

TRANQUILITY® 16 (TR) VERSATILE SERIES



**MODELS TRH/V 006-060
60HZ - HFC-410A**

**INSTALLATION, OPERATION
& MAINTENANCE**

97B0075N08

Revised: November 4, 2024



A **NIBE** GROUP MEMBER

Table of Contents

Model Nomenclature: General Overview	3
General Information	4
Physical Data	6
Physical Data: Hydronic Heating	7
Horizontal Installation	8
Field Conversion of Air Discharge	10
Horizontal Installation	11
Vertical Installation	12
Piping Installation	14
Water-Loop Heat Pump Applications	15
Ground-Loop Heat Pump Applications	16
Ground-Water Heat Pump Applications	18
Water Quality Requirements	20
Electrical Data	24
Electrical: Power Wiring	32
Electrical: Power & Low Voltage Wiring	33
Electrical: Low Voltage Wiring	34
Electrical: Thermostat Wiring	35
Blower Performance Data	36
Blower Performance Data: with ClimaDry® II	47
Blower Performance Data: Hybrid	53
Constant Volume (CV) ECM	64
Constant Torque (CV) ECM	65
Wiring Diagram Matrix	66
Controls: CXM2 and DXM2.5	67
ClimaDry® II Modulating Reheat Option	68
Operating Limits and Commissioning Conditions	71
Piping System Cleaning and Flushing	72
Flushing/Purging Units with ClimaDry® II	73
Unit and System Checkout	74
Unit Start-Up Procedure	75
Unit Operating Conditions	78
Preventive Maintenance	82
Functional Troubleshooting	83
Performance Troubleshooting	85
Start-Up Log Sheet	86
Functional Troubleshooting Form	87
Warranty (U.S. & Canada)	88
Revision History	92

Tranquility® (TR) Series

Rev.: November 4, 2024

This page intentionally left blank.

Model Nomenclature: General Overview

MODEL TYPE
TR = TRANQUILITY® HIGH EFFICIENCY 410A

CONFIGURATION
H = HORIZONTAL
V = VERTICAL

UNIT SIZE
006 - E,G
009 - E,G
012 - E,G
015 - E,G
018 - E,G
024 - E,G,H,F
030 - E,G,H,F
036 - E,G,H,F
042 - G,H,F,N
048 - G,H,F,N
060 - G,H,F,N

REVISION LEVEL
A = CURRENT REVISION

VOLTAGE
G = 208-230/60/1
E = 265/60/1
H = 208-230/60/3
F = 460/60/3
N = 575/60/3

CONTROLS
C = CXM2
D = DXM2.5
N = CXM2 w/MPC
P = DXM2.5 w/MPC

w/DISCONNECT
A = CXM2
B = DXM2.5
R = CXM2 w/MPC
S = DXM2.5 w/MPC

SUPPLY AIR OPTIONS

Option	Supply	Configuration	Motor
T	Top	TRV	PSC
B	Back	TRH	PSC
S	Straight	TRH	PSC
V	Top	TRV	PSC Hi Static
Y	Back	TRH	PSC Hi Static
Z	Straight	TRH	PSC Hi Static
K	Top	TRV	CV ECM
P	Back	TRH	CV ECM
W	Straight	TRH	CV ECM
1	Top	TRV	CT ECM
2	Back	TRH	CT ECM
3	Straight	TRH	CT ECM

DXM2.5 Controls Required for CV ECM Fan Motors

RETURN AIR OPTIONS
P = LEFT RETURN
C = RIGHT RETURN
S = LEFT RETURN, STAINLESS STEEL DRAIN PAN
T = RIGHT RETURN, STAINLESS STEEL DRAIN PAN

HEAT EXCHANGER OPTIONS

	Non Coated Air Coil		Tin-plated Air Coil	
	Copper	Cupro-nickel	Copper	Cupro-nickel
Standard	C	N	A	J
Motorized Valve	T	S	U	W
ClimaDry® II	E	P	D	F
Hydronic Heat	H	Y	B	R

DXM2.5 CONTROLS REQUIRED FOR CLIMADRY OPTION
HYDRONIC HEAT ONLY OFFERED IN HORIZONTAL CONFIGURATION

WATER CIRCUIT OPTIONS
0 = None
2 = HWG (Coil Only)
5 = Internal Secondary Pump
6 = HWG (Coil Only) w/Auto Flow Regulator 2.5 GPM/Ton
7 = HWG (Coil Only) w/Auto Flow Regulator 3.0 GPM/Ton
8 = Auto Flow Regulator 2.5 GPM/Ton
9 = Auto Flow Regulator 3.0 GPM/Ton

CABINET INSULATION

OPTION	RANGE	ULTRA QUIET	1" FILTER RAIL	2" FILTER RAIL	1" FILTER FRAME	2" FILTER FRAME
1	EXTENDED RANGE	NO	YES			NO
A				NO		YES
J			NO	YES		NO
K			NO		YES	NO
2			YES		NO	
C	EXTENDED RANGE	YES		NO	YES	
L			NO	YES	NO	
M			NO		YES	NO
3	STANDARD RANGE	NO	YES		NO	YES
E				NO		YES
N			NO	YES		NO
P			NO		YES	NO
4	STANDARD RANGE	YES	YES		NO	
G				NO		YES
R			NO	YES		NO
			NO		YES	NO
S			NO		YES	NO

Note: Above model nomenclature is a general reference. Not all configurations are available on all models. Consult selection software for detailed information.

ClimaDry® II Option Notes:

- Unit must have DXM2.5 control option. 460 volt unit units require a four wire power supply with neutral.
- ClimaDry II may not be combined with motorized water valve, internal secondary circulating pump, or automatic flow regulator options.
- Unit minimum entering air temperature while in the dehumidification, cooling, or continuous fan modes is **65°F DB/55°F WB**. Operation below this minimum may result in nuisance faults.
- A thermostat with dehumidification mode or thermostat and separate humidistat/dehumidistat is required for activation and control of ClimaDry II.
- Sizes 006, 009, 012, 015, 018, downflow units and 575 volt units are not eligible for ClimaDry II.

Tranquility® (TR) Series

Rev.: November 4, 2024

General Information

Safety

Warnings, cautions, and notices appear throughout this manual. Read these items carefully before attempting any installation, service, or troubleshooting of the equipment.

DANGER: Indicates an immediate hazardous situation, which if not avoided will result in death or serious injury. DANGER labels on unit access panels must be observed.

WARNING: Indicates a potentially hazardous situation, which if not avoided could result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation or an unsafe practice, which if not avoided could result in minor or moderate injury or product or property damage.

NOTICE: Notification of installation, operation, or maintenance information, which is important, but which is not hazard-related.

WARNING!

WARNING! The EarthPure® Application and Service Manual should be read and understood before attempting to service refrigerant circuits with HFC-410A.

WARNING!

WARNING! To avoid the release of refrigerant into the atmosphere, the refrigerant circuit of this unit must be serviced only by technicians who meet local, state, and federal proficiency requirements.

CAUTION!

CAUTION! To avoid equipment damage, DO NOT use these units as a source of heating or cooling during the construction process. The mechanical components and filters can quickly become clogged with construction dirt and debris, which may cause system damage and void product warranty.

WARNING!

WARNING! The installation of water-source heat pumps and all associated components, parts, and accessories which make up the installation shall be in accordance with the regulations of ALL authorities having jurisdiction and MUST conform to all applicable codes. It is the responsibility of the installing contractor to determine and comply with ALL applicable codes and regulations.

WARNING!

WARNING! Children Being Supervised are NOT to play with the appliance.

WARNING!

WARNING! All refrigerant discharged from this unit must be recovered **WITHOUT EXCEPTION**. Technicians must follow industry accepted guidelines and all local, state, and federal statutes for the recovery and disposal of refrigerants. If a compressor is removed from this unit, refrigerant circuit oil will remain in the compressor. To avoid leakage of compressor oil, refrigerant lines of the compressor must be sealed after it is removed.

WARNING!

WARNING! This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Inspection - Upon receipt of the equipment, carefully check the shipment against the bill of lading. Make sure all units have been received. Inspect the packaging of each unit, and inspect each unit for damage. Ensure that the carrier makes proper notation of any shortages or damage on all copies of the freight bill and completes a common carrier inspection report. Concealed damage not discovered during unloading must be reported to the carrier within 15 days of receipt of shipment. If not filed within 15 days, the freight company can deny the claim without recourse.

Note: It is the responsibility of the purchaser to file all necessary claims with the carrier. Notify your equipment supplier of all damage within fifteen (15) days of shipment.

Storage - Equipment should be stored in its original packaging in a clean, dry area. Store units in an upright position at all times. Stack units a maximum of 3 units high.

Unit Protection - Cover units on the job site with either the original packaging or an equivalent protective covering. Cap the open ends of pipes stored on the job site. In areas where painting, plastering, and/or spraying has not been completed, all due precautions must be taken to avoid physical damage to the units and contamination by foreign material. Physical damage and contamination may prevent proper start-up and may result in costly equipment clean-up.

General Information, Cont'd.

Examine all pipes, fittings, and valves before installing any of the system components. Remove any dirt or debris found in or on these components.

Pre-Installation - Installation, Operation, and Maintenance instructions are provided with each unit. Horizontal equipment is designed for installation above false ceiling or in a ceiling plenum. Other unit configurations are typically installed in a mechanical room. The installation site chosen should include adequate service clearance around the unit. Before unit start-up, read all manuals and become familiar with the unit and its operation. Thoroughly check the system before operation.

Prepare units for installation as follows:

1. Compare the electrical data on the unit nameplate with ordering and shipping information to verify that the correct unit has been shipped.
2. Keep the cabinet covered with the original packaging until installation is complete and all plastering, painting, etc. is finished.
3. Verify refrigerant tubing is free of kinks or dents and that it does not touch other unit components.
4. Inspect all electrical connections. Connections must be clean and tight at the terminals.
5. Remove any blower support packaging (water-to-air units only).
6. Some airflow patterns are field convertible (horizontal units only). Locate the airflow conversion section of this IOM.
7. Locate and verify any hot water generator (HWG), hanger, or other accessory kit located in the compressor section or blower section.

CAUTION!

CAUTION! All three phase scroll compressors must have direction of rotation verified at start-up. Verification is achieved by checking compressor Amp draw. Amp draw will be substantially lower compared to nameplate values. Additionally, reverse rotation results in an elevated sound level compared to correct rotation. Reverse rotation will result in compressor internal overload trip within several minutes. Verify compressor type before proceeding.

CAUTION!

CAUTION! DO NOT store or install units in corrosive environments or in locations subject to temperature or humidity extremes (e.g., attics, garages, rooftops, etc.). Corrosive conditions and high temperature or humidity can significantly reduce performance, reliability, and service life. Always move and store units in an upright position. Tilting units on their sides will cause equipment damage.

CAUTION!

CAUTION! CUT HAZARD - Failure to follow this caution may result in personal injury. Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing, safety glasses and gloves when handling parts and servicing heat pumps.

Tranquility® (TR) Series

Rev.: November 4, 2024

Physical Data

Tranquility® (TR) Series (60 Hz)

TR Series	006	009	012	015	018	024	030	036	042	048	060	
Compressor (1 each)	Rotary					Scroll						
Factory Charge HFC-410A - (oz.)	19	20	23	35	43	40	48	50	70	74	82	
ECM Fan Motor & Blower												
Blower Wheel Size (Dia x w)	6x5	6x5	6x5	9x7	9x7	9x7	9x7	9x8	9x8	10x10	11x10	
PSC Fan Motor & Blower												
Fan Motor Type/Speeds	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	PSC/3	
Blower Wheel Size (Dia x W)	5x5	5x5	6x5	8x7	8x7	9x7	9x7	9x8	9x8	10x10	11x10	
Water Connection Size												
Source FPT	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	1"	1"	
Optional HWG FPT	1/2"											
Coax Volume (gallons)	0.123	0.143	0.167	0.286	0.45	0.286	0.323	0.323	0.89	0.738	0.939	
Vertical												
Air Coil Dimensions (H x W)	10x15	10x15	10x15	20x17.25	20x17.25	20x17.25	20x17.25	24x21.75	24x21.76	28x25	28x25	
Filter Standard - 1" Throwaway	10x18	10x18	10x18	20x20	20x20	20x20	20x20	24x24	24x24	28x28	28x28	
Weight - Operating (lbs.)	110	112	121	163	168	184	192	213	228	283	298	
Weight - Packaged (lbs.)	115	117	126	168	173	189	197	219	234	290	305	
Horizontal												
Air Coil Dimensions (H x W)	10x15	10x15	10x15	16x22	16x22	16x22	16x22	20x25	20x25	20x35	20x35	
Filter Standard - 1" Throwaway	10x18	10x18	10x18	16x25	16x25	18x25	18x25	20x28 or 2-20x14	20x28 or 2-20x14	1-20x24, 1-20x14	1-20x24, 1-20x14	
Weight - Operating (lbs.)	110	112	121	163	168	184	192	213	228	283	298	
Weight - Packaged (lbs.)	115	117	126	168	173	189	197	219	234	290	305	

Notes: All units have TXV expansion device and 1/2" & 3/4" electrical knockouts.

575 volt fan motors are two speed.

FPT=Female Pipe Thread

Condensate Drain Connection is rubber coupling that couples to 3/4" schedule 40/80 PVC.

For ClimaDry® II option add 30 lbs (13.6 kg).

Unit Maximum Water Working Pressure	
Options	Max Pressure PSIG [kPa]
Base Unit	500 [3447]
Internal Secondary Pump (ISP)	145 [999]
Internal Motorized Water Valve (MWV)	300 [2,068]
Internal Auto Flow Valve	300 [2,068]
ClimaDry® II	145 [999]

Use the lowest maximum pressure rating when multiple options are combined.

Physical Data: Hydronic Heating

TR Series	006	009	012	015	018	024	030	036	042	048	060
Compressor (1 each)	Rotary					Scroll					
Factory Charge R410A - (oz.)	17	20	23	35	43	43	48	50	70	74	82
CV ECM Fan Motor & Blower											
Fan Motor - Hybrid (hp) [W]	1/8	1/8	1/4	1/3	1/3	1/2	3/4	3/4	3/4	1	1
Blower Wheel Size - Hybrid (Dia x W)	6x5	6x5	6x5	9x7	9x7	9x7	10X8T	10X8A	10X8A	12X10T	12X10T
CT ECM Fan Motor & Blower											
Fan Motor - Hybrid (hp) [W]	1/4	1/4	1/4	1/3	1/3	1/2	3/4	3/4	3/4	1	1
Blower Wheel Size - Hybrid (Dia x W)	6x5	6x5	6x5	9x7	9x7	9x7	10X8T	10X8A	10X8A	12X10T	12X10T
Water Connection Size											
FPT - All Other	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	1"	1"
Horizontal											
Air Coil Dimensions (H x W)	10x15	10x15	10x15	16x22	16x22	16x22	16x22	20x25	20x25	20x35	20x35
Filter Standard - 1" Throwaway	10x18	10x18	10x18	16x25	16x25	18x25	18x25	20x28 or 2-20x14	20x28 or 2-20x14	1-20x24, 1-20x14	1-20x24, 1-20x14
Weight - Operating - Hybrid (lbs.)	154	156	165	215	221	253	261	309	324	373	405
Weight - Packaged - Hybrid (lbs.)	159	161	170	220	226	258	266	314	329	378	410

Notes: All units have TXV expansion device and 1/2" & 3/4" electrical knockouts.

FPT=Female Pipe Thread

Condensate Drain Connection is 3/4" MPT.

Unit Maximum Water Working Pressure	
Options	Max Pressure PSIG [kPa]
Base Unit	300 [2068]
Internal Secondary Pump (ISP)	145 [999]
Internal Auto Flow Valve	300 [2,068]

Use the lowest maximum pressure rating when multiple options are combined.

Tranquility® (TR) Series

Rev.: November 4, 2024

Horizontal Installation

Horizontal Unit Location

Units are not designed for outdoor installation. Locate the unit in an INDOOR area that allows enough space for service personnel to perform typical maintenance or repairs without removing unit from the ceiling. Horizontal units are typically installed above a false ceiling or in a ceiling plenum. Never install units in areas subject to freezing or where humidity levels could cause cabinet condensation (such as unconditioned spaces subject to 100% outside air). Consideration should be given to access for easy removal of the filter and access panels. Provide sufficient room to make water, electrical, and duct connection(s).

If the unit is located in a confined space, such as a closet, provisions must be made for return air to freely enter the space by means of a louvered door, etc. Any access panel screws that would be difficult to remove after the unit is installed should be removed prior to setting the unit. Refer to Figure 3 for an illustration of a typical installation. Refer to unit submittal data or engineering design guide for dimensional data.

Conform to the following guidelines when selecting unit location:

1. Provide a hinged access door in concealed-spline or plaster ceilings. Provide removable ceiling tiles in T-bar or lay-in ceilings. Refer to horizontal unit dimensions for specific series and model in unit submittal data. Size the access opening to accommodate the service technician during the removal or replacement of the compressor, control, or blower assembly.
2. Provide access to hanger brackets, water valves and fittings. Provide screwdriver clearance to access panels, discharge collars and all electrical connections.
3. DO NOT obstruct the space beneath the unit with piping, electrical cables and other items that prohibit future removal of components or the unit itself.
4. Use a manual portable jack/lift to lift and support the weight of the unit during installation and servicing.

The installation of water source heat pump units and all associated components, parts and accessories which make up the installation shall be in accordance with the regulations of ALL authorities having jurisdiction and MUST conform to all applicable codes. It is the responsibility of the installing contractor to determine and comply with ALL applicable codes and regulations.

