Form

Precedent® Packaged Rooftop Air Conditioners

Start-Up Checklist

⚠ 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.

August 2024 **RT-ADF007B-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 Labeling 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.**

Copyright

Trademarks

All trademarks referenced in this document are the trademarks of their respective owners.

Revision History

Updated Start-Up Checklist and Logs chapters.

Table of Contents

Start-Up Checklist

Date: _____
Service Call #: _____
Appointment ID: _____
Technician: _____
Manufacture: _____
Model #: _____
Serial #: _____
Tag #: _____
Location: _____

WARNING

Safety Alert!

Failure to follow instructions below could result in death or serious injury. In addition to the following tasks, you MUST:

- **Follow all instructions in the unit's *Installation, Operation, and Maintenance* manual, including warnings, cautions, and notices.**
- **Perform all required tasks in any applicable Service Alerts and Service Bulletins.**
- **Review and understand all information provided in Submittals and Design Specifications.**

WARNING

Hazardous Service Procedures!

Failure to follow all precautions in this manual and on the tags, stickers, and labels 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 following instructions: Unless specified otherwise, disconnect all electrical power including remote disconnect and discharge all energy storing devices such as capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized.When necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been trained in handling live electrical components perform these tasks.

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 Labeling 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.**

Important:

- *If the unit installation does not meet the requirements established in this document, and if all non-conforming conditions are not corrected prior to start-up, do NOT start the unit. The start-up technician will fill out the Non-Compliance Form. The unit will not be started until all non-conforming conditions are corrected, or until the documents described in the next point are completed and signed (where applicable).*
- *If the unit installation does meet the requirements established in this document, start-up may be performed. A completed copy of the Non-Compliance Form will need to be signed by responsible site personnel.*
- *On certain units, crankcase heaters must be energized a minimum of 8 hours prior to unit start.*

Start-Up Checklist

Notes:

- *If the unit is included in a building automation system (BAS), disconnect from BAS prior to start-up to prevent potential interference.*
- *The Symbio™ Service and Installation Mobile App is recommended to start-up and commission the equipment. The app is available for download from the Google Play store or Apple Store. Scan QR code below for quick access.*

☐ Model Number Description

Category	Description
Unit Type	
Refrigerant Type	
Cooling Capacity	
Heating Type	
Fresh Air Selection	
Supply Fan/Drive Type/Motor	
Communications Options	
Additional Options	
DCV	
Dehumidification	
Smoke Detectors	
Condensate Overflow	
Clogged Filter	
Power Exhaust	

Check the box if the task is complete or if the answer is "yes".

☐ All electrical connections checked and tightened.

☐ Incoming voltage, voltage balance, phase monitor. Complete Power Supply log sheet included with this start-up checklist.

☐ Verify Crankcase Heater is on

☐ Check Control Transformer Voltage. Complete Low Voltage log sheet included with this start-up checklist.

☐ Check Compressor Model Numbers

☐ Check Compressor Serial Numbers

☐ Condensate Drain installed

☐ Gas Piping (if applicable)

☐ Economizer installed (if FIOP, is it pulled out, linkages installed, Symbio™ 700 UC configuration setup, etc.)

☐ Fan Type (EBM Papst, or Mitsubishi VFD driven)

☐ If MZVAV, all VAVs need to be fully open before setting up airflow.

☐ Windbird installed and Tubing ran correctly.

☐ Barometric hood removed and installed if applicable.

- ☐ Any Economizer Block Offs, Rain Deflector installed if applicable.
- ☐ Use Mobile App or Onboard Display to setup controller Setpoints. Complete Setpoints Log included with this start-up checklist.
- ☐ Complete Operating Conditions log sheet included with this start-up checklist.
- ☐ Set-up Supply Fan min/max speed setpoints using Symbio™ Service and Installation Mobile App, Onboard Display, or Tracer® TU.
- ☐ Run unit in Service Test Mode to verify fan, compressor, heat, damper, operation. Service Test Mode is available through the Symbio Service and Installation Mobile App or Onboard Display.
- ☐ Complete Indoor Blower Motor/Airflow log sheet included with this start-up checklist.
- ☐ Complete Gas Heat log sheet included with this start-up checklist.
- ☐ Complete Electric Heat log Sheet included with this start-up checklist.
- ☐ Use Mobile App or Onboard Display to setup Economizer
  - ☐ Economizer Minimum Position (Mid Fan setpoint not available with Multi-Speed Indoor Fan)
    - ☐ Design Minimum OA Damper Position at Full Fan Capacity
    - ☐ Design Minimum OA Damper Position at Mid Fan Capacity
    - ☐ Design Minimum OA Damper Position at Min Fan Capacity
  - ☐ Demand Controlled Ventilation Set-up (Mid Fan setpoint not available with Multi-Speed Indoor Fan)
    - ☐ DCV Minimum OA Damper Position at Full Fan Capacity
    - ☐ DCV Minimum OA Damper Position at Mid Fan Capacity
    - ☐ DCV Minimum OA Damper Position at Min Fan Capacity
  - ☐ Supply Fan Compensation
  - ☐ Economizer Enable Setpoints
- ☐ Power Exhaust (Relief Fan - Enable using Symbio™ Service and Installation Mobile App under Space Pressure Control)
- ☐ Humidity Control
  - ☐ Dehumidification Control
  - ☐ Dehumidification Setpoint
- ☐ Complete Refrigerant log sheet included with this start-up checklist.

