Installation Instructions

IntelliPak™ 1 Refresh Service Program

Model Number:

SAHF	SEHG	SEHL
SEHF	SFHG	SFHL
SFHF	SLHG	SLHL
SLHF	SSHG	SXHL
SSHF	SXHG	SFHK
SXHF	SAHL	SXHK

This document applies to service offering applications only.

Distribution/use of this document is limited to the Trane sales and service organization in support of the Refresh service program and is not intended for independent third party use.

⚠ SAFETY WARNING

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

June 2026

SO-SVN066A-EN

Introduction

Read this manual thoroughly before operating or servicing this unit.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE	Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

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

Important Responsible Refrigerant Practices

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

⚠ WARNING

Proper Field Wiring and Grounding Required!

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

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

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/ sleeves, butyl gloves, safety glasses, hard hat/ bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠ WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

⚠ WARNING

Cancer and Reproductive Harm!

This product can expose you to chemicals including lead and bisphenol A (BPA), which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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Refresh Options Overview

The IntelliPak™ Refresh offering includes the following options.

- **Basic Refresh** is designed for users with well-running equipment. It addresses electrical, control, and cabinet-integrity wear points that typically occur during the middle of the units life. This service focuses on known wear items while reducing air leaks and improving energy efficiency.
- **Common Options** are generally done as part of an overall plan to extend the life of a unit 10 or more years. These options can be added to the Refresh operation with minimal disruption. A building with units that are 15 to 20 years old might see a pattern of barometric style damper failures. A common Refresh option is to replace all the remaining original barometric style dampers in order to avoid the inconvenience of repairing them on a random basis in the future.
- **Sales Order Special** includes repairing components that address specific unit problems. These options generally require substantial planning and effort for their completion. These are not standard options. These are field-provided or are ordered as design specials. An example of a major option is Repair or replace evaporator drain pan assembly. Drain pan leaks cause corrosion and provide opportunities for biological growth both in the unit and the surrounding area. This is a substantial project, but may be worthwhile when the alternative would be replacing the entire unit.

Table 1. IntelliPak refresh offerings

Scope	Basic Refresh (included as standard)	Common Options	Sales Order Special
Initial evaluation for evidence of rust and corrosion damage.	X	—	—
Initial evaluation for evidence of heat exchanger damage and conditions that need to be addressed.	X	—	—
Initial evaluation for evidence of damaged, soiled or soaked insulation should be cleaned, repaired or replaced.	X	—	—
Initial evaluation of drain pan condition and visually checked for evidence of biological accumulation.	X	—	—
Initial evaluation of heating and cooling system performance.	X	—	—
Initial evaluation of damage or wear to refrigeration lines and connections.	X	—	—
Replacement of internal airflow and air pressure switches electrical control components.	X	—	—
Replacement of cabinet door/panel gaskets, damper seals, missing fasteners and failed panel latches to improve cabinet integrity.	X	—	—
Replacement of large power contactors for fans, compressors, and electric heat.	X	—	—
Installation of power protection monitor to prevent damage due to single phase and/or reversed phase operation.	X	—	—
Installation of outside air static pressure sensor, if available on the unit.	X	—	—
Replace the condenser coil temperature sensor, if available on the unit.	X	—	—
OEM warranty and nameplate component replacement.	X	—	—
Replace condenser fan blades, brackets, and fan motors for total unit.	—	X	—
Replace condenser fan guard (s). One fan guard replaces one broken, worn, or corroded fan guard. Order the quantity of fan guards needed.	—	X	—
Replace unit compressors; comes with choice of 2 or 5-year extended parts warranty for compressors.	—	X	—
Replace compressor crankcase heaters, isolators, gasket, solenoid coils, Thermostat Sensors, and high/low Pressure Cutouts.	—	X	—
Replace airside fans bearings to reduce the chance of unplanned failure.	—	X	—

Table 1. IntelliPak refresh offerings (continued)

Scope	Basic Refresh (included as standard)	Common Options	Sales Order Special
Replace worn damper actuators and rod bearings to reduce the possibility of air leakage and/or insufficient ventilation.	—	X	—
Replace worn dampers to reduce the possibility of air leakage and/or insufficient ventilation.	—	X	—
Replace worn gas heat exchanger, gas heat valves and regulator with new gas valve train components to reduce the possibility of loss in heating operation.	—	X	—
Replace air pressure sensor.	—	X	—
Replace broken door latch(es) with latch kit(s). One latch kit replaces one broken latch. Order the quantity of latch kits needed.	—	X	—
Replace supply/exhaust/return fan motor for high-hour motors.	—	X	—
Replace existing Square D VFD with Trane TR200 VFD used in production units; Square D VFD is no longer supported. See *Variable Frequency Drive Replacement List General — Service Bulletin* (PART-SVB21*-EN) for drive selection. Replace TR200/TR150 VFD if the unit already has TR200/TR150 VFD if needed.	—	X	—
Replace condenser coil (see Figure 1, p. 7). Heat exchangers can suffer from hail and mechanical damage, corrosion due to salt air, chemical corrosion and other factors. Replacing damaged coils restores lost efficiency and prevents refrigerant loss.	—	X	—
Replace worn expansion valves, to prevent refrigerant loss.	—	X	—
Replace broken hail guard, protect coil fins.	—	X	—
Replace fan pulleys and belts; worn fan pulleys can cause belt wear and cause belt slippage, which reduces efficiency. Replacing belts and worn fan pulleys are strongly recommended. Pulleys and belts are either field-provided or can be ordered as a design special as part of the kit.	—	—	X
Replace supply fan inlet guide vane assembly with supply fan VFD control. Guide vane failure results in loss of airflow control. Replacing worn assemblies with current Trane VFD controls is a cost effective alternative to rebuilding worn assemblies. It also improves unit efficiency. VFD conversion is only available as field-provided and -engineered. It is not offered as a design special part of the kit.	—	—	X
Replace IntelliPak modules to current spec, allowing upgraded controls and communications options. Upgrade control modules are either field-provided or can be ordered as a design special part of the kit.	—	—	X
Replace evaporator coils (see Figure 1, p. 7). Heat exchangers can suffer from mechanical damage, and other factors. Replacing damaged coils restores lost efficiency and prevents refrigerant loss. Replacement evaporator coil is either field-provided or can be ordered as a design special.	—	—	X
Repair or replace evaporator drain pan assembly. Drain pan leaks cause corrosion and provide opportunities for biological growth both in the unit and the surrounding area and need to be addressed when discovered. Replacement drain pan is either field-provided or can be ordered as a design special part of the kit.	—	—	X
Repair or replace damaged unit insulation to improve unit efficient as well as provide a reduction in the opportunity for biological growth. Insulation is field-provided and not part of the kit.	—	—	X
Clean or replace fan wheel and shaft; it is often easier to replace the entire fan shaft and wheel assembly with the bearings than just the bearings themselves.	—	—	X

Figure 1. Major refresh option - replacing damaged coils

Initial Inspection

If a unit inspection was not performed before the Refresh parts were ordered, assess the equipment condition and its suitability for the application. Report any observed deficiencies to the owner/building manager before remediation.

Inspect for the following:

Rust and corrosion - Visually assess the unit for significant corrosion damage to the unit structure.

Condenser and evaporator coil condition - Visually assess unit coils for damage and check their leak history.

Thermal insulation - Visually check unit insulation for water damage, physical damage or being otherwise soiled.

Drain pan problems and biological growth - Visually check the unit drain pan for biological growth, leaks and/or wear and corrosion that has the potential to cause leaks.

Refrigeration system pressures and temperatures - Check refrigeration system temperatures and pressures for indication of improper charge levels or operation.

Refrigerant piping and joints - Visually inspect the condition of refrigerant lines and connections.

Model Number Descriptions

This Refresh program includes five IntelliPak™ 1 product family development sequences models. Model number descriptions for each are provided.

S*HF 20 to 75 Ton

Digit 1 — Product Refresh - Year After 1999

R = Refresh Unit Made Pre-1999 - Contact Service Desk
R = Refresh Unit Made After 1999 - Select Kit in system

Digit 2, 3, 4, 5 — Unit Function (Base Unit Digit 1 to 4)

SAHF = DX Cooling, No Heat
SEHF = DX Cooling, Electric Heat
SFHF = DX Cooling, Natural Gas Heat
SLHF = DX Cooling, Hot Water Heat
SSHF = DX Cooling, Steam Heat
SXHF = DX Cooling, No Heat, Extended Casings

Digit 6 — Type of Work

2 = Refresh R-22 Unit
4 = Refresh R-407C Unit
B = Conver to R-407C and Refresh Unit

Digit 7, 8 — Nominal Capacity (Base Unit Digit 6, 7)

20 = 20 Ton Unit
25 = 25 Ton Unit
30 = 30 Ton Unit
40 = 40 Ton Unit
50 = 50 Ton Unit
55 = 55 Ton Unit
60 = 60 Ton Unit
70 = 70 Ton Unit
75 = 75 Ton Unit

Digit 9 — Power Supply (Base Unit Digit 8)

4 = 460/60/3
5 = 575/60/3
E = 200/60/3
F = 230/60/3

Digit 10 — Gas Heat (Base Unit Digit 9)

0 = No Gas Heat
H = High Gas Heat 2 Stage
L = Low Gas Heat 2 Stage
M = Low Heat Gas Full Modulating
P = High Heat Gas Full Modulating
G = Low Heat Gas Limited Modulating
J = High Heat Gas Limited Modulating

Digit 11 — OLD Unit Design Sequence (Base Unit Digit 10)

A = Design Sequence
B = Design Sequence
C = Design Sequence

Digit 11 — Old Unit Design Sequence (Base Unit Digit 10) (continued)

D = Design Sequence
E = Design Sequence
F = Design Sequence
G = Design Sequence
H = Design Sequence
J = Design Sequence
K = Design Sequence
L = Design Sequence
M = Design Sequence
N = Design Sequence
P = Design Sequence
Q = Design Sequence
R = Design Sequence
T = Design Sequence
U = Design Sequence
V = Design Sequence
W = Design Sequence
X = Design Sequence
Y = Design Sequence
Z = Design Sequence
1 = Design Sequence
2 = Design Sequence
3 = Design Sequence
4 = Design Sequence
5 = Design Sequence
6 = Design Sequence
7 = Design Sequence
8 = Design Sequence
9 = Design Sequence

Digit 12 — Exhaust Option (Base Unit Digit 11)

0 = None
1 = Barometric Relief
2 = 100% - 1.5 HP with Statitrac
3 = 100% - 3 HP with Statitrac
4 = 100% - 5 HP with Statitrac
5 = 100% - 7.5 HP with Statitrac
6 = 100% - 10 HP with Statitrac
7 = 100% - 15 HP with Statitrac
8 = 100% - 20 HP with Statitrac
A = 50% - 1.5 HP
B = 50% - 3 HP
C = 50% - 5 HP
D = 50% - 7.5 HP
E = 100% - 1.5 HP w/o Statitrac
F = 100% - 3 HP w/o Statitrac
G = 100% - 5 HP w/o Statitrac
H = 100% - 7.5 HP w/o Statitrac
J = 100% - 10 HP w/o Statitrac
K = 100% - 15 HP w/o Statitrac
L = 100% - 20 HP w/o Statitrac
9 = 100% Ret - 3HP with Statitrac

Digit 12 — Exhaust Option (Base Unit Digit 11) (continued)

M = 100% Ret - 5HP with Statitrac
N = 100% Ret - 7.5HP with Statitrac
P = 100% Ret - 10HP with Statitrac
R = 100% Ret - 15HP with Statitrac
T = 100% Ret - 20HP with Statitrac
U = 100% Ret - 3HP w/o Statitrac
V = 100% Ret - 5HP w/o Statitrac
W = 100% Ret - 7.5HP w/o Statitrac
X = 100% Ret - 10HP w/o Statitrac
Y = 100% Ret - 15HP w/o Statitrac
Z = 100% Ret - 20HP w/o Statitrac

Digit 13 — Supply Fan HP (Base Unit Digit 14)

1 = 3.0 HP
2 = 5.0 HP
3 = 7.5 HP
4 = 10.0 HP
5 = 15.0 HP
6 = 20.0 HP
7 = 25.0 HP
8 = 30.0 HP
9 = 40.0 HP

Digit 14 — Fresh Air Selection (Base Unit Digit 16)

A = No Fresh Air
B = 0 to 25% Manual
D = 0 to 100% Economizer

Digit 15 — System Control (Base Unit Digit 17)

1 = CV Control (Zone Control)
2 = VAV (S/A Temp Control without Inlet Guide Vane)
3 = VAV (S/A Temp Control with Inlet Guide Vane)
4 = Space Pres Cntl with Exh/Ret VFD w/o Bypass
5 = Space Pres Cntl with Exh/Ret VFD with Bypass
6 = VAV Sup Air Temp. Cntl with Sup VFD w/o Bypass
7 = VAV Sup Air Temp Cntl with Sup VFD with Bypass
8 = Supply and Exhaust/Return VFD w/o Bypass
9 = Supply and Exhaust/Return VFD with Bypass

Digit 16 — Ambient Control (Base Unit Digit 19)

0 = Standard Ambient
1 = 0 Degree Fahrenheit

Digit 17 — Hot Gas Bypass (Base Unit Digit 22)

0 = Without Hot Gas Bypass
B = With Hot Gas Bypass

Digit 17 — Hot Gas Bypass (Base Unit Digit 22) (continued)

C = Modulating Dehumidification (Hot Gas ReHeat - w/o HGBP)
D = Modulating Dehumidification (Hot Gas ReHeat - with HGBP)

Digit 18 — Fresh Air Control (Base Unit Digit 23)

0 = w/o Economizer
W = Econ Control with Dry Bulb
Z = Econ Control with Reference Enthalpy
D = 0 to 100% Econ Comparative Enthalpy
C = Econ Control with Comparative Enthalpy

Digit 19 — Low Leak Fresh Air Dampers (Base Unit Digit 24)

0 = Std Fresh Air Damper or No Damper
E = Low leak Fresh Air Damper

Digit 20 — Coil Capacity (Base Unit Digit 26)

0 = Standard Capacity Evap Coil
G = High capacity evap coil
H = High Cap Evap Coil and High Eff Cond Coil
4 = 407C Freon Option

Digit 21 — Condenser Coil Selection (Base Unit Digit 27)

0 = Aluminum Finned Condenser Coil
H = Copper Finned Condenser Coil

Digit 22 — Generic BAS Module (Base Unit Digit 28)

0 = w/o GBAS Option - Cover Plate - Low Voltage Barrier
K = 0 to 5 Vdc Generic BAS Module
B = 0 to 10 Vdc Generic BAS Module

Digit 23 — Sup/Exh/Ret Motor (Base Unit Digit 29)

0 = Std Eff Mtrs (Sup and Exh/Ret)
L = High Eff Mtrs (Sup anf Exh/Ret)

Digit 24 — Access Doors (Base Unit Digit 33)

0 = Standard Panels
T = Access Doors

Digit 25 — Re-Heat Coil Option (Base Unit Digit 39)

0 = Standard Unit
A = 2 Circuit Refrig. Reheat Coil
B = Multi-Circuit Refrig. Reheat Coil
C = Hot Water Reheat Coil
D = Air Cooled Protocol RHT

Digit 26 — Replacement Compressors

0 = No Compressors
A = Replace All R-22 Compressors
B = Replace All R-407C Compressors

Digit 27 — Replacement Condenser Fan

0 = No Condenser Fan
1 = Replace Condenser Fan Blade and Motor

Digit 28 — Replacement Condenser Fan Guard

0 = No Fan Guard
1 = Fan Guard QTY = 1
2 = Fan Guard QTY = 2
3 = Fan Guard QTY = 3
4 = Fan Guard QTY = 4
5 = Fan Guard QTY = 5
6 = Fan Guard QTY = 6

