



## Heating and Air Conditioning TECHNICAL GUIDE

### R-410A ZH/ZJ SERIES 3 - 12-1/2 TON 60 Hertz



ZH/ZJ 3 THROUGH 10 TON



ZH 12-1/2 TON



ZJ 12-1/2 TON

# PREDATOR<sup>®</sup>

## Description

### ASHRAE 90.1 COMPLIANT

YORK<sup>®</sup> Predator<sup>®</sup> units are convertible single packages with a common footprint cabinet and common roof curb for all 3 through 12-1/2 ton models. All 6-1/2 through 12-1/2 ton units have two compressors with independent refrigeration circuits to provide 2 stages of cooling. The units were designed for light commercial applications and can be easily installed on a roof curb, slab, or frame.

All Predator<sup>®</sup> units are self-contained and assembled on rigid full perimeter base rails allowing for 3-way forklift access and overhead rigging. Every unit is completely charged, wired, piped, and tested at the factory to provide a quick and easy field installation.

All units are convertible between side and down airflow. Independent economizer designs are used on side and down discharge applications, as well as all tonnage sizes.

Predator<sup>®</sup> units are available in the following configurations: cooling only, cooling with electric heat, and cooling with gas heat. Electric heaters are available as factory-installed options or field-installed accessories.

All units provide constant supply air volume. A variable air volume (VAV) option, featuring a variable frequency drive, is available on 6-1/2 through 12-1/2 ton models only.

Tested in accordance with:



ARI Standard 340/360  
Commercial and Industrial Unitary  
Air Conditioning Equipment

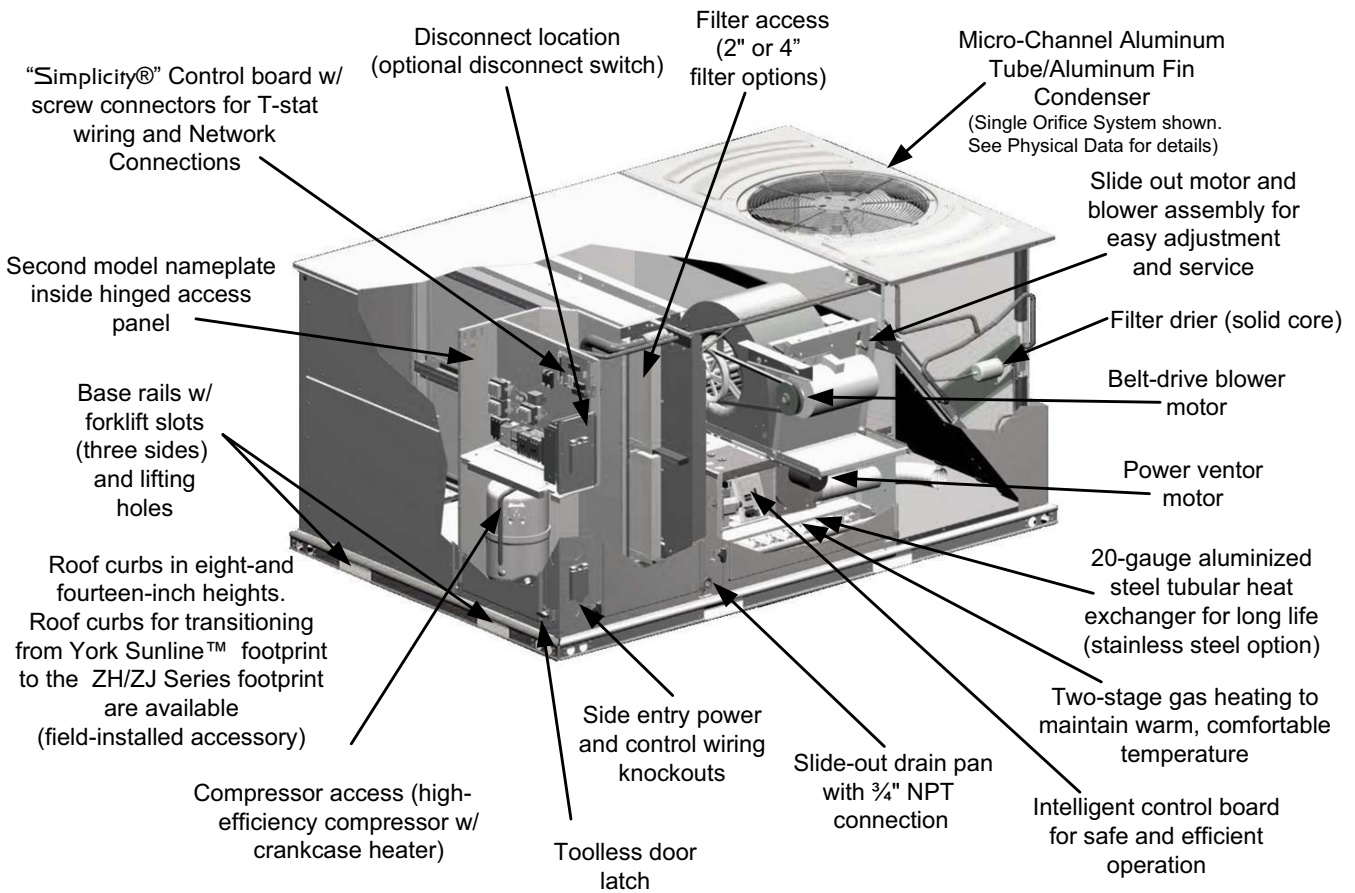


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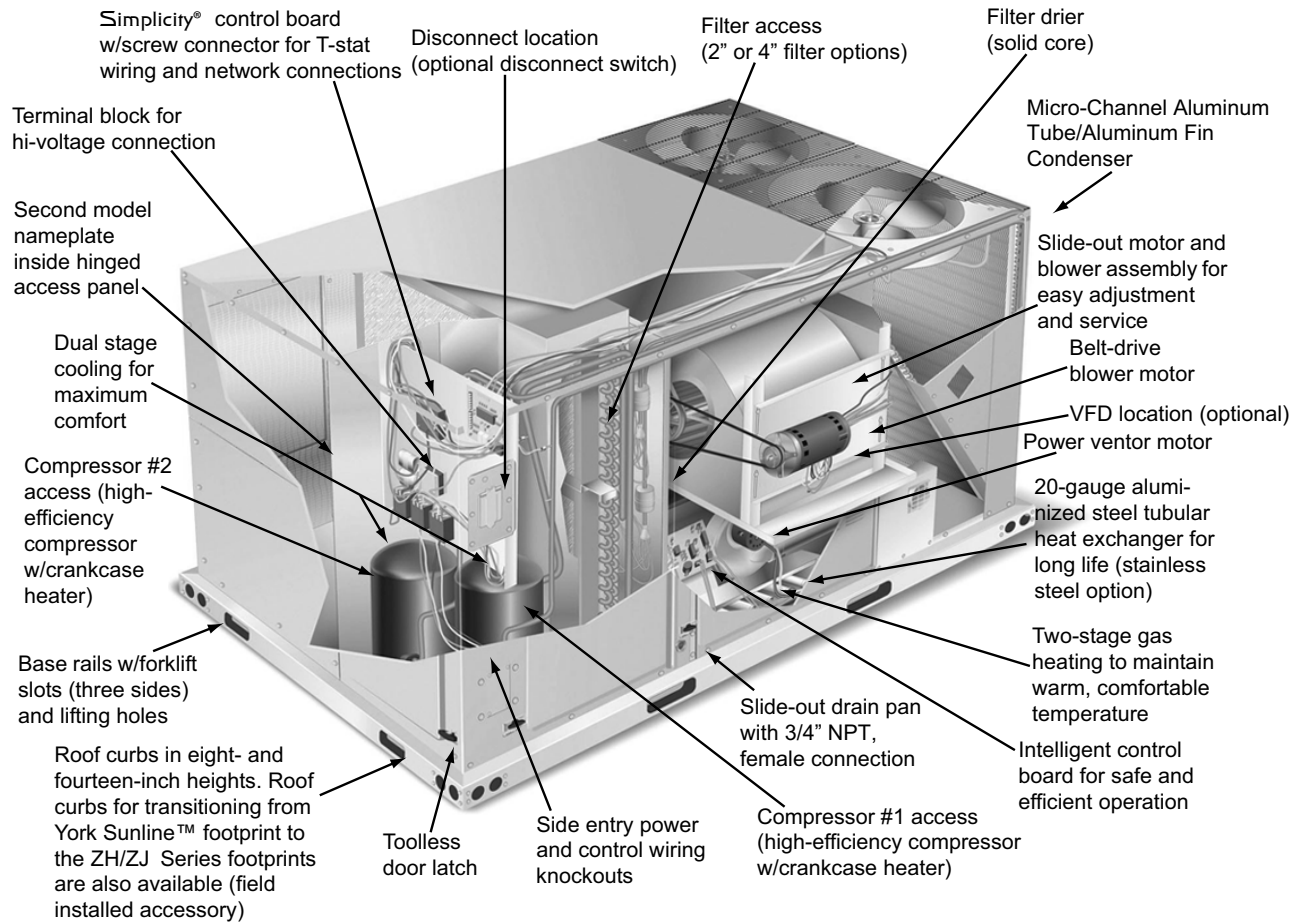
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## Component Location

### Cooling With Gas Heat (3 Through 5 Ton)

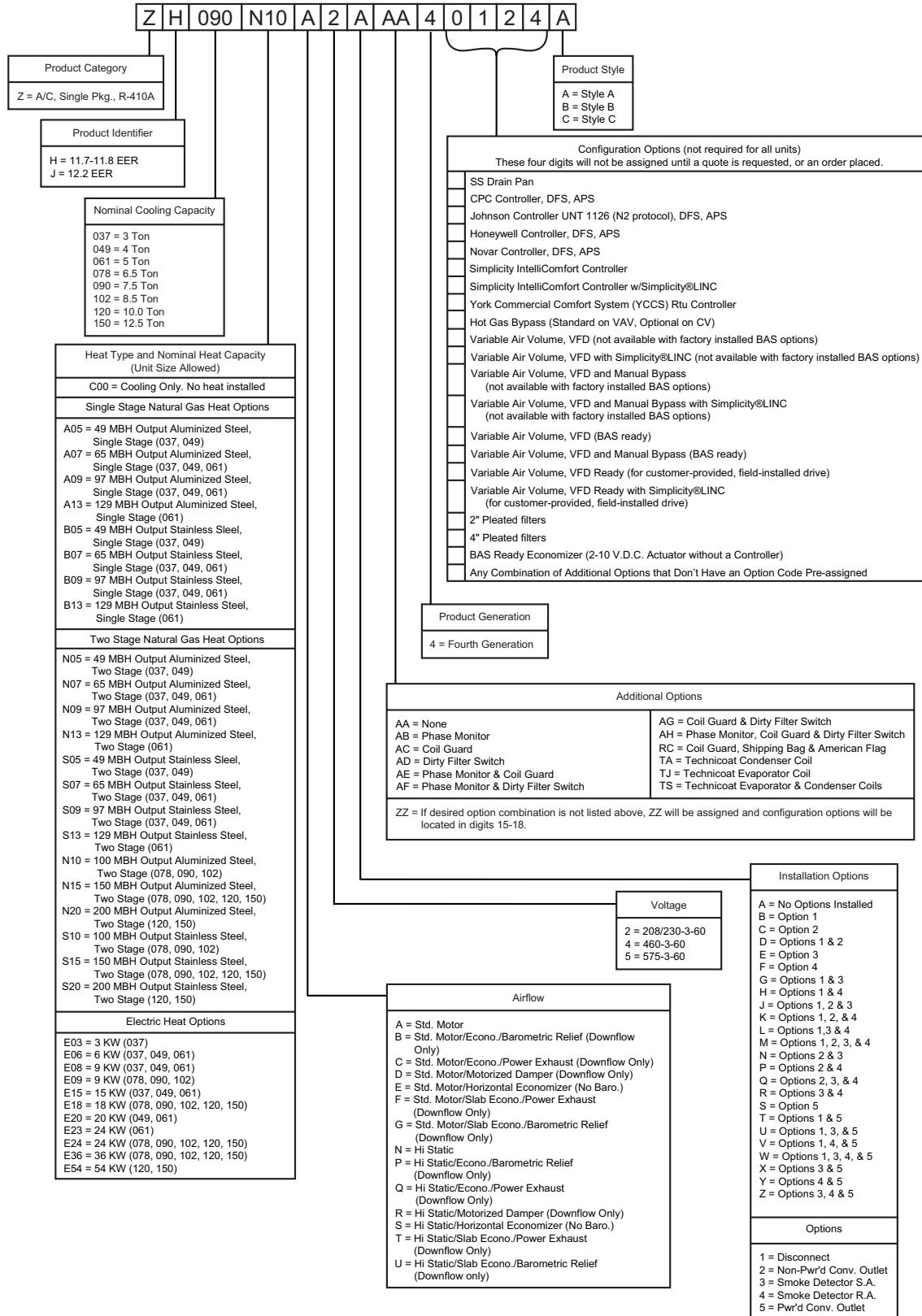


## Cooling With Gas Heat (6 1/2 Through 10 Tons)



# Nomenclature

## 3-12.5 Ton York® Model Number Nomenclature





## Features and Benefits

### Standard Features

- **High Efficiency** – High efficiency units reach as high as 12.2 EER. Gas/electric units have electronic spark ignition and power vented combustion with steady state efficiencies of 80%. These efficiencies exceed all legislated minimum levels and provide low operating costs.

- **Service Friendly** – The Predator® incorporates a number of enhancements which improve serviceability.

The motor and blower slide out of the unit as a common assembly. This facilitates greater access to all the indoor airflow components, thus simplifying maintenance and adjustment.

Service time is reduced through the use of hinged, toolless panels. Such panels provide access to frequently inspected components and areas, including the control box, compressors, filters, indoor motor & blower, and the heating section. The panels are screwed in place at the factory to prevent access by children or other unauthorized persons. It is recommended that the panels be secured with screws once service is complete.

Service windows have been placed in both condenser section walls. Rotation of the cover allows easy access to the condenser coils for cleaning or inspection.

Both the unit control board and ignition control board utilize flash codes to aid in diagnosis of unit malfunctions. Unique alarm codes quickly identify the source of the unit alarm.

All units use the same standard filter size. This standardization removes any confusion on which filter sizes are needed for replacement.

The non-corrosive drain pan slides out of the unit to permit easy cleaning. The drain pan is accessed by removing the drain pan cover plate on the rear of the unit. Once the plate is removed, the drain pan slides out through the rear of the unit.

All Predator® units have a second model nameplate located inside the control access door. This is to prevent deterioration of the nameplate through weathering.

- **Coil Technology** – All ZH/ZF condensers utilize Micro-Channel “all-aluminum” condensers which provide improved heat transfer capabilities, superior corrosion protection and reduced charge volumes. All evaporators utilize a conventional copper tube/aluminum fin design for proven reliability and performance.
- **Environmentally Aware** – For improved Indoor Air Quality, foil faced insulation is used exclusively throughout the units.
- **Balanced Heating** – The Predator® offers “Ultimate Heating Comfort” with a balance between 1<sup>st</sup> and 2<sup>nd</sup> stage gas heating. The first stage of a gas heat Predator® unit provides 70% of the heating capacity 3 thru 5 tons and 60% heating capacity 6-1/2 thru 12-1/2 tons. Balanced heating allows the unit to better maintain desired temperatures.
- **Convertible Airflow Design** – The side duct openings are covered when they leave the factory. If a side supply/return is desired, the installer simply removes the two side duct covers from the outside of the unit and installs them

over the down shot openings. No panel cutting is required. Convertible airflow design allows maximum field flexibility and minimum inventory.

- **System Protection** - Suction line freezestats are supplied on all units to protect against loss of charge and coil frosting when the economizer operates at low outdoor air temperatures while the compressors are running. Every unit has solid-core liquid line filter-driers and high and low-pressure switches. Internal compressor protection is standard on all compressors. Crankcase heaters are standard on reciprocating compressors. Scroll compressors do not require crankcase heaters. Phase Monitors are standard on units with scroll compressors. This accessory monitors the incoming power to the unit and protects the unit from phase loss and reversed phase rotation.
- **Advanced Controls** - Simplicity® control boards have standardized a number of features previously available only as options or by utilizing additional controls.
  - **Low Ambient** - An integrated low-ambient control allows all units to operate in the cooling mode down to 0°F outdoor ambient without additional assistance. Optionally, the control board can be programmed to lockout the compressors when the outdoor air temperature is low or when free cooling is available.

### CAUTION

The Simplicity® control board used in this product will effectively operate the cooling system down to 0°F when this product is applied in a comfort cooling application for people. An economizer is typically included in this type of application. When applying this product for process cooling applications (computer rooms, switchgear, etc.), please reference applications bulletin AE-011-07 or call the applications department for Unitary Products @ 1-877-UPG-SERV for guidance. Additional accessories may be needed for stable operation at temperatures below 30° F.

- **Anti-Short Cycle Protection** - To aid compressor life, an anti-short cycle delay is incorporated into the standard controls. Compressor reliability is further ensured by programmable minimum run times. For testing, the anti-short cycle delay can be temporarily overridden with the push of a button.
- **Fan Delays** - Fan on and fan off delays are fully programmable. Furthermore, the heating and cooling fan delay times are independent of one another. All units are programmed with default values based upon their configuration of cooling and heat.
- **Safety Monitoring** - The control board monitors the high and low-pressure switches, the freezestats, the gas valve, if applicable, and the temperature limit switch on gas and electric heat units. The unit control board will alarm on ignition failures, compressor lockouts and repeated limit switch trips.

- **Nuisance Trip Protection and Strikes** - To prevent nuisance trouble calls, the control board uses a “three times, you’re out” philosophy. The high and low-pressure switches and the freezestats must trip three times within two hours before the unit control board will lock out the associated compressor.
- **On Board Diagnostics** - Each alarm will energize a trouble light on the thermostat, if so equipped, and flash an alarm code on the control board LED. Each high and low-pressure switch alarm as well as each freezestat alarm has its own flash code. The control board saves the five most recent alarms in memory, and these alarms can be reviewed at any time. Alarms and programmed values are retained through the loss of power.
- **Reliable** – From the beginning – All units undergo computer automated testing before they leave the factory. Units are tested for refrigerant charge and pressure, unit amperage, and 100% functionality. For the long term – All Predator® units are painted with a long lasting, powder paint that stands up over the life of the unit. The paint used has been proven by a 1000 hour salt spray test.
- **Flexible Placement** – All models and configurations share the same cabinet/footprint and thus the same roof curb. You have the flexibility to set one curb and choose the correct tonnage size and heating option after the internal loads have been determined.

To further simplify planning and installation, Predator® cabinets are designed to fit your roof. With the optional roof curb, the unit ductwork is designed to fit around 24” on-center joists or between 48” on-center joists.

The drain pan can be rotated to drain to either the front or the rear of the unit. Additionally, the drain pan can be fitted to drain through the roof curb. As it is sometimes difficult to have a level installation, the drain pan features a generous slope to ensure proper drainage.

- **Full Perimeter Base Rails** – The permanently attached base rails provide a solid foundation for the entire unit and protect the unit during shipment. The rails offer forklift access from 3 sides, and rigging holes are available so that an overhead crane can be used to place the units on a roof.
- **Easy Installation** – Gas and electric utility knockouts are supplied in the unit underside as well as the side of the unit. A clearly identified location is provided to mount a field supplied electrical disconnect switch. Utility connections can be made quickly and with a minimum amount of field labor. All units are shipped with 2” throw-away filters installed.
- **Wide Range of Indoor Airflows** – All indoor fan motors are belt-drive type providing maximum flexibility to handle most airflow requirements. For high static applications, factory installed alternate indoor fan motors are available. With the optional indoor fan motor, all units can supply nominal airflow at a minimum of 1.5” ESP.

A variable air volume (VAV) option using a variable frequency drive is available on 6-1/2 through 12-1/2 ton models for applications requiring a constant supply duct pressure. A differential pressure transducer is used to

monitor supply duct static pressure while a VAV control board provides a speed reference signal to the VFD to control the output of the indoor blower motor.

- **Warranty** - All models include a 1-year limited warranty on the complete unit. Compressors and electric heater elements each carry a 5-year warranty. Aluminized steel and stainless steel tubular heat exchangers carry a 10-year warranty.

## Factory Installed Options

YORK® offers several equipment options factory installed, for the Predator® line.

- **Optional Factory Installed Economizers** - Predator units offer a variety of optional factory installed economizers with low leak dampers. The outdoor air enthalpy sensor enables economizer operation if the outdoor enthalpy is less than the setpoint of the economizer logic module. See economizer options section to determine the correct economizer for your application.
- **Downflow Economizer - (With barometric relief)** - The economizer is provided with a single enthalpy input. The economizer is 2% low leakage type, and is shipped installed and wired. The installer needs only to assemble and mount the outdoor air hood (Provided). The economizer has spring return, fully modulating damper actuators and is capable of introducing up to 100% outdoor air. As the outdoor air intake dampers open, the return air dampers close. The changeover from mechanical refrigeration to economizer operation is regulated by the standard single enthalpy input. There is an optional input dual dry bulb available. To meet regulated air standards, the economizer control accepts an optional CO<sub>2</sub> input for demand ventilation. With single enthalpy input, the economizer control monitors outdoor air. The dual enthalpy kit provides a second input used to monitor the return air. With a dual input kit installed, the economizer control compares the values of the two enthalpy or temperature inputs and positions the dampers to provide the maximum efficiency possible.
- **Horizontal Economizer - (Without barometric relief)** - All features of the downflow economizer exist except you must order the duct mount barometric relief separately. **You must order a 1EH0408 if you are installing a power exhaust. You can order a 1RD0411 Barometric Relief for horizontal flow economizers only.**
- **BAS Ready Economizer -(With barometric relief)** - The economizer is provided with an actuator that requires a 2-10V DC input from an external source (i.e., field installed building automation system controller). Power exhaust options are available. The economizer is 2% low leakage type with spring return and fully modulating dampers capable of introducing up to 100% outside air. Also include 2” pleated filters. BAS ready actuators have an adjustable auxiliary end-switch for optional power exhaust control.

For units with optional VAV or Simplicity® Intelli-Comfort™ control, a factory-installed dry bulb sensor determines if outdoor air temperature is low enough to

provide free-cooling operation. (Field-installed humidity sensors for either outdoor air or outdoor & return air streams are available for single enthalpy and differential enthalpy configurations, respectively.)

- **Slab Economizer for Energy Recovery Ventilators- (With barometric relief and Fresh Air Hood)** - The economizer is provided with a single enthalpy input. The economizer is 2% low leakage type, and is shipped installed and wired. The economizer has spring return, fully modulating damper actuators and is capable of introducing up to 100% outdoor air. As the outdoor air intake dampers open, the return air dampers close. The changeover from mechanical refrigeration to economizer operation is regulated by the standard single enthalpy input. There is an optional input dual dry bulb available. To meet regulated air standards, the economizer control accepts an optional CO<sub>2</sub> input for demand ventilation. With single enthalpy input, the economizer control monitors outdoor air. The dual enthalpy kit provides a second input used to monitor the return air. With a dual input kit installed, the economizer control compares the values of the two enthalpy or temperature inputs and positions the dampers to provide the maximum efficiency possible.
- **Power Exhaust (Downflow only)** - This accessory installs in the unit with a down flow economizer.
- **Motorized Outdoor Air Damper** - The motorized outdoor air damper includes a slide-in/plug-in damper assembly with an outdoor air hood and filters. The outdoor air dampers open to the preset position when the indoor fan motor is energized. The damper has a range of 0% to 100% outdoor air entry. Factory installed option or field installed accessory.
- **Alternate Indoor Blower Motor** - For applications with high static restrictions, units are offered with optional indoor motors that provide higher static output and/or higher airflow, depending upon the installer's needs.
- **Variable Air Volume (VAV; 6-1/2 through 12-1/2 ton, only)** - A factory-installed variable frequency drive (VFD), mounted in the Blower Access compartment, is used to control the speed of the indoor blower motor in order to maintain a constant static pressure in the supply duct. A pressure transducer and VAV control board are mounted inside the control box. The drive comes completely wired and pre-programmed from the factory.  
An optional, factory-installed manual bypass switch available with factory-installed VFD can be found in the Blower Motor Access compartment. The switch can be used to either route power to the VFD for modulating control of the blower motor, to bypass the drive and operate the motor at full speed, or to power the drive (and not the motor) for diagnostic purposes.  
Due to space limitations, VAV is not available with any of the factory-installed BAS options, but is available with 'BAS-ready' models. Terminal blocks are provided in the control box for field wiring of the customer-installed BAS.

A 'VFD-ready' option provides the provisions for a customer-installed drive. The unit comes with a mounting bracket installed in the Blower Access compartment which may accommodate other vendor's drives depending on their size. In order to utilize the unit's mounting bracket, the maximum recommended drive dimensions are limited to approximately 9" H x 5" W x 7.5" D.

If the drive will not fit in the allotted space, then it will have to be mounted elsewhere; either within the building on a perpendicular wall which is not subjected to excessive temperature, vibration, humidity, dust, corrosive gas, explosive gas, etc., or within an appropriate enclosure rated for outside installation to safeguard against moisture, dust and excessive heat. A terminal block located in the control box is provided for field connection of the VFD controls.

- **Aluminized Steel Gas Heat Exchanger** - For applications in non-corrosive environments.
- **Stainless Steel Gas Heat Exchanger** - For applications in corrosive environments, this option provides a full stainless steel heat exchanger assembly.
- **Stainless Steel Drain Pan** - An optional rust-proof stainless steel drain pan is available to provide years of trouble-free operation in corrosive environments.
- **Electric Heaters** - The electric heaters range from 3kW to 54kW and are available in all the voltage options of the base units. All heaters are intended for single point power supply.
- **Disconnect Switch** - For gas heat units and cooling units with electric heat, a HACR breaker sized to the unit is provided. For cooling only units, a switch sized to the largest electric heat available for the particular unit is provided. Factory installed option only.
- **Convenience Outlet - (Non-Powered/Powered)** - This option locates a 120V single-phase GFCI outlet with cover, on the corner of the unit housing adjacent to the compressors. The "Non-powered" option requires the installer to provide the 120V single-phase power source and wiring. The "Powered" option is powered by a stepdown transformer in the unit. Factory installed option only.
- **Smoke Detectors** - The smoke detectors stop operation of the unit by interrupting power to the control board if smoke is detected within the air compartment. Available for both the supply and/or return air configurations.
- **Filters** - 2" Pleated MERV 7 or 4" Pleated MERV 14 are available to meet LEED requirements. A 2" Throwaway is shipped as standard.

## **WARNING**

Factory-installed smoke detectors may be subjected to extreme temperatures during "off" times due to outside air infiltration. These smoke detectors have an operational limit of -4°F to 158°F. Smoke detectors installed in areas that could be outside this range will have to be relocated to prevent false alarms.

- **Phase Monitors** - Designed to prevent unit damage. The phase monitor will shut the unit down in an out-of phase condition. **(Standard on units with Scroll Compressors.)**
- **Coil Guard** - Customers can purchase a coil guard kit to protect the condenser coil from damage. Additionally, this kit stops animals and foreign objects from entering the space between the inner condenser coil and the main cabinet. This is not a hail guard kit.
- **Dirty Filter Switch** - This kit includes a differential pressure switch that energizes the fault light on the unit thermostat, indicating that there is an abnormally high pressure drop across the filters. Factory installed option or field installed accessory.
- **Technicoat Condenser Coils** - The condenser coils are coated with a phenolic coating for protection against corrosion due to harsh environments.
- **Technicoat Evaporator Coil** - The evaporator coils are coated with a phenolic coating for protection against corrosion due to harsh environments.
- **Hot Gas Bypass** - Allows operation during low load conditions while avoiding coil frosting and damage to compressor. When suction pressure falls below valve setpoint, the valve modulates hot gas to the inlet of the evaporator. HGBP is standard on all units with VAV and optional with constant-volume units.

## Control Options

- **BAS - Building Automation System Controls Simplicity® INTELLI-Comfort™ Control** - The York® Simplicity® INTELLI-Comfort™ control is factory installed. It includes a supply air sensor, a return air sensor, and an outside air sensor. There are provisions for a field installed dirty filter indicator switch, an air-proving switch, an Outside Air Humidity sensor, a Return Air Humidity sensor, an Inside IAQ sensor, and an Outside Air IAQ sensor. Construction mode operation, 365-day real time clock with 7 day programming plus holiday scheduling is built-in. Two different modes of demand ventilation are achieved through the INTELLI-Comfort™ using CO<sub>2</sub> sensors. It uses an inside CO<sub>2</sub> sensor to perform Demand Ventilation. It can also use an Outside CO<sub>2</sub> sensor to perform Differential Demand Ventilation. It uses a Patented Comfort Ventilation algorithm to provide comfortable ventilation air temperature. The patented economizer-loading algorithm will protect the equipment when harsh operating conditions exist. Humidity in the occupied space or return duct can be monitored and controlled via humidity sensors and the on-board connection for hot gas re-heat system. It uses the INTELLI-Start™ algorithm to maximize energy savings by recovering the building from the Unoccupied Setpoints to the Occupied Setpoints just in time for the Occupied Time Period to begin. The Simplicity® INTELLI-Comfort™ balances space temperature, ventilation air temperature, CO<sub>2</sub> and humidity for ultimate comfort.
- **Simplicity® INTELLI-Comfort™ with Simplicity®LINC Control** - The York® Simplicity® INTELLI-Comfort™ with Simplicity®LINC control is factory installed. It includes all the features of the INTELLI-Comfort™ control with an additional control to translate communications from MODBUS to the BACnet MSTP protocol.
- **Novar® BAS Control** - The Novar® building automation system controller is factory installed. Includes supply air sensor, return air sensor, dirty filter indicator switch, and air proving switch.
- **Johnson Controls BAS Control** - The Johnson Control YK-UNT-1126 building automation system controller is factory installed. Includes supply air sensor, return air sensor, dirty filter indicator switch, and air proving switch.
- **CPC BAS Control** - The Computer Process Controls Model 810-3060 ARTC Advanced Rooftop building automation system controller is factory installed. Includes supply air sensor, return air sensor, dirty filter indicator switch and air proving switch.
- **Honeywell BAS Control** - The Honeywell W7750C building automation system controller is factory installed. Includes air supply sensor, return air sensor, dirty filter indicator switch, and air proving switch.
- **York Commercial Comfort System (YCCS)** - Provides rooftop system integration for YCCS single zone and change-over bypass systems.

## Field Installed Accessories

YORK® offers several equipment accessories for field installation, for the Predator® line.

- **Downflow Economizer - (With barometric relief)** - The economizer is provided with a single enthalpy input. The economizer is 2% low leakage type. The economizer has spring return, fully modulating damper actuators and is capable of introducing up to 100% outdoor air. As the outdoor air intake dampers open, the return air dampers close. The changeover from mechanical refrigeration to economizer operation is regulated by the standard single enthalpy input. There is an optional input dual dry bulb available. To meet regulated air standards, the economizer control accepts an optional CO<sub>2</sub> input for demand ventilation. With single enthalpy input, the economizer control monitors outdoor air. The dual enthalpy kit provides a second input used to monitor the return air. With a dual input kit installed, the economizer control compares the values of the two enthalpy or temperature inputs and positions the dampers to provide the maximum efficiency possible.
- **Horizontal Economizer - (Without barometric relief)** - All features of the downflow economizer exist except you must order the duct mount barometric relief separately. **You must order a 1EH0408 if you are installing a power exhaust. You can order a 1RD0411 Barometric Relief for horizontal flow economizer.**
- **Slab Economizer for Energy Recovery Ventilator - (Without barometric relief or Fresh Air Hood)** - The economizer is provided with a single enthalpy input. The economizer is 2% low leakage type. The economizer has spring return, fully modulating damper actuators and is capable of introducing up to 100% outdoor air. As the outdoor air intake dampers open, the return air dampers close. The changeover from mechanical refrigeration to economizer operation is regulated by the standard single enthalpy input. There is an optional input dual dry bulb



available. To meet regulated air standards, the economizer control accepts an optional CO<sub>2</sub> input for demand ventilation. With single enthalpy input, the economizer control monitors outdoor air. The dual enthalpy kit provides a second input used to monitor the return air. With a dual input kit installed, the economizer control compares the values of the two enthalpy or temperature inputs and positions the dampers to provide the maximum efficiency possible.

**You can order 1EH0409 Barometric Relief/FA Hood for field installations without an ERV.**

- **Dual Enthalpy Control, Accessory** - This kit contains the required components to convert a single enthalpy economizer to dual enthalpy.
- **Barometric Relief Damper** - Zero to 100% capacity barometric relief dampers for use with horizontal flow, or field installed slab economizers.
- **Power Exhaust** - This accessory installs in the unit with a down flow economizer. Power exhaust plugs into the connector in the unit bulkhead. **You must purchase 1EH0408 barometric relief when applying to a horizontal flow application.**
- **Manual Outdoor Air Damper** - Like the motorized outdoor air damper, each manual outdoor air damper includes a slide-in damper assembly with an outdoor air hood and filters. Customers have a choice of dampers with ranges of 0% to 100% or 0% to 35% outdoor air entry.
- **Motorized Outdoor Air Damper** - The motorized outdoor air damper includes a slide-in/plug-in damper assembly with an outdoor air hood and filters. The outdoor air dampers open to the preset position when the indoor fan motor is energized. The damper has a range of 0% to 100% outdoor air entry. Factory installed option or field installed accessory.
- **Smoke Detectors** - The smoke detectors stop operation of the unit by interrupting power to the control board if smoke is detected within the air compartment.
- **CO<sub>2</sub> Sensor** - Senses CO<sub>2</sub> levels and automatically overrides the economizer when levels rise above the preset limits.
- **Dirty Filter Switch** - This kit includes a differential pressure switch that energizes the fault light on the unit thermostat, indicating that there is an abnormally high pressure drop across the filters.
- **Coil Guard** - Field installed decorative wire coil guard.
- **Hail Guard** - This kit includes a sloped hood which installs over the outside condenser coil and prevents damage to the coil fins from hail strikes. Field installed accessory only.
- **Flue Exhaust Extension Kit** - In locations with wind or weather conditions which may interfere with proper exhausting of furnace combustion products, this kit can be installed to prevent the flue exhaust from entering nearby fresh air intakes.
- **-60°F Gas Heat Kit** - For installations which require gas heat units to perform in low ambient temperatures, a gas section heating kit is available. This kit provides electric heat in the gas heat controls section to ensure the gas valve and controls will continue to function properly at extremely low temperatures.
- **Gas Heat High Altitude Kit** - This kit converts a gas heat unit to operate at high altitudes, 2,000 to 6,000 feet. Conversion kits are available for natural gas and propane.
- **Gas Heat Propane Conversion Kit** - This kit converts a gas-fired heater from natural gas to propane. It contains the main burner orifices and gas valve replacement springs.
- **Gas Piping Kit** - Contains pipe nipples, fittings and gas cock required for gas supply connection with external shut off.
- **Electric Heaters** - The electric heaters range from 3kW to 54kW and are available in all the voltage options of the base units. The 54kW/208-240 volt, field-installed heater kit is not available with VAV units due to a lack of space to accommodate the heater's fuse block accessory. All heaters are dual staged. Cooling units include an adapter panel for easy installation of the electric heaters. Necessary hardware and connectors are included with the heaters. All heaters are intended for single point power supply.
- **Low Limit / Compressor Lockout Kit**
  - **Compressor Lockout (CLO):** To prevent mechanical (compressorized) operation of the unit during cold outdoor conditions where there is a risk of returning liquid refrigerant back to the compressors.
  - **Low Limit Control (LLC):** To prevent the supply air from dropping below a specified setpoint by utilizing the units first stage heating means when there is a demand for cooling during cold outside conditions.
- **Metal Frame Filter Kit** - Metal frame with polyester filter medium.
- **Permanent Filters** - Permanent filters are available.
- **Roof Curbs** - The roof curbs have insulated decks and are shipped disassembled. The roof curbs are available in 8" and 14" heights. For applications with security concerns, burglar bars are available for the duct openings of the roof curbs.
- **Roof Curb Transition - Single Piece Adapter (10" High)** - Roof curbs for transitioning from Sunline™ units to Predator® units. Fits 7.5 to 12.5 Sunline™ roof curbs only.
- **Burglar Bars** - Mount in the supply and return openings to prevent entry into the duct work.
- **Thermostat** - The units are designed to operate with 24-volt electronic and electro-mechanical thermostats. All units (with or without an economizer) operate with two-stage heat/two-stage cool or two-stage cooling only thermostats, depending upon unit configuration.

## Accessories

### Field Installed Accessories - Non-Electrical

| MODEL   | VOLTAGE | DESCRIPTION   | WHERE USED  |
|---------|---------|---|---|
| 1BD0408 | All     | Burglar Bars, Downflow  | All Cabinets  |
| 1CG0419 | All     | Coil Guard  | (Electric / Electric Models), 50" Tall Standard Cabinets        |
| 1CG0420 | All     | Coil Guard  | (Gas / Electric Models), 50" Tall Standard Cabinets             |
| 1CG0425 | All     | Coil Guard  | (Electric / Electric Models), 50"- Double "V" cabinets          |
| 1CG0426 | All     | Coil Guard  | (Gas / Electric Models), 50"- Double "V" cabinets               |
| 1CG0427 | All     | Coil Guard  | (Electric / Electric Models), 42" Tall Cabinets                 |
| 1CG0428 | All     | Coil Guard  | (Gas / Electric Models), 42" Tall Cabinets                      |
| 1CG0422 | All     | Coil Guard  | (Gas / Electric Models), 50" - Single "V" cabinets              |
| 1CG0423 | All     | Coil Guard  | (Electric / Electric Models), 50" Single "V" Cabinets           |
| 1HG0411 | All     | Hail Guard Kit  | All Tall (50") Standard Cabinets, (Excludes 12.5T "V" cabinets) |
| 1HG0415 | All     | Hail Guard Kit  | All Short (42") Standard Cabinets                               |
| 1FE0411 | All     | Flue Exhaust Extension Kit  | All Cabinets  |
| 1FF0410 | All     | 2" only Metal Filter Frame Kit                                      | All Tall 50" Cabinets   |
| 1FF0411 | All     | 2" only Metal Filter Frame Kit                                      | All Tall 42" Cabinets   |
| 1FL0402 | All     | Permanent 2" only Filter Kit Includes (4) Four Filters)             | All Tall 50" Cabinets   |
| 1FL0423 | All     | Permanent 2" only Filter Kit (Includes (4) four Filters)            | All Tall 42" Cabinets   |
| 1GP0405 | All     | Gas Piping Kit  | All Cabinets  |
| 1HA0442 | All     | High Altitude Kit for Natural Gas                                   | All 6 - 12T Cabinets  |
| 1HA0450 | All     | High Altitude Kit for Natural Gas                                   | 3 - 5T (80 & 160 MBH Input)                                     |
| 1HA0451 | All     | High Altitude Kit for Natural Gas                                   | 3 - 4T (60 MBH Input)   |
| 1HA0443 | All     | High Altitude Kit for Propane                                       | All 6 - 12T Cabinets  |
| 1HA0452 | All     | High Altitude Kit for Propane                                       | 3 - 5T (80 & 160 MBH Input)                                     |
| 1HA0453 | All     | High Altitude Kit for Propane                                       | 3 - 4T (60 MBH Input)   |
| 1NP0442 | All     | Propane Conversion Kit  | All 6 - 12T Cabinets  |
| 1NP0454 | All     | Propane Conversion Kit  | 3 - 5T (80 & 160 MBH Input)                                     |
| 1NP0455 | All     | Propane Conversion Kit  | 3 - 4T (60 MBH Input)   |
| 1RC0470 | All     | Roof Curb, 8" Height  | All Cabinets  |
| 1RC0471 | All     | Roof Curb, 14" Height   | All Cabinets  |
| 1RC0472 | All     | Roof Curb, Transition (7.5 T thru 12.5T Sunline to Predator 3- 12T) | All Cabinets  |
| 1RC0474 | All     | Roof Curb, Transition (3 T thru 6 T Sunline to Predator 3 - 12T)    | All Cabinets  |
| 1WC0412 | All     | Wooden Crate for extra protection during shipping and handling      | Standard Cabinets Only (not applicable to units 119" in length) |
| 1LN0407 | All     | Low NOx Kit   | 3 - 5T (80 & 160 MBH Input)                                     |
| 1LN0408 | All     | Low NOx Kit   | 3 - 5T (60 MBH Input)   |

**Accessories (Continued)****Field Installed Accessories - Electric Heat**

| MODEL       | VOLTAGE | DESCRIPTION        | WHERE USED                                       |
|-------------|---------|--------------------|--|
| 2TP04520925 | 230     | 9kW Electric Heat  | All 50" Cabinet 6.5 and 8.5 Ton Models           |
| 2TP04520946 | 460     |                    |  |
| 2TP04520958 | 575     |                    |  |
| 2TP04531825 | 230     | 18kW Electric Heat | All 50" Cabinet 6.5, 8.5, 10 and 12.5 Ton Models |
| 2TP04531846 | 460     |                    |  |
| 2TP04521858 | 575     |                    |  |
| 2TP04532425 | 230     | 24kW Electric Heat | All 50" Cabinet 6.5, 8.5, 10 and 12.5 Ton Models |
| 2TP04532446 | 460     |                    |  |
| 2TP04522458 | 575     |                    |  |
| 2TP04533625 | 230     | 36kW Electric Heat | All 50" Cabinet 6.5, 8.5, 10 and 12.5 Ton Models |
| 2TP04533646 | 460     |                    |  |
| 2TP04523658 | 575     |                    |  |
| 2TP04525425 | 230     | 54kW Electric Heat | All 50" 10 and 12.5 Ton Models                   |
| 2TP04525446 | 460     |                    |  |
| 2TP04525458 | 575     |                    |  |
| 2TP04540925 | 230     | 9kW Electric Heat  | All 42" Cabinet 6.5, 7.5 and 8.5 Ton Models      |
| 2TP04540946 | 460     |                    |  |
| 2TP04540958 | 575     |                    |  |
| 2TP04541825 | 230     | 18kW Electric Heat | All 42" 6.5, 7.5 and 8.5 Ton Models              |
| 2TP04541846 | 460     |                    |  |
| 2TP04541858 | 575     |                    |  |
| 2TP04542425 | 230     | 24kW Electric Heat | All 42" Cabinet 6.5, 7.5 and 8.5 Ton Models      |
| 2TP04542446 | 460     |                    |  |
| 2TP04542458 | 575     |                    |  |
| 2TP04543625 | 230     | 36kW Electric Heat | All 42" Cabinet 6.5, 7.5 and 8.5 Ton Models      |
| 2TP04543646 | 460     |                    |  |
| 2TP04543658 | 575     |                    |  |
| 2TP04510325 | 230     | 3kW Electric Heat  | All 42" Cabinet 3 Ton Models                     |
| 2TP04510346 | 460     |                    |  |
| 2TP04510625 | 230     | 6kW Electric Heat  | All 42" Cabinet 3, 4 and 5 Ton Models            |
| 2TP04510646 | 460     |                    |  |
| 2TP04510825 | 230     | 9kW Electric Heat  | All 42" Cabinet 3, 4 and 5 Ton Models            |
| 2TP04510846 | 460     |                    |  |
| 2TP04510858 | 575     |                    |  |
| 2TP04511525 | 230     | 15kW Electric Heat | All 42" Cabinet 3, 4 and 5 Ton Models            |
| 2TP04511546 | 460     |                    |  |
| 2TP04511558 | 575     |                    |  |
| 2TP04512025 | 230     | 20kW Electric Heat | All 42" 4 and 5 Ton Models                       |
| 2TP04512046 | 460     |                    |  |
| 2TP04512058 | 575     |                    |  |
| 2TP04512325 | 230     | 24kW Electric Heat | All 42" Cabinet 5 Ton Models                     |
| 2TP04512346 | 460     |                    |  |
| 2TP04512358 | 575     |                    |  |

**Accessories (Continued)****Field Installed Accessories - Fresh Air**

| MODEL        | VOLTAGE | DESCRIPTION   | WHERE USED       |
|--------------|---------|---|------------------|
| 1EH0407      | All     | Barometric Relief Kit for Power Exhaust, Downflow Application                         | All Cabinets     |
| 1EH0408      | All     | Barometric Relief Kit for Power Exhaust, Horizontal Application                       | All Cabinets     |
| 1EH0409      | All     | Barometric Relief/Hood Kit - Required for field installed slab economizer without ERV | All Cabinets     |
| 1FA0413      | All     | Manual Outside Air Damper 0-35%, Downflow   | All Cabinets     |
| 1FA0414      | All     | Manual Outside Air Damper 0-100%, Downflow  | All Cabinets     |
| 1RD0411      | All     | Barometric Relief Kit for Horizontal Applications                                     | All Cabinets     |
| 2EC04700924  | All     | Dual Enthalpy Control   | All Cabinets     |
| 2EE04705724  | All     | Downflow Economizer, Slab type for ERV, (no Barometric Relief or FA hood)             | All 50" Cabinets |
| 2EE04705824  | All     | Downflow Economizer, Slab type for ERV, (no Barometric Relief or FA hood)             | All 42" Cabinets |
| 2EE04705924  | All     | Downflow Economizer with Barometric Relief  | All Cabinets     |
| 2EE04706024  | All     | Horizontal Economizer without Barometric Relief                                       | All Cabinets     |
| 2MD04703224  | All     | Motorized Damper, Downflow without Barometric Relief                                  | All Cabinets     |
| 2MD04703724  | All     | Motorized Damper, Horizontal  | All Cabinets     |
| 2PE04703225* | 230     | Power Exhaust 230V Downflow or Horizontal   | All Cabinets     |
| 2PE04703246* | 460     | Power Exhaust 460V Downflow or Horizontal   | All Cabinets     |
| 2PE04703258* | 575     | Power Exhaust 575V Downflow or Horizontal   | All Cabinets     |

\* Must be installed in return Duct on Horizontal Applications and a 1EH0408 is required.

**Field Installed Accessories - Controls**

| MODEL       | VOLTAGE | DESCRIPTION                         | WHERE USED  |
|-------------|---------|-------------------------------------|---|
| 2AP0401     | All     | Air Proving Switch                  | All Units   |
| 2AQ04700324 | All     | CO <sup>2</sup> Space Accessory     | All Units   |
| 2AQ04700424 | All     | CO <sup>2</sup> Unit Accessory      | All Units   |
| 2DF0402     | All     | Dirty Air Switch                    | All Units   |
| 2DH04700024 | All     | Humidistat                          | All Units   |
| 2SD04700424 | All     | Smoke Detector for Supply or Return | All Gen 4 or older units with 2" Filter only capable Cabinets |
| 2SD04700824 | All     | Smoke Detector Supply               | All Gen 5 / 2" or 4" Filter Cabinet Units                     |
| 2SD04700924 | All     | Smoke Detector Return               | All Gen 5 / 2" or 4" Filter Cabinet Units                     |
| 2SD04701024 | All     | Smoke Detector Supply & Return      | All Gen 5 / 2" or 4" Filter Cabinet Units                     |

**Field Installed Accessories - Electrical**

| MODEL       | VOLTAGE | DESCRIPTION         | WHERE USED                                      |
|-------------|---------|---------------------|---|
| 2BC04700106 | 230     | Gas heat kit, -60°F | All Units                                       |
| 2BC04700151 | 460     | Gas heat kit, -60°F | All Units                                       |
| 2BC04700154 | 575     | Gas heat kit, -60°F | All Units                                       |
| 2LA04704632 | All     | Low Ambient Kit     | All 3 - 12T units (excludes 12.5T "V" cabinets) |

**Guide Specifications****GENERAL**

Units shall be manufactured by Unitary Products in an ISO 9001 certified facility. YORK® Predator® units are convertible single packages with a common footprint cabinet and common roof curb for all 3 through 12-1/2 ton models. All 6-1/2 through 12-1/2 ton units have two compressors with independent R-410A refrigeration circuits to provide 2 stages of cooling. The units were designed for light commercial applications and can be easily installed on a roof curb, slab, or frame. All Predator® units are self-contained and assembled on rigid full perimeter base rails allowing for 3-way forklift access and overhead rigging. Every unit is completely charged with R-410A, wired,

pipled, and tested at the factory to provide a quick and easy field installation. All units are convertible between side and down airflow. Independent economizer designs are used on side and down discharge applications, as well as all tonnage sizes. Predator® units are available in the following configurations: cooling only, cooling with electric heat, and cooling with gas heat. Electric heaters are available as factory-installed options or field-installed accessories.

**DESCRIPTION**

Units shall be factory assembled, single package, (Elec/Elec, Gas/Elec), designed for outdoor installation. They shall have built in field convertible duct connections for down discharge supply/return or horizontal discharge supply/return and be available with factory installed options or field installed accessories. The units shall be



factory wired, piped and charged with R-410A refrigerant and factory tested prior to shipment. All unit wiring shall be both numbered and color coded. The cooling performance shall be rated in accordance with DOE and ARI test procedures. Units shall be CSA certified to ANSI Z21.47 and UL 1995/CAN/CSA No. 236-M90 standards.