Mounting Horizontal Units

Horizontal units have 4 hanger brackets partially attached at the factory, one at each corner. Enclosed within the unit there is a hanger kit hardware bag containing vibration isolation grommets, washers, screws and a hanger installation instruction page. One additional screw from the hardware bag must be added to each hanger bracket before unit installation. Tighten each screw to 75 in-lbs (8.5 Nm). See Figure 1. Refer to the hanger installation instruction page contained in the hardware bag for details of final hanger bracket attachment and unit suspension. See Figure 1a.

Use four (4) field supplied threaded rods and factory provided vibration isolators to suspend the unit. Safely lift the unit into position supporting the bottom of the unit. Ensure the top of the unit is not in contact with any external objects. Connect the top end of the 4 all-thread rods, slide rods through the brackets and grommet then assemble washers and double nuts at each rod. Ensure that the unit is approximately level and that the threaded rod extends past the nuts.

Pitch the unit toward the drain as shown in Figure 2 to improve the condensate drainage. On small units (less than 2.5 tons/8.8kW) ensure that unit pitch does not cause condensate leaks inside the cabinet.

Figure 1: Hanger Bracket

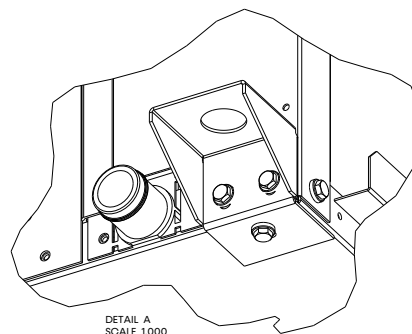
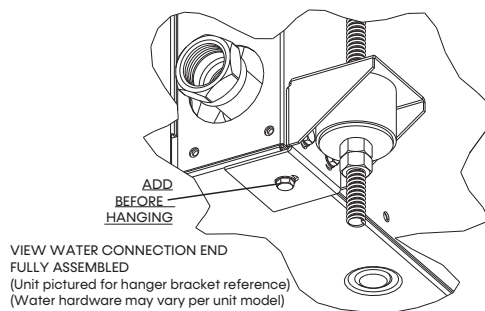


Figure 1a:



Horizontal Installation, Cont'd.

Figure 2: Horizontal Unit Pitch

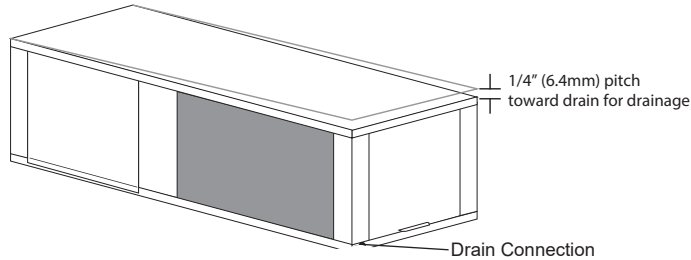
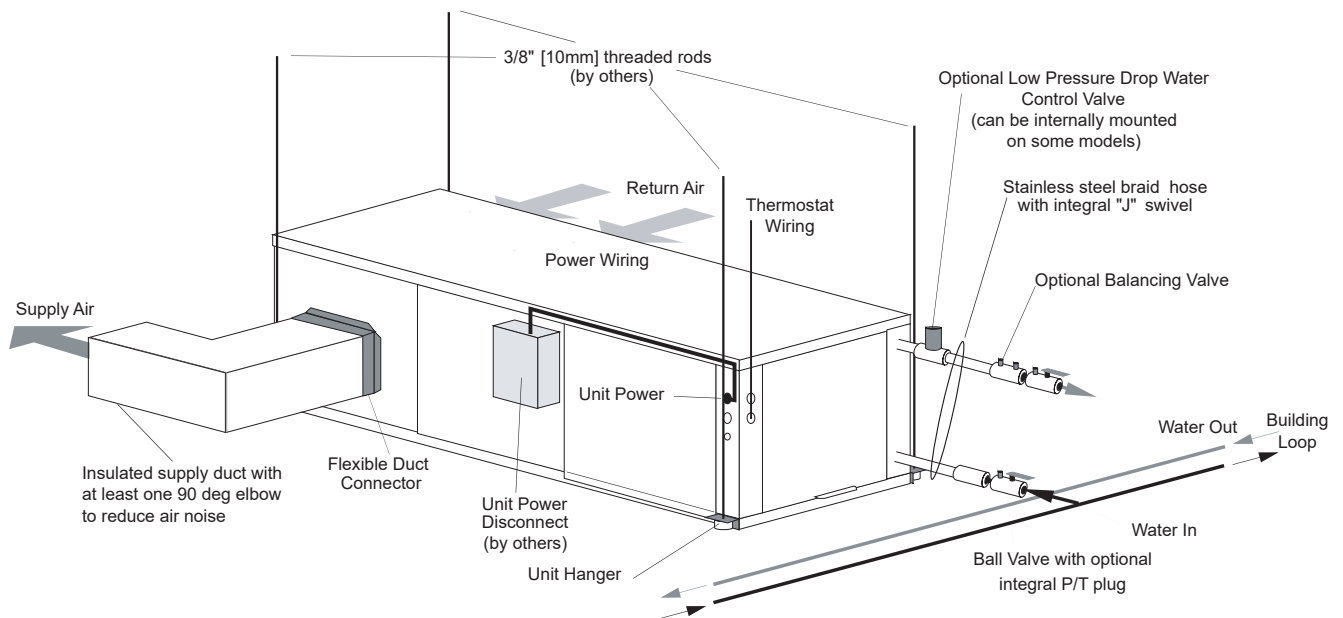


Figure 3: Typical Horizontal Unit Installation



Air Coil - To obtain maximum performance, the air coil should be cleaned before start-up. A 10% solution of dishwasher detergent and water is recommended for both sides of the coil. A thorough water rinse should follow. **UV based anti-bacterial systems may damage e-coated air coils.**

Notice! Installation Note - Ducted Return: Many horizontal WSHPs are installed in a return air ceiling plenum application (above ceiling). Vertical WSHPs are commonly installed in a mechanical room with free return (e.g. louvered door). Therefore, filter rails are the industry standard and are included on ClimateMaster commercial heat pumps for the purposes of holding the filter only. For ducted return applications, the filter rail must be removed and replaced with a duct flange or filter frame. Canvas or flexible connectors should also be used to minimize vibration between the unit and ductwork.

Tranquility® (TR) Series

Rev.: November 4, 2024

Field Conversion of Air Discharge

Overview - Horizontal units can be field converted between side (straight) and back (end) discharge using the instructions below.

NOTE: It is not possible to field convert return air between left or right return models due to the necessity of refrigeration copper piping changes.

Preparation - It is best to field convert the unit on the ground before hanging. If the unit is already hung it should be taken down for the field conversion.

Side to Back Discharge Conversion

1. Place unit in well lit area. Remove the screws as shown in Figure 4 to free top panel and discharge panel.
2. Lift out the access panel and set aside. Lift and rotate the discharge panel to the other position as shown, being careful with the blower wiring.
3. Check blower wire routing and connections for tension or contact with sheet metal edges. Re-route if necessary.
4. Check refrigerant tubing for contact with other components.
5. Reinstall top panel and screws noting that the location for some screws will have changed.
6. Manually spin the fan wheel to ensure that the wheel is not rubbing or obstructed.
7. Replace access panels.

Back to Side Discharge Conversion - If the discharge is changed from back to side, use above instruction noting that illustrations will be reversed.

Left vs. Right Return - It is not possible to field convert return air between left or right return models due to the necessity of refrigeration copper piping changes. However, the conversion process of side to back or back to side discharge for either right or left return configuration is the same. In some cases, it may be possible to rotate the entire unit 180 degrees if the return air connection needs to be on the opposite side. **Note that rotating the unit will move the piping to the other end of the unit.**

Figure 4: Left Return Side to Back

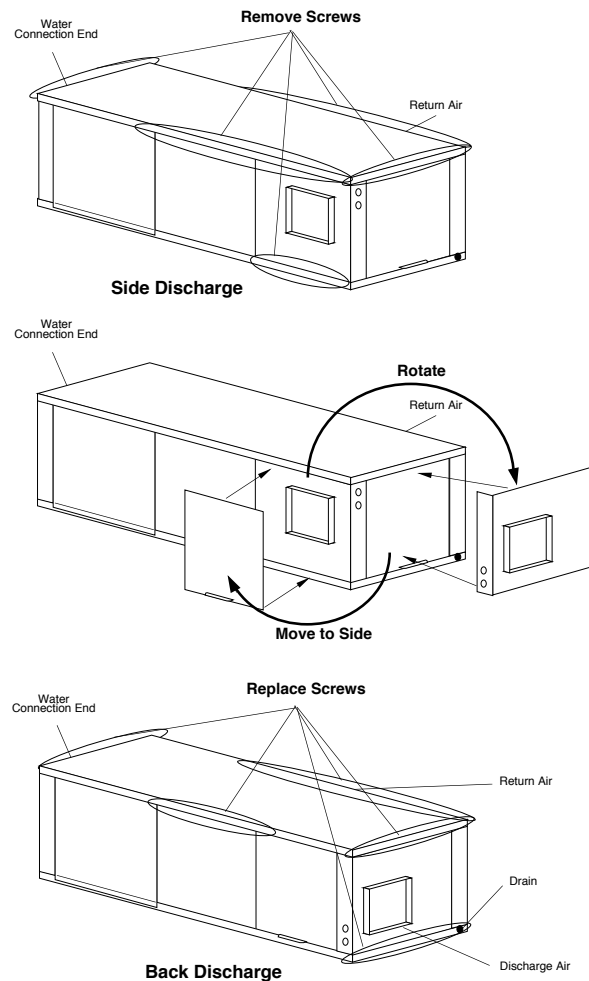
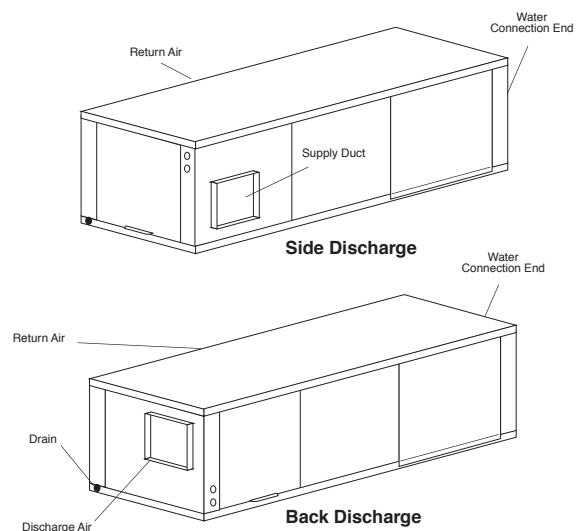


Figure 5: Right Return Side to Back



Horizontal Installation

Condensate Piping - Horizontal Units - A condensate drain line must be installed and pitched away for the unit to allow for proper drainage. This connection must meet all local plumbing/building codes.

Pitch the unit toward the drain as shown in Figure 2 to improve the condensate drainage. On small units (less than 2.5 tons/8.8 kW), ensure that unit pitch does not cause condensate leaks inside the cabinet.

Install condensate trap at each unit with the top of the trap positioned below the unit condensate drain connection as shown in Figure 6. Design the depth of the trap (water-seal) based upon the amount of ESP capability of the blower (where 2 inches [51 mm] of ESP capability requires 2 inches [51 mm] of trap depth). As a general rule, 1-1/2 inch [38 mm] trap depth is the minimum.

Each unit must be installed with its own individual trap and connection to the condensate line (main) or riser. Provide a means to flush or blow out the condensate line. DO NOT install units with a common trap and/or vent.

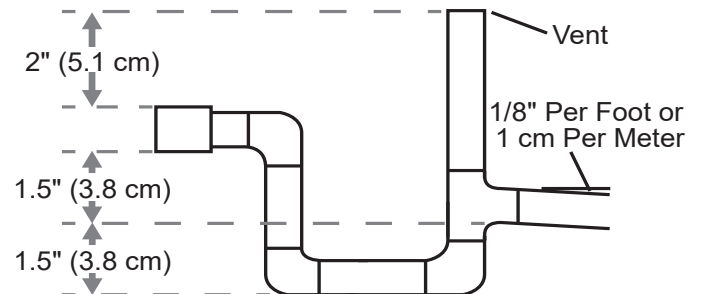
Always vent the condensate line when dirt or air can collect in the line or a long horizontal drain line is required. Also vent when large units are working against higher external static pressure than other units connected to the same condensate main since this may cause poor drainage for all units on the line. **WHEN A VENT IS INSTALLED IN THE DRAIN LINE, IT MUST BE LOCATED AFTER THE TRAP IN THE DIRECTION OF THE CONDENSATE FLOW.**

Polymer Drain Pans - condensate drain connection is a rubber coupling that connects to 3/4" schedule 40/80 PVC. Use hose clamps to secure the pipe inside the coupling. If the connection is not secure, the connection may leak.

Instructions for coupling the condensate drain to the trap are included in the bag that includes the coupling and hose clamps.

Stainless Steel Drain Pans - condensate connection is female pipe thread. Field to provide condensate connection male adapter.

Figure 6: Horizontal Condensate Connection



CAUTION! Ensure condensate line is pitched toward drain 1/8 inch per ft [11 mm per m] of run.

Duct System Installation - Proper duct sizing and design is critical to the performance of the unit. The duct system should be designed to allow adequate and even airflow through the unit during operation. Air flow through the unit MUST be at or above the minimum stated airflow for the unit to avoid equipment damage. Duct systems should be designed for quiet operation. Refer to Figure 3 for horizontal duct system details or Figure 8 for vertical duct system details. A flexible connector is recommended for both discharge and return air duct connections on metal duct systems to eliminate the transfer of vibration to the duct system. To maximize sound attenuation of the unit blower, the supply and return plenums should include internal fiberglass duct liner or be constructed from ductboard for the first few feet. Application of the unit to uninsulated ductwork in an unconditioned space is not recommended, as the unit's performance may be adversely affected.

At least one 90° elbow should be included in the supply duct to reduce air noise. If air noise or excessive air flow is a problem, the blower speed can be changed. For airflow charts, consult submittal data for the series and model of the specific unit.

If the unit is connected to existing ductwork, a previous check should have been made to ensure that the ductwork has the capacity to handle the airflow required for the unit. If ducting is too small, as in the replacement of a heating only system, larger ductwork should be installed. All existing ductwork should be checked for leaks and repaired as necessary.

Tranquility® (TR) Series

Rev.: November 4, 2024

Vertical Installation

Vertical Unit Location - Units are not designed for outdoor installation. Locate the unit in an INDOOR area that allows enough space for service personnel to perform typical maintenance or repairs without removing unit from the mechanical room/closet. Vertical units are typically installed in a mechanical room or closet. Never install units in areas subject to freezing or where humidity levels could cause cabinet condensation (such as unconditioned spaces subject to 100% outside air). Consideration should be given to access for easy removal of the filter and access panels. Provide sufficient room to make water, electrical, and duct connection(s).

If the unit is located in a confined space, such as a closet, provisions must be made for return air to freely enter the space by means of a louvered door, etc. Any access panel screws that would be difficult to remove after the unit is installed should be removed prior to setting the unit. Refer to Figures 7 and 8 for typical installation illustrations. Refer to unit submittal data or engineering design guide for dimensional data.

1. Install the unit on a piece of rubber, neoprene or other mounting pad material for sound isolation. The pad should be at least 3/8" [10 mm] to 1/2" [13 mm] in thickness. Extend the pad beyond all four edges of the unit.
2. Provide adequate clearance for filter replacement and drain pan cleaning. Do not block filter access with piping, conduit or other materials. Refer to unit submittal data or engineering design guide for dimensional data.
3. Provide access for fan and fan motor maintenance and for servicing the compressor and coils without removing the unit.
4. Provide an unobstructed path to the unit within the closet or mechanical room. Space should be sufficient to allow removal of the unit, if necessary.
5. Provide access to water valves and fittings and screwdriver access to the unit side panels, discharge collar and all electrical connections.