Digit 29 — Replacement Condenser Coil

0 = No Condenser Coil
1 = Replace Cond Coil 1 Circuit
2 = Replace Cond Coil All Circuits

Digit 30 — Replacement TXV

0 = No TXV
1 = Replace TXV

Digit 31 — Replacement Gas Heat Exchanger

0 = No Gas Heat Exchanger
1 = Replace Gas Heat Exchanger

Digit 32 — Replacement Gas Heat Motor

0 = No Gas Heat Motor
1 = Replace Gas Heat Motor

Digit 33 — Replacement Gas Heat Switch Kit

0 = No Gas Heat Switch Kit
1 = Replace GH Switch Kit: Temp Limit and Elec Heater

Digit 34 — Replacement Econ Damper

0 = No Econ Damper
1 = Replace Econ Damper
2 = Replace Econ Actuator
3 = Replace Econ Damper with Actuator

Digit 35 — Replacement Econ/Exh Rod and Bearing

0 = No Econ/Exh Rod and Bearing
1 = Replace Econ/Exh Rod and Bearing

Digit 36 — Replacement Econ Sensors

0 = No Econ Sensors
1 = Replace Econ Sensors

Digit 37 — Replacement Supply Fan Motor

0 = No Supply Fan Motor
1 = Replace Supply Fan Motor

Digit 38 — Replacement Exhaust/return Fan Motor

0 = No Exhaust/return Fan Motor
1 = Replace Exhaust/return Fan Motor

Digit 39 — Replacement Bearings

0 = No Fan Bearing
1 = Replace Fan Bearing

Digit 40 — Replacement Low Ambient Damper

0 = No Low Ambient Damper
1 = Replace Low Ambient Damper with Actuator
2 = Replace Actuator only

Digit 41 — Replacement Exhaust Damper

0 = No Exhaust Damper
1 = Replace Exhaust Damper
2 = Replace Exhaust Actuator Kit
3 = Replace Exhaust Damper with Actuator Kit

Digit 42 — Replacement Fresh Air Damper

0 = No Fresh Air Damper
1 = Replace Fresh Air Damper

Digit 43 — Replacement Air Pressure Sensor

0 = No Air Pressure Sensor
1 = Replace Air Pressure Sensor

Digit 44 — Replacement Hail Guard

0 = No Hail Guard
1 = Replace Hail Guard

Digit 45 — Replacement VFD

0 = No VFD
1 = Replace Fan Drive

Digit 46 — Replacement Latch Kit

0 = None
1 = Latch Kit Qty = 1
2 = Latch Kit Qty = 2
3 = Latch Kit Qty = 3
4 = Latch Kit Qty = 4
5 = Latch Kit Qty = 5
6 = Latch Kit Qty = 6
7 = Latch Kit Qty = 7
8 = Latch Kit Qty = 8
9 = Latch Kit Qty = 9
10 = Latch Kit Qty = 10
11 = Latch Kit Qty = 11
12 = Latch Kit Qty = 12
13 = Latch Kit Qty = 13
14 = Latch Kit Qty = 14
15 = Latch Kit Qty = 15
16 = Latch Kit Qty = 16
17 = Latch Kit Qty = 17
18 = Latch Kit Qty = 18
19 = Latch Kit Qty = 19
20 = Latch Kit Qty = 20
21 = Latch Kit Qty = 21
22 = Latch Kit Qty = 22
23 = Latch Kit Qty = 23
24 = Latch Kit Qty = 24
25 = Latch Kit Qty = 25
26 = Latch Kit Qty = 26
27 = Latch Kit Qty = 27
28 = Latch Kit Qty = 28
29 = Latch Kit Qty = 29
30 = Latch Kit Qty = 30

Digit 47 — CMSA Connectivity Tool

0 = No CMSA connectivity tool
1 = Tracer SC+ gateway kit
2 = BCI-I kit
3 = Tracer SC+ gateway kit with BCI-I kit

S*HG 90 to 130 Ton

Digit 1 — Product Refresh - Year After 1999

R = Refresh Unit Made Pre-1999 - Contact Service Desk
R = Refresh Unit Made After1999 - Select Kit in system

Digit 2, 3, 4, 5 — Unit Function (Base Unit Digit 1 to 4)

SEHG = DX Cooling, Electric Heat
SFHG = DX Cooling, Natural Gas Heat
SLHG = DX Cooling, Hot Water Heat
SSHG = DX Cooling, Steam Heat
SXHG = DX Cooling, No Heat, Extended Casings

Digit 6 — Type of Work

2 = Refresh R-22 Unit
4 = Refresh R-407C Unit
B = Convert to R-407C and Refresh Unit

Digit 7, 8, 9 — Nominal Capacity (Base Unit Digit 5, 6, 7)

C90 = 90 Ton
D11 = 105 Ton
D12 = 115 Ton
D13 = 130 Ton

Digit 10 — Power Supply (Base Unit Digit 8)

4 = 460/60/3
5 = 575/60/3
E = 200/60/3
F = 230/60/3

Digit 11 — Gas Heat (Base Unit Digit 9)

0 = No Gas Heat
H = High Gas Heat 2 Stage
P = High Heat Gas Full Modulating
J = High Heat Gas Limited Modulating

Digit 12 — Old Unit Design Sequence (Base Unit Digit 10)

A = Design Sequence
B = Design Sequence
C = Design Sequence
D = Design Sequence
E = Design Sequence
F = Design Sequence
G = Design Sequence
H = Design Sequence
J = Design Sequence
K = Design Sequence
L = Design Sequence
M = Design Sequence
N = Design Sequence
P = Design Sequence
Q = Design Sequence
R = Design Sequence
T = Design Sequence
U = Design Sequence

Digit 12 — Old Unit Design Sequence (Base Unit Digit 10) (continued)

V = Design Sequence
W = Design Sequence
X = Design Sequence
Y = Design Sequence
Z = Design Sequence
1 = Design Sequence
2 = Design Sequence
3 = Design Sequence
4 = Design Sequence
5 = Design Sequence
6 = Design Sequence
7 = Design Sequence
8 = Design Sequence

Digit 13 — Exhaust Option (Base Unit Digit 11)

0 = None
7 = 100% - 15 HP with Statitrac
8 = 100% - 20 HP with Statitrac
9 = 100% - 25 HP with Statitrac
F = 50% - 15 HP
H = 100% - 30 HP with Statitrac
J = 100% - 40 HP with Statitrac
K = 100% - 15 HP w/o Statitrac
L = 100% - 20 HP w/o Statitrac
M = 100% - 25 HP w/o Statitrac
N = 100% - 30 HP w/o Statitrac
P = 100% - 40 HP w/o Statitrac

Digit 14 — Supply Fan HP (Base Unit Digit 14)

C = 30 Hp (2 to 15 Hp Motors) Supply Motor
D= 40 Hp (2 to 20 Hp Motors) Supply Motor
E = 50 Hp (2 to 25 Hp Motors) Supply Motor
F = 60 Hp (2 to 30 Hp Motors) Supply Motor
G = 80 Hp (2 to 40 Hp Motors) Supply Motor

Digit 15 — System Control (Base Unit Digit 17)

1 = CV Control (Zone Control)
2 = VAV (S/A Temp Control without Inlet Guide Vane)
3 = VAV (S/A Temp Control with Inlet Guide Vane)
4 = Space Pres Cntl with Exh/Ret VFD w/o Bypass
5 = Space Pres Cntl with Exh/Ret VFD with Bypass
6 = VAV Sup Air Temp. Cntl with Sup VFD w/o Bypass
7 = VAV Sup Air Temp Cntl with Sup VFD with Bypass
8 = Supply and Exhaust/Return VFD w/o Bypass
9 = Supply and Exhaust/Return VFD with Bypass

Digit 16 — Hot Gas Bypass (Base Unit Digit 22)

0 = Without Hot Gas Bypass
B = With Hot Gas Bypass
VFD4 = Space Pres Cntl with Exh/Ret VFD w/o Bypass

Digit 17 — Fresh Air Control (Base Unit Digit 23)

0 =w/o Economizer Comparative Enthalpy
W = Econ Control with Dry Bulb
Z = Econ Control with Reference Enthalpy
D = 0 to 100% Economizer Comparative Enthalpy
C = Econ Control with Comparative Enthalpy

Digit 18 — Low Leak Fresh Air Dampers (Base Unit Digit 24)

0 = Std Fresh Air Dmpr or No Damper
E = Low leak Fresh Air Damper

Digit 19 — Coil Capacity (Base Unit Digit 26)

0 = Standard Capacity Evap Coil
G = High capacity evap coil
H = High Cap Evap Coil and High Eff Cond Coil

Digit 20 — 0 to 5 Vdc Generic BAS Module (Base Unit Digit 27)

0 = w/o GBAS Option - Cover Plate For Low Voltage Barrier
K = 0 to 5 Vdc Generic BAS Module

Digit 21 — Supply and Exhaust Motors (Base Unit Digit 28)

0 = Standard Efficiency Motors (Supply and Exhaust)
L = High Efficiency Motors (Supply and Exhaust)

Digit 22 — Access Doors (Base Unit Digit 32)

0 = Standard Panels
T = Access Doors

Digit 23 — Replacement Compressors

0 = No Compressors
A = Replace All R-22 Compressors
B = Replace All R-407C Compressors

Digit 24 — Replacement Condenser Fan

0 = No Condenser Fan
1 = Replace Condenser Fan Blade and Motor

Digit 25 — Replacement Condenser Fan Guard

0 = No Fan Guard
1 = Fan Guard QTY = 1
2 = Fan Guard QTY = 2
3 = Fan Guard QTY = 3
4 = Fan Guard QTY = 4
5 = Fan Guard QTY = 5
6 = Fan Guard QTY = 6
7 = Fan Guard QTY = 7
8 = Fan Guard QTY = 8
9 = Fan Guard QTY = 9
A = Fan Guard QTY = 10
B = Fan Guard QTY = 11
C = Fan Guard QTY = 12

Digit 26 — Replacement Condenser Coil

0 = No Condenser Coil
1 = Replace Cond Coil 1 Circuit
2 = Replace Cond Coil All Circuits

Digit 27 — Replacement TXV

0 = No TXV
1 = Replace TXV

Digit 28 — Replacement Gas Heat Exchanger

0 = No Gas Heat Exchanger
1 = Replace Gas Heat Exchanger

Digit 29 — Replacement Gas Heat Motor

0 = No Gas Heat Motor
1 = Replace Gas Heat Motor

Digit 30 — Replacement Gas Heat Switch Kit

0 = No Gas Heat Switch Kit
1 = Replace GH Switch Kit: Temp Limit and Elec Heater

Digit 31 — Replacement Econ Damper

0 = No Econ Damper
1 = Replace Econ Damper
2 = Replace Econ Actuator
3 = Replace Econ Damper with Actuator

Digit 32 — Replacement Econ/Exh Rod and Bearing

0 = No Econ/Exh Rod and Bearing
1 = Replace Econ/Exh Rod and Bearing

Digit 33 — Replacement Econ Sensors

0 = No Econ Sensors
1 = Replace Econ Sensors

Digit 34 — Replacement Supply Fan Motor

0 = No Supply Fan Motor
1 = Replace Supply Fan Motor

Digit 35 — Replacement Exhaust Fan Motor

0 = No Exhaust Fan Motor
1 = Replace Exhaust Fan Motor

Digit 36 — Replacement Bearings

0 = No Fan Bearing
1 = Replace Fan Bearing

Digit 37 — Replacement Exhaust Damper

0 = No Exhaust Damper
1 = Replace Exhaust Damper
2 = Replace Exhaust Actuator Kit
3 = Replace Exhaust Damper with Actuator Kit

Digit 38 — Replacement Air Pressure Sensor

0 = No Air Pressure Sensor
1 = Replace Air Pressure Sensor

Digit 39 — Replacement Hail Guard

0 = No Hail Guard
1 = Replace Hail Guard

Digit 40 — Replacement VFD

0 = No VFD
1 = Replace Fan Drive

Digit 41 — Replacement Latch Kit

0 = None
1 = Latch Kit Qty = 1
2 = Latch Kit Qty = 2
3 = Latch Kit Qty = 3
4 = Latch Kit Qty = 4
5 = Latch Kit Qty = 5
6 = Latch Kit Qty = 6
7 = Latch Kit Qty = 7
8 = Latch Kit Qty = 8
9 = Latch Kit Qty = 9
A = Latch Kit Qty = 10
B = Latch Kit Qty = 11
C = Latch Kit Qty = 12
D = Latch Kit Qty = 13
E = Latch Kit Qty = 14
F = Latch Kit Qty = 15
G = Latch Kit Qty = 16
H = Latch Kit Qty = 17
J = Latch Kit Qty = 18
K = Latch Kit Qty = 19
L = Latch Kit Qty = 20
M = Latch Kit Qty = 21
N = Latch Kit Qty = 22
P = Latch Kit Qty = 23
R = Latch Kit Qty = 24
T = Latch Kit Qty = 25
U = Latch Kit Qty = 26
V = Latch Kit Qty = 27
W = Latch Kit Qty = 28
X = Latch Kit Qty = 29
Y = Latch Kit Qty = 30

Digit 42 — CMSA Connectivity Tool

0 = No CMSA connectivity tool
1 = Tracer SC+ gateway kit
2 = BCI-I kit
3 = Tracer SC+ gateway kit with BCI-I kit

S*HK 90 to 130 Ton

Digit 1 — Product Refresh

R = Product Refresh - Yes

Digit 2, 3, 4, 5 — Unit Function – (Base Unit Digit 1 to 4)

SFHK = DX Cooling, Natural Gas Heat
SXHK = DX Cooling, No Heat, Extended Casings

Digit 6, 7, 8 — Nominal Capacity (Base Unit Digit 6,7)

C90 = 90 Ton
D11 = 105 Ton
D12 = 115 Ton
D13 = 130 Ton

Digit 9 — Power Supply (Base Unit Digit 8)

4 = 460/60/3
5 = 575/60/3

Digit 10 — Gas Heat (Base Unit Digit 9)

0 = No Gas Heat
H = High Gas Heat 2 Stage
P = High Heat Gas Full Modulating
J = High Heat Gas Limited Modulating
T = High Gas Heat Ultra Modulating

Digit 11 — Old Unit Design Sequence – (Base Unit Digit 10)

A = Design Sequence
B = Design Sequence
C = Design Sequence
D = Design Sequence
E = Design Sequence
F = Design Sequence
G = Design Sequence
H = Design Sequence
J = Design Sequence
K = Design Sequence
L = Design Sequence
M = Design Sequence
N = Design Sequence
P = Design Sequence
R = Design Sequence
T = Design Sequence
U = Design Sequence

Digit 12 — Exhaust Option (Base Unit Digit 11)

0 = None
7 = 100% - 15 HP with Statitrac
8 = 100% - 20 HP with Statitrac
9 = 100% - 25 HP with Statitrac
F = 50% - 15 HP
H = 100% - 30 HP with Statitrac
J = 100% - 40 HP with Statitrac
K = 100% - 15 HP w/o Statitrac
L = 100% - 20 HP w/o Statitrac
M = 100% - 25 HP w/o Statitrac
N = 100% - 30 HP w/o Statitrac
P = 100% - 40 HP w/o Statitrac

Digit 13 — Supply Fan HP (Base Unit Digit 14)

C = 30 Hp (2 to 15 Hp Motors) Supply Motor
D= 40 Hp (2 to 20 Hp Motors) Supply Motor
E = 50 Hp (2 to 25 Hp Motors) Supply Motor
F = 60 Hp (2 to 30 Hp Motors) Supply Motor
G = 80 Hp (2 to 40 Hp Motors) Supply Motor

Digit 14 — Fresh Air Selection – (Base Unit Digit 16)

D = 0 to 100% Economizer
E = 0 to 100% Econ with TRAQ and DCV
F = 0 to 100% Econ with DCV only design specials only

Digit 15 — System Control (Base Unit Digit 17)