### UNIT CABINET

Unit cabinet shall be constructed of galvanized steel with exterior surfaces coated with a non-chalking, powder paint finish, certified at 1000 hour salt spray test per ASTM-B117 standards. Indoor blower sections shall be insulated with up to 1" thick insulation coated on the airside. Aluminum foil faced insulation shall be used in the unit's compartments and be fastened to prevent insulation from entering the air stream. Cabinet doors shall be hinged with toolless access for easy servicing and maintenance. Full perimeter base rails shall be provided to assure reliable transit of equipment, overhead rigging, fork truck access and proper sealing on roof curb applications. Disposable 2" filters shall be furnished as standard and be accessible through hinged access door. Fan performance measuring ports shall be provided on the outside of the cabinet to allow accurate air measurements of evaporator fan performance without removing panels or creating bypass of the coils. Condensate pan shall be slide out design, constructed of a non corrosive material, internally sloped and conforming to ASHRAE 62-B9 standards. Condensate connection shall be a minimum of ¾" I.D. female and be rigid mount connection.

### INDOOR (EVAPORATOR) FAN ASSEMBLY

Fan shall be a belt drive assembly and include an adjustable pitch motor pulley. Job site selected brake horsepower shall not exceed the motors nameplate horsepower rating plus the service factor. Units shall be designed to operate within the service factor. Fan wheel shall be double inlet type with forward curve blades, dynamically balanced to operate smoothly throughout the entire range of operation. Airflow design shall be constant volume. Bearings shall be sealed and permanently lubricated for longer life and no maintenance. Entire blower assembly and motor shall be slide out design.

### OUTDOOR (CONDENSER) FAN ASSEMBLY

The outdoor fans shall be of the direct drive type, discharge air vertically, have aluminum blades riveted to corrosion resistant steel spider brackets and shall be dynamically balanced for smooth operation. The outdoor fan motors shall have permanently lubricated bearings internally protected against overload conditions and staged independently. A cleaning window shall be provided on two sides of the units for coil cleaning.

### REFRIGERANT COMPONENTS

#### Compressors:

- a. Shall be fully hermetic type, direct drive, internally protected with internal high-pressure relief and over temperature protection. The hermetic motor shall be suction gas cooled and have a voltage range of + or - 10% of the unit nameplate voltage.

- b. Shall have internal spring isolation and sound muffling to minimize vibration and noise, and be externally isolated on a dedicated, independent mounting.

#### Coils:

- a. Evaporator coils shall have aluminum plate fins mechanically bonded to seamless internally enhanced copper tubes with all joints brazed. Special Phenolic coating shall be available as a factory option.
- b. Evaporator coils shall be of the direct expansion, draw-thru design.
- c. Condenser coils shall have aluminum plate fins mechanically bonded to seamless internally enhanced copper tubes with all joints brazed or Micro-Channel aluminum tube, aluminum fins.
- d. Condenser coils shall be of the direct expansion, draw-thru design.

Refrigerant Circuit and Refrigerant Safety Components shall include:

- a. Independent fixed-orifice or thermally operated expansion devices.
- b. Solid core filter drier/strainer to eliminate any moisture or foreign matter.
- c. Accessible service gage connections on both suction and discharge lines to charge, evacuate, and measure refrigerant pressure during any necessary servicing or troubleshooting, without losing charge.
- d. The 6-1/2 through 12-1/2 ton unit shall have two independent refrigerant circuits, equally split in 50% capacity increments.

#### Unit Controls:

- a. Unit shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-volt transformer side.
- b. Unit shall incorporate a lockout circuit which provides reset capability at the space thermostat or base unit should any of the following standard safety devices trip and shut off compressor:
  - c. Loss-of-charge/Low-pressure switch.
    - High-pressure switch.
    - Freeze-protection thermostat, evaporator coil. If any of the above safety devices trip, an LED (light-emitting diode) indicator shall flash a diagnostic code that indicates which safety switch has tripped.
- d. Unit shall incorporate "AUTO RESET" compressor over temperature, over current protection.
- e. Unit shall operate with conventional thermostat designs and have a low voltage terminal strip for easy hook-up.
- f. Unit control board shall have on-board diagnostics and fault code display.

- g. Standard controls shall include anti-short cycle and low voltage protection, and permit cooling operation down to 0 °F.
- h. Control board shall monitor each refrigerant safety switch independently.
- i. Control board shall retain last 5 fault codes in non-volatile memory, which will not be lost in the event of a power loss.

### **GAS HEATING SECTION (IF EQUIPPED)**

Heat exchanger and exhaust system shall be constructed of aluminized steel and shall be designed with induced draft combustion with post purge logic, energy saving direct spark ignition, and redundant main gas valve. The heat exchanger shall be of the tubular type, constructed of T1-40 aluminized steel for corrosion resistance and allowing minimum mixed air entering temperature of 40 °F. Burners shall be of the in-shot type, constructed of aluminum-coated steel. All gas piping shall enter the unit cabinet at a single location, through either the side or bottom, without any field modifications. An integrated control board shall provide timed control of evaporator fan functioning and burner ignition. Heating section shall be provided with the following minimum protection:

- a. Primary and auxiliary high-temperature limit switches.
- b. Induced draft pressure sensor.
- c. Flame roll out switch (manual reset).
- d. Flame proving controls.
- e. All two stage gas units shall have two independent stages of capacity (70% 1st stage, 100% 2nd stage) 3 through 5 ton and (60% 1st stage, 100% 2nd stage) 6-1/2 through 12-1/2 ton.

### **ELECTRIC HEATING SECTION (IF EQUIPPED)**

An electric heating section, with nickel chromium elements, shall be provided in a range of 3 thru 54KW. The heating section shall have a primary limit control(s) (automatic reset) to prevent the heating element system from operating at an excessive temperature. The Heating Section assembly shall slide out of the unit for easy maintenance and service. Units with Electric Heating Sections shall be wired for a single point power supply with branch circuit fusing (where required).

### **UNIT OPERATING CHARACTERISTICS**

Unit shall be capable of starting and running at 125 °F outdoor temperature, exceeding maximum load criteria of ARI Standard 340/360. The compressor, with standard controls, shall be capable of operation down to 0 °F outdoor temperature. Unit shall be provided with fan time delay to prevent cold air delivery before heat exchanger warms up. (Gas heat only)

**ELECTRICAL REQUIREMENTS** - All unit power wiring shall enter unit cabinet at a single factory provided location and be capable of side or bottom entry to minimize roof penetrations and avoid unit field modifications. Separate side and bottom openings shall be provided for the control wiring.

**STANDARD LIMITED WARRANTIES** - Compressor – 5 Years, Heat Exchanger – 10 Years, Elect. Heat Elem. – 5 Years, Parts – 1 Year

**FACTORY INSTALLED OPTIONAL OUTDOOR AIR** (Shall be made available by either/or):

- **ELECTRONIC ENTHALPY AUTOMATIC ECONOMIZER** – Outdoor and return air dampers that are interlocked and positioned by a fully-modulating, spring-return damper actuator. The maximum leakage rate for the outdoor air intake dampers shall not exceed 2% when dampers are fully closed and operating against a pressure differential of 0.5 IWG. A unit-mounted potentiometer shall be provided to adjust the outdoor and return air damper assembly to take in outdoor air to meet the minimum ventilation requirement of the conditioned space during normal operation. During economizer operation, a mixed-air temperature control shall modulate the outdoor and return air damper assembly to prevent the supply air temperature from dropping below 55 °F. Changeover from compressor to economizer operation shall be provided by an integral electronic enthalpy control that feeds input into the basic module. The outdoor intake opening shall be covered with a rain hood that matches the exterior of the unit. Water eliminator/filters shall be provided. Simultaneous economizer/compressor operation is also possible. Dampers shall fully close on power loss. Available with barometric relief or power exhaust.
- **MOTORIZED OUTDOOR AIR DAMPERS** – Outdoor and return air dampers that are interlocked and positioned by a 2-position, spring-return damper actuator. The maximum leakage rate for the outdoor air intake dampers shall not exceed 2% when dampers are fully closed and operating against a pressure differential of 0.5 IWG. A unit-mounted potentiometer shall be provided to adjust the outdoor and return air damper assembly to take in the design CFM of outdoor air to meet the ventilation requirements of the conditioned space during normal operation. Whenever the indoor fan motor is energized, the dampers open up to one of two pre-selected positions – regardless of the outdoor air enthalpy. Dampers return to the fully closed position when the indoor fan motor is de-energized. Dampers shall fully close on power loss.

### **ADDITIONAL FACTORY INSTALLED OPTIONS**

- **ALTERNATE INDOOR BLOWER MOTOR** – For applications with high restrictions, units are available with optional indoor blower motors that provide higher static output and/or higher airflow.
- **VARIABLE AIR VOLUME (VAV)** - The VAV option using a variable frequency drive (VFD) shall be available on 6-1/2 through 12-1/2 ton models for applications requiring a constant supply-duct static pressure. Units equipped for VAV shall be controlled by a duct pressure transducer with a 0 - 5" WC pressure range. The pressure transducer shall provide a 0 - 5 VDC output signal to a VAV control board which, in turn shall provide a 2 - 10 VDC speed reference signal to the VFD. The VAV control board shall operate using factory-installed Supply Air, Return Air and

Outside Air Temperature Sensors with a nominal resistance of 10,000 Ohms. Units equipped with VFD's shall have factory-installed manual bypass as an option.

- **CONVENIENCE OUTLET (POWERED/NON-POWERED)**– Unit can be provided with an optional 120VAC GFCI outlet with cover on the corner of the unit housing the compressors.
- **ELECTRIC HEAT** - Electric Heaters range from 3kW to 54kW and are available in all the voltage options of the base unit.
- **PHASE MONITOR** - Designed to prevent damage in out-of-phase condition.
- **COIL GUARD** - Designed to prevent condenser coil damage.
- **BAS CONTROLS** - Include supply air sensor, return air sensor, dirty filter indicator and air proving switch.
- **DIRTY FILTER SWITCH** – This kit includes a differential pressure switch that energizes the fault light on the unit thermostat, indicating that there is an abnormally high-pressure drop across the filters.
- **BREAKER** – An HACR breaker can be factory installed on gas heat units or cooling units with electric heat.
- **DISCONNECT SWITCH** - A disconnect can be factory installed on a cooling only units sized for the largest electric heat available.

- **STAINLESS STEEL HEAT EXCHANGER** – For applications in a corrosive environment, this option provides a full stainless steel heat exchanger assembly.
- **SMOKE DETECTOR** – A smoke detector can be factory mounted and wired in the supply and/or return air compartments.

#### OTHER PRE-ENGINEERED ACCESSORIES AVAILABLE

- **ROOF CURB** - 14" and 8" high, full perimeter knockdown curb, with hinged design for quick assembly.
- **BAROMETRIC RELIEF DAMPER** – (Unit mounted – Downflow, Duct Mounted – Horizontal) – Contains a rain hood, air inlet screen, exhaust damper and mounting hardware. Used to relieve internal air pressure through the unit during economizer operation.
- **PROPANE CONVERSION KIT** – Contains new orifices and gas valve springs to convert from natural to L.P. gas.
- **60°F GAS HEAT KIT** – Provides an electric heat kit for the gas compartment for use in extreme low ambient conditions.
- **ECONOMIZER** (Downflow and Horizontal flow)
- **POWER EXHAUST** – (Unit mount – Downflow, Duct mount – Horizontal flow)
- **DUAL ENTHALPY KIT** - Provides a second input to economizer to monitor return air.

**ZJ078-150 Physical Data**

| Component                          | Models              |                |                     |                |                     |                |                     |                |                     |                |
|------------------------------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|
|                                    | ZJ078               |                | ZJ090               |                | ZJ102               |                | ZJ120               |                | ZJ150               |                |
| Nominal Tonnage                    | 6.5                 |                | 7.5                 |                | 8.5                 |                | 10                  |                | 12.5                |                |
| <b>ARI COOLING PERFORMANCE</b>     |                     |                |                     |                |                     |                |                     |                |                     |                |
| Gross Capacity @ ARI A point (Btu) | 80000               |                | 93000               |                | 106000              |                | 124000              |                | 155000              |                |
| ARI net capacity (Btu)             | 78000               |                | 90000               |                | 102000              |                | 120000              |                | 150000              |                |
| EER                                | 12.2                |                | 12.2                |                | 12.2                |                | 12.2                |                | 12.2                |                |
| SEER                               | -                   |                | -                   |                | -                   |                | -                   |                | -                   |                |
| IEER                               | 14.9                |                | 13.1                |                | 13.2                |                | 12.9                |                | 12.9                |                |
| IPLV                               | 14.9                |                | 13.4                |                | 13.6                |                | 13.4                |                | 14.1                |                |
| Nominal CFM                        | 2600                |                | 2650                |                | 3400                |                | 3400                |                | 3500                |                |
| System power (KW)                  | 6.40                |                | 7.40                |                | 8.30                |                | 9.80                |                | 12.25               |                |
| Refrigerant type                   | R-410A              |                | R-410A              |                | R-410A              |                | R-410A              |                | R-410A              |                |
| Refrigerant charge (lb-oz)         |                     |                |                     |                |                     |                |                     |                |                     |                |
| System 1                           | 5-10                |                | 6-6                 |                | 7-0                 |                | 7-14                |                | 8-0                 |                |
| System 2                           | 5-12                |                | 6-6                 |                | 6-12                |                | 7-14                |                | 7-8                 |                |
| <b>ARI HEATING PERFORMANCE</b>     |                     |                |                     |                |                     |                |                     |                |                     |                |
| Heating model                      | 10                  | 15             | 10                  | 15             | 10                  | 15             | 15                  | 20             | 15                  | 20             |
| Heat input (K Btu)                 | 120                 | 180            | 120                 | 180            | 120                 | 180            | 180                 | 240            | 180                 | 240            |
| Heat output (K Btu)                | 96                  | 144            | 96                  | 144            | 96                  | 144            | 144                 | 192            | 144                 | 192            |
| AFUE %                             | -                   | -              | -                   | -              | -                   | -              | -                   | -              | -                   | -              |
| Steady state efficiency (%)        | 80                  | 80             | 80                  | 80             | 80                  | 80             | 80                  | 80             | 80                  | 80             |
| No. burners                        | 4                   | 6              | 4                   | 6              | 4                   | 6              | 6                   | 8              | 6                   | 8              |
| No. stages                         | 2 <sup>1</sup>      | 2 <sup>1</sup> | 2 <sup>1</sup>      | 2 <sup>1</sup> | 2 <sup>1</sup>      | 2 <sup>1</sup> | 2 <sup>1</sup>      | 2 <sup>1</sup> | 2 <sup>1</sup>      | 2 <sup>1</sup> |
| Temperature Rise Range (°F)        | 20-50               | 35-65          | 15-45               | 30-60          | 10-40               | 25-55          | 20-50               | 35-65          | 10-40               | 25-55          |
| Gas Limit Setting (°F)             | 165                 | 165            | 165                 | 165            | 215                 | 195            | 195                 | 160            | 195                 | 160            |
| Gas piping connection (in.)        | 3/4                 | 3/4            | 3/4                 | 3/4            | 3/4                 | 3/4            | 3/4                 | 3/4            | 3/4                 | 3/4            |
| <b>DIMENSIONS (inches)</b>         |                     |                |                     |                |                     |                |                     |                |                     |                |
| Length                             | 89                  |                | 89                  |                | 89                  |                | 89                  |                | 119-1/2             |                |
| Width                              | 59                  |                | 59                  |                | 59                  |                | 59                  |                | 59                  |                |
| Height                             | 50-3/4              |                | 50-3/4              |                | 50-3/4              |                | 50-3/4              |                | 50-3/4              |                |
| <b>OPERATING WT. (lbs.)</b>        | 1030                |                | 1055                |                | 1060                |                | 1070                |                | 1280                |                |
| <b>COMPRESSORS</b>                 |                     |                |                     |                |                     |                |                     |                |                     |                |
| Type                               | Recip               |                | Scroll              |                | Recip               |                | Scroll              |                | Scroll              |                |
| Quantity                           | 2                   |                | 2                   |                | 2                   |                | 2                   |                | 2                   |                |
| Unit Capacity Steps (%)            | 50 / 100            |                | 50 / 100            |                | 50 / 100            |                | 50 / 100            |                | 50 / 100            |                |
| <b>CONDENSER COIL DATA</b>         |                     |                |                     |                |                     |                |                     |                |                     |                |
| Face area (Sq. Ft.)                | 29.0                |                | 23.8                |                | 23.8                |                | 29.0                |                | 47.5                |                |
| Rows                               | 1                   |                | 1                   |                | 1                   |                | 1                   |                | 1                   |                |
| Fins per inch                      | 23                  |                | 23                  |                | 23                  |                | 23                  |                | 23                  |                |
| Tube diameter (in./MM)             | .71/18              |                | .71/18              |                | .71/18              |                | 1/25                |                | .71/18              |                |
| Circuitry Type                     | 2-pass Microchannel |                | 2-pass Microchannel |                | 2-pass Microchannel |                | 2-pass Microchannel |                | 2-pass Microchannel |                |
| <b>EVAPORATOR COIL DATA</b>        |                     |                |                     |                |                     |                |                     |                |                     |                |
| Face area (Sq. Ft.)                | 13.2                |                | 13.2                |                | 13.2                |                | 13.2                |                | 13.2                |                |
| Rows                               | 3                   |                | 4                   |                | 4                   |                | 4                   |                | 4                   |                |
| Fins per inch                      | 15                  |                | 15                  |                | 15                  |                | 15                  |                | 15                  |                |
| Tube diameter                      | 0.375               |                | 0.375               |                | 0.375               |                | 0.375               |                | 0.375               |                |
| Circuitry Type                     | Intertwined         |                | Intertwined         |                | Intertwined         |                | Intertwined         |                | Intertwined         |                |
| Refrigerant control                | TXV                 |                | TXV                 |                | TXV                 |                | TXV                 |                | TXV                 |                |



## ZJ078-150 Physical Data (Continued)

| Component                       | Models                           |       |                                  |       |                                  |       |                                  |       |                                  |       |
|---------------------------------|----------------------------------|-------|----------------------------------|-------|----------------------------------|-------|----------------------------------|-------|----------------------------------|-------|
|                                 | ZJ078                            |       | ZJ090                            |       | ZJ102                            |       | ZJ120                            |       | ZJ150                            |       |
| Nominal Tonnage                 | 6.5                              |       | 7.5                              |       | 8.5                              |       | 10                               |       | 12.5                             |       |
| <b>CONDENSER FAN DATA</b>       |                                  |       |                                  |       |                                  |       |                                  |       |                                  |       |
| Quantity of fans                | 2                                |       | 2                                |       | 2                                |       | 2                                |       | 4                                |       |
| Fan diameter (Inch)             | 24                               |       | 24                               |       | 24                               |       | 24                               |       | 24                               |       |
| Type                            | Prop                             |       | Prop                             |       | Prop                             |       | Prop                             |       | Prop                             |       |
| Drive type                      | Direct                           |       | Direct                           |       | Direct                           |       | Direct                           |       | Direct                           |       |
| Quantity of motors              | 2                                |       | 2                                |       | 2                                |       | 2                                |       | 4                                |       |
| Motor HP each                   | 1/3                              |       | 3/4                              |       | 3/4                              |       | 3/4                              |       | 1/3                              |       |
| No. speeds                      | 1                                |       | 1                                |       | 1                                |       | 1                                |       | 1                                |       |
| RPM                             | 850                              |       | 1110                             |       | 1110                             |       | 1110                             |       | 850                              |       |
| Nominal total CFM               | 7400                             |       | 9000                             |       | 9000                             |       | 9400                             |       | 14000                            |       |
| <b>BELT DRIVE EVAP FAN DATA</b> |                                  |       |                                  |       |                                  |       |                                  |       |                                  |       |
| Quantity                        | 1                                |       | 1                                |       | 1                                |       | 1                                |       | 1                                |       |
| Fan Size (Inch)                 | 15 x 15                          |       | 15 x 15                          |       | 15 x 15                          |       | 15 x 15                          |       | 15 x 15                          |       |
| Type                            | Centrifugal                      |       | Centrifugal                      |       | Centrifugal                      |       | Centrifugal                      |       | Centrifugal                      |       |
| Motor Sheave                    | 1VL40                            | 1VM50 | 1VL40                            | 1VM50 | 1VM50                            | 1VM50 | 1VM50                            | 1VM50 | 1VM50                            | 1VP56 |
| Blower Sheave                   | AK74                             | AK74  | AK69                             | AK69  | AK89                             | AK74  | AK84                             | AK74  | AK74                             | BK77  |
| Belt                            | A53                              | A54   | A53                              | A54   | A56                              | A54   | A56                              | A54   | A54                              | BX55  |
| Motor HP each                   | 1-1/2                            | 2     | 1-1/2                            | 3     | 2                                | 3     | 2                                | 3     | 3                                | 5     |
| RPM                             | 1725                             | 1725  | 1725                             | 1725  | 1725                             | 1725  | 1725                             | 1725  | 1725                             | 1725  |
| Frame size                      | 56                               | 56    | 56                               | 56    | 56                               | 56    | 56                               | 56    | 56                               | 184T  |
| <b>FILTERS</b>                  |                                  |       |                                  |       |                                  |       |                                  |       |                                  |       |
| Quantity - Size                 | 4 - (25 x 20 x 2) <sup>2,3</sup> |       | 4 - (25 x 20 x 2) <sup>2,3</sup> |       | 4 - (25 x 20 x 2) <sup>2,3</sup> |       | 4 - (25 x 20 x 2) <sup>2,3</sup> |       | 4 - (25 x 20 x 2) <sup>2,3</sup> |       |
|                                 | 4 - (25 x 20 x 4) <sup>4</sup>   |       | 4 - (25 x 20 x 4) <sup>4</sup>   |       | 4 - (25 x 20 x 4) <sup>4</sup>   |       | 4 - (25 x 20 x 4) <sup>4</sup>   |       | 4 - (25 x 20 x 4) <sup>4</sup>   |       |

1. 1<sup>st</sup> Stage 60% of 2<sup>nd</sup> Stage.
2. 2 In. Throwaway, Standard, MERV (Minimum Efficiency Reporting Value) 3.
3. 2 In. Pleated, Optional, MERV 7.
4. 4 In. Pleated, Optional, MERV 14.

**ZH/ZJ078-150 Unit Limitations**

| Size<br>(Tons) | Model | Unit Voltage | Unit Limitations |     |                 |
|----------------|-------|--------------|------------------|-----|-----------------|
|                |       |              | Applied Voltage  |     | Outdoor DB Temp |
|                |       |              | Min              | Max | Max (°F)        |
| 037<br>(3)     | ZH/ZJ | 208/230-3-60 | 187              | 252 | 125             |
|                |       | 460-3-60     | 432              | 504 | 125             |
|                |       | 575-3-60     | 540              | 630 | 125             |
| 049<br>(4)     | ZH/ZJ | 208/230-3-60 | 187              | 252 | 125             |
|                |       | 460-3-60     | 432              | 504 | 125             |
|                |       | 575-3-60     | 540              | 630 | 125             |
| 061<br>(5)     | ZH/ZJ | 208/230-3-60 | 187              | 252 | 125             |
|                |       | 460-3-60     | 432              | 504 | 125             |
|                |       | 575-3-60     | 540              | 630 | 125             |
| 078<br>(6.5)   | ZH/ZJ | 208/230-3-60 | 187              | 252 | 125             |
|                |       | 460-3-60     | 432              | 504 | 125             |
|                |       | 575-3-60     | 540              | 630 | 125             |
| 090<br>(7.5)   | ZH/ZJ | 208/230-3-60 | 187              | 252 | 125             |
|                |       | 460-3-60     | 432              | 504 | 125             |
|                |       | 575-3-60     | 540              | 630 | 125             |
| 102<br>(8.5)   | ZH/ZJ | 208/230-3-60 | 187              | 252 | 125             |
|                |       | 460-3-60     | 432              | 504 | 125             |
|                |       | 575-3-60     | 540              | 630 | 125             |
| 120<br>(10)    | ZH/ZJ | 208/230-3-60 | 187              | 252 | 125             |
|                |       | 460-3-60     | 432              | 504 | 125             |
|                |       | 575-3-60     | 540              | 630 | 125             |
| 150<br>(12.5)  | ZH/ZJ | 208/230-3-60 | 187              | 252 | 125             |
|                |       | 460-3-60     | 432              | 504 | 125             |
|                |       | 575-3-60     | 540              | 630 | 125             |

**ZJ078 (6.5 Ton)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |      |      |      |      |      |                                   |                               |                         |      |      |      |      |      |  |  |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|------|------|------|------|------|-----------------------------------|-------------------------------|-------------------------|------|------|------|------|------|--|--|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      |  |  |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |      |      |      |      |      |                                   |                               | Return Dry Bulb (°F)    |      |      |      |      |      |  |  |
|                        |         |                                      |                               | 90                      | 85   | 80   | 75   | 70   | 65   |                                   |                               | 90                      | 85   | 80   | 75   | 70   | 65   |  |  |
|                        |         |                                      |                               | <b>75°F</b>             |      |      |      |      |      |                                   |                               | <b>85°F</b>             |      |      |      |      |      |  |  |
| 1625                   | 77      | 106.7                                | 4.6                           | 46.4                    | 38.6 | 31.0 | -    | -    | -    | 98.2                              | 5.1                           | 42.4                    | 35.0 | 27.6 | -    | -    | -    |  |  |
|                        | 72      | 97.0                                 | 4.5                           | 57.0                    | 49.4 | 41.7 | 34.1 | -    | -    | 89.3                              | 5.0                           | 53.2                    | 45.8 | 38.4 | 31.0 | -    | -    |  |  |
|                        | 67      | 87.2                                 | 4.5                           | 67.6                    | 60.1 | 52.4 | 44.8 | 37.2 | -    | 80.3                              | 5.0                           | 63.9                    | 56.5 | 49.1 | 41.7 | 34.3 | -    |  |  |
|                        | 62      | 78.3                                 | 4.6                           | 78.3                    | 71.0 | 62.1 | 54.4 | 46.8 | 39.1 | 72.1                              | 5.0                           | 72.1                    | 67.6 | 57.7 | 50.3 | 42.9 | 35.5 |  |  |
| 1950                   | 77      | 109.7                                | 4.6                           | 50.9                    | 42.2 | 33.4 | -    | -    | -    | 101.0                             | 5.1                           | 47.1                    | 38.5 | 30.0 | -    | -    | -    |  |  |
|                        | 72      | 99.7                                 | 4.6                           | 62.4                    | 53.7 | 45.0 | 36.2 | -    | -    | 91.8                              | 5.1                           | 58.7                    | 50.2 | 41.7 | 33.2 | -    | -    |  |  |
|                        | 67      | 89.6                                 | 4.5                           | 73.9                    | 65.2 | 56.5 | 47.8 | 39.1 | -    | 82.6                              | 5.0                           | 70.4                    | 61.9 | 53.3 | 44.8 | 36.3 | -    |  |  |
|                        | 62      | 80.4                                 | 4.6                           | 80.4                    | 75.6 | 66.9 | 58.1 | 49.4 | 40.7 | 74.1                              | 5.0                           | 74.1                    | 71.1 | 62.6 | 54.1 | 45.6 | 37.1 |  |  |
|                        | 57      | 83.1                                 | 4.6                           | 83.1                    | 83.1 | 72.0 | 63.2 | 54.5 | 45.8 | 74.2                              | 5.0                           | 74.2                    | 74.2 | 66.9 | 58.4 | 49.9 | 41.4 |  |  |
| 2275                   | 77      | 112.6                                | 4.6                           | 55.3                    | 45.7 | 35.9 | -    | -    | -    | 103.8                             | 5.1                           | 51.7                    | 42.0 | 32.4 | -    | -    | -    |  |  |
|                        | 72      | 102.3                                | 4.6                           | 67.8                    | 58.0 | 48.2 | 38.4 | -    | -    | 94.4                              | 5.1                           | 64.2                    | 54.6 | 45.0 | 35.4 | -    | -    |  |  |
|                        | 67      | 92.1                                 | 4.5                           | 80.3                    | 70.4 | 60.6 | 50.8 | 41.0 | -    | 84.9                              | 5.0                           | 76.8                    | 67.2 | 57.6 | 47.9 | 38.3 | -    |  |  |
|                        | 62      | 82.6                                 | 4.6                           | 82.6                    | 80.2 | 71.7 | 61.9 | 52.1 | 42.3 | 76.2                              | 5.0                           | 76.2                    | 74.7 | 67.6 | 58.0 | 48.3 | 38.7 |  |  |
|                        | 57      | 85.3                                 | 4.6                           | 85.3                    | 85.3 | 77.1 | 67.3 | 57.5 | 47.7 | 76.3                              | 5.0                           | 76.3                    | 76.3 | 72.2 | 62.6 | 53.0 | 43.4 |  |  |
| 2600                   | 77      | 115.6                                | 4.6                           | 59.8                    | 49.2 | 38.3 | -    | -    | -    | 106.6                             | 5.2                           | 56.3                    | 45.5 | 34.8 | -    | -    | -    |  |  |
|                        | 72      | 105.0                                | 4.6                           | 73.2                    | 62.3 | 51.4 | 40.6 | -    | -    | 96.9                              | 5.1                           | 69.8                    | 59.0 | 48.3 | 37.6 | -    | -    |  |  |
|                        | 67      | 94.5                                 | 4.5                           | 86.6                    | 75.5 | 64.6 | 53.7 | 42.9 | -    | 87.2                              | 5.1                           | 83.3                    | 72.5 | 61.8 | 51.1 | 40.3 | -    |  |  |
|                        | 62      | 84.8                                 | 4.6                           | 84.8                    | 84.8 | 76.5 | 65.6 | 54.7 | 43.8 | 78.2                              | 5.1                           | 78.2                    | 78.2 | 72.6 | 61.8 | 51.1 | 40.3 |  |  |
|                        | 57      | 87.6                                 | 4.6                           | 87.6                    | 87.6 | 82.3 | 71.4 | 60.6 | 49.7 | 78.4                              | 5.0                           | 78.4                    | 78.4 | 77.6 | 66.8 | 56.1 | 45.3 |  |  |
| 2925                   | 72      | 107.5                                | 4.6                           | 78.5                    | 66.6 | 54.8 | 43.0 | -    | -    | 99.1                              | 5.1                           | 74.7                    | 63.0 | 51.4 | 39.7 | -    | -    |  |  |
|                        | 67      | 96.7                                 | 4.6                           | 92.7                    | 80.7 | 68.8 | 57.0 | 45.2 | -    | 89.2                              | 5.1                           | 87.2                    | 77.4 | 65.7 | 54.1 | 42.5 | -    |  |  |
|                        | 62      | 86.7                                 | 4.6                           | 86.7                    | 86.7 | 82.6 | 70.8 | 58.9 | 47.1 | 80.0                              | 5.1                           | 80.0                    | 80.0 | 77.2 | 65.5 | 53.9 | 42.2 |  |  |
|                        | 57      | 89.6                                 | 4.6                           | 89.6                    | 89.6 | 87.0 | 75.2 | 63.3 | 51.5 | 80.1                              | 5.1                           | 80.1                    | 80.1 | 79.7 | 68.1 | 56.4 | 44.8 |  |  |
| 3250                   | 72      | 109.9                                | 4.6                           | 83.7                    | 70.9 | 58.2 | 45.4 | -    | -    | 101.3                             | 5.1                           | 79.5                    | 67.0 | 54.5 | 41.9 | -    | -    |  |  |
|                        | 67      | 98.8                                 | 4.6                           | 98.8                    | 85.8 | 73.1 | 60.3 | 47.5 | -    | 91.2                              | 5.1                           | 91.2                    | 82.2 | 69.7 | 57.2 | 44.6 | -    |  |  |
|                        | 62      | 88.7                                 | 4.6                           | 88.7                    | 88.7 | 88.7 | 75.9 | 63.2 | 50.4 | 81.8                              | 5.1                           | 81.8                    | 81.8 | 81.8 | 69.2 | 56.7 | 44.1 |  |  |
|                        | 57      | 91.6                                 | 4.6                           | 91.6                    | 91.6 | 91.6 | 78.9 | 66.1 | 53.3 | 81.9                              | 5.1                           | 81.9                    | 81.9 | 81.9 | 69.3 | 56.8 | 44.3 |  |  |
|                        |         |                                      |                               | <b>95°F</b>             |      |      |      |      |      |                                   |                               | <b>105°F</b>            |      |      |      |      |      |  |  |
| 1625                   | 77      | 89.6                                 | 5.6                           | 38.5                    | 31.4 | 24.3 | -    | -    | -    | 80.9                              | 6.2                           | 33.0                    | 28.4 | 21.5 | -    | -    | -    |  |  |
|                        | 72      | 81.5                                 | 5.5                           | 49.3                    | 42.2 | 35.0 | 27.9 | -    | -    | 73.1                              | 6.1                           | 45.5                    | 38.6 | 31.8 | 25.0 | -    | -    |  |  |
|                        | 67      | 73.4                                 | 5.5                           | 60.2                    | 52.9 | 45.8 | 38.6 | 31.5 | -    | 65.3                              | 6.0                           | 57.9                    | 48.9 | 42.1 | 35.2 | 28.4 | -    |  |  |
|                        | 62      | 65.8                                 | 5.4                           | 65.8                    | 64.2 | 53.3 | 46.1 | 39.0 | 31.8 | 58.3                              | 5.9                           | 58.3                    | 57.5 | 47.9 | 41.1 | 34.2 | 27.4 |  |  |
| 1950                   | 77      | 92.3                                 | 5.6                           | 43.2                    | 34.9 | 26.6 | -    | -    | -    | 83.8                              | 6.2                           | 40.0                    | 31.9 | 23.9 | -    | -    | -    |  |  |
|                        | 72      | 84.0                                 | 5.6                           | 55.0                    | 46.7 | 38.4 | 30.1 | -    | -    | 75.7                              | 6.1                           | 51.4                    | 43.3 | 35.3 | 27.2 | -    | -    |  |  |
|                        | 67      | 75.6                                 | 5.5                           | 66.8                    | 58.5 | 50.2 | 41.9 | 33.6 | -    | 67.7                              | 6.0                           | 62.8                    | 54.7 | 46.7 | 38.6 | 30.5 | -    |  |  |
|                        | 62      | 67.8                                 | 5.5                           | 67.8                    | 66.7 | 58.4 | 50.1 | 41.8 | 33.5 | 60.4                              | 5.9                           | 60.4                    | 59.9 | 53.1 | 45.0 | 37.0 | 28.9 |  |  |
|                        | 57      | 65.4                                 | 5.4                           | 65.4                    | 65.4 | 61.9 | 53.6 | 45.3 | 37.0 | 61.0                              | 5.9                           | 61.0                    | 61.0 | 55.7 | 47.7 | 39.6 | 31.6 |  |  |
| 2275                   | 77      | 95.0                                 | 5.7                           | 48.0                    | 38.4 | 29.0 | -    | -    | -    | 86.7                              | 6.3                           | 46.9                    | 35.5 | 26.2 | -    | -    | -    |  |  |
|                        | 72      | 86.4                                 | 5.6                           | 60.7                    | 51.2 | 41.8 | 32.3 | -    | -    | 78.4                              | 6.1                           | 57.2                    | 48.0 | 38.7 | 29.4 | -    | -    |  |  |
|                        | 67      | 77.8                                 | 5.5                           | 73.4                    | 64.0 | 54.6 | 45.1 | 35.7 | -    | 70.1                              | 6.0                           | 67.6                    | 60.5 | 51.2 | 42.0 | 32.7 | -    |  |  |
|                        | 62      | 69.8                                 | 5.5                           | 69.8                    | 69.2 | 63.5 | 54.1 | 44.6 | 35.2 | 62.5                              | 5.9                           | 62.5                    | 62.2 | 58.3 | 49.0 | 39.7 | 30.5 |  |  |
|                        | 57      | 67.2                                 | 5.5                           | 67.2                    | 67.2 | 67.3 | 57.9 | 48.4 | 39.0 | 63.2                              | 6.0                           | 63.2                    | 63.2 | 61.2 | 51.9 | 42.6 | 33.4 |  |  |
| 2600                   | 77      | 97.6                                 | 5.7                           | 52.7                    | 41.9 | 31.3 | -    | -    | -    | 89.7                              | 6.3                           | 53.8                    | 39.0 | 28.5 | -    | -    | -    |  |  |
|                        | 72      | 88.8                                 | 5.6                           | 66.4                    | 55.8 | 45.1 | 34.5 | -    | -    | 81.0                              | 6.2                           | 63.1                    | 52.6 | 42.2 | 31.7 | -    | -    |  |  |
|                        | 67      | 80.0                                 | 5.6                           | 80.0                    | 69.6 | 59.0 | 48.4 | 37.8 | -    | 72.4                              | 6.1                           | 72.4                    | 66.3 | 55.8 | 45.3 | 34.8 | -    |  |  |
|                        | 62      | 71.7                                 | 5.5                           | 71.7                    | 71.7 | 68.7 | 58.1 | 47.5 | 36.8 | 64.6                              | 6.0                           | 64.6                    | 64.6 | 63.5 | 53.0 | 42.5 | 32.0 |  |  |
|                        | 57      | 69.1                                 | 5.5                           | 69.1                    | 69.1 | 72.8 | 62.2 | 51.6 | 40.9 | 65.3                              | 6.0                           | 65.3                    | 65.3 | 66.6 | 56.1 | 45.7 | 35.2 |  |  |
| 2925                   | 72      | 90.7                                 | 5.7                           | 70.9                    | 59.4 | 47.9 | 36.5 | -    | -    | 82.6                              | 6.2                           | 67.2                    | 55.9 | 44.7 | 33.4 | -    | -    |  |  |
|                        | 67      | 81.7                                 | 5.6                           | 81.7                    | 74.1 | 62.7 | 51.2 | 39.7 | -    | 73.8                              | 6.1                           | 73.8                    | 69.5 | 59.1 | 47.8 | 36.6 | -    |  |  |
|                        | 62      | 73.3                                 | 5.5                           | 73.3                    | 73.3 | 71.7 | 60.3 | 48.8 | 37.4 | 65.9                              | 6.0                           | 65.9                    | 65.9 | 65.3 | 54.0 | 42.7 | 31.5 |  |  |
|                        | 57      | 70.6                                 | 5.5                           | 70.6                    | 70.6 | 72.5 | 61.0 | 49.5 | 38.1 | 66.6                              | 6.0                           | 66.6                    | 66.6 | 67.2 | 55.9 | 44.7 | 33.4 |  |  |
| 3250                   | 72      | 92.7                                 | 5.7                           | 75.4                    | 63.1 | 50.7 | 38.4 | -    | -    | 84.2                              | 6.2                           | 71.3                    | 59.2 | 47.2 | 35.1 | -    | -    |  |  |
|                        | 67      | 83.5                                 | 5.6                           | 83.5                    | 78.6 | 66.3 | 54.0 | 41.7 | -    | 75.2                              | 6.1                           | 75.2                    | 72.8 | 62.4 | 50.4 | 38.3 | -    |  |  |
|                        | 62      | 74.8                                 | 5.5                           | 74.8                    | 74.8 | 74.8 | 62.5 | 50.2 | 37.9 | 67.1                              | 6.0                           | 67.1                    | 67.1 | 67.1 | 55.1 | 43.0 | 30.9 |  |  |
|                        | 57      | 72.1                                 | 5.5                           | 72.1                    | 72.1 | 72.1 | 59.8 | 47.5 | 35.2 | 67.8                              | 6.0                           | 67.8                    | 67.8 | 67.8 | 55.7 | 43.7 | 31.6 |  |  |

**ZJ078 (6.5 Ton) (Continued)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |      |      |      |      |      |                                   |                               |                         |      |      |      |      |      |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|------|------|------|------|------|-----------------------------------|-------------------------------|-------------------------|------|------|------|------|------|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |      |      |      |      |      |                                   |                               | Return Dry Bulb (°F)    |      |      |      |      |      |
|                        |         |                                      |                               | 90                      | 85   | 80   | 75   | 70   | 65   |                                   |                               | 90                      | 85   | 80   | 75   | 70   | 65   |
|                        |         |                                      |                               | <b>115°F</b>            |      |      |      |      |      | <b>125°F</b>                      |                               |                         |      |      |      |      |      |
| 1625                   | 77      | 72.1                                 | 6.8                           | 27.6                    | 25.3 | 18.8 | -    | -    | -    | 63.3                              | 7.3                           | 26.5                    | 21.1 | 16.1 | -    | -    | -    |
|                        | 72      | 64.6                                 | 6.6                           | 41.6                    | 35.1 | 28.6 | 22.1 | -    | -    | 56.2                              | 7.1                           | 37.8                    | 31.6 | 25.4 | 19.2 | -    | -    |
|                        | 67      | 57.2                                 | 6.4                           | 55.6                    | 44.9 | 38.4 | 31.9 | 25.4 | -    | 49.1                              | 6.9                           | 49.1                    | 40.9 | 34.7 | 28.5 | 22.3 | -    |
|                        | 62      | 50.7                                 | 6.3                           | 50.7                    | 50.7 | 42.5 | 36.0 | 29.5 | 23.0 | 43.2                              | 6.8                           | 43.2                    | 43.2 | 37.2 | 31.0 | 24.8 | 18.6 |
| 1950                   | 77      | 75.3                                 | 6.8                           | 36.7                    | 28.9 | 21.1 | -    | -    | -    | 66.8                              | 7.4                           | 36.3                    | 25.9 | 18.4 | -    | -    | -    |
|                        | 72      | 67.5                                 | 6.6                           | 47.7                    | 39.9 | 32.1 | 24.3 | -    | -    | 59.3                              | 7.2                           | 44.1                    | 36.5 | 29.0 | 21.4 | -    | -    |
|                        | 67      | 59.8                                 | 6.5                           | 58.7                    | 50.9 | 43.1 | 35.3 | 27.5 | -    | 51.8                              | 7.0                           | 51.8                    | 47.1 | 39.6 | 32.1 | 24.5 | -    |
|                        | 62      | 53.0                                 | 6.4                           | 53.0                    | 53.0 | 47.8 | 40.0 | 32.2 | 24.4 | 45.6                              | 6.8                           | 45.6                    | 45.6 | 42.5 | 34.9 | 27.4 | 19.8 |
|                        | 57      | 56.6                                 | 6.4                           | 56.6                    | 56.6 | 49.6 | 41.8 | 34.0 | 26.2 | 52.3                              | 6.9                           | 52.3                    | 52.3 | 43.4 | 35.9 | 28.4 | 20.8 |
| 2275                   | 77      | 78.5                                 | 6.8                           | 45.8                    | 32.5 | 23.4 | -    | -    | -    | 70.2                              | 7.4                           | 46.1                    | 30.7 | 20.7 | -    | -    | -    |
|                        | 72      | 70.4                                 | 6.7                           | 53.8                    | 44.7 | 35.6 | 26.6 | -    | -    | 62.4                              | 7.2                           | 50.3                    | 41.5 | 32.6 | 23.7 | -    | -    |
|                        | 67      | 62.3                                 | 6.5                           | 61.8                    | 56.9 | 47.8 | 38.8 | 29.7 | -    | 54.6                              | 7.0                           | 54.6                    | 53.4 | 44.5 | 35.6 | 26.7 | -    |
|                        | 62      | 55.3                                 | 6.4                           | 55.3                    | 55.3 | 53.0 | 43.9 | 34.9 | 25.8 | 48.0                              | 6.8                           | 48.0                    | 48.0 | 47.8 | 38.9 | 30.0 | 21.1 |
|                        | 57      | 59.1                                 | 6.4                           | 59.1                    | 59.1 | 55.0 | 46.0 | 36.9 | 27.8 | 55.0                              | 6.9                           | 55.0                    | 55.0 | 48.9 | 40.0 | 31.1 | 22.2 |
| 2600                   | 77      | 81.7                                 | 6.9                           | 54.9                    | 36.1 | 25.7 | -    | -    | -    | 73.7                              | 7.5                           | 56.0                    | 35.5 | 23.0 | -    | -    | -    |
|                        | 72      | 73.3                                 | 6.7                           | 59.9                    | 49.5 | 39.2 | 28.8 | -    | -    | 65.5                              | 7.2                           | 56.6                    | 46.4 | 36.2 | 25.9 | -    | -    |
|                        | 67      | 64.9                                 | 6.6                           | 64.9                    | 62.9 | 52.6 | 42.2 | 31.9 | -    | 57.3                              | 7.0                           | 57.3                    | 57.3 | 49.4 | 39.1 | 28.9 | -    |
|                        | 62      | 57.5                                 | 6.4                           | 57.5                    | 57.5 | 58.3 | 47.9 | 37.5 | 27.2 | 50.4                              | 6.9                           | 50.4                    | 50.4 | 50.4 | 42.8 | 32.6 | 22.3 |
|                        | 57      | 61.5                                 | 6.5                           | 61.5                    | 61.5 | 60.5 | 50.1 | 39.7 | 29.4 | 57.6                              | 7.0                           | 57.6                    | 57.6 | 54.3 | 44.1 | 33.8 | 23.6 |
| 2925                   | 72      | 74.5                                 | 6.7                           | 63.6                    | 52.5 | 41.4 | 30.3 | -    | -    | 66.4                              | 7.3                           | 59.9                    | 49.0 | 38.1 | 27.2 | -    | -    |
|                        | 67      | 65.9                                 | 6.6                           | 65.9                    | 65.0 | 55.6 | 44.5 | 33.4 | -    | 58.0                              | 7.1                           | 58.0                    | 58.0 | 52.0 | 41.1 | 30.2 | -    |
|                        | 62      | 58.5                                 | 6.5                           | 58.5                    | 58.5 | 58.8 | 47.7 | 36.6 | 25.5 | 51.1                              | 6.9                           | 51.1                    | 51.1 | 51.1 | 41.5 | 30.6 | 19.6 |
|                        | 57      | 62.5                                 | 6.5                           | 62.5                    | 62.5 | 62.0 | 50.9 | 39.8 | 28.7 | 58.4                              | 7.0                           | 58.4                    | 58.4 | 56.8 | 45.8 | 34.9 | 24.0 |
| 3250                   | 72      | 75.7                                 | 6.8                           | 67.3                    | 55.4 | 43.6 | 31.8 | -    | -    | 67.2                              | 7.3                           | 63.2                    | 51.6 | 40.0 | 28.4 | -    | -    |
|                        | 67      | 67.0                                 | 6.6                           | 67.0                    | 67.0 | 58.5 | 46.7 | 34.9 | -    | 58.8                              | 7.1                           | 58.8                    | 58.8 | 54.7 | 43.1 | 31.5 | -    |
|                        | 62      | 59.4                                 | 6.5                           | 59.4                    | 59.4 | 59.4 | 47.6 | 35.8 | 23.9 | 51.7                              | 7.0                           | 51.7                    | 51.7 | 51.7 | 40.1 | 28.5 | 16.9 |
|                        | 57      | 63.5                                 | 6.5                           | 63.5                    | 63.5 | 63.5 | 51.7 | 39.8 | 28.0 | 59.2                              | 7.1                           | 59.2                    | 59.2 | 59.2 | 47.6 | 36.0 | 24.4 |

1. These capacities are gross ratings. For net capacity, deduct air blower motor, MBh = 3.415 x kW. Refer to the appropriate Blower Performance Table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors (total 1 kW) and the compressor motors but not the supply air blower motor.