Figure 7: Vertical Unit Mounting

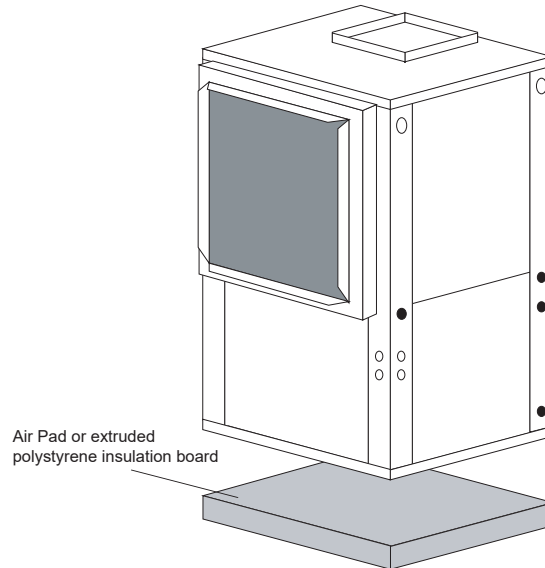
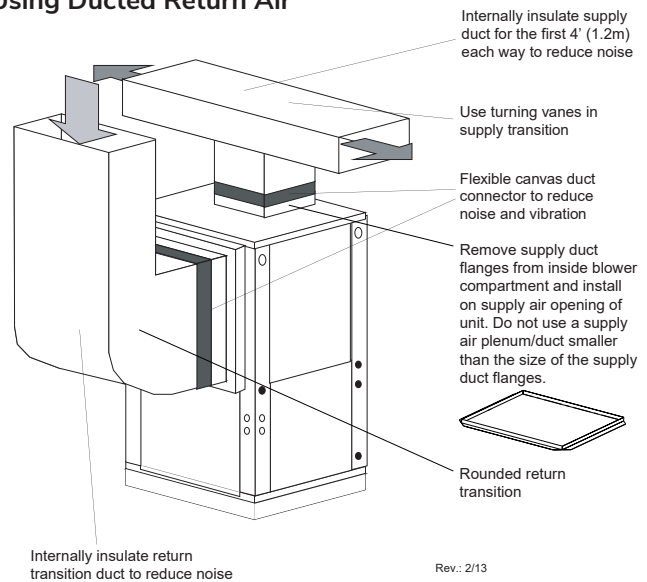


Figure 8: Typical Vertical Unit Installation Using Ducted Return Air



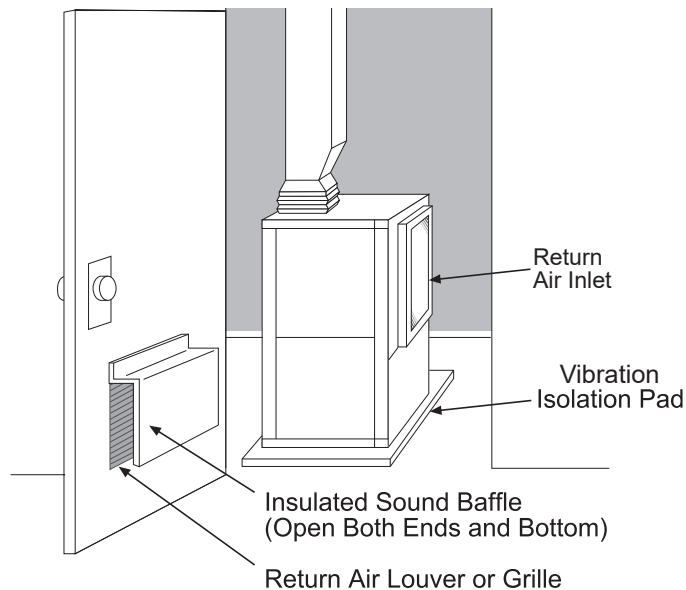
Notice! Installation Note - Ducted Return: Many horizontal WSHPs are installed in a return air ceiling plenum application (above ceiling). Vertical WSHPs are commonly installed in a mechanical room with free return (e.g. louvered door). Therefore, filter rails are the industry standard and are included on ClimateMaster commercial heat pumps for the purposes of holding the filter only. For ducted return applications, the filter rail must be removed and replaced with a duct flange or filter frame. Canvas or flexible connectors should also be used to minimize vibration between the unit and ductwork.

Vertical Installation, Cont'd.

Sound Attenuation for Vertical Units - Sound attenuation is achieved by enclosing the unit within a small mechanical room or a closet. Additional measures for sound control include the following:

1. Mount the unit so that the return air inlet is 90° to the return air grille. Refer to Figure 9. Install a sound baffle as illustrated to reduce line-of sight sound transmitted through return air grilles.
2. Mount the unit on a rubber or neoprene isolation pad to minimize vibration transmission to the building structure.

Figure 9: Vertical Sound Attenuation



Notice! Units with clear plastic drain lines should have regular maintenance (as required) to avoid buildup of debris, especially in new construction.

Condensate Piping for Vertical Units - A condensate line must be installed and pitched away from the unit to allow for proper drainage. This connection must meet all local plumbing/building codes.

Install condensate trap at each unit with the top of the trap positioned below the unit condensate drain connection as shown in Figure 10. Design the depth of the trap (water-seal) based upon the amount of ESP capability of the blower (where 2 inches [51mm] of ESP capability requires 2 inches [51mm] of trap depth). As a general rule, 1-1/2 inch [38mm] trap depth is the minimum.

Always vent the condensate line when dirt or air can collect in the line or a long horizontal drain line is required. Also vent when large units are working against higher external static pressure than other units connected to the same condensate main since this may cause poor drainage for all units on the line. **WHEN A VENT IS INSTALLED IN THE DRAIN LINE, IT MUST BE LOCATED AFTER THE TRAP IN THE DIRECTION OF THE CONDENSATE FLOW.**

Each unit must be installed with its own individual vent (where necessary) and a means to flush or blow out the condensate drain line. Do not install units with a common trap and/or vent.

Condensate drain connection is a rubber coupling that couples to 3/4" schedule 40/80 PVC. Use hose clamps to secure the pipe inside the coupling. If the connection is not secure, the connection may leak.

Instructions for coupling the condensate drain to the trap are included in the bag that includes the coupling and hose clamps.

Tranquility® (TR) Series

Rev.: November 4, 2024

Piping Installation

Installation of Supply and Return Piping

Follow these piping guidelines.

1. Install a drain valve at the base of each supply and return riser to facilitate system flushing.
2. Install shut-off / balancing valves and unions at each unit to permit unit removal for servicing.
3. Place strainers at the inlet of each system circulating pump.
4. Select the proper hose length to allow slack between connection points. Hoses may vary in length by +2% to -4% under pressure.
5. Refer to Table 1. Do not exceed the minimum bend radius for the hose selected. Exceeding the minimum bend radius may cause the hose to collapse, which reduces water flow rate. Install an angle adapter to avoid sharp bends in the hose when the radius falls below the required minimum.

Insulation is not required on loop water piping except where the piping runs through unheated areas, outside the building or when the loop water temperature is below the minimum expected dew point of the pipe ambient conditions. Insulation is required if loop water temperature drops below the dew point (insulation is required for ground loop applications in most climates).

Pipe joint compound is not necessary when Teflon® thread tape is pre-applied to hose assemblies or when flared-end connections are used. If pipe joint compound is preferred, use compound only in small amounts on the external pipe threads of the fitting adapters. Prevent sealant from reaching the flared surfaces of the joint.

NOTE: When antifreeze is used in the loop, ensure that it is compatible with the Teflon® tape or pipe joint compound that is applied.

Maximum allowable torque for brass fittings is 30 ft-lbs [41 N-m]. If a torque wrench is not available, tighten finger-tight plus one quarter turn. Tighten steel fittings as necessary.

Optional pressure-rated hose assemblies designed specifically for use with ClimateMaster units are available. Similar hoses can be obtained from alternate suppliers. Supply and return hoses are fitted with swivel-joint fittings at one end to prevent kinking during installation.

Refer to Figure 11 for an illustration of a typical supply/return hose kit. Adapters secure hose assemblies to the unit and risers. Install hose assemblies properly and check regularly to avoid system failure and reduced service life.

Installer Caution: After making water connections on units equipped with ClimaDry® II, ensure the three union nuts on the internal three-way water valve are tight.

ClimaDry II equipped units have a manual air bleed valve at the top of the reheat coil. This valve must be used to bleed the air from the reheat coil after filling the system, for the ClimaDry II to operate properly.

⚠ WARNING! ⚠

WARNING! Polyolester Oil, commonly known as POE oil, is a synthetic oil used in many refrigeration systems including those with HFC-410A refrigerant. POE oil, if it ever comes in contact with PVC or CPVC piping, may cause failure of the PVC/CPVC. PVC/CPVC piping should never be used as supply or return water piping with water source heat pump products containing HFC-410A as system failures and property damage may result.

⚠ CAUTION! ⚠

CAUTION! Corrosive system water requires corrosion resistant fittings and hoses, and may require water treatment.

⚠ CAUTION! ⚠

CAUTION! Do not bend or kink supply lines or hoses.

⚠ CAUTION! ⚠

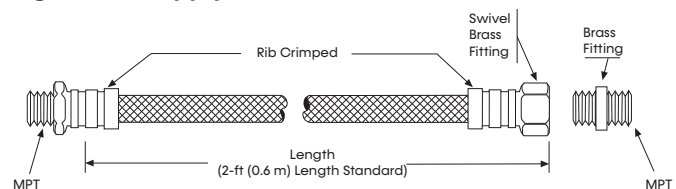
CAUTION! Piping must comply with all applicable codes.

Table 1: Metal Hose Minimum Bend Radii

Hose Diameter	Minimum Bend Radii
1/2" [12.7mm]	2-1/2" [6.4cm]
3/4" [19.1mm]	4" [10.2cm]
1" [25.4mm]	5-1/2" [14cm]
1-1/4" [31.8mm]	6-3/4" [17.1cm]

NOTICE! Do not allow hoses to rest against structural building components. Compressor vibration may be transmitted through the hoses to the structure, causing unnecessary noise complaints.

Figure 11: Supply/Return Hose Kit



Water-Loop Heat Pump Applications

Commercial Water Loop Applications

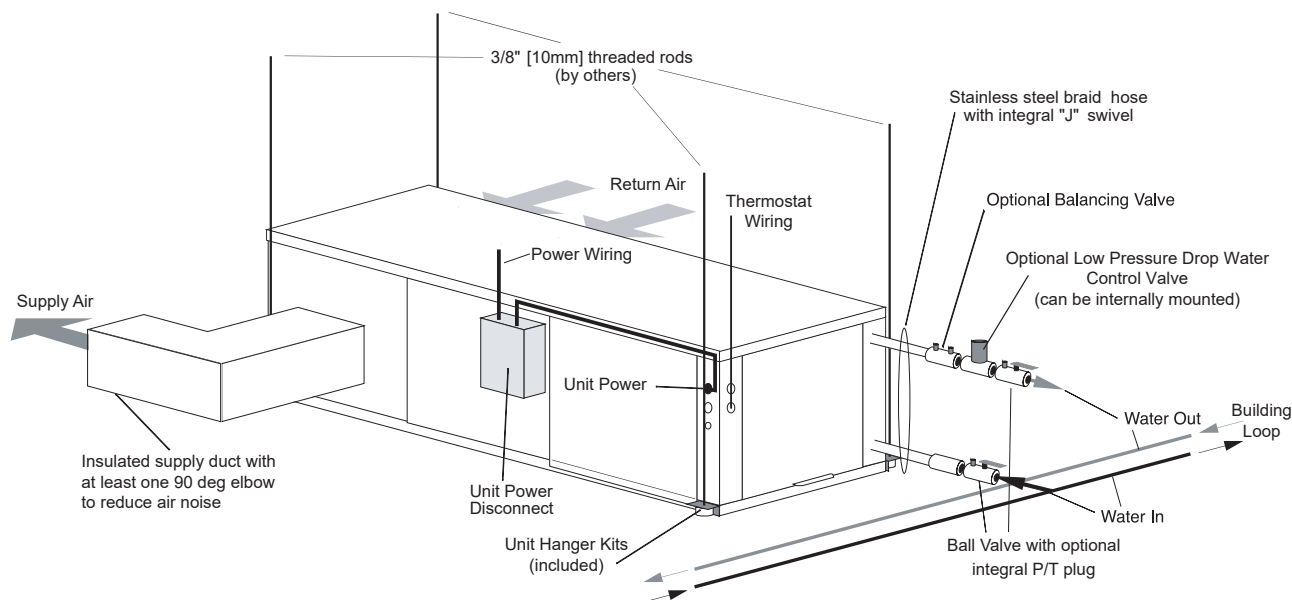
Commercial systems typically include a number of units connected to a common piping system. Any unit plumbing maintenance work can introduce air into the piping system; therefore air elimination equipment is a major portion of the mechanical room plumbing. Consideration should be given to insulating the piping surfaces to avoid condensation. ClimateMaster recommends unit insulation any time the water temperature is expected to be below 60°F (15.6°C). Metal to plastic threaded joints should never be used due to their tendency to leak over time.

Teflon® tape thread sealant is recommended to minimize internal fouling of the heat exchanger. Do not over tighten connections and route piping so as not to interfere with service or maintenance access. Hose kits are available from ClimateMaster in different configurations as shown in Figure 11 for connection between the unit and the piping system. Depending upon selection, hose kits may include shut off valves, P/T plugs for performance measurement, high pressure stainless steel braided hose, “Y” type strainer with blow down valve, and/or “J” type swivel connection. Balancing valves and an external low pressure drop solenoid valve for use in variable speed pumping systems may also be included in the hose kit.

The piping system should be flushed to remove dirt, piping chips, and other foreign material prior to operation (see “Piping System Cleaning and Flushing Procedures” in this manual). The flow rate is usually set between 2.25 and 3.5 gpm per ton [2.9 and 4.5 l/m per kW] of cooling capacity. ClimateMaster recommends 3 gpm per ton [3.9 l/m per kW] for most applications of water loop heat pump systems. To ensure proper maintenance and servicing, P/T ports are imperative for temperature and flow verification, as well as performance checks.

Water loop heat pump (cooling tower/boiler) systems typically utilize a common loop, maintained between 60 - 90°F [16 - 32°C]. The use of a closed circuit evaporative cooling tower with a secondary heat exchanger between the tower and the water loop is recommended. If an open type cooling tower is used continuously, chemical treatment and filtering will be necessary.

Figure 12: Typical Water-Loop Application



Low Water Temperature Cutout Setting - CXM2 Control

When antifreeze is selected, the LT1 jumper (JW3) should be clipped to select the low temperature (antifreeze 10.0°F [-12.2°C]) setpoint and avoid nuisance faults (see “Low

Water Temperature Cutout Selection” in this manual).

NOTE: Low water temperature operation requires extended range equipment.

Tranquility® (TR) Series

Rev.: November 4, 2024

Ground-Loop Heat Pump Applications

! CAUTION! !

CAUTION! The following instructions represent industry accepted installation practices for closed loop earth coupled heat pump systems. Instructions are provided to assist the contractor in installing trouble free ground loops. These instructions are recommendations only. State/provincial and local codes **MUST** be followed and installation **MUST** conform to **ALL** applicable codes. It is the responsibility of the installing contractor to determine and comply with **ALL** applicable codes and regulations.

! CAUTION! !

CAUTION! Ground loop applications require extended range equipment and optional refrigerant/water circuit insulation.

Test individual horizontal loop circuits before backfilling. Test vertical U-bends and pond loop assemblies prior to installation. Pressures of at least 100 psi [689 kPa] should be used when testing. Do not exceed the pipe pressure rating. Test entire system when all loops are assembled.

Flushing the Earth Loop

Upon completion of system installation and testing, flush the system to remove all foreign objects and purge to remove all air.

Antifreeze

In areas where minimum entering loop temperatures drop below 40°F [5°C] or where piping will be routed through areas subject to freezing, antifreeze is required. Alcohols and glycols are commonly used as antifreeze; however your local sales office should be consulted to determine the antifreeze best suited to your area. Freeze protection should be maintained to 15°F [9°C] below the lowest expected entering loop temperature. For example, if 30°F [-1°C] is the minimum expected entering loop temperature, the leaving loop temperature would be 22 to 25°F [-6 to -4°C] and freeze protection should be at 15°F [-10°C].

Calculation is as follows:

$$30^{\circ}\text{F} - 15^{\circ}\text{F} = 15^{\circ}\text{F} \quad [-1^{\circ}\text{C} - 9^{\circ}\text{C} = -10^{\circ}\text{C}]$$

All alcohols should be premixed and pumped from a reservoir outside of the building when possible or introduced under the water level to prevent fumes. Calculate the total volume of fluid in the piping system. Then use the percentage by volume shown in Table 2 for the amount of antifreeze needed. Antifreeze concentration should be checked from a well mixed sample using a hydrometer to measure specific gravity.

Low Water Temperature Cutout Setting - CXM2 Control

When antifreeze is selected, the LT1 jumper (JW3) should be clipped to select the low temperature (antifreeze 10.0°F [-12.2°C]) setpoint and avoid nuisance faults (see “Low Water Temperature Cutout Selection” in this manual).

NOTE: Low water temperature operation requires extended range equipment.

Pre-Installation

Prior to installation, locate and mark all existing underground utilities, piping, etc. Install loops for new construction before sidewalks, patios, driveways, and other construction has begun. During construction, accurately mark all ground loop piping on the plot plan as an aid in avoiding potential future damage to the installation.

Piping Installation

The typical closed loop ground source system is shown in Figure 13. All earth loop piping materials should be limited to polyethylene fusion only for in-ground sections of the loop. Galvanized or steel fittings should not be used at any time due to their tendency to corrode. All plastic to metal threaded fittings should be avoided due to their potential to leak in earth coupled applications. A flanged fitting should be substituted. P/T plugs should be used so that flow can be measured using the pressure drop of the unit heat exchanger.

Earth loop temperatures can range between 25 and 110°F [-4 to 43°C]. Flow rates between 2.25 and 3 gpm [2.41 to 3.23 l/m per kW] of cooling capacity is recommended in these applications.