1 = Constant Volume Control
2 = CV Discharge Temp Control (DTC)
3 = VAV Sup Air Temp Cntl with IGV
4 = Space Pres Cntl with Exh-Ret VFD w/o Bypass
5 = Space Pres Cntl with Exh-Ret VFD with Bypass
6 = VAV Sup Air Temp Cntl with Sup VFD w/o Bypass
7 = VAV Sup Air Temp Cntl with Sup VFD with Bypass
8 = Sup and Exh/Ret VFD w/o Bypass
9 = Sup and Exh/Ret VFD with Bypass
A = Single Zone - VAV - with VFD w/o BP
B = Single Zone - VAV - with VFD with BP
C = Single Zone - VAV - Sup and Exh/Ret with VFD w/o BP
D = Single Zone - VAV - Sup and Exh/Ret with VFD with BP

Digit 16 — Disconnect Switch Selection (Base Unit Digit 21)

0 = Unit Mounted Terminal Block
A = Unit Mounted Non- Fused Disc. Switch
B = Circuit Breaker with high fault SCCR

Digit 17 — Hot Gas Bypass (Base Unit Digit 22)

0 = Without Hot Gas Bypass
B = With Hot Gas Bypass

Digit 18 — Fresh Air Control – (Base Unit Digit 23)

W = Econ Control with Dry Bulb
Z = Econ Control with Reference Enthalpy
C = Econ Control with Comparative Enthalpy

Digit 19 — Low Leak Fresh Air Dampers (Base Unit Digit 24)

0 = Std Fresh Air Dmpr or No Damper
E = Low leak Fresh Air Damper
U = Ultra Low Leak Damper

Digit 20 — Coil Capacity (Base Unit Digit 26)

0 = Standard Capacity Evap Coil
G = High capacity evap coil
H = High Cap Evap Coil and High Eff Cond Coil

Digit 21 — Condenser Coil Selection (Base Unit Digit 27)

0 = Standard Aluminum Condenser Coil
J = Corrosion Protected Condenser Coil

Digit 22 — 0-5 Vdc Generic BAS Module

0 = w/o GBAS Option - Cover Plate for Low Voltage Barrier
K = 0-5 Vdc Generic BAS Module
R = Rapid Restart

Digit 23 — Supply and Exhaust Motors (Base Unit Digit 28 or 29)

0 = Std Eff Mtrs - DSEQ=A-C (28), DSEQ=D-U (29)
L = High Eff Mtrs (N/A) - DSEQ=A-C (28), DSEQ= D-U (29)
A = EISA Std Mtrs with Shaft Grounding Ring
B = EISA Hi Eff Mtrs with Shaft Grounding Ring (N/A)

Digit 24 — Access Doors (Base Unit Digit 32 or 33)

0 = Standard Panels
T = Access Doors
0 = Standard Panels - DSEQ=A-C (32), DESQ=D-H (33)
T = Access Doors - DSEQ=A-C (32), DESQ=D-H (33)
U = IRU with Galv - with Std Panels
W = IRU with Galv - with Access Doors
Y = IRU with SST - with Std Panels
Z = IRU with SST - with Access Doors
1 = Double wall
2 = Access Doors with Double Wall
3 = IRU with Glav - with Double Wall
4 = IRU with Glav - with Access Doors with Double Wall
5 = IRU with SST - with Double Wall
6 = IRU with SST - with Access Doors with Double Wall

Digit 25 — Replacement Compressors

0 = No Compressors
1 = Replace All Compressors

Digit 26 — Replacement Condenser Fan

0 = No Condenser Fan
1 = Replace Condenser Fan Blade and Motor

Digit 27 — Replacement Condenser Fan Guard

0 = No Fan Guard
1 = Fan Guard QTY = 1
2 = Fan Guard QTY = 2
3 = Fan Guard QTY = 3
4 = Fan Guard QTY = 4
5 = Fan Guard QTY = 5
6 = Fan Guard QTY = 6
7 = Fan Guard QTY = 7
8 = Fan Guard QTY = 8
9 = Fan Guard QTY = 9
A = Fan Guard QTY = 10
B = Fan Guard QTY = 11
C = Fan Guard QTY = 12

Digit 28 — Replacement Condenser Coil

0 = No Condenser Coil
1 = Replace Cond Coil 1 Circuit
2 = Replace Cond Coil All Circuits

Digit 29 — Replacement TXV

0 = No TXV
1 = Replace TXV

Digit 30 — Replacement Gas Heat Exchanger

0 = No Gas Heat Exchanger
1 = Replace Gas Heat Exchanger

Digit 31 — Replacement Gas Heat Motor

0 = No Gas Heat Motor
1 = Replace Gas Heat Motor

Digit 32 — Replacement Gas Heat Switch Kit

0 = No Gas Heat Switch Kit
1 = Replace GH Switch Kit: Temp Limit and Elec Heater

Digit 33 — Replacement Econ Damper

0 = No Econ Damper
1 = Replace Econ Damper
2 = Replace Econ Actuator
3 = Replace Econ Damper with Actuator

Digit 34 — Replacement Econ/Exh Rod and Bearing

0 = No Econ/Exh Rod and Bearing
1 = Replace Econ/Exh Rod and Bearing

Digit 35 — Replacement Econ Sensors

0 = No Econ Sensors
1 = Replace Econ Sensors

Digit 36 — Replacement Supply Fan Motor

0 = No Supply Fan Motor
1 = Replace Supply Fan Motor

Digit 37 — Replacement Exhaust Fan Motor

0 = No Exhaust Fan Motor
1 = Replace Exhaust Fan Motor

Digit 38 — Replacement Bearings

0 = No Fan Bearing
1 = Replace Fan Bearing

Digit 39 — Replacement Exhaust Damper

0 = No Exhaust Damper
1 = Replace Exhaust Damper
2 = Replace Exhaust Actuator Kit
3 = Replace Exhaust Damper with Actuator Kit

Digit 40 — Replacement Air Pressure Sensor

0 = No Air Pressure Sensor
1 = Replace Air Pressure Sensor

Digit 41 — Replacement Hail Guard

0 = No Hail Guard
1 = Replace Hail Guard

Digit 42 — Replacement VFD

0 = No VFD
1 = Replace Fan Drive

Digit 43 — Replacement Latch Kit

0 = None
1 = Latch Kit Qty = 1
2 = Latch Kit Qty = 2
3 = Latch Kit Qty = 3
4 = Latch Kit Qty = 4
5 = Latch Kit Qty = 5
6 = Latch Kit Qty = 6
7 = Latch Kit Qty = 7
8 = Latch Kit Qty = 8
9 = Latch Kit Qty = 9
A = Latch Kit Qty = 10
B = Latch Kit Qty = 11
C = Latch Kit Qty = 12
D = Latch Kit Qty = 13
E = Latch Kit Qty = 14
F = Latch Kit Qty = 15
G = Latch Kit Qty = 16
H = Latch Kit Qty = 17
J = Latch Kit Qty = 18
K = Latch Kit Qty = 19
L = Latch Kit Qty = 20
M = Latch Kit Qty = 21
N = Latch Kit Qty = 22
P = Latch Kit Qty = 23
R = Latch Kit Qty = 24
T = Latch Kit Qty = 25
U = Latch Kit Qty = 26
V = Latch Kit Qty = 27
W = Latch Kit Qty = 28
X = Latch Kit Qty = 29
Y = Latch Kit Qty = 30

Digit 44 — CMSA Connectivity Tool

0 = No CMSA connectivity tool
1 = Tracer SC+ gateway kit
2 = BCI-I kit
3 = Tracer SC+ gateway kit with BCI-I kit

S*HL 20 to 89 Ton

Digit 1 — Product Refresh

R = Product Refresh - Yes

Digit 2, 3, 4, 5 — Unit Function – (Base Unit Digit 1 to 4)

SAHL = DX Cooling, No Heat
SEHL = DX Cooling, Electric Heat
SFHL = DX Cooling, Natural Gas Heat
SLHL = DX Cooling, Hot Water Heat
SXHL = DX Cooling, No Heat, Extended Casings

Digit 6, 7 — Nominal Capacity (Base Unit Digit 6,7)

20 = 20 Ton Air-cooled Unit
25 = 25 Ton Air-cooled Unit
30 = 30 Ton Air-cooled Unit
40 = 40 Ton Air-cooled Unit
50 = 50 Ton Air-cooled Unit
55 = 55 Ton Air-cooled Unit
60 = 60 Ton Air-cooled Unit
70 = 70 Ton Air-cooled Unit
75 = 75 Ton Air-cooled Unit
24 = 24 Ton Evap Condenser Unit
29 = 29 Ton Evap Condenser Unit
36 = 36 Ton Evap Condenser Unit
48 = 48 Ton Evap Condenser Unit
59 = 59 Ton Evap Condenser Unit
73 = 73 Ton Evap Condenser Unit
80 = 80 Ton Evap Condenser Unit
89 = 89 Ton Evap Condenser Unit

Digit 8 — Power Supply (Base Unit Digit 8)

4 = 460/60/3
5 = 575/60/3
E = 200/60/3
F = 230/60/3

Digit 9 — Gas Heat (Base Unit Digit 9)

0 = No Gas Heat
H = High Gas Heat 2 Stage
L = Low Gas Heat 2 Stage
M = Low Heat Gas Full Modulating
P = High Heat Gas Full Modulating
G = Low Heat Gas Limited Modulating
J = High Heat Gas Limited Modulating
K = Low Gas Heat Ultra Modulating
T = High Gas Heat Ultra Modulating

Digit 10 — Old Unit Design Sequence (Base Unit Digit 10)

A = Design Sequence
B = Design Sequence
C = Design Sequence
D = Design Sequence
E = Design Sequence
F = Design Sequence
G = Design Sequence
H = Design Sequence
J = Design Sequence
K = Design Sequence
L = Design Sequence
M = Design Sequence
N = Design Sequence
P = Design Sequence
R = Design Sequence
S = Design Sequence
T = Design Sequence
U = Design Sequence
V = Design Sequence

Digit 11 — Exhaust Option (Base Unit Digit 11)

0 = None
1 = Barometric Relief
2 = 100% - 1.5 HP with Statitrac
3 = 100% - 3 HP with Statitrac
4 = 100% - 5 HP with Statitrac
5 = 100% - 7.5 HP with Statitrac
6 = 100% - 10 HP with Statitrac
7 = 100% - 15 HP with Statitrac
8 = 100% - 20 HP with Statitrac
A = 50% - 1.5 HP
B = 50% - 3 HP
C = 50% - 5 HP
D = 50% - 7.5 HP
E = 100% - 1.5 HP w/o Statitrac
F = 100% - 3 HP w/o Statitrac
G = 100% - 5 HP w/o Statitrac
H = 100% - 7.5 HP w/o Statitrac
J = 100% - 10 HP w/o Statitrac
K = 100% - 15 HP w/o Statitrac
L = 100% - 20 HP w/o Statitrac
9 = 100% Ret - 3HP with Statitrac
M = 100% Ret - 5HP with Statitrac
N = 100% Ret - 7.5HP with Statitrac
P = 100% Ret - 10HP with Statitrac
R = 100% Ret - 15HP with Statitrac
T = 100% Ret - 20HP with Statitrac
U = 100% Ret - 3HP w/o Statitrac
V = 100% Ret - 5HP w/o Statitrac
W = 100% Ret - 7.5HP w/o Statitrac
X = 100% Ret - 10HP w/o Statitrac
Y = 100% Ret - 15HP w/o Statitrac
Z = 100% Ret - 20HP w/o Statitrac

Digit 12 — Supply Fan HP (Base Unit Digit 14)

1 = 3 HP FC
2 = 5 HP FC
3 = 7.5 HP FC
4 = 10 HP FC
5 = 15 HP FC
6 = 20 HP FC
7 = 25 HP FC
8 = 30 HP FC
9 = 40 HP FC
A = 50 HP FC
B = 3 HP DDP 80W
C = 3 HP DDP 120W
D = 5 HP DDP 80W
E = 5 HP DDP 120W
F = 7.5 HP DDP 80W
G = 7.5 HP DDP 120W
H = 10 HP DDP 80W (60-89t - 2x-5hp DDP mtrs)
J = 10 HP DDP 120W (60-89t - 2x-5hp DDP mtrs)
K = 15 HP DDP 80W (60-89t - 2x-7.5hp DDP mtrs)
L = 15 HP DDP 120W (60-89t - 2x-7.5hp DDP mtrs)
M = 20 HP DDP 80W (60-89t - 2x-10hp DDP mtrs)
N = 20 HP DDP 120W (60-89t - 2x-10hp DDP mtrs)
P = 25 HP DDP 80W
R = 25 HP DDP 120W
T = 30 HP DDP 80A (60-89t - 2x-15hp DDP mtrs)
U = 30 HP DDP 120W (60-89t - 2x-15hp DDP mtrs)
V = 40 HP DDP 80W (2x-20hp DDP mtrs)
W = 40 HP DDP 120W (2x-20hp DDP mtrs)
X = 50 HP DDP 80W (2x-25hp DDP mtrs)
Y = 50 HP DDP 120W (2x-25hp DDP mtrs)
Z = 30 HP DDP 100W15

Digit 13 — Supply Fan RPM (Base Unit Digit 15)

4 = 400 RPM
5 = 500 RPM
6 = 600 RPM
7 = 700 RPM
8 = 800 RPM
9 = 900 RPM
A = 1000 RPM
B = 1100 RPM
C = 1200 RPM
D = 1300 RPM
E = 1400 RPM
F = 1500 RPM
G = 1600 RPM
H = 1700 RPM
J = 1800 RPM
K = 1900 RPM
L = 2000 RPM
M = 2100 RPM
N = 2200 RPM
P = 2300 RPM
R = 2400 RPM

Digit 14 — Fresh Air Selection – (Base Unit Digit 16)

A = No Fresh Air
B = 0 to 25% Manual
D = 0 to 100% Economizer
E = 0 to 100% Econ with TRAQ and DCV
F = 0 to 100% Econ with DCV only design specials only

Digit 15 — System Control (Base Unit Digit 17)

1 = Constant Volume Control
2 = CV Discharge Temp Control (DTC)
3 = VAV Sup Air Temp Cntl with IGV
4 = Space Pres Cntl with Exh-Ret VFD w/o Bypass
5 = Space Pres Cntl with Exh-Ret VFD with Bypass
6 = VAV Sup Air Temp Cntl with Sup VFD w/o Bypass
7 = VAV Sup Air Temp Cntl with Sup VFD with Bypass
8 = Sup and Exh/Ret VFD w/o Bypass
9 = Sup and Exh/Ret VFD with Bypass
A = Single Zone - VAV - with VFD w/o BP
B = Single Zone - VAV - with VFD with BP
C = Single Zone - VAV - Sup and Exh/Ret with VFD w/o BP
D = Single Zone - VAV - Sup and Exh/Ret with VFD with BP

Digit 16 — Disconnect Switch Selection (Base Unit Digit 21)

0 = Unit Mounted Terminal Block
A = Unit Mounted Non- Fused Disc. Switch
B = Circuit Breaker with high fault SCCR

Digit 17 — Ambient Control (Base Unit Digit 19)

0 = Standard Ambient
A = 0 Degree Fahrenheit

Digit 18 — Hot Gas Bypass (Base Unit Digit 22)

0 = Without Hot Gas Bypass
B = With Hot Gas Bypass
C = Modulating Dehumidification (Hot Gas ReHeat - w/o HGBP)
D = Modulating Dehumidification (Hot Gas ReHeat - with HGBP)

Digit 19 — Fresh Air Control (Base Unit Digit 23)

0 = w/o Economizer
W = Econ Control with Dry Bulb
Z = Econ Control with Reference Enthalpy
C = Econ Control with Comparative Enthalpy

Digit 20 — Low Leak Fresh Air Dampers (Base Unit Digit 24)