  Note: *OAT: >55° F, All Compressors need to be on and allow run time to stabilize.*

Important: *Reconnect BAS and exit Service Test Mode.*

Logs

Operating Conditions

Application		Space Humidity	
Unit Voltage		Discharge Duct Static Pressure	
Control Transformer TNS1 Primary Voltage		Control Transformer TNS1 Secondary Voltage	
Control Transformer TNS2 Primary Voltage		Control Transformer TNS2 Secondary Voltage	
Control Transformer TNS3 Primary Voltage		Control Transformer TNS3 Secondary Voltage	
Gas Heat Transformer TNS4 Primary Voltage		Gas Heat Transformer TNS4 Secondary Voltage	
Zone Temperature		Building Static	
Outside Air Temperature		Indoor Air/Enthalpy	
Return Air Temperature		Outdoor Air/Enthalpy	
Discharge Air Temperature		CO_2	

Power Supply

Volts	L1-L2	L2-L3	L3-L1	L1-Grd	L3-Grd	L2-Grd
No-Load						
Not less than 2V @ 208-230 or 4V @ 460-575 from no-load, within 2% avg.						
Full-Load						
All connections tight? Y / N						

Indoor Blower Motor/Airflow

Fan	Nameplate Amps	Actual Amps			Motor HP	RPM	Unit ESP	Unit CFM
		L1	L2	L3				
1								
2								
Comments:								

Setpoints

System Settings	
Heating Reset Amount	
Heating Reset End Temperature	
Heating Reset Start Temperature	
Cooling Reset Amount	
Cooling Reset End Temperature	
Cooling Reset Start Temperature	
Unoccupied Cooling Setpoint	
Unoccupied Heating Setpoint	
Indoor Settings	
Duct Static Pressure Setpoint BAS	
Refrigeration Settings	
Discharge Air Cooling Setpoint BAS	
Space Dehumidification Setpoint BAS	
Space Dehumidification Unoccupied Setpoint BAS	
Space Dew Point Unoccupied Setpoint BAS	
Heat Settings	
Daytime Warmup Setpoint BAS	
Discharge Air Heating Setpoint BAS	
Morning Warmup Setpoint BAS	
Fresh/Return Air Settings	
Economizer Discharge Air Setpoint	
Economizer Minimum Position Setpoint BAS	
Economizer Outdoor Air Enable Setpoint BAS	
Economizer Outdoor Air Enthalpy Enable Setpoint BAS	
Relief Enable Position Setpoint	
Space CO_2 High Limit	
Space CO_2 Low Limit	
System Status	
Occupied Cooling Setpoint BAS	
Occupied Heating Setpoint BAS	
Space Temperature Setpoint BAS	

Gas Heat

Control Type		Controls Conditions	
Outside Air Temperature		High Limit Controls	
Gas Type		Rollout Sensors	
Incoming Gas Pressure (taken before running heat, then at full fire)		Gas Valve Condition	
Manifold Gas Pressure (at full fire)		Gas Leak Check	
Flu Gas Stack Temperature		Igniter Condition	
Combustion Co		Heat Exchanger Condition	
Combustion O_2		Combustion Fan/Motor	
Gas Piping Type/Condition		Verified Condensate Drain	
Comments:			

Electric Heat

Control Operations		L1	L2	L3
Wiring Connections and Fittings	Amperage			
High Limit				
Comments:				

Refrigeration

Compressor	Nameplate Amps	Actual Amps			Voltage					
		L1	L2	L3	L1-L2	L2-L3	L1-L3	L1-Grd	L2-Grd	L3-Grd
1										
2										
3										

Outdoor Fan Motor	#1	#2	#3	Comments:
Nameplate Amps				
Volts				
Actual Amps				

Hot Gas Reheat Temperature	Value
Entering Air / Entering Line	
Leaving Air / Leaving Line	

Full Cooling Temperatures	Value
Entering Air / Entering Line	
Leaving Air / Leaving Line	

Low Side			
Pressure	Saturated Temperature	Line Temperature	Superheat
High Side			
Pressure	Saturated Temperature	Line Temperature	Discharge Superheat
Liquid Line			
Pressure	Saturated Temperature	Line Temperature	Subcooling
Crankcase Heater			
Working? (Yes/No)			

Light Commercial Help Center

Trane and American Standard create comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or americanstandardair.com.

RT-ADF007B-EN 11 Aug 2024
Supersedes RT-ADF007A-EN (Jun 2022)