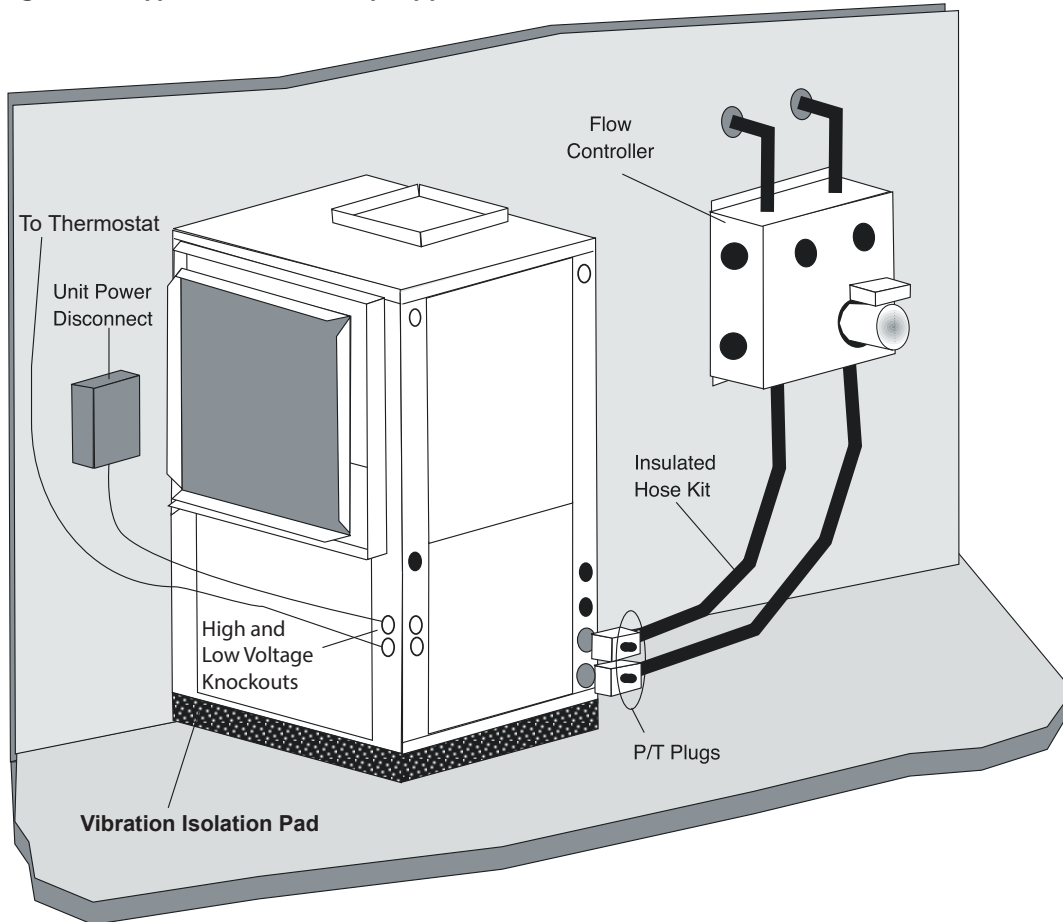
Table 2: Antifreeze Percentages by Volume

Type	Minimum Temperature for Low Temperature Protection			
	10°F [-12.2°C]	15°F [-9.4°C]	20°F [-6.7°C]	25°F [-3.9°C]
Methanol	25%	21%	16%	10%
100% USP food grade Propylene Glycol	38%	25%	22%	15%
Ethanol*	29%	25%	20%	14%

* Must not be denatured with any petroleum based product

Ground-Loop Heat Pump Applications, Cont'd.

Figure 13: Typical Ground-Loop Application



Tranquility® (TR) Series

Rev.: November 4, 2024

Ground-Water Heat Pump Applications

Open Loop - Ground Water Systems - Typical open loop piping is shown in Figure 14. Shut off valves should be included for ease of servicing. Boiler drains or other valves should be “tee'd” into the lines to allow acid flushing of the heat exchanger. Shut off valves should be positioned to allow flow through the coax via the boiler drains without allowing flow into the piping system. P/T plugs should be used so that pressure drop and temperature can be measured. Supply and return water piping materials should be limited to copper, PE, or similar material. PVC or CPVC should never be used as they are incompatible with the POE oils used in HFC-410A products and piping system failure and property damage may result.

WARNING!

WARNING! Polyolester Oil, commonly known as POE oil, is a synthetic oil used in many refrigeration systems including those with HFC-410A refrigerant. POE oil, if it ever comes in contact with PVC or CPVC piping, may cause failure of the PVC/CPVC. PVC/CPVC piping should never be used as supply or return water piping with water source heat pump products containing HFC-410A as system failures and property damage may result.

Water quantity should be plentiful and of good quality. Consult Table 3 for water quality guidelines. The unit can be ordered with either a copper or cupro-nickel water heat exchanger. Consult Table 3 for recommendations. Copper is recommended for closed loop systems and open loop ground water systems that are not high in mineral content or corrosiveness. In conditions anticipating heavy scale formation or in brackish water, a cupro-nickel heat exchanger is recommended. In ground water situations where scaling could be heavy or where biological growth such as iron bacteria will be present, an open loop system is not recommended. Heat exchanger coils may over time lose heat exchange capabilities due to build up of mineral deposits. Heat exchangers must only be serviced by a qualified technician, as acid and special pumping equipment is required. Desuperheater coils can likewise become scaled and possibly plugged. In areas with extremely hard water, the owner should be informed that the heat exchanger may require occasional acid flushing. In some cases, the desuperheater option should not be recommended due to hard water conditions and additional maintenance required.

Water Quality Requirements - Table 3 should be consulted for water quality requirements. Scaling potential should be assessed using the pH/Calcium hardness method. If the pH <7.5 and the calcium hardness is less than 100 ppm, scaling potential is low. If this method yields numbers out of range of those listed, the Ryznar Stability and Langelier Saturation indices should be calculated. Use the appropriate scaling surface temperature for the application, 150°F [66°C] for direct use (well water/open loop) and DHW (desuperheater); 90°F [32°F] for indirect use. A monitoring plan should be implemented in these probable scaling situations. Other water quality issues such as iron fouling, corrosion prevention and erosion and clogging should be referenced in Table 3.

Expansion Tank and Pump - Use a closed, bladder-type expansion tank to minimize mineral formation due to air exposure. The expansion tank should be sized to provide at least one minute continuous run time of the pump using its drawdown capacity rating to prevent pump short cycling. Discharge water from the unit is not contaminated in any manner and can be disposed of in various ways, depending on local building codes (e.g. recharge well, storm sewer, drain field, adjacent stream or pond, etc.). Most local codes forbid the use of sanitary sewer for disposal. Consult your local building and zoning department to assure compliance in your area.

Water Control Valve - Note the placement of the water control valve in Figure 14. Always maintain water pressure in the heat exchanger by placing the water control valve(s) on the discharge line to prevent mineral precipitation during the off-cycle. Pilot operated slow closing valves are recommended to reduce water hammer. If water hammer persists, a mini-expansion tank can be mounted on the piping to help absorb the excess hammer shock. Ensure that the total 'VA' draw of the valve can be supplied by the unit transformer. For instance, a slow closing valve can draw up to 35VA. This can overload smaller 40 or 50 VA transformers depending on the other controls in the circuit. A typical pilot operated solenoid valve draws approximately 15VA (see Figure 19). Note the special wiring diagrams for slow closing valves (Figures 20 & 21).

Ground-Water Heat Pump Applications, Cont'd.

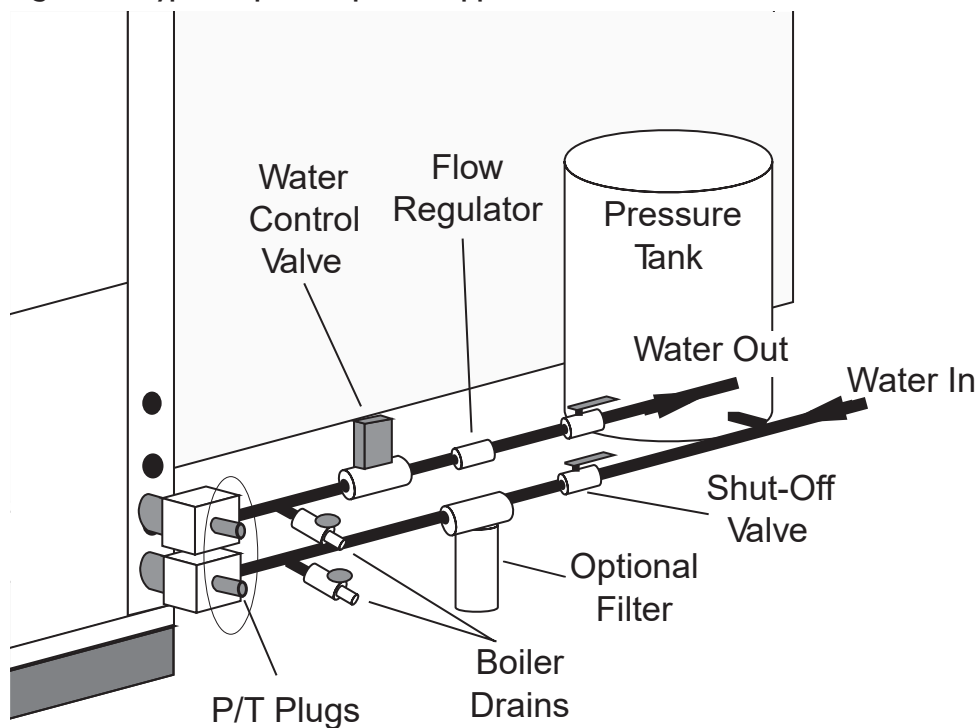
Flow Regulation - Flow regulation can be accomplished by two methods. One method of flow regulation involves simply adjusting the ball valve or water control valve on the discharge line. Measure the pressure drop through the unit heat exchanger, and determine flow rate from Table 8. Since the pressure is constantly varying, two pressure gauges may be needed. Adjust the valve until the desired flow of 1.5 to 2 gpm per ton [2.0 to 2.6 l/m per kW] is achieved. A second method of flow control requires a flow control device mounted on the outlet of the water control valve. The device is typically a brass fitting with an orifice of rubber or plastic material that is designed to allow a specified flow rate. On occasion, flow control devices may produce velocity noise that can be reduced by applying

some back pressure from the ball valve located on the discharge line. Slightly closing the valve will spread the pressure drop over both devices, lessening the velocity noise.

Note: When EWT is below 50°F [10°C], 2 gpm per ton (2.6 l/m per kW) is required.

Water Coil Low Temperature Limit Setting - For all open loop systems the 30°F [-1.1°C] LT1 setting (factory setting-water) should be used to avoid freeze damage to the unit. See “Low Water Temperature Cutout Selection” in this manual for details on the low limit setting.

Figure 14: Typical Open Loop/Well Application



Tranquility® (TR) Series

Rev.: November 4, 2024

Water Quality Requirements

Table 3: Water Quality Requirements

Clean water is essential to the performance and life span of water source heat pumps. Contaminants, chemicals, and minerals all have the potential to cause damage to the water heat exchanger if not treated properly. All closed water loop systems should undergo water quality testing and be maintained to the water quality standards listed in this table.

WATER QUALITY REQUIREMENTS							
For Closed-Loop and Open-Loop Systems							
	Description	Symbol	Units	Heat Exchanger Type			
				All Heat Exchanger Types	Open Loop, Tower, Ground Source Well		
					COAXIAL HX Copper Tube in Tube	COAXIAL HX Cupronickel	Brazed Plate HX 316 SS
Scaling Potential	pH - Chilled Water <85°F			7.0 to 9.0	7.0 to 9.0	7.0 to 9.0	7.0 to 9.0
	pH - Heated Water >85°F			8.0 to 10.0	8.0 to 10.0	8.0 to 10.0	8.0 to 10.0
	Alkalinity	(HCO ₃ ⁻)	ppm - CaCO ₃ equiv.	50 to 500	50 to 500	50 to 500	50 to 500
	Calcium	(Ca)	ppm	<100	<100	<100	<100
	Magnesium	(Mg)	ppm	<100	<100	<100	<100
	Total Hardness	(CaCO ₃)	ppm - CaCO ₃ equiv.	30 to 150	150 to 450	150 to 450	150 to 450
	Langelier Saturation Index	LSI		-0.5 to +0.5	-0.5 to +0.5	-0.5 to +0.5	-0.5 to +0.5
Ryznar Stability Index	RSI		6.5 to 8.0	6.5 to 8.0	6.5 to 8.0	6.5 to 8.0	
Corrosion Prevention	Total Dissolved Solids	(TDS)	ppm - CaCO ₃ equiv.	<1000	<1000	<1000	<1500
	Sulfate	(SO ₄ ²⁻)	ppm	<200	<200	<200	<200
	Nitrate	(NO ₃ ⁻)	ppm	<100	<100	<100	<100
	Chlorine (free)	(Cl)	ppm	<0.5	<0.5	<0.5	<0.5
	Chloride (water < 80°F)	(Cl ⁻)	ppm	<20	<20	<150	<150
	Chloride (water > 120°F)	(Cl ⁻)	ppm	<20	<20	<125	<125
	Hydrogen Sulfide ^a	(H ₂ S)	ppb	<0.5	<0.5	<0.5	<0.5
	Carbon Dioxide	(CO ₂)	ppm	0	<50	10 to 50	10 to 50
	Iron Oxide	(Fe)	ppm	<1.0	<1.0	<1.0	<0.2
	Manganese	(Mn)	ppm	< 0.4	<0.4	<0.4	<0.4
	Ammonia	(NH ₃)	ppm	<0.05	<0.1	<0.1	<0.1
	Chloramine	(NH ₂ CL)	ppm	0	0	0	0
Fouling & Biological	Iron Bacteria		cells/mL	0	0	0	0
	Slime Forming Bacteria		cells/mL	0	0	0	0
	Sulfate reducing bacteria		cells/mL	0	0	0	0
	Suspended Solids ^b	(TSS)	ppm	<10	<10	<10	<10
Electrolysis All HX types	Earth Ground Resistance ^x		Ohms	0	Consult NEC & local electrical codes for grounding requirements		
	Electrolysis Voltage ^δ		mV	<300	Measure voltage internal water loop to HP ground		
	Leakage Current ^δ		mA	<15	Measure current in water loop pipe		
	Building Primary Electrical Ground to unit, must meet local diameter and penetration length requirements Do not connect heat pump to steel pipe unless dissimilar materials are separated by using Di-electric unions. Galvanic corrosion of heat pump water pipe will occur.						

Water Quality Requirements, Cont'd.

1. The ClimateMaster Water Quality Table provides water quality requirements for coaxial & brazed plate heat exchangers.
2. The water must be evaluated by an independent testing facility comparing site samples against this table. When water properties are outside of these parameters, the water must either be treated by a professional water treatment specialist to bring the water quality within the boundaries of this specification, or an external secondary heat exchanger must be used to isolate the heat pump water system from the unsuitable water. Failure to do so will void the warranty of the heat pump system and will limit liability for damage caused by leaks or system failure.
3. Regular sampling, testing and treatment of the water is necessary to assure that the water quality remains within acceptable levels thereby allowing the heat pump to operate at optimum levels.
4. If closed-loop systems are turned off for extended periods, water samples must be tested prior to operating the system.
5. For optimal performance, it is recommended that the closed-loop piping systems are initially filled with de-ionized water.
6. Well water with chemistry outside of these boundaries, and salt water or brackish water requires an external secondary heat exchanger. Surface/Pond water should not be used.
7. If water temperature is expected to fall below 40°F, antifreeze is required. Refer to the heat pump IOM for the correct solution ratios to prevent freezing.
 - α Hydrogen Sulfide has an odor of rotten eggs. If one detects this smell, a test for H₂S must be performed. If H₂S is detected above the limit indicated, remediation is necessary (Consult with your Water Testing/Treatment Professional) or a secondary heat exchanger is required using appropriate materials as recommended by the heat exchanger supplier.
 - β Suspended solids and particulates must be filtered to prevent fouling and failure of heat exchangers. Strainers or particulate filters must be installed to provide a maximum particle size of 600 micron (0.60 mm, 0.023 in.) using a 20 to 30 mesh screen size. When a loop is installed in areas with fine material such as sand or clay, further filtration is required to a maximum of 100 micron. Refer to the Strainer / Filter Sizing Chart to capture the particle sizes encountered on the site.
 - χ An electrical grounding system using a dedicated ground rod meeting NEC and Local Electrical codes must be installed. Building Ground must not be connected the WSHP piping system or other plumbing pipes.
 - δ Refer to IOM for instructions on measuring resistance and leakage currents within water loops.

Do not use PVC pipe for water loop (compressor POE oil and glycols damage PVC) use of HDPE pipe is recommended.

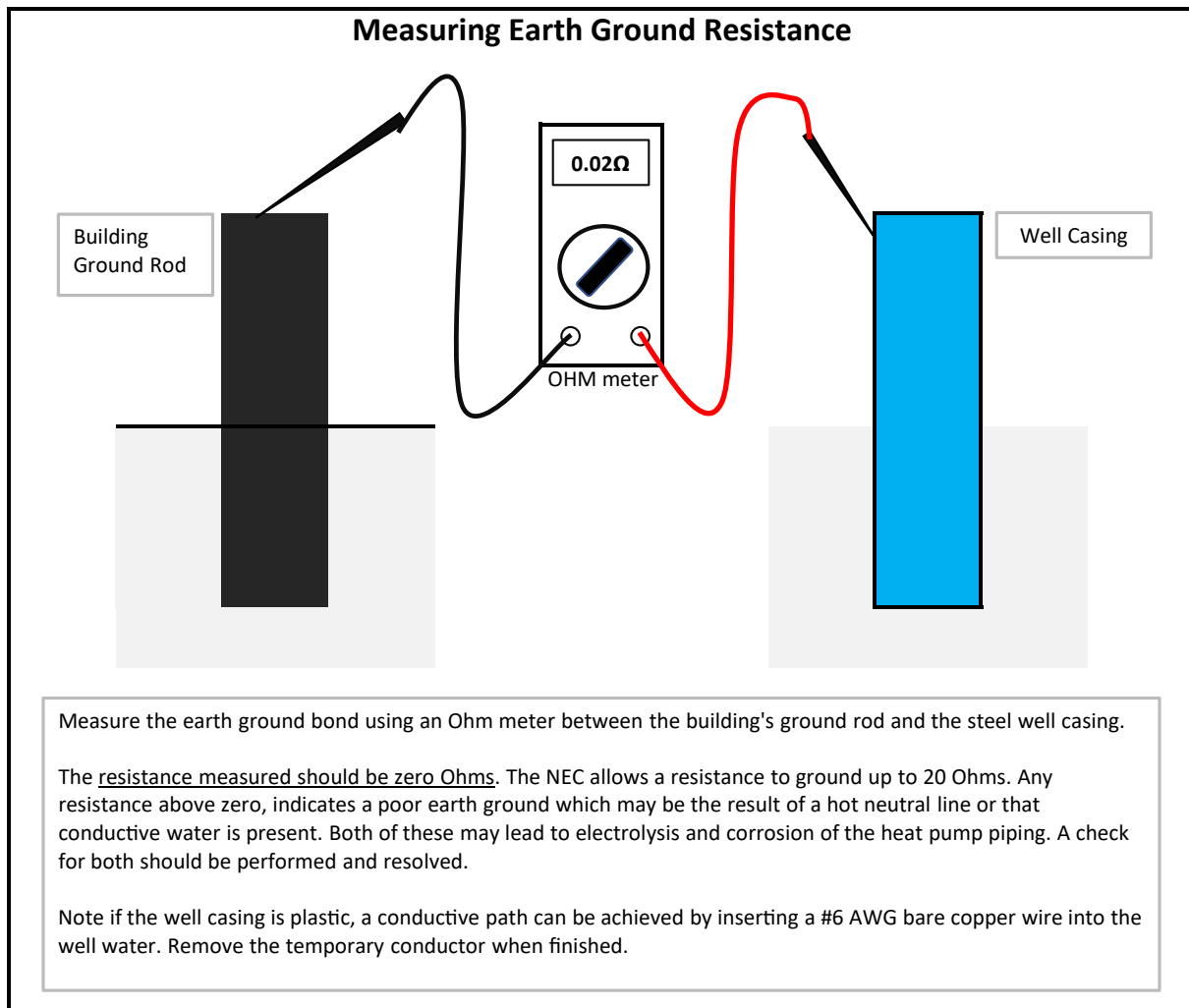
Strainer / Filter Sizing			
Mesh Size	Particle Size		
	Microns	MM	Inch
20	840	0.840	0.0340
30	533	0.533	0.0210
60	250	0.250	0.0100
100	149	0.149	0.0060
150	100	0.100	0.0040
200	74	0.074	0.0029