0 = Std Fresh Air Dmpr or No Damper
E = Low leak Fresh Air Damper
U = Ultra Low Leak Damper

Digit 21 — Coil Capacity (Base Unit Digit 26)

0 = Standard Capacity Evap Coil
G = High capacity evap coil
H = High Cap Evap Coil and High Eff Cond Coil
V = Variable Speed Compressors (40-75t only)

Digit 22 — Condenser Coil Selection (Base Unit Digit 27)

0 = Standard Aluminum Condenser Coil
H = Copper Fin Cond Coil
J = Corrosion Protected Condenser Coil
A = Evap Condenser
B = Evap Condenser with Sump Heater
C = Evap Cond with H_2O Treatment
D = Evap Cond with H_2O Treat and Sump Ht
E = Evap Cond with Conductivity Controller
F = Evap Cond with Conductivity Controller and Sump Ht

Digit 23 — Generic BAS Module (Base Unit Digit 28)

0 = w/o GBAS Option-Cover Plate low volt barrier
K = 0 to 5 Vdc Generic BAS Module
B = 0 to 10 Vdc Generic BAS Module
R = Rapid Restart

Digit 24 — Supply/Exhaust/ Return Motors (Base Unit Digit 29)

0 = Std Eff Mtrs (Sup and Exh/Ret)
L = High Eff Mtrs (Sup and Exh/Ret)
A = EISA Std Mtrs with Shaft Grounding Ring
B = EISA Hi Eff Mtrs with Shaft Grounding Ring (N/A)

Digit 25 — Access Doors (Base Unit Digit 33)

0 = Standard Panels
T = Access Doors
0 = Standard Panels (DSEQ = A-K)
T = Access Doors (DSEQ = A-K)
U = IRU with Galv - with Std Panels
W = IRU with Galv - with Access Doors
Y = IRU with SST - with Std Panels
Z = IRU with SST - with Access Doors
1 = Double wall
2 = Access Doors with Double Wall
3 = IRU with Glav - with Double Wall
4 = IRU with Glav - with Access Doors with Double Wall
5 = IRU with SST - with Double Wall
6 = IRU with SST - with Access Doors with Double Wall

Digit 26 — Re-Heat Coil Option (Base Unit Digit 39)

0 = Standard Unit
A = 2 Circuit Refrig. Reheat Coil
B = Multi-Circuit Refrig. Reheat Coil
C = Hot Water Reheat Coil
D = Air Cooled Protocol RHT

Digit 27 — Replacement Compressors

0 = No Compressors
1 = Replace All Compressors

Digit 28 — Replacement Condenser Fan

0 = No Condenser Fan
1 = Replace Condenser Fan Blade and Motor

Digit 29 — Replacement Condenser Fan Guard

0 = No Fan Guard
1 = Fan Guard QTY = 1
2 = Fan Guard QTY = 2
3 = Fan Guard QTY = 3
4 = Fan Guard QTY = 4
5 = Fan Guard QTY = 5
6 = Fan Guard QTY = 6

Digit 30 — Replacement Condenser Coil

0 = No Condenser Coil
1 = Replace Cond Coil 1 Circuit
2 = Replace Cond Coil All Circuits

Digit 31 — Replacement TXV

0 = No TXV
1 = Replace TXV

Digit 32 — Replacement Gas Heat Exchanger

0 = No Gas Heat Exchanger
1 = Replace Gas Heat Exchanger

Digit 33 — Replacement Gas Heat Motor

0 = No Gas Heat Motor
1 = Replace Gas Heat Motor

Digit 34 — Replacement Gas Heat Switch Kit

0 = No Gas Heat Switch Kit
1 = Replace GH Switch Kit: Temp Limit and Elec Heater

Digit 35 — Replacement Econ Damper

0 = No Econ Damper
1 = Replace Econ Damper
2 = Replace Econ Actuator
3 = Replace Econ Damper with Actuator

Digit 36 — Replacement Econ/Exh Rod and Bearing

0 = No Econ/Exh Rod and Bearing
1 = Replace Econ/Exh Rod and Bearing

Digit 37 — Replacement Econ Sensors

0 = No Econ Sensors
1 = Replace Econ Sensors

Digit 38 — Replacement Supply Fan Motor

0 = No Supply Fan Motor
1 = Replace Supply Fan Motor

Digit 39 — Replacement Exhaust/Return Fan Motor

0 = No Exhaust/return Fan Motor
1 = Replace Exhaust/return Fan Motor

Digit 40 — Replacement Bearings

0 = No Fan Bearing
1 = Replace Fan Bearing

Digit 41 — Replacement Low Ambient Damper

0 = No Low Ambient Damper
1 = Replace Low Ambient Damper with Actuator
2 = Replace Actuator only

Digit 42 — Replacement Exhaust Damper

0 = No Exhaust Damper
1 = Replace Exhaust Damper
2 = Replace Exhaust Actuator Kit
3 = Replace Exhaust Damper with Actuator Kit

Digit 43 — Replacement Fresh Air Damper

0 = No Fresh Air Damper
1 = Replace Fresh Air Damper

Digit 44 — Replacement Air Pressure Sensor

0 = No Air Pressure Sensor
1 = Replace Air Pressure Sensor

Digit 45 — Replacement Hail Guard

0 = No Hail Guard
1 = Replace Hail Guard

Digit 46 — Replacement VFD

0 = No VFD
1 = Replace Fan Drive
2 = Replace Compressor Drive (VS compressor)
3 = Replace Fan Drive and Compressor Drive (VS compressor)

Digit 47 — Replacement Latch Kit

0 = None
1 = Latch Kit Qty = 1
2 = Latch Kit Qty = 2
3 = Latch Kit Qty = 3
4 = Latch Kit Qty = 4
5 = Latch Kit Qty = 5
6 = Latch Kit Qty = 6
7 = Latch Kit Qty = 7
8 = Latch Kit Qty = 8
9 = Latch Kit Qty = 9
A = Latch Kit Qty = 10
B = Latch Kit Qty = 11
C = Latch Kit Qty = 12
D = Latch Kit Qty = 13
E = Latch Kit Qty = 14
F = Latch Kit Qty = 15
G = Latch Kit Qty = 16
H = Latch Kit Qty = 17
J = Latch Kit Qty = 18
K = Latch Kit Qty = 19
L = Latch Kit Qty = 20
M = Latch Kit Qty = 21

Digit 47 — Replacement Latch Kit (continued)

N = Latch Kit Qty = 22
P = Latch Kit Qty = 23
R = Latch Kit Qty = 24
T = Latch Kit Qty = 25
U = Latch Kit Qty = 26
V = Latch Kit Qty = 27
W = Latch Kit Qty = 28
X = Latch Kit Qty = 29
Y = Latch Kit Qty = 30

Digit 48 — CMSA Connectivity Tool

0 = No CMSA connectivity tool
1 = Tracer SC+ gateway kit
2 = BCI-I kit
3 = Tracer SC+ gateway kit with BCI-I kit

S*HL 90 to 130 Ton

Digit 1— Product Refresh

R = Product Refresh

Digit 2, 3, 4, 5 — Unit Function (Base Unit Digit 1 to 4)

SEHL = Cooling/Electric Heat
SFHL = Cooling/Gas Heat
SLHL = Cooling/Hot Water Heat
SXHL = Cool Only/Extended Casing

Digit 6, 7, 8 — Nominal Capacity (Base Unit Digit 5 to 7)

C90 = 90 Tons
D11 = 105 Tons
D12 = 115 Tons
D13 = 130 Tons

Digit 9 — Power Supply (Base Unit Digit 8)

4 = 460/60/3
5 = 575/60/3

Digit 10— Gas Heat (Base Unit Digit 9)

0 = No Gas Heat
H = Gas Heat 2 Stage
P = Gas Heat Full Modulating
T = High Gas Heat Ultra Modulating

Digit 11 — OLD Unit Design Sequence (Base Unit Digit 10)

A = Design Sequence

Digit 12 — Exhaust Option (Base Unit Digit 11)

0 = None
7 = 100% - 15 HP with Statitrac
8 = 100% - 20 HP with Statitrac
9 = 100% - 25 HP with Statitrac
H = 100% - 30 HP with Statitrac
J = 100% - 40 HP with Statitrac

Digit 13 — Supply Fan HP (Base Unit Digit 14)

C = 30 Hp (2 to15 Hp Motors) Supply Motor
D = 40 Hp (2 to 20 Hp Motors) Supply Motor
E = 50 Hp (2 to 25 Hp Motors) Supply Motor
F = 60 Hp (2 to 30 Hp Motors) Supply Motor
G = 80 Hp (2 to 40 Hp Motors) Supply Motor

Digit 14 — Fresh Air Selection – (Base Unit Digit 16)

D = 0 to 100% Economizer
E = 0 to 100% Econ with TRAQ and DCV
F = 0to 100% Econ with DCV only design specials only

Digit 15 — System Control (Base Unit Digit 17)

6 = VAV Supply Air Temp Control with Supply VFD w/o Bypass
7 = VAV Supply Air Temp Control with Supply VFD with Bypass
8 = Supply and Exhaust VFD w/o Bypass
9 = Supply and Exhaust VFD with Bypass
A = Single Zone - VAV - with VFD - w/o BP
B = Single Zone - VAV - with VFD - with BP
C = Single Zone - VAV - Sup and Exh Fan with VFD w/o BP
D = Single Zone - VAV - Sup and Exh Fan with VFD with BP

Digit 16 — Ambient Control (Base Unit Digit 19)

0 = Standard Ambient
1 = 0 Degree Fahrenheit

Digit 17 — Disconnect Switch Selection (Base Unit Digit 21)

0 = Unit Mounted Terminal Block
A = Unit Mounted Non- Fused Disc. Switch
B = Circuit Breaker with high fault SCCR
D = Unit Mounted Non-Fused Disc. Switch with Convenience Outlet
E = Circuit Breaker with high fault SCCR with Convenience Outlet

Digit 18 — Hot Gas Bypass (Base Unit Digit 22)

0 = Without Hot Gas Bypass
B = With Hot Gas Bypass

Digit 19 — Fresh Air Control (Base Unit Digit 23)

W = Econ Control with Dry Bulb
Z = Econ Control with Reference Enthalpy
C = Econ Control with Comparative Enthalpy
D = Econ with Differential Dry Bulb

Digit 20 — Low Leak Fresh Air Dampers (Base Unit Digit 24)

0 = Std Fresh Air Dmpr or No Damper
E = Low leak Fresh Air Damper
U = Ultra Low Leak Damper

Digit 21 — Coil Capacity (Base Unit Digit 26)

0 = Standard Capacity Evap Coil
G = High capacity evap coil
H = High Cap Evap Coil and High Eff Cond Coil

Digit 22 — Condenser Coil Selection (Base Unit Digit 27)

0 = Standard Aluminum Condenser Coil
J = Corrosion Protected Condenser Coil

Digit 23 — Rapid Restart (Base Unit Digit 28)

0 = Non Rapid Restart
R = Rapid Restart

Digit 24 — Supply and Exhaust Motors (Base Unit Digit 29)

0 = Std Eff Mtrs (Sup and Exh)
L = High Eff Mtrs (Sup and Exh) (N/A)
A = EISA Std Mtrs with Shaft Grounding Ring
B = EISA Hi Eff Mtrs with Shaft Grounding Ring (N/A)

Digit 25 — Access Doors (Base Unit Digit 33)

0 = Standard Panels
T = Access Doors
U = IRU with Galv - with Std Panels
W = IRU with Galv - with Access Doors
Y = IRU with SST - with Std Panels
Z = IRU with SST - with Access Doors
1 = Double wall
2 = Access Doors with Double Wall
3 = IRU with Galv - with Double Wall
4 = IRU with Galv - with Access Doors with Double Wall
5 = IRU with SST - with Double Wall
6 = IRU with SST - with Access Doors with Double Wall

Digit 26 — Replacement Compressors

0 = No Compressors
1 = Replace All Compressors

Digit 27 — Replacement Condenser Fan

0 = No Condenser Fan
1 = Replace Condenser Fan Blade and Motor

Digit 28 — Replacement Condenser Fan Guard

0 = No Fan Guard
1 = Fan Guard QTY = 1
2 = Fan Guard QTY = 2
3 = Fan Guard QTY = 3
4 = Fan Guard QTY = 4
5 = Fan Guard QTY = 5
6 = Fan Guard QTY = 6
7 = Fan Guard QTY = 7
8 = Fan Guard QTY = 8
9 = Fan Guard QTY = 9
A = Fan Guard QTY = 10
B = Fan Guard QTY = 11
C = Fan Guard QTY = 12

Digit 29 — Replacement Condenser Coil

0 = No Condenser Coil
1 = Replace Cond Coil 1 Circuit
2 = Replace Cond Coil All Circuits

Digit 30 — Replacement TXV

0 = No TXV
1 = Replace TXV

Digit 31 — Replacement Gas Heat Exchanger

0 = No Gas Heat Exchanger
1 = Replace Gas Heat Exchanger

Digit 32 — Replacement Gas Heat Motor

0 = No Gas Heat Motor
1 = Replace Gas Heat Motor

Digit 33 — Replacement Gas Heat Switch Kit

0 = No Gas Heat Switch Kit
1 = Replace GH Switch Kit: Temp Limit and Elec Heater

Digit 34 — Replacement Econ Damper

0 = No Econ Damper
1 = Replace Econ Damper
2 = Replace Econ Actuator
3 = Replace Econ Damper with Actuator

Digit 35 — Replacement Econ/Exh Rod and Bearing

0 = No Econ/Exh Rod and Bearing
1 = Replace Econ/Exh Rod and Bearing

Digit 36 — Replacement Econ Sensors

0 = No Econ Sensors
1 = Replace Econ Sensors

Digit 37 — Replacement Supply Fan Motor

0 = No Supply Fan Motor
1 = Replace Supply Fan Motor

Digit 38 — Replacement Exhaust Fan Motor

0 = No Exhaust Fan Motor
1 = Replace Exhaust Fan Motor

Digit 39 — Replacement Bearings

0 = No Fan Bearing
1 = Replace Fan Bearing

Digit 40 — Replacement Exhaust Damper

0 = No Exhaust Damper
1 = Replace Exhaust Damper
2 = Replace Exhaust Actuator Kit
3 = Replace Exhaust Damper with Actuator Kit

Digit 41 — Replacement Air Pressure Sensor

0 = No Air Pressure Sensor
1 = Replace Air Pressure Sensor

Digit 42 — Replacement Hail Guard

0 = No Hail Guard
1 = Replace Hail Guard

Digit 43 — Replacement VFD

0 = No VFD
1 = Replace Fan Drive

Digit 44— Replacement Latch Kit

0 = None
1 = Latch Kit Qty = 1
2 = Latch Kit Qty = 2
3 = Latch Kit Qty = 3
4 = Latch Kit Qty = 4
5 = Latch Kit Qty = 5
6 = Latch Kit Qty = 6
7 = Latch Kit Qty = 7
8 = Latch Kit Qty = 8
9 = Latch Kit Qty = 9
A = Latch Kit Qty = 10
B = Latch Kit Qty = 11
C = Latch Kit Qty = 12
D = Latch Kit Qty = 13
E = Latch Kit Qty = 14
F = Latch Kit Qty = 15
G = Latch Kit Qty = 16
H = Latch Kit Qty = 17
J= Latch Kit Qty = 18
K= Latch Kit Qty = 19
L = Latch Kit Qty = 20
M = Latch Kit Qty = 21
N = Latch Kit Qty = 22
P = Latch Kit Qty = 23
R = Latch Kit Qty = 24
T = Latch Kit Qty = 25
U = Latch Kit Qty = 26
V = Latch Kit Qty = 27
W = Latch Kit Qty = 28
X = Latch Kit Qty = 29
Y= Latch Kit Qty = 30

Pre-Installation

Nameplate

Two Refresh nameplate stickers ship in a separate envelope under part number 018503790100. Remove each sticker from the backing and place on the unit as follows:

1. Attach one beneath the existing unit nameplate.
2. Attach the second sticker inside the control panel door.

Parts

Use the following tables and figures to identify the items included in the Refresh package. Required parts will vary based on the selected options and the specific unit being refreshed. See Refresh model number on the nameplate sticker to verify selected options.