**ZJ090 (7.5 Ton)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |       |      |      |      |      |                                   |                               |                         |      |      |      |      |      |  |  |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|-------|------|------|------|------|-----------------------------------|-------------------------------|-------------------------|------|------|------|------|------|--|--|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |      |      |      |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      |  |  |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |       |      |      |      |      |                                   |                               | Return Dry Bulb (°F)    |      |      |      |      |      |  |  |
|                        |         |                                      |                               | 90                      | 85    | 80   | 75   | 70   | 65   |                                   |                               | 90                      | 85   | 80   | 75   | 70   | 65   |  |  |
|                        |         |                                      |                               | <b>75°F</b>             |       |      |      |      |      |                                   |                               | <b>85°F</b>             |      |      |      |      |      |  |  |
| 1875                   | 77      | 123.1                                | 5.4                           | 55.6                    | 45.8  | 36.9 | -    | -    | -    | 113.7                             | 6.1                           | 49.9                    | 41.1 | 32.2 | -    | -    | -    |  |  |
|                        | 72      | 110.1                                | 5.3                           | 65.5                    | 56.6  | 47.6 | 38.7 | -    | -    | 102.9                             | 6.0                           | 61.7                    | 52.9 | 44.1 | 35.2 | -    | -    |  |  |
|                        | 67      | 97.2                                 | 5.2                           | 75.3                    | 67.3  | 58.4 | 49.5 | 40.5 | -    | 92.1                              | 6.0                           | 73.6                    | 64.7 | 55.9 | 47.1 | 38.2 | -    |  |  |
|                        | 62      | 91.9                                 | 5.2                           | 91.9                    | 87.0  | 71.4 | 62.5 | 53.6 | 44.7 | 84.4                              | 5.9                           | 84.4                    | 81.9 | 68.3 | 59.5 | 50.6 | 41.8 |  |  |
| 2250                   | 77      | 126.6                                | 5.4                           | 60.8                    | 50.5  | 40.3 | -    | -    | -    | 116.9                             | 6.2                           | 55.8                    | 45.6 | 35.3 | -    | -    | -    |  |  |
|                        | 72      | 113.2                                | 5.4                           | 72.5                    | 62.2  | 51.9 | 41.6 | -    | -    | 105.8                             | 6.1                           | 68.8                    | 58.6 | 48.3 | 38.1 | -    | -    |  |  |
|                        | 67      | 99.9                                 | 5.3                           | 84.2                    | 73.9  | 63.6 | 53.3 | 43.0 | -    | 94.7                              | 6.0                           | 81.8                    | 71.5 | 61.3 | 51.1 | 40.8 | -    |  |  |
|                        | 62      | 94.5                                 | 5.3                           | 94.5                    | 91.3  | 77.8 | 67.5 | 57.2 | 46.9 | 86.7                              | 5.9                           | 86.7                    | 85.1 | 74.9 | 64.6 | 54.4 | 44.2 |  |  |
| 2625                   | 77      | 130.1                                | 5.5                           | 66.0                    | 55.3  | 43.6 | -    | -    | -    | 120.1                             | 6.2                           | 61.7                    | 50.1 | 38.4 | -    | -    | -    |  |  |
|                        | 72      | 116.3                                | 5.4                           | 79.5                    | 67.9  | 56.2 | 44.6 | -    | -    | 108.7                             | 6.1                           | 75.8                    | 64.2 | 52.6 | 40.9 | -    | -    |  |  |
|                        | 67      | 102.6                                | 5.3                           | 93.0                    | 80.5  | 68.8 | 57.1 | 45.5 | -    | 97.3                              | 6.0                           | 89.9                    | 78.3 | 66.7 | 55.0 | 43.4 | -    |  |  |
|                        | 62      | 97.1                                 | 5.3                           | 97.1                    | 95.5  | 84.2 | 72.5 | 60.9 | 49.2 | 89.1                              | 6.0                           | 89.1                    | 88.3 | 81.5 | 69.8 | 58.2 | 46.6 |  |  |
| 3000                   | 77      | 133.5                                | 5.5                           | 71.2                    | 60.0  | 47.0 | -    | -    | -    | 123.3                             | 6.2                           | 67.6                    | 54.6 | 41.6 | -    | -    | -    |  |  |
|                        | 72      | 119.4                                | 5.4                           | 86.6                    | 73.5  | 60.5 | 47.5 | -    | -    | 111.6                             | 6.1                           | 82.9                    | 69.8 | 56.8 | 43.8 | -    | -    |  |  |
|                        | 67      | 105.3                                | 5.3                           | 101.9                   | 87.1  | 74.0 | 61.0 | 48.0 | -    | 99.9                              | 6.0                           | 98.1                    | 85.1 | 72.1 | 59.0 | 46.0 | -    |  |  |
|                        | 62      | 99.7                                 | 5.3                           | 99.7                    | 99.7  | 90.6 | 77.5 | 64.5 | 51.5 | 91.5                              | 6.0                           | 91.5                    | 91.5 | 88.0 | 75.0 | 62.0 | 48.9 |  |  |
| 3375                   | 77      | 122.2                                | 5.4                           | 93.6                    | 79.3  | 65.1 | 50.8 | -    | -    | 113.5                             | 6.1                           | 89.5                    | 75.2 | 60.9 | 46.6 | -    | -    |  |  |
|                        | 72      | 107.8                                | 5.4                           | 106.1                   | 93.9  | 79.6 | 65.4 | 51.1 | -    | 101.6                             | 6.1                           | 100.7                   | 91.5 | 77.2 | 62.9 | 48.7 | -    |  |  |
|                        | 67      | 102.0                                | 5.3                           | 102.0                   | 102.0 | 97.4 | 83.2 | 68.9 | 54.6 | 93.1                              | 6.0                           | 93.1                    | 93.1 | 91.3 | 77.1 | 62.8 | 48.5 |  |  |
|                        | 62      | 97.4                                 | 5.3                           | 97.4                    | 97.4  | 96.6 | 82.3 | 68.0 | 53.7 | 91.9                              | 6.0                           | 91.9                    | 91.9 | 92.0 | 77.7 | 63.4 | 49.1 |  |  |
| 3750                   | 77      | 125.0                                | 5.5                           | 100.7                   | 85.2  | 69.6 | 54.1 | -    | -    | 115.4                             | 6.2                           | 96.1                    | 80.5 | 65.0 | 49.4 | -    | -    |  |  |
|                        | 72      | 110.3                                | 5.4                           | 110.3                   | 100.8 | 85.3 | 69.7 | 54.2 | -    | 103.3                             | 6.1                           | 103.3                   | 98.0 | 82.4 | 66.9 | 51.3 | -    |  |  |
|                        | 67      | 104.3                                | 5.4                           | 104.3                   | 104.3 | 88.8 | 73.2 | 57.7 | -    | 94.7                              | 6.0                           | 94.7                    | 94.7 | 94.7 | 79.1 | 63.6 | 48.0 |  |  |
|                        | 62      | 99.6                                 | 5.3                           | 99.6                    | 99.6  | 99.6 | 84.1 | 68.5 | 53.0 | 93.4                              | 6.0                           | 93.4                    | 93.4 | 93.4 | 77.9 | 62.3 | 46.8 |  |  |
|                        |         |                                      |                               | <b>95°F</b>             |       |      |      |      |      |                                   |                               | <b>105°F</b>            |      |      |      |      |      |  |  |
| 1875                   | 77      | 104.2                                | 6.9                           | 44.2                    | 36.3  | 27.6 | -    | -    | -    | 98.7                              | 7.7                           | 40.3                    | 34.3 | 25.7 | -    | -    | -    |  |  |
|                        | 72      | 95.6                                 | 6.8                           | 58.0                    | 49.3  | 40.5 | 31.7 | -    | -    | 90.0                              | 7.6                           | 55.6                    | 46.9 | 38.3 | 29.7 | -    | -    |  |  |
|                        | 67      | 87.0                                 | 6.7                           | 71.9                    | 62.2  | 53.5 | 44.7 | 35.9 | -    | 81.3                              | 7.6                           | 70.9                    | 59.6 | 50.9 | 42.3 | 33.6 | -    |  |  |
|                        | 62      | 76.8                                 | 6.6                           | 76.8                    | 76.8  | 65.2 | 56.4 | 47.7 | 38.9 | 71.7                              | 7.5                           | 71.7                    | 71.7 | 61.1 | 52.4 | 43.8 | 35.2 |  |  |
| 2250                   | 77      | 107.2                                | 6.9                           | 50.8                    | 40.6  | 30.4 | -    | -    | -    | 101.3                             | 7.7                           | 48.6                    | 38.5 | 28.4 | -    | -    | -    |  |  |
|                        | 72      | 98.3                                 | 6.8                           | 65.1                    | 54.9  | 44.7 | 34.5 | -    | -    | 92.3                              | 7.7                           | 62.5                    | 52.5 | 42.4 | 32.3 | -    | -    |  |  |
|                        | 67      | 89.5                                 | 6.7                           | 79.4                    | 69.2  | 59.0 | 48.8 | 38.6 | -    | 83.4                              | 7.6                           | 76.5                    | 66.4 | 56.4 | 46.3 | 36.2 | -    |  |  |
|                        | 62      | 79.0                                 | 6.6                           | 79.0                    | 79.0  | 72.0 | 61.8 | 51.6 | 41.4 | 73.6                              | 7.6                           | 73.6                    | 73.6 | 67.6 | 57.5 | 47.4 | 37.4 |  |  |
| 2625                   | 77      | 110.1                                | 6.9                           | 57.4                    | 44.9  | 33.3 | -    | -    | -    | 103.9                             | 7.8                           | 56.9                    | 42.7 | 31.2 | -    | -    | -    |  |  |
|                        | 72      | 101.0                                | 6.8                           | 72.1                    | 60.5  | 48.9 | 37.3 | -    | -    | 94.7                              | 7.7                           | 69.5                    | 58.0 | 46.5 | 35.0 | -    | -    |  |  |
|                        | 67      | 91.9                                 | 6.7                           | 86.9                    | 76.2  | 64.6 | 52.9 | 41.3 | -    | 85.6                              | 7.7                           | 82.1                    | 73.3 | 61.8 | 50.3 | 38.8 | -    |  |  |
|                        | 62      | 81.1                                 | 6.6                           | 81.1                    | 81.1  | 78.7 | 67.1 | 55.5 | 43.9 | 75.5                              | 7.6                           | 75.5                    | 75.5 | 74.1 | 62.6 | 51.1 | 39.6 |  |  |
| 3000                   | 77      | 113.1                                | 6.9                           | 64.0                    | 49.2  | 36.1 | -    | -    | -    | 106.5                             | 7.8                           | 65.2                    | 46.8 | 33.9 | -    | -    | -    |  |  |
|                        | 72      | 103.7                                | 6.8                           | 79.2                    | 66.2  | 53.1 | 40.1 | -    | -    | 97.1                              | 7.8                           | 76.5                    | 63.5 | 50.6 | 37.6 | -    | -    |  |  |
|                        | 67      | 94.4                                 | 6.8                           | 94.4                    | 83.1  | 70.1 | 57.1 | 44.0 | -    | 87.7                              | 7.7                           | 87.7                    | 80.2 | 67.2 | 54.3 | 41.4 | -    |  |  |
|                        | 62      | 83.3                                 | 6.7                           | 83.3                    | 83.3  | 85.5 | 72.5 | 59.4 | 46.4 | 77.4                              | 7.6                           | 77.4                    | 77.4 | 80.6 | 67.7 | 54.8 | 41.8 |  |  |
| 3375                   | 77      | 104.8                                | 6.8                           | 85.3                    | 71.0  | 56.7 | 42.4 | -    | -    | 98.4                              | 7.8                           | 82.6                    | 68.4 | 54.1 | 39.9 | -    | -    |  |  |
|                        | 72      | 95.4                                 | 6.8                           | 95.4                    | 89.1  | 74.8 | 60.5 | 46.2 | -    | 88.9                              | 7.7                           | 88.9                    | 84.8 | 72.0 | 57.8 | 43.6 | -    |  |  |
|                        | 67      | 84.2                                 | 6.7                           | 84.2                    | 84.2  | 85.3 | 71.0 | 56.7 | 42.4 | 78.5                              | 7.7                           | 78.5                    | 78.5 | 80.1 | 65.9 | 51.6 | 37.4 |  |  |
|                        | 62      | 86.4                                 | 6.7                           | 86.4                    | 86.4  | 87.5 | 73.2 | 58.9 | 44.6 | 82.2                              | 7.6                           | 82.2                    | 82.2 | 82.5 | 68.3 | 54.1 | 39.9 |  |  |
| 3750                   | 77      | 105.9                                | 6.9                           | 91.4                    | 75.8  | 60.3 | 44.7 | -    | -    | 99.7                              | 7.8                           | 88.7                    | 73.2 | 57.7 | 42.2 | -    | -    |  |  |
|                        | 72      | 96.3                                 | 6.8                           | 96.3                    | 95.1  | 79.6 | 64.0 | 48.4 | -    | 90.1                              | 7.7                           | 90.1                    | 89.5 | 76.7 | 61.3 | 45.8 | -    |  |  |
|                        | 67      | 85.0                                 | 6.7                           | 85.0                    | 85.0  | 85.0 | 69.5 | 53.9 | 38.3 | 79.5                              | 7.7                           | 79.5                    | 79.5 | 79.5 | 64.0 | 48.5 | 33.1 |  |  |
|                        | 62      | 87.3                                 | 6.7                           | 87.3                    | 87.3  | 87.3 | 71.7 | 56.1 | 40.6 | 83.3                              | 7.6                           | 83.3                    | 83.3 | 83.3 | 67.9 | 52.4 | 36.9 |  |  |

**ZJ090 (7.5 Ton) (Continued)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |      |      |      |      |      |                                   |                               |                         |      |      |      |      |      |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|------|------|------|------|------|-----------------------------------|-------------------------------|-------------------------|------|------|------|------|------|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |      |      |      |      |      |                                   |                               | Return Dry Bulb (°F)    |      |      |      |      |      |
|                        |         |                                      |                               | 90                      | 85   | 80   | 75   | 70   | 65   |                                   |                               | 90                      | 85   | 80   | 75   | 70   | 65   |
|                        |         |                                      |                               | <b>115°F</b>            |      |      |      |      |      | <b>125°F</b>                      |                               |                         |      |      |      |      |      |
| 1875                   | 77      | 93.1                                 | 8.6                           | 36.3                    | 32.3 | 23.8 | -    | -    | -    | 87.5                              | 9.4                           | 32.4                    | 30.3 | 21.9 | -    | -    | -    |
|                        | 72      | 84.3                                 | 8.5                           | 53.1                    | 44.6 | 36.1 | 27.6 | -    | -    | 78.7                              | 9.4                           | 50.7                    | 42.3 | 33.9 | 25.5 | -    | -    |
|                        | 67      | 75.5                                 | 8.5                           | 70.0                    | 56.9 | 48.4 | 39.9 | 31.4 | -    | 69.8                              | 9.4                           | 69.0                    | 54.3 | 45.9 | 37.5 | 29.1 | -    |
|                        | 62      | 66.7                                 | 8.5                           | 66.7                    | 66.7 | 57.0 | 48.4 | 39.9 | 31.4 | 61.6                              | 9.4                           | 61.6                    | 61.6 | 53.4 | 44.4 | 36.0 | 27.6 |
| 2250                   | 77      | 95.3                                 | 8.6                           | 46.4                    | 36.4 | 26.4 | -    | -    | -    | 89.4                              | 9.5                           | 44.1                    | 34.3 | 24.4 | -    | -    | -    |
|                        | 72      | 86.3                                 | 8.6                           | 60.0                    | 50.0 | 40.1 | 30.1 | -    | -    | 80.4                              | 9.5                           | 57.5                    | 47.6 | 37.8 | 27.9 | -    | -    |
|                        | 67      | 77.4                                 | 8.5                           | 73.6                    | 63.7 | 53.7 | 43.8 | 33.8 | -    | 71.3                              | 9.4                           | 70.8                    | 60.9 | 51.1 | 41.2 | 31.4 | -    |
|                        | 62      | 68.3                                 | 8.5                           | 68.3                    | 68.3 | 63.2 | 53.3 | 43.3 | 33.3 | 63.0                              | 9.5                           | 63.0                    | 63.0 | 58.9 | 49.0 | 39.2 | 29.3 |
|                        | 57      | 73.3                                 | 8.4                           | 73.3                    | 73.1 | 63.1 | 53.1 | 43.2 | 33.2 | 69.4                              | 9.2                           | 69.4                    | 69.1 | 57.8 | 47.9 | 38.1 | 28.2 |
| 2625                   | 77      | 97.6                                 | 8.7                           | 56.4                    | 40.5 | 29.1 | -    | -    | -    | 91.3                              | 9.6                           | 55.9                    | 38.2 | 26.9 | -    | -    | -    |
|                        | 72      | 88.4                                 | 8.6                           | 66.9                    | 55.5 | 44.1 | 32.7 | -    | -    | 82.1                              | 9.5                           | 64.2                    | 52.9 | 41.6 | 30.3 | -    | -    |
|                        | 67      | 79.2                                 | 8.6                           | 77.3                    | 70.5 | 59.1 | 47.7 | 36.3 | -    | 72.8                              | 9.5                           | 72.6                    | 67.6 | 56.3 | 45.0 | 33.7 | -    |
|                        | 62      | 69.9                                 | 8.6                           | 69.9                    | 69.9 | 58.1 | 46.7 | 35.3 | -    | 64.3                              | 9.5                           | 64.3                    | 64.3 | 53.6 | 42.3 | 31.0 | -    |
|                        | 57      | 75.0                                 | 8.4                           | 75.0                    | 74.9 | 69.4 | 58.0 | 46.6 | 35.2 | 70.9                              | 9.3                           | 70.9                    | 70.7 | 63.7 | 52.4 | 41.1 | 29.8 |
| 3000                   | 77      | 99.8                                 | 8.7                           | 66.4                    | 44.5 | 31.7 | -    | -    | -    | 93.2                              | 9.6                           | 67.6                    | 42.2 | 29.4 | -    | -    | -    |
|                        | 72      | 90.4                                 | 8.7                           | 73.7                    | 60.9 | 48.0 | 35.2 | -    | -    | 83.8                              | 9.6                           | 71.0                    | 58.2 | 45.5 | 32.7 | -    | -    |
|                        | 67      | 81.0                                 | 8.6                           | 81.0                    | 77.2 | 64.4 | 51.5 | 38.7 | -    | 74.3                              | 9.6                           | 74.3                    | 74.3 | 61.5 | 48.8 | 36.0 | -    |
|                        | 62      | 71.5                                 | 8.6                           | 71.5                    | 71.5 | 75.8 | 62.9 | 50.1 | 37.2 | 65.6                              | 9.6                           | 65.6                    | 65.6 | 65.6 | 58.1 | 45.4 | 32.7 |
|                        | 57      | 76.8                                 | 8.5                           | 76.8                    | 76.8 | 75.6 | 62.8 | 49.9 | 37.1 | 72.4                              | 9.4                           | 72.4                    | 72.4 | 69.6 | 56.9 | 44.1 | 31.4 |
| 3375                   | 72      | 92.0                                 | 8.7                           | 79.8                    | 65.7 | 51.6 | 37.5 | -    | -    | 85.6                              | 9.6                           | 77.1                    | 63.1 | 49.0 | 35.0 | -    | -    |
|                        | 67      | 82.4                                 | 8.7                           | 82.4                    | 80.5 | 69.2 | 55.0 | 40.9 | -    | 76.0                              | 9.6                           | 76.0                    | 76.0 | 66.3 | 52.3 | 38.2 | -    |
|                        | 62      | 72.8                                 | 8.6                           | 72.8                    | 72.8 | 74.9 | 60.8 | 46.6 | 32.5 | 67.1                              | 9.6                           | 67.1                    | 67.1 | 67.1 | 55.7 | 41.6 | 27.6 |
|                        | 57      | 78.1                                 | 8.5                           | 78.1                    | 78.1 | 77.5 | 63.4 | 49.3 | 35.1 | 74.0                              | 9.4                           | 74.0                    | 74.0 | 72.6 | 58.5 | 44.5 | 30.4 |
| 3750                   | 72      | 93.6                                 | 8.7                           | 86.0                    | 70.6 | 55.2 | 39.7 | -    | -    | 87.4                              | 9.7                           | 83.3                    | 67.9 | 52.6 | 37.3 | -    | -    |
|                        | 67      | 83.8                                 | 8.7                           | 83.8                    | 83.8 | 73.9 | 58.5 | 43.1 | -    | 77.6                              | 9.6                           | 77.6                    | 77.6 | 71.1 | 55.8 | 40.5 | -    |
|                        | 62      | 74.0                                 | 8.7                           | 74.0                    | 74.0 | 74.0 | 58.6 | 43.2 | 27.8 | 68.5                              | 9.7                           | 68.5                    | 68.5 | 68.5 | 53.2 | 37.8 | 22.5 |
|                        | 57      | 79.4                                 | 8.5                           | 79.4                    | 79.4 | 79.4 | 64.0 | 48.6 | 33.2 | 75.5                              | 9.4                           | 75.5                    | 75.5 | 75.5 | 60.2 | 44.9 | 29.5 |

1. These capacities are gross ratings. For net capacity, deduct air blower motor, MBh = 3.415 x kW. Refer to the appropriate Blower Performance Table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors (total 1 kW) and the compressor motors but not the supply air blower motor.

**ZJ102 (8.5 Ton)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |       |       |      |      |      |                                   |                               |                         |       |       |      |      |      |  |  |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|-------|-------|------|------|------|-----------------------------------|-------------------------------|-------------------------|-------|-------|------|------|------|--|--|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |      |      |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |      |      |      |  |  |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |       |       |      |      |      |                                   |                               | Return Dry Bulb (°F)    |       |       |      |      |      |  |  |
|                        |         |                                      |                               | 90                      | 85    | 80    | 75   | 70   | 65   |                                   |                               | 90                      | 85    | 80    | 75   | 70   | 65   |  |  |
|                        |         |                                      |                               | <b>75°F</b>             |       |       |      |      |      |                                   |                               | <b>85°F</b>             |       |       |      |      |      |  |  |
| 2125                   | 77      | 136.0                                | 6.1                           | 61.5                    | 49.5  | 38.6  | -    | -    | -    | 127.6                             | 6.8                           | 56.3                    | 45.7  | 35.0  | -    | -    | -    |  |  |
|                        | 72      | 124.0                                | 6.0                           | 74.1                    | 63.2  | 52.4  | 41.5 | -    | -    | 116.0                             | 6.7                           | 70.2                    | 59.6  | 48.9  | 38.3 | -    | -    |  |  |
|                        | 67      | 112.1                                | 5.9                           | 86.7                    | 77.0  | 66.1  | 55.3 | 44.4 | -    | 104.3                             | 6.6                           | 84.1                    | 73.5  | 62.8  | 52.2 | 41.5 | -    |  |  |
|                        | 62      | 99.3                                 | 6.2                           | 99.3                    | 95.1  | 77.6  | 66.8 | 55.9 | 45.0 | 91.6                              | 6.7                           | 91.6                    | 89.5  | 74.0  | 63.3 | 52.7 | 42.0 |  |  |
| 2550                   | 77      | 141.0                                | 6.1                           | 67.2                    | 54.7  | 42.3  | -    | -    | -    | 132.1                             | 6.8                           | 63.0                    | 50.7  | 38.4  | -    | -    | -    |  |  |
|                        | 72      | 128.6                                | 6.0                           | 82.2                    | 69.8  | 57.4  | 44.9 | -    | -    | 120.0                             | 6.7                           | 78.2                    | 65.9  | 53.6  | 41.3 | -    | -    |  |  |
|                        | 67      | 116.2                                | 5.9                           | 97.3                    | 84.9  | 72.5  | 60.0 | 47.6 | -    | 107.9                             | 6.6                           | 93.5                    | 81.2  | 68.9  | 56.6 | 44.3 | -    |  |  |
|                        | 62      | 102.9                                | 6.2                           | 102.9                   | 100.1 | 85.0  | 72.6 | 60.1 | 47.7 | 94.8                              | 6.7                           | 94.8                    | 93.4  | 81.1  | 68.8 | 56.5 | 44.2 |  |  |
| 2975                   | 77      | 146.0                                | 6.1                           | 72.8                    | 60.0  | 46.0  | -    | -    | -    | 136.5                             | 6.8                           | 69.7                    | 55.7  | 41.8  | -    | -    | -    |  |  |
|                        | 72      | 133.1                                | 6.0                           | 90.4                    | 76.4  | 62.4  | 48.4 | -    | -    | 124.0                             | 6.7                           | 86.3                    | 72.3  | 58.4  | 44.4 | -    | -    |  |  |
|                        | 67      | 120.3                                | 5.9                           | 107.9                   | 92.8  | 78.8  | 64.8 | 50.8 | -    | 111.6                             | 6.6                           | 102.9                   | 88.9  | 75.0  | 61.0 | 47.0 | -    |  |  |
|                        | 62      | 106.5                                | 6.1                           | 106.5                   | 105.1 | 92.4  | 78.4 | 64.4 | 50.4 | 98.0                              | 6.7                           | 98.0                    | 97.3  | 88.3  | 74.3 | 60.4 | 46.4 |  |  |
| 3400                   | 77      | 151.0                                | 6.0                           | 78.5                    | 65.2  | 49.7  | -    | -    | -    | 141.0                             | 6.8                           | 76.4                    | 60.8  | 45.2  | -    | -    | -    |  |  |
|                        | 72      | 137.7                                | 5.9                           | 98.5                    | 82.9  | 67.4  | 51.8 | -    | -    | 128.1                             | 6.7                           | 94.3                    | 78.7  | 63.1  | 47.5 | -    | -    |  |  |
|                        | 67      | 124.4                                | 5.8                           | 118.5                   | 100.6 | 85.1  | 69.5 | 53.9 | -    | 115.2                             | 6.6                           | 112.3                   | 96.6  | 81.0  | 65.4 | 49.8 | -    |  |  |
|                        | 62      | 110.2                                | 6.1                           | 110.2                   | 110.2 | 99.8  | 84.3 | 68.7 | 53.1 | 101.2                             | 6.8                           | 101.2                   | 101.2 | 95.4  | 79.8 | 64.2 | 48.6 |  |  |
| 3825                   | 72      | 141.1                                | 6.0                           | 105.2                   | 88.2  | 71.1  | 54.0 | -    | -    | 131.1                             | 6.7                           | 101.2                   | 84.1  | 67.1  | 50.0 | -    | -    |  |  |
|                        | 67      | 127.5                                | 5.9                           | 124.6                   | 106.8 | 89.8  | 72.7 | 55.6 | -    | 117.9                             | 6.6                           | 116.4                   | 103.2 | 86.1  | 69.1 | 52.0 | -    |  |  |
|                        | 62      | 112.9                                | 6.2                           | 112.9                   | 112.9 | 107.7 | 90.6 | 73.6 | 56.5 | 103.5                             | 6.8                           | 103.5                   | 103.5 | 100.7 | 83.6 | 66.5 | 49.5 |  |  |
|                        | 57      | 109.1                                | 8.7                           | 109.1                   | 109.1 | 109.4 | 92.3 | 75.2 | 58.2 | 102.2                             | 6.6                           | 102.2                   | 102.2 | 102.4 | 85.4 | 68.3 | 51.3 |  |  |
| 4250                   | 72      | 144.5                                | 6.1                           | 112.0                   | 93.4  | 74.8  | 56.3 | -    | -    | 134.0                             | 6.8                           | 108.0                   | 89.5  | 71.0  | 52.5 | -    | -    |  |  |
|                        | 67      | 130.6                                | 6.0                           | 130.6                   | 113.0 | 94.5  | 75.9 | 57.3 | -    | 120.6                             | 6.7                           | 120.6                   | 109.7 | 91.2  | 72.7 | 54.2 | -    |  |  |
|                        | 62      | 115.6                                | 6.2                           | 115.6                   | 115.6 | 115.6 | 97.0 | 78.4 | 59.9 | 105.9                             | 6.8                           | 105.9                   | 105.9 | 105.9 | 87.4 | 68.9 | 50.4 |  |  |
|                        | 57      | 111.7                                | 8.8                           | 111.7                   | 111.7 | 111.7 | 93.2 | 74.6 | 56.0 | 104.5                             | 6.6                           | 104.5                   | 104.5 | 104.5 | 86.0 | 67.5 | 49.0 |  |  |
|                        |         |                                      |                               | <b>95°F</b>             |       |       |      |      |      |                                   |                               | <b>105°F</b>            |       |       |      |      |      |  |  |
| 2125                   | 77      | 119.3                                | 7.4                           | 51.1                    | 41.8  | 31.4  | -    | -    | -    | 108.3                             | 8.2                           | 44.7                    | 38.5  | 28.3  | -    | -    | -    |  |  |
|                        | 72      | 107.9                                | 7.3                           | 66.3                    | 55.9  | 45.4  | 35.0 | -    | -    | 97.7                              | 8.0                           | 62.2                    | 52.0  | 41.8  | 31.6 | -    | -    |  |  |
|                        | 67      | 96.5                                 | 7.2                           | 81.5                    | 69.9  | 59.5  | 49.1 | 38.6 | -    | 87.1                              | 7.8                           | 79.6                    | 65.5  | 55.3  | 45.1 | 34.9 | -    |  |  |
|                        | 62      | 84.0                                 | 7.3                           | 84.0                    | 84.0  | 70.3  | 59.9 | 49.5 | 39.1 | 77.3                              | 7.9                           | 77.3                    | 77.3  | 65.1  | 54.9 | 44.7 | 34.5 |  |  |
| 2550                   | 77      | 123.1                                | 7.5                           | 58.8                    | 46.7  | 34.5  | -    | -    | -    | 111.8                             | 8.2                           | 55.2                    | 43.2  | 31.2  | -    | -    | -    |  |  |
|                        | 72      | 111.4                                | 7.4                           | 74.2                    | 62.1  | 49.9  | 37.7 | -    | -    | 100.9                             | 8.1                           | 70.1                    | 58.1  | 46.2  | 34.2 | -    | -    |  |  |
|                        | 67      | 99.7                                 | 7.2                           | 89.7                    | 77.5  | 65.3  | 53.1 | 41.0 | -    | 90.0                              | 7.9                           | 85.0                    | 73.0  | 61.1  | 49.1 | 37.2 | -    |  |  |
|                        | 62      | 86.7                                 | 7.3                           | 86.7                    | 86.7  | 77.2  | 65.1 | 52.9 | 40.7 | 79.8                              | 7.9                           | 79.8                    | 79.8  | 71.9  | 60.0 | 48.0 | 36.1 |  |  |
| 2975                   | 77      | 127.0                                | 7.5                           | 66.6                    | 51.5  | 37.6  | -    | -    | -    | 115.3                             | 8.3                           | 65.6                    | 47.9  | 34.2  | -    | -    | -    |  |  |
|                        | 72      | 114.9                                | 7.4                           | 82.2                    | 68.3  | 54.4  | 40.5 | -    | -    | 104.1                             | 8.1                           | 78.0                    | 64.3  | 50.6  | 36.9 | -    | -    |  |  |
|                        | 67      | 102.8                                | 7.3                           | 97.8                    | 85.1  | 71.2  | 57.2 | 43.3 | -    | 92.8                              | 7.9                           | 90.3                    | 80.6  | 66.9  | 53.2 | 39.5 | -    |  |  |
|                        | 62      | 89.5                                 | 7.4                           | 89.5                    | 89.5  | 84.1  | 70.2 | 56.3 | 42.4 | 82.3                              | 7.9                           | 82.3                    | 82.3  | 78.8  | 65.1 | 51.4 | 37.6 |  |  |
| 3400                   | 77      | 130.9                                | 7.6                           | 74.3                    | 56.3  | 40.7  | -    | -    | -    | 118.9                             | 8.3                           | 76.1                    | 52.6  | 37.2  | -    | -    | -    |  |  |
|                        | 72      | 118.5                                | 7.4                           | 90.2                    | 74.5  | 58.8  | 43.2 | -    | -    | 107.3                             | 8.1                           | 85.9                    | 70.4  | 55.0  | 39.5 | -    | -    |  |  |
|                        | 67      | 106.0                                | 7.3                           | 106.0                   | 92.7  | 77.0  | 61.3 | 45.7 | -    | 95.7                              | 8.0                           | 95.7                    | 88.2  | 72.7  | 57.3 | 41.8 | -    |  |  |
|                        | 62      | 92.2                                 | 7.4                           | 92.2                    | 92.2  | 91.0  | 75.4 | 59.7 | 44.1 | 84.8                              | 8.0                           | 84.8                    | 84.8  | 85.6  | 70.2 | 54.7 | 39.2 |  |  |
| 3825                   | 72      | 121.0                                | 7.5                           | 97.1                    | 80.1  | 63.0  | 46.0 | -    | -    | 109.5                             | 8.2                           | 92.8                    | 75.9  | 59.0  | 42.1 | -    | -    |  |  |
|                        | 67      | 108.3                                | 7.3                           | 108.3                   | 99.5  | 82.5  | 65.4 | 48.4 | -    | 97.7                              | 8.0                           | 97.7                    | 92.9  | 78.1  | 61.2 | 44.3 | -    |  |  |
|                        | 62      | 94.2                                 | 7.4                           | 94.2                    | 94.2  | 93.6  | 76.5 | 59.5 | 42.5 | 86.6                              | 8.0                           | 86.6                    | 86.6  | 87.0  | 70.1 | 53.2 | 36.3 |  |  |
|                        | 57      | 95.3                                 | 7.2                           | 95.3                    | 95.3  | 95.5  | 78.5 | 61.4 | 44.4 | 87.5                              | 7.9                           | 87.5                    | 87.5  | 87.8  | 70.9 | 54.0 | 37.1 |  |  |
| 4250                   | 72      | 123.5                                | 7.5                           | 104.1                   | 85.6  | 67.2  | 48.8 | -    | -    | 111.7                             | 8.2                           | 99.6                    | 81.3  | 63.0  | 44.7 | -    | -    |  |  |
|                        | 67      | 110.5                                | 7.4                           | 110.5                   | 106.4 | 87.9  | 69.5 | 51.1 | -    | 99.6                              | 8.0                           | 99.6                    | 97.6  | 83.4  | 65.1 | 46.8 | -    |  |  |
|                        | 62      | 96.2                                 | 7.5                           | 96.2                    | 96.2  | 96.2  | 77.7 | 59.3 | 40.8 | 88.4                              | 8.0                           | 88.4                    | 88.4  | 88.4  | 70.1 | 51.7 | 33.4 |  |  |
|                        | 57      | 97.3                                 | 7.3                           | 97.3                    | 97.3  | 97.3  | 78.8 | 60.4 | 41.9 | 89.3                              | 7.9                           | 89.3                    | 89.3  | 89.3  | 71.0 | 52.7 | 34.4 |  |  |

**ZJ102 (8.5 Ton) (Continued)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |      |      |      |      |      |                                   |                               |                         |      |      |      |      |      |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|------|------|------|------|------|-----------------------------------|-------------------------------|-------------------------|------|------|------|------|------|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |      |      |      |      |      |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |      |      |      |      |      |                                   |                               | Return Dry Bulb (°F)    |      |      |      |      |      |
|                        |         |                                      |                               | 90                      | 85   | 80   | 75   | 70   | 65   |                                   |                               | 90                      | 85   | 80   | 75   | 70   | 65   |
|                        |         |                                      |                               | <b>115°F</b>            |      |      |      |      |      | <b>125°F</b>                      |                               |                         |      |      |      |      |      |
| 2125                   | 77      | 97.3                                 | 9.0                           | 38.3                    | 35.1 | 25.1 | -    | -    | -    | 86.3                              | 9.7                           | 39.4                    | 29.5 | 21.9 | -    | -    | -    |
|                        | 72      | 87.5                                 | 8.7                           | 58.0                    | 48.0 | 38.1 | 28.1 | -    | -    | 77.4                              | 9.4                           | 53.9                    | 44.1 | 34.4 | 24.6 | -    | -    |
|                        | 67      | 77.8                                 | 8.5                           | 77.8                    | 61.0 | 51.1 | 41.1 | 31.1 | -    | 68.4                              | 9.1                           | 68.4                    | 56.6 | 46.8 | 37.1 | 27.4 | -    |
|                        | 62      | 70.6                                 | 8.4                           | 70.6                    | 70.6 | 59.8 | 49.8 | 39.8 | 29.9 | 63.9                              | 9.0                           | 63.9                    | 63.9 | 54.5 | 44.8 | 35.0 | 25.3 |
| 2550                   | 77      | 100.5                                | 9.0                           | 51.5                    | 39.7 | 28.0 | -    | -    | -    | 89.1                              | 9.8                           | 52.8                    | 36.2 | 24.7 | -    | -    | -    |
|                        | 72      | 90.4                                 | 8.8                           | 65.9                    | 54.1 | 42.4 | 30.7 | -    | -    | 79.9                              | 9.5                           | 61.7                    | 50.2 | 38.7 | 27.1 | -    | -    |
|                        | 67      | 80.3                                 | 8.5                           | 80.3                    | 68.6 | 56.9 | 45.1 | 33.4 | -    | 70.6                              | 9.2                           | 70.6                    | 64.2 | 52.6 | 41.1 | 29.6 | -    |
|                        | 62      | 72.9                                 | 8.4                           | 72.9                    | 72.9 | 66.6 | 54.9 | 43.1 | 31.4 | 66.0                              | 9.0                           | 66.0                    | 66.0 | 61.3 | 49.8 | 38.2 | 26.7 |
|                        | 57      | 73.6                                 | 8.4                           | 73.6                    | 73.6 | 65.4 | 53.7 | 41.9 | 30.2 | 66.6                              | 10.4                          | 66.6                    | 66.6 | 58.3 | 46.8 | 35.3 | 23.8 |
| 2975                   | 77      | 103.6                                | 9.1                           | 64.7                    | 44.3 | 30.8 | -    | -    | -    | 91.9                              | 9.8                           | 66.2                    | 42.9 | 27.4 | -    | -    | -    |
|                        | 72      | 93.2                                 | 8.8                           | 73.7                    | 60.2 | 46.7 | 33.2 | -    | -    | 82.4                              | 9.5                           | 69.5                    | 56.2 | 42.9 | 29.6 | -    | -    |
|                        | 67      | 82.8                                 | 8.6                           | 82.8                    | 76.2 | 62.7 | 49.2 | 35.7 | -    | 72.8                              | 9.2                           | 72.8                    | 71.7 | 58.4 | 45.2 | 31.9 | -    |
|                        | 62      | 75.2                                 | 8.5                           | 75.2                    | 75.2 | 73.4 | 59.9 | 46.4 | 32.9 | 68.0                              | 9.0                           | 68.0                    | 68.0 | 68.0 | 54.7 | 41.5 | 28.2 |
|                        | 57      | 75.9                                 | 8.4                           | 75.9                    | 75.9 | 72.1 | 58.6 | 45.1 | 31.6 | 68.7                              | 10.4                          | 68.7                    | 68.7 | 64.8 | 51.5 | 38.2 | 24.9 |
| 3400                   | 77      | 106.8                                | 9.1                           | 77.9                    | 48.9 | 33.7 | -    | -    | -    | 94.7                              | 9.9                           | 79.6                    | 49.5 | 30.2 | -    | -    | -    |
|                        | 72      | 96.1                                 | 8.9                           | 81.6                    | 66.3 | 51.1 | 35.8 | -    | -    | 84.9                              | 9.6                           | 77.3                    | 62.3 | 47.2 | 32.1 | -    | -    |
|                        | 67      | 85.3                                 | 8.6                           | 85.3                    | 83.8 | 68.5 | 53.2 | 38.0 | -    | 75.0                              | 9.3                           | 75.0                    | 75.0 | 64.2 | 49.2 | 34.1 | -    |
|                        | 62      | 77.5                                 | 8.5                           | 77.5                    | 77.5 | 80.2 | 64.9 | 49.7 | 34.4 | 70.1                              | 9.1                           | 70.1                    | 70.1 | 70.1 | 59.7 | 44.7 | 29.6 |
|                        | 57      | 78.3                                 | 8.4                           | 78.3                    | 78.3 | 78.8 | 63.5 | 48.2 | 33.0 | 70.7                              | 10.5                          | 70.7                    | 70.7 | 70.7 | 56.2 | 41.1 | 26.1 |
| 3825                   | 72      | 98.0                                 | 8.9                           | 88.4                    | 71.7 | 55.0 | 38.2 | -    | -    | 86.5                              | 9.6                           | 84.0                    | 67.5 | 50.9 | 34.4 | -    | -    |
|                        | 67      | 87.0                                 | 8.7                           | 87.0                    | 86.3 | 73.7 | 57.0 | 40.3 | -    | 76.4                              | 9.3                           | 76.4                    | 76.4 | 69.3 | 52.8 | 36.2 | -    |
|                        | 62      | 79.0                                 | 8.6                           | 79.0                    | 79.0 | 80.4 | 63.7 | 46.9 | 30.2 | 71.4                              | 9.1                           | 71.4                    | 71.4 | 71.4 | 57.2 | 40.7 | 24.1 |
|                        | 57      | 79.8                                 | 8.5                           | 79.8                    | 79.8 | 80.1 | 63.4 | 46.6 | 29.9 | 72.1                              | 10.5                          | 72.1                    | 72.1 | 72.1 | 55.8 | 39.2 | 22.7 |
| 4250                   | 72      | 99.9                                 | 8.9                           | 95.2                    | 77.0 | 58.8 | 40.7 | -    | -    | 88.1                              | 9.7                           | 88.1                    | 72.7 | 54.7 | 36.6 | -    | -    |
|                        | 67      | 88.8                                 | 8.7                           | 88.8                    | 88.8 | 78.9 | 60.7 | 42.5 | -    | 77.9                              | 9.4                           | 77.9                    | 77.9 | 74.4 | 56.3 | 38.3 | -    |
|                        | 62      | 80.6                                 | 8.6                           | 80.6                    | 80.6 | 80.6 | 62.4 | 44.2 | 26.0 | 72.8                              | 9.2                           | 72.8                    | 72.8 | 72.8 | 54.7 | 36.7 | 18.6 |
|                        | 57      | 81.4                                 | 8.5                           | 81.4                    | 81.4 | 81.4 | 63.2 | 45.0 | 26.9 | 73.5                              | 10.6                          | 73.5                    | 73.5 | 73.5 | 55.4 | 37.4 | 19.3 |

1. These capacities are gross ratings. For net capacity, deduct air blower motor, MBh = 3.415 x kW. Refer to the appropriate Blower Performance Table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors (total 1 kW) and the compressor motors but not the supply air blower motor.

**ZJ120 (10 Ton)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |       |       |       |       |      |                                   |                               |                         |       |       |       |      |      |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|-------|-------|-------|-------|------|-----------------------------------|-------------------------------|-------------------------|-------|-------|-------|------|------|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |       |       |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |       |      |      |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |       |       |       |       |      |                                   |                               | Return Dry Bulb (°F)    |       |       |       |      |      |
|                        |         |                                      |                               | 90                      | 85    | 80    | 75    | 70    | 65   |                                   |                               | 90                      | 85    | 80    | 75    | 70   | 65   |
|                        |         | <b>75°F</b>                          |                               |                         |       |       |       |       |      | <b>85°F</b>                       |                               |                         |       |       |       |      |      |
| 2500                   | 77      | 159.5                                | 7.3                           | 63.5                    | 52.6  | 41.7  | -     | -     | -    | 148.2                             | 8.2                           | 61.1                    | 50.3  | 39.4  | -     | -    | -    |
|                        | 72      | 145.9                                | 7.2                           | 83.1                    | 72.2  | 61.3  | 50.4  | -     | -    | 136.1                             | 8.1                           | 80.2                    | 69.3  | 58.4  | 47.6  | -    | -    |
|                        | 67      | 132.2                                | 7.1                           | 102.7                   | 91.8  | 80.9  | 70.0  | 59.1  | -    | 124.0                             | 8.0                           | 99.3                    | 88.4  | 77.5  | 66.6  | 55.8 | -    |
|                        | 62      | 123.1                                | 7.0                           | 123.1                   | 118.4 | 99.0  | 88.1  | 77.2  | 66.3 | 114.8                             | 7.9                           | 114.8                   | 112.5 | 95.6  | 84.8  | 73.9 | 63.0 |
| 3000                   | 77      | 164.8                                | 7.4                           | 71.2                    | 58.4  | 45.5  | -     | -     | -    | 153.7                             | 8.2                           | 68.6                    | 55.9  | 43.1  | -     | -    | -    |
|                        | 72      | 150.7                                | 7.2                           | 92.6                    | 79.8  | 67.0  | 54.2  | -     | -    | 141.1                             | 8.1                           | 89.5                    | 76.7  | 64.0  | 51.3  | -    | -    |
|                        | 67      | 136.6                                | 7.1                           | 114.0                   | 101.2 | 88.4  | 75.6  | 62.8  | -    | 128.6                             | 8.0                           | 110.4                   | 97.6  | 84.9  | 72.2  | 59.5 | -    |
|                        | 62      | 127.2                                | 7.0                           | 127.2                   | 124.1 | 108.2 | 95.4  | 82.6  | 69.8 | 119.0                             | 7.9                           | 119.0                   | 117.5 | 104.8 | 92.1  | 79.3 | 66.6 |
| 3500                   | 77      | 170.1                                | 7.4                           | 78.9                    | 64.2  | 49.4  | -     | -     | -    | 159.1                             | 8.2                           | 76.0                    | 61.5  | 46.9  | -     | -    | -    |
|                        | 72      | 155.5                                | 7.3                           | 102.1                   | 87.4  | 72.7  | 57.9  | -     | -    | 146.1                             | 8.1                           | 98.7                    | 84.2  | 69.6  | 55.0  | -    | -    |
|                        | 67      | 140.9                                | 7.1                           | 125.4                   | 110.6 | 95.9  | 81.2  | 66.5  | -    | 133.1                             | 8.1                           | 121.5                   | 106.9 | 92.3  | 77.7  | 63.2 | -    |
|                        | 62      | 131.2                                | 7.1                           | 131.2                   | 129.7 | 117.5 | 102.7 | 88.0  | 73.3 | 123.3                             | 8.0                           | 123.3                   | 122.5 | 113.9 | 99.3  | 84.8 | 70.2 |
| 4000                   | 77      | 175.4                                | 7.4                           | 86.6                    | 70.0  | 53.3  | -     | -     | -    | 164.5                             | 8.3                           | 83.5                    | 67.1  | 50.7  | -     | -    | -    |
|                        | 72      | 160.3                                | 7.3                           | 111.7                   | 95.0  | 78.4  | 61.7  | -     | -    | 151.1                             | 8.2                           | 108.0                   | 91.6  | 75.2  | 58.8  | -    | -    |
|                        | 67      | 145.3                                | 7.2                           | 136.7                   | 120.1 | 103.4 | 86.8  | 70.1  | -    | 137.6                             | 8.1                           | 132.5                   | 116.1 | 99.7  | 83.3  | 66.9 | -    |
|                        | 62      | 135.3                                | 7.1                           | 135.3                   | 135.3 | 126.7 | 110.0 | 93.4  | 76.7 | 127.5                             | 8.0                           | 127.5                   | 127.5 | 123.0 | 106.6 | 90.2 | 73.8 |
| 4500                   | 77      | 175.4                                | 7.4                           | 86.6                    | 70.0  | 53.3  | -     | -     | -    | 164.5                             | 8.3                           | 83.5                    | 67.1  | 50.7  | -     | -    | -    |
|                        | 72      | 160.3                                | 7.3                           | 111.7                   | 95.0  | 78.4  | 61.7  | -     | -    | 151.1                             | 8.2                           | 108.0                   | 91.6  | 75.2  | 58.8  | -    | -    |
|                        | 67      | 145.3                                | 7.2                           | 136.7                   | 120.1 | 103.4 | 86.8  | 70.1  | -    | 137.6                             | 8.1                           | 132.5                   | 116.1 | 99.7  | 83.3  | 66.9 | -    |
|                        | 62      | 135.3                                | 7.1                           | 135.3                   | 135.3 | 126.7 | 110.0 | 93.4  | 76.7 | 127.5                             | 8.0                           | 127.5                   | 127.5 | 123.0 | 106.6 | 90.2 | 73.8 |
| 5000                   | 77      | 175.4                                | 7.4                           | 86.6                    | 70.0  | 53.3  | -     | -     | -    | 164.5                             | 8.3                           | 83.5                    | 67.1  | 50.7  | -     | -    | -    |
|                        | 72      | 160.3                                | 7.3                           | 111.7                   | 95.0  | 78.4  | 61.7  | -     | -    | 151.1                             | 8.2                           | 108.0                   | 91.6  | 75.2  | 58.8  | -    | -    |
|                        | 67      | 145.3                                | 7.2                           | 136.7                   | 120.1 | 103.4 | 86.8  | 70.1  | -    | 137.6                             | 8.1                           | 132.5                   | 116.1 | 99.7  | 83.3  | 66.9 | -    |
|                        | 62      | 135.3                                | 7.1                           | 135.3                   | 135.3 | 126.7 | 110.0 | 93.4  | 76.7 | 127.5                             | 8.0                           | 127.5                   | 127.5 | 123.0 | 106.6 | 90.2 | 73.8 |
| 4500                   | 72      | 164.1                                | 7.4                           | 118.0                   | 100.1 | 82.2  | 64.4  | -     | -    | 154.0                             | 8.2                           | 115.6                   | 97.7  | 79.8  | 61.9  | -    | -    |
|                        | 67      | 148.7                                | 7.2                           | 144.4                   | 126.4 | 108.5 | 90.7  | 72.8  | -    | 140.3                             | 8.1                           | 137.7                   | 123.7 | 105.8 | 87.9  | 70.1 | -    |
|                        | 62      | 138.4                                | 7.1                           | 138.4                   | 138.4 | 134.1 | 116.3 | 98.4  | 80.5 | 129.9                             | 8.0                           | 129.9                   | 129.9 | 127.7 | 109.8 | 91.9 | 74.0 |
|                        | 57      | 137.0                                | 7.1                           | 137.0                   | 137.0 | 136.4 | 118.6 | 100.7 | 82.8 | 129.3                             | 8.0                           | 129.3                   | 129.3 | 128.8 | 110.9 | 93.0 | 75.1 |
| 5000                   | 72      | 167.8                                | 7.4                           | 124.3                   | 105.2 | 86.1  | 67.0  | -     | -    | 156.8                             | 8.2                           | 123.1                   | 103.7 | 84.4  | 65.0  | -    | -    |
|                        | 67      | 152.0                                | 7.3                           | 152.0                   | 132.7 | 113.6 | 94.5  | 75.5  | -    | 142.9                             | 8.1                           | 142.9                   | 131.3 | 111.9 | 92.6  | 73.2 | -    |
|                        | 62      | 141.6                                | 7.2                           | 141.6                   | 141.6 | 141.6 | 122.5 | 103.4 | 84.3 | 132.3                             | 8.0                           | 132.3                   | 132.3 | 132.3 | 112.9 | 93.6 | 74.2 |
|                        | 57      | 140.1                                | 7.2                           | 140.1                   | 140.1 | 140.1 | 121.0 | 101.9 | 82.9 | 131.7                             | 8.0                           | 131.7                   | 131.7 | 131.7 | 112.4 | 93.0 | 73.7 |
|                        |         | <b>95°F</b>                          |                               |                         |       |       |       |       |      | <b>105°F</b>                      |                               |                         |       |       |       |      |      |
| 2500                   | 77      | 136.9                                | 9.0                           | 58.8                    | 47.9  | 37.1  | -     | -     | -    | 125.0                             | 10.0                          | 52.9                    | 44.3  | 33.5  | -     | -    | -    |
|                        | 72      | 126.4                                | 8.9                           | 77.3                    | 66.5  | 55.6  | 44.8  | -     | -    | 115.5                             | 10.0                          | 73.3                    | 62.5  | 51.7  | 40.9  | -    | -    |
|                        | 67      | 115.8                                | 8.9                           | 95.9                    | 85.0  | 74.1  | 63.3  | 52.4  | -    | 105.9                             | 10.0                          | 93.6                    | 80.7  | 69.9  | 59.1  | 48.3 | -    |
|                        | 62      | 106.6                                | 8.8                           | 106.6                   | 106.6 | 92.2  | 81.4  | 70.5  | 59.7 | 98.2                              | 9.9                           | 98.2                    | 98.2  | 86.0  | 75.2  | 64.5 | 53.7 |
| 3000                   | 77      | 142.5                                | 9.0                           | 66.0                    | 53.4  | 40.7  | -     | -     | -    | 131.1                             | 10.1                          | 62.3                    | 49.7  | 37.2  | -     | -    | -    |
|                        | 72      | 131.5                                | 9.0                           | 86.3                    | 73.7  | 61.1  | 48.5  | -     | -    | 121.1                             | 10.0                          | 82.5                    | 69.9  | 57.3  | 44.7  | -    | -    |
|                        | 67      | 120.5                                | 8.9                           | 106.7                   | 94.1  | 81.4  | 68.8  | 56.2  | -    | 111.1                             | 10.0                          | 102.6                   | 90.0  | 77.5  | 64.9  | 52.3 | -    |
|                        | 62      | 110.9                                | 8.8                           | 110.9                   | 110.9 | 101.3 | 88.7  | 76.0  | 63.4 | 102.9                             | 9.9                           | 102.9                   | 102.9 | 95.3  | 82.7  | 70.2 | 57.6 |
| 3500                   | 77      | 148.1                                | 9.1                           | 73.2                    | 58.8  | 44.4  | -     | -     | -    | 137.1                             | 10.1                          | 71.7                    | 55.1  | 40.8  | -     | -    | -    |
|                        | 72      | 136.7                                | 9.0                           | 95.4                    | 80.9  | 66.5  | 52.1  | -     | -    | 126.7                             | 10.1                          | 91.6                    | 77.3  | 62.9  | 48.5  | -    | -    |
|                        | 67      | 125.3                                | 9.0                           | 117.5                   | 103.1 | 88.7  | 74.3  | 59.9  | -    | 116.2                             | 10.1                          | 111.6                   | 99.4  | 85.0  | 70.7  | 56.3 | -    |
|                        | 62      | 115.3                                | 8.9                           | 115.3                   | 115.3 | 110.4 | 96.0  | 81.6  | 67.2 | 107.7                             | 10.0                          | 107.7                   | 107.7 | 104.6 | 90.3  | 75.9 | 61.5 |
| 4000                   | 77      | 153.7                                | 9.1                           | 80.4                    | 64.2  | 48.0  | -     | -     | -    | 143.2                             | 10.2                          | 81.1                    | 60.5  | 44.4  | -     | -    | -    |
|                        | 72      | 141.9                                | 9.0                           | 104.4                   | 88.2  | 72.0  | 55.8  | -     | -    | 132.3                             | 10.2                          | 100.8                   | 84.7  | 68.5  | 52.3  | -    | -    |
|                        | 67      | 130.0                                | 9.0                           | 128.3                   | 112.2 | 96.0  | 79.8  | 63.7  | -    | 121.4                             | 10.1                          | 120.5                   | 108.8 | 92.6  | 76.4  | 60.3 | -    |
|                        | 62      | 119.6                                | 8.9                           | 119.6                   | 119.6 | 119.4 | 103.3 | 87.1  | 70.9 | 112.5                             | 10.0                          | 112.5                   | 112.5 | 113.9 | 97.8  | 81.6 | 65.4 |
| 4500                   | 77      | 153.7                                | 9.1                           | 80.4                    | 64.2  | 48.0  | -     | -     | -    | 143.2                             | 10.2                          | 81.1                    | 60.5  | 44.4  | -     | -    | -    |
|                        | 72      | 141.9                                | 9.0                           | 104.4                   | 88.2  | 72.0  | 55.8  | -     | -    | 132.3                             | 10.2                          | 100.8                   | 84.7  | 68.5  | 52.3  | -    | -    |
|                        | 67      | 130.0                                | 9.0                           | 128.3                   | 112.2 | 96.0  | 79.8  | 63.7  | -    | 121.4                             | 10.1                          | 120.5                   | 108.8 | 92.6  | 76.4  | 60.3 | -    |
|                        | 62      | 119.6                                | 8.9                           | 119.6                   | 119.6 | 119.4 | 103.3 | 87.1  | 70.9 | 112.5                             | 10.0                          | 112.5                   | 112.5 | 113.9 | 97.8  | 81.6 | 65.4 |
| 5000                   | 72      | 143.9                                | 9.1                           | 113.1                   | 95.2  | 77.3  | 59.4  | -     | -    | 133.6                             | 10.1                          | 109.0                   | 91.2  | 73.5  | 55.7  | -    | -    |
|                        | 67      | 131.8                                | 9.0                           | 131.0                   | 121.0 | 103.1 | 85.2  | 67.3  | -    | 122.6                             | 10.1                          | 122.2                   | 115.3 | 99.4  | 81.6  | 63.8 | -    |
|                        | 62      | 121.3                                | 8.9                           | 121.3                   | 121.3 | 121.2 | 103.3 | 85.4  | 67.5 | 113.6                             | 10.0                          | 113.6                   | 113.6 | 114.3 | 96.6  | 78.8 | 61.1 |
|                        | 57      | 121.7                                | 8.9                           | 121.7                   | 121.7 | 121.1 | 103.2 | 85.3  | 67.5 | 113.8                             | 10.0                          | 113.8                   | 113.8 | 113.1 | 95.4  | 77.6 | 59.8 |
| 5000                   | 72      | 145.9                                | 9.1                           | 121.9                   | 102.3 | 82.7  | 63.1  | -     | -    | 134.9                             | 10.1                          | 117.2                   | 97.8  | 78.5  | 59.1  | -    | -    |
|                        | 67      | 133.7                                | 9.0                           | 133.7                   | 129.8 | 110.2 | 90.6  | 71.0  | -    | 123.8                             | 10.1                          | 123.8                   | 121.9 | 106.1 | 86.8  | 67.4 | -    |
|                        | 62      | 123.0                                | 8.9                           | 123.0                   | 123.0 | 123.0 | 103.4 | 83.8  | 64.2 | 114.7                             | 10.0                          | 114.7                   | 114.7 | 114.7 | 95.4  | 76.1 | 56.7 |
|                        | 57      | 123.4                                | 8.9                           | 123.4                   | 123.4 | 123.4 | 103.7 | 84.1  | 64.5 | 114.9                             | 10.0                          | 114.9                   | 114.9 | 114.9 | 95.5  | 76.2 | 56.8 |