ppm = parts per million
ppb = parts per billion

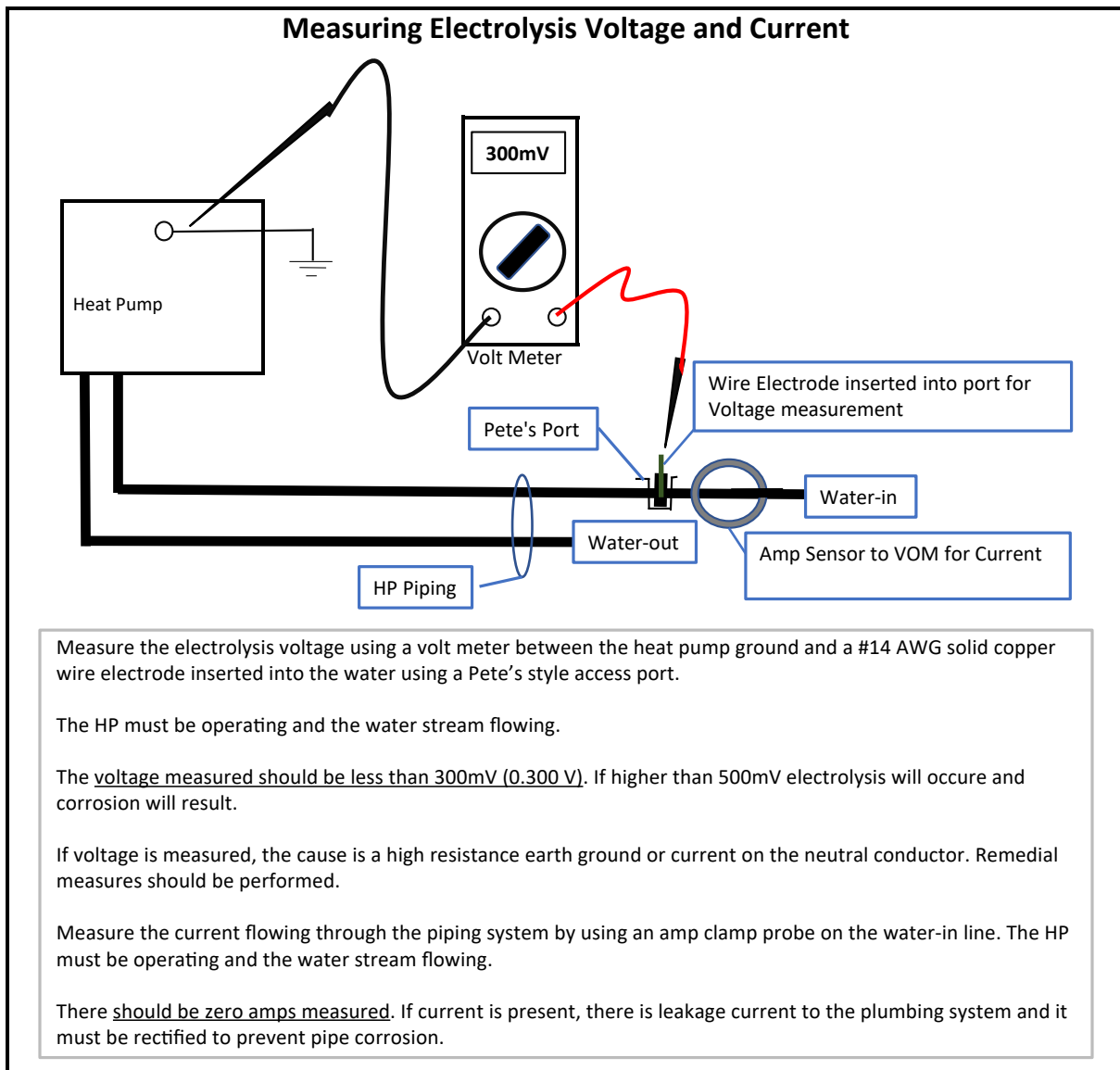
Tranquility® (TR) Series

Rev.: November 4, 2024

Water Quality Requirements, Cont'd.



Water Quality Requirements, Cont'd.



Tranquility® (TR) Series

Rev.: November 4, 2024

Electrical Data: PSC Blower – Standard Unit

TR Commercial Electrical Table							STANDARD PSC				HI STATIC PSC			
MODEL	VOLTAGE CODE	RATED VOLTAGE	VOLTAGE MIN/MAX	COMPRESSOR			FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR
				QTY	RLA	LRA								
006	G	208-230 / 60 / 1	187.2 / 253	1	2.6	17.7	0.3	2.9	3.6	15A				
	E	265 / 60 / 1	238.5 / 291.5	1	2.6	13.5	0.4	3.0	3.6	15A				
009	G	208-230 / 60 / 1	187.2 / 253	1	3.7	22	0.8	4.5	5.5	15A				
	E	265 / 60 / 1	238.5 / 291.5	1	3.4	17.5	0.8	4.2	5.1	15A				
012	G	208-230 / 60 / 1	187.2 / 253	1	5.6	32.5	0.8	6.4	7.8	15A				
	E	265 / 60 / 1	238.5 / 291.5	1	4.2	31.5	0.8	5.0	6.1	15A				
015	G	208-230 / 60 / 1	187.2 / 253	1	5.6	29	0.9	6.5	7.9	15A	0.9	6.5	7.9	15A
	E	265 / 60 / 1	238.5 / 291.5	1	5.0	28	0.7	5.7	7.0	15A	0.7	5.7	7.0	15A
018	G	208-230 / 60 / 1	187.2 / 253	1	7.4	33	0.9	8.3	10.2	15A	0.9	8.3	10.2	15A
	E	265 / 60 / 1	238.5 / 291.5	1	6.0	28	0.7	6.7	8.2	15A	0.7	6.7	8.2	15A
024	G	208-230 / 60 / 1	187.2 / 253	1	12.8	58.3	1.5	14.3	17.5	30A	2.7	15.5	18.7	30A
	E	265 / 60 / 1	238.5 / 291.5	1	9.6	54	1.2	10.8	13.2	20A	2.9	12.5	14.9	20A
	F	460 / 60 / 3	414 / 506	1	3.6	28	1.4	5.0	5.9	15A	1.6	5.2	6.1	15A
	H	208-230 / 60 / 3	187.2 / 253	1	7.7	55.4	1.5	9.2	11.1	15A	2.7	10.4	12.3	20A
030	G	208-230 / 60 / 1	187.2 / 253	1	14.1	73	2.7	16.8	20.3	30A	2.7	16.8	20.3	30A
	E	265 / 60 / 1	238.5 / 291.5	1	11.2	60	2.9	14.1	16.9	25A	2.9	14.1	16.9	25A
	F	460 / 60 / 3	414 / 506	1	4.2	28	1.6	5.8	6.9	15A	1.6	5.8	6.9	15A
	H	208-230 / 60 / 3	187.2 / 253	1	8.9	58	2.7	11.6	13.8	20A	2.7	11.6	13.8	20A
036	G	208-230 / 60 / 1	187.2 / 253	1	16.7	79	2.7	19.4	23.6	40A	2.7	19.4	23.6	40A
	E	265 / 60 / 1	238.5 / 291.5	1	13.5	72	2.0	15.5	18.9	30A	2.9	16.4	19.8	30A
	F	460 / 60 / 3	414 / 506	1	5.8	38	1.2	7.0	8.5	15A	1.6	7.4	8.9	15A
	H	208-230 / 60 / 3	187.2 / 253	1	10.4	73	2.7	13.1	15.7	25A	2.7	13.1	15.7	25A
042	G	208-230 / 60 / 1	187.2 / 253	1	17.9	112	2.7	20.6	25.1	40A	2.7	20.6	25.1	40A
	F	460 / 60 / 3	414 / 506	1	6.0	44	1.6	7.6	9.1	15A	1.6	7.6	9.1	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.5	88	2.7	16.2	19.6	30A	2.7	16.2	19.6	30A
	N	575 / 60 / 3	517.5 / 632.5	1	4.9	34	1.4	6.3	7.5	15A	1.4	6.3	7.5	15A
048	G	208-230 / 60 / 1	187.2 / 253	1	21.8	117	3.3	25.1	30.6	50A	4.8	26.6	32.1	50A
	F	460 / 60 / 3	414 / 506	1	6.2	41	1.7	7.9	9.5	15A	2.4	8.6	10.2	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.7	83.1	3.3	17.0	20.4	30A	4.8	18.5	21.9	35A
	N	575 / 60 / 3	517.5 / 632.5	1	4.8	33	1.4	6.2	7.4	15A	1.8	6.6	7.8	15A
060	G	208-230 / 60 / 1	187.2 / 253	1	26.3	134	4.8	31.1	37.7	60A	5.7	32.0	38.6	60A
	F	460 / 60 / 3	414 / 506	1	7.8	52	2.4	10.2	12.2	15A	2.5	10.3	12.3	20A
	H	208-230 / 60 / 3	187.2 / 253	1	15.6	110	4.8	20.4	24.3	40A	5.7	21.3	25.2	40A
	N	575 / 60 / 3	517.5 / 632.5	1	5.8	38.9	1.8	7.6	9.1	15A	1.9	7.7	9.2	15A

460 volt units require a neutral connection. All "F" voltage units with Constant Volume (CV) ECM require a four wire power supply with neutral. Motors are 265 volt and are wired between one hot leg and neutral. All fuses Class RK-5

Electrical Data: PSC Blower – Internal Secondary Pump

TR Commercial Electrical Table W/ ISP								STANDARD PSC				HI STATIC PSC			
MODEL	VOLTAGE CODE	RATED VOLTAGE	VOLTAGE MIN/MAX	COMPRESSOR			PUMP FLA	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR
				QTY	RLA	LRA									
006	G	208-230 / 60 / 1	187.2 / 253	1	2.6	17.7	0.4	0.3	3.3	4.0	15A				
	E	265 / 60 / 1	238.5 / 291.5	1	2.6	13.5	0.7	0.4	3.7	4.3	15A				
009	G	208-230 / 60 / 1	187.2 / 253	1	3.7	22	0.4	0.8	4.9	5.9	15A				
	E	265 / 60 / 1	238.5 / 291.5	1	3.4	17.5	0.7	0.8	4.9	5.8	15A				
012	G	208-230 / 60 / 1	187.2 / 253	1	5.6	32.5	0.8	0.8	7.2	8.6	15A				
	E	265 / 60 / 1	238.5 / 291.5	1	4.2	31.5	0.7	0.8	5.7	6.8	15A				
015	G	208-230 / 60 / 1	187.2 / 253	1	5.6	29	0.8	0.9	7.3	8.7	15A	0.9	7.3	8.7	15A
	E	265 / 60 / 1	238.5 / 291.5	1	5.0	28	0.7	0.7	6.4	7.7	15A	0.7	6.4	7.7	15A
018	G	208-230 / 60 / 1	187.2 / 253	1	7.4	33	0.8	0.9	9.1	11.0	15A	0.9	9.1	11.0	15A
	E	265 / 60 / 1	238.5 / 291.5	1	6.0	28	0.7	0.7	7.4	8.9	15A	0.7	7.4	8.9	15A
024	G	208-230 / 60 / 1	187.2 / 253	1	12.8	58.3	0.8	1.5	15.1	18.3	30A	2.7	16.3	19.5	30A
	E	265 / 60 / 1	238.5 / 291.5	1	9.6	54	0.7	1.2	11.5	13.9	20A	2.9	13.2	15.6	25A
	F**	460 / 60 / 3	414 / 506	1	3.6	28	0.7	1.4	5.7	6.6	15A	1.6	5.9	6.8	15A
	H	208-230 / 60 / 3	187.2 / 253	1	7.7	55.4	0.8	1.5	10.0	11.9	15A	2.7	11.2	13.1	20A
030	G	208-230 / 60 / 1	187.2 / 253	1	14.1	73	0.8	2.7	17.6	21.1	35A	2.7	17.6	21.1	35A
	E	265 / 60 / 1	238.5 / 291.5	1	11.2	60	0.7	2.9	14.8	17.6	25A	2.9	14.8	17.6	25A
	F**	460 / 60 / 3	414 / 506	1	4.2	28	0.7	1.6	6.5	7.6	15A	1.6	6.5	7.6	15A
	H	208-230 / 60 / 3	187.2 / 253	1	8.9	58	0.8	2.7	12.4	14.6	20A	2.7	12.4	14.6	20A
036	G	208-230 / 60 / 1	187.2 / 253	1	16.7	79	0.8	2.7	20.2	24.4	40A	2.7	20.2	24.4	40A
	E	265 / 60 / 1	238.5 / 291.5	1	13.5	72	0.7	2.0	16.2	19.6	30A	2.9	17.1	20.5	30A
	F**	460 / 60 / 3	414 / 506	1	5.8	38	0.7	1.2	7.7	9.2	15A	1.6	8.1	9.6	15A
	H	208-230 / 60 / 3	187.2 / 253	1	10.4	73	0.8	2.7	13.9	16.5	25A	2.7	13.9	16.5	25A
042	G	208-230 / 60 / 1	187.2 / 253	1	17.9	112	0.8	2.7	21.4	25.9	40A	2.7	21.4	25.9	40A
	F**	460 / 60 / 3	414 / 506	1	6.0	44	0.7	1.6	8.3	9.8	15A	1.6	8.3	9.8	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.5	88	0.8	2.7	17.0	20.4	30A	2.7	17.0	20.4	30A
048	G	208-230 / 60 / 1	187.2 / 253	1	21.8	117	1.1	3.3	26.2	31.7	50A	4.8	27.7	33.2	50A
	F**	460 / 60 / 3	414 / 506	1	6.2	41	1.3	1.7	9.2	10.8	15A	2.4	9.9	11.5	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.7	83.1	1.1	3.3	18.1	21.5	35A	4.8	19.6	23.0	35A
060	G	208-230 / 60 / 1	187.2 / 253	1	26.3	134	1.1	4.8	32.2	38.8	60A	5.7	33.1	39.7	60A
	F**	460 / 60 / 3	414 / 506	1	7.8	52	1.3	2.4	11.5	13.5	20A	2.5	11.6	13.6	20A
	H	208-230 / 60 / 3	187.2 / 253	1	15.6	110	1.1	4.8	21.5	25.4	40A	5.7	22.4	26.3	40A

** 460 volt units require a neutral for the Internal Secondary Pump

Tranquility® (TR) Series

Rev.: November 4, 2024

Electrical Data: PSC Blower – with ClimaDry® II

TR Condenser Water Reheat Commercial Electrical Table								STANDARD PSC				HI STATIC PSC			
MODEL	VOLTAGE CODE	RATED VOLTAGE	VOLTAGE MIN/MAX	COMPRESSOR			PUMP FLA	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR
				QTY	RLA	LRA									
024	G	208-230 / 60 / 1	187.2 / 253	1	12.8	58.3	0.8	1.5	15.1	18.3	30A	2.7	16.3	19.5	30A
	E	265 / 60 / 1	238.5 / 291.5	1	9.6	54	0.7	1.2	11.5	13.9	20A	2.9	13.2	15.6	25A
	F**	460 / 60 / 3	414 / 506	1	3.6	28	0.7	1.4	5.7	6.6	15A	1.6	5.9	6.8	15A
	H	208-230 / 60 / 3	187.2 / 253	1	7.7	55.4	0.8	1.5	10.0	11.9	15A	2.7	11.2	13.1	20A
030	G	208-230 / 60 / 1	187.2 / 253	1	14.1	73	0.8	2.7	17.6	21.1	35A	2.7	17.6	21.1	35A
	E	265 / 60 / 1	238.5 / 291.5	1	11.2	60	0.7	2.9	14.8	17.6	25A	2.9	14.8	17.6	25A
	F**	460 / 60 / 3	414 / 506	1	4.2	28	0.7	1.6	6.5	7.6	15A	1.6	6.5	7.6	15A
	H	208-230 / 60 / 3	187.2 / 253	1	8.9	58	0.8	2.7	12.4	14.6	20A	2.7	12.4	14.6	20A
036	G	208-230 / 60 / 1	187.2 / 253	1	16.7	79	0.8	2.7	20.2	24.4	40A	2.7	20.2	24.4	40A
	E	265 / 60 / 1	238.5 / 291.5	1	13.5	72	0.7	2.0	16.2	19.6	30A	2.9	17.1	20.5	30A
	F**	460 / 60 / 3	414 / 506	1	5.8	38	0.7	1.2	7.7	9.2	15A	1.6	8.1	9.6	15A
	H	208-230 / 60 / 3	187.2 / 253	1	10.4	73	0.8	2.7	13.9	16.5	25A	2.7	13.9	16.5	25A
042	G	208-230 / 60 / 1	187.2 / 253	1	17.9	112	0.8	2.7	21.4	25.9	40A	2.7	21.4	25.9	40A
	F**	460 / 60 / 3	414 / 506	1	6.0	44	0.7	1.6	8.3	9.8	15A	1.6	8.3	9.8	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.5	88	0.8	2.7	17.0	20.4	30A	2.7	17.0	20.4	30A
048	G	208-230 / 60 / 1	187.2 / 253	1	21.8	117	1.1	3.3	26.2	31.7	50A	4.8	27.7	33.2	50A
	F**	460 / 60 / 3	414 / 506	1	6.2	41	1.3	1.7	9.2	10.8	15A	2.4	9.9	11.5	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.7	83.1	1.1	3.3	18.1	21.5	35A	4.8	19.6	23.0	35A
060	G	208-230 / 60 / 1	187.2 / 253	1	26.3	134	1.1	4.8	32.2	38.8	60A	5.7	33.1	39.7	60A
	F**	460 / 60 / 3	414 / 506	1	7.8	52	1.3	2.4	11.5	13.5	20A	2.5	11.6	13.6	20A
	H	208-230 / 60 / 3	187.2 / 253	1	15.6	110	1.1	4.8	21.5	25.4	40A	5.7	22.4	26.3	40A