Standard Parts

Confirm the following standard parts have been provided:

- Compressor contactors and auxiliary switches
- Supply fan contactors and auxiliary switches
- Condenser fan contactors
- Supply fan proving switch, and phase monitor
- Gasket material, decorative brass refresh nameplate, and screws for access doors and panels
- Outside air static pressure sensor
  - Outdoor air pressure static sensor
  - Air pressure static sensor bracket
  - Tube

The following parts are standard, but are dependent on the existing unit options:

- Exhaust fan contactors and auxiliary switches
- Exhaust fan proving switch kit
- Gas ignitor and combustion fan proving switch
- Damper tip seal
- Thermistor sensors on condenser coils
- Control panel handle and latch

Optional Parts

The following optional parts may be provided:

- Supply fan motor and bearing
  - Supply fan motor
  - Bearing
- Exhaust fan motor and bearing
  - Exhaust fan motor
  - Bearing
- Return fan motor
- Condenser fan
  - Condenser fan blades
  - Condenser fan motors
  - Slinger
  - Fan hub seals
  - Wire harness
  - Fan guards
- Compressor and the related parts
  - Scroll compressors
  - Scroll compressor band heaters
  - Isolators and sleeves
  - Gasket for oil equalizing tube
  - Solenoid coil (E-flex compressor)
  - Thermostat (90 to 130 tons)
  - High/low pressure cutouts
- Expansion valves and filter driers
- Exhaust damper, actuator, and linkage
  - Exhaust damper
  - Exhaust actuator
  - Linkages
- Economizer damper, actuator, linkages, and sensors
  - Economizer damper
  - Economizer actuator
  - Linkages
  - Sensors
- Fresh air damper
- Condenser assembly
  - Condenser coils
  - Low ambient damper (20 to 89 ton units)
  - Low ambient damper actuator (20 to 89 ton units)
  - Fan guards
- Door latch kit installation
  - Replacement knob
  - Replacement bracket
  - Replacement latch
  - Self-drilling screws
- Gas heat exchanger and the related parts
  - Gas heat exchangers
  - Gas heat motor
  - Limit control
  - Electric heater
- Air pressure sensor
  - Transducer
  - Sensor shield

  - Connector
  - Washer
  - Gasket
  - Tube
- Hail guard
- Drive and keypad
- CMSA connectivity tool

Design Special Parts

Some design special options are available. The specific part numbers are unique for each order.

Note: *These options will extend the lead time for the entire order.*

Examples of common design specials include:

- Gas heat valves and pressure regulators.
- Supply fan VFD to replace inlet guide vanes.
- Inverter duty supply fan motor.
- Evaporator coil.
- Fan pulleys and belts.

  Note: *Replacement of belts and fan pulley is highly recommended.*

Additional Service Procedures

Some Refresh projects may include additional procedures such as:

- Supply fan and housing cleaning.
- Drain pan repair and cleaning.
- Unit insulation repairing and/or replacement.

Installation

Refresh Standard Parts

Standard refresh parts include:

- Contactors (compressor, supply fan, condenser fan, and exhaust/return fan)
- Proving switches (supply fan, exhaust fan)
- Phase monitor
- Gasket material
- Decorative brass refresh nameplate
- Outside air static pressure sensor
- Gas igniter with fan proving switch
- Damper tip seal
- Condenser-coil thermistor sensor
- Control-panel handle and latch

Contactors and Auxiliary Switches

Table 2. Contactor kit

Figure Callout	Item
1	Compressor Contactor
2	Compressor Auxiliary Switches
3	Supply Fan Contactor
4	Supply Fan Auxiliary Switches
5	Condenser Fan Contactor
7	Exhaust/return Fan Contactor
8	Exhaust/return Fan Auxiliary Switches

Figure 2. Contactor in control box S*HF 20 to 75 Ton

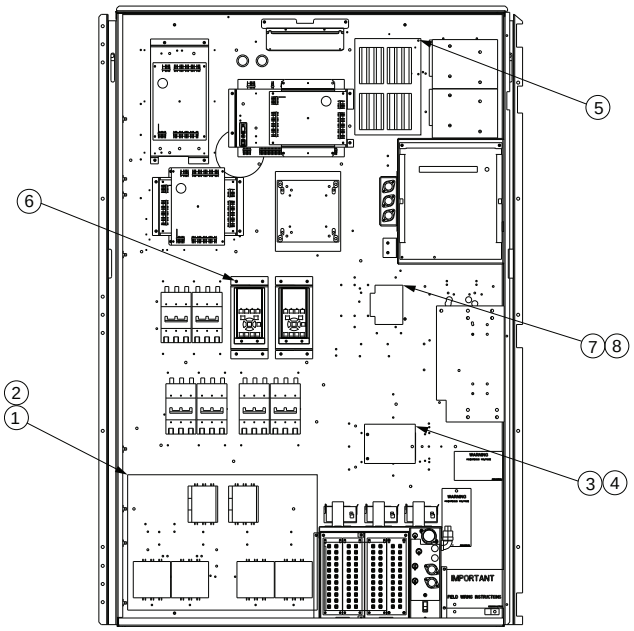


Figure 3. Contactor in control box S*HG 90 to 130 Ton

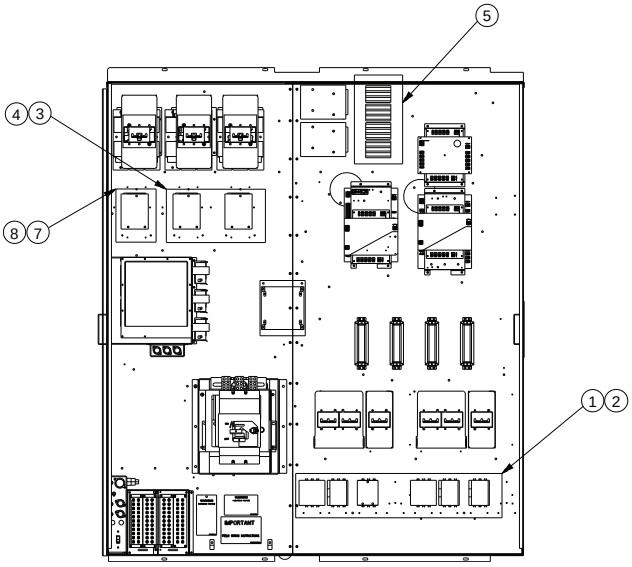


Figure 4. Contactor in control box S*HL 20 to 89 ton

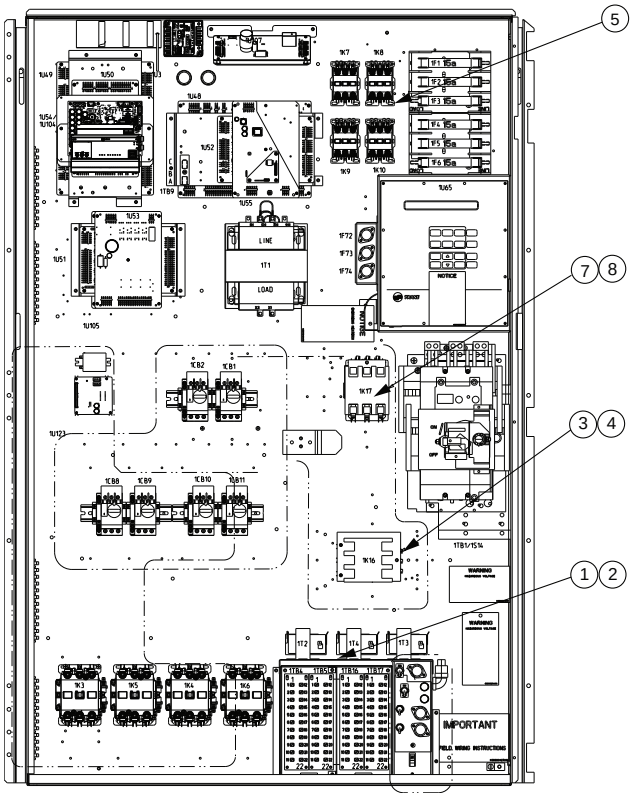


Figure 5. Contactor in control box S*HL 20 to 89 ton

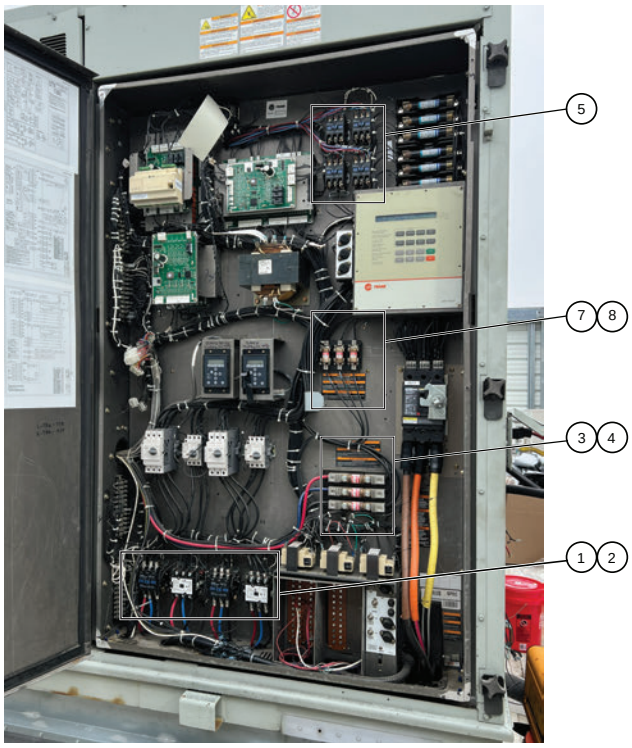


Figure 6. Contactor in control box S*HL 90 to 130 ton

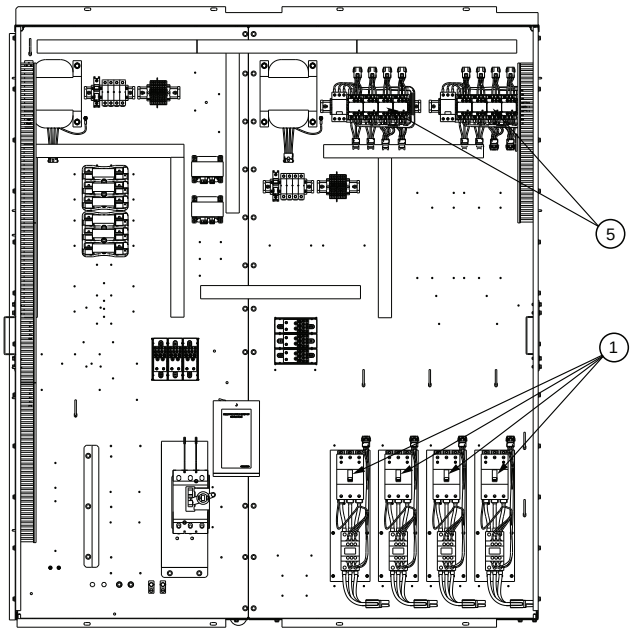
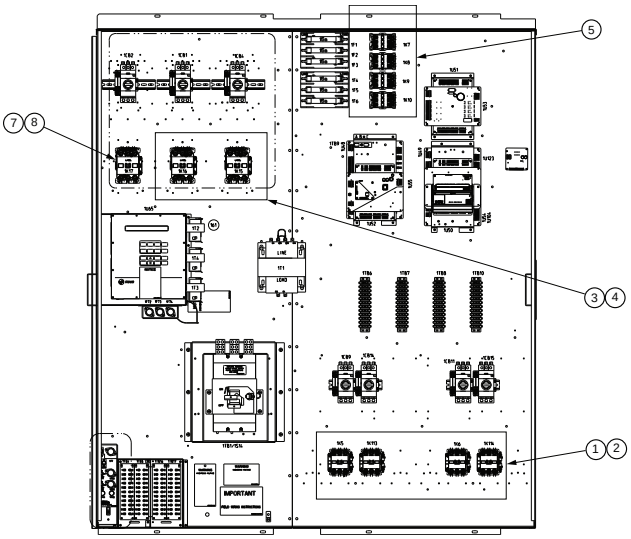


Figure 7. Contactor in control box S*HK 90 to 130 Ton



Supply Fan Proving Switch and Phase Monitor

Table 3. Supply fan-proving switch and phase monitor kit

Figure Callout	Item
1	Air Pressure Controller
2	Tube
3	Phase Monitor

Note: Phase monitor is in control box.

Figure 8. Supply fan-proving switch and phase monitor kit

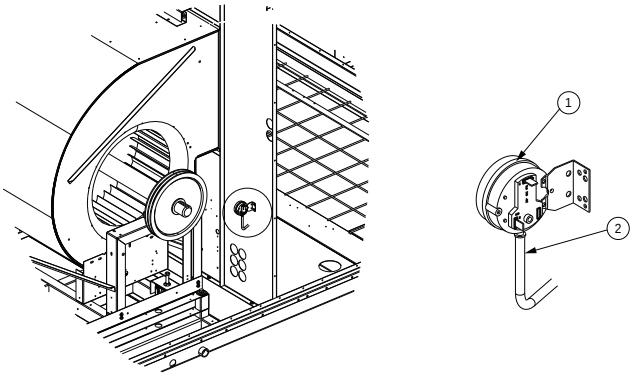


Figure 9. Supply fan-proving switch and phase monitor kit locations

Gasket Material and Screws for Access Doors and Panels

Table 4. Gasket and screws for access doors and panels

Figure Callout	Item
1	Gasket (roll)
2	Screws

Notes:

1. The gaskets and screws in this kit are intended for use on all unit access doors. For stationary panels, gaskets and screws are not typically replaced.
2. Two screw sizes are provided: SCR01557 - 1/4-14 X 0.625 and SCR02523 - 5/16 X 3/4
3. Decorative Brass Refresh Nameplate

Figure 10. Gasket and screws for access doors and panels

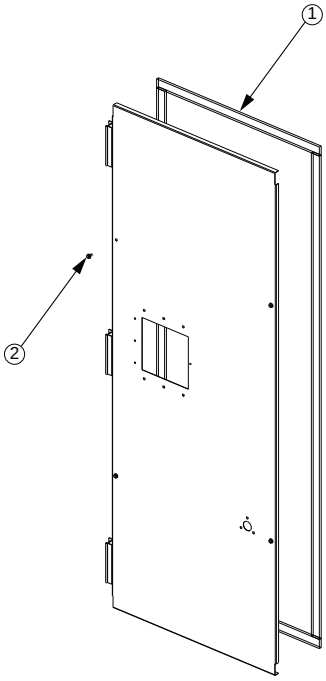


Figure 11. Decorative brass refresh nameplate

Figure 12. Gasket and screws for access doors and panels location

Outside Air Static Pressure Sensor

Table 5. Outside air static pressure sensor kit

Figure Callout	Item
1	Outdoor Air Static Pressure Sensor
2	Outdoor Air Static Pressure Sensor Bracket
3	Tube