**ZJ120 (10 Ton) (Continued)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |       |       |      |      |      |                                   |                               |                         |       |      |      |      |      |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|-------|-------|------|------|------|-----------------------------------|-------------------------------|-------------------------|-------|------|------|------|------|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |      |      |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |      |      |      |      |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |       |       |      |      |      |                                   |                               | Return Dry Bulb (°F)    |       |      |      |      |      |
|                        |         |                                      |                               | 90                      | 85    | 80    | 75   | 70   | 65   |                                   |                               | 90                      | 85    | 80   | 75   | 70   | 65   |
|                        |         |                                      |                               | <b>115°F</b>            |       |       |      |      |      | <b>125°F</b>                      |                               |                         |       |      |      |      |      |
| 2500                   | 77      | 113.0                                | 11.0                          | 47.0                    | 40.7  | 30.0  | -    | -    | -    | 101.1                             | 12.1                          | 44.1                    | 37.0  | 26.4 | -    | -    | -    |
|                        | 72      | 104.5                                | 11.0                          | 69.2                    | 58.5  | 47.8  | 37.1 | -    | -    | 93.6                              | 12.1                          | 65.1                    | 54.5  | 43.9 | 33.3 | -    | -    |
|                        | 67      | 96.0                                 | 11.0                          | 91.4                    | 76.3  | 65.6  | 55.0 | 44.3 | -    | 86.1                              | 12.1                          | 86.1                    | 72.0  | 61.4 | 50.8 | 40.2 | -    |
|                        | 62      | 89.7                                 | 11.0                          | 89.7                    | 89.7  | 79.8  | 69.1 | 58.4 | 47.7 | 81.3                              | 12.1                          | 81.3                    | 81.3  | 74.1 | 63.0 | 52.3 | 41.7 |
| 3000                   | 77      | 119.6                                | 11.1                          | 58.6                    | 46.1  | 33.6  | -    | -    | -    | 108.1                             | 12.1                          | 57.2                    | 42.5  | 30.0 | -    | -    | -    |
|                        | 72      | 110.6                                | 11.1                          | 78.6                    | 66.1  | 53.5  | 41.0 | -    | -    | 100.1                             | 12.2                          | 74.7                    | 62.2  | 49.8 | 37.3 | -    | -    |
|                        | 67      | 101.6                                | 11.1                          | 98.5                    | 86.0  | 73.5  | 61.0 | 48.5 | -    | 92.1                              | 12.2                          | 92.1                    | 82.0  | 69.5 | 57.1 | 44.6 | -    |
|                        | 62      | 94.9                                 | 11.0                          | 94.9                    | 94.9  | 89.3  | 76.8 | 64.3 | 51.8 | 87.0                              | 12.2                          | 87.0                    | 87.0  | 83.3 | 70.9 | 58.4 | 46.0 |
|                        | 57      | 94.9                                 | 11.0                          | 94.9                    | 94.9  | 85.5  | 73.0 | 60.5 | 47.9 | 86.7                              | 12.0                          | 86.7                    | 86.7  | 77.8 | 65.3 | 52.9 | 40.4 |
| 3500                   | 77      | 126.1                                | 11.2                          | 70.2                    | 51.5  | 37.2  | -    | -    | -    | 115.1                             | 12.2                          | 70.3                    | 47.9  | 33.6 | -    | -    | -    |
|                        | 72      | 116.6                                | 11.2                          | 87.9                    | 73.6  | 59.3  | 44.9 | -    | -    | 106.6                             | 12.3                          | 84.2                    | 69.9  | 55.6 | 41.3 | -    | -    |
|                        | 67      | 107.2                                | 11.2                          | 105.6                   | 95.7  | 81.4  | 67.0 | 52.7 | -    | 98.1                              | 12.3                          | 98.1                    | 92.0  | 77.7 | 63.4 | 49.1 | -    |
|                        | 62      | 100.1                                | 11.1                          | 100.1                   | 100.1 | 98.9  | 84.6 | 70.2 | 55.9 | 92.6                              | 12.3                          | 92.6                    | 92.6  | 92.6 | 78.8 | 64.6 | 50.3 |
|                        | 57      | 100.1                                | 11.0                          | 100.1                   | 100.1 | 94.6  | 80.3 | 66.0 | 51.6 | 92.3                              | 12.1                          | 92.3                    | 92.3  | 87.0 | 72.7 | 58.4 | 44.1 |
| 4000                   | 77      | 132.7                                | 11.3                          | 81.8                    | 56.9  | 40.8  | -    | -    | -    | 122.2                             | 12.3                          | 83.4                    | 53.3  | 37.1 | -    | -    | -    |
|                        | 72      | 122.7                                | 11.3                          | 97.3                    | 81.1  | 65.0  | 48.8 | -    | -    | 113.1                             | 12.4                          | 93.7                    | 77.6  | 61.5 | 45.3 | -    | -    |
|                        | 67      | 112.7                                | 11.3                          | 112.7                   | 105.4 | 89.2  | 73.1 | 56.9 | -    | 104.1                             | 12.4                          | 104.1                   | 102.0 | 85.8 | 69.7 | 53.6 | -    |
|                        | 62      | 105.3                                | 11.2                          | 105.3                   | 105.3 | 108.4 | 92.3 | 76.1 | 60.0 | 98.2                              | 12.4                          | 98.2                    | 98.2  | 98.2 | 86.8 | 70.7 | 54.5 |
|                        | 57      | 105.3                                | 11.1                          | 105.3                   | 105.3 | 103.7 | 87.6 | 71.5 | 55.3 | 98.0                              | 12.2                          | 98.0                    | 98.0  | 96.2 | 80.0 | 63.9 | 47.8 |
| 4500                   | 72      | 123.4                                | 11.2                          | 104.9                   | 87.3  | 69.6  | 52.0 | -    | -    | 113.1                             | 12.3                          | 100.8                   | 83.3  | 65.8 | 48.3 | -    | -    |
|                        | 67      | 113.3                                | 11.2                          | 113.3                   | 109.7 | 95.6  | 78.0 | 60.4 | -    | 104.1                             | 12.3                          | 104.1                   | 104.0 | 91.9 | 74.4 | 56.9 | -    |
|                        | 62      | 105.9                                | 11.2                          | 105.9                   | 105.9 | 107.5 | 89.8 | 72.2 | 54.6 | 98.2                              | 12.3                          | 98.2                    | 98.2  | 98.2 | 83.1 | 65.6 | 48.1 |
|                        | 57      | 105.9                                | 11.1                          | 105.9                   | 105.9 | 105.1 | 87.5 | 69.9 | 52.2 | 98.0                              | 12.2                          | 98.0                    | 98.0  | 97.1 | 79.6 | 62.1 | 44.6 |
| 5000                   | 72      | 124.0                                | 11.2                          | 112.5                   | 93.4  | 74.3  | 55.2 | -    | -    | 113.1                             | 12.3                          | 107.8                   | 89.0  | 70.1 | 51.3 | -    | -    |
|                        | 67      | 113.9                                | 11.2                          | 113.9                   | 113.9 | 102.0 | 82.9 | 63.8 | -    | 104.1                             | 12.3                          | 104.1                   | 104.1 | 97.9 | 79.1 | 60.3 | -    |
|                        | 62      | 106.5                                | 11.2                          | 106.5                   | 106.5 | 106.5 | 87.4 | 68.3 | 49.2 | 98.2                              | 12.3                          | 98.2                    | 98.2  | 98.2 | 79.4 | 60.6 | 41.7 |
|                        | 57      | 106.4                                | 11.1                          | 106.4                   | 106.4 | 106.4 | 87.3 | 68.3 | 49.2 | 98.0                              | 12.1                          | 98.0                    | 98.0  | 98.0 | 79.1 | 60.3 | 41.5 |

1. These capacities are gross ratings. For net capacity, deduct air blower motor, MBh = 3.415 x kW. Refer to the appropriate Blower Performance Table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors (total 1 kW) and the compressor motors but not the supply air blower motor.



**ZJ150 (12.5 Ton)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |       |       |       |       |       |       |      |                                   |                               |                         |       |       |       |  |  |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|-------|-------|-------|-------|-------|-------|------|-----------------------------------|-------------------------------|-------------------------|-------|-------|-------|--|--|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |       |       |       |       |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |       |  |  |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |       |       |       |       |       |       |      |                                   |                               | Return Dry Bulb (°F)    |       |       |       |  |  |
|                        |         |                                      |                               | 90                      | 85    | 80    | 75    | 70    | 65    | 90    | 85   |                                   |                               | 80                      | 75    | 70    | 65    |  |  |
|                        |         |                                      |                               | <b>75°F</b>             |       |       |       |       |       |       |      | <b>85°F</b>                       |                               |                         |       |       |       |  |  |
| 3125                   | 77      | 191.5                                | 9.8                           | 80.3                    | 66.9  | 53.5  | -     | -     | -     | 184.5 | 10.7 | 76.0                              | 62.6                          | 49.3                    | -     | -     | -     |  |  |
|                        | 72      | 178.7                                | 9.5                           | 103.3                   | 89.9  | 76.4  | 63.0  | -     | -     | 171.3 | 10.5 | 99.0                              | 85.7                          | 72.3                    | 59.0  | -     | -     |  |  |
|                        | 67      | 165.9                                | 9.2                           | 126.3                   | 112.8 | 99.4  | 86.0  | 72.6  | -     | 158.1 | 10.2 | 122.1                             | 108.8                         | 95.4                    | 82.1  | 68.7  | -     |  |  |
|                        | 62      | 149.9                                | 9.1                           | 149.9                   | 139.5 | 122.9 | 109.5 | 96.1  | 82.7  | 143.1 | 10.1 | 143.1                             | 135.8                         | 117.5                   | 104.2 | 90.8  | 77.5  |  |  |
| 3750                   | 77      | 201.3                                | 9.8                           | 89.4                    | 74.2  | 58.9  | -     | -     | -     | 193.5 | 10.7 | 85.1                              | 69.8                          | 54.5                    | -     | -     | -     |  |  |
|                        | 72      | 187.9                                | 9.5                           | 114.7                   | 99.5  | 84.2  | 69.0  | -     | -     | 179.6 | 10.5 | 110.6                             | 95.3                          | 80.0                    | 64.6  | -     | -     |  |  |
|                        | 67      | 174.5                                | 9.3                           | 140.0                   | 124.8 | 109.5 | 94.3  | 79.1  | -     | 165.8 | 10.3 | 136.1                             | 120.8                         | 105.5                   | 90.1  | 74.8  | -     |  |  |
|                        | 62      | 157.6                                | 9.1                           | 157.6                   | 150.7 | 135.4 | 120.2 | 105.0 | 89.7  | 150.1 | 10.1 | 150.1                             | 145.2                         | 129.9                   | 114.6 | 99.3  | 83.9  |  |  |
| 4375                   | 77      | 211.1                                | 9.8                           | 98.5                    | 81.5  | 64.4  | -     | -     | -     | 202.4 | 10.8 | 94.2                              | 76.9                          | 59.6                    | -     | -     | -     |  |  |
|                        | 72      | 197.0                                | 9.6                           | 126.2                   | 109.1 | 92.0  | 75.0  | -     | -     | 187.9 | 10.6 | 122.1                             | 104.9                         | 87.6                    | 70.3  | -     | -     |  |  |
|                        | 67      | 183.0                                | 9.3                           | 153.8                   | 136.7 | 119.7 | 102.6 | 85.5  | -     | 173.5 | 10.3 | 150.1                             | 132.8                         | 115.5                   | 98.2  | 80.9  | -     |  |  |
|                        | 62      | 165.3                                | 9.1                           | 165.3                   | 161.8 | 148.0 | 130.9 | 113.8 | 96.8  | 157.0 | 10.1 | 157.0                             | 154.6                         | 142.3                   | 125.0 | 107.7 | 90.4  |  |  |
| 5000                   | 77      | 221.0                                | 9.9                           | 107.6                   | 88.8  | 69.9  | -     | -     | -     | 211.4 | 10.9 | 103.3                             | 84.1                          | 64.8                    | -     | -     | -     |  |  |
|                        | 72      | 206.2                                | 9.6                           | 137.6                   | 118.7 | 99.8  | 80.9  | -     | -     | 196.3 | 10.6 | 133.7                             | 114.4                         | 95.2                    | 75.9  | -     | -     |  |  |
|                        | 67      | 191.5                                | 9.3                           | 167.5                   | 148.7 | 129.8 | 110.9 | 92.0  | -     | 181.2 | 10.4 | 164.1                             | 144.8                         | 125.5                   | 106.3 | 87.0  | -     |  |  |
|                        | 62      | 173.0                                | 9.1                           | 173.0                   | 173.0 | 160.5 | 141.6 | 122.7 | 103.8 | 164.0 | 10.2 | 164.0                             | 164.0                         | 154.6                   | 135.4 | 116.1 | 96.9  |  |  |
| 5625                   | 72      | 215.4                                | 9.6                           | 150.0                   | 129.1 | 108.3 | 87.5  | -     | -     | 204.6 | 10.7 | 146.0                             | 124.7                         | 103.5                   | 82.2  | -     | -     |  |  |
|                        | 67      | 200.0                                | 9.3                           | 185.5                   | 161.6 | 140.8 | 119.9 | 99.1  | -     | 188.8 | 10.4 | 179.0                             | 157.7                         | 136.5                   | 115.2 | 93.9  | -     |  |  |
|                        | 62      | 180.7                                | 9.2                           | 180.7                   | 180.7 | 174.4 | 153.6 | 132.8 | 111.9 | 170.9 | 10.2 | 170.9                             | 170.9                         | 166.3                   | 145.0 | 123.7 | 102.4 |  |  |
|                        | 57      | 174.6                                | 9.1                           | 174.6                   | 174.6 | 174.4 | 153.5 | 132.7 | 111.9 | 166.1 | 10.3 | 166.1                             | 166.1                         | 166.2                   | 144.9 | 123.6 | 102.3 |  |  |
| 6250                   | 72      | 224.6                                | 9.6                           | 162.3                   | 139.5 | 116.7 | 94.0  | -     | -     | 212.9 | 10.7 | 158.4                             | 135.1                         | 111.7                   | 88.4  | -     | -     |  |  |
|                        | 67      | 208.5                                | 9.3                           | 203.5                   | 174.5 | 151.8 | 129.0 | 106.2 | -     | 196.5 | 10.5 | 194.0                             | 170.7                         | 147.4                   | 124.1 | 100.8 | -     |  |  |
|                        | 62      | 188.4                                | 9.2                           | 188.4                   | 188.4 | 188.4 | 165.6 | 142.8 | 120.0 | 177.9 | 10.3 | 177.9                             | 177.9                         | 177.9                   | 154.6 | 131.3 | 108.0 |  |  |
|                        | 57      | 182.0                                | 9.2                           | 182.0                   | 182.0 | 182.0 | 159.2 | 136.5 | 113.7 | 172.8 | 10.3 | 172.8                             | 172.8                         | 172.8                   | 149.5 | 126.2 | 102.9 |  |  |
|                        |         |                                      |                               | <b>95°F</b>             |       |       |       |       |       |       |      | <b>105°F</b>                      |                               |                         |       |       |       |  |  |
| 3125                   | 77      | 177.5                                | 11.6                          | 71.6                    | 58.3  | 45.1  | -     | -     | -     | 168.0 | 12.8 | 67.5                              | 55.1                          | 42.0                    | -     | -     | -     |  |  |
|                        | 72      | 163.9                                | 11.4                          | 94.8                    | 81.5  | 68.2  | 55.0  | -     | -     | 154.2 | 12.7 | 90.8                              | 77.7                          | 64.5                    | 51.4  | -     | -     |  |  |
|                        | 67      | 150.3                                | 11.2                          | 118.0                   | 104.7 | 91.4  | 78.1  | 64.9  | -     | 140.3 | 12.6 | 114.2                             | 100.2                         | 87.1                    | 73.9  | 60.8  | -     |  |  |
|                        | 62      | 136.4                                | 11.0                          | 136.4                   | 132.1 | 112.1 | 98.9  | 85.6  | 72.3  | 128.6 | 12.4 | 128.6                             | 126.4                         | 106.8                   | 93.6  | 80.5  | 67.3  |  |  |
| 3750                   | 77      | 185.6                                | 11.7                          | 80.8                    | 65.4  | 50.0  | -     | -     | -     | 175.2 | 12.9 | 77.1                              | 61.9                          | 46.7                    | -     | -     | -     |  |  |
|                        | 72      | 171.4                                | 11.5                          | 106.5                   | 91.1  | 75.7  | 60.3  | -     | -     | 160.8 | 12.8 | 102.2                             | 86.9                          | 71.7                    | 56.5  | -     | -     |  |  |
|                        | 67      | 157.2                                | 11.3                          | 132.2                   | 116.8 | 101.4 | 86.0  | 70.6  | -     | 146.4 | 12.7 | 127.2                             | 112.0                         | 96.8                    | 81.6  | 66.4  | -     |  |  |
|                        | 62      | 142.6                                | 11.1                          | 142.6                   | 139.7 | 124.3 | 109.0 | 93.6  | 78.2  | 134.1 | 12.5 | 134.1                             | 132.7                         | 118.7                   | 103.5 | 88.2  | 73.0  |  |  |
| 4375                   | 77      | 193.7                                | 11.8                          | 89.9                    | 72.4  | 54.9  | -     | -     | -     | 182.4 | 13.0 | 86.7                              | 68.6                          | 51.3                    | -     | -     | -     |  |  |
|                        | 72      | 178.9                                | 11.6                          | 118.1                   | 100.6 | 83.1  | 65.6  | -     | -     | 167.4 | 12.9 | 113.5                             | 96.2                          | 78.9                    | 61.6  | -     | -     |  |  |
|                        | 67      | 164.0                                | 11.4                          | 146.4                   | 128.8 | 111.3 | 93.8  | 76.3  | -     | 152.4 | 12.8 | 140.3                             | 123.8                         | 106.5                   | 89.2  | 71.9  | -     |  |  |
|                        | 62      | 148.8                                | 11.2                          | 148.8                   | 147.4 | 136.6 | 119.1 | 101.5 | 84.0  | 139.6 | 12.6 | 139.6                             | 138.9                         | 130.6                   | 113.3 | 96.0  | 78.7  |  |  |
| 5000                   | 77      | 201.8                                | 11.9                          | 99.1                    | 79.4  | 59.8  | -     | -     | -     | 189.6 | 13.1 | 96.3                              | 75.4                          | 56.0                    | -     | -     | -     |  |  |
|                        | 72      | 186.3                                | 11.7                          | 129.8                   | 110.2 | 90.5  | 70.9  | -     | -     | 174.0 | 13.0 | 124.8                             | 105.5                         | 86.1                    | 66.8  | -     | -     |  |  |
|                        | 67      | 170.8                                | 11.5                          | 160.6                   | 140.9 | 121.3 | 101.7 | 82.0  | -     | 158.5 | 12.9 | 153.3                             | 135.6                         | 116.2                   | 96.9  | 77.5  | -     |  |  |
|                        | 62      | 155.0                                | 11.3                          | 155.0                   | 155.0 | 148.8 | 129.2 | 109.5 | 89.9  | 145.1 | 12.7 | 145.1                             | 145.1                         | 142.5                   | 123.2 | 103.8 | 84.5  |  |  |
| 5625                   | 72      | 193.8                                | 11.8                          | 142.1                   | 120.4 | 98.6  | 76.9  | -     | -     | 180.7 | 13.1 | 136.9                             | 115.4                         | 94.0                    | 72.5  | -     | -     |  |  |
|                        | 67      | 177.7                                | 11.6                          | 172.5                   | 153.9 | 132.1 | 110.4 | 88.7  | -     | 164.5 | 13.0 | 161.9                             | 148.3                         | 126.8                   | 105.3 | 83.9  | -     |  |  |
|                        | 62      | 161.2                                | 11.3                          | 161.2                   | 161.2 | 158.1 | 136.4 | 114.6 | 92.9  | 150.7 | 12.8 | 150.7                             | 150.7                         | 149.3                   | 127.9 | 106.4 | 84.9  |  |  |
|                        | 57      | 157.6                                | 11.4                          | 157.6                   | 157.6 | 157.9 | 136.2 | 114.5 | 92.7  | 147.8 | 12.8 | 147.8                             | 147.8                         | 148.0                   | 126.5 | 105.0 | 83.6  |  |  |
| 6250                   | 72      | 201.2                                | 11.9                          | 154.4                   | 130.6 | 106.7 | 82.9  | -     | -     | 187.3 | 13.2 | 149.0                             | 125.4                         | 101.8                   | 78.2  | -     | -     |  |  |
|                        | 67      | 184.5                                | 11.7                          | 184.5                   | 166.8 | 143.0 | 119.2 | 95.3  | -     | 170.5 | 13.1 | 170.5                             | 161.0                         | 137.4                   | 113.8 | 90.2  | -     |  |  |
|                        | 62      | 167.4                                | 11.4                          | 167.4                   | 167.4 | 167.4 | 143.6 | 119.7 | 95.9  | 156.2 | 12.9 | 156.2                             | 156.2                         | 156.2                   | 132.6 | 109.0 | 85.4  |  |  |
|                        | 57      | 163.6                                | 11.5                          | 163.6                   | 163.6 | 163.6 | 139.8 | 116.0 | 92.1  | 153.2 | 12.9 | 153.2                             | 153.2                         | 153.2                   | 129.6 | 106.0 | 82.4  |  |  |

**ZJ150 (12.5 Ton) (Continued)**

| Air on Evaporator Coil |         | Temperature of Air on Condenser Coil |                               |                         |       |       |       |      |      |                                   |                               |                         |       |       |       |      |      |
|------------------------|---------|--------------------------------------|-------------------------------|-------------------------|-------|-------|-------|------|------|-----------------------------------|-------------------------------|-------------------------|-------|-------|-------|------|------|
| CFM                    | WB (°F) | Total Capacity <sup>1</sup> (MBh)    | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |       |      |      | Total Capacity <sup>1</sup> (MBh) | Total Input (kW) <sup>2</sup> | Sensible Capacity (MBh) |       |       |       |      |      |
|                        |         |                                      |                               | Return Dry Bulb (°F)    |       |       |       |      |      |                                   |                               | Return Dry Bulb (°F)    |       |       |       |      |      |
|                        |         |                                      |                               | 90                      | 85    | 80    | 75    | 70   | 65   |                                   |                               | 90                      | 85    | 80    | 75    | 70   | 65   |
|                        |         |                                      |                               | <b>115°F</b>            |       |       |       |      |      | <b>125°F</b>                      |                               |                         |       |       |       |      |      |
| 3125                   | 77      | 158.4                                | 14.0                          | 63.3                    | 51.9  | 38.9  | -     | -    | -    | 148.8                             | 15.3                          | 56.6                    | 48.7  | 35.8  | -     | -    | -    |
|                        | 72      | 144.4                                | 14.0                          | 86.9                    | 73.8  | 60.8  | 47.8  | -    | -    | 134.6                             | 15.3                          | 82.9                    | 70.0  | 57.1  | 44.2  | -    | -    |
|                        | 67      | 130.4                                | 14.0                          | 110.4                   | 95.8  | 82.7  | 69.7  | 56.7 | -    | 120.4                             | 15.4                          | 106.6                   | 91.3  | 78.4  | 65.5  | 52.6 | -    |
|                        | 62      | 120.7                                | 13.8                          | 120.7                   | 120.7 | 101.4 | 88.4  | 75.3 | 62.3 | 112.9                             | 15.2                          | 112.9                   | 112.9 | 96.0  | 83.1  | 70.2 | 57.3 |
| 3750                   | 77      | 164.8                                | 14.1                          | 73.4                    | 58.4  | 43.3  | -     | -    | -    | 154.3                             | 15.4                          | 69.8                    | 54.9  | 40.0  | -     | -    | -    |
|                        | 72      | 150.2                                | 14.1                          | 97.9                    | 82.8  | 67.8  | 52.7  | -    | -    | 139.6                             | 15.4                          | 93.6                    | 78.7  | 63.8  | 48.9  | -    | -    |
|                        | 67      | 135.6                                | 14.1                          | 122.3                   | 107.3 | 92.2  | 77.2  | 62.1 | -    | 124.8                             | 15.5                          | 117.4                   | 102.5 | 87.6  | 72.7  | 57.9 | -    |
|                        | 62      | 125.6                                | 13.9                          | 125.6                   | 125.6 | 113.0 | 98.0  | 82.9 | 67.9 | 117.1                             | 15.3                          | 117.1                   | 117.1 | 107.3 | 92.5  | 77.6 | 62.7 |
|                        | 57      | 123.7                                | 13.9                          | 123.7                   | 123.7 | 110.6 | 95.6  | 80.5 | 65.5 | 115.8                             | 15.3                          | 115.8                   | 115.8 | 102.3 | 87.4  | 72.5 | 57.7 |
| 4375                   | 77      | 171.1                                | 14.2                          | 83.5                    | 64.8  | 47.8  | -     | -    | -    | 159.8                             | 15.5                          | 82.9                    | 61.1  | 44.2  | -     | -    | -    |
|                        | 72      | 156.0                                | 14.2                          | 108.8                   | 91.8  | 74.7  | 57.7  | -    | -    | 144.5                             | 15.5                          | 104.2                   | 87.4  | 70.5  | 53.7  | -    | -    |
|                        | 67      | 140.8                                | 14.2                          | 134.2                   | 118.7 | 101.7 | 84.6  | 67.6 | -    | 129.2                             | 15.6                          | 128.1                   | 113.7 | 96.9  | 80.0  | 63.2 | -    |
|                        | 62      | 130.4                                | 14.0                          | 130.4                   | 130.4 | 124.6 | 107.6 | 90.5 | 73.4 | 121.2                             | 15.4                          | 121.2                   | 121.2 | 118.6 | 101.8 | 85.0 | 68.1 |
|                        | 57      | 128.4                                | 14.0                          | 128.4                   | 128.4 | 122.0 | 104.9 | 87.9 | 70.8 | 119.9                             | 15.5                          | 119.9                   | 119.9 | 113.1 | 96.3  | 79.4 | 62.6 |
| 5000                   | 77      | 177.5                                | 14.4                          | 93.6                    | 71.3  | 52.2  | -     | -    | -    | 165.3                             | 15.6                          | 96.0                    | 67.2  | 48.5  | -     | -    | -    |
|                        | 72      | 161.8                                | 14.3                          | 119.8                   | 100.8 | 81.7  | 62.6  | -    | -    | 149.5                             | 15.7                          | 114.8                   | 96.1  | 77.3  | 58.5  | -    | -    |
|                        | 67      | 146.1                                | 14.3                          | 146.1                   | 130.2 | 111.2 | 92.1  | 73.0 | -    | 133.7                             | 15.7                          | 133.7                   | 124.9 | 106.1 | 87.3  | 68.5 | -    |
|                        | 62      | 135.3                                | 14.1                          | 135.3                   | 135.3 | 136.2 | 117.2 | 98.1 | 79.0 | 125.4                             | 15.5                          | 125.4                   | 125.4 | 125.4 | 111.1 | 92.4 | 73.6 |
|                        | 57      | 133.2                                | 14.1                          | 133.2                   | 133.2 | 133.3 | 114.3 | 95.2 | 76.1 | 124.1                             | 15.6                          | 124.1                   | 124.1 | 123.9 | 105.1 | 86.3 | 67.5 |
| 5625                   | 72      | 167.6                                | 14.4                          | 131.7                   | 110.5 | 89.3  | 68.1  | -    | -    | 154.5                             | 15.8                          | 126.5                   | 105.6 | 84.6  | 63.6  | -    | -    |
|                        | 67      | 151.3                                | 14.4                          | 151.3                   | 142.7 | 121.5 | 100.3 | 79.0 | -    | 138.1                             | 15.8                          | 138.1                   | 137.1 | 116.1 | 95.2  | 74.2 | -    |
|                        | 62      | 140.1                                | 14.2                          | 140.1                   | 140.1 | 140.6 | 119.4 | 98.1 | 76.9 | 129.6                             | 15.6                          | 129.6                   | 129.6 | 129.6 | 110.9 | 89.9 | 68.9 |
|                        | 57      | 138.0                                | 14.2                          | 138.0                   | 138.0 | 138.0 | 116.8 | 95.6 | 74.4 | 128.2                             | 15.7                          | 128.2                   | 128.2 | 128.1 | 107.1 | 86.1 | 65.2 |
| 6250                   | 72      | 173.4                                | 14.5                          | 143.6                   | 120.2 | 96.9  | 73.5  | -    | -    | 159.4                             | 15.9                          | 138.2                   | 115.1 | 91.9  | 68.8  | -    | -    |
|                        | 67      | 156.5                                | 14.5                          | 156.5                   | 155.2 | 131.8 | 108.4 | 85.0 | -    | 142.5                             | 15.9                          | 142.5                   | 142.5 | 126.2 | 103.0 | 79.9 | -    |
|                        | 62      | 145.0                                | 14.3                          | 145.0                   | 145.0 | 145.0 | 121.6 | 98.2 | 74.8 | 133.7                             | 15.7                          | 133.7                   | 133.7 | 133.7 | 110.6 | 87.4 | 64.3 |
|                        | 57      | 142.7                                | 14.3                          | 142.7                   | 142.7 | 142.7 | 119.4 | 96.0 | 72.6 | 132.3                             | 15.8                          | 132.3                   | 132.3 | 132.3 | 109.1 | 86.0 | 62.8 |

1. These capacities are gross ratings. For net capacity, deduct air blower motor, MBh = 3.415 x kW. Refer to the appropriate Blower Performance Table for the kW of the supply air blower motor.
2. These ratings include the condenser fan motors (total 1 kW) and the compressor motors but not the supply air blower motor.

**ZJ078 (6.5 Ton) Side Duct**

| Air Flow (CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |     |      |                         |      |     |      |     |      |                        |      |      |      |      |      |      |      |      |      |
|----------------|---|------|-----|------|-------------------------|------|-----|------|-----|------|------------------------|------|------|------|------|------|------|------|------|------|
|                | 0.2   |      | 0.4 |      | 0.6                     |      | 0.8 |      | 1.0 |      | 1.2                    |      | 1.4  |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                | RPM   | BHP  | RPM | BHP  | RPM                     | BHP  | RPM | BHP  | RPM | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                | FS <sup>4</sup>                                       |      |     |      | Standard 1.5 HP & Drive |      |     |      |     |      | Hi Static 2 HP & Drive |      |      |      |      |      |      |      |      |      |
| 1800           | 514   | 0.15 | 586 | 0.33 | 657                     | 0.52 | 727 | 0.71 | 794 | 0.89 | 857                    | 1.07 | 917  | 1.23 | 972  | 1.38 | 1021 | 1.50 | 1064 | 1.59 |
| 2000           | 529   | 0.23 | 601 | 0.41 | 672                     | 0.60 | 741 | 0.79 | 808 | 0.97 | 872                    | 1.15 | 931  | 1.31 | 986  | 1.46 | 1036 | 1.58 | 1079 | 1.67 |
| 2200           | 544   | 0.33 | 616 | 0.51 | 687                     | 0.69 | 756 | 0.88 | 823 | 1.07 | 886                    | 1.24 | 946  | 1.41 | 1001 | 1.55 | 1051 | 1.67 | 1094 | 1.77 |
| 2400           | 559   | 0.43 | 631 | 0.61 | 702                     | 0.80 | 771 | 0.98 | 838 | 1.17 | 902                    | 1.35 | 961  | 1.51 | 1016 | 1.65 | 1066 | 1.78 | 1109 | 1.87 |
| 2600           | 574   | 0.54 | 646 | 0.72 | 717                     | 0.91 | 787 | 1.10 | 853 | 1.28 | 917                    | 1.46 | 977  | 1.62 | 1032 | 1.77 | 1081 | 1.89 | 1124 | 1.98 |
| 2800           | 590   | 0.67 | 662 | 0.85 | 733                     | 1.03 | 802 | 1.22 | 869 | 1.41 | 933                    | 1.59 | 993  | 1.75 | 1047 | 1.89 | 1097 | 2.02 | 1140 | 2.11 |
| 3000           | 607   | 0.80 | 679 | 0.98 | 750                     | 1.17 | 819 | 1.36 | 886 | 1.54 | 949                    | 1.72 | 1009 | 1.88 | 1064 | 2.03 | 1113 | 2.15 | 1157 | 2.24 |
| 3200           | 624   | 0.95 | 695 | 1.13 | 766                     | 1.31 | 836 | 1.50 | 903 | 1.69 | 966                    | 1.86 | 1026 | 2.03 | 1081 | 2.17 | 1130 | 2.29 | 1173 | 2.39 |
| 3400           | 641   | 1.10 | 713 | 1.28 | 784                     | 1.47 | 853 | 1.66 | 920 | 1.84 | 984                    | 2.02 | 1043 | 2.18 | 1098 | 2.33 | 1148 | 2.45 | 1191 | 2.54 |

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.
4. Field Supplied Drive.

**ZJ090 (7.5 Ton) Side Duct**

| Air Flow (CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |     |      |                         |      |     |      |     |      |                        |      |      |      |      |      |      |      |      |      |
|----------------|---|------|-----|------|-------------------------|------|-----|------|-----|------|------------------------|------|------|------|------|------|------|------|------|------|
|                | 0.2   |      | 0.4 |      | 0.6                     |      | 0.8 |      | 1.0 |      | 1.2                    |      | 1.4  |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                | RPM   | BHP  | RPM | BHP  | RPM                     | BHP  | RPM | BHP  | RPM | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                | FS <sup>4</sup>                                       |      |     |      | Standard 1.5 HP & Drive |      |     |      |     |      | Hi Static 3 HP & Drive |      |      |      |      |      |      |      |      |      |
| 2000           | -   | -    | 656 | 0.24 | 711                     | 0.48 | 768 | 0.73 | 826 | 0.96 | 886                    | 1.19 | 945  | 1.41 | 1003 | 1.61 | 1058 | 1.79 | 1110 | 1.95 |
| 2200           | 619   | 0.07 | 670 | 0.32 | 724                     | 0.57 | 781 | 0.81 | 840 | 1.04 | 899                    | 1.27 | 959  | 1.49 | 1016 | 1.69 | 1072 | 1.87 | 1124 | 2.04 |
| 2400           | 631   | 0.16 | 682 | 0.41 | 736                     | 0.66 | 793 | 0.90 | 852 | 1.14 | 911                    | 1.36 | 970  | 1.58 | 1028 | 1.78 | 1084 | 1.97 | 1136 | 2.13 |
| 2600           | 642   | 0.27 | 692 | 0.52 | 747                     | 0.76 | 804 | 1.01 | 862 | 1.24 | 922                    | 1.47 | 981  | 1.69 | 1039 | 1.89 | 1094 | 2.07 | 1146 | 2.24 |
| 2800           | 652   | 0.39 | 703 | 0.64 | 757                     | 0.88 | 814 | 1.13 | 873 | 1.36 | 932                    | 1.59 | 992  | 1.81 | 1049 | 2.01 | 1105 | 2.19 | 1157 | 2.36 |
| 3000           | 663   | 0.53 | 714 | 0.77 | 768                     | 1.02 | 825 | 1.26 | 884 | 1.50 | 943                    | 1.73 | 1003 | 1.94 | 1060 | 2.14 | 1116 | 2.33 | 1168 | 2.49 |
| 3200           | 675   | 0.68 | 726 | 0.92 | 780                     | 1.17 | 837 | 1.41 | 896 | 1.65 | 955                    | 1.88 | 1014 | 2.09 | 1072 | 2.29 | 1128 | 2.48 | 1180 | 2.64 |
| 3400           | 688   | 0.84 | 739 | 1.09 | 793                     | 1.34 | 850 | 1.58 | 909 | 1.82 | 968                    | 2.04 | 1027 | 2.26 | 1085 | 2.46 | 1141 | 2.65 | 1193 | 2.81 |
| 3600           | 703   | 1.03 | 753 | 1.28 | 807                     | 1.52 | 864 | 1.76 | 923 | 2.00 | 983                    | 2.23 | 1042 | 2.44 | 1100 | 2.64 | 1155 | 2.83 | -    | -    |
| 3800           | 718   | 1.23 | 769 | 1.47 | 823                     | 1.72 | 880 | 1.96 | 939 | 2.20 | 998                    | 2.43 | 1058 | 2.64 | 1115 | 2.84 | 1171 | 3.03 | -    | -    |

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.
4. Field Supplied Drive.

**ZJ102 (8.5 Ton) Side Duct**

| Air Flow (CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |     |      |                       |      |     |      |     |      |                        |      |      |      |      |      |      |      |      |      |
|----------------|---|------|-----|------|-----------------------|------|-----|------|-----|------|------------------------|------|------|------|------|------|------|------|------|------|
|                | 0.2   |      | 0.4 |      | 0.6                   |      | 0.8 |      | 1.0 |      | 1.2                    |      | 1.4  |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                | RPM   | BHP  | RPM | BHP  | RPM                   | BHP  | RPM | BHP  | RPM | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                | Field Supplied Drive                                  |      |     |      | Standard 2 HP & Drive |      |     |      |     |      | Hi Static 3 HP & Drive |      |      |      |      |      |      |      |      |      |
| 2200           | 654   | 0.32 | 706 | 0.53 | 755                   | 0.73 | 803 | 0.92 | 849 | 1.10 | 893                    | 1.27 | 937  | 1.44 | 979  | 1.62 | 1020 | 1.79 | 1061 | 1.96 |
| 2400           | 664   | 0.43 | 716 | 0.64 | 765                   | 0.83 | 813 | 1.02 | 859 | 1.20 | 904                    | 1.38 | 947  | 1.55 | 989  | 1.72 | 1030 | 1.89 | 1071 | 2.07 |
| 2600           | 675   | 0.53 | 726 | 0.74 | 776                   | 0.94 | 824 | 1.12 | 870 | 1.30 | 914                    | 1.48 | 957  | 1.65 | 1000 | 1.82 | 1041 | 1.99 | 1082 | 2.17 |
| 2800           | 686   | 0.63 | 738 | 0.84 | 787                   | 1.04 | 835 | 1.23 | 881 | 1.41 | 925                    | 1.58 | 969  | 1.76 | 1011 | 1.93 | 1052 | 2.10 | 1093 | 2.27 |
| 3000           | 699   | 0.75 | 750 | 0.96 | 800                   | 1.16 | 847 | 1.34 | 893 | 1.52 | 938                    | 1.70 | 981  | 1.87 | 1024 | 2.04 | 1065 | 2.21 | 1106 | 2.39 |
| 3200           | 713   | 0.88 | 764 | 1.09 | 814                   | 1.28 | 861 | 1.47 | 907 | 1.65 | 952                    | 1.83 | 995  | 2.00 | 1037 | 2.17 | 1079 | 2.34 | 1119 | 2.52 |
| 3400           | 728   | 1.02 | 779 | 1.23 | 829                   | 1.43 | 877 | 1.61 | 923 | 1.79 | 967                    | 1.97 | 1010 | 2.14 | 1053 | 2.31 | 1094 | 2.48 | 1135 | 2.66 |
| 3600           | 745   | 1.18 | 796 | 1.39 | 846                   | 1.59 | 893 | 1.77 | 939 | 1.95 | 984                    | 2.13 | 1027 | 2.30 | 1069 | 2.47 | 1111 | 2.64 | 1152 | 2.82 |
| 3800           | 763   | 1.36 | 815 | 1.57 | 864                   | 1.76 | 912 | 1.95 | 958 | 2.13 | 1002                   | 2.31 | 1046 | 2.48 | 1088 | 2.65 | 1129 | 2.82 | 1170 | 3.00 |
| 4000           | 783   | 1.55 | 835 | 1.76 | 884                   | 1.96 | 932 | 2.15 | 978 | 2.33 | 1022                   | 2.50 | 1066 | 2.67 | 1108 | 2.84 | 1149 | 3.02 | 1190 | 3.19 |
| 4200           | 805   | 1.77 | 856 | 1.98 | 906                   | 2.17 | 953 | 2.36 | 999 | 2.54 | 1044                   | 2.72 | 1087 | 2.89 | 1129 | 3.06 | 1171 | 3.23 | 1211 | 3.41 |

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.

**ZJ120 (10 Ton) Side Duct**

| Air Flow (CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |     |      |      |      |                       |      |      |      |      |      |                        |      |      |      |      |      |      |      |
|----------------|---|------|-----|------|------|------|-----------------------|------|------|------|------|------|------------------------|------|------|------|------|------|------|------|
|                | 0.2   |      | 0.4 |      | 0.6  |      | 0.8                   |      | 1.0  |      | 1.2  |      | 1.4                    |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                | RPM   | BHP  | RPM | BHP  | RPM  | BHP  | RPM                   | BHP  | RPM  | BHP  | RPM  | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                | Field Supplied Drive                                  |      |     |      |      |      | Standard 2 HP & Drive |      |      |      |      |      | Hi Static 3 HP & Drive |      |      |      |      |      |      |      |
| 2600           | 675   | 0.53 | 726 | 0.74 | 776  | 0.94 | 824                   | 1.12 | 870  | 1.30 | 914  | 1.48 | 957                    | 1.65 | 1000 | 1.82 | 1041 | 1.99 | 1082 | 2.17 |
| 2800           | 686   | 0.63 | 738 | 0.84 | 787  | 1.04 | 835                   | 1.23 | 881  | 1.41 | 925  | 1.58 | 969                    | 1.76 | 1011 | 1.93 | 1052 | 2.10 | 1093 | 2.27 |
| 3000           | 699   | 0.75 | 750 | 0.96 | 800  | 1.16 | 847                   | 1.34 | 893  | 1.52 | 938  | 1.70 | 981                    | 1.87 | 1024 | 2.04 | 1065 | 2.21 | 1106 | 2.39 |
| 3200           | 713   | 0.88 | 764 | 1.09 | 814  | 1.28 | 861                   | 1.47 | 907  | 1.65 | 952  | 1.83 | 995                    | 2.00 | 1037 | 2.17 | 1079 | 2.34 | 1119 | 2.52 |
| 3400           | 728   | 1.02 | 779 | 1.23 | 829  | 1.43 | 877                   | 1.61 | 923  | 1.79 | 967  | 1.97 | 1010                   | 2.14 | 1053 | 2.31 | 1094 | 2.48 | 1135 | 2.66 |
| 3600           | 745   | 1.18 | 796 | 1.39 | 846  | 1.59 | 893                   | 1.77 | 939  | 1.95 | 984  | 2.13 | 1027                   | 2.30 | 1069 | 2.47 | 1111 | 2.64 | 1152 | 2.82 |
| 3800           | 763   | 1.36 | 815 | 1.57 | 864  | 1.76 | 912                   | 1.95 | 958  | 2.13 | 1002 | 2.31 | 1046                   | 2.48 | 1088 | 2.65 | 1129 | 2.82 | 1170 | 3.00 |
| 4000           | 783   | 1.55 | 835 | 1.76 | 884  | 1.96 | 932                   | 2.15 | 978  | 2.33 | 1022 | 2.50 | 1066                   | 2.67 | 1108 | 2.84 | 1149 | 3.02 | 1190 | 3.19 |
| 4200           | 805   | 1.77 | 856 | 1.98 | 906  | 2.17 | 953                   | 2.36 | 999  | 2.54 | 1044 | 2.72 | 1087                   | 2.89 | 1129 | 3.06 | 1171 | 3.23 | 1211 | 3.41 |
| 4400           | 828   | 2.00 | 879 | 2.21 | 929  | 2.41 | 976                   | 2.59 | 1022 | 2.77 | 1067 | 2.95 | 1110                   | 3.12 | 1152 | 3.29 | -    | -    | -    | -    |
| 4600           | 852   | 2.25 | 904 | 2.46 | 953  | 2.66 | 1001                  | 2.85 | 1047 | 3.03 | 1092 | 3.20 | 1135                   | 3.37 | -    | -    | -    | -    | -    | -    |
| 4800           | 879   | 2.52 | 930 | 2.73 | 980  | 2.93 | 1027                  | 3.12 | 1073 | 3.30 | -    | -    | -                      | -    | -    | -    | -    | -    | -    | -    |
| 5000           | 906   | 2.81 | 958 | 3.02 | 1007 | 3.22 | 1055                  | 3.41 | -    | -    | -    | -    | -                      | -    | -    | -    | -    | -    | -    | -    |
|                | 3 HP & Field Supplied Drive                           |      |     |      |      |      |                       |      |      |      |      |      |                        |      |      |      |      |      |      |      |

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.