** 460 volt units with ClimaDry® II Require a Neutral

Electrical Data: ECM Blower – Standard Unit

TR Commercial Electrical Table							CV ECM**				CT ECM			
MODEL	VOLTAGE CODE	RATED VOLTAGE	VOLTAGE MIN/MAX	COMPRESSOR			FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR
				QTY	RLA	LRA								
006	G	208-230 / 60 / 1	187.2 / 253	1	2.6	17.7	1.5	4.1	4.8	15A	2.3	4.9	5.6	15A
	E	265 / 60 / 1	238.5 / 291.5	1	2.6	13.5	1.4	4.0	4.7	15A	2.3	4.9	5.6	15A
009	G	208-230 / 60 / 1	187.2 / 253	1	3.7	22	1.5	5.2	6.1	15A	2.3	6.0	6.9	15A
	E	265 / 60 / 1	238.5 / 291.5	1	3.4	17.5	1.4	4.8	5.7	15A	2.3	5.7	6.6	15A
012	G	208-230 / 60 / 1	187.2 / 253	1	5.6	32.5	2.6	8.2	9.6	15A	2.3	7.9	9.3	15A
	E	265 / 60 / 1	238.5 / 291.5	1	4.2	31.5	2.5	6.7	7.8	15A	2.3	6.5	7.6	15A
015	G	208-230 / 60 / 1	187.2 / 253	1	5.6	29	2.6	8.2	9.6	15A	2.6	8.2	9.6	15A
	E	265 / 60 / 1	238.5 / 291.5	1	5.0	28	2.4	7.4	8.7	15A	1.9	6.9	8.2	15A
018	G	208-230 / 60 / 1	187.2 / 253	1	7.4	33	2.6	10.0	11.9	15A	2.6	10.0	11.9	15A
	E	265 / 60 / 1	238.5 / 291.5	1	6.0	28	2.4	8.4	9.9	15A	1.9	7.9	9.4	15A
024	G	208-230 / 60 / 1	187.2 / 253	1	12.8	58.3	3.9	16.7	19.9	30A	3.9	16.7	19.9	30A
	E	265 / 60 / 1	238.5 / 291.5	1	9.6	54	3.2	12.8	15.2	20A	3.2	12.8	15.2	20A
	F**	460 / 60 / 3	414 / 506	1	3.6	28	3.2	6.8	7.7	15A	1.1	4.7	5.6	15A
	H	208-230 / 60 / 3	187.2 / 253	1	7.7	55.4	3.9	11.6	13.5	20A	3.9	11.6	13.5	20A
030	G	208-230 / 60 / 1	187.2 / 253	1	14.1	73	3.9	18.0	21.5	35A	3.9	18.0	21.5	35A
	E	265 / 60 / 1	238.5 / 291.5	1	11.2	60	3.2	14.4	17.2	25A	3.2	14.4	17.2	25A
	F**	460 / 60 / 3	414 / 506	1	4.2	28	3.2	7.4	8.5	15A	1.1	5.3	6.4	15A
	H	208-230 / 60 / 3	187.2 / 253	1	8.9	58	3.9	12.8	15.0	20A	3.9	12.8	15.0	20A
036	G	208-230 / 60 / 1	187.2 / 253	1	16.7	79	6.0	22.7	26.9	40A	6.0	22.7	26.9	40A
	E	265 / 60 / 1	238.5 / 291.5	1	13.5	72	4.8	18.3	21.7	35A	3.9	17.4	20.8	30A
	F**	460 / 60 / 3	414 / 506	1	5.8	38	4.8	10.6	12.1	15A	1.5	7.3	8.8	15A
	H	208-230 / 60 / 3	187.2 / 253	1	10.4	73	6.0	16.4	19.0	25A	6.0	16.4	19.0	25A
042	G	208-230 / 60 / 1	187.2 / 253	1	17.9	112	6.0	23.9	28.4	45A	6.0	23.9	28.4	45A
	F**	460 / 60 / 3	414 / 506	1	6.0	44	4.8	10.8	12.3	15A	1.5	7.5	9.0	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.5	88	6.0	19.5	22.9	35A	6.0	19.5	22.9	35A
048	G	208-230 / 60 / 1	187.2 / 253	1	21.8	117	7.5	29.3	34.8	50A	7.5	29.3	34.8	50A
	F**	460 / 60 / 3	414 / 506	1	6.2	41	6.2	12.4	14.0	15A	2.1	8.3	9.9	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.7	83.1	7.5	21.2	24.6	35A	7.5	21.2	24.6	35A
060	G	208-230 / 60 / 1	187.2 / 253	1	26.3	134	7.5	33.8	40.4	60A	7.5	33.8	40.4	60A
	F**	460 / 60 / 3	414 / 506	1	7.8	52	6.0	13.8	15.8	20A	2.1	9.9	11.9	15A
	H	208-230 / 60 / 3	187.2 / 253	1	15.6	110	7.5	23.1	27.0	40A	7.5	23.1	27.0	40A

** 460 volt units with Internal Secondary Pump and/or CV ECM Require a Neutral

Tranquility® (TR) Series

Rev.: November 4, 2024

Electrical Data: ECM Blower – Internal Secondary Pump

TR Commercial Electrical Table W/ ISP								CV ECM**				CT ECM			
MODEL	VOLTAGE CODE	RATED VOLTAGE	VOLTAGE MIN/MAX	COMPRESSOR			PUMP FLA	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR
				QTY	RLA	LRA									
006	G	208-230 / 60 / 1	187.2 / 253	1	2.6	17.7	0.4	1.5	4.5	5.2	15A	2.3	5.3	6.0	15A
	E	265 / 60 / 1	238.5 / 291.5	1	2.6	13.5	0.7	1.4	4.7	5.4	15A	2.3	5.6	6.3	15A
009	G	208-230 / 60 / 1	187.2 / 253	1	3.7	22	0.4	1.5	5.6	6.5	15A	2.3	6.4	7.3	15A
	E	265 / 60 / 1	238.5 / 291.5	1	3.4	17.5	0.7	1.4	5.5	6.4	15A	2.3	6.4	7.3	15A
012	G	208-230 / 60 / 1	187.2 / 253	1	5.6	32.5	0.8	2.6	9.0	10.4	15A	2.3	8.7	10.1	15A
	E	265 / 60 / 1	238.5 / 291.5	1	4.2	31.5	0.7	2.5	7.4	8.5	15A	2.3	7.2	8.3	15A
015	G	208-230 / 60 / 1	187.2 / 253	1	5.6	29	0.8	2.6	9.0	10.4	15A	2.6	9.0	10.4	15A
	E	265 / 60 / 1	238.5 / 291.5	1	5.0	28	0.7	2.4	8.1	9.4	15A	1.9	7.6	8.9	15A
018	G	208-230 / 60 / 1	187.2 / 253	1	7.4	33	0.8	2.6	10.8	12.7	20A	2.6	10.8	12.7	20A
	E	265 / 60 / 1	238.5 / 291.5	1	6.0	28	0.7	2.1	8.8	10.3	15A	1.9	8.6	10.1	15A
024	G	208-230 / 60 / 1	187.2 / 253	1	12.8	58.3	0.8	3.9	17.5	20.7	30A	3.9	17.5	20.7	30A
	E	265 / 60 / 1	238.5 / 291.5	1	9.6	54	0.7	3.2	13.5	15.9	25A	3.2	13.5	15.9	25A
	F**	460 / 60 / 3	414 / 506	1	3.6	28	0.7	3.2	7.5	8.4	15A	1.1	5.4	6.3	15A
	H	208-230 / 60 / 3	187.2 / 253	1	7.7	55.4	0.8	3.9	12.4	14.3	20A	3.9	12.4	14.3	20A
030	G	208-230 / 60 / 1	187.2 / 253	1	14.1	73	0.8	3.9	18.8	22.3	35A	3.9	18.8	22.3	35A
	E	265 / 60 / 1	238.5 / 291.5	1	11.2	60	0.7	3.2	15.1	17.9	25A	3.2	15.1	17.9	25A
	F**	460 / 60 / 3	414 / 506	1	4.2	28	0.7	3.2	8.1	9.2	15A	1.1	6.0	7.1	15A
	H	208-230 / 60 / 3	187.2 / 253	1	8.9	58	0.8	3.9	13.6	15.8	20A	3.9	13.6	15.8	25A
036	G	208-230 / 60 / 1	187.2 / 253	1	16.7	79	0.8	6.0	23.5	27.7	40A	6.0	23.5	27.7	40A
	E	265 / 60 / 1	238.5 / 291.5	1	13.5	72	0.7	4.8	19.0	22.4	35A	3.9	18.1	21.5	30A
	F**	460 / 60 / 3	414 / 506	1	5.8	38	0.7	4.8	11.3	12.8	15A	1.5	8.0	9.5	15A
	H	208-230 / 60 / 3	187.2 / 253	1	10.4	73	0.8	6.0	17.2	19.8	25A	6.0	17.2	19.8	30A
042	G	208-230 / 60 / 1	187.2 / 253	1	17.9	112	0.8	6.0	24.7	29.2	45A	6.0	24.7	29.2	45A
	F**	460 / 60 / 3	414 / 506	1	6.0	44	0.7	4.8	11.5	13.0	15A	1.5	8.2	9.7	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.5	88	0.8	6.0	20.3	23.7	35A	6.0	20.3	23.7	35A
048	G	208-230 / 60 / 1	187.2 / 253	1	21.8	117	1.1	7.5	30.4	35.9	50A	7.5	30.4	35.9	50A
	F**	460 / 60 / 3	414 / 506	1	6.2	41	1.3	6.2	13.7	15.3	20A	2.1	9.6	11.2	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.7	83.1	1.1	7.5	22.3	25.7	35A	7.5	22.3	25.7	35A
060	G	208-230 / 60 / 1	187.2 / 253	1	26.3	134	1.1	7.5	34.9	41.5	60A	7.5	34.9	41.5	60A
	F**	460 / 60 / 3	414 / 506	1	7.8	52	1.3	6.0	15.1	17.1	20A	2.1	11.2	13.2	20A
	H	208-230 / 60 / 3	187.2 / 253	1	15.6	110	1.1	7.5	24.2	28.1	40A	7.5	24.2	28.1	40A

** 460 volt units with Internal Secondary Pump and/or CV ECM Require a Neutral

Electrical Data: ECM Blower – with ClimaDry® II

TR Condenser Water Reheat Commercial Electrical Table								CV ECM**				CT ECM			
MODEL	VOLTAGE CODE	RATED VOLTAGE	VOLTAGE MIN/MAX	COMPRESSOR			PUMP FLA	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR
				QTY	RLA	LRA									
024	G	208-230 / 60 / 1	187.2 / 253	1	12.8	58.3	0.8	3.9	17.5	20.7	30A	3.9	17.5	20.7	30A
	E	265 / 60 / 1	238.5 / 291.5	1	9.6	54	0.7	3.2	13.5	15.9	25A	3.2	13.5	15.9	25A
	F**	460 / 60 / 3	414 / 506	1	3.6	28	0.7	3.2	7.5	8.4	15A	1.1	5.4	6.3	15A
	H	208-230 / 60 / 3	187.2 / 253	1	7.7	55.4	0.8	3.9	12.4	14.3	20A	3.9	12.4	14.3	20A
030	G	208-230 / 60 / 1	187.2 / 253	1	14.1	73	0.8	3.9	18.8	22.3	35A	3.9	18.8	22.3	35A
	E	265 / 60 / 1	238.5 / 291.5	1	11.2	60	0.7	3.2	15.1	17.9	25A	3.2	15.1	17.9	25A
	F**	460 / 60 / 3	414 / 506	1	4.2	28	0.7	3.2	8.1	9.2	15A	1.1	6.0	7.1	15A
	H	208-230 / 60 / 3	187.2 / 253	1	8.9	58	0.8	3.9	13.6	15.8	20A	3.9	13.6	15.8	25A
036	G	208-230 / 60 / 1	187.2 / 253	1	16.7	79	0.8	6.0	23.5	27.7	40A	6.0	23.5	27.7	40A
	E	265 / 60 / 1	238.5 / 291.5	1	13.5	72	0.7	4.8	19.0	22.4	35A	3.9	18.1	21.5	30A
	F**	460 / 60 / 3	414 / 506	1	5.8	38	0.7	4.8	11.3	12.8	15A	1.5	8.0	9.5	15A
	H	208-230 / 60 / 3	187.2 / 253	1	10.4	73	0.8	6.0	17.2	19.8	25A	6.0	17.2	19.8	30A
042	G	208-230 / 60 / 1	187.2 / 253	1	17.9	112	0.8	6.0	24.7	29.2	45A	6.0	24.7	29.2	45A
	F**	460 / 60 / 3	414 / 506	1	6.0	44	0.7	4.8	11.5	13.0	15A	1.5	8.2	9.7	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.5	88	0.8	6.0	20.3	23.7	35A	6.0	20.3	23.7	35A
048	G	208-230 / 60 / 1	187.2 / 253	1	21.8	117	1.1	7.5	30.4	35.9	50A	7.5	30.4	35.9	50A
	F**	460 / 60 / 3	414 / 506	1	6.2	41	1.3	6.2	13.7	15.3	20A	2.1	9.6	11.2	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.7	83.1	1.1	7.5	22.3	25.7	35A	7.5	22.3	25.7	35A
060	G	208-230 / 60 / 1	187.2 / 253	1	26.3	134	1.1	7.5	34.9	41.5	60A	7.5	34.9	41.5	60A
	F**	460 / 60 / 3	414 / 506	1	7.8	52	1.3	6.0	15.1	17.1	20A	2.1	11.2	13.2	20A
	H	208-230 / 60 / 3	187.2 / 253	1	15.6	110	1.1	7.5	24.2	28.1	40A	7.5	24.2	28.1	40A

** 460 volt units with ClimaDry® II and/or CV ECM Require a Neutral

Tranquility® (TR) Series

Rev.: November 4, 2024

Electrical Data: ECM Blower – Hybrid Unit

TR Hydronic Heat Commercial Electrical Table							CV ECM**				CT ECM			
MODEL	VOLTAGE CODE	RATED VOLTAGE	VOLTAGE MIN/MAX	COMPRESSOR			FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR
				QTY	RLA	LRA								
006	G	208-230 / 60 / 1	187.2 / 253	1	2.6	17.7	1.5	4.1	4.8	15A	2.3	4.9	5.6	15A
	E	265 / 60 / 1	238.5 / 291.5	1	2.6	13.5	1.4	4.0	4.7	15A	2.3	4.9	5.6	15A
009	G	208-230 / 60 / 1	187.2 / 253	1	3.7	22	1.5	5.2	6.1	15A	2.3	6.0	6.9	15A
	E	265 / 60 / 1	238.5 / 291.5	1	3.4	17.5	1.4	4.8	5.7	15A	2.3	5.7	6.6	15A
012	G	208-230 / 60 / 1	187.2 / 253	1	5.6	32.5	2.6	8.2	9.6	15A	2.3	7.9	9.3	15A
	E	265 / 60 / 1	238.5 / 291.5	1	4.2	31.5	2.5	6.7	7.8	15A	2.3	6.5	7.6	15A
015	G	208-230 / 60 / 1	187.2 / 253	1	5.6	29	2.6	8.2	9.6	15A	2.6	8.2	9.6	15A
	E	265 / 60 / 1	238.5 / 291.5	1	5.0	28	2.4	7.4	8.7	15A	1.9	6.9	8.2	15A
018	G	208-230 / 60 / 1	187.2 / 253	1	7.4	33	2.6	10.0	11.9	15A	2.6	10.0	11.9	15A
	E	265 / 60 / 1	238.5 / 291.5	1	6.0	28	2.4	8.4	9.9	15A	1.9	7.9	9.4	15A
024	G	208-230 / 60 / 1	187.2 / 253	1	12.8	58.3	3.9	16.7	19.9	30A	3.9	16.7	19.9	30A
	E	265 / 60 / 1	238.5 / 291.5	1	9.6	54	3.2	12.8	15.2	20A	3.2	12.8	15.2	20A
	F**	460 / 60 / 3	414 / 506	1	3.6	28	3.2	6.8	7.7	15A	1.1	4.7	5.6	15A
	H	208-230 / 60 / 3	187.2 / 253	1	7.7	55.4	3.9	11.6	13.5	20A	3.9	11.6	13.5	20A
030	G	208-230 / 60 / 1	187.2 / 253	1	14.1	73	6.0	20.1	23.6	35A	6.0	20.1	23.6	35A
	E	265 / 60 / 1	238.5 / 291.5	1	11.2	60	4.7	15.9	18.7	25A	3.9	15.1	17.9	25A
	F**	460 / 60 / 3	414 / 506	1	4.2	28	4.8	9.0	10.1	15A	1.5	5.7	6.8	15A
	H	208-230 / 60 / 3	187.2 / 253	1	8.9	58	6.0	14.9	17.1	25A	6.0	14.9	17.1	25A
036	G	208-230 / 60 / 1	187.2 / 253	1	16.7	79	6.0	22.7	26.9	40A	6.0	22.7	26.9	40A
	E	265 / 60 / 1	238.5 / 291.5	1	13.5	72	4.8	18.3	21.7	35A	3.9	17.4	20.8	30A
	F**	460 / 60 / 3	414 / 506	1	5.8	38	4.8	10.6	12.1	15A	1.5	7.3	8.8	15A
	H	208-230 / 60 / 3	187.2 / 253	1	10.4	73	6.0	16.4	19.0	25A	6.0	16.4	19.0	25A
042	G	208-230 / 60 / 1	187.2 / 253	1	17.9	112	6.0	23.9	28.4	45A	6.0	23.9	28.4	45A
	F**	460 / 60 / 3	414 / 506	1	6.0	44	4.8	10.8	12.3	15A	1.5	7.5	9.0	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.5	88	6.0	19.5	22.9	35A	6.0	19.5	22.9	35A
048	G	208-230 / 60 / 1	187.2 / 253	1	4.9	34	7.5	12.4	34.8	50A	7.5	12.4	34.8	50A
	F**	460 / 60 / 3	414 / 506	1	21.8	117	6.2	28.0	14.0	15A	2.1	23.9	9.9	15A
	H	208-230 / 60 / 3	187.2 / 253	1	6.2	41	7.5	13.7	24.6	35A	7.5	12.7	24.6	35A
060	G	208-230 / 60 / 1	187.2 / 253	1	13.7	83.1	7.5	21.2	40.4	60A	7.5	21.2	40.4	60A
	F**	460 / 60 / 3	414 / 506	1	4.8	33	6.0	10.8	15.8	20A	2.1	6.9	11.9	15A
	H	208-230 / 60 / 3	187.2 / 253	1	26.3	134	7.5	33.8	27.0	40A	7.5	33.8	27.0	40A