Figure 13. Outside air static pressure sensor kit

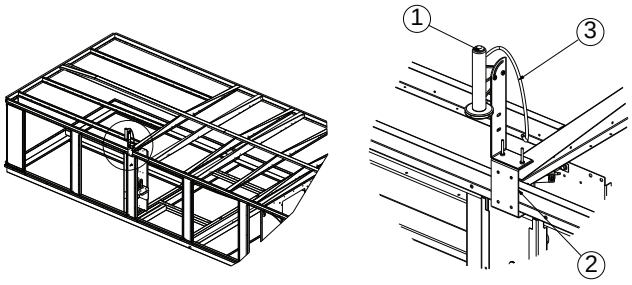


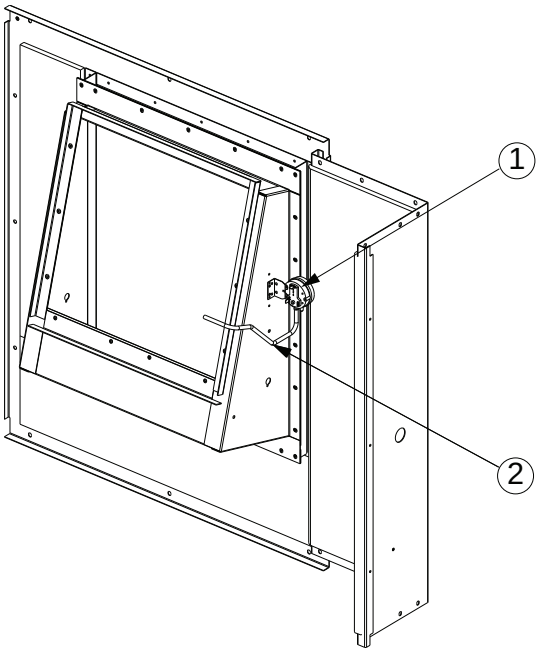
Figure 14. Outside air static pressure sensor kit location

Exhaust Fan Proving Switch

Table 6. Exhaust fan-proving switch kit

Figure Callout	Item
1	Air Pressure Controller Switch
2	Tube

Figure 15. Exhaust fan-proving switch kit



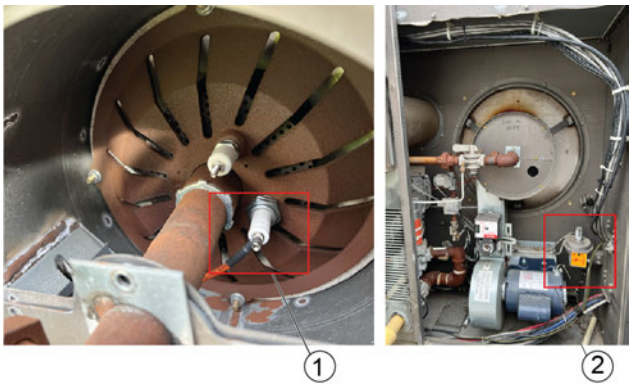
Gas Ignitor and Combustion Fan Proving Switch

Table 7. Gas igniter and combustion fan-proving switch

Figure Callout	Item
1	Ignitor
2	Combustion Fan Proving Switch

Note: Replacement part locations are the same as the original unit.

Figure 16. Gas igniter and combustion fan-proving switch locations



Damper Tip Seal

Table 8. Damper tip seal

Figure Callout	Item
1	Damper Tip Seal

Figure 17. Damper tip seal

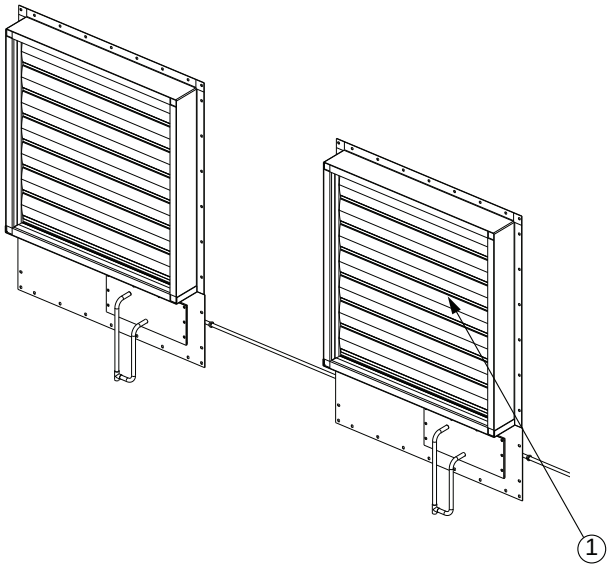


Figure 18. Damper tip seal - new and old

Thermistor Sensors on Condenser Coils

Table 9. Thermistor sensor on condenser coils

Figure Callout	Item
1	Thermistor sensor

Note: S*HL 90 to 130 ton models have no thermistor sensor on condenser coil. Replacement is not required.

Figure 19. Thermistor sensor on condenser coils (fin-tube coil)

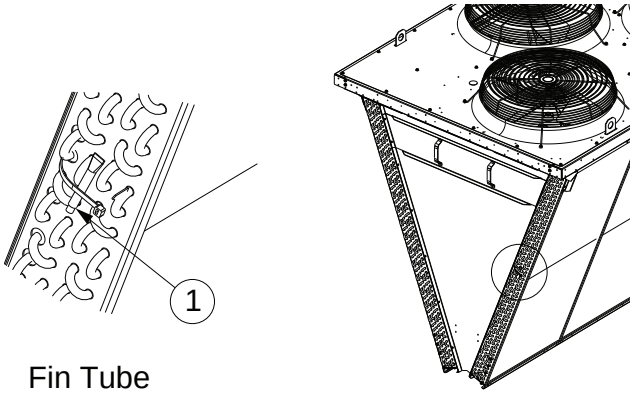


Figure 20. Thermistor sensor on condenser coils (MCHE coil)

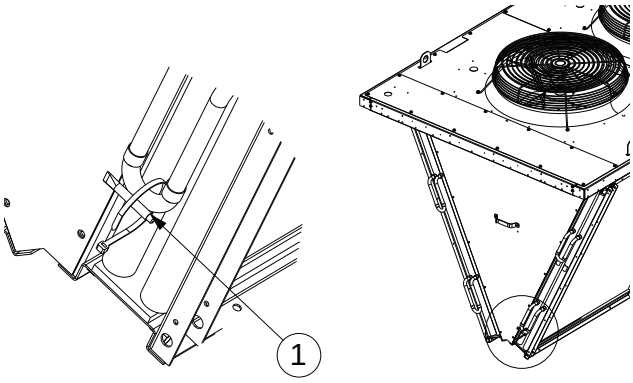


Figure 21. Thermistor sensor on condenser coils (MCHE coil) location

Control Panel Handle and Latch

Table 10. Handle and latch

Figure Callout	Item
1	Handle
2	Control Panel Latch

Note: S*HL 90 to 130 ton models use a metallic handle. Replacement is not required.

Figure 22. Control panel handle and latch

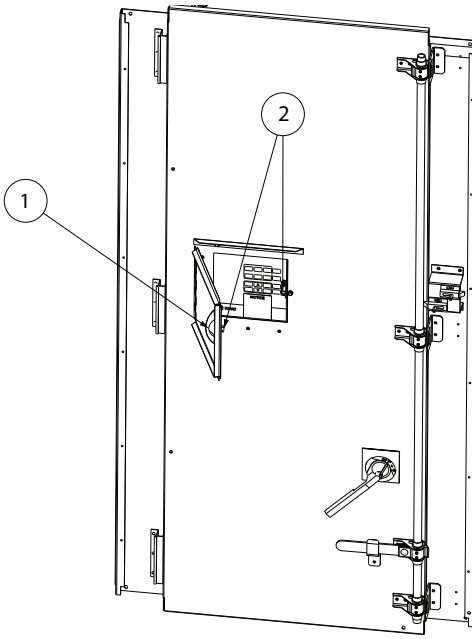


Figure 23. Control panel handle and latch location

Optional Parts

Option refresh parts include:

- Supply fan motor and bearing
- Exhaust fan motor and bearing
- Return fan motor
- Condenser fan
- Compressors
- Expansion valve and filter drier
- Exhaust damper
- Economizer damper
- Actuator and linkage
- Fresh air damper
- Condenser coil
- Low ambient damper
- Low ambient damper actuator

- Fan guard
- Door latch
- Gas heat exchanger
- Air pressure sensor
- Hail guard
- Drive and keypad
- CMSA connectivity tool

Supply Fan Motor and Bearing

Table 11. Supply fan motor and bearing

Figure Callout	Item
1	Supply Fan Motor (FC)
2	Supply Fan Motor (DDP)
3	Bearing

Notes:
1. The unit has either FC or DDP supply fan.
2. DDP fan does not have a bearing.

Figure 24. Supply fan (FC or DDP) motor and bearings

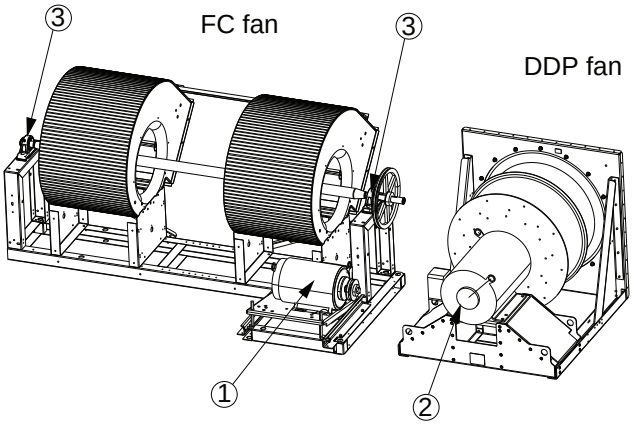


Figure 25. Supply fan (FC) motor and bearings location

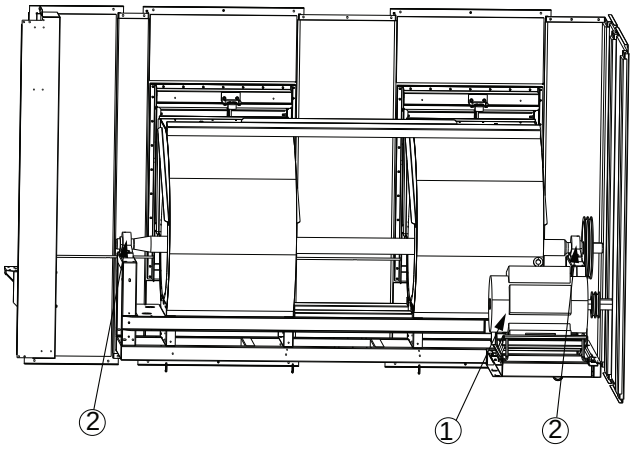
Exhaust Fan Motor and Bearing

Table 12. Exhaust fan motor and bearing

Figure Callout	Item
1	Exhaust Fan Motor
2	Bearing

Note: The unit has either an exhaust fan or a return fan.

Figure 26. Exhaust fan motor and bearing

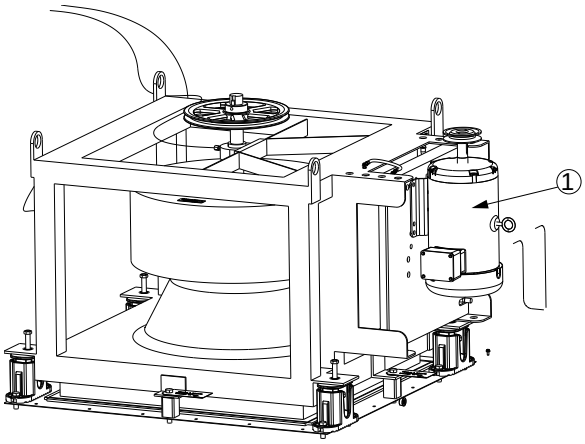


Return Fan Motor

Table 13. Return fan motor

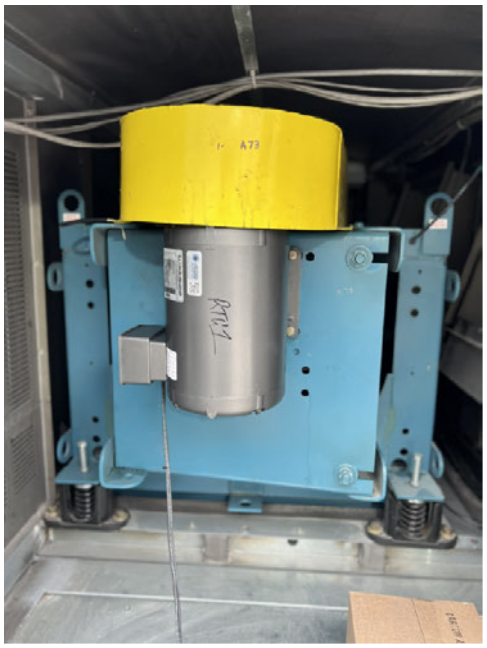
Figure Callout	Item
1	Return Fan Motor

Figure 27. Return fan motor



Note: *The return fan does not have a bearing.*

Figure 28. Return fan motor location



Condenser Fan

Table 14. Condenser fan kit

Figure Callout	Individual Parts and Kits	Item
5	Condenser fan kit (not Symbio)	OD Fan Blade
6		OD Fan Motor
7		Slinger
8		Seal
9		Wire
10	Condenser fan motor (Symbio)	OD Fan Motor (with wire)

Table 14. Condenser fan kit (continued)

Figure Callout	Individual Parts and Kits	Item
11	Condenser fan kit (Symbio)	OD Fan Blade
12		Seal

Figure 29. Condenser fan blade motor seal and wire

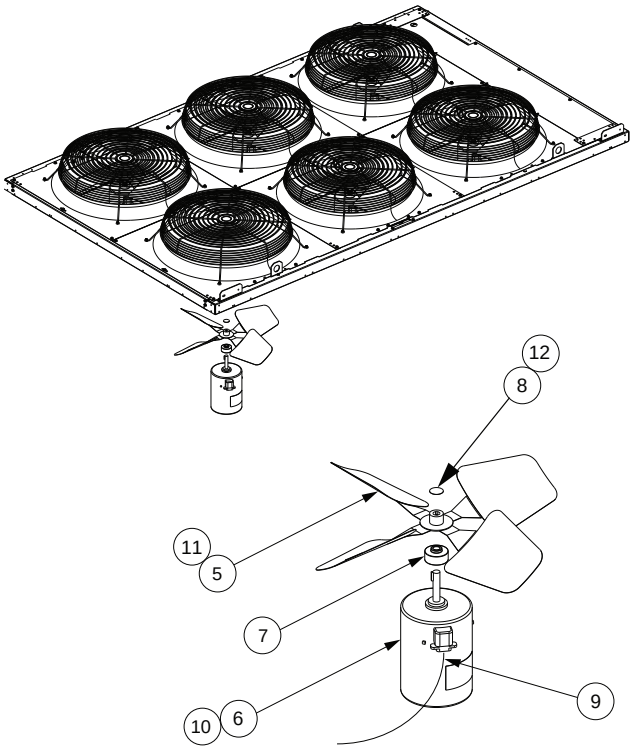
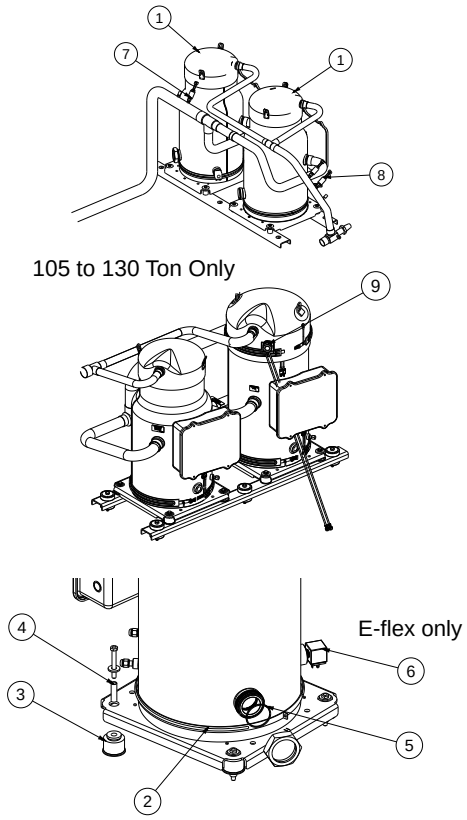


Figure 30. Condenser fan blade, motor, seal, and wire parts

Figure 31. Compressor and related parts



Compressor and Related Parts

Table 15. Compressor and related parts

Figure Callout	Individual Parts and Kits	Item
1	Compressor	Compressor
2	Crankcase Heater	Crankcase Heater
3	Compressor accessory kit	Isolator
4		Sleeve
5[a]		Gasket
6[b]		Solenoid Coil (E-flex compressor only)
7		Low Pressure Cutout
8		High Pressure Cutout
9[c]	Sensor	Thermostat Sensor (105 to 130 ton only)

(a) Gasket is included in the compressor kit. For 75 ton units, the gasket for the manifolded E-flex compressor is included in the compressor accessory kit.
(b) E-flex compressors only.
(c) Only required for 105 to 130 ton models. Mounted on the upper crankcase heater.

