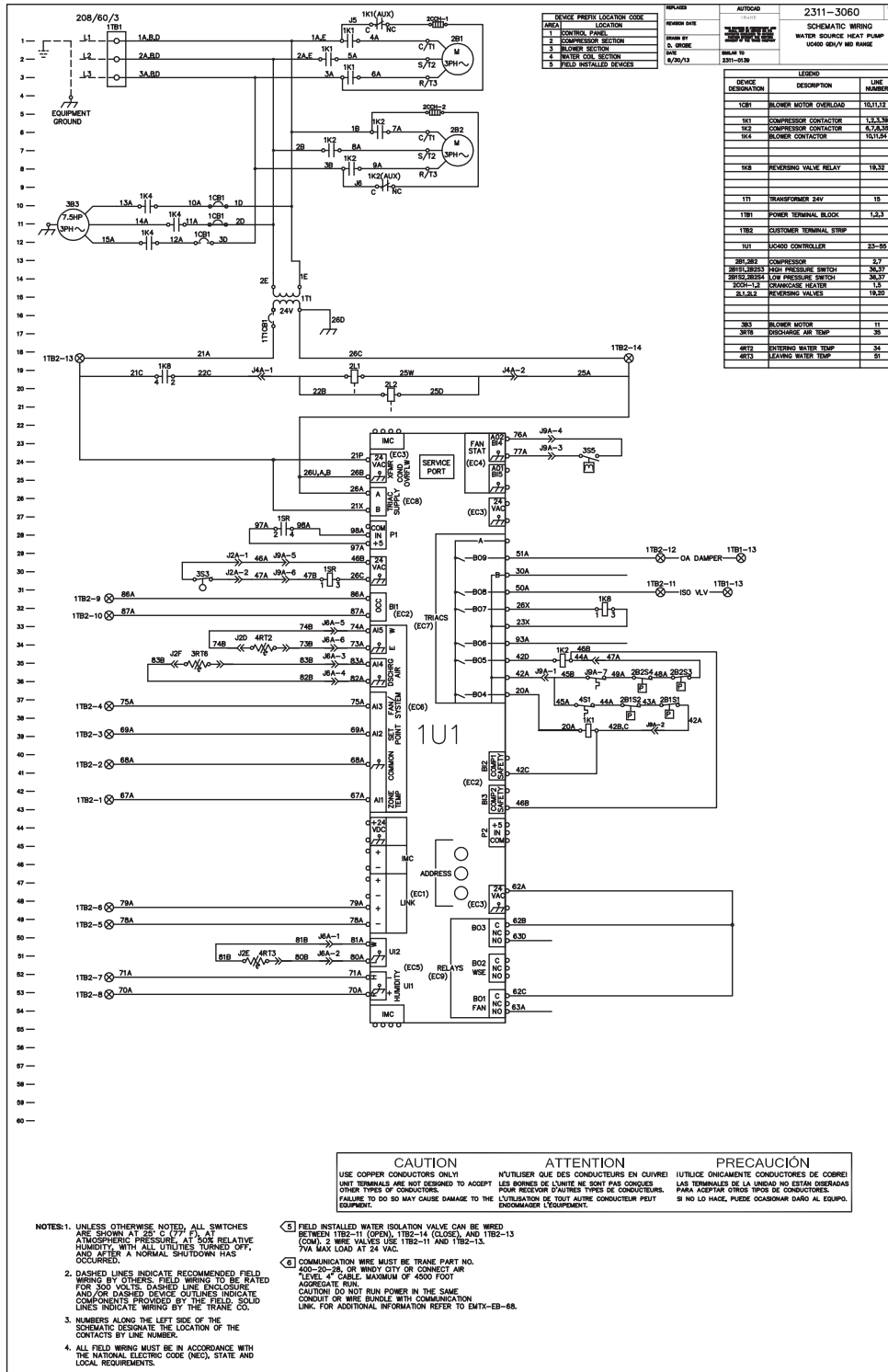


Figure 53. UC400(a)



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



Mechanical Specifications

General

Equipment is completely assembled, piped, internally wired, fully charged with R-410A and test operated at the factory. Filters, thermostat field interface terminal strip, and all safety controls are furnished and factory installed.