**ZJ150 (12.5 Ton) Side Duct**

| Air Flow (CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |      |      |      |      |                             |      |      |      |      |      |                        |      |      |      |      |      |      |      |
|----------------|---|------|------|------|------|------|-----------------------------|------|------|------|------|------|------------------------|------|------|------|------|------|------|------|
|                | 0.2   |      | 0.4  |      | 0.6  |      | 0.8                         |      | 1.0  |      | 1.2  |      | 1.4                    |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                | RPM   | BHP  | RPM  | BHP  | RPM  | BHP  | RPM                         | BHP  | RPM  | BHP  | RPM  | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                | Field Supplied Drive                                  |      |      |      |      |      | Standard 3 HP & Drive       |      |      |      |      |      | Hi Static 5 HP & Drive |      |      |      |      |      |      |      |
| 3200           | 713   | 0.88 | 764  | 1.09 | 814  | 1.28 | 861                         | 1.47 | 907  | 1.65 | 952  | 1.83 | 995                    | 2.00 | 1037 | 2.17 | 1079 | 2.34 | 1119 | 2.52 |
| 3400           | 728   | 1.02 | 779  | 1.23 | 829  | 1.43 | 877                         | 1.61 | 923  | 1.79 | 967  | 1.97 | 1010                   | 2.14 | 1053 | 2.31 | 1094 | 2.48 | 1135 | 2.66 |
| 3600           | 745   | 1.18 | 796  | 1.39 | 846  | 1.59 | 893                         | 1.77 | 939  | 1.95 | 984  | 2.13 | 1027                   | 2.30 | 1069 | 2.47 | 1111 | 2.64 | 1152 | 2.82 |
| 3800           | 763   | 1.36 | 815  | 1.57 | 864  | 1.76 | 912                         | 1.95 | 958  | 2.13 | 1002 | 2.31 | 1046                   | 2.48 | 1088 | 2.65 | 1129 | 2.82 | 1170 | 3.00 |
| 4000           | 783   | 1.55 | 835  | 1.76 | 884  | 1.96 | 932                         | 2.15 | 978  | 2.33 | 1022 | 2.50 | 1066                   | 2.67 | 1108 | 2.84 | 1149 | 3.02 | 1190 | 3.19 |
| 4200           | 805   | 1.77 | 856  | 1.98 | 906  | 2.17 | 953                         | 2.36 | 999  | 2.54 | 1044 | 2.72 | 1087                   | 2.89 | 1129 | 3.06 | 1171 | 3.23 | 1211 | 3.41 |
| 4400           | 828   | 2.00 | 879  | 2.21 | 929  | 2.41 | 976                         | 2.59 | 1022 | 2.77 | 1067 | 2.95 | 1110                   | 3.12 | 1152 | 3.29 | 1194 | 3.46 | 1235 | 3.64 |
| 4600           | 852   | 2.25 | 904  | 2.46 | 953  | 2.66 | 1001                        | 2.85 | 1047 | 3.03 | 1092 | 3.20 | 1135                   | 3.37 | 1177 | 3.54 | 1219 | 3.72 | 1259 | 3.89 |
| 4800           | 879   | 2.52 | 930  | 2.73 | 980  | 2.93 | 1027                        | 3.12 | 1073 | 3.30 | 1118 | 3.47 | 1161                   | 3.65 | 1203 | 3.82 | 1245 | 3.99 | 1285 | 4.16 |
| 5000           | 906   | 2.81 | 958  | 3.02 | 1007 | 3.22 | 1055                        | 3.41 | 1101 | 3.59 | 1146 | 3.76 | 1189                   | 3.94 | 1231 | 4.11 | 1273 | 4.28 | 1313 | 4.45 |
| 5200           | 936   | 3.12 | 987  | 3.33 | 1037 | 3.53 | 1084                        | 3.72 | 1130 | 3.90 | 1175 | 4.07 | 1218                   | 4.24 | 1260 | 4.42 | 1302 | 4.59 | 1343 | 4.76 |
| 5400           | 966   | 3.45 | 1018 | 3.66 | 1067 | 3.86 | 1115                        | 4.05 | 1161 | 4.23 | 1206 | 4.40 | 1249                   | 4.57 | 1291 | 4.74 | 1333 | 4.91 | 1373 | 5.09 |
| 5600           | 999   | 3.80 | 1050 | 4.01 | 1100 | 4.20 | 1147                        | 4.39 | 1193 | 4.57 | 1238 | 4.75 | 1281                   | 4.92 | 1323 | 5.09 | 1365 | 5.26 | 1405 | 5.44 |
| 5800           | 1032  | 4.16 | 1084 | 4.37 | 1133 | 4.57 | 1181                        | 4.75 | 1227 | 4.93 | 1271 | 5.11 | 1315                   | 5.28 | 1357 | 5.45 | 1398 | 5.62 | -    | -    |
| 6000           | 1067  | 4.54 | 1119 | 4.75 | 1168 | 4.95 | 1216                        | 5.13 | 1262 | 5.31 | 1306 | 5.49 | 1350                   | 5.66 | -    | -    | -    | -    | -    | -    |
| 6200           | 1103  | 4.94 | 1155 | 5.15 | 1204 | 5.34 | 1252                        | 5.53 | 1298 | 5.71 | -    | -    | -                      | -    | -    | -    | -    | -    | -    | -    |
|                | Hi Static 5 HP & Drive                                |      |      |      |      |      | 5 HP & Field Supplied Drive |      |      |      |      |      |                        |      |      |      |      |      |      |      |

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.

**ZJ078 (6.5 Ton) Bottom Duct**

| Air Flow (CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |                         |      |     |      |     |      |                        |      |      |      |      |      |      |      |      |      |      |      |
|----------------|---|------|-------------------------|------|-----|------|-----|------|------------------------|------|------|------|------|------|------|------|------|------|------|------|
|                | 0.2   |      | 0.4                     |      | 0.6 |      | 0.8 |      | 1.0                    |      | 1.2  |      | 1.4  |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                | RPM   | BHP  | RPM                     | BHP  | RPM | BHP  | RPM | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                | FS <sup>4</sup>                                       |      | Standard 1.5 HP & Drive |      |     |      |     |      | Hi Static 2 HP & Drive |      |      |      |      |      |      |      |      |      |      |      |
| 1800           | 603   | 0.13 | 656                     | 0.36 | 718 | 0.58 | 784 | 0.79 | 851                    | 0.98 | 914  | 1.16 | 968  | 1.31 | 1010 | 1.43 | 1035 | 1.53 | 1039 | 1.59 |
| 2000           | 627   | 0.26 | 680                     | 0.49 | 742 | 0.71 | 808 | 0.92 | 875                    | 1.12 | 937  | 1.29 | 992  | 1.44 | 1034 | 1.57 | 1059 | 1.66 | 1063 | 1.72 |
| 2200           | 650   | 0.40 | 703                     | 0.63 | 765 | 0.85 | 831 | 1.06 | 898                    | 1.25 | 961  | 1.43 | 1015 | 1.58 | 1057 | 1.71 | 1082 | 1.80 | 1086 | 1.86 |
| 2400           | 673   | 0.55 | 726                     | 0.78 | 788 | 1.00 | 854 | 1.21 | 921                    | 1.40 | 984  | 1.58 | 1038 | 1.73 | 1080 | 1.85 | 1105 | 1.95 | 1109 | 2.01 |
| 2600           | 696   | 0.71 | 749                     | 0.94 | 811 | 1.16 | 878 | 1.37 | 944                    | 1.56 | 1007 | 1.73 | 1061 | 1.89 | 1103 | 2.01 | 1128 | 2.10 | 1133 | 2.16 |
| 2800           | 720   | 0.87 | 773                     | 1.10 | 835 | 1.32 | 902 | 1.53 | 968                    | 1.73 | 1031 | 1.90 | 1085 | 2.05 | 1127 | 2.18 | 1152 | 2.27 | 1157 | 2.33 |
| 3000           | 745   | 1.05 | 798                     | 1.28 | 860 | 1.50 | 926 | 1.71 | 993                    | 1.91 | 1056 | 2.08 | 1110 | 2.23 | 1152 | 2.36 | 1177 | 2.45 | 1181 | 2.51 |
| 3200           | 771   | 1.24 | 824                     | 1.47 | 886 | 1.69 | 952 | 1.90 | 1019                   | 2.09 | 1081 | 2.27 | 1136 | 2.42 | 1178 | 2.54 | 1203 | 2.64 | 1207 | 2.70 |
| 3400           | 797   | 1.44 | 850                     | 1.67 | 912 | 1.89 | 979 | 2.10 | 1045                   | 2.29 | 1108 | 2.47 | 1162 | 2.62 | 1204 | 2.74 | 1229 | 2.84 | 1234 | 2.90 |

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.
4. Field Supplied Drive.

**ZJ090 (7.5 Ton) Bottom Duct**

| Air Flow (CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |                         |      |     |      |      |      |                        |      |      |      |      |      |      |      |      |      |      |      |
|----------------|---|------|-------------------------|------|-----|------|------|------|------------------------|------|------|------|------|------|------|------|------|------|------|------|
|                | 0.2   |      | 0.4                     |      | 0.6 |      | 0.8  |      | 1.0                    |      | 1.2  |      | 1.4  |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                | RPM   | BHP  | RPM                     | BHP  | RPM | BHP  | RPM  | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                | FS <sup>4</sup>                                       |      | Standard 1.5 HP & Drive |      |     |      |      |      | Hi Static 3 HP & Drive |      |      |      |      |      |      |      |      |      |      |      |
| 2000           | 644   | 0.11 | 698                     | 0.38 | 755 | 0.62 | 814  | 0.85 | 874                    | 1.06 | 933  | 1.26 | 990  | 1.46 | 1043 | 1.66 | 1090 | 1.87 | 1131 | 2.09 |
| 2200           | 666   | 0.26 | 720                     | 0.53 | 777 | 0.77 | 836  | 1.00 | 896                    | 1.21 | 956  | 1.41 | 1012 | 1.61 | 1065 | 1.81 | 1113 | 2.02 | 1153 | 2.24 |
| 2400           | 689   | 0.42 | 743                     | 0.69 | 800 | 0.93 | 859  | 1.16 | 919                    | 1.37 | 978  | 1.57 | 1035 | 1.77 | 1088 | 1.97 | 1135 | 2.18 | 1176 | 2.40 |
| 2600           | 712   | 0.60 | 766                     | 0.87 | 823 | 1.11 | 882  | 1.34 | 942                    | 1.55 | 1002 | 1.75 | 1058 | 1.95 | 1111 | 2.15 | 1159 | 2.36 | 1199 | 2.58 |
| 2800           | 736   | 0.80 | 790                     | 1.06 | 847 | 1.31 | 906  | 1.53 | 967                    | 1.74 | 1026 | 1.94 | 1082 | 2.14 | 1135 | 2.34 | 1183 | 2.55 | 1223 | 2.78 |
| 3000           | 761   | 1.00 | 815                     | 1.27 | 872 | 1.52 | 931  | 1.74 | 991                    | 1.95 | 1051 | 2.15 | 1107 | 2.35 | 1160 | 2.55 | 1208 | 2.76 | 1248 | 2.98 |
| 3200           | 787   | 1.22 | 840                     | 1.49 | 898 | 1.74 | 957  | 1.96 | 1017                   | 2.17 | 1076 | 2.37 | 1133 | 2.57 | 1186 | 2.77 | 1233 | 2.98 | 1274 | 3.20 |
| 3400           | 813   | 1.46 | 867                     | 1.73 | 924 | 1.97 | 984  | 2.19 | 1044                   | 2.40 | 1103 | 2.61 | 1160 | 2.80 | 1212 | 3.01 | 1260 | 3.21 | -    | -    |
| 3600           | 841   | 1.70 | 894                     | 1.97 | 952 | 2.21 | 1011 | 2.44 | 1071                   | 2.65 | 1130 | 2.85 | 1187 | 3.05 | -    | -    | -    | -    | -    | -    |
| 3800           | 869   | 1.96 | 923                     | 2.22 | 980 | 2.47 | 1039 | 2.69 | 1099                   | 2.90 | 1158 | 3.10 | 1215 | 3.30 | -    | -    | -    | -    | -    | -    |

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.
4. Field Supplied Drive.

**ZJ102 (8.5 Ton) Bottom Duct**

| Air Flow (CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |                       |      |      |      |      |      |                        |      |      |      |      |      |      |      |      |      |      |      |
|----------------|---|------|-----------------------|------|------|------|------|------|------------------------|------|------|------|------|------|------|------|------|------|------|------|
|                | 0.2   |      | 0.4                   |      | 0.6  |      | 0.8  |      | 1.0                    |      | 1.2  |      | 1.4  |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                | RPM   | BHP  | RPM                   | BHP  | RPM  | BHP  | RPM  | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                | FS <sup>4</sup>                                       |      | Standard 2 HP & Drive |      |      |      |      |      | Hi Static 3 HP & Drive |      |      |      |      |      |      |      |      |      |      |      |
| 2200           | 685   | 0.59 | 739                   | 0.74 | 791  | 0.88 | 841  | 1.01 | 889                    | 1.14 | 936  | 1.27 | 981  | 1.39 | 1025 | 1.51 | 1069 | 1.63 | 1111 | 1.75 |
| 2400           | 702   | 0.70 | 756                   | 0.85 | 808  | 0.99 | 858  | 1.12 | 906                    | 1.25 | 953  | 1.37 | 999  | 1.49 | 1043 | 1.62 | 1086 | 1.74 | 1129 | 1.86 |
| 2600           | 722   | 0.83 | 776                   | 0.97 | 828  | 1.11 | 878  | 1.25 | 926                    | 1.37 | 973  | 1.50 | 1018 | 1.62 | 1063 | 1.74 | 1106 | 1.86 | 1149 | 1.99 |
| 2800           | 744   | 0.97 | 798                   | 1.12 | 850  | 1.26 | 900  | 1.39 | 949                    | 1.52 | 995  | 1.64 | 1041 | 1.76 | 1085 | 1.88 | 1128 | 2.00 | 1171 | 2.13 |
| 3000           | 769   | 1.13 | 823                   | 1.28 | 875  | 1.42 | 925  | 1.55 | 974                    | 1.68 | 1020 | 1.80 | 1066 | 1.92 | 1110 | 2.05 | 1153 | 2.17 | 1196 | 2.29 |
| 3200           | 797   | 1.32 | 851                   | 1.46 | 903  | 1.60 | 953  | 1.74 | 1001                   | 1.86 | 1048 | 1.99 | 1093 | 2.11 | 1138 | 2.23 | 1181 | 2.35 | 1224 | 2.48 |
| 3400           | 828   | 1.52 | 882                   | 1.67 | 934  | 1.81 | 983  | 1.94 | 1032                   | 2.07 | 1078 | 2.19 | 1124 | 2.32 | 1168 | 2.44 | 1212 | 2.56 | 1254 | 2.68 |
| 3600           | 861   | 1.75 | 915                   | 1.90 | 967  | 2.04 | 1017 | 2.17 | 1065                   | 2.30 | 1112 | 2.42 | 1157 | 2.54 | 1201 | 2.67 | 1245 | 2.79 | 1287 | 2.91 |
| 3800           | 897   | 2.00 | 951                   | 2.15 | 1002 | 2.29 | 1052 | 2.42 | 1101                   | 2.55 | 1147 | 2.67 | 1193 | 2.80 | 1237 | 2.92 | 1280 | 3.04 | 1323 | 3.16 |
| 4000           | 935   | 2.27 | 989                   | 2.42 | 1041 | 2.56 | 1091 | 2.69 | 1139                   | 2.82 | 1186 | 2.95 | 1231 | 3.07 | 1275 | 3.19 | 1319 | 3.31 | 1362 | 3.43 |
| 4200           | 976   | 2.57 | 1030                  | 2.72 | 1082 | 2.86 | 1132 | 2.99 | 1180                   | 3.12 | 1227 | 3.24 | 1272 | 3.36 | -    | -    | -    | -    | -    | -    |

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.
4. Field Supplied Drive.

**ZJ120 (10 Ton) Bottom Duct**

| Air Flow<br>(CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |      |      |                       |      |      |      |      |      |                        |      |      |      |      |      |      |      |      |      |
|-------------------|---|------|------|------|-----------------------|------|------|------|------|------|------------------------|------|------|------|------|------|------|------|------|------|
|                   | 0.2   |      | 0.4  |      | 0.6                   |      | 0.8  |      | 1.0  |      | 1.2                    |      | 1.4  |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                   | RPM   | BHP  | RPM  | BHP  | RPM                   | BHP  | RPM  | BHP  | RPM  | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                   | Field Supplied Drive                                  |      |      |      | Standard 2 HP & Drive |      |      |      |      |      | Hi Static 3 HP & Drive |      |      |      |      |      |      |      |      |      |
| 2600              | 722   | 0.83 | 776  | 0.97 | 828                   | 1.11 | 878  | 1.25 | 926  | 1.37 | 973                    | 1.50 | 1018 | 1.62 | 1063 | 1.74 | 1106 | 1.86 | 1149 | 1.99 |
| 2800              | 744   | 0.97 | 798  | 1.12 | 850                   | 1.26 | 900  | 1.39 | 949  | 1.52 | 995                    | 1.64 | 1041 | 1.76 | 1085 | 1.88 | 1128 | 2.00 | 1171 | 2.13 |
| 3000              | 769   | 1.13 | 823  | 1.28 | 875                   | 1.42 | 925  | 1.55 | 974  | 1.68 | 1020                   | 1.80 | 1066 | 1.92 | 1110 | 2.05 | 1153 | 2.17 | 1196 | 2.29 |
| 3200              | 797   | 1.32 | 851  | 1.46 | 903                   | 1.60 | 953  | 1.74 | 1001 | 1.86 | 1048                   | 1.99 | 1093 | 2.11 | 1138 | 2.23 | 1181 | 2.35 | 1224 | 2.48 |
| 3400              | 828   | 1.52 | 882  | 1.67 | 934                   | 1.81 | 983  | 1.94 | 1032 | 2.07 | 1078                   | 2.19 | 1124 | 2.32 | 1168 | 2.44 | 1212 | 2.56 | 1254 | 2.68 |
| 3600              | 861   | 1.75 | 915  | 1.90 | 967                   | 2.04 | 1017 | 2.17 | 1065 | 2.30 | 1112                   | 2.42 | 1157 | 2.54 | 1201 | 2.67 | 1245 | 2.79 | 1287 | 2.91 |
| 3800              | 897   | 2.00 | 951  | 2.15 | 1002                  | 2.29 | 1052 | 2.42 | 1101 | 2.55 | 1147                   | 2.67 | 1193 | 2.80 | 1237 | 2.92 | 1280 | 3.04 | 1323 | 3.16 |
| 4000              | 935   | 2.27 | 989  | 2.42 | 1041                  | 2.56 | 1091 | 2.69 | 1139 | 2.82 | 1186                   | 2.95 | 1231 | 3.07 | 1275 | 3.19 | 1319 | 3.31 | 1362 | 3.43 |
| 4200              | 976   | 2.57 | 1030 | 2.72 | 1082                  | 2.86 | 1132 | 2.99 | 1180 | 3.12 | 1227                   | 3.24 | 1272 | 3.36 | -    | -    | -    | -    | -    | -    |
| 4400              | 1019  | 2.88 | 1073 | 3.03 | 1125                  | 3.17 | 1175 | 3.30 | 1223 | 3.43 | -                      | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 4600              | 1065  | 3.22 | 1119 | 3.36 | -                     | -    | -    | -    | -    | -    | -                      | -    | -    | -    | -    | -    | -    | -    | -    | -    |

3 HP & Field Supplied Drive

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.

**ZJ150 (12.5 Ton) Bottom Duct**

| Air Flow<br>(CFM) | Available External Static Pressure - IWG <sup>1</sup> |      |      |      |                       |      |      |      |      |      |                        |      |      |      |      |      |      |      |      |      |
|-------------------|---|------|------|------|-----------------------|------|------|------|------|------|------------------------|------|------|------|------|------|------|------|------|------|
|                   | 0.2   |      | 0.4  |      | 0.6                   |      | 0.8  |      | 1.0  |      | 1.2                    |      | 1.4  |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                   | RPM   | BHP  | RPM  | BHP  | RPM                   | BHP  | RPM  | BHP  | RPM  | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                   | Field Supplied Drive                                  |      |      |      | Standard 3 HP & Drive |      |      |      |      |      | Hi Static 5 HP & Drive |      |      |      |      |      |      |      |      |      |
| 3200              | 797   | 1.32 | 851  | 1.46 | 903                   | 1.60 | 953  | 1.74 | 1001 | 1.86 | 1048                   | 1.99 | 1093 | 2.11 | 1138 | 2.23 | 1181 | 2.35 | 1224 | 2.48 |
| 3400              | 828   | 1.52 | 882  | 1.67 | 934                   | 1.81 | 983  | 1.94 | 1032 | 2.07 | 1078                   | 2.19 | 1124 | 2.32 | 1168 | 2.44 | 1212 | 2.56 | 1254 | 2.68 |
| 3600              | 861   | 1.75 | 915  | 1.90 | 967                   | 2.04 | 1017 | 2.17 | 1065 | 2.30 | 1112                   | 2.42 | 1157 | 2.54 | 1201 | 2.67 | 1245 | 2.79 | 1287 | 2.91 |
| 3800              | 897   | 2.00 | 951  | 2.15 | 1002                  | 2.29 | 1052 | 2.42 | 1101 | 2.55 | 1147                   | 2.67 | 1193 | 2.80 | 1237 | 2.92 | 1280 | 3.04 | 1323 | 3.16 |
| 4000              | 935   | 2.27 | 989  | 2.42 | 1041                  | 2.56 | 1091 | 2.69 | 1139 | 2.82 | 1186                   | 2.95 | 1231 | 3.07 | 1275 | 3.19 | 1319 | 3.31 | 1362 | 3.43 |
| 4200              | 976   | 2.57 | 1030 | 2.72 | 1082                  | 2.86 | 1132 | 2.99 | 1180 | 3.12 | 1227                   | 3.24 | 1272 | 3.36 | 1316 | 3.48 | 1360 | 3.60 | 1402 | 3.73 |
| 4400              | 1019  | 2.88 | 1073 | 3.03 | 1125                  | 3.17 | 1175 | 3.30 | 1223 | 3.43 | 1270                   | 3.55 | 1315 | 3.67 | 1360 | 3.80 | 1403 | 3.92 | 1446 | 4.04 |
| 4600              | 1065  | 3.22 | 1119 | 3.36 | 1171                  | 3.50 | 1221 | 3.64 | 1269 | 3.76 | 1316                   | 3.89 | 1361 | 4.01 | 1405 | 4.13 | 1449 | 4.25 | 1491 | 4.38 |
| 4800              | 1113  | 3.57 | 1167 | 3.72 | 1219                  | 3.86 | 1269 | 3.99 | 1317 | 4.12 | 1364                   | 4.24 | 1409 | 4.36 | 1453 | 4.48 | 1497 | 4.61 | 1540 | 4.73 |
| 5000              | 1163  | 3.94 | 1217 | 4.09 | 1269                  | 4.23 | 1319 | 4.36 | 1367 | 4.49 | 1414                   | 4.62 | 1459 | 4.74 | 1504 | 4.86 | 1547 | 4.98 | 1590 | 5.10 |
| 5200              | 1216  | 4.34 | 1270 | 4.48 | 1321                  | 4.62 | 1371 | 4.76 | 1420 | 4.88 | 1466                   | 5.01 | 1512 | 5.13 | 1556 | 5.25 | 1600 | 5.37 | 1642 | 5.50 |
| 5400              | 1270  | 4.75 | 1324 | 4.89 | 1376                  | 5.03 | 1426 | 5.17 | 1474 | 5.29 | 1521                   | 5.42 | 1566 | 5.54 | 1611 | 5.66 | -    | -    | -    | -    |
| 5600              | 1327  | 5.17 | 1381 | 5.32 | 1433                  | 5.46 | 1483 | 5.59 | 1531 | 5.72 | -                      | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 5800              | 1385  | 5.62 | -    | -    | -                     | -    | -    | -    | -    | -    | -                      | -    | -    | -    | -    | -    | -    | -    | -    | -    |

5 HP & Field Supplied Drive

1. Blower performance includes gas heat exchangers and 2" filters. See STATIC RESISTANCE table for additional applications.
2. See RPM SELECTION table to determine desired motor sheave setting and to determine the maximum continuous BHP.
3. kW = BHP x 0.932.



## RPM Selection

| Size (Tons)   | Model | HP  | Max BHP | Motor Sheave | Blower Sheave | 6 Turns Open | 5 Turns Open | 4 Turns Open | 3 Turns Open | 2 Turns Open | 1 Turn Open | Fully Closed |
|---------------|-------|-----|---------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|
| 037<br>(3)    | ZH    | 1.5 | 1.5     | 1VM34        | AK69          | N/A          | 531          | 584          | 637          | 690          | 743         | 796          |
|               |       | 1.5 | 1.5     | 1VL44        | AK69          | N/A          | 796          | 849          | 902          | 955          | 1008        | 1062         |
| 049<br>(4)    | ZH    | 1.5 | 1.5     | 1VM34        | AK56          | N/A          | 663          | 730          | 796          | 863          | 929         | 995          |
|               |       | 1.5 | 1.5     | 1VL44        | AK56          | N/A          | 995          | 1062         | 1128         | 1194         | 1261        | 1327         |
| 061<br>(5)    | ZH    | 1.5 | 1.5     | 1VL40        | AK61          | N/A          | 787          | 847          | 908          | 968          | 1029        | 1089         |
|               |       | 2   | 2       | 1VP56        | AK74          | N/A          | 1035         | 1084         | 1134         | 1183         | 1232        | 1281         |
| 078<br>(6.5)  | ZH    | 1.5 | 1.73    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
|               |       | 2   | 2.30    | 1VM50        | AK64          | N/A          | 1039         | 1094         | 1150         | 1207         | 1256        | 1308         |
| 090<br>(7.5)  | ZH    | 1.5 | 1.73    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
|               |       | 3   | 3.45    | 1VM50        | AK61          | N/A          | 1088         | 1147         | 1205         | 1265         | 1312        | 1365         |
| 102<br>(8.5)  | ZH    | 2   | 2.30    | 1VM50        | AK94          | N/A          | 690          | 728          | 767          | 805          | 843         | 882          |
|               |       | 3   | 3.45    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
| 120<br>(10)   | ZH    | 2   | 2.30    | 1VM50        | AK84          | N/A          | 776          | 819          | 863          | 906          | 949         | 992          |
|               |       | 3   | 3.45    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
| 150<br>(12.5) | ZH    | 3   | 3.45    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
|               |       | 5   | 5.75    | 1VP56        | BK77          | 1052         | 1095         | 1136         | 1175         | 1216         | 1272        | N/A          |
| 037<br>(3)    | ZJ    | 1.5 | 1.5     | 1VM34        | AK69          | N/A          | 531          | 584          | 637          | 690          | 743         | 796          |
|               |       | 1.5 | 1.5     | 1VL44        | AK69          | N/A          | 796          | 849          | 902          | 955          | 1008        | 1062         |
| 049<br>(4)    | ZJ    | 1.5 | 1.5     | 1VM34        | AK56          | N/A          | 663          | 730          | 796          | 863          | 929         | 995          |
|               |       | 1.5 | 1.5     | 1VL44        | AK56          | N/A          | 995          | 1062         | 1128         | 1194         | 1261        | 1327         |
| 061<br>(5)    | ZJ    | 1.5 | 1.5     | 1VL40        | AK61          | N/A          | 787          | 847          | 908          | 968          | 1029        | 1089         |
|               |       | 2   | 2       | 1VP56        | AK74          | N/A          | 1035         | 1084         | 1134         | 1183         | 1232        | 1281         |
| 078<br>(6.5)  | ZJ    | 1.5 | 1.73    | 1VL40        | AK74          | N/A          | 641          | 690          | 739          | 789          | 838         | 887          |
|               |       | 2   | 2.30    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
| 090<br>(7.5)  | ZJ    | 1.5 | 1.73    | 1VL40        | AK69          | N/A          | 690          | 743          | 796          | 849          | 902         | 955          |
|               |       | 3   | 3.45    | 1VM50        | AK69          | N/A          | 955          | 1008         | 1062         | 1115         | 1168        | 1221         |
| 102<br>(8.5)  | ZJ    | 2   | 2.30    | 1VM50        | AK89          | N/A          | 731          | 771          | 812          | 852          | 893         | 934          |
|               |       | 3   | 3.45    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
| 120<br>(10)   | ZJ    | 2   | 2.30    | 1VM50        | AK84          | N/A          | 776          | 819          | 863          | 906          | 949         | 992          |
|               |       | 3   | 3.45    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
| 150<br>(12.5) | ZJ    | 3   | 3.45    | 1VM50        | AK74          | N/A          | 887          | 936          | 986          | 1035         | 1084        | 1134         |
|               |       | 5   | 5.75    | 1VP56        | BK77          | 1052         | 1095         | 1136         | 1175         | 1216         | 1272        | N/A          |

**Table 1: Additional Static Resistance**

| Size<br>(Tons)  | Model | CFM  | Cooling Only <sup>1</sup> | Economizer <sup>2,3</sup> | 4" Filter <sup>2</sup> | Electric Heat kW <sup>2</sup> |      |      |      |      |
|---|-------|------|---------------------------|---------------------------|------------------------|-------------------------------|------|------|------|------|
|   |       |      |                           |                           |                        | 9                             | 18   | 24   | 36   | 54   |
| 078 (6.5)<br>090 (7.5)<br>102 (8.5)<br>120 (10)<br>150 (12.5) | ZJ    | 1900 | 0.06                      | 0.02                      | 0.12                   | 0.05                          | 0.06 | 0.07 | 0.08 | 0.10 |
|   |       | 2100 | 0.07                      | 0.02                      | 0.13                   | 0.06                          | 0.07 | 0.08 | 0.09 | 0.11 |
|   |       | 2300 | 0.08                      | 0.02                      | 0.14                   | 0.07                          | 0.08 | 0.09 | 0.10 | 0.13 |
|   |       | 2500 | 0.09                      | 0.02                      | 0.16                   | 0.08                          | 0.09 | 0.10 | 0.11 | 0.14 |
|   |       | 2700 | 0.11                      | 0.03                      | 0.17                   | 0.09                          | 0.10 | 0.12 | 0.13 | 0.16 |
|   |       | 2900 | 0.12                      | 0.03                      | 0.19                   | 0.10                          | 0.11 | 0.13 | 0.14 | 0.18 |
|   |       | 3100 | 0.14                      | 0.03                      | 0.20                   | 0.12                          | 0.13 | 0.15 | 0.16 | 0.20 |
|   |       | 3300 | 0.16                      | 0.03                      | 0.22                   | 0.13                          | 0.14 | 0.17 | 0.18 | 0.22 |
|   |       | 3500 | 0.18                      | 0.04                      | 0.26                   | 0.15                          | 0.16 | 0.19 | 0.20 | 0.24 |
|   |       | 3700 | 0.20                      | 0.04                      | 0.27                   | 0.17                          | 0.18 | 0.21 | 0.22 | 0.26 |
|   |       | 3900 | 0.23                      | 0.04                      | 0.29                   | 0.19                          | 0.20 | 0.23 | 0.24 | 0.28 |
|   |       | 4100 | 0.25                      | 0.04                      | 0.32                   | 0.21                          | 0.22 | 0.25 | 0.26 | 0.31 |
|   |       | 4300 | 0.28                      | 0.05                      | 0.35                   | 0.23                          | 0.24 | 0.28 | 0.29 | 0.34 |
|   |       | 4500 | 0.30                      | 0.05                      | 0.38                   | 0.25                          | 0.26 | 0.30 | 0.31 | 0.37 |
|   |       | 4700 | 0.33                      | 0.05                      | 0.41                   | 0.28                          | 0.29 | 0.33 | 0.34 | 0.40 |
|   |       | 4900 | 0.36                      | 0.05                      | 0.44                   | 0.30                          | 0.31 | 0.35 | 0.37 | 0.43 |
|   |       | 5100 | 0.39                      | 0.06                      | 0.47                   | 0.33                          | 0.34 | 0.38 | 0.40 | 0.46 |
|   |       | 5300 | 0.42                      | 0.06                      | 0.51                   | 0.35                          | 0.37 | 0.41 | 0.43 | 0.49 |
| 5500  | 0.45  | 0.06 | 0.55                      | 0.38                      | 0.40                   | 0.44                          | 0.46 | 0.53 |      |      |
| 5700  | 0.48  | 0.06 | 0.58                      | 0.41                      | 0.43                   | 0.47                          | 0.49 | 0.56 |      |      |
| 5900  | 0.52  | 0.07 | 0.62                      | 0.44                      | 0.46                   | 0.50                          | 0.53 | 0.59 |      |      |
| 6100  | 0.56  | 0.07 | 0.67                      | 0.47                      | 0.49                   | 0.53                          | 0.56 | 0.62 |      |      |
| 6300  | 0.60  | 0.07 | 0.71                      | 0.50                      | 0.53                   | 0.56                          | 0.59 | 0.65 |      |      |

1. Add these values to the available static resistance in the respective Blower Performance Tables.
2. Deduct these values from the available external static pressure shown in the respective Blower Performance Tables.
3. The pressure drop through the economizer is greater for 100% outdoor air than for 100% return air. If the resistance of the return air duct is less than 0.25 IWG, the unit will deliver less CFM during full economizer operation.

**Drive Selection**

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

**Example**

1. 2600 CFM
2. 1.6 iwg
3. Using the supply air blower performance table below, the following data point was located: 1268 RPM & 1.95 BHP.
4. Using the RPM selection table below, Size X and Model Y is found.
5. 1.95 BHP exceeds the maximum continuous BHP rating of the 1.5 HP motor. The 2 HP motor is required.
6. 1268 RPM is within the range of the 2 HP drives.
7. Using the 2 HP motor and drive, .5 turns open will achieve 1268 RPM.

**Airflow Performance****Example Supply Air Blower Performance**

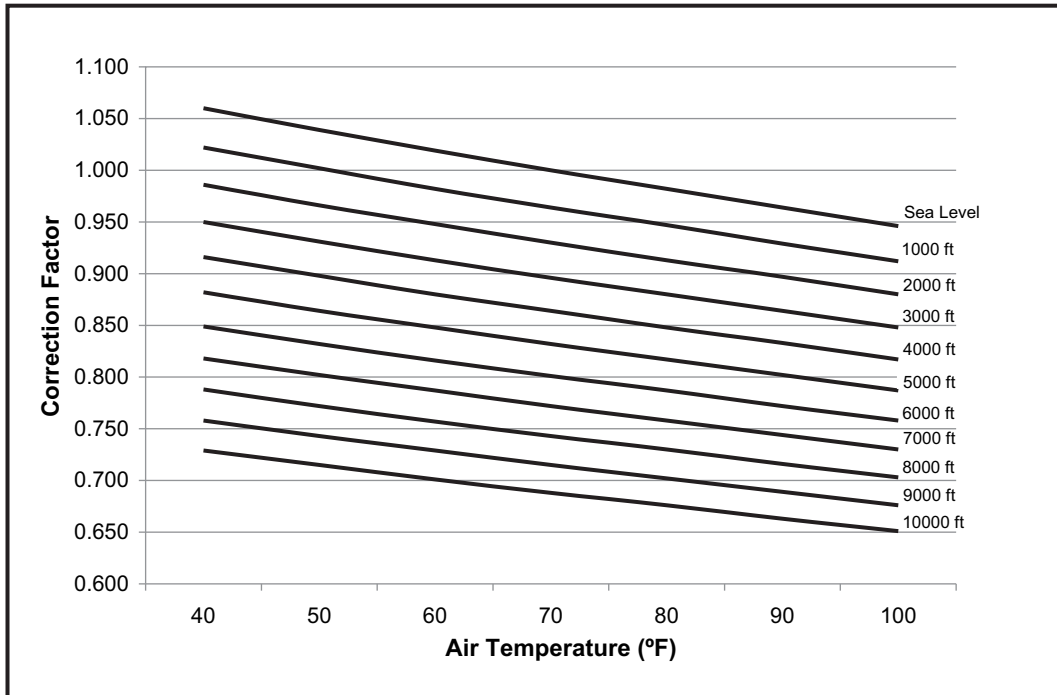
| Air Flow<br>(CFM) | Available External Static Pressure - IWG |      |     |      |      |      |                         |      |      |      |      |      |                        |      |      |      |      |      |      |      |
|-------------------|--|------|-----|------|------|------|-------------------------|------|------|------|------|------|------------------------|------|------|------|------|------|------|------|
|                   | 0.2                                      |      | 0.4 |      | 0.6  |      | 0.8                     |      | 1.0  |      | 1.2  |      | 1.4                    |      | 1.6  |      | 1.8  |      | 2.0  |      |
|                   | RPM                                      | BHP  | RPM | BHP  | RPM  | BHP  | RPM                     | BHP  | RPM  | BHP  | RPM  | BHP  | RPM                    | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |
|                   | 1.5 HP & Field Supplied Drive            |      |     |      |      |      | Standard 1.5 HP & Drive |      |      |      |      |      | Alternate 2 HP & Drive |      |      |      |      |      |      |      |
| 2200              | 804                                      | 0.50 | 866 | 0.71 | 925  | 0.90 | 982                     | 1.06 | 1038 | 1.21 | 1092 | 1.35 | 1147                   | 1.48 | 1203 | 1.61 | 1259 | 1.73 | 1317 | 1.87 |
| 2400              | 835                                      | 0.66 | 897 | 0.87 | 956  | 1.06 | 1013                    | 1.22 | 1069 | 1.37 | 1124 | 1.51 | 1178                   | 1.64 | 1234 | 1.77 | 1290 | 1.90 | 1348 | 2.03 |
| 2600              | 869                                      | 0.84 | 931 | 1.05 | 990  | 1.24 | 1047                    | 1.40 | 1103 | 1.55 | 1158 | 1.69 | 1212                   | 1.82 | 1268 | 1.95 | 1324 | 2.07 | 1382 | 2.21 |
| 2800              | 906                                      | 1.03 | 968 | 1.25 | 1027 | 1.43 | 1084                    | 1.60 | 1139 | 1.75 | 1194 | 1.89 | 1249                   | 2.02 | 1304 | 2.14 | 1361 | 2.27 | -    | -    |

**Table X: RPM Selection**

| Size<br>(Tons) | Model | HP  | Max<br>BHP | Motor<br>Sheave | Blower<br>Sheave | 6 Turns<br>Open | 5 Turns<br>Open | 4 Turns<br>Open | 3 Turns<br>Open | 2 Turns<br>Open | 1 Turn<br>Open | Fully<br>Closed |
|----------------|-------|-----|------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|
| X              | Y     | 1.5 | 1.73       | 1VM50           | AK74             | N/A             | 897             | 945             | 991             | 1035            | 1079           | 1126            |
|                |       | 2   | 2.30       | 1VM50           | AK64             | N/A             | 1039            | 1094            | 1150            | 1207            | 1256           | 1308            |

**Altitude/Temperature Correction Factors**

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



## Gas Heat Minimum Supply Air

| Size<br>(Tons)         | Model            | Heat Size            | Supply Air (CFM) |                 |
|------------------------|------------------|----------------------|------------------|-----------------|
|                        |                  |                      | Heating          |                 |
|                        |                  |                      | Min              | Max             |
| <del>037<br/>(3)</del> | <del>ZH/ZJ</del> | <del>A05 / N05</del> | <del>890</del>   | <del>2220</del> |
|                        |                  | <del>A07 / N07</del> | <del>915</del>   | <del>2370</del> |
|                        |                  | <del>A09 / N09</del> | <del>1115</del>  | <del>1780</del> |
| 049<br>(4)             | ZH/ZJ            | A05 / N05            | 890              | 2220            |
|                        |                  | A07 / N07            | 915              | 2370            |
|                        |                  | A09 / N09            | 1270             | 2220            |
| 061<br>(5)             | ZH/ZJ            | A07 / N07            | 915              | 2370            |
|                        |                  | A09 / N09            | 1370             | 2540            |
|                        |                  | A13 / N13            | 1580             | 2630            |
| 078<br>(6.5)           | ZH/ZJ            | 10                   | 1950             | 3250            |
|                        |                  | 15                   | 1950             | 3250            |
| 090<br>(7.5)           | ZH/ZJ            | 10                   | 2250             | 3750            |
|                        |                  | 15                   | 2250             | 3750            |
| 102<br>(8.5)           | ZH/ZJ            | 10                   | 2550             | 4250            |
|                        |                  | 15                   | 2550             | 4250            |
| 120<br>(10)            | ZH/ZJ            | 15                   | 3000             | 5000            |
|                        |                  | 20                   | 3000             | 5000            |
| 150<br>(12.5)          | ZH/ZJ            | 15                   | 3750             | 6250            |
|                        |                  | 20                   | 3750             | 6250            |

## Electric Heat Minimum Supply Air

## 3 thru 5 Tons

| Size<br>(Tons)         | Model            | Voltage                 | Minimum Supply Air (CFM) |                |                |                |              |              |
|------------------------|------------------|-------------------------|--------------------------|----------------|----------------|----------------|--------------|--------------|
|                        |                  |                         | Heater kW                |                |                |                |              |              |
|                        |                  |                         | 3                        | 6              | 9              | 15             | 20           | 24           |
| <del>037<br/>(3)</del> | <del>ZH/ZJ</del> | <del>208/230-3-60</del> | <del>TBD</del>           | <del>TBD</del> | <del>TBD</del> | <del>TBD</del> | <del>-</del> | <del>-</del> |
|                        |                  | <del>460-3-60</del>     | <del>TBD</del>           | <del>TBD</del> | <del>TBD</del> | <del>TBD</del> | <del>-</del> | <del>-</del> |
|                        |                  | <del>600-3-60</del>     | <del>-</del>             | <del>-</del>   | <del>TBD</del> | <del>TBD</del> | <del>-</del> | <del>-</del> |
| 049<br>(4)             | ZH/ZJ            | 208/230-3-60            | -                        | TBD            | TBD            | TBD            | TBD          | -            |
|                        |                  | 460-3-60                | -                        | TBD            | TBD            | TBD            | TBD          | -            |
|                        |                  | 600-3-60                | -                        | -              | TBD            | TBD            | TBD          | -            |
| 061<br>(5)             | ZH/ZJ            | 208/230-3-60            | -                        | TBD            | TBD            | TBD            | TBD          | TBD          |
|                        |                  | 460-3-60                | -                        | TBD            | TBD            | TBD            | TBD          | TBD          |
|                        |                  | 600-3-60                | -                        | -              | TBD            | TBD            | TBD          | TBD          |

## 6-1/2 thru 12-1/5 Tons

| Size<br>(Tons) | Model | Voltage      | Minimum Supply Air (CFM) |      |      |      |      |
|----------------|-------|--------------|--------------------------|------|------|------|------|
|                |       |              | Heater kW                |      |      |      |      |
|                |       |              | 9                        | 18   | 24   | 36   | 54   |
| 078<br>(6.5)   | ZH/ZJ | 208/230-3-60 | 1950                     | 1950 | 1950 | 1950 | -    |
|                |       | 460-3-60     | 1950                     | 1950 | 1950 | 1950 | -    |
|                |       | 600-3-60     | 1950                     | 1950 | 1950 | 1950 | -    |
| 090<br>(7.5)   | ZH/ZJ | 208/230-3-60 | 2250                     | 2250 | 2250 | 2250 | -    |
|                |       | 460-3-60     | 2250                     | 2250 | 2250 | 2250 | -    |
|                |       | 600-3-60     | 2250                     | 2250 | 2250 | 2250 | -    |
| 102<br>(8.5)   | ZH/ZJ | 208/230-3-60 | 2550                     | 2550 | 2550 | 2550 | -    |
|                |       | 460-3-60     | 2550                     | 2550 | 2550 | 2550 | -    |
|                |       | 600-3-60     | 2550                     | 2550 | 2550 | 2550 | -    |
| 120<br>(10)    | ZH/ZJ | 208/230-3-60 | -                        | 3000 | 3000 | 3000 | 3500 |
|                |       | 460-3-60     | -                        | 3000 | 3000 | 3000 | 3000 |
|                |       | 600-3-60     | -                        | 3000 | 3000 | 3000 | 3500 |
| 150<br>(12.5)  | ZH/ZJ | 208/230-3-60 | -                        | 3750 | 3750 | 3750 | 4000 |
|                |       | 460-3-60     | -                        | 3750 | 3750 | 3750 | 3750 |
|                |       | 600-3-60     | -                        | 3750 | 3750 | 3750 | 3750 |

## Indoor Blower Specifications

| Size (Tons) | Model | Motor |      |      |      |       | Motor Sheave     |            |       | Blower Sheave    |            |       | Belt |
|-------------|-------|-------|------|------|------|-------|------------------|------------|-------|------------------|------------|-------|------|
|             |       | HP    | RPM  | Eff. | SF   | Frame | Datum Dia. (in.) | Bore (in.) | Model | Datum Dia. (in.) | Bore (in.) | Model |      |
| 037 (3)     | ZH    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 2.0 - 3.0        | 7/8        | 1VM34 | 6.5              | 1          | AK69  | A47  |
|             |       | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 3.0 - 4.0        | 7/8        | 1VL44 | 6.5              | 1          | AK69  | A47  |
| 049 (4)     | ZH    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 2.0 - 3.0        | 7/8        | 1VM34 | 5.2              | 1          | AK56  | A47  |
|             |       | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 3.0 - 4.0        | 7/8        | 1VL44 | 5.2              | 1          | AK56  | A47  |
| 061 (5)     | ZH    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 2.6 - 3.6        | 7/8        | 1VL40 | 5.7              | 1          | AK61  | A47  |
|             |       | 2     | 1725 | 0.8  | 1.15 | 56    | 4.2 - 5.2        | 7/8        | 1VP56 | 7.0              | 1          | AK74  | A47  |
| 078 (6.5)   | ZH    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A49  |
|             |       | 2     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 6.0              | 1          | AK64  | A49  |
| 090 (7.5)   | ZH    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A49  |
|             |       | 3     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 5.7              | 1          | AK61  | A49  |
| 102 (8.5)   | ZH    | 2     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 9.0              | 1          | AK94  | A56  |
|             |       | 3     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A54  |
| 120 (10)    | ZH    | 2     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 8.0              | 1          | AK84  | A56  |
|             |       | 3     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A54  |
| 150 (12.5)  | ZH    | 3     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A54  |
|             |       | 5     | 1725 | 0.87 | 1.15 | 184T  | 4.3 - 5.3        | 1-1/8      | 1VP56 | 6.7              | 1          | BK77  | BX55 |
| 037 (3)     | ZJ    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 2.0 - 3.0        | 7/8        | 1VM34 | 6.5              | 1          | AK69  | A47  |
|             |       | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 3.0 - 4.0        | 7/8        | 1VL44 | 6.5              | 1          | AK69  | A47  |
| 049 (4)     | ZJ    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 2.0 - 3.0        | 7/8        | 1VM34 | 5.2              | 1          | AK56  | A47  |
|             |       | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 3.0 - 4.0        | 7/8        | 1VL44 | 5.2              | 1          | AK56  | A47  |
| 061 (5)     | ZJ    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 2.6 - 3.6        | 7/8        | 1VL40 | 5.7              | 1          | AK61  | A47  |
|             |       | 2     | 1725 | 0.8  | 1.15 | 56    | 4.2 - 5.2        | 7/8        | 1VP56 | 7.0              | 1          | AK74  | A47  |
| 078 (6.5)   | ZJ    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 2.6 - 3.6        | 7/8        | 1VL40 | 7.0              | 1          | AK74  | A53  |
|             |       | 2     | 1725 | 0.8  | 1.15 | 56    | 3.6 - 4.6        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A54  |
| 090 (7.5)   | ZJ    | 1-1/2 | 1725 | 0.8  | 1.15 | 56    | 2.6 - 3.6        | 7/8        | 1VL40 | 6.5              | 1          | AK69  | A53  |
|             |       | 3     | 1725 | 0.8  | 1.15 | 56    | 3.6 - 4.6        | 7/8        | 1VM50 | 6.5              | 1          | AK69  | A54  |
| 102 (8.5)   | ZJ    | 2     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 8.5              | 1          | AK89  | A56  |
|             |       | 3     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A54  |
| 120 (10)    | ZJ    | 2     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 8.0              | 1          | AK84  | A56  |
|             |       | 3     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A54  |
| 150 (12.5)  | ZJ    | 3     | 1725 | 0.8  | 1.15 | 56    | 3.4 - 4.4        | 7/8        | 1VM50 | 7.0              | 1          | AK74  | A54  |
|             |       | 5     | 1725 | 0.87 | 1.15 | 184T  | 4.3 - 5.3        | 1-1/8      | 1VP56 | 6.7              | 1          | BK77  | BX55 |

## Power Exhaust Specifications

| Model       | Voltage      | Motor |                  |     | Motor |     |     | Fuse Size | CFM @ 0.1 ESP |
|-------------|--------------|-------|------------------|-----|-------|-----|-----|-----------|---------------|
|             |              | HP    | RPM <sup>1</sup> | QTY | LRA   | FLA | MCA |           |               |
| 2PE04703225 | 208/230-1-60 | 3/4   | 1075             | 1   | 7.8   | 5   | 6.3 | 10        | 3800          |
| 2PE04703246 | 460-1-60     | 3/4   | 1075             | 1   | 3.4   | 2.2 | 2.8 | 5         | 3800          |
| 2PE04703258 | 575-1-60     | 3/4   | 1050             | 1   | 2.9   | 1.5 | 1.9 | 4         | 3800          |

1. Motors are multi-tapped and factory wired for high speed.

## Electric Heat Multipliers

| Nominal | Voltage |  | kW Capacity Multipliers <sup>1</sup> |
|---------|---------|--|--------------------------------------|
|         | Applied |  |                                      |
| 240     | 208     |  | 0.75                                 |
|         | 230     |  | 0.92                                 |
| 480     | 460     |  | 0.92                                 |
| 600     | 575     |  | 0.92                                 |

1. Electric heaters are rated at nominal voltage. Use this table to determine the electric heat capacity for heaters applied at lower voltages.