** 460 volt units with CV ECM Require a Neutral

Electrical Data: ECM Blower – Hybrid Unit with Internal Secondary Pump

TR Hydronic Heat Commercial Electrical Table W/ ISP								CV ECM**				CT ECM			
MODEL	VOLTAGE CODE	RATED VOLTAGE	VOLTAGE MIN/MAX	COMPRESSOR			PUMP FLA	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR	FAN MOTOR FLA	TOTAL UNIT FLA	MIN CIRCUIT AMP	MAX FUSE/HACR
				QTY	RLA	LRA									
006	G	208-230 / 60 / 1	187.2 / 253	1	2.6	17.7	0.4	1.5	4.1	5.2	15A	2.3	4.9	6.0	15A
	E	265 / 60 / 1	238.5 / 291.5	1	2.6	13.5	0.7	1.4	4.0	5.4	15A	2.3	4.9	6.3	15A
009	G	208-230 / 60 / 1	187.2 / 253	1	3.7	22	0.4	1.5	5.2	6.5	15A	2.3	6.0	7.3	15A
	E	265 / 60 / 1	238.5 / 291.5	1	3.4	17.5	0.7	1.4	4.8	6.4	15A	2.3	5.7	7.3	15A
012	G	208-230 / 60 / 1	187.2 / 253	1	5.6	32.5	0.8	2.6	8.2	10.4	15A	2.3	7.9	10.1	15A
	E	265 / 60 / 1	238.5 / 291.5	1	4.2	31.5	0.7	2.5	6.7	8.5	15A	2.3	6.5	8.3	15A
015	G	208-230 / 60 / 1	187.2 / 253	1	5.6	29	0.8	2.6	8.2	10.4	15A	2.6	8.2	10.4	15A
	E	265 / 60 / 1	238.5 / 291.5	1	5.0	28	0.7	2.4	7.4	9.4	15A	1.9	6.9	8.9	15A
018	G	208-230 / 60 / 1	187.2 / 253	1	7.4	33	0.8	2.6	10.0	12.7	20A	2.6	10.0	12.7	20A
	E	265 / 60 / 1	238.5 / 291.5	1	6.0	28	0.7	2.4	8.4	10.6	15A	1.9	7.9	10.1	15A
024	G	208-230 / 60 / 1	187.2 / 253	1	12.8	58.3	0.8	3.9	16.7	20.7	30A	3.9	16.7	20.7	30A
	E	265 / 60 / 1	238.5 / 291.5	1	9.6	54	0.7	3.2	12.8	15.9	25A	3.2	12.8	15.9	25A
	F**	460 / 60 / 3	414 / 506	1	3.6	28	0.7	3.2	6.8	8.4	15A	1.1	4.7	6.3	15A
	H	208-230 / 60 / 3	187.2 / 253	1	7.7	55.4	0.8	3.9	11.6	14.3	20A	3.9	11.6	14.3	20A
030	G	208-230 / 60 / 1	187.2 / 253	1	14.1	73	0.8	6.0	20.1	24.4	35A	6.0	20.1	24.4	35A
	E	265 / 60 / 1	238.5 / 291.5	1	11.2	60	0.7	4.7	15.9	19.4	30A	3.9	15.1	18.6	25A
	F**	460 / 60 / 3	414 / 506	1	4.2	28	0.7	4.8	9.0	10.8	15A	1.5	5.7	7.5	15A
	H	208-230 / 60 / 3	187.2 / 253	1	8.9	58	0.8	6.0	14.9	17.9	25A	6.0	14.9	17.9	25A
036	G	208-230 / 60 / 1	187.2 / 253	1	16.7	79	0.8	6.0	22.7	27.7	40A	6.0	22.7	27.7	40A
	E	265 / 60 / 1	238.5 / 291.5	1	13.5	72	0.7	4.8	18.3	22.4	35A	3.9	17.4	21.5	30A
	F**	460 / 60 / 3	414 / 506	1	5.8	38	0.7	4.8	10.6	12.8	15A	1.5	7.3	9.5	15A
	H	208-230 / 60 / 3	187.2 / 253	1	10.4	73	0.8	6.0	16.4	19.8	25A	6.0	16.4	19.8	30A
042	G	208-230 / 60 / 1	187.2 / 253	1	17.9	112	0.8	6.0	23.9	29.2	45A	6.0	23.9	29.2	45A
	F**	460 / 60 / 3	414 / 506	1	6.0	44	0.7	4.8	10.8	13.0	15A	1.5	7.5	9.7	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.5	88	0.8	6.0	19.5	23.7	35A	6.0	19.5	23.7	35A
048	G	208-230 / 60 / 1	187.2 / 253	1	21.8	117	1.1	7.5	29.3	35.9	50A	7.5	29.3	35.9	50A
	F**	460 / 60 / 3	414 / 506	1	6.2	41	1.3	6.2	12.4	15.3	20A	2.1	8.3	11.2	15A
	H	208-230 / 60 / 3	187.2 / 253	1	13.7	83.1	1.1	7.5	21.2	25.7	35A	7.5	21.2	25.7	35A
060	G	208-230 / 60 / 1	187.2 / 253	1	26.3	134	1.1	7.5	33.8	41.5	60A	7.5	33.8	41.5	60A
	F**	460 / 60 / 3	414 / 506	1	7.8	52	1.3	6.0	13.8	17.1	20A	2.1	9.9	13.2	20A
	H	208-230 / 60 / 3	187.2 / 253	1	15.6	110	1.1	7.5	23.1	28.1	40A	7.5	23.1	28.1	40A

** 460 volt units with Internal Secondary Pump and/or CV ECM Require a Neutral

Tranquility® (TR) Series

Rev.: November 4, 2024

Electrical: Power Wiring

⚠ WARNING! ⚠

WARNING! Disconnect electrical power source to prevent injury or death from electrical shock.

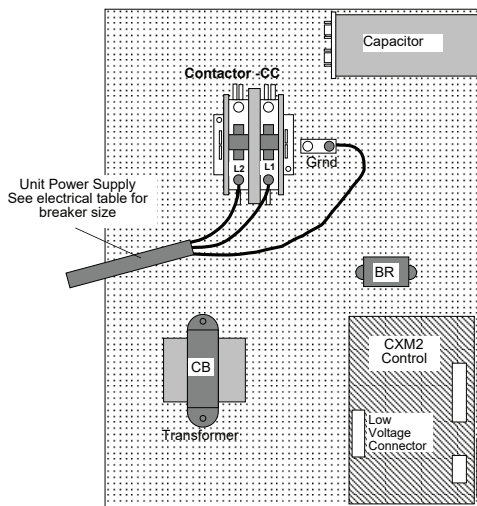
⚠ CAUTION! ⚠

CAUTION! Use only copper conductors for field installed electrical wiring. Unit terminals are not designed to accept other types of conductors.

Electrical - Line Voltage - All field installed wiring, including electrical ground, must comply with the National Electrical Code as well as all applicable local codes. Refer to the unit electrical data for fuse sizes. Consult wiring diagram for field connections that must be made by the installing (or electrical) contractor. All final electrical connections must be made with a length of flexible conduit to minimize vibration and sound transmission to the building.

General Line Voltage Wiring - Be sure the available power is the same voltage and phase shown on the unit serial plate. Line and low voltage wiring must be done in accordance with local codes or the National Electric Code, whichever is applicable.

Figure 15: Single Phase Line Voltage Field Wiring. Three phase wiring is similar except that all three power wires are directly connected to the contactor.



Note: 460V units with ECM, ClimaDry® II, or Internal Secondary Pump require a neutral wire.

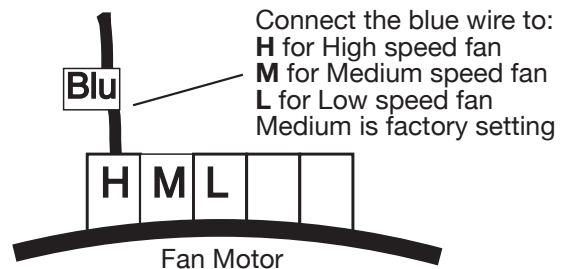
Power Connection - Line voltage connection is made by connecting the incoming line voltage wires to the “L” side of the contactor as shown in Figure 15. Consult electrical data tables for correct fuse size.

Transformer - All 208/230 voltage units are factory wired for 208 volt. If supply voltage is 230 volt, installer must rewire transformer. See wire diagram for connections.

Blower Speed Selection – Units with PSC Motor - PSC (Permanent Split Capacitor) blower fan speed can be changed by moving the blue wire on the fan motor terminal block to the desired speed as shown in Figure 16. Most units are shipped on the medium speed tap. Consult submittal data or engineering design guide for specific unit airflow tables. Typical unit design delivers rated airflow at nominal static (0.15 in. w.g. [37Pa]) on medium speed and rated airflow at a higher static (0.4 to 0.5 in. w.g. [100 to 125 Pa]) on high speed for applications where higher static is required. Low speed will deliver approximately 85% of rated airflow at 0.10 in. w.g. [25 Pa]. An optional high static blower is available on some models.

Special Note for AHRI Testing: To achieve rated airflow for AHRI testing purposes on all PSC products, it is necessary to change the fan speed to “HI” speed. When the heat pump has experienced less than 100 operational hours and the coil has not had sufficient time to be “seasoned”, it is necessary to clean the coil with a mild surfactant such as Calgon to remove the oils left by manufacturing processes and enable the condensate to properly “sheet” off of the coil.

Figure 16: PSC Motor Speed Selection



Electrical: Power & Low Voltage Wiring

ELECTRICAL - LOW VOLTAGE WIRING

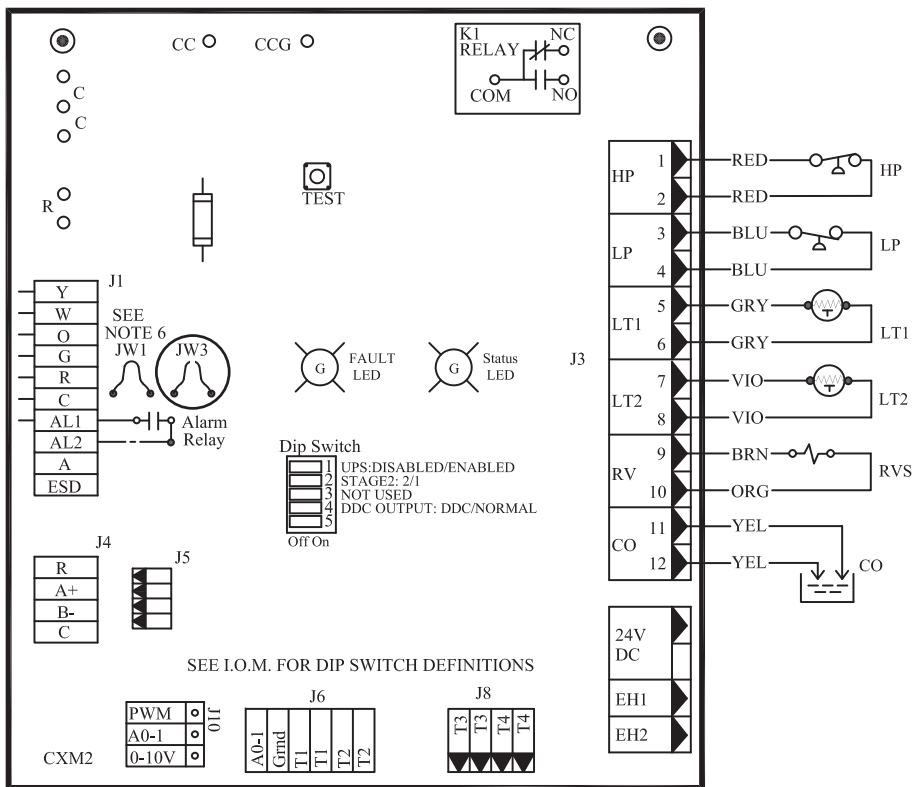
Thermostat Connections - The thermostat should be wired directly to the CXM2 or DXM2.5 board. See “Electrical – Thermostat” for specific terminal connections. Review the appropriate AOM (Application, Operation and Maintenance) manual for units with DDC controls.

Low Water Temperature Cutout Selection - The CXM2/ DXM2.5 control allows the field selection of low water (or water-antifreeze solution) temperature limit by clipping jumper JW3 (see Figure 17), which changes the sensing temperature associated with thermistor LT1. Note that the LT1 thermistor is located on the refrigerant line between the coaxial heat exchanger and expansion device (TXV). Therefore, LT1 is sensing refrigerant temperature, not water temperature, which is a better indication of how water flow rate/temperature is affecting the refrigeration circuit.

The factory setting for LT1 is for systems using water (30°F [-1.1°C] refrigerant temperature). In low water temperature (extended range) applications with antifreeze (most ground loops), jumper JW3 should be clipped as shown in Figure 17 to change the setting to 10°F [-12.2°C] refrigerant temperature, a more suitable temperature when using an antifreeze solution. All ClimateMaster units operating with entering water temperatures below 60°F [15.6°C] must include the optional water/refrigerant circuit insulation package to prevent internal condensation.

Note: 460V units with ECM motor require a neutral wire.

Figure 17: LT1 Limit Setting



Tranquility® (TR) Series

Rev.: November 4, 2024

Electrical: Low Voltage Wiring

Accessory Connections

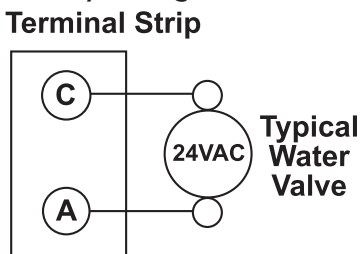
A terminal paralleling the compressor contactor coil has been provided on the CXM2/DXM2.5 control. Terminal “A” is designed to control accessory devices, such as water valves. Note: This terminal should be used only with 24 Volt signals and not line voltage. Terminal “A” is energized with the compressor contactor. See Figure 18 or the specific unit wiring diagram for details.

Low Voltage VA Ratings

Component	VA
Typical Blower Relay	6 - 7
Typical Reversing Valve Solenoid	4 - 6
30A Compressor Contactor	6 - 9
Subtotal	16 - 22
+ CXM2 board (5 - 9 VA)*	21 - 31
Remaining VA for Accessories	19 - 29
+ DXM2.5 board (8 - 12 VA)*	24 - 34
Remaining VA for Accessories	41 - 51

*Standard transformer for CXM2 board is 50VA.
Optional DXM2.5 board and/or DDC controls
Include 75VA transformer.

Figure 18: Accessory Wiring



Water Solenoid Valves - An external solenoid valve(s) should be used on ground water installations to shut off flow to the unit when the compressor is not operating. A slow closing valve may be required to help reduce water hammer. Figure 18 shows typical wiring for a 24VAC external solenoid valve. Figures 19 and 20 illustrates a slow closing water control valve wiring for two styles of typical accessory water valves. Slow closing valves take approximately 60 seconds to open (very little water will flow before 45 seconds). Once fully open, an end switch allows the compressor to be energized. Only relay or triac based electronic thermostats should be used with slow closing valves. When wired as shown, the slow closing valve will operate properly with the following notations:

1. The valve will remain open during a unit lockout.
2. The valve will draw approximately 25-35 VA through the “Y” signal of the thermostat.

NOTE: This valve can overheat the anticipator of an electromechanical thermostat. Therefore, only relay or triac based thermostats should be used.