Figure 32. Compressor and related parts

Expansion Valves and Filter Driers

Table 16. Expansion valves and filter driers

Figure Callout	Item
1	Expansion valves
2	Filter Drier

Note: TXVs and filter drier(s) locations are the same as the original unit.

Figure 33. Expansion valves and filter driers

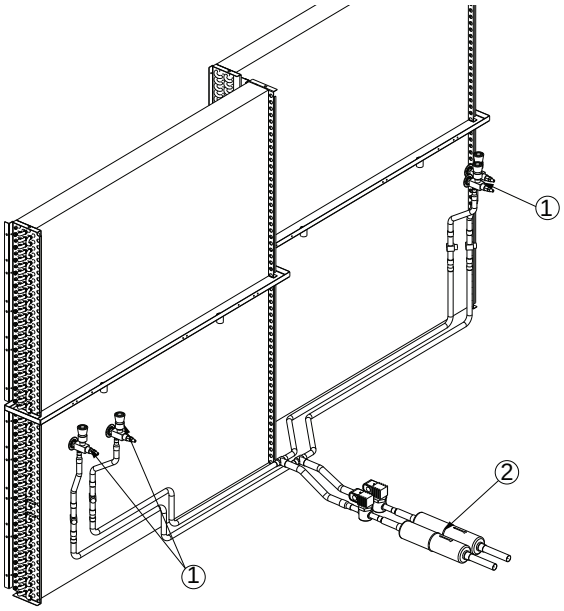


Figure 34. Expansion valves and filter driers locations

Exhaust Damper, Actuator, and Linkage

Table 17. Exhaust damper, actuator, and linkages

Figure Callout	Item
1	Exhaust Damper
2	Actuator
3	Linkages

Notes:

1. See Figure 35, p. 32 for "Exhaust Damper, Actuator, and Linkage Installation," p. 33.
2. See Figure 37, p. 33 for old style actuator replacement and installation.
3. See Figure 38, p. 33 for various styles of rod and bearing.

Figure 35. Exhaust damper, actuator, and linkages

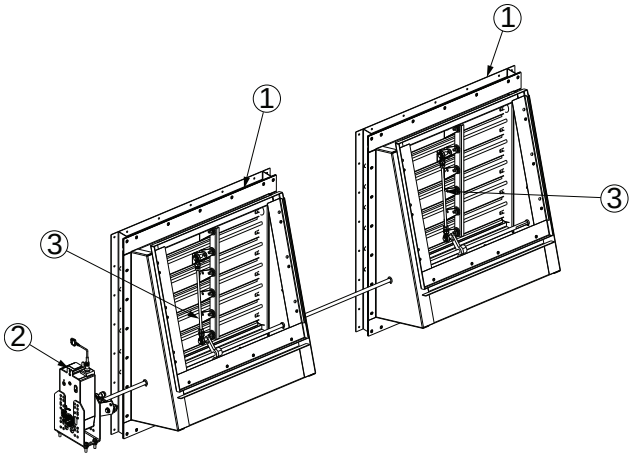


Figure 36. Exhaust damper, actuator, and linkages

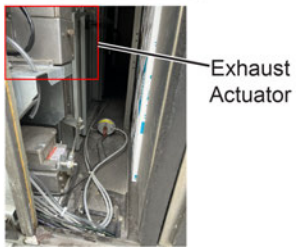
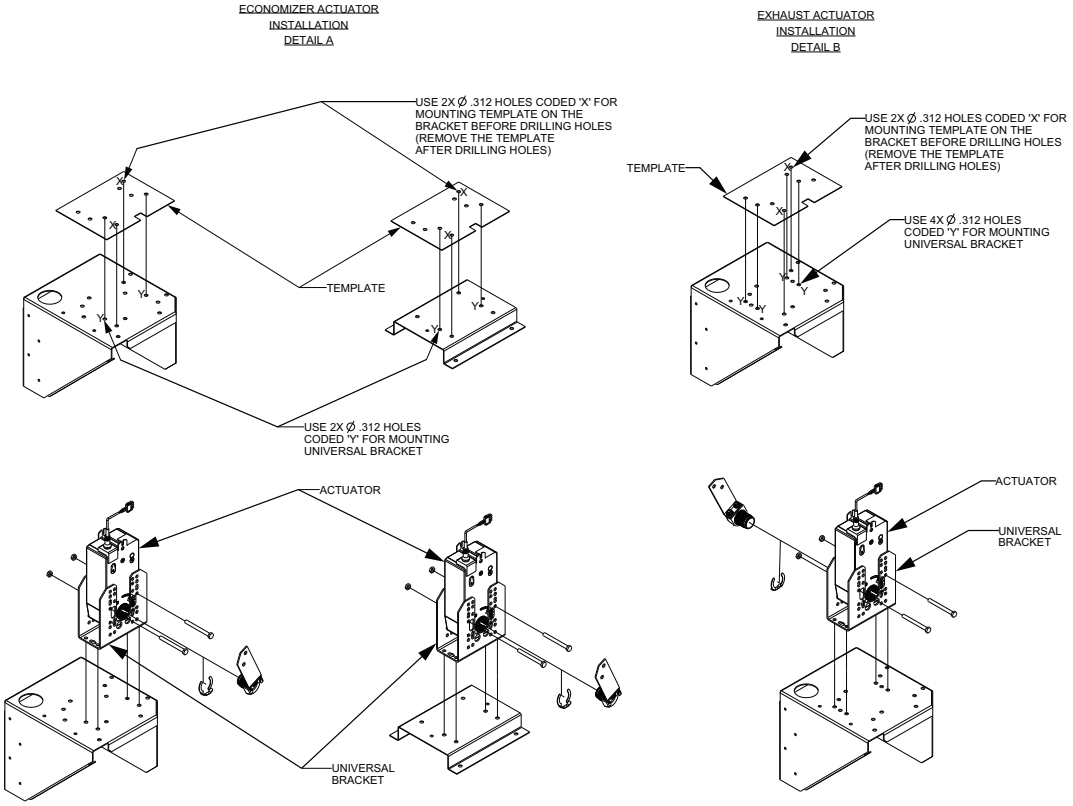


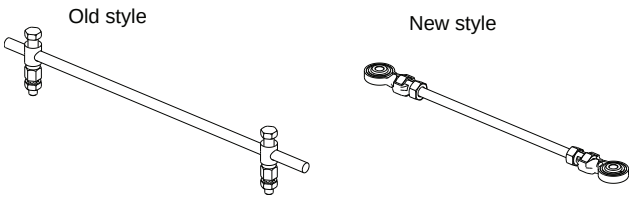
Figure 37. Old style actuator replacement



Exhaust Damper, Actuator, and Linkage Installation

1. Disconnect control rod from lever and remove the old damper actuator. Reserve bolts, nuts, and spacer.
2. Drill holes for new actuator bracket as follows:
   a. Locate and drill holes for mounting of new actuator bracket, shown in Figure 37, p. 33, detail A and detail B.
   b. Align ϕ 0.312 hole to the bracket hole.
   c. Mount the provided template on the bracket with screws before drilling holes.
   d. Drill four ϕ 0.312 hole on the bracket with template as guide.
   e. Remove the template after drilling holes.
3. Install the universal bracket on the mounting bracket using reserved bolts and nuts.
4. Install new actuator on the universal bracket using two screws and self-locking nuts supplied with the kit.
5. Add crank arm to the new actuator.
6. Reinstall control rod on crank arm and damper using reserve bolts, nuts, and spacer.
7. Add clip to crank arm lever once the control rod is adjusted and assembled.

Figure 38. Linkages



Linkage model usage:

- Old style:
  - S_HF design sequence T-Z,1, 2
  - S_HG design sequence N-V

  Note: *Replace the bearings for old style linkage. There is no replacement for rod.*
- New style:
  - S_HF design sequence 3-9, A-H
  - S_HG design sequence W-Z, 1-8
  - S_HL all design sequences
  - S_HK all design sequences

Economizer Damper, Actuator, Linkages, and Sensors

Table 18. Economizer damper, actuator, linkages, and sensors

Figure Callout	Item
1	Economizer Damper
2	Actuator
3	Linkages
4	Thermistor Sensor
5	Temperature Sensor

Notes:
1. See Figure 35, p. 32 for "Exhaust Damper, Actuator, and Linkage Installation," p. 33.
2. See Figure 37, p. 33 for old style actuator replacement and installation.
3. See Figure 38, p. 33 for various styles of rod and bearing.

Figure 39. Economizer damper, actuator, linkages, and sensors

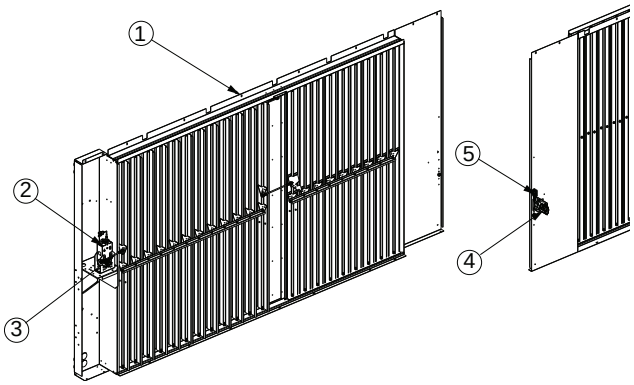
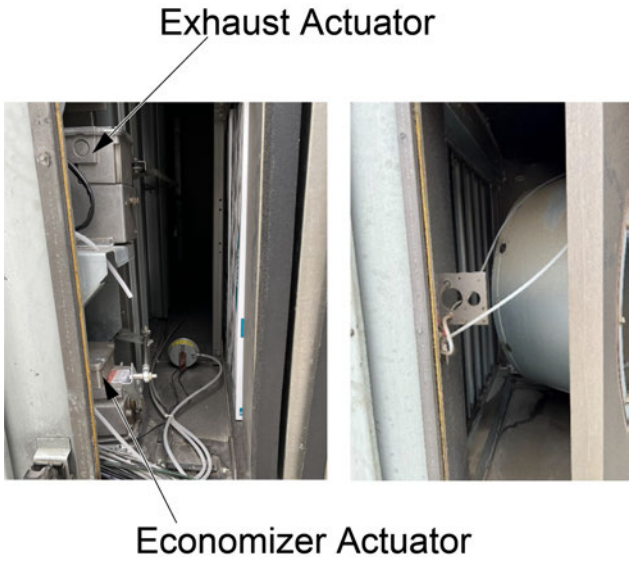


Figure 40. Economizer damper, actuator, linkages, and sensors

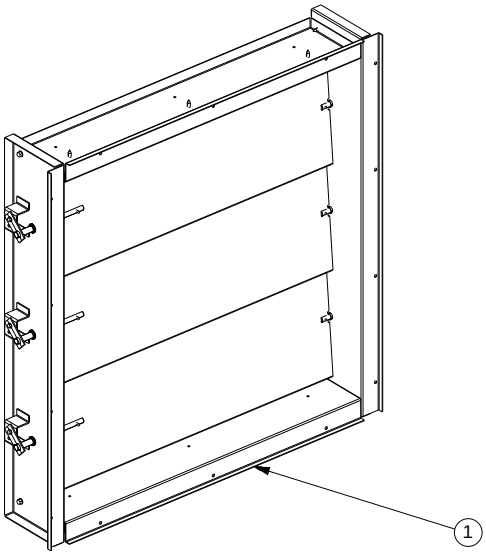


Fresh Air Damper

Table 19. Fresh air damper

Figure Callout	Item
1	Fresh Air Damper

Figure 41. Fresh air damper



Condenser Assembly

Table 20. Condenser coil, low ambient damper, actuator, and fan guard

Figure Callout	Individual Parts and Kits	Item
1	Condenser Coil	Condenser Coil Circuit 1
2		Condenser Coil Circuit 2
4	Fan guard	OD Fan Guard
13[a]	Low ambient kit	Low Ambient Damper
14[a]		Actuator

Notes:
1. See Figure 19, p. 27 for fin-tube coil thermistor sensor location.
2. See Figure 20, p. 27 for MCHE coil thermistor location.

[a] For 20 to 75-ton units only.

Figure 42. Condenser coil, low ambient damper, actuator, and fan guard

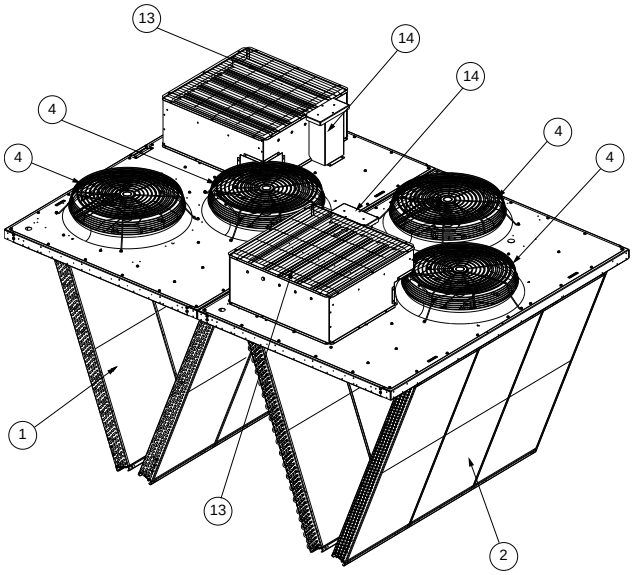


Figure 43. Condenser coil, and fan guard locations

Door Latch Kit

Table 21. Door latch kit

Figure Callout	Item
1	Latch

Figure 44. Door latch kit

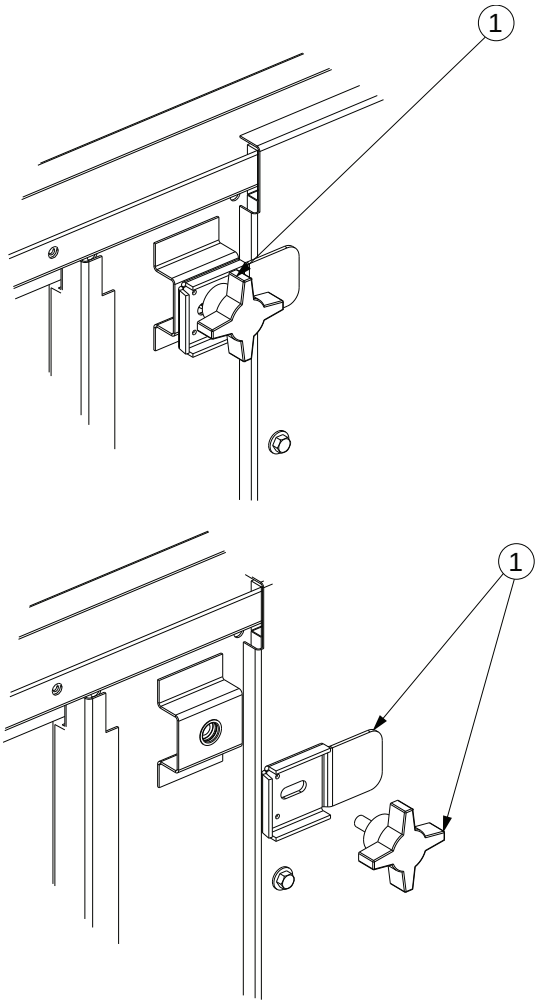


Figure 45. Door latch kit location

Gas Heat Exchanger and Related Parts

Table 22. Gas heat exchanger, motor, limit control, and electric heater

Figure Callout	Item
1	Heat Exchanger
2	Gas Heat Motor
3	Limit Control
4	Electric Heater

Note: Replacement part locations are the same as the original unit.