## Sound Performance

### Indoor Sound Power Levels

| Size<br>(Tons) | Model | CFM  | ESP<br>(IWG) | Blower |      | Sound Power, dB ( $10^{-12}$ ) Watts |                                       |     |     |     |      |      |      |      |
|----------------|-------|------|--------------|--------|------|--------------------------------------|---------------------------------------|-----|-----|-----|------|------|------|------|
|                |       |      |              | RPM    | BHP  | Sound Rating <sup>1</sup><br>dB (A)  | Octave Band Centerline Frequency (Hz) |     |     |     |      |      |      |      |
|                |       |      |              |        |      |                                      | 63                                    | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 078<br>(6.5)   | ZH/ZJ | 2600 | 0.6          | 812    | 1.14 | 74                                   | 71                                    | 73  | 73  | 71  | 69   | 65   | 65   | 60   |
| 090<br>(7.5)   | ZH/ZJ | 3000 | 0.6          | 854    | 1.47 | 77                                   | 74                                    | 76  | 76  | 74  | 72   | 68   | 68   | 63   |
| 102<br>(8.5)   | ZH/ZJ | 3400 | 0.6          | 872    | 1.65 | 80                                   | 77                                    | 79  | 79  | 77  | 75   | 71   | 71   | 66   |
| 120<br>(10)    | ZH/ZJ | 4000 | 0.6          | 959    | 2.29 | 83                                   | 80                                    | 82  | 82  | 80  | 78   | 74   | 74   | 69   |
| 150<br>(12.5)  | ZH/ZJ | 5000 | 0.6          | 1132   | 3.74 | 87                                   | 84                                    | 86  | 86  | 84  | 82   | 78   | 78   | 73   |

1. These values have been accessed using a model of sound propagation from a point source into the hemispheric/free field. The dBA values provided are to be used for reference only. Calculation of dBA values cover matters of system design and the fan manufacture has no way of knowing the details of each system. This constitutes an exception to any specification or guarantee requiring a dBA value of sound data in any other form than sound power level ratings.

### Outdoor Sound Power Levels

#### ZH/ZJ078-150

| Size<br>(Tons)            | Model         | Sound Rating <sup>1</sup><br>dB (A) | Octave Band Centerline Frequency (Hz) |                 |                 |                 |                 |                 |                 |
|---------------------------|---------------|-------------------------------------|---------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                           |               |                                     | 125                                   | 250             | 500             | 1000            | 2000            | 4000            | 8000            |
| <del>078<br/>(6.5)</del>  | <del>ZH</del> | <del>83</del>                       | <del>88.0</del>                       | <del>82.5</del> | <del>81.5</del> | <del>78.0</del> | <del>73.0</del> | <del>69.0</del> | <del>62.0</del> |
| <del>090<br/>(7.5)</del>  | <del>ZH</del> | <del>83</del>                       | <del>89.5</del>                       | <del>83.5</del> | <del>82.0</del> | <del>78.0</del> | <del>72.5</del> | <del>68.0</del> | <del>60.5</del> |
| <del>102<br/>(8.5)</del>  | <del>ZH</del> | <del>90</del>                       | <del>93.5</del>                       | <del>92.5</del> | <del>88.0</del> | <del>84.5</del> | <del>79.0</del> | <del>74.5</del> | <del>68.0</del> |
| <del>120<br/>(10)</del>   | <del>ZH</del> | <del>90</del>                       | <del>94.0</del>                       | <del>92.0</del> | <del>88.5</del> | <del>84.5</del> | <del>80.0</del> | <del>75.5</del> | <del>68.5</del> |
| <del>150<br/>(12.5)</del> | <del>ZH</del> | <del>84</del>                       | <del>90.0</del>                       | <del>84.5</del> | <del>81.5</del> | <del>77.5</del> | <del>72.0</del> | <del>68.5</del> | <del>61.5</del> |
| 078<br>(6.5)              | ZJ            | 83                                  | 88.0                                  | 82.5            | 81.5            | 78.0            | 73.0            | 69.0            | 62.0            |
| 090<br>(7.5)              | ZJ            | 83                                  | 89.5                                  | 83.5            | 82.0            | 78.0            | 72.5            | 68.0            | 60.5            |
| 102<br>(8.5)              | ZJ            | 83                                  | 89.0                                  | 84.5            | 81.5            | 78.0            | 72.5            | 68.5            | 70.5            |
| 120<br>(10)               | ZJ            | 83                                  | 89.5                                  | 83.5            | 81.0            | 78.0            | 72.0            | 68.5            | 70.5            |
| 150<br>(12.5)             | ZJ            | 84                                  | 90.0                                  | 84.5            | 81.5            | 77.5            | 72.0            | 68.5            | 61.5            |

1. Rated in accordance with ARI 270 standard.

**ZJ078-150 Standard Motor - Without Powered Convenience Outlet**

| Size (Tons) | Volt | Compressors (each) |     |      | OD Fan Motors (each) | Supply Blower Motor | Pwr Exh Motor | Pwr Conv Outlet | Electric Heat Option |      |        |       | MCA <sup>1</sup> (Amps) | MCA <sup>1</sup> w/Pwr Exh (Amps) | Max Fuse <sup>2/</sup> Breaker <sup>3</sup> Size (Amps) | Max Fuse <sup>2/</sup> Breaker <sup>3</sup> Size w/ Pwr Exh (Amps) |
|-------------|------|--------------------|-----|------|----------------------|---------------------|---------------|-----------------|----------------------|------|--------|-------|-------------------------|-----------------------------------|---|--|
|             |      | RLA                | LRA | MCC  | FLA                  | FLA                 | FLA           | FLA             | Model                | kW   | Stages | Amps  |                         |                                   |   |  |
| 078 (6.5)   | 208  | 9.3                | 68  | 14.5 | 1.5                  | 6.0                 | 5.5           | 0.0             | None                 | -    | -      | -     | 29.9                    | 35.4                              | 35  | 40   |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 6.8  | 1      | 18.9  | 31.1                    | 38                                | 35  | 40   |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5  | 54.3                    | 61.2                              | 60  | 70   |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0  | 70                      | 76.8                              | 70  | 80   |
|             | 230  | 9.3                | 68  | 14.5 | 1.5                  | 6.0                 | 5.5           | 0.0             | E36                  | 25.5 | 2      | 70.8  | 96                      | 102.9                             | 100   | 110  |
|             |      |                    |     |      |                      |                     |               |                 | None                 | -    | -      | -     | 29.9                    | 35.4                              | 35  | 40   |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 22.6  | 34.6                    | 41.4                              | 35  | 45   |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2  | 61.6                    | 68.5                              | 70  | 70   |
|             | 460  | 4.9                | 34  | 7.6  | 0.8                  | 3.0                 | 2.2           | 0.0             | E24                  | 24   | 2      | 60.2  | 79.7                    | 86.5                              | 80  | 90   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3  | 109.7                   | 116.6                             | 110   | 125  |
|             |      |                    |     |      |                      |                     |               |                 | None                 | -    | -      | -     | 15.6                    | 17.8                              | 20  | 20   |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 11.3  | 17.3                    | 20                                | 20  | 20   |
| 575         | 3.8  | 28                 | 6   | 0.6  | 2.4                  | 1.8                 | 0.0           | E18             | 18                   | 2    | 22.6   | 30.8  | 33.6                    | 35                                | 35  |  |
|             |      |                    |     |      |                      |                     |               | E24             | 24                   | 2    | 30.1   | 39.8  | 42.6                    | 40                                | 45  |  |
|             |      |                    |     |      |                      |                     |               | E36             | 34                   | 2    | 42.7   | 54.9  | 57.6                    | 60                                | 60  |  |
|             |      |                    |     |      |                      |                     |               | None            | -                    | -    | -      | 12.2  | 14                      | 15                                | 15  |  |
| 090 (7.5)   | 208  | 14.7               | 115 | 23   | 3.5                  | 6.0                 | 5.5           | 0.0             | E09                  | 9    | 1      | 9.0   | 13.8                    | 16.1                              | 15  | 20   |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1  | 24.7                    | 26.9                              | 25  | 30   |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1  | 31.9                    | 34.1                              | 35  | 35   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1  | 43.9                    | 46.1                              | 45  | 50   |
|             | 230  | 14.7               | 115 | 23   | 3.5                  | 6.0                 | 5.5           | 0.0             | None                 | -    | -      | -     | 46.1                    | 51.6                              | 60  | 60   |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 6.8  | 1      | 18.9  | 46.1                    | 51.6                              | 60  | 60   |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5  | 54.3                    | 61.2                              | 60  | 70   |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0  | 70                      | 76.8                              | 70  | 80   |
|             | 460  | 7.7                | 50  | 12   | 1.6                  | 3.0                 | 2.2           | 0.0             | E36                  | 25.5 | 2      | 70.8  | 96                      | 102.9                             | 100   | 110  |
|             |      |                    |     |      |                      |                     |               |                 | None                 | -    | -      | -     | 23.5                    | 25.7                              | 30  | 30   |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 11.3  | 23.5                    | 25.7                              | 30  | 30   |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6  | 30.8                    | 33.6                              | 35  | 35   |
| 575         | 6.4  | 40                 | 10  | 1.3  | 2.4                  | 1.8                 | 0.0           | E24             | 24                   | 2    | 30.1   | 39.8  | 42.6                    | 40                                | 45  |  |
|             |      |                    |     |      |                      |                     |               | E36             | 34                   | 2    | 42.7   | 54.9  | 57.6                    | 60                                | 60  |  |
|             |      |                    |     |      |                      |                     |               | None            | -                    | -    | -      | 19.4  | 21.2                    | 25                                | 25  |  |
|             |      |                    |     |      |                      |                     |               | E09             | 9                    | 1    | 9.0    | 19.4  | 21.2                    | 25                                | 25  |  |
| 102 (8.5)   | 208  | 12.2               | 88  | 19   | 3.5                  | 6.8                 | 5.5           | 0.0             | E18                  | 18   | 2      | 18.1  | 24.7                    | 26.9                              | 25  | 30   |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1  | 31.9                    | 34.1                              | 35  | 35   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1  | 43.9                    | 46.1                              | 45  | 50   |
|             |      |                    |     |      |                      |                     |               |                 | None                 | -    | -      | -     | 41.3                    | 46.8                              | 50  | 50   |
|             | 230  | 12.2               | 88  | 19   | 3.5                  | 6.8                 | 5.5           | 0.0             | E09                  | 6.8  | 1      | 18.9  | 41.3                    | 46.8                              | 50  | 50   |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5  | 55.3                    | 62.2                              | 60  | 70   |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0  | 71                      | 77.8                              | 80  | 80   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8  | 97                      | 103.9                             | 100   | 110  |
|             | 460  | 5.8                | 44  | 9    | 1.6                  | 3.4                 | 2.2           | 0.0             | None                 | -    | -      | -     | 41.3                    | 46.8                              | 50  | 50   |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 22.6  | 41.3                    | 46.8                              | 50  | 50   |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2  | 62.6                    | 69.5                              | 70  | 70   |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2  | 80.7                    | 87.5                              | 90  | 90   |
| 575         | 4.4  | 36                 | 5.5 | 1.3  | 2.7                  | 1.8                 | 0.0           | E36             | 34                   | 2    | 85.3   | 110.7 | 117.6                   | 125                               | 125   |  |
|             |      |                    |     |      |                      |                     |               | None            | -                    | -    | -      | 19.7  | 21.9                    | 25                                | 25  |  |
|             |      |                    |     |      |                      |                     |               | E09             | 9                    | 1    | 11.3   | 19.7  | 21.9                    | 25                                | 25  |  |
|             |      |                    |     |      |                      |                     |               | E18             | 18                   | 2    | 22.6   | 31.3  | 34.1                    | 35                                | 35  |  |
|             |      |                    |     |      |                      |                     |               | E24             | 24                   | 2    | 30.1   | 40.3  | 43.1                    | 45                                | 45  |  |
|             |      |                    |     |      |                      |                     |               | E36             | 34                   | 2    | 42.7   | 55.4  | 58.1                    | 60                                | 60  |  |
|             |      |                    |     |      |                      |                     |               | None            | -                    | -    | -      | 15.2  | 17                      | 20                                | 20  |  |
|             |      |                    |     |      |                      |                     |               | E09             | 9                    | 1    | 9.0    | 15.2  | 17                      | 20                                | 20  |  |
|             |      |                    |     |      |                      |                     |               | E18             | 18                   | 2    | 18.1   | 25    | 27.3                    | 25                                | 30  |  |
|             |      |                    |     |      |                      |                     |               | E24             | 24                   | 2    | 24.1   | 32.2  | 34.5                    | 35                                | 35  |  |
|             |      |                    |     |      |                      |                     |               | E36             | 34                   | 2    | 34.1   | 44.3  | 46.5                    | 45                                | 50  |  |
|             |      |                    |     |      |                      |                     |               | None            | -                    | -    | -      | 15.2  | 17                      | 20                                | 20  |  |

**ZJ078-150 Standard Motor - Without Powered Convenience Outlet (Continued)**

| Size (Tons) | Volt | Compressors (each) |      |      | OD Fan Motors (each) | Supply Blower Motor | Pwr Exh Motor | Pwr Conv Outlet | Electric Heat Option |      |        |       | MCA <sup>1</sup> (Amps) | MCA <sup>1</sup> w/Pwr Exh (Amps) | Max Fuse <sup>2/</sup> Breaker <sup>3</sup> Size (Amps) | Max Fuse <sup>2/</sup> Breaker <sup>3</sup> Size w/ Pwr Exh (Amps) |
|-------------|------|--------------------|------|------|----------------------|---------------------|---------------|-----------------|----------------------|------|--------|-------|-------------------------|-----------------------------------|---|--|
|             |      | RLA                | LRA  | MCC  | FLA                  | FLA                 | FLA           | FLA             | Model                | kW   | Stages | Amps  |                         |                                   |   |  |
| 120 (10)    | 208  | 16                 | 110  | 24.9 | 3.5                  | 6.8                 | 5.5           | 0.0             | None                 | -    | -      | -     | 49.8                    | 55.3                              | 60  | 70   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5  | 55.3                    | 62.2                              | 60  | 70   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0  | 71                      | 77.8                              | 80  | 80   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8  | 97                      | 103.9                             | 100   | 110  |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 40.6 | 2      | 112.7 | 149.4                   | 156.2                             | 150   | 175  |
|             | 230  | 16                 | 110  | 24.9 | 3.5                  | 6.8                 | 5.5           | 0.0             | None                 | -    | -      | -     | 49.8                    | 55.3                              | 60  | 70   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2  | 62.6                    | 69.5                              | 70  | 70   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2  | 80.7                    | 87.5                              | 90  | 90   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3  | 110.7                   | 117.6                             | 125   | 125  |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 135.6 | 138.4                   | 145.3                             | 150   | 175  |
|             | 460  | 7.8                | 52   | 12.1 | 1.6                  | 3.4                 | 2.2           | 0.0             | None                 | -    | -      | -     | 24.2                    | 26.4                              | 30  | 30   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6  | 31.3                    | 34.1                              | 35  | 35   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1  | 40.3                    | 43.1                              | 45  | 45   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7  | 55.4                    | 58.1                              | 60  | 60   |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 67.8  | 69.2                    | 72                                | 80  | 80   |
|             | 575  | 5.7                | 38.9 | 8.9  | 1.3                  | 2.7                 | 1.8           | 0.0             | None                 | -    | -      | -     | 18.1                    | 19.9                              | 20  | 25   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1  | 25                      | 27.3                              | 25  | 30   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1  | 32.2                    | 34.5                              | 35  | 35   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1  | 44.3                    | 46.5                              | 45  | 50   |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 54.2  | 55.3                    | 57.6                              | 60  | 60   |
| 150 (12.5)  | 208  | 23.1               | 160  | 36   | 1.5                  | 9.6                 | 5.5           | 0.0             | None                 | -    | -      | -     | 67.6                    | 73.1                              | 90  | 90   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5  | 67.6                    | 73.1                              | 90  | 90   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0  | 74.5                    | 81.3                              | 90  | 90   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8  | 100.5                   | 107.4                             | 110   | 110  |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 40.6 | 2      | 112.7 | 152.9                   | 159.7                             | 175   | 175  |
|             | 230  | 23.1               | 160  | 36   | 1.5                  | 9.6                 | 5.5           | 0.0             | None                 | -    | -      | -     | 67.6                    | 73.1                              | 90  | 90   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2  | 67.6                    | 73.1                              | 90  | 90   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2  | 84.2                    | 91                                | 90  | 100  |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3  | 114.2                   | 121.1                             | 125   | 125  |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 135.6 | 141.9                   | 148.8                             | 175   | 175  |
|             | 460  | 12.2               | 87   | 19   | 0.8                  | 4.8                 | 2.2           | 0.0             | None                 | -    | -      | -     | 35.5                    | 37.7                              | 45  | 45   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6  | 35.5                    | 37.7                              | 45  | 45   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1  | 42.1                    | 44.8                              | 45  | 45   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7  | 57.1                    | 59.9                              | 60  | 60   |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 67.8  | 71                      | 73.7                              | 80  | 80   |
|             | 575  | 8.7                | 62   | 13.5 | 0.6                  | 3.9                 | 1.8           | 0.0             | None                 | -    | -      | -     | 25.9                    | 27.7                              | 30  | 35   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1  | 26.5                    | 28.8                              | 30  | 35   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1  | 33.7                    | 36                                | 35  | 40   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1  | 45.8                    | 48                                | 50  | 50   |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 54.2  | 56.8                    | 59.1                              | 70  | 70   |

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC.

**ZJ078-150 Hi Static Motor - Without Powered Convenience Outlet**

| Size (Tons) | Volt | Compressors (each) |     |      | OD Fan Motors (each) | Supply Blower Motor | Pwr Exh Motor | Pwr Conv Outlet | Electric Heat Option |      |        |      | MCA <sup>1</sup> (Amps) | MCA <sup>1</sup> w/Pwr Exh (Amps) | Max Fuse <sup>2</sup> / Breaker <sup>3</sup> Size (Amps) | Max Fuse <sup>2</sup> / Breaker <sup>3</sup> Size w/ Pwr Exh (Amps) |
|-------------|------|--------------------|-----|------|----------------------|---------------------|---------------|-----------------|----------------------|------|--------|------|-------------------------|-----------------------------------|--|---|
|             |      | RLA                | LRA | MCC  | FLA                  | FLA                 | FLA           | FLA             | Model                | kW   | Stages | Amps |                         |                                   |  |   |
| 078 (6.5)   | 208  | 9.3                | 68  | 14.5 | 1.5                  | 6.8                 | 5.5           | 0.0             | None                 | -    | -      | -    | 30.7                    | 36.2                              | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 6.8  | 1      | 18.9 | 32.1                    | 39                                | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5 | 55.3                    | 62.2                              | 60   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0 | 71                      | 77.8                              | 80   | 80  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8 | 97                      | 103.9                             | 100  | 110   |
|             | 230  | 9.3                | 68  | 14.5 | 1.5                  | 6.8                 | 5.5           | 0.0             | None                 | -    | -      | -    | 30.7                    | 36.2                              | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 22.6 | 35.6                    | 42.4                              | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2 | 62.6                    | 69.5                              | 70   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2 | 80.7                    | 87.5                              | 90   | 90  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3 | 110.7                   | 117.6                             | 125  | 125   |
|             | 460  | 4.9                | 34  | 7.6  | 0.8                  | 3.4                 | 2.2           | 0.0             | None                 | -    | -      | -    | 16                      | 18.2                              | 20   | 20  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 11.3 | 17.8                    | 20.5                              | 20   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6 | 31.3                    | 34.1                              | 35   | 35  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1 | 40.3                    | 43.1                              | 45   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7 | 55.4                    | 58.1                              | 60   | 60  |
|             | 575  | 3.8                | 28  | 6    | 0.6                  | 2.7                 | 1.8           | 0.0             | None                 | -    | -      | -    | 12.5                    | 14.3                              | 15   | 15  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 9.0  | 14.2                    | 16.5                              | 15   | 20  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1 | 25                      | 27.3                              | 25   | 30  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1 | 32.2                    | 34.5                              | 35   | 35  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1 | 44.3                    | 46.5                              | 45   | 50  |
| 090 (7.5)   | 208  | 14.7               | 115 | 23   | 3.5                  | 9.6                 | 5.5           | 0.0             | None                 | -    | -      | -    | 49.7                    | 55.2                              | 60   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 6.8  | 1      | 18.9 | 49.7                    | 55.2                              | 60   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5 | 58.8                    | 65.7                              | 60   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0 | 74.5                    | 81.3                              | 80   | 90  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8 | 100.5                   | 107.4                             | 110  | 110   |
|             | 230  | 14.7               | 115 | 23   | 3.5                  | 9.6                 | 5.5           | 0.0             | None                 | -    | -      | -    | 49.7                    | 55.2                              | 60   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 22.6 | 49.7                    | 55.2                              | 60   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2 | 66.1                    | 73                                | 70   | 80  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2 | 84.2                    | 91                                | 90   | 100   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3 | 114.2                   | 121.1                             | 125  | 125   |
|             | 460  | 7.7                | 50  | 12   | 1.6                  | 4.8                 | 2.2           | 0.0             | None                 | -    | -      | -    | 25.3                    | 27.5                              | 30   | 35  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 11.3 | 25.3                    | 27.5                              | 30   | 35  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6 | 33.1                    | 35.8                              | 35   | 40  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1 | 42.1                    | 44.8                              | 45   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7 | 57.1                    | 59.9                              | 60   | 60  |
|             | 575  | 6.4                | 40  | 10   | 1.3                  | 3.9                 | 1.8           | 0.0             | None                 | -    | -      | -    | 20.9                    | 22.7                              | 25   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 9.0  | 20.9                    | 22.7                              | 25   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1 | 26.5                    | 28.8                              | 30   | 30  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1 | 33.7                    | 36                                | 35   | 40  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1 | 45.8                    | 48                                | 50   | 50  |
| 102 (8.5)   | 208  | 12.2               | 88  | 19   | 3.5                  | 9.6                 | 5.5           | 0.0             | None                 | -    | -      | -    | 44.1                    | 49.6                              | 50   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 6.8  | 1      | 18.9 | 44.1                    | 49.6                              | 50   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5 | 58.8                    | 65.7                              | 60   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0 | 74.5                    | 81.3                              | 80   | 90  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8 | 100.5                   | 107.4                             | 110  | 110   |
|             | 230  | 12.2               | 88  | 19   | 3.5                  | 9.6                 | 5.5           | 0.0             | None                 | -    | -      | -    | 44.1                    | 49.6                              | 50   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 22.6 | 44.1                    | 49.6                              | 50   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2 | 66.1                    | 73                                | 70   | 80  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2 | 84.2                    | 91                                | 90   | 100   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3 | 114.2                   | 121.1                             | 125  | 125   |
|             | 460  | 5.8                | 44  | 9    | 1.6                  | 4.8                 | 2.2           | 0.0             | None                 | -    | -      | -    | 21.1                    | 23.3                              | 25   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 11.3 | 21.1                    | 23.3                              | 25   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6 | 33.1                    | 35.8                              | 35   | 40  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1 | 42.1                    | 44.8                              | 45   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7 | 57.1                    | 59.9                              | 60   | 60  |
|             | 575  | 4.4                | 36  | 5.5  | 1.3                  | 3.9                 | 1.8           | 0.0             | None                 | -    | -      | -    | 16.4                    | 18.2                              | 20   | 20  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 9.0  | 16.4                    | 18.2                              | 20   | 20  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1 | 26.5                    | 28.8                              | 30   | 30  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1 | 33.7                    | 36                                | 35   | 40  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1 | 45.8                    | 48                                | 50   | 50  |

## ZJ078-150 Hi Static Motor - Without Powered Convenience Outlet (Continued)

| Size<br>(Tons) | Volt | Compressors<br>(each) |      |      | OD Fan<br>Motors<br>(each) | Supply<br>Blower<br>Motor | Pwr<br>Exh<br>Motor | Pwr<br>Conv<br>Outlet | Electric Heat Option |      |        |       | MCA <sup>1</sup><br>(Amps) | MCA <sup>1</sup><br>w/Pwr<br>Exh<br>(Amps) | Max Fuse <sup>2</sup> /<br>Breaker <sup>3</sup><br>Size<br>(Amps) | Max Fuse <sup>2</sup> /<br>Breaker <sup>3</sup><br>Size w/ Pwr<br>Exh<br>(Amps) |
|----------------|------|-----------------------|------|------|----------------------------|---------------------------|---------------------|-----------------------|----------------------|------|--------|-------|----------------------------|--|---|---|
|                |      | RLA                   | LRA  | MCC  | FLA                        | FLA                       | FLA                 | FLA                   | Model                | kW   | Stages | Amps  |                            |  |   |   |
| 120<br>(10)    | 208  | 16                    | 110  | 24.9 | 3.5                        | 9.6                       | 5.5                 | 0.0                   | None                 | -    | -      | -     | 52.6                       | 58.1                                       | 60  | 70  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 13.5 | 2      | 37.5  | 58.8                       | 65.7                                       | 60  | 70  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 18   | 2      | 50.0  | 74.5                       | 81.3                                       | 80  | 90  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 25.5 | 2      | 70.8  | 100.5                      | 107.4                                      | 110   | 110   |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 40.6 | 2      | 112.7 | 152.9                      | 159.7                                      | 175   | 175   |
|                | 230  | 16                    | 110  | 24.9 | 3.5                        | 9.6                       | 5.5                 | 0.0                   | None                 | -    | -      | -     | 52.6                       | 58.1                                       | 60  | 70  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 45.2  | 66.1                       | 73   | 70  | 80  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 60.2  | 84.2                       | 91   | 90  | 100   |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 85.3  | 114.2                      | 121.1                                      | 125   | 125   |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 135.6 | 141.9                      | 148.8                                      | 175   | 175   |
|                | 460  | 7.8                   | 52   | 12.1 | 1.6                        | 4.8                       | 2.2                 | 0.0                   | None                 | -    | -      | -     | 25.6                       | 27.8                                       | 30  | 35  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 22.6  | 33.1                       | 35.8                                       | 35  | 40  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 30.1  | 42.1                       | 44.8                                       | 45  | 45  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 42.7  | 57.1                       | 59.9                                       | 60  | 60  |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 67.8  | 71                         | 73.7                                       | 80  | 80  |
|                | 575  | 5.7                   | 38.9 | 8.9  | 1.3                        | 3.9                       | 1.8                 | 0.0                   | None                 | -    | -      | -     | 19.3                       | 21.1                                       | 25  | 25  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 18.1  | 26.5                       | 28.8                                       | 30  | 30  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 24.1  | 33.7                       | 36   | 35  | 40  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 34.1  | 45.8                       | 48   | 50  | 50  |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 54.2  | 56.8                       | 59.1                                       | 70  | 70  |
| 150<br>(12.5)  | 208  | 23.1                  | 160  | 36   | 1.5                        | 15.2                      | 5.5                 | 0.0                   | None                 | -    | -      | -     | 73.2                       | 78.7                                       | 90  | 100   |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 13.5 | 2      | 37.5  | 73.2                       | 78.7                                       | 90  | 100   |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 18   | 2      | 50.0  | 81.5                       | 88.3                                       | 90  | 100   |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 25.5 | 2      | 70.8  | 107.5                      | 114.4                                      | 110   | 125   |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 40.6 | 2      | 112.7 | 159.9                      | 166.7                                      | 175   | 175   |
|                | 230  | 23.1                  | 160  | 36   | 1.5                        | 15.2                      | 5.5                 | 0.0                   | None                 | -    | -      | -     | 73.2                       | 78.7                                       | 90  | 100   |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 45.2  | 73.2                       | 80   | 90  | 100   |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 60.2  | 91.2                       | 98   | 100   | 100   |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 85.3  | 121.2                      | 128.1                                      | 125   | 150   |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 135.6 | 148.9                      | 155.8                                      | 175   | 175   |
|                | 460  | 12.2                  | 87   | 19   | 0.8                        | 7.6                       | 2.2                 | 0.0                   | None                 | -    | -      | -     | 38.3                       | 40.5                                       | 50  | 50  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 22.6  | 38.3                       | 40.5                                       | 50  | 50  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 30.1  | 45.6                       | 48.3                                       | 50  | 50  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 42.7  | 60.6                       | 63.4                                       | 70  | 70  |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 67.8  | 74.5                       | 77.2                                       | 90  | 90  |
|                | 575  | 8.7                   | 62   | 13.5 | 0.6                        | 6.1                       | 1.8                 | 0.0                   | None                 | -    | -      | -     | 28.1                       | 29.9                                       | 35  | 35  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 18.1  | 29.3                       | 31.5                                       | 35  | 35  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 24.1  | 36.5                       | 38.7                                       | 40  | 40  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 34.1  | 48.5                       | 50.8                                       | 50  | 60  |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 54.2  | 59.6                       | 61.8                                       | 70  | 70  |

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC.

## ZJ078-150 Standard Motor - With Powered Convenience Outlet

| Size<br>(Tons) | Volt | Compressors<br>(each) |     |      | OD Fan<br>Motors<br>(each) | Supply<br>Blower<br>Motor | Pwr<br>Exh<br>Motor | Pwr<br>Conv<br>Outlet | Electric Heat Option |      |        |      | MCA <sup>1</sup><br>(Amps) | MCA <sup>1</sup><br>w/Pwr<br>Exh<br>(Amps) | Max Fuse <sup>2</sup> /<br>Breaker <sup>3</sup><br>Size<br>(Amps) | Max Fuse <sup>2</sup> /<br>Breaker <sup>3</sup><br>Size w/ Pwr<br>Exh<br>(Amps) |
|----------------|------|-----------------------|-----|------|----------------------------|---------------------------|---------------------|-----------------------|----------------------|------|--------|------|----------------------------|--|---|---|
|                |      | RLA                   | LRA | MCC  | FLA                        | FLA                       | FLA                 | FLA                   | Model                | kW   | Stages | Amps |                            |  |   |   |
| 078<br>(6.5)   | 208  | 9.3                   | 68  | 14.5 | 1.5                        | 6.0                       | 5.5                 | 10.0                  | None                 | -    | -      | -    | 40.1                       | 45.6                                       | 50  | 50  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 6.8  | 1      | 18.9 | 43.6                       | 50.5                                       | 50  | 60  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 13.5 | 2      | 37.5 | 66.8                       | 73.7                                       | 70  | 80  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 18   | 2      | 50.0 | 82.5                       | 89.3                                       | 90  | 90  |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 25.5 | 2      | 70.8 | 108.5                      | 115.4                                      | 110   | 125   |
|                | 230  | 9.3                   | 68  | 14.5 | 1.5                        | 6.0                       | 5.5                 | 10.0                  | None                 | -    | -      | -    | 40.1                       | 45.6                                       | 50  | 50  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 22.6 | 47.1                       | 53.9                                       | 50  | 60  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 45.2 | 74.1                       | 81   | 80  | 90  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 60.2 | 92.2                       | 99   | 100   | 100   |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 85.3 | 122.2                      | 129.1                                      | 125   | 150   |
|                | 460  | 4.9                   | 34  | 7.6  | 0.8                        | 3.0                       | 2.2                 | 5.0                   | None                 | -    | -      | -    | 20.7                       | 22.9                                       | 25  | 25  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 11.3 | 23.5                       | 26.3                                       | 25  | 30  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 22.6 | 37.1                       | 39.8                                       | 40  | 40  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 30.1 | 46.1                       | 48.8                                       | 50  | 50  |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 42.7 | 61.1                       | 63.9                                       | 70  | 70  |
|                | 575  | 3.8                   | 28  | 6    | 0.6                        | 2.4                       | 1.8                 | 4.0                   | None                 | -    | -      | -    | 16.2                       | 18   | 20  | 20  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 9.0  | 18.8                       | 21.1                                       | 20  | 25  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 18.1 | 29.7                       | 31.9                                       | 30  | 35  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 24.1 | 36.9                       | 39.1                                       | 40  | 40  |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 34.1 | 48.9                       | 51.1                                       | 50  | 60  |
| 090<br>(7.5)   | 208  | 14.7                  | 115 | 23   | 3.5                        | 6.0                       | 5.5                 | 10.0                  | None                 | -    | -      | -    | 56.1                       | 61.6                                       | 70  | 70  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 6.8  | 1      | 18.9 | 56.1                       | 61.6                                       | 70  | 70  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 13.5 | 2      | 37.5 | 66.8                       | 73.7                                       | 70  | 80  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 18   | 2      | 50.0 | 82.5                       | 89.3                                       | 90  | 90  |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 25.5 | 2      | 70.8 | 108.5                      | 115.4                                      | 110   | 125   |
|                | 230  | 14.7                  | 115 | 23   | 3.5                        | 6.0                       | 5.5                 | 10.0                  | None                 | -    | -      | -    | 56.1                       | 61.6                                       | 70  | 70  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 22.6 | 56.1                       | 61.6                                       | 70  | 70  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 45.2 | 74.1                       | 81   | 80  | 90  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 60.2 | 92.2                       | 99   | 100   | 100   |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 85.3 | 122.2                      | 129.1                                      | 125   | 150   |
|                | 460  | 7.7                   | 50  | 12   | 1.6                        | 3.0                       | 2.2                 | 5.0                   | None                 | -    | -      | -    | 28.5                       | 30.7                                       | 35  | 35  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 11.3 | 28.5                       | 30.7                                       | 35  | 35  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 22.6 | 37.1                       | 39.8                                       | 40  | 40  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 30.1 | 46.1                       | 48.8                                       | 50  | 50  |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 42.7 | 61.1                       | 63.9                                       | 70  | 70  |
|                | 575  | 6.4                   | 40  | 10   | 1.3                        | 2.4                       | 1.8                 | 4.0                   | None                 | -    | -      | -    | 23.4                       | 25.2                                       | 25  | 30  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 9.0  | 23.4                       | 25.2                                       | 25  | 30  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 18.1 | 29.7                       | 31.9                                       | 30  | 35  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 24.1 | 36.9                       | 39.1                                       | 40  | 40  |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 34.1 | 48.9                       | 51.1                                       | 50  | 60  |
| 102<br>(8.5)   | 208  | 12.2                  | 88  | 19   | 3.5                        | 6.8                       | 5.5                 | 10.0                  | None                 | -    | -      | -    | 51.3                       | 56.8                                       | 60  | 60  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 6.8  | 1      | 18.9 | 51.3                       | 56.8                                       | 60  | 60  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 13.5 | 2      | 37.5 | 67.8                       | 74.7                                       | 70  | 80  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 18   | 2      | 50.0 | 83.5                       | 90.3                                       | 90  | 100   |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 25.5 | 2      | 70.8 | 109.5                      | 116.4                                      | 110   | 125   |
|                | 230  | 12.2                  | 88  | 19   | 3.5                        | 6.8                       | 5.5                 | 10.0                  | None                 | -    | -      | -    | 51.3                       | 56.8                                       | 60  | 60  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 22.6 | 51.3                       | 56.8                                       | 60  | 60  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 45.2 | 75.1                       | 82   | 80  | 90  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 60.2 | 93.2                       | 100  | 100   | 100   |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 85.3 | 123.2                      | 130.1                                      | 125   | 150   |
|                | 460  | 5.8                   | 44  | 9    | 1.6                        | 3.4                       | 2.2                 | 5.0                   | None                 | -    | -      | -    | 24.7                       | 26.9                                       | 30  | 30  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 11.3 | 24.7                       | 26.9                                       | 30  | 30  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 22.6 | 37.6                       | 40.3                                       | 40  | 45  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 30.1 | 46.6                       | 49.3                                       | 50  | 50  |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 42.7 | 61.6                       | 64.4                                       | 70  | 70  |
|                | 575  | 4.4                   | 36  | 5.5  | 1.3                        | 2.7                       | 1.8                 | 4.0                   | None                 | -    | -      | -    | 19.2                       | 21   | 20  | 25  |
|                |      |                       |     |      |                            |                           |                     |                       | E09                  | 9    | 1      | 9.0  | 19.2                       | 21.5                                       | 20  | 25  |
|                |      |                       |     |      |                            |                           |                     |                       | E18                  | 18   | 2      | 18.1 | 30                         | 32.3                                       | 30  | 35  |
|                |      |                       |     |      |                            |                           |                     |                       | E24                  | 24   | 2      | 24.1 | 37.2                       | 39.5                                       | 40  | 40  |
|                |      |                       |     |      |                            |                           |                     |                       | E36                  | 34   | 2      | 34.1 | 49.3                       | 51.5                                       | 50  | 60  |



**ZJ078-150 Standard Motor - With Powered Convenience Outlet (Continued)**

| Size (Tons) | Volt | Compressors (each) |      |      | OD Fan Motors (each) | Supply Blower Motor | Pwr Exh Motor | Pwr Conv Outlet | Electric Heat Option |      |        |       | MCA <sup>1</sup> (Amps) | MCA <sup>1</sup> w/Pwr Exh (Amps) | Max Fuse <sup>2</sup> / Breaker <sup>3</sup> Size (Amps) | Max Fuse <sup>2</sup> / Breaker <sup>3</sup> Size w/ Pwr Exh (Amps) |
|-------------|------|--------------------|------|------|----------------------|---------------------|---------------|-----------------|----------------------|------|--------|-------|-------------------------|-----------------------------------|--|---|
|             |      | RLA                | LRA  | MCC  | FLA                  | FLA                 | FLA           | FLA             | Model                | kW   | Stages | Amps  |                         |                                   |  |   |
| 120 (10)    | 208  | 16                 | 110  | 24.9 | 3.5                  | 6.8                 | 5.5           | 10.0            | None                 | -    | -      | -     | 59.8                    | 65.3                              | 70   | 80  |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5  | 67.8                    | 74.7                              | 70   | 80  |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0  | 83.5                    | 90.3                              | 90   | 100   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8  | 109.5                   | 116.4                             | 110  | 125   |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 40.6 | 2      | 112.7 | 161.9                   | 168.7                             | 175  | 175   |
|             | 230  | 16                 | 110  | 24.9 | 3.5                  | 6.8                 | 5.5           | 10.0            | None                 | -    | -      | -     | 59.8                    | 65.3                              | 70   | 80  |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2  | 75.1                    | 82                                | 80   | 90  |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2  | 93.2                    | 100                               | 100  | 100   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3  | 123.2                   | 130.1                             | 125  | 150   |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 135.6 | 150.9                   | 157.8                             | 175  | 175   |
|             | 460  | 7.8                | 52   | 12.1 | 1.6                  | 3.4                 | 2.2           | 5.0             | None                 | -    | -      | -     | 29.2                    | 31.4                              | 35   | 35  |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6  | 37.6                    | 40.3                              | 40   | 45  |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1  | 46.6                    | 49.3                              | 50   | 50  |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7  | 61.6                    | 64.4                              | 70   | 70  |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 67.8  | 75.5                    | 78.2                              | 80   | 90  |
|             | 575  | 5.7                | 38.9 | 8.9  | 1.3                  | 2.7                 | 1.8           | 4.0             | None                 | -    | -      | -     | 22.1                    | 23.9                              | 25   | 25  |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1  | 30                      | 32.3                              | 30   | 35  |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1  | 37.2                    | 39.5                              | 40   | 40  |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1  | 49.3                    | 51.5                              | 50   | 60  |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 54.2  | 60.3                    | 62.6                              | 70   | 70  |
| 150 (12.5)  | 208  | 23.1               | 160  | 36   | 1.5                  | 9.6                 | 5.5           | 10.0            | None                 | -    | -      | -     | 77.6                    | 83.1                              | 100  | 100   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5  | 77.6                    | 83.1                              | 100  | 100   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0  | 87                      | 93.8                              | 100  | 100   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8  | 113                     | 119.9                             | 125  | 125   |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 40.6 | 2      | 112.7 | 165.4                   | 172.2                             | 175  | 175   |
|             | 230  | 23.1               | 160  | 36   | 1.5                  | 9.6                 | 5.5           | 10.0            | None                 | -    | -      | -     | 77.6                    | 83.1                              | 100  | 100   |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2  | 78.6                    | 85.5                              | 100  | 100   |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2  | 96.7                    | 103.5                             | 100  | 110   |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3  | 126.7                   | 133.6                             | 150  | 150   |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 135.6 | 154.4                   | 161.3                             | 175  | 175   |
|             | 460  | 12.2               | 87   | 19   | 0.8                  | 4.8                 | 2.2           | 5.0             | None                 | -    | -      | -     | 40.5                    | 42.7                              | 50   | 50  |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6  | 40.5                    | 42.7                              | 50   | 50  |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1  | 48.3                    | 51.1                              | 50   | 60  |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7  | 63.4                    | 66.1                              | 70   | 70  |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 67.8  | 77.2                    | 80                                | 90   | 90  |
|             | 575  | 8.7                | 62   | 13.5 | 0.6                  | 3.9                 | 1.8           | 4.0             | None                 | -    | -      | -     | 29.9                    | 31.7                              | 35   | 40  |
|             |      |                    |      |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1  | 31.5                    | 33.8                              | 35   | 40  |
|             |      |                    |      |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1  | 38.7                    | 41                                | 40   | 45  |
|             |      |                    |      |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1  | 50.8                    | 53                                | 60   | 60  |
|             |      |                    |      |      |                      |                     |               |                 | E54                  | 54   | 2      | 54.2  | 61.8                    | 64.1                              | 70   | 70  |

1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC.