The system water inlet and outlet connections are female NPT composed of copper.

All units are ETL certified and under 10 tons are AHRI certified. Larger units are rated in accordance with ISO-ARI 13256-1. Service and caution area labels are placed on the unit in their appropriate locations.

Cabinet

Unit casing is constructed of zinc coated, heavy gauge, galvanized steel.

Access to the refrigerant and controls is provided through the front and side access panels.

All panels are insulated with 1/2-inch thick dual density bonded glass fiber. The exposed side is a high density erosion proof material suitable for use in air streams up to 3600 feet per minute (FPM). The insulation meets the erosion requirements of UL 181. It has a flame spread of less than 25 and a smoke developed classification of less than 50 per ASTM E-84 and UL 723.

Access for inspection and cleaning of the unit drain pan, coils and fan section are provided. The unit shall be installed for proper access.

Filters

One inch or two inch, throwaway filters are standard and factory installed. The filters have an average arrestance of 75% and dust holding capacity of 26-grams per square foot.

Sound Attenuation

Sound attenuation is applied as a standard feature in the product design. All units are tested and rated in accordance with ARI 260.

Compressors

The unit contains a high efficiency scroll compressor. External vibration isolation is provided by rubber mounting devices located underneath the mounting base of the compressor. A second isolation of the refrigeration assembly is supported under the compressor mounting base.

Internal thermal overload protection is provided. Protection against excessive discharge pressure is provided by means of a high pressure switch. A loss of charge is provided by a low pressure switch. Crankcase heaters are provided standard on all units.

Refrigerant Tubing

The refrigerant tubing is of 99% pure copper. This system shall be free from contaminants and conditions such as drilling fragments, dirt and oil. All refrigerant and water lines are insulated with an elastomeric insulation that has a 3/8-inch thick wall in the air-side section of the unit.

Refrigerant Circuits

The refrigerant circuit contains a thermal expansion device. Service pressure ports are factory supplied on the high and low pressure sides for easy refrigerant pressure.

Air-to-Refrigerant Coil

Internally finned, 3/8-inch copper tubes mechanically bonded to a configured aluminum plate fin are standard. Coils are leak tested at the factory to ensure the pressure integrity. The coil is leak tested to 450 psig and pressure tested to 650 psig. The tubes are to be completely evacuated of air and correctly charged with proper volume of refrigerant prior to shipment.

The refrigerant coil distributor assembly is of orifice style with round copper distributor tubes. The tubes are sized consistently with the capacity of the coil. Suction header is fabricated from rounded copper pipe.

A thermostatic expansion valve is factory selected and installed for a wide range of control.

Drain Pan

The condensate pan is constructed of corrosion resistant material and insulated to prevent sweating. The bottom of the drain pan is sloped on two planes which pitches the condensate to the drain connection. The drain pan is flame rated per UL945V-B.

Water-to-Refrigerant Heat Exchanger

The water-to-refrigerant heat exchanger is of a high quality co-axial coil for maximum heat transfer. The copper or optional cupro-nickel coil shall be deeply fluted to enhance heat transfer and minimize fouling and scaling. The coil has a working pressure of 650 psig on both the refrigerant side and 400 psig on the water side.

Water-to-Refrigerant Heat Exchanger and Suction Lines - Insulated Option

The water-to-refrigerant heat exchanger(s), water lines, and refrigerant suction lines shall be insulated to prevent condensation at low temperatures below 60F degrees.

Indoor Fan

The blower has nine blower motor/sheave combinations available.

Options of the blower motor/fan packages are selected and wired from the factory to match performance criteria suggested in the performance section.

The fan(s) are placed in a draw-through configuration. They are constructed of corrosion resistant galvanized material.

Electrical

The unit control box contains all necessary devices to allow heating and cooling operation to occur from a remote wall thermostat. These devices are as follows:

- 24 VAC energy limiting class II
- 75 VA (minimum) transformer.
- 24 VAC blower motor relay.
- 24 VAC compressor contactor for compressor control.
- Field thermostat connections shall be provided for ease of hook-up to a terminal strip located in the unit's control box.
- A high pressure switch shall protect the compressor against operation at refrigerant system pressures exceeding 650 psig.
- A low pressure switch shall protect the compressor against operation at refrigerant system pressures below 40 psig.
- Freeze protection (option) shall protect the compressor against operation at low water temperature.
- Factory installed wire harness shall be available for the Deluxe, UC400 and ZN524 control packages.