Figure 46. Gas heat exchanger, motor, limit control, and electric heater

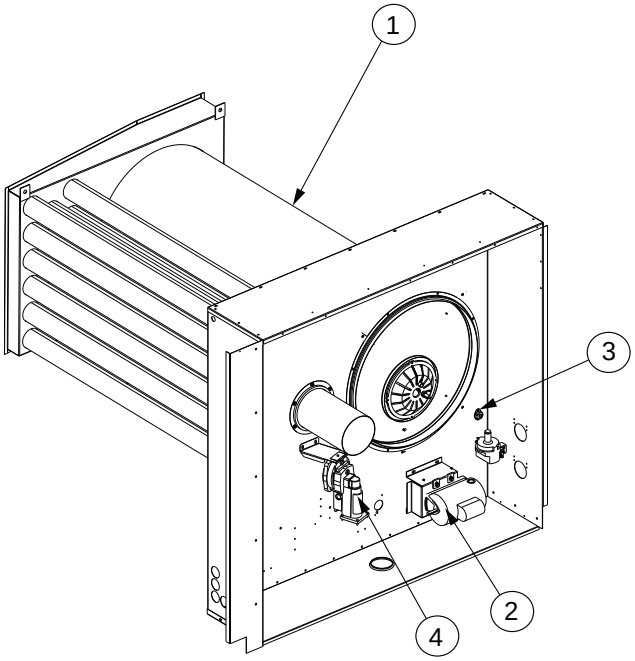


Figure 47. Gas heat exchanger, motor, limit control, and electric heater

Air Pressure Sensor

Table 23. Air pressure sensor kit

Figure Callout	Item
1	Transducer
2	Sensor Shield
3	Connector
4	Washer
5	Gasket
6	Tube

Figure 48. Air pressure sensor kit

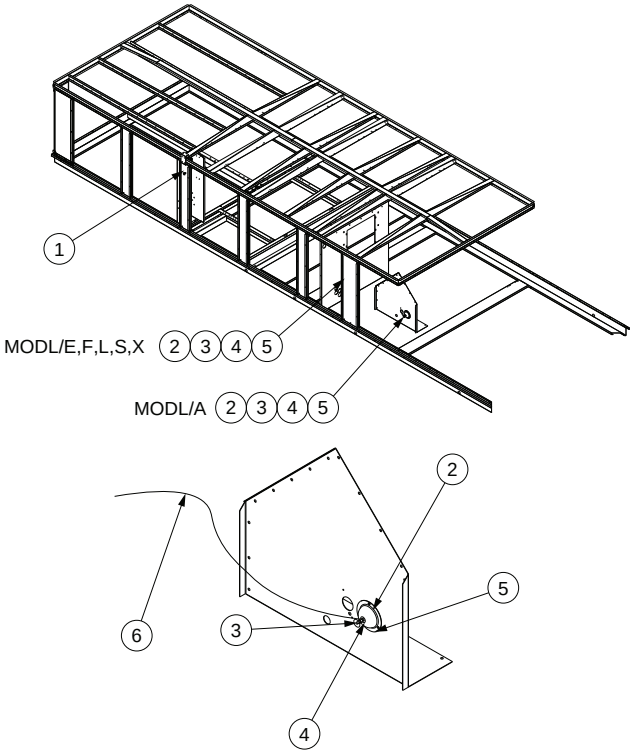


Figure 49. Air pressure sensor kit location

Hail Guard

Table 24. Hail guard

Figure Callout	Item
1	Hail guard panel

Figure 50. Hail guard

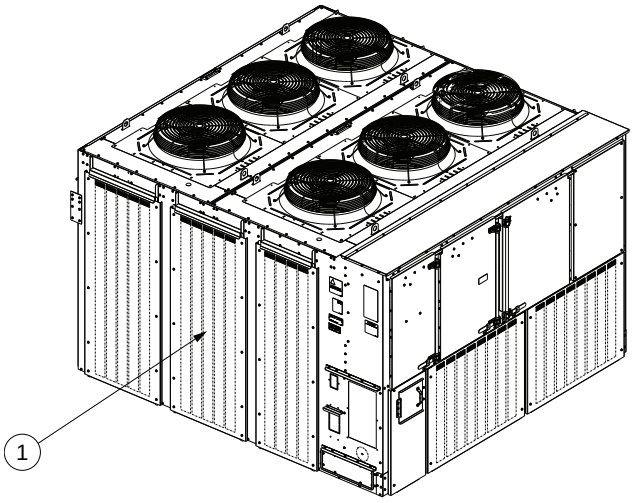


Figure 51. Hail guard location

Drive and Keypad

Table 25. Drive and keypad installation

Figure Callout	Individual Parts and Kits	Item
1	Drive	Drive
2	Keypad Mounting Kit	Bracket
3		Cradle
4		Cable

Notes:
1. Keypad is located in control box.
2. Keypad mounting kit only applicable for S*HF and S*HG units.

Figure 52. Drive and keypad installation

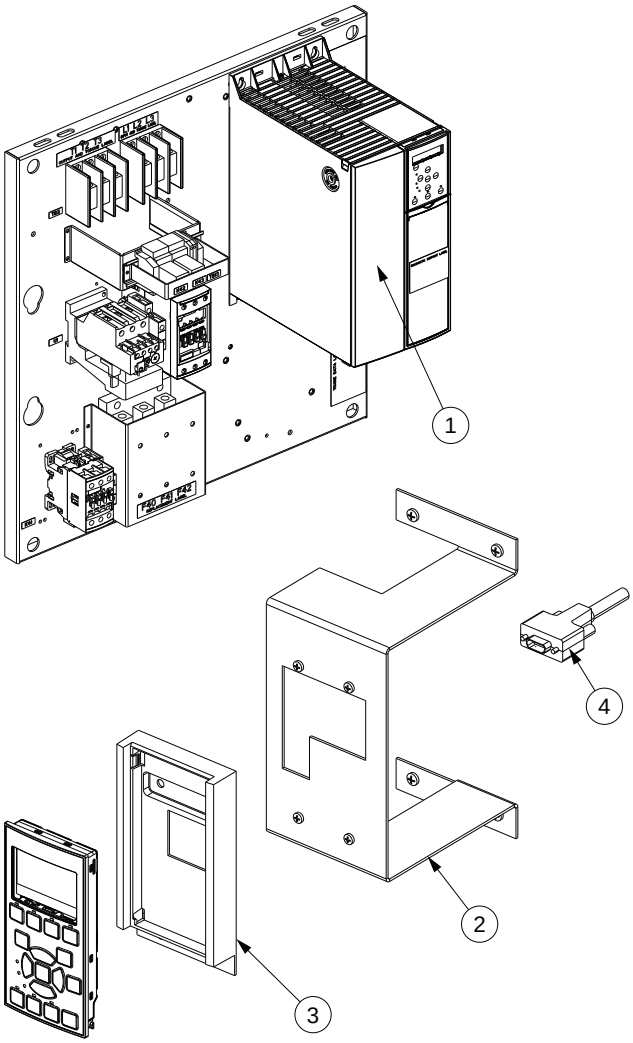
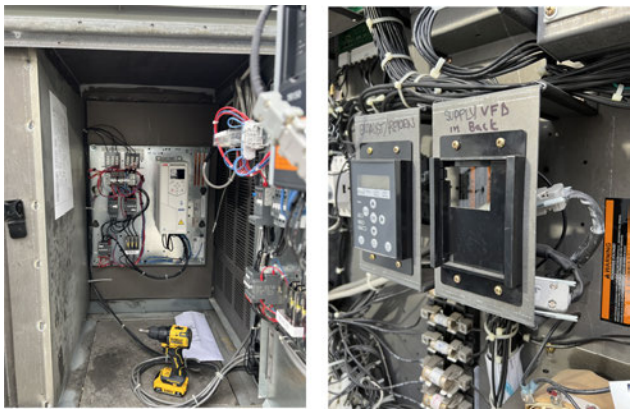


Figure 53. Drive and keypad installation



CMSA Connectivity Tool

Tracer SC+ gateway kit and/or BCI-I kit

Table 26. Tracer SC+ gateway (KIT18461) kit

Figure callout	Item
1	Module Tracer SC+
2	Connector
3	Wire
4	Self Tapping Screw
5	Label
6	Literature

Note: CMSA connectivity tool is used for microprocessor controller Ipak models.

Figure 54. Tracer SC+ gateway (KIT18461) kit

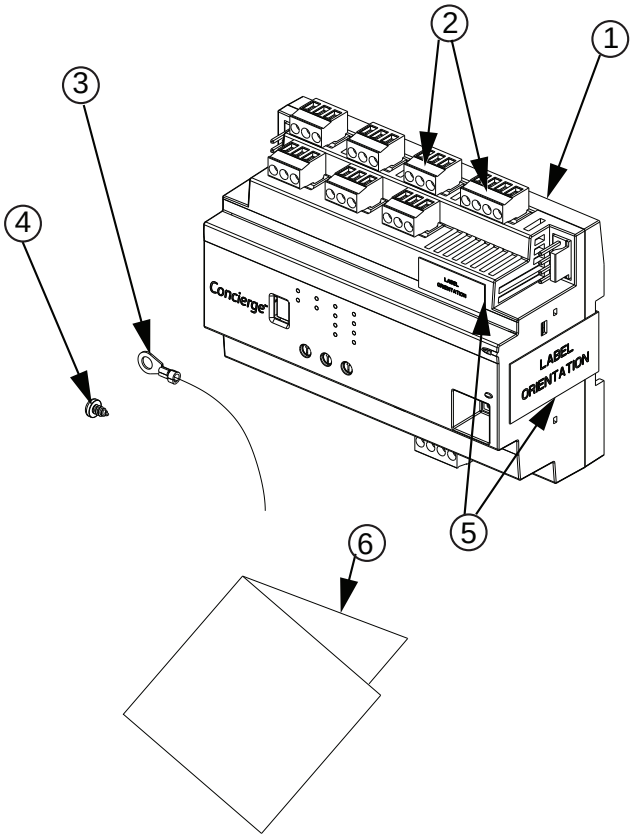
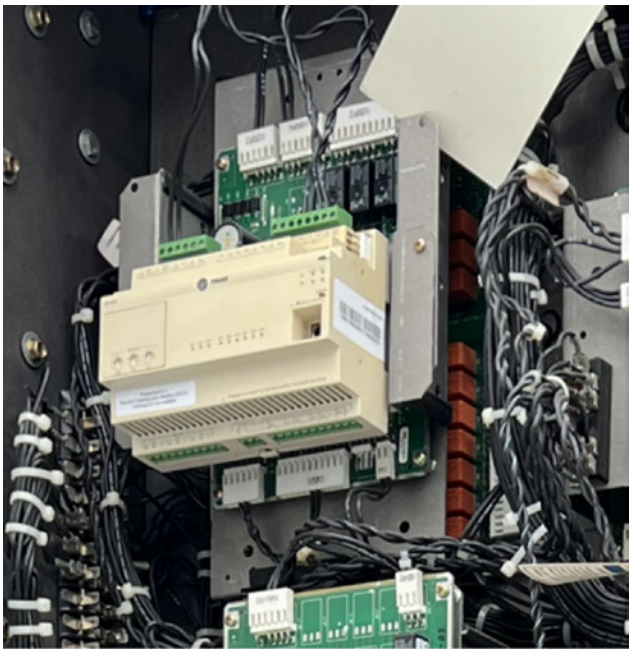
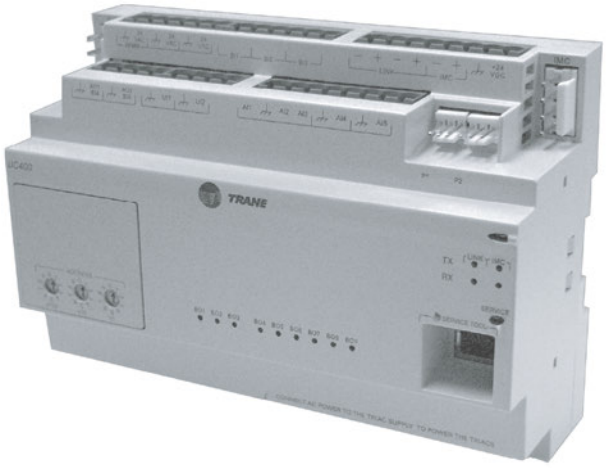


Figure 55. Tracer SC+ gateway (KIT18461)



BCI-I Kit

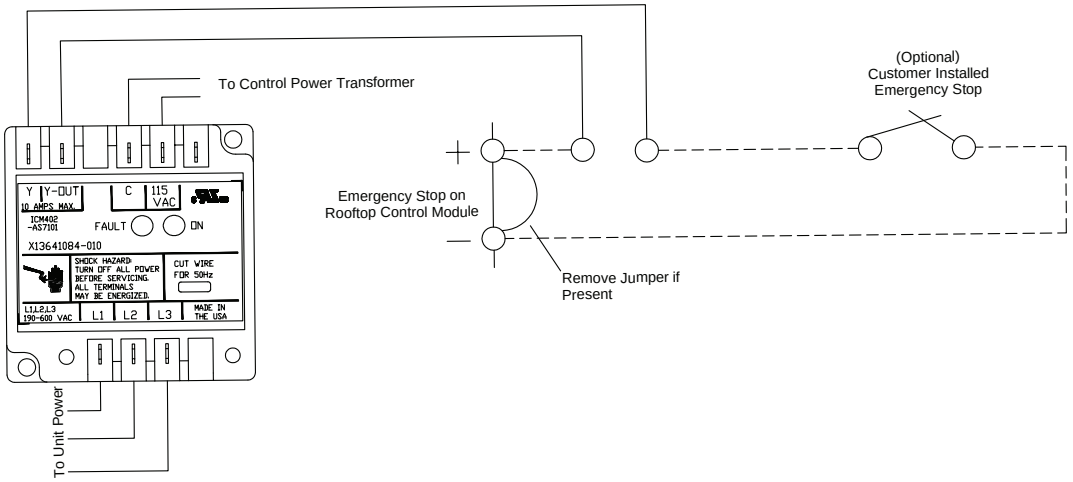
Figure 56. BCI-I (KIT15634) kit



Note: *See literature in BCI-I (KIT15634) kit for installation.*

Phase Monitor Diagram

Figure 57. Phase monitor diagram



- The phase monitor module interfaces with the existing unit in three places. Terminals labeled L1, L2, and L3 should be connected to the three-phase power entering the unit (after the unit disconnect if present).
- The terminal labeled 115 Vac should be wired to the hot leg of the control power transformer (CPT), while the terminal labeled C should be wired to the neutral leg of the CPT. Terminals Y and Y-OUT are the terminals of a normally open switch that is actuated by the phase monitoring circuit. The switch is closed when three-phases are present and open when a phase or control power is lost. The switch is rated for a maximum of 10 A at 28 Vdc and a minimum of 10 mA at 5 Vdc. This switch needs to be wired to the unit controls in order to shutdown the unit.
- Trane recommends wiring terminals Y and Y-OUT to the emergency stop on the Rooftop Control Module.
- If the jumper that shipped with the unit is present, it should be removed. If the control has been wired to an external switch, the phase-loss module should be wired in series with this switch.
- For units that do not have IntelliPak controls the wire terminals Y and Y-OUT could be connected to either the Remote Signal Input, Compressor Status, or other location depending on how the unit was wired after it was installed.

Notes

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SO-SVN066A-EN 12 Jun 2026
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