**ZJ078-150 Hi Static Motor - With Powered Convenience Outlet**

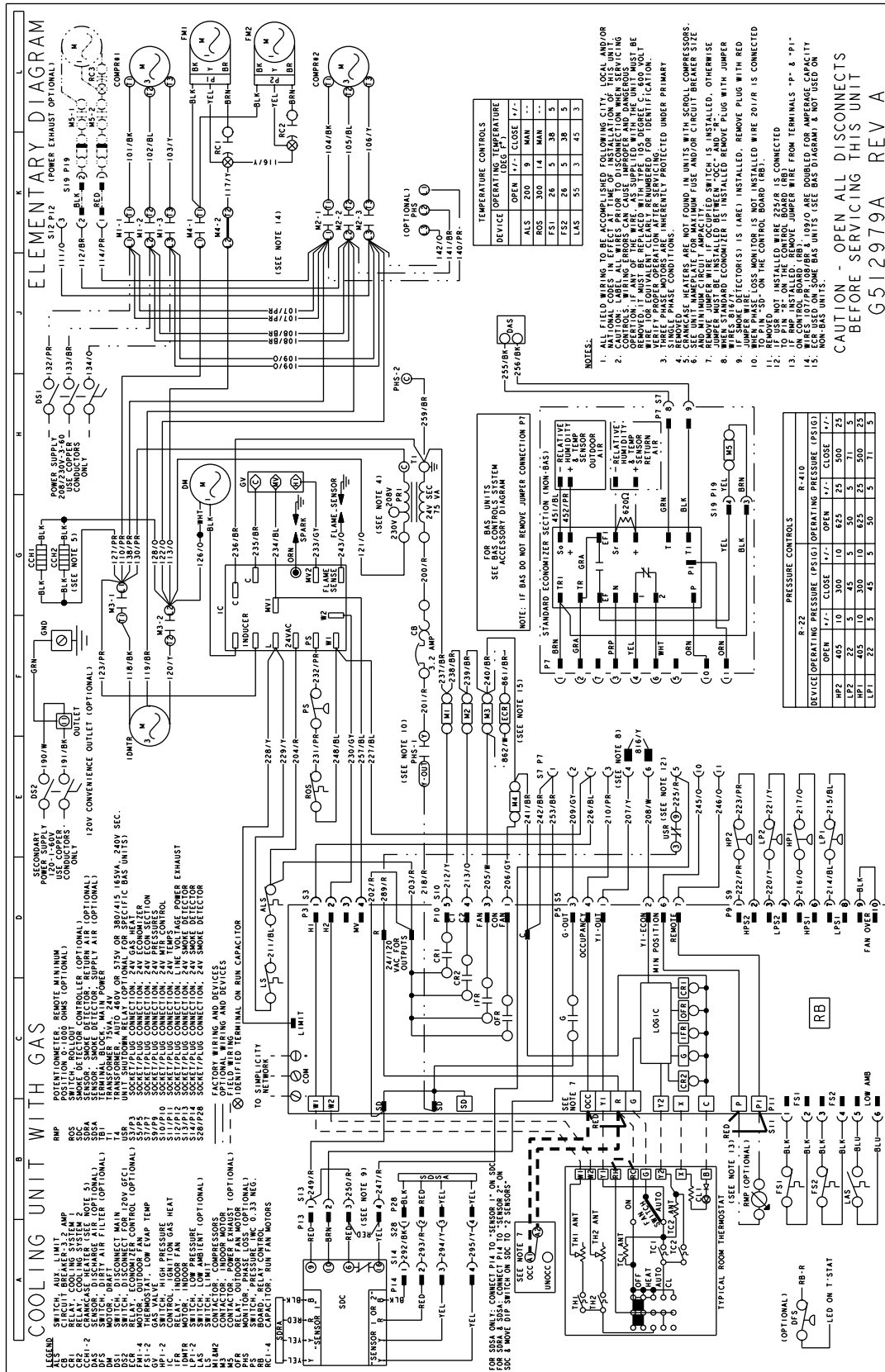
| Size (Tons) | Volt | Compressors (each) |     |      | OD Fan Motors (each) | Supply Blower Motor | Pwr Exh Motor | Pwr Conv Outlet | Electric Heat Option |      |        |      | MCA <sup>1</sup> (Amps) | MCA <sup>1</sup> w/Pwr Exh (Amps) | Max Fuse <sup>2</sup> / Breaker <sup>3</sup> Size (Amps) | Max Fuse <sup>2</sup> / Breaker <sup>3</sup> Size w/ Pwr Exh (Amps) |
|-------------|------|--------------------|-----|------|----------------------|---------------------|---------------|-----------------|----------------------|------|--------|------|-------------------------|-----------------------------------|--|---|
|             |      | RLA                | LRA | MCC  | FLA                  | FLA                 | FLA           | FLA             | Model                | kW   | Stages | Amps |                         |                                   |  |   |
| 078 (6.5)   | 208  | 9.3                | 68  | 14.5 | 1.5                  | 6.8                 | 5.5           | 10.0            | None                 | -    | -      | -    | 40.9                    | 46.4                              | 50   | 50  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 6.8  | 1      | 18.9 | 44.6                    | 51.5                              | 50   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5 | 67.8                    | 74.7                              | 70   | 80  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0 | 83.5                    | 90.3                              | 90   | 100   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8 | 109.5                   | 116.4                             | 110  | 125   |
|             | 230  | 9.3                | 68  | 14.5 | 1.5                  | 6.8                 | 5.5           | 10.0            | None                 | -    | -      | -    | 40.9                    | 46.4                              | 50   | 50  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 22.6 | 48.1                    | 54.9                              | 50   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2 | 75.1                    | 82                                | 80   | 90  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2 | 93.2                    | 100                               | 100  | 100   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3 | 123.2                   | 130.1                             | 125  | 150   |
|             | 460  | 4.9                | 34  | 7.6  | 0.8                  | 3.4                 | 2.2           | 5.0             | None                 | -    | -      | -    | 21.1                    | 23.3                              | 25   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 11.3 | 24                      | 26.8                              | 25   | 30  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6 | 37.6                    | 40.3                              | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1 | 46.6                    | 49.3                              | 50   | 50  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7 | 61.6                    | 64.4                              | 70   | 70  |
|             | 575  | 3.8                | 28  | 6    | 0.6                  | 2.7                 | 1.8           | 4.0             | None                 | -    | -      | -    | 16.5                    | 18.3                              | 20   | 20  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 9.0  | 19.2                    | 21.5                              | 20   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1 | 30                      | 32.3                              | 30   | 35  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1 | 37.2                    | 39.5                              | 40   | 40  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1 | 49.3                    | 51.5                              | 50   | 60  |
| 090 (7.5)   | 208  | 14.7               | 115 | 23   | 3.5                  | 9.6                 | 5.5           | 10.0            | None                 | -    | -      | -    | 59.7                    | 65.2                              | 70   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 6.8  | 1      | 18.9 | 59.7                    | 65.2                              | 70   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5 | 71.3                    | 78.2                              | 80   | 80  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0 | 87                      | 93.8                              | 90   | 100   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8 | 113                     | 119.9                             | 125  | 125   |
|             | 230  | 14.7               | 115 | 23   | 3.5                  | 9.6                 | 5.5           | 10.0            | None                 | -    | -      | -    | 59.7                    | 65.2                              | 70   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 22.6 | 59.7                    | 65.2                              | 70   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2 | 78.6                    | 85.5                              | 80   | 90  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2 | 96.7                    | 103.5                             | 100  | 110   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3 | 126.7                   | 133.6                             | 150  | 150   |
|             | 460  | 7.7                | 50  | 12   | 1.6                  | 4.8                 | 2.2           | 5.0             | None                 | -    | -      | -    | 30.3                    | 32.5                              | 35   | 40  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 11.3 | 30.3                    | 32.5                              | 35   | 40  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6 | 39.3                    | 42.1                              | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1 | 48.3                    | 51.1                              | 50   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7 | 63.4                    | 66.1                              | 70   | 70  |
|             | 575  | 6.4                | 40  | 10   | 1.3                  | 3.9                 | 1.8           | 4.0             | None                 | -    | -      | -    | 24.9                    | 26.7                              | 30   | 30  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 9.0  | 24.9                    | 26.7                              | 30   | 30  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1 | 31.5                    | 33.8                              | 35   | 35  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1 | 38.7                    | 41                                | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1 | 50.8                    | 53                                | 60   | 60  |
| 102 (8.5)   | 208  | 12.2               | 88  | 19   | 3.5                  | 9.6                 | 5.5           | 10.0            | None                 | -    | -      | -    | 54.1                    | 59.6                              | 60   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 6.8  | 1      | 18.9 | 54.1                    | 59.6                              | 60   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 13.5 | 2      | 37.5 | 71.3                    | 78.2                              | 80   | 80  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 18   | 2      | 50.0 | 87                      | 93.8                              | 90   | 100   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 25.5 | 2      | 70.8 | 113                     | 119.9                             | 125  | 125   |
|             | 230  | 12.2               | 88  | 19   | 3.5                  | 9.6                 | 5.5           | 10.0            | None                 | -    | -      | -    | 54.1                    | 59.6                              | 60   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 22.6 | 54.1                    | 59.6                              | 60   | 70  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 45.2 | 78.6                    | 85.5                              | 80   | 90  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 60.2 | 96.7                    | 103.5                             | 100  | 110   |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 85.3 | 126.7                   | 133.6                             | 150  | 150   |
|             | 460  | 5.8                | 44  | 9    | 1.6                  | 4.8                 | 2.2           | 5.0             | None                 | -    | -      | -    | 26.1                    | 28.3                              | 30   | 30  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 11.3 | 26.1                    | 28.5                              | 30   | 30  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 22.6 | 39.3                    | 42.1                              | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 30.1 | 48.3                    | 51.1                              | 50   | 60  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 42.7 | 63.4                    | 66.1                              | 70   | 70  |
|             | 575  | 4.4                | 36  | 5.5  | 1.3                  | 3.9                 | 1.8           | 4.0             | None                 | -    | -      | -    | 20.4                    | 22.2                              | 25   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E09                  | 9    | 1      | 9.0  | 20.7                    | 23                                | 25   | 25  |
|             |      |                    |     |      |                      |                     |               |                 | E18                  | 18   | 2      | 18.1 | 31.5                    | 33.8                              | 35   | 35  |
|             |      |                    |     |      |                      |                     |               |                 | E24                  | 24   | 2      | 24.1 | 38.7                    | 41                                | 40   | 45  |
|             |      |                    |     |      |                      |                     |               |                 | E36                  | 34   | 2      | 34.1 | 50.8                    | 53                                | 60   | 60  |

## ZJ078-150 Hi Static Motor - With Powered Convenience Outlet (Continued)

| Size<br>(Tons) | Volt | Compressors<br>(each) |      |      | OD Fan<br>Motors<br>(each) | Supply<br>Blower<br>Motor | Pwr<br>Exh<br>Motor | Pwr<br>Conv<br>Outlet | Electric Heat Option |      |        |       | MCA <sup>1</sup><br>(Amps) | MCA <sup>1</sup><br>w/Pwr<br>Exh<br>(Amps) | Max Fuse <sup>2</sup> /<br>Breaker <sup>3</sup><br>Size<br>(Amps) | Max Fuse <sup>2</sup> /<br>Breaker <sup>3</sup><br>Size w/ Pwr<br>Exh<br>(Amps) |
|----------------|------|-----------------------|------|------|----------------------------|---------------------------|---------------------|-----------------------|----------------------|------|--------|-------|----------------------------|--|---|---|
|                |      | RLA                   | LRA  | MCC  | FLA                        | FLA                       | FLA                 | FLA                   | Model                | kW   | Stages | Amps  |                            |  |   |   |
| 120<br>(10)    | 208  | 16                    | 110  | 24.9 | 3.5                        | 9.6                       | 5.5                 | 10.0                  | None                 | -    | -      | -     | 62.6                       | 68.1                                       | 70  | 80  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 13.5 | 2      | 37.5  | 71.3                       | 78.2                                       | 80  | 80  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 18   | 2      | 50.0  | 87                         | 93.8                                       | 90  | 100   |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 25.5 | 2      | 70.8  | 113                        | 119.9                                      | 125   | 125   |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 40.6 | 2      | 112.7 | 165.4                      | 172.2                                      | 175   | 175   |
|                | 230  | 16                    | 110  | 24.9 | 3.5                        | 9.6                       | 5.5                 | 10.0                  | None                 | -    | -      | -     | 62.6                       | 68.1                                       | 70  | 80  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 45.2  | 78.6                       | 85.5                                       | 80  | 90  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 60.2  | 96.7                       | 103.5                                      | 100   | 110   |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 85.3  | 126.7                      | 133.6                                      | 150   | 150   |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 135.6 | 154.4                      | 161.3                                      | 175   | 175   |
|                | 460  | 7.8                   | 52   | 12.1 | 1.6                        | 4.8                       | 2.2                 | 5.0                   | None                 | -    | -      | -     | 30.6                       | 32.8                                       | 35  | 40  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 22.6  | 39.3                       | 42.1                                       | 40  | 45  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 30.1  | 48.3                       | 51.1                                       | 50  | 60  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 42.7  | 63.4                       | 66.1                                       | 70  | 70  |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 67.8  | 77.2                       | 80   | 90  | 90  |
|                | 575  | 5.7                   | 38.9 | 8.9  | 1.3                        | 3.9                       | 1.8                 | 4.0                   | None                 | -    | -      | -     | 23.3                       | 25.1                                       | 25  | 30  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 18.1  | 31.5                       | 33.8                                       | 35  | 35  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 24.1  | 38.7                       | 41   | 40  | 45  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 34.1  | 50.8                       | 53   | 60  | 60  |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 54.2  | 61.8                       | 64.1                                       | 70  | 70  |
| 150<br>(12.5)  | 208  | 23.1                  | 160  | 36   | 1.5                        | 15.2                      | 5.5                 | 10.0                  | None                 | -    | -      | -     | 83.2                       | 88.7                                       | 100   | 110   |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 13.5 | 2      | 37.5  | 83.2                       | 88.7                                       | 100   | 110   |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 18   | 2      | 50.0  | 94                         | 100.8                                      | 100   | 110   |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 25.5 | 2      | 70.8  | 120                        | 126.9                                      | 125   | 150   |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 40.6 | 2      | 112.7 | 172.4                      | 179.2                                      | 175   | 200   |
|                | 230  | 23.1                  | 160  | 36   | 1.5                        | 15.2                      | 5.5                 | 10.0                  | None                 | -    | -      | -     | 83.2                       | 88.7                                       | 100   | 110   |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 45.2  | 85.6                       | 92.5                                       | 100   | 110   |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 60.2  | 103.7                      | 110.5                                      | 110   | 125   |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 85.3  | 133.7                      | 140.6                                      | 150   | 150   |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 135.6 | 161.4                      | 168.3                                      | 175   | 175   |
|                | 460  | 12.2                  | 87   | 19   | 0.8                        | 7.6                       | 2.2                 | 5.0                   | None                 | -    | -      | -     | 43.3                       | 45.5                                       | 50  | 50  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 22.6  | 43.3                       | 45.6                                       | 50  | 50  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 30.1  | 51.8                       | 54.6                                       | 60  | 60  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 42.7  | 66.9                       | 69.6                                       | 70  | 70  |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 67.8  | 80.7                       | 83.5                                       | 90  | 90  |
|                | 575  | 8.7                   | 62   | 13.5 | 0.6                        | 6.1                       | 1.8                 | 4.0                   | None                 | -    | -      | -     | 32.1                       | 33.9                                       | 40  | 40  |
|                |      |                       |      |      |                            |                           |                     |                       | E18                  | 18   | 2      | 18.1  | 34.3                       | 36.5                                       | 40  | 40  |
|                |      |                       |      |      |                            |                           |                     |                       | E24                  | 24   | 2      | 24.1  | 41.5                       | 43.7                                       | 45  | 45  |
|                |      |                       |      |      |                            |                           |                     |                       | E36                  | 34   | 2      | 34.1  | 53.5                       | 55.8                                       | 60  | 60  |
|                |      |                       |      |      |                            |                           |                     |                       | E54                  | 54   | 2      | 54.2  | 64.6                       | 66.8                                       | 70  | 70  |

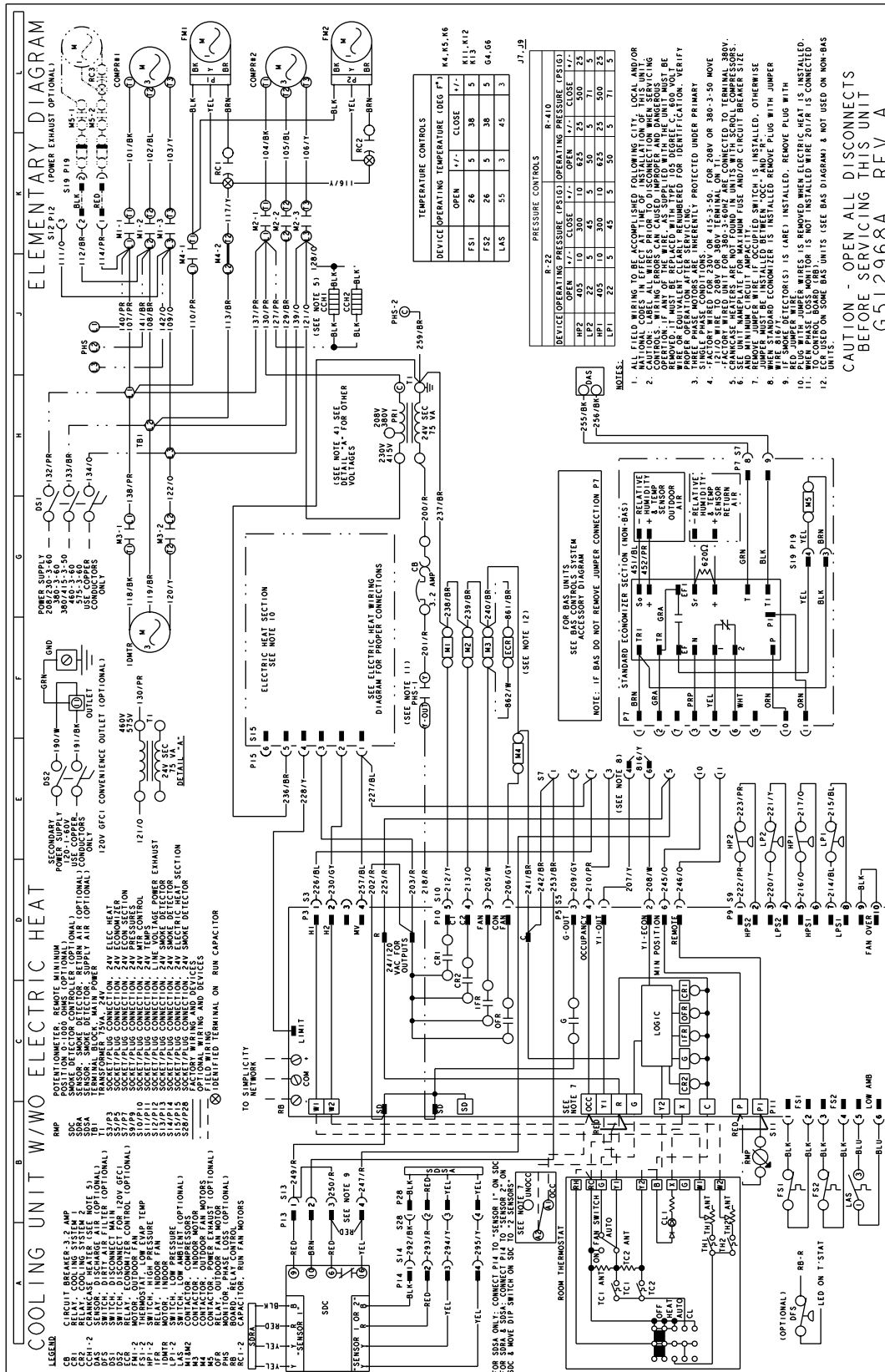
1. Minimum Circuit Ampacity.
2. Dual Element, Time Delay Type.
3. HACR type per NEC.

# Typical ZH/ZJ078-120 Cooling Unit with Gas Heat 230 Volt Wiring Diagram





Typical ZH/ZJ078-120 Cooling Unit with/without Electric Heat Wiring Diagram

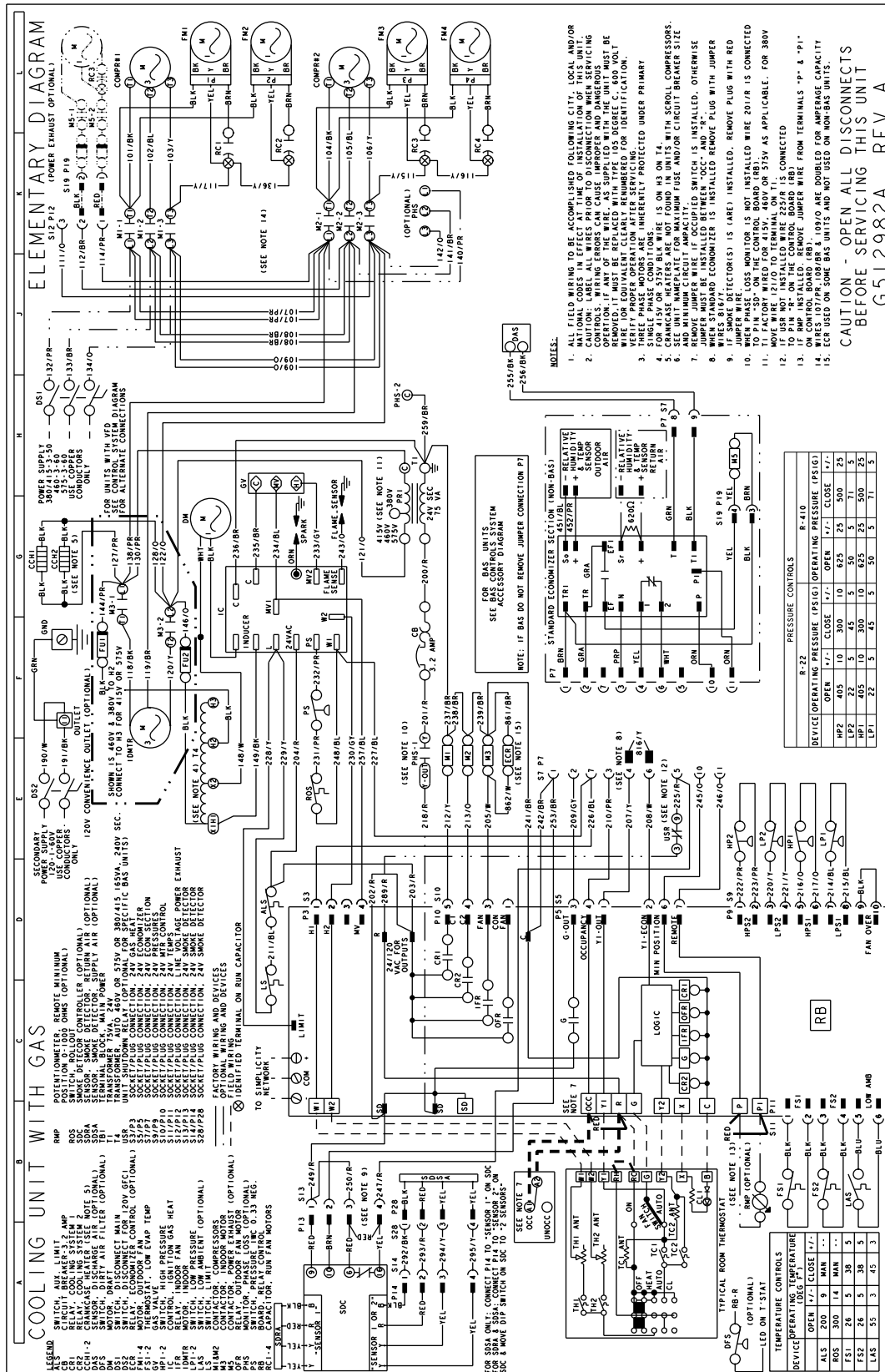




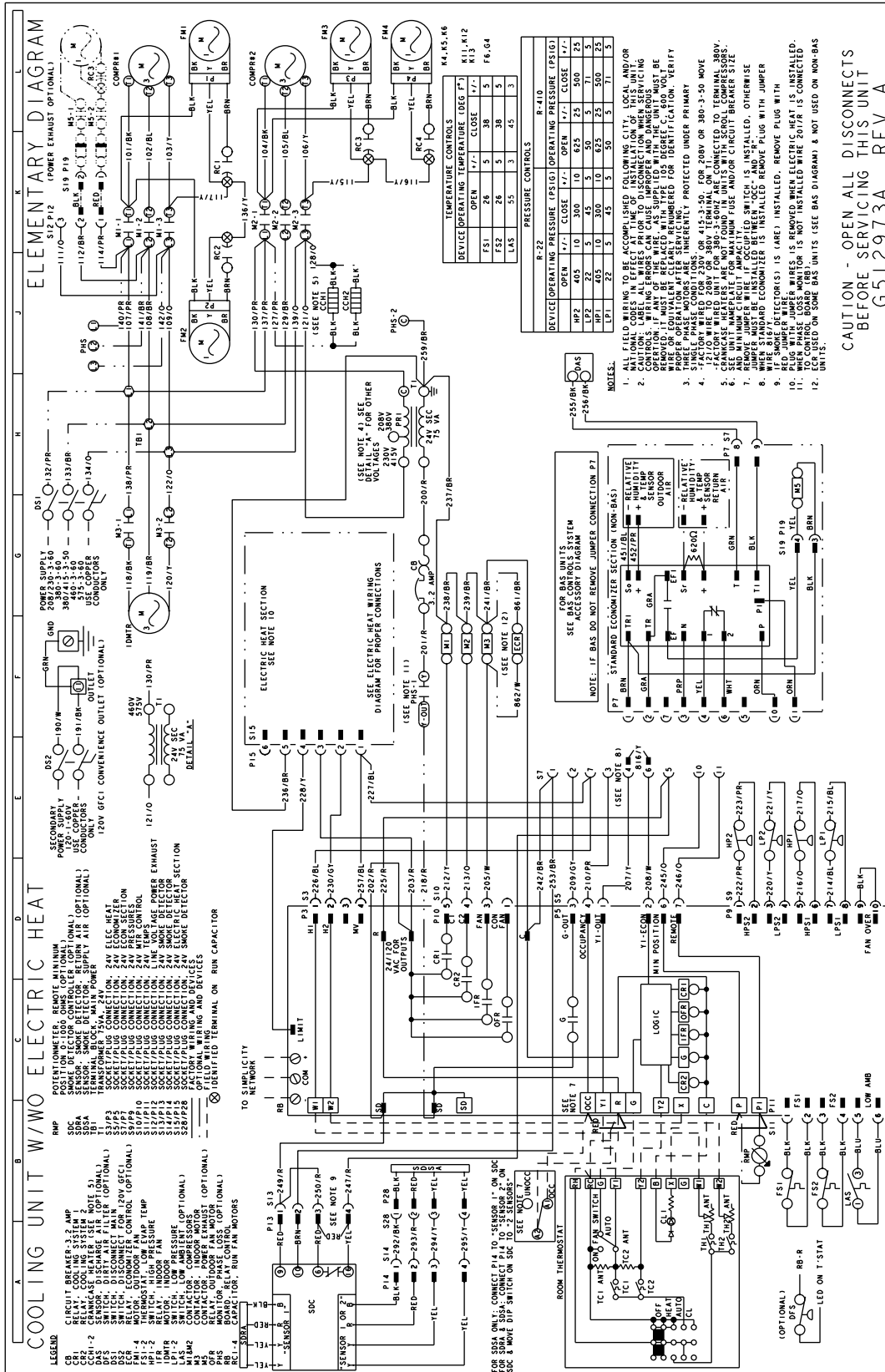




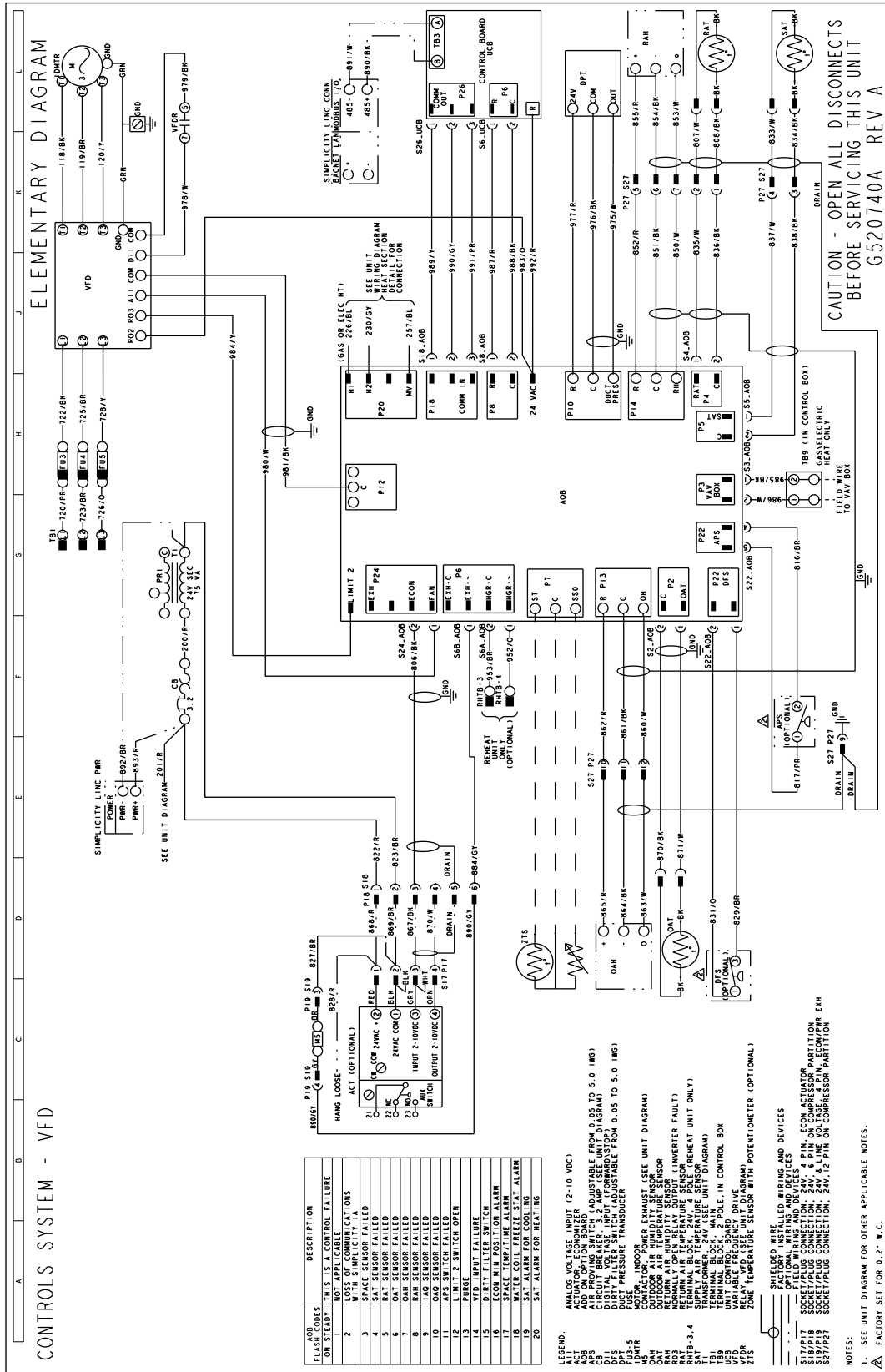
Typical ZH/ZJ150 Cooling Unit with Gas Heat 460/575 Volt Wiring Diagram



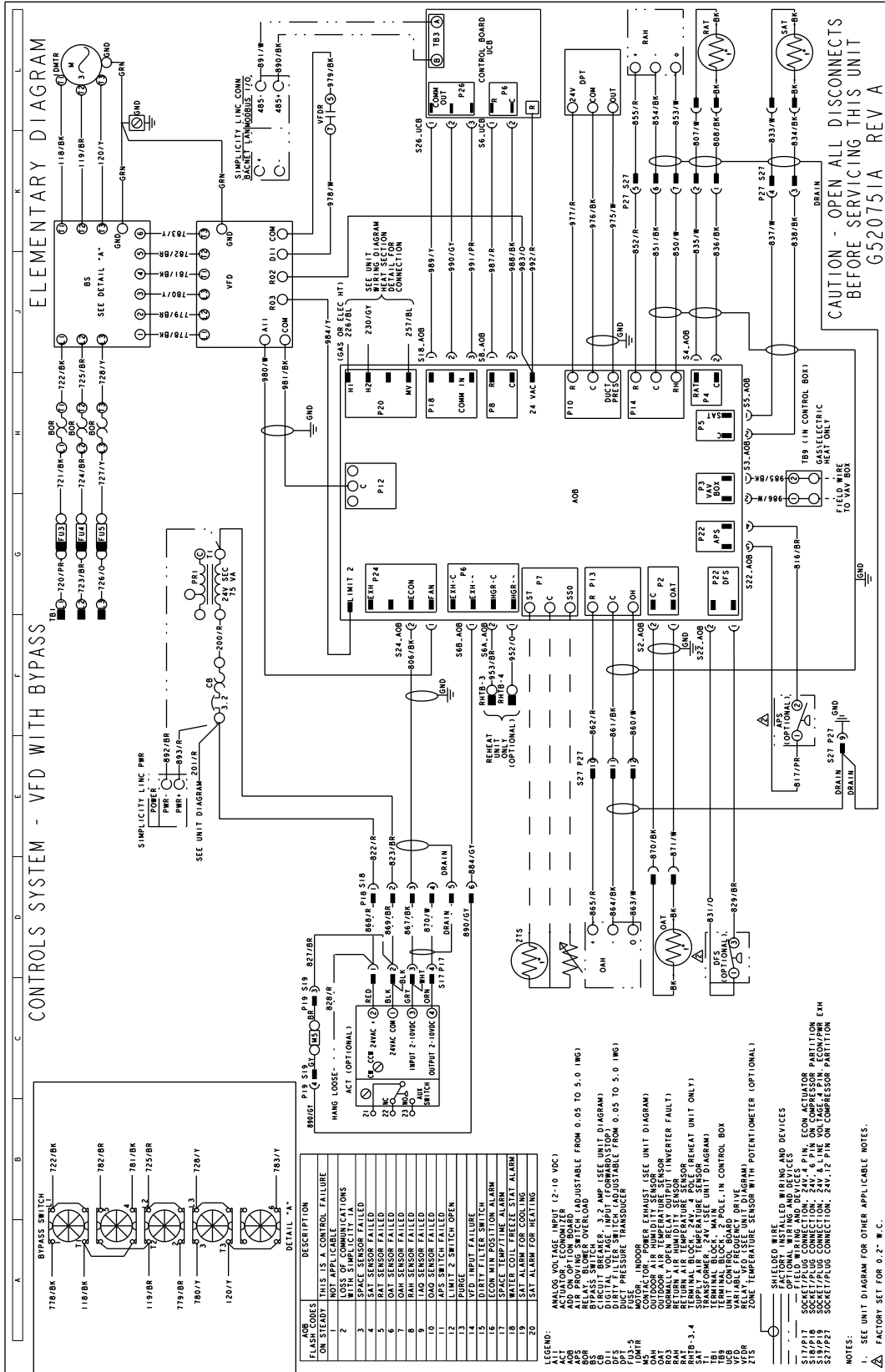
# Typical ZH/ZJ150 Cooling Unit with/without Electric Heat Wiring Diagram



Typical ZH/ZJ078-150 Factory Installed VFD (Option)

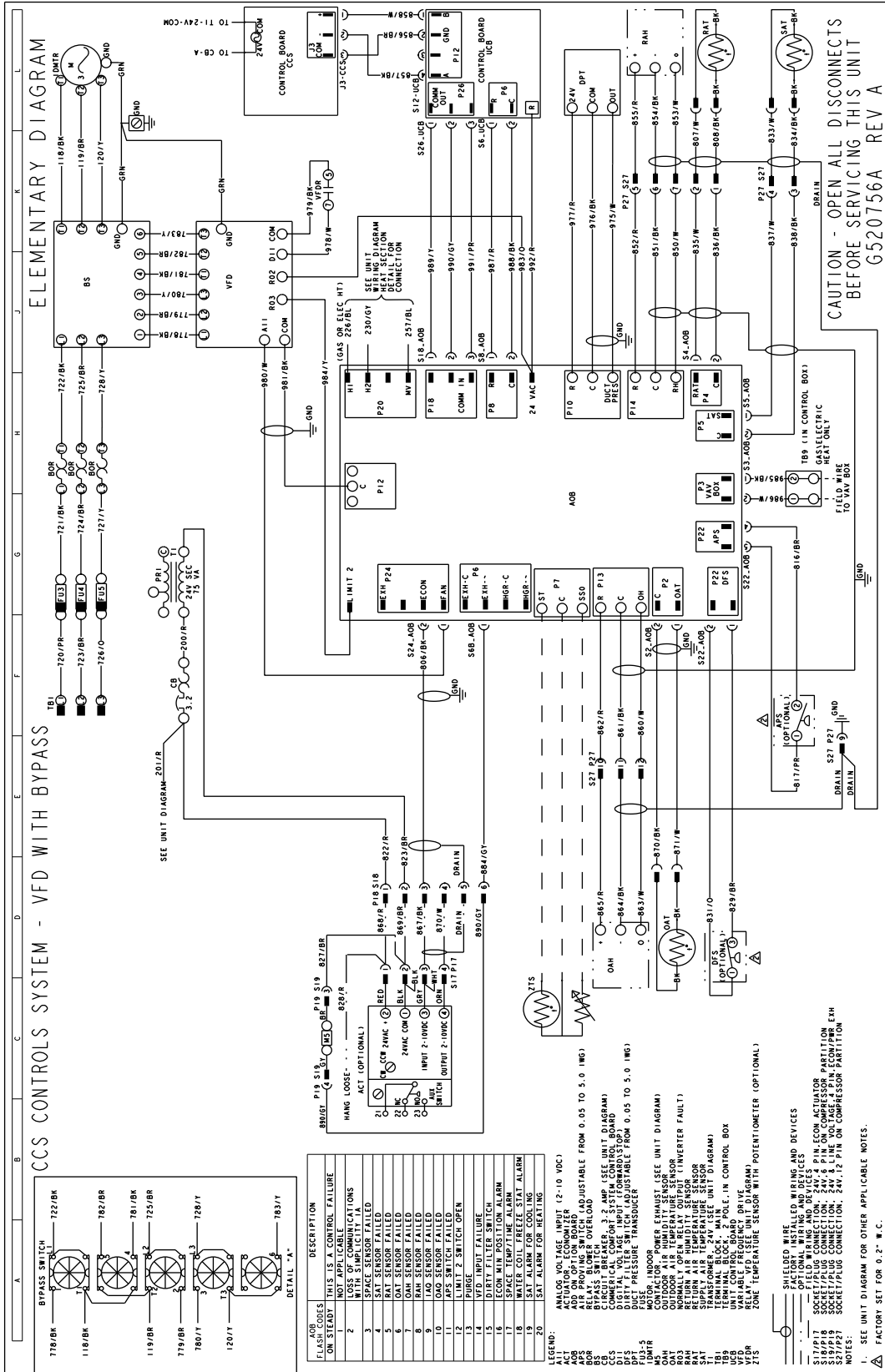


Typical ZH/ZJ078-150 Factory Installed VFD with Manual Bypass (Option)

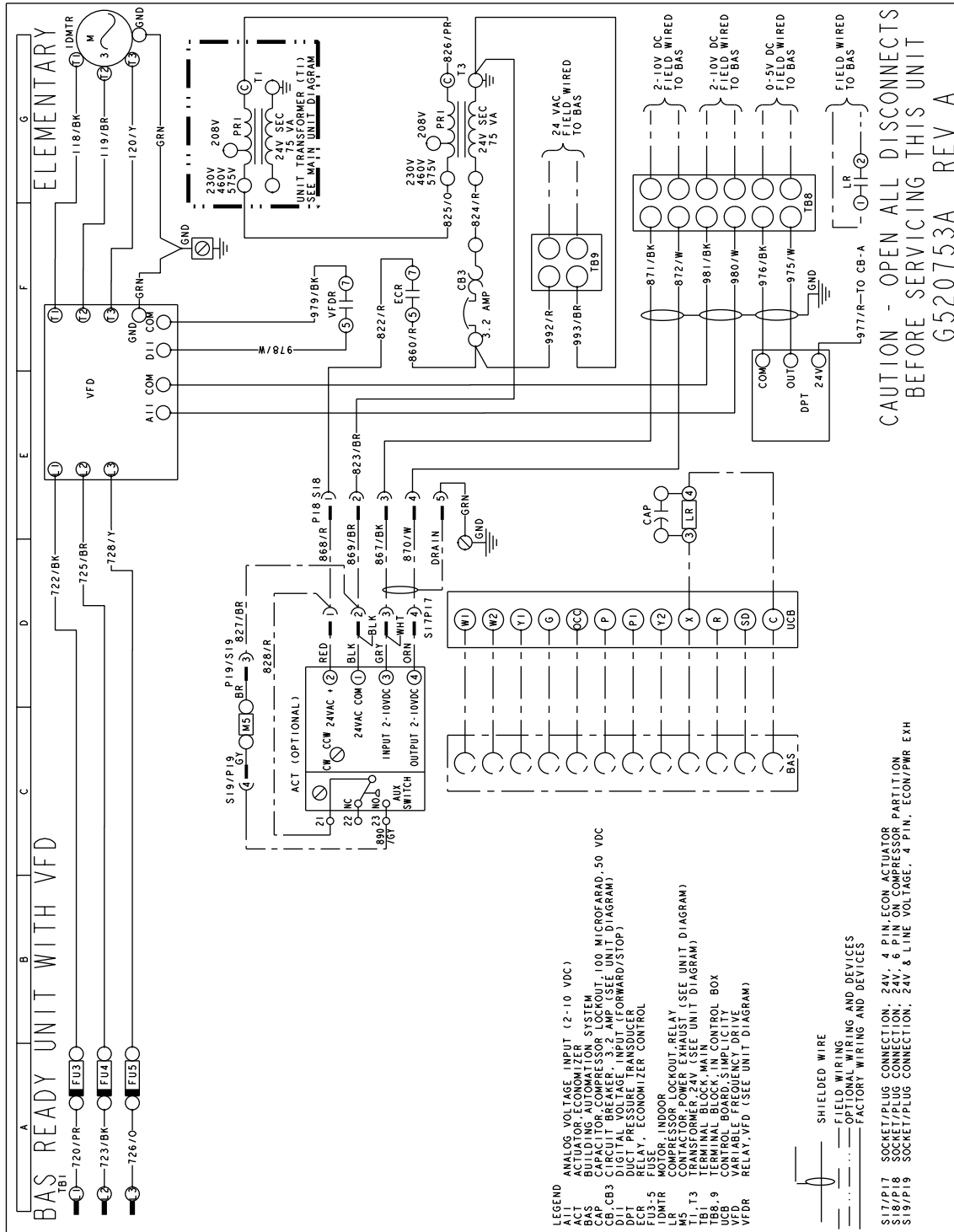




Typical ZH/ZJ078-150 Factory Installed VFD and Manual Bypass with CCS Control (Option)

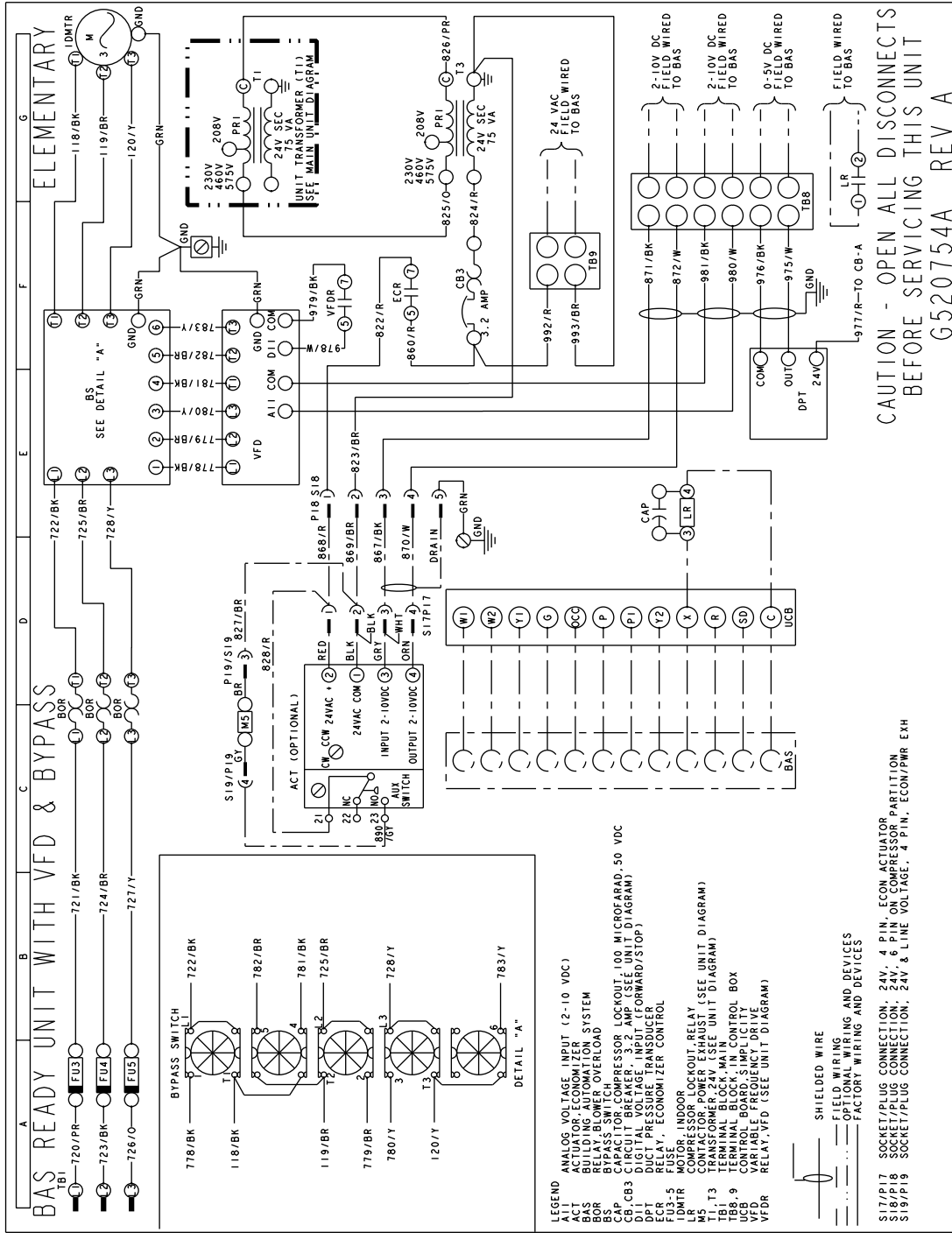


Typical ZH/ZJ078-150 BAS Ready Unit with Factory Installed VFD (Option)

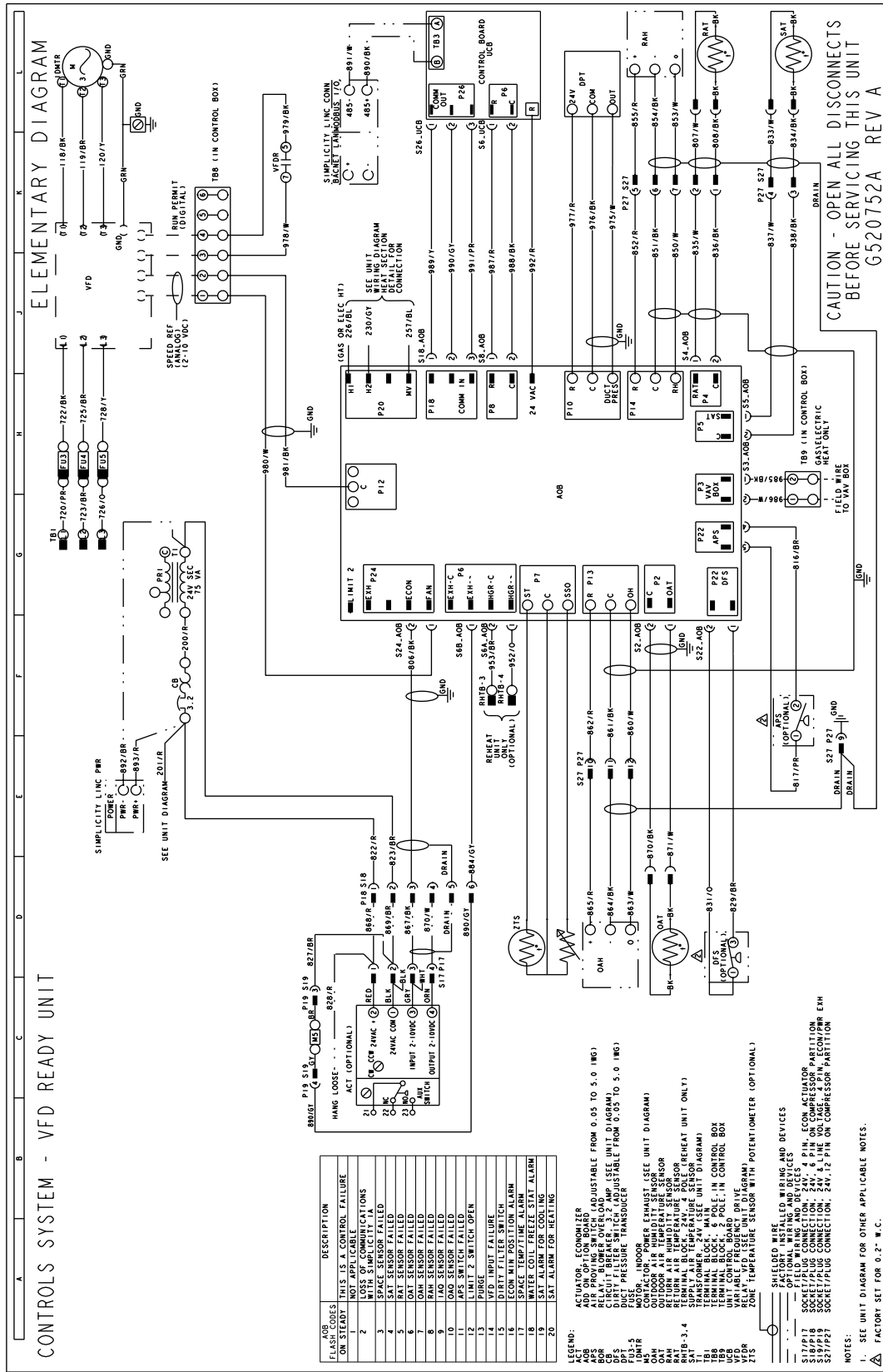




Typical ZH/ZJ078-150 BAS Ready Unit with Factory Installed VFD and Manual Bypass (Option)



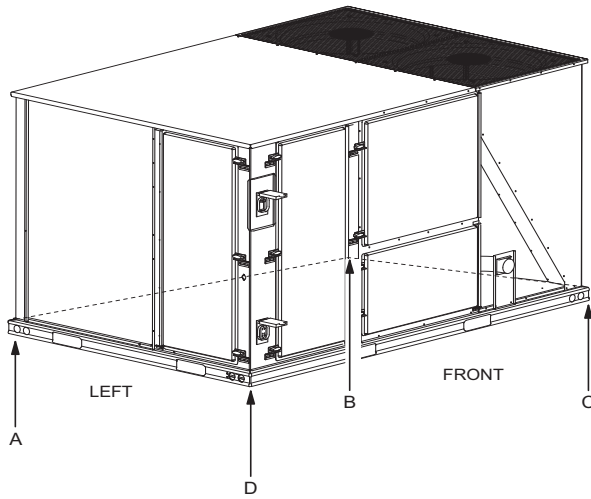
Typical ZH/ZJ078-150 VFD Ready Unit (Option)



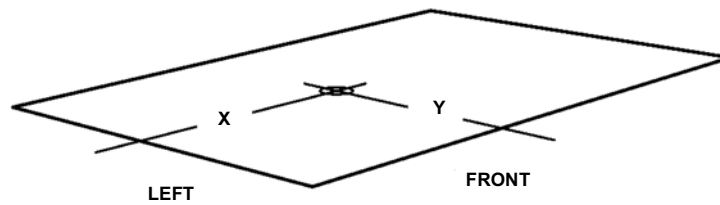
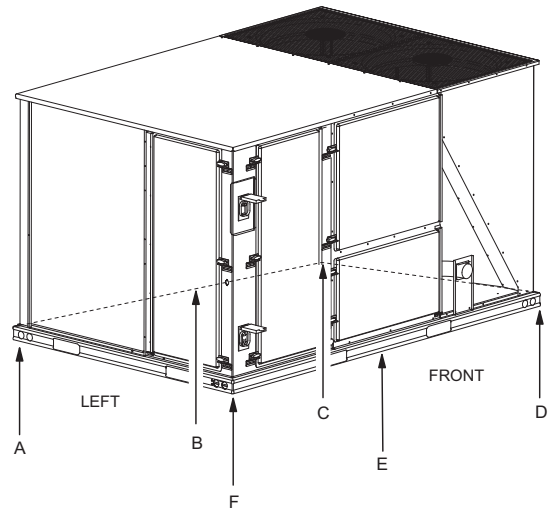
## Weights and Dimensions

### ZH/ZJ037-150 Unit Weights

#### Unit 4 Point Load Weight



#### Unit 6 Point Load Weight



| Size (Tons) | Model | Weight (lbs.) |           | Center of Gravity |    | 4 Point Load Location (lbs.) |     |     |     | 6 Point Load Location (lbs.) |     |     |     |     |     |
|-------------|-------|---------------|-----------|-------------------|----|------------------------------|-----|-----|-----|------------------------------|-----|-----|-----|-----|-----|
|             |       | Shipping      | Operating | X                 | Y  | A                            | B   | C   | D   | A                            | B   | C   | D   | E   | F   |
| 037 (3)     | ZH    | 728           | 723       | 40                | 26 | 175                          | 143 | 182 | 223 | 121                          | 105 | 92  | 117 | 134 | 154 |
| 049 (4)     | ZH    | 753           | 748       | 40                | 26 | 181                          | 148 | 188 | 230 | 125                          | 109 | 96  | 121 | 138 | 159 |
| 061 (5)     | ZH    | 777           | 772       | 40                | 26 | 187                          | 153 | 194 | 238 | 129                          | 112 | 99  | 125 | 143 | 164 |
| 078 (6.5)   | ZH    | 915           | 910       | 38                | 24 | 212                          | 158 | 230 | 309 | 149                          | 121 | 100 | 147 | 177 | 217 |
| 090 (7.5)   | ZH    | 915           | 910       | 38                | 24 | 212                          | 158 | 230 | 309 | 149                          | 121 | 100 | 147 | 177 | 217 |
| 102 (8.5)   | ZH    | 1035          | 1030      | 38                | 24 | 240                          | 179 | 261 | 350 | 168                          | 137 | 114 | 166 | 200 | 245 |
| 120 (10)    | ZH    | 1095          | 1090      | 38                | 24 | 254                          | 189 | 276 | 371 | 178                          | 145 | 120 | 176 | 211 | 260 |
| 150 (12.5)  | ZH    | 1220          | 1215      | 46                | 26 | 259                          | 277 | 351 | 328 | 171                          | 178 | 187 | 237 | 226 | 216 |
| 037 (3)     | ZJ    | 745           | 740       | 40                | 26 | 180                          | 147 | 186 | 228 | 124                          | 108 | 95  | 120 | 137 | 157 |
| 049 (4)     | ZJ    | 767           | 762       | 40                | 24 | 171                          | 139 | 203 | 249 | 118                          | 102 | 90  | 131 | 149 | 172 |
| 061 (5)     | ZJ    | 775           | 770       | 40                | 24 | 172                          | 141 | 205 | 251 | 119                          | 103 | 91  | 132 | 151 | 174 |
| 078 (6.5)   | ZJ    | 1035          | 1030      | 39                | 25 | 245                          | 191 | 260 | 333 | 170                          | 144 | 122 | 167 | 195 | 232 |
| 090 (7.5)   | ZJ    | 1060          | 1055      | 39                | 25 | 251                          | 196 | 266 | 342 | 175                          | 147 | 125 | 171 | 200 | 237 |
| 102 (8.5)   | ZJ    | 1065          | 1060      | 38                | 24 | 247                          | 184 | 268 | 360 | 173                          | 141 | 117 | 171 | 206 | 253 |
| 120 (10)    | ZJ    | 1075          | 1070      | 39                | 24 | 245                          | 191 | 278 | 357 | 170                          | 143 | 122 | 178 | 209 | 248 |
| 150 (12.5)  | ZJ    | 1285          | 1280      | 48                | 24 | 240                          | 281 | 410 | 350 | 156                          | 173 | 192 | 280 | 252 | 227 |