Nameplate information shall be provided for the application of either time-delay fuses or HACR circuit breakers for branch circuit protection from the primary source of power.

Deluxe Controls (option)

The deluxe control package provides a 75 VA transformer with circuit breaker. The controller includes a lockout relay, anti-short cycle compressor protection, random start delay, brown-out

Mechanical Specifications

protection, low pressure time delay, compressor delay on start and an open relay for night setback or pump request. Optional wiring from the factory for condensate overflow, hot gas reheat, electric heat, and compressor enable is also provided. Three LEDs (light emitting diodes) are included for diagnostics of the equipment.

DDC Controller (option)

The UC400 and ZN524 controller utilizes factory furnished and mounted DDC controls. The DDC control package includes a 75 VA (minimum) transformer. The controller provides random start delay, heating/cooling status, occupied/unoccupied mode, fan status and filter maintenance options. Optional wiring from the factory for condensate overflow is available. Three LEDs (light emitting diodes) are included for diagnostics of the equipment.

The controller is capable of a standalone application, or as applied to a full building automation installation.

With this controller, the unit is capable of a hot gas reheat (for dehumidification), boilerless control for electric heat, waterside economizing, and support of variable speed pump control applications.

Economizing Coil (option)

The waterside economizing package is an external unit accessory for field installation. The economizing coil is designed to perform with the WSHP at unit measured flow rate of 80.6°F DB/66.2°F WB with 45°F EWT.

All hydronic coils are of 3/8 in. (6-20 ton units), 1/2 in. (25 ton unit) copper and aluminum plate fin combination. All coils are proof and leak tested from the manufacturer.

The proof test is performed at 1.5 times the maximum operating pressure and the leak test at the maximum operating pressure.

A dual sloped non corrosive drain pan is easily accessible and cleanable for the hydronic economizing coil.

An electronic two-position, 3-way valve meters water flow to the economizing coil during the economizing mode. It is factory set to energize the economizing mode at 55°F, while simultaneously halting mechanical operation of the compressor.

The economizer is field attached to the equipment.

Electric Heat (option)

Boilerless control electric heat is factory wired and tested.

The boilerless control option is composed of a controls interface for a field provided boilerless or supplemental electric heat selection. The heater for this model is placed 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.

Hot Gas Reheat (option)

Dehumidification is provided through a hot gas reheat option. The coil consists of 3/8 in./1/2 in. copper tubes mechanically expanded into evenly spaced aluminum fins. All coils are proof and leak tested. The proof test must be performed at 1.5 time the maximum operating pressure and the leak test performed at the maximum operating pressure.

Ball Valves (option)

Ball valves are field installed between the unit and the supply and return lines of the loop to stop water flow to the unit in a maintenance or service situation.

Motorized Water Valve (option)

When extreme fluid temperature conditions do not exist with an open loop system, a motorized water valve may be applied to each water-source heat pump. The motorized valve shall stop flow

to the unit, causing pressures to rise. This rise in pressure will halt pump operation to provide greater energy savings of the entire system.

Hoses (option)

Hoses consists of a stainless steel outer braid with an inner core of tube made of a nontoxic synthetic polymer material. The hoses are suitable for water temperatures ranging between 33°F and 211°F without the use of glycol.

Automatic Flow Devices (option)

The automatic flow kit contains a Hays Mesurflo® automatic flow control valve, two ball valves, two flexible hoses, a high flow Y-strainer, and may include a strainer blow-down and various other accessories.

The automatic flow control valve is factory set to a rated flow, and shall automatically control the flow to within 10% of the rated value over a 40 to 1 differential pressure, operating range (2 to 80 PSID). Operational temperature is rated from fluid freezing, to 225°F. The valve body shall be constructed from hot forged brass UNS C37700 per ASTM B-283 latest revision. For more information pertaining to the automatic balancing hose kits, see literature documentation WSHP-PRC025-EN.



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