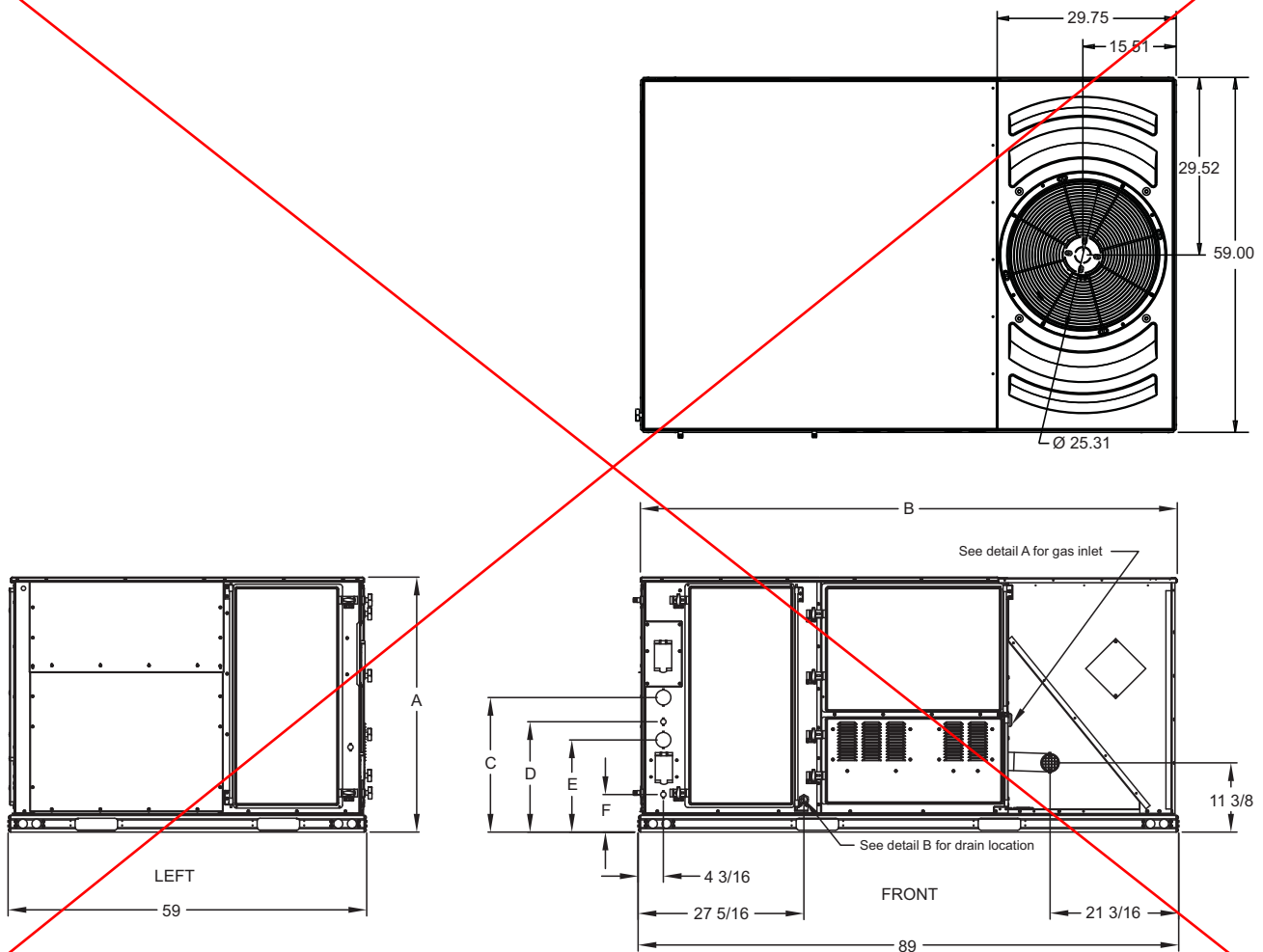
### ZH/ZJ037-150 Unit Accessory Weights

| Unit Accessory                        | Weight (lbs.) |           |
|---------------------------------------|---------------|-----------|
|                                       | Shipping      | Operating |
| Economizer                            | 90            | 85        |
| Power Exhaust                         | 40            | 35        |
| Electric Heat <sup>1</sup>            | 49            | 49        |
| Gas Heat <sup>2</sup>                 | 110           | 110       |
| Variable Frequency Drive <sup>3</sup> | 30            | 30        |

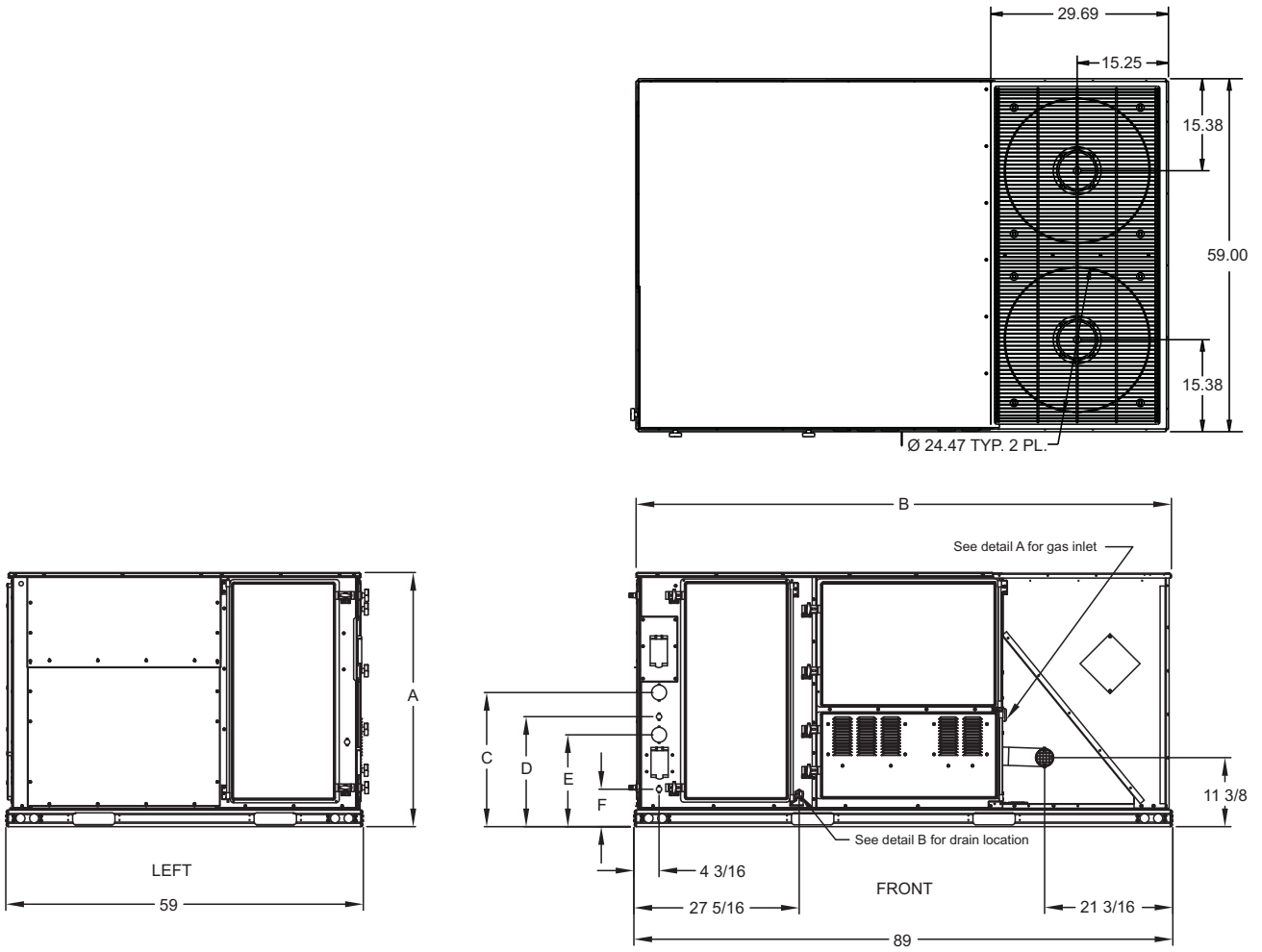
1. Weight given is for the maximum heater size available (54KW).
2. Weight given is for the maximum number of tube heat exchangers available (8 tube).
3. Weight includes mounting hardware, controls and manual bypass option (6-1/2 to 12-1/2 ton only).

### ZH/ZJ037-150 Unit Dimensions

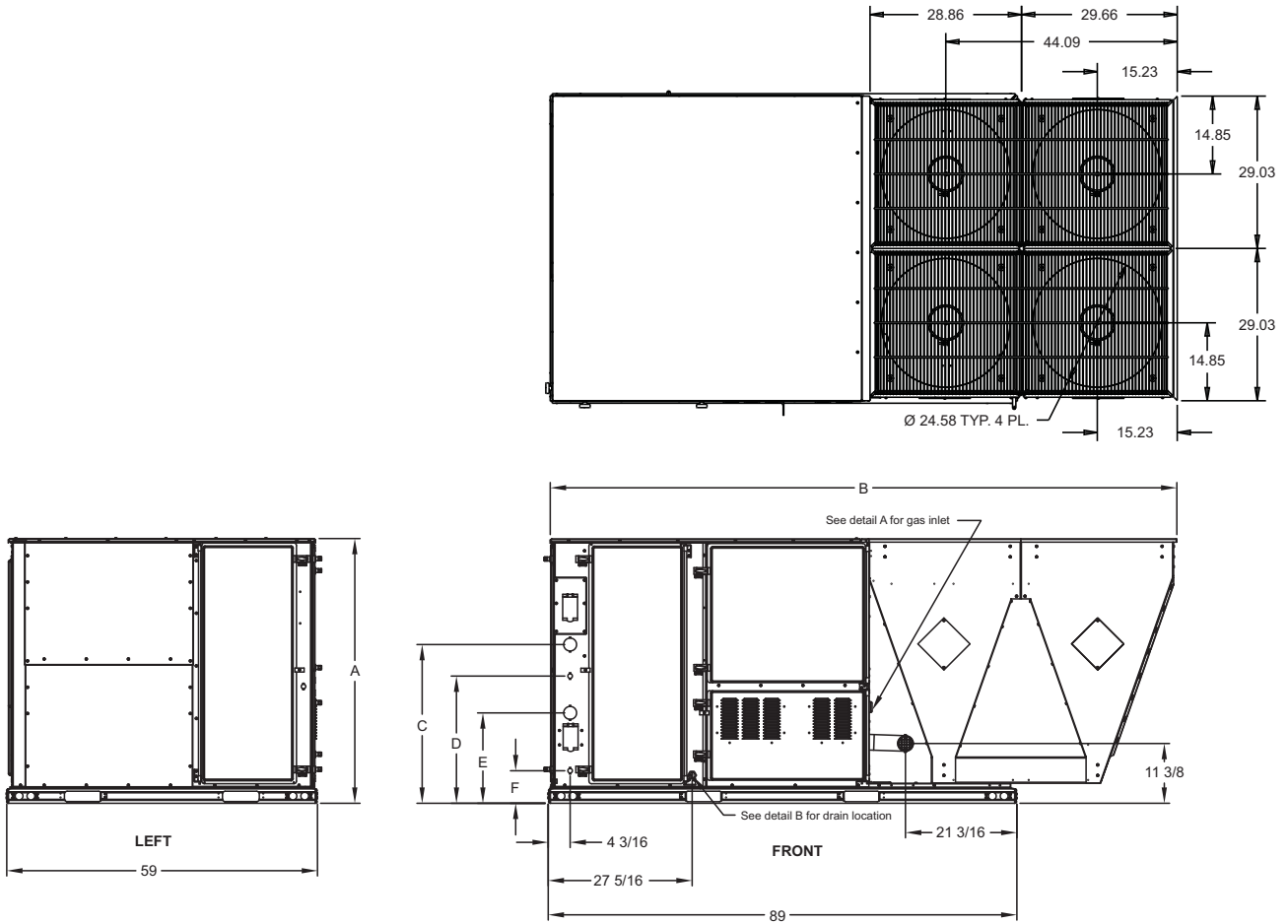
~~ZH037-061 and ZJ037~~



ZJ049 thru 061 and ZH/ZJ078 thru 120



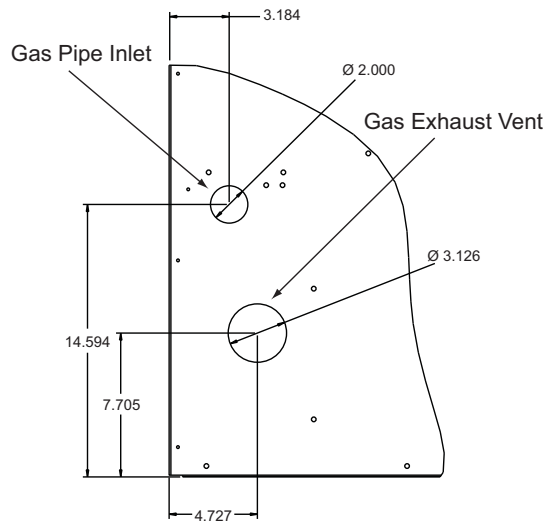
ZJ150



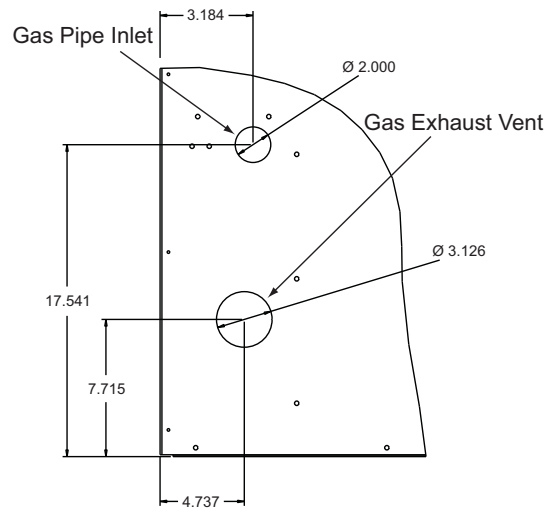
ZH/ZJ037-150 Unit Physical Dimensions

| Unit Model Number         | Dimension (in.) |         |         |         |         |        |
|---------------------------|-----------------|---------|---------|---------|---------|--------|
|                           | A               | B       | C       | D       | E       | F      |
| ZH037, 049, 061, 078, 090 | 42              | 89      | 22 1/8  | 18 3/16 | 15 3/16 | 6 3/16 |
| ZH102, 120                | 50 3/4          | 89      | 30 3/16 | 24 3/16 | 17 3/16 | 6 3/16 |
| ZH150                     | 50 3/4          | 119 1/2 | 30 3/16 | 24 3/16 | 17 3/16 | 6 3/16 |
| ZJ037, 049, 061           | 42              | 89      | 22 1/8  | 18 3/16 | 15 3/16 | 6 3/16 |
| ZJ078, 090, 102, 120      | 50 3/4          | 89      | 30 3/16 | 24 3/16 | 17 3/16 | 6 3/16 |
| ZJ150                     | 50 3/4          | 119 1/2 | 30 3/16 | 24 3/16 | 17 3/16 | 6 3/16 |

**Detail A**

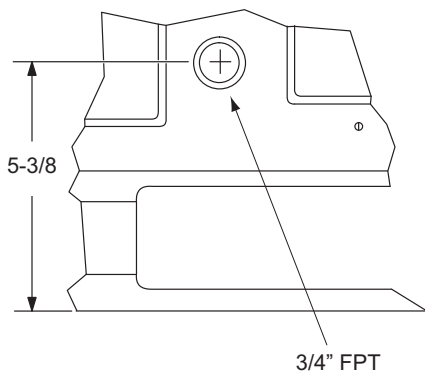


**42" CABINET**



**50 3/4" CABINET**

**Detail B**



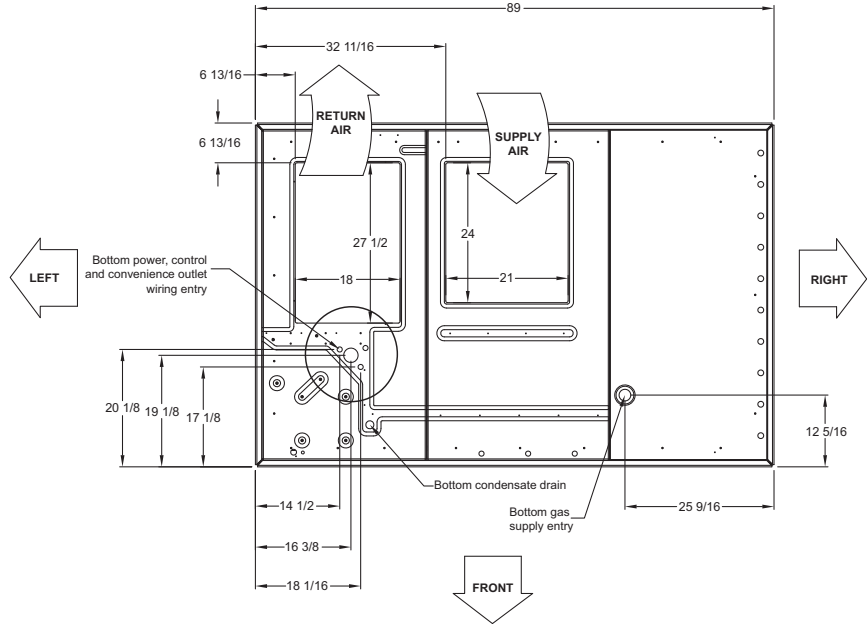
**ZH/ZJ037-150 Unit Clearances**

| Direction        | Distance (in.) | Direction           | Distance (in.) |
|------------------|----------------|---------------------|----------------|
| Top <sup>1</sup> | 72             | Right               | 12             |
| Front            | 36             | Left                | 36             |
| Rear             | 36             | Bottom <sup>2</sup> | 0              |

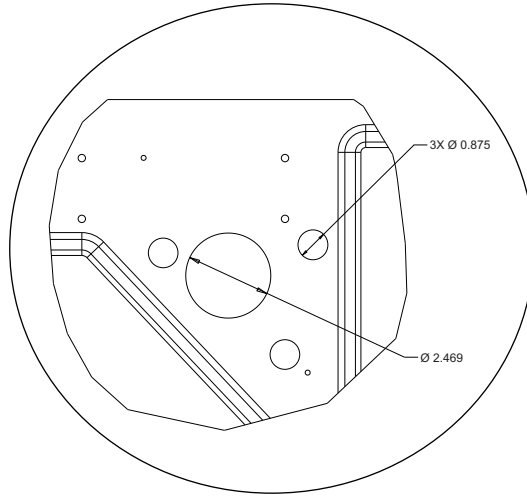
1. Units must be installed outdoors. Over hanging structure or shrubs should not obscure condenser air discharge outlet.
2. Units may be installed on combustible floors made from wood or class A, B or C roof covering materials.



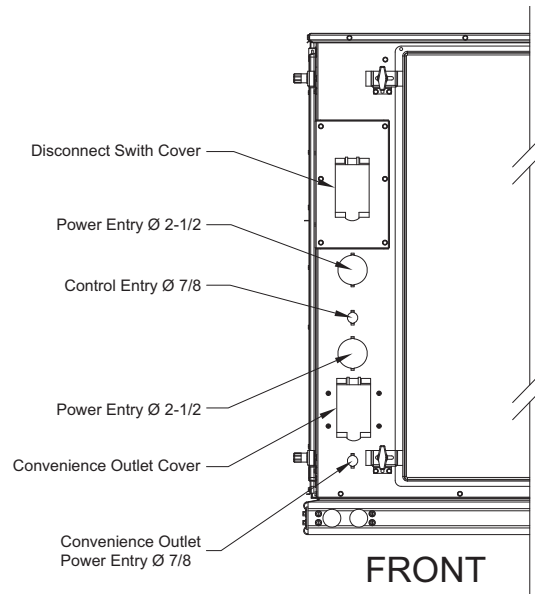
ZH/ZJ037-150 Unit Bottom Duct Openings



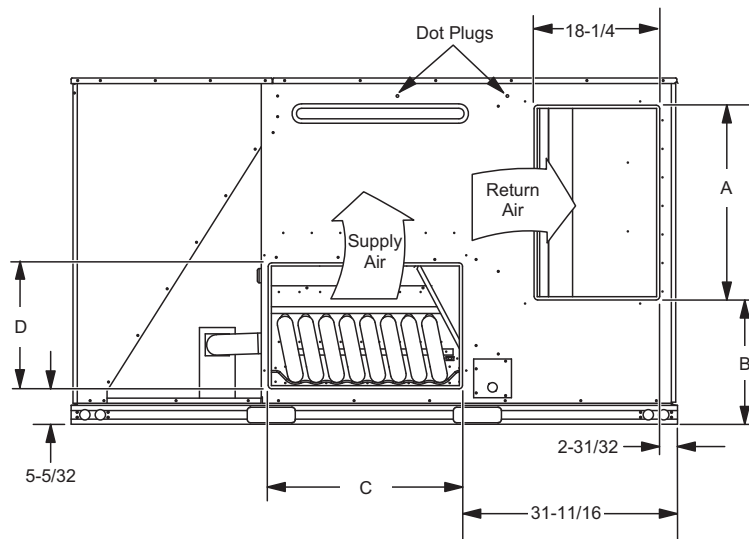
TOP VIEW



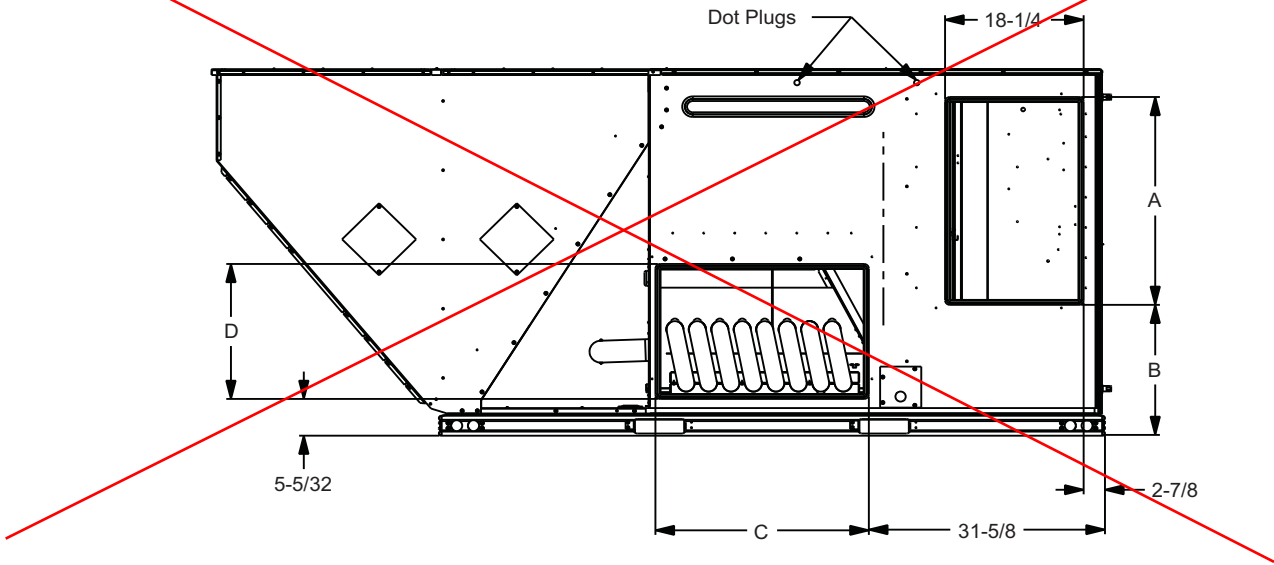
## ZH/ZJ037-150 Unit Electrical Entry



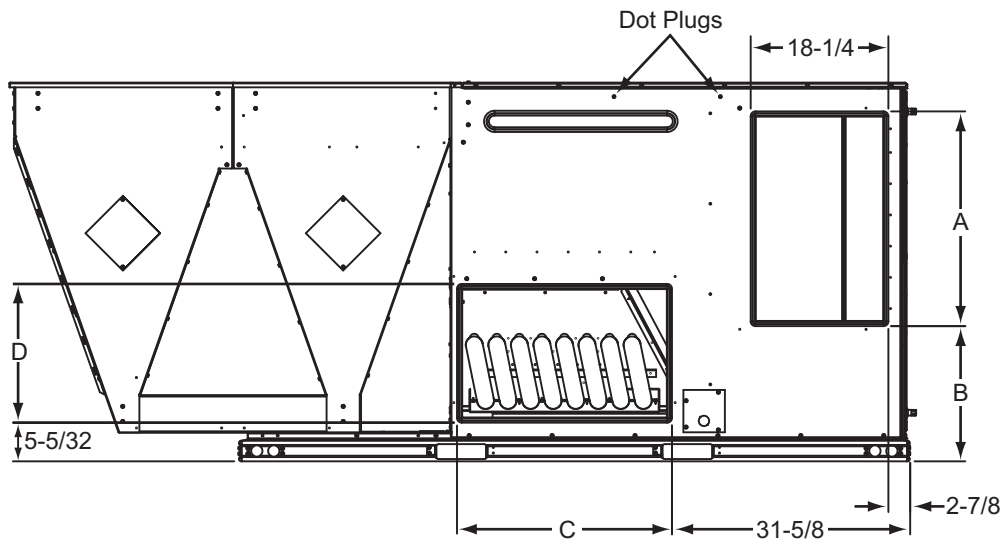
## ZH/ZJ037-120 Unit Side Duct Openings



**ZH150 Unit Side Duct Openings**



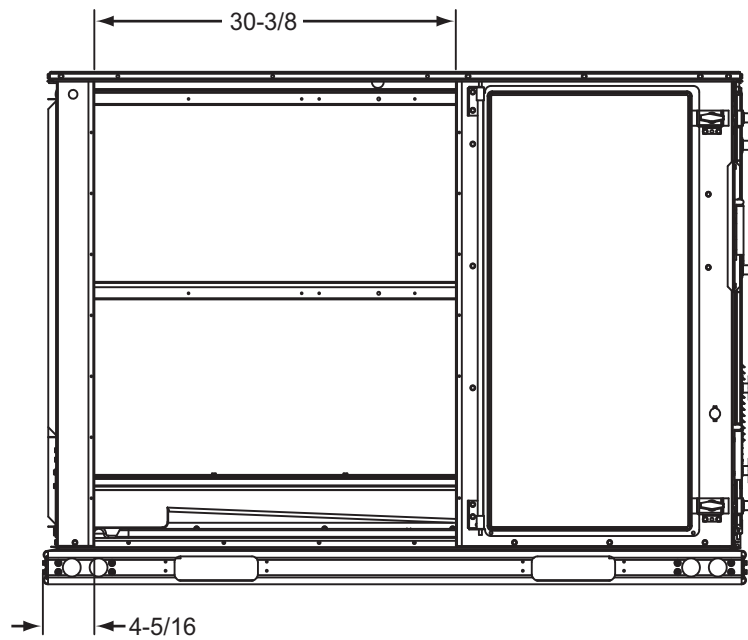
**ZJ150 Unit Side Duct Openings**



**ZH/ZJ037-150 Side Duct Dimensions**

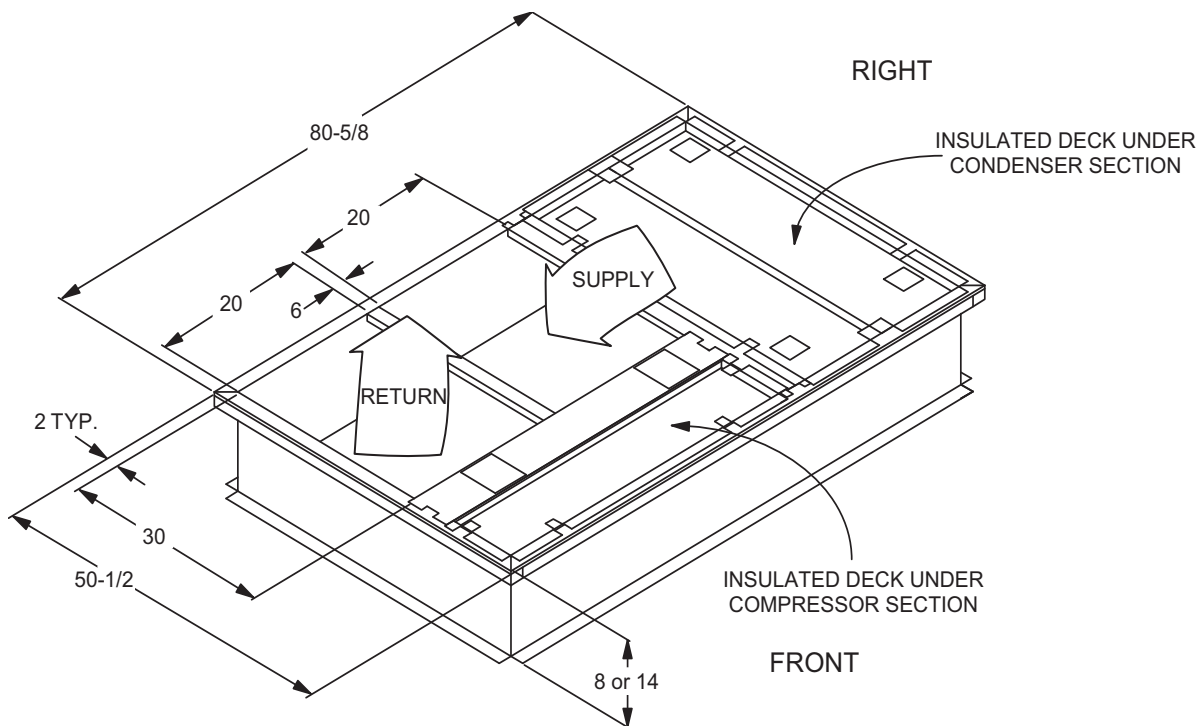
| Unit Model Number         | Dimension (in.) |         |        |        |
|---------------------------|-----------------|---------|--------|--------|
|                           | A               | B       | C      | D      |
| ZH037, 049, 061, 078, 090 | 27 3/4          | 12 1/16 | 27 1/2 | 16     |
| ZH102, 120                | 28 1/4          | 18 1/16 | 28 1/4 | 18 1/4 |
| ZH150                     | 28 1/4          | 18 1/16 | 28 1/4 | 18 1/4 |
| ZJ037, 049, 061           | 27 3/4          | 12 1/16 | 27 1/2 | 16     |
| ZJ078, 090, 102, 120      | 28 1/4          | 18 1/16 | 28 1/4 | 18 1/4 |
| ZJ150                     | 28 1/4          | 18 1/16 | 28 1/4 | 18 1/4 |

### ZH/ZJ037-150 Unit Left Duct Opening

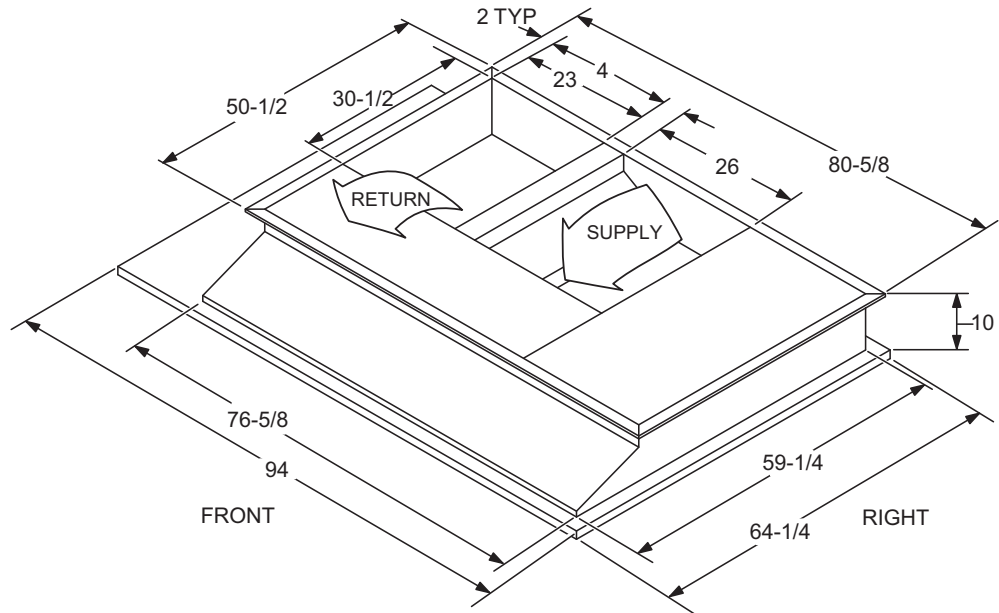


### ZH/ZJ037-150 Unit Accessory Dimensions

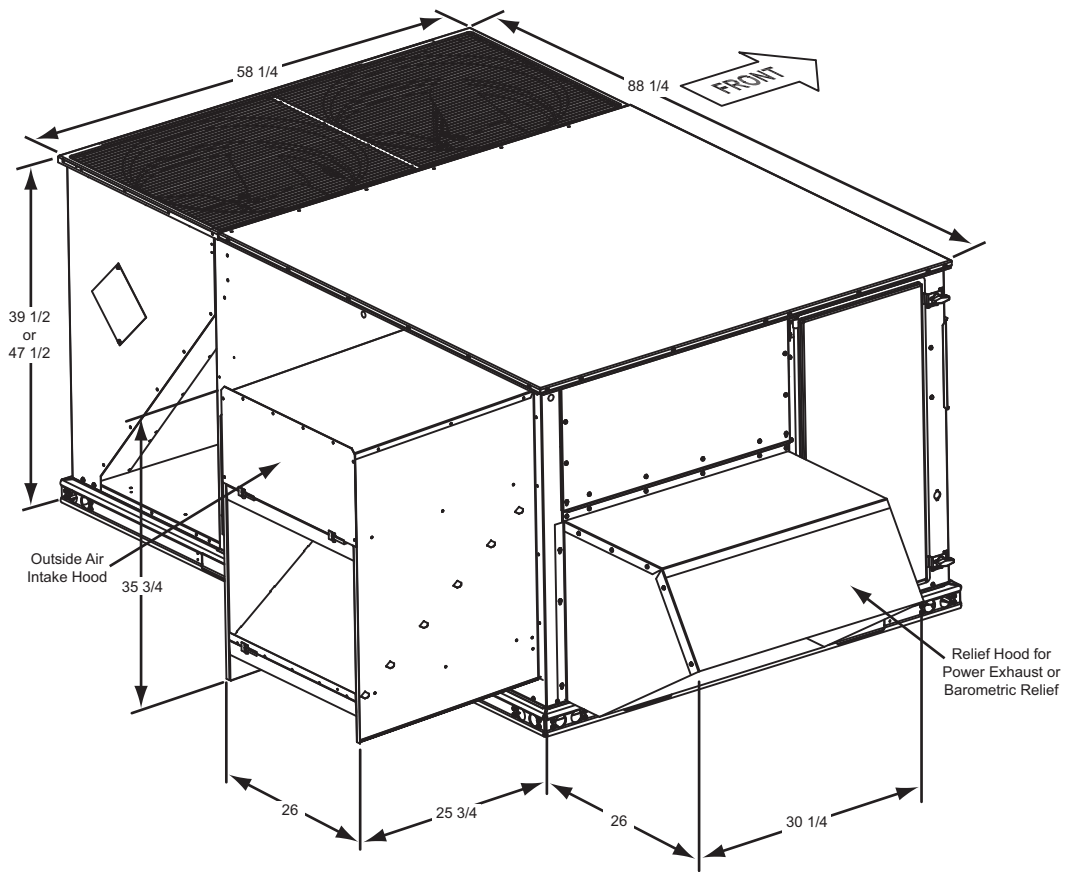
#### ZH/ZJ037-150 Roof Curb



ZH/ZJ037-150 Transition Roof Curb



ZH/ZJ037-150 Economizer Assembly



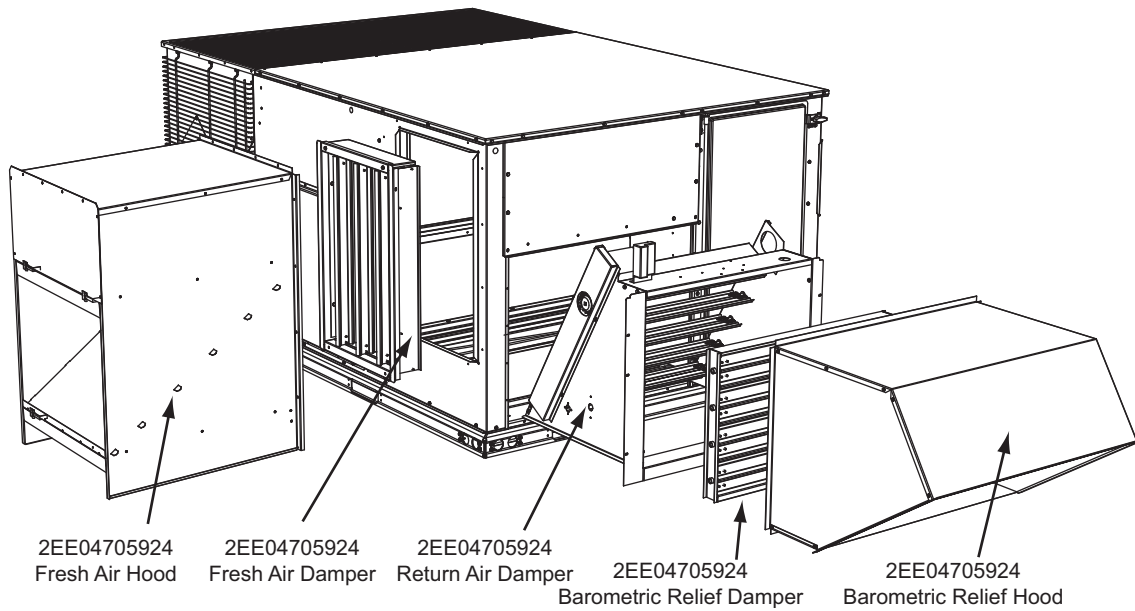
## Economizer Options

### Economizer Usage

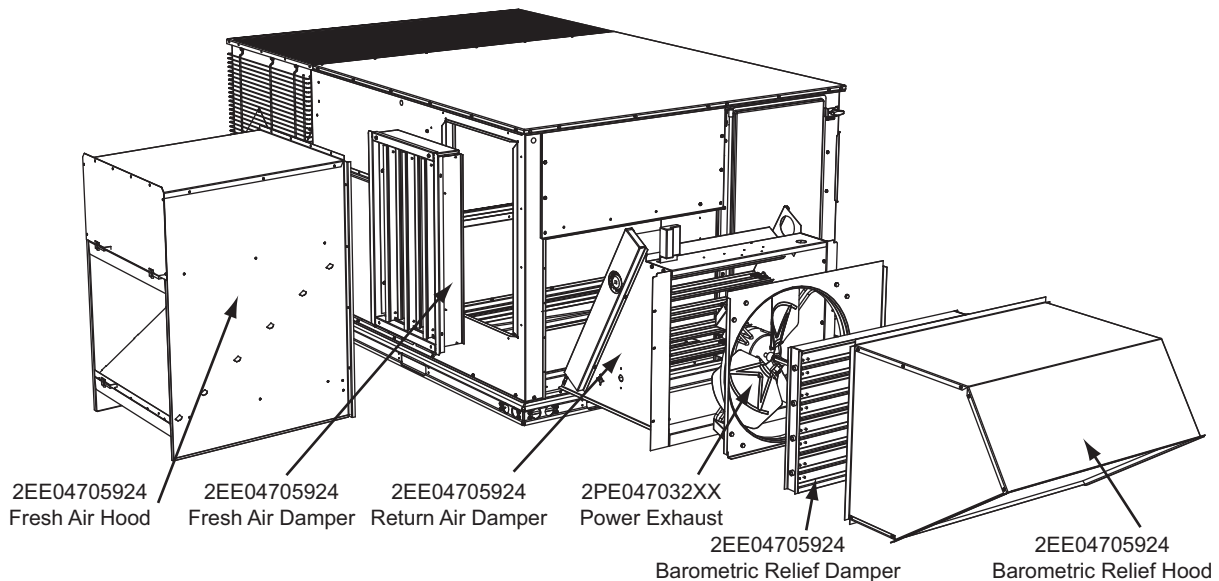
| Application       | Cabinet Height | Description                                     | Model                    |
|-------------------|----------------|---|--------------------------|
| Bottom Return     | All            | Downflow economizer with barometric relief      | 2EE04705924              |
| Side Return       | All            | Horizontal economizer without barometric relief | 2EE04706024 <sup>1</sup> |
| ERV or End Return | 42"            | Slab Economizer, 42" tall cabinet               | 2EE04705824 <sup>2</sup> |
|                   | 50"            | Slab Economizer, 50" tall cabinet               | 2EE04705724 <sup>2</sup> |

1. Barometric relief must be ordered separately and installed in duct work.
2. Barometric relief or fresh air hood not included. Must be ordered separately.

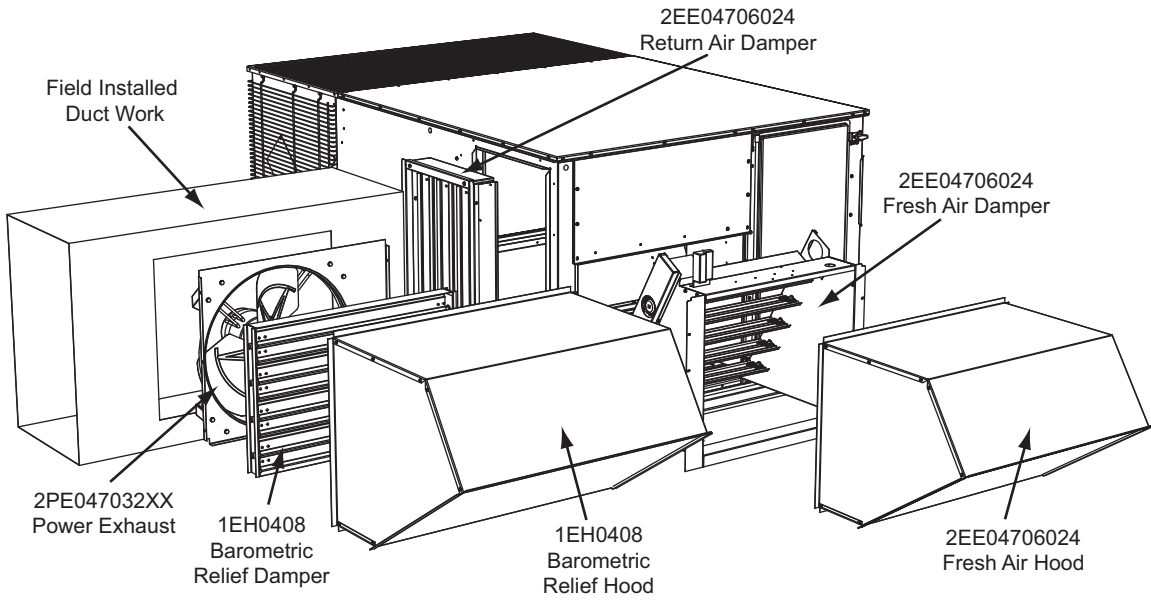
### Factory Installed Downflow Economizer



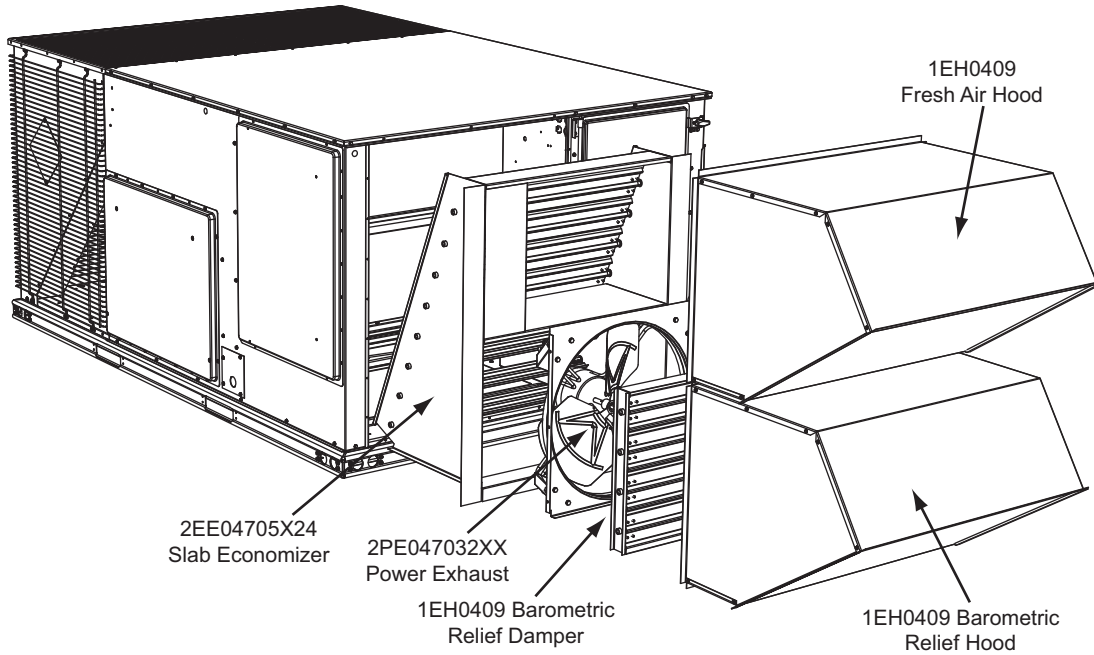
### Field Installed Downflow Economizer W/Power Exhaust



**Field Installed Horizontal Economizer W/Power Exhaust**

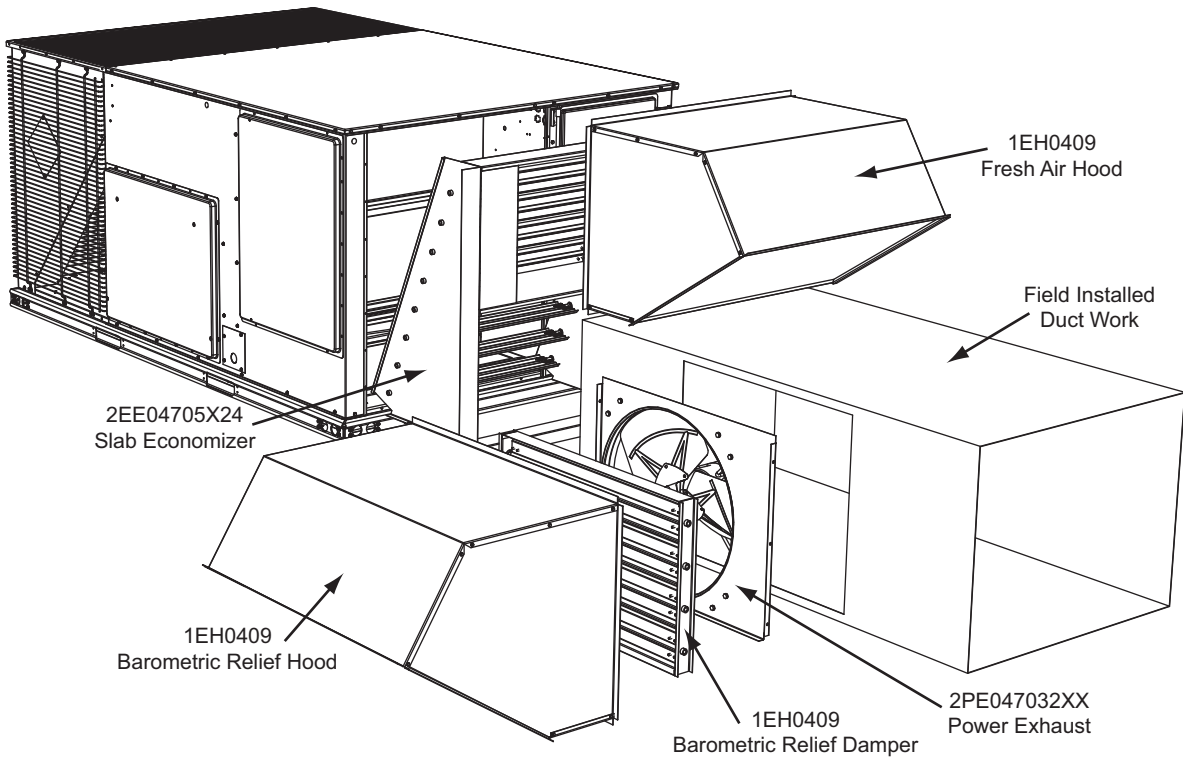


**Slab Economizer Downflow W/Power Exhaust**





**Slab Economizer End Return W/Power Exhaust**



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Supersedes: 528150-YTG-A-0609

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