Figure 19: Accessory Motorized Water Valve - Typical Wiring Example #1

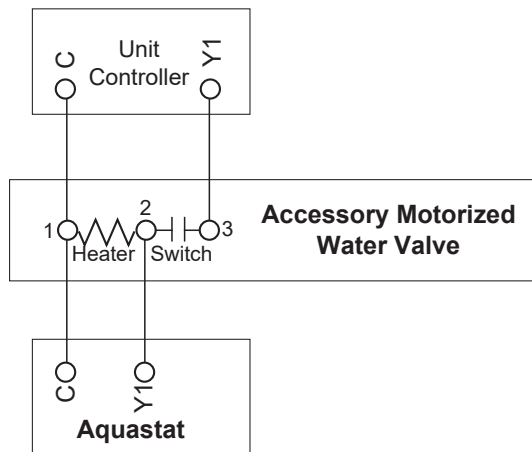
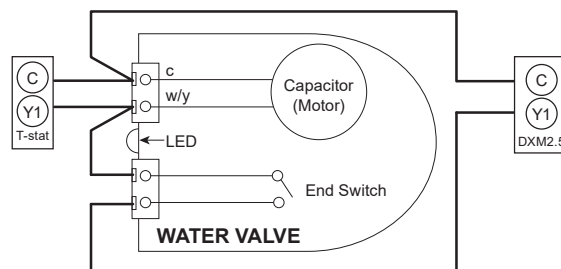


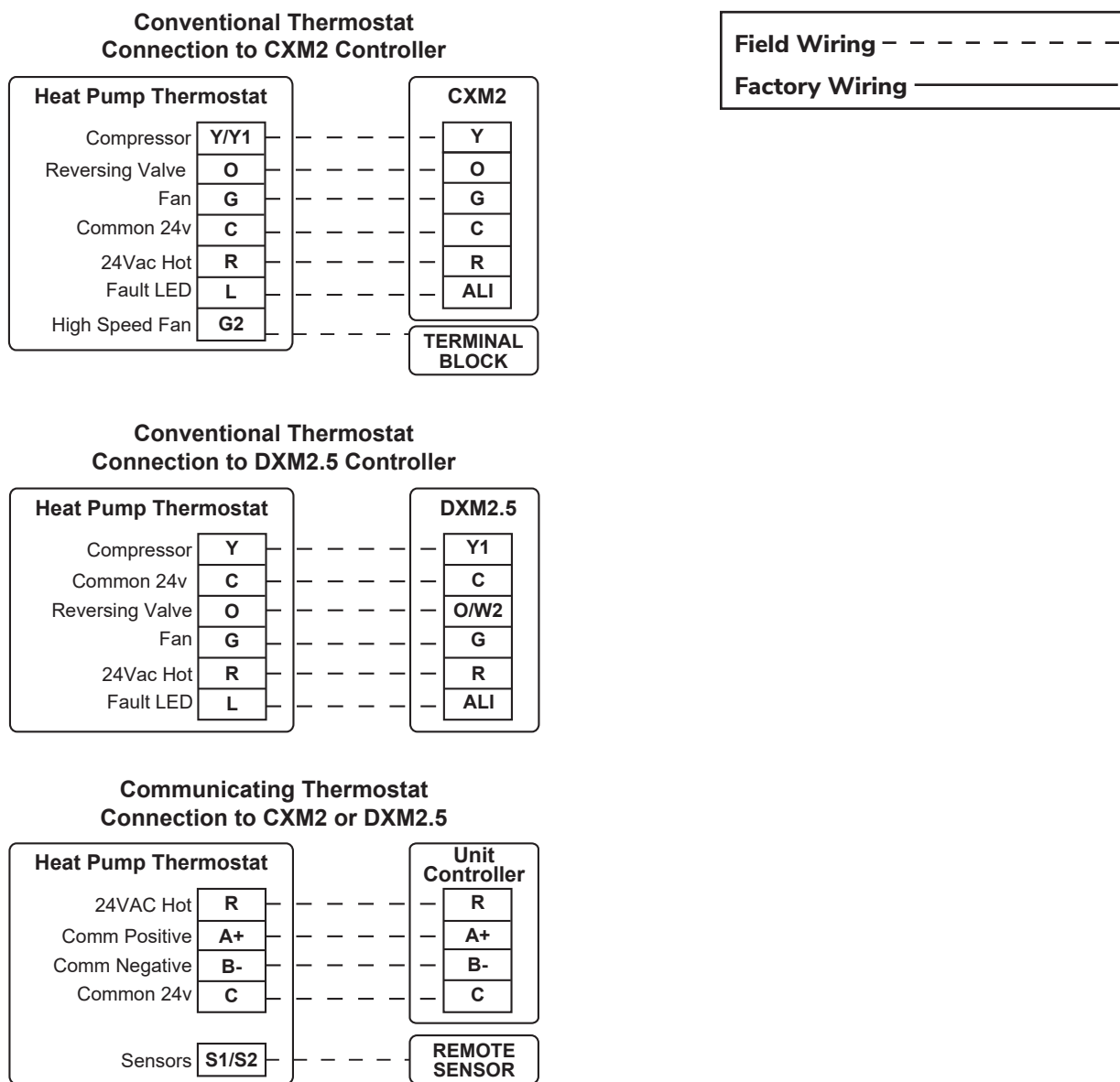
Figure 20: Accessory Motorized Water Valve - Typical Wiring Example #2



Electrical: Thermostat Wiring

Thermostat Installation - The thermostat should be located on an interior wall in a larger room, away from supply duct drafts. DO NOT locate the thermostat in areas subject to sunlight, drafts or on external walls. The wire access hole behind the thermostat may in certain cases need to be sealed to prevent erroneous temperature measurement. Position the thermostat back plate against the wall so that it appears level and so the thermostat wires protrude through the middle of the back plate. Mark the position of the back plate mounting holes and drill holes with a 3/16" (5mm) bit. Install supplied anchors and secure plate to the wall. Thermostat wire must be 18 AWG wire. Representative thermostat wiring is shown in Figure 21 however, actual wiring connections should be determined from the thermostat IOM and or unit wiring diagram. Practically any heat pump thermostat will work with heat pump units, provided it has the correct number of heating and cooling stages.

Figure 21: Units with PSC Fan



Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR006

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)														
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0					
225	150	PSC	Low	CFM	210	190	160											
			Medium	CFM	260	240	210	190										
			High	CFM	310	290	270	230	180									
225	150	Constant Torque ECM	1	RPM	944	1028	1114	1206	1297									
				Power (W)	22	24	25	28	30									
				CFM	225	207	187	169	150									
			2	RPM				1201	1280	1362	1441	1523	1608	1694				
				Power (W)				34	37	39	42	44	48	51				
				CFM				233	217	201	185	173	164	150				
			3	RPM							1324	1400	1476	1551	1628	1709	1786	
				Power (W)							43	45	48	51	54	58	61	
				CFM							241	227	212	200	188	179	168	
			4	RPM										1516	1588	1658	1730	1799
				Power (W)										55	58	61	65	67
				CFM										240	227	216	205	193
225	150	Constant Volume ECM	Minimum CFM	RPM	763	933	1078	1201	1314	1417	1519	1615	1712					
				Power (W)	16	21	27	40	36	41	46	52	59					
				CFM	150	150	150	150	150	150	150	150	150	150				
			Default CFM	RPM	983	1102	1211	1319	1419	1516	1610	1708	1783	1817				
				Power (W)	29	35	41	47	53	60	67	76	81	77				
				CFM	225	225	225	225	225	225	225	225	225	225	225			
			Maximum CFM	RPM	1053	1162	1265	1366	1462	1553	1648	1733	1802	1817				
				Power (W)	35	41	47	53	60	67	76	84	88	78				
				CFM	250	250	250	250	250	250	250	250	250	250	250			

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

Blower Performance Data: TR009

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
325	225	PSC	Low	CFM	340	322	300	260							
			Medium	CFM	390	360	320	290	260						
			High	CFM	410	380	350	320	280						
325	225	Constant Torque ECM	1	RPM	1137	1203	1266	1344	1413						
				Power (W)	40	42	44	47	49						
				CFM	294	278	259	245	230						
			2	RPM	1361	1413	1464	1503	1577	1640	1700	1751	1803	1831	
				Power (W)	67	70	73	74	79	82	85	88	90	85	
				CFM	370	357	343	326	318	302	291	278	265	235	
			3	RPM				1538	1589	1642	1695	1749	1812	1829	1847
				Power (W)				86	88	91	95	98	101	96	90
				CFM				370	358	346	334	322	307	280	247
			4	RPM							1835	1853	1869	1875	
				Power (W)							120	113	107	102	
				CFM							340	309	276	234	
325	225	Constant Volume ECM	Minimum CFM	RPM	929	1083	1210	1324	1432	1529	1595	1723	1792		
				Power (W)	25	32	39	45	53	60	66	78	83		
				CFM	225	225	225	225	225	225	225	225	225		
			Default CFM	RPM	1209	1326	1430	1535	1635	1732	1792	1801	1811		
				Power (W)	49	58	67	77	88	100	105	95	88		
				CFM	325	325	325	325	325	325	325	325	325		
			Maximum CFM	RPM	1691	1753	1765	1769	1778	1784	1793	1803	1813		
				Power (W)	126	134	131	125	119	118	105	98	90		
				CFM	375	375	375	375	375	375	375	375	375		

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR012

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)																
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0							
380	300	PSC	Low	CFM	360	350	320	310												
			Medium	CFM	420	400	380	360	340											
			High	CFM	470	450	430	400	380	320										
380	300	Constant Torque ECM	1	RPM	1338	1385	1436	1491	1551											
				Power (W)	64	66	69	71	75											
				CFM	358	345	332	319	305											
			2	RPM	1477	1517	1561	1612	1660	1711	1769	1819								
				Power (W)	86	88	91	94	97	100	103	104								
				CFM	400	388	377	365	354	342	328	309								
			3	RPM	1632	1672	1709	1747	1785	1820	1835	1856								
				Power (W)	116	119	122	124	126	126	121	114								
				CFM	449	437	427	414	401	385	359	327								
			4	RPM	1698	1729	1765	1798	1821	1836	1842	1843								
				Power (W)	131	133	135	137	135	130	123	110								
				CFM	467	456	444	433	414	390	361	318								
380	300	Constant Volume ECM	Minimum CFM	RPM	1258	1368	1464	1555	1635	1718	1793	1830								
				Power (W)	55	64	73	81	90	99	107	106								
				CFM	300	300	300	300	300	300	300	300								
			Default CFM	RPM	1598	1672	1743	1813	1831	1845	1859	1875								
				Power (W)	105	115	125	135	132	127	123	118								
				CFM	380	380	380	380	380	380	380	380								
			Maximum CFM	RPM	1798	1823	1834	1844	1858	1872	1886	1901	1920							
				Power (W)	147	149	146	143	139	134	130	126	120							
				CFM	415	415	415	415	415	415	415	415	415							

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

Blower Performance Data: TR015

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)																	
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0								
525	375	PSC	Low	CFM	503	490	479	439													
			Medium	CFM	595	575	562	510	451												
			High	CFM				581	510	386											
525	375	PSC - High Static	Low	CFM	462	456	443	425	385												
			Medium	CFM	546	539	531	513	481	414											
			High	CFM						547	426										
525	375	Constant Torque ECM	1	RPM	655	614	701	770	851	937											
				Power (W)	67	55	62	68	75	82											
				CFM	648	588	542	493	441	378											
			2	RPM	655	720	799	863	946	1021	1078										
				Power (W)	67	74	81	87	95	102	108										
				CFM	648	608	557	514	460	402	354										
			3	RPM	687	744	822	883	950	1032	1098	1150									
				Power (W)	79	86	94	101	107	117	124	130									
				CFM	695	659	611	570	526	475	422	377									
			4	RPM	716	771	844	906	965	1037	1110	1170	1219								
				Power (W)	92	98	107	114	121	129	138	145	151								
				CFM	737	705	661	622	582	534	482	438	396								
			5	RPM	763	790	851	924	978	1039	1113	1175	1233	1281							
				Power (W)	106	110	117	126	133	141	151	159	165	172							
				CFM	745	745	708	662	626	585	535	488	444	402							
525	375	Constant Volume ECM	Minimum CFM	RPM		617	741	848	945	1028	1103	1171									
				Power (W)		36	52	68	84	99	114	129									
				CFM		375	375	375	375	375	375	375									
			Default CFM	RPM		661	767	859	944	1028	1107	1179	1247								
				Power (W)		55	74	90	108	127	147	166	186								
				CFM		525	525	525	525	525	525	525	525								
			Maximum CFM	RPM	586	695	795	882	963	1038	1111	1180	1248	1312							
				Power (W)	54	73	93	112	132	152	173	194	216	238							
				CFM	625	625	625	625	625	625	625	625	625	625							

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR018

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
600	450	PSC	Low	CFM	524	509	493	451							
			Medium	CFM	611	588	564	514							
			High	CFM	704	668	643	617	504						
600	450	PSC - High Static	Low	CFM	461										
			Medium	CFM	553	543	533	506	468						
			High	CFM	670	661	645	628	587	534					
600	450	Constant Torque ECM	1	RPM	693	763	837	882							
				Power (W)	73	78	85	90							
				CFM	600	558	518	491							
			2	RPM	745	801	873	904	966	1031	1098				
				Power (W)	92	99	107	109	116	123	131				
				CFM	676	641	599	570	536	498	452				
			3	RPM	782	831	890	958	992	1048	1106	1171	1223		
				Power (W)	112	118	126	135	140	147	155	163	170		
				CFM	741	713	677	640	619	586	554	512	471		
			4	RPM	833	875	924	986	1046	1072	1124	1177	1236	1290	
				Power (W)	138	144	152	161	170	174	181	190	199	207	
				CFM	802	780	751	714	680	662	633	603	567	529	
			5	RPM	895	924	968	1016	1078	1133	1151	1199	1249	1302	
				Power (W)	170	175	182	190	201	210	214	222	231	240	
				CFM	854	848	820	791	754	724	711	683	655	625	
600	450	Constant Volume ECM	Minimum CFM	RPM					1096	1179	1275	1361			
				Power (W)					111	132	157	180			
				CFM					450	450	450	450			
			Default CFM	RPM	847	918	971	1095	1208	1297	1360	1418	1467		
				Power (W)	85	101	113	145	178	206	228	248	266		
				CFM	600	600	600	600	600	600	600	600	600		
			Maximum CFM	RPM	1036	1080	1131	1172	1213	1317	1406	1494			
				Power (W)	157	171	186	200	214	251	286	323			
				CFM	750	750	750	750	750	750	750	750			

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

Blower Performance Data: TR024

Rated CFM	Min CFM	Motor Type	Motor Speed Setting		External Static Pressure (in. wg)												
					0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0			
850	600	PSC	Low	CFM	760	741	722	694	665	618							
			Medium	CFM	941	912	874	836	789	732	665						
			High	CFM					950	884	827	732	656				
850	600	PSC - High Static	Low	CFM				979	931	884	827	751	675				
			Medium	CFM					988	922	846	713					
			High	CFM						979	903	798	665				
800	600	Constant Torque ECM	1	RPM	817	865	915	973									
				Power (W)	116	122	128	135									
				CFM	755	728	695	653									
			2	RPM	877	920	966	1012	1070	1142	1198						
				Power (W)	146	152	159	166	174	185	193						
				CFM	836	810	782	750	708	657	616						
			3	RPM	938	974	1017	1057	1102	1158	1227	1283	1323	1355			
				Power (W)	181	187	194	201	209	218	230	239	246	252			
				CFM	910	887	861	834	804	762	714	674	642	619			
			4	RPM	1015	1048	1084	1121	1159	1199	1244	1309	1369	1412			
				Power (W)	232	240	247	254	262	270	278	291	303	312			
				CFM	996	975	952	929	904	876	845	798	755	725			
			5	RPM						1219	1255	1293	1331	1384	1446		
				Power (W)						323	331	340	348	361	374		
				CFM						999	975	951	923	884	840		
800	600	Constant Volume ECM	Minimum CFM	RPM	706	788	867	941	1013	1080	1143	1203	1259	1311			
				Power (W)	71	89	107	124	141	159	177	195	213	230			
				CFM	600	600	600	600	600	600	600	600	600	600	600		
			Default CFM	RPM	882	943	1002	1059	1114	1168	1220	1271	1319	1366			
				Power (W)	145	165	185	205	225	245	266	285	306	326			
				CFM	800	800	800	800	800	800	800	800	800	800			
			Maximum CFM	RPM	1077	1122	1162	1200	1233	1263	1288	1310	1329	1343			
				Power (W)	284	300	315	332	351	364	379	396	412	428			
				CFM	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000			

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 ClimaDry is factory wired to operate in stage 2 airflow.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

All TR units with optional CV ECM fan motor automatically adjusts for the reheat coil. The small additional pressure drop of the reheat coil causes the CV ECM motor to slightly increase RPM to overcome the added pressure drop, and maintain selected CFM up to the maximum ESP.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR030

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1000	750	PSC	Low	CFM	1017	979	931	884	827	751					
			Medium	CFM	1140	1093	1036	988	922	846					
			High	CFM				1102	1045	979	903	798			
1000	750	PSC - High Static	Low	CFM	979	941	912	865	798						
			Medium	CFM				1074	979	884	779				
			High	CFM					1102	988	874	760			
1000	750	Constant Torque ECM	1	RPM	880	925	994	1049	1101						
				Power (W)	158	165	176	184	192						
				CFM	904	873	832	796	763						
			2	RPM	956	998	1038	1105	1156	1203	1248	1295	1344		
				Power (W)	211	219	227	240	250	258	267	276	285		
				CFM	1020	992	965	927	894	864	835	805	771		
			3	RPM	1034	1072	1110	1145	1209	1250	1303	1346	1387	1422	
				Power (W)	280	289	298	306	321	330	342	351	361	368	
				CFM	1139	1113	1089	1064	1027	999	966	937	910	879	
			4	RPM	1095	1130	1166	1201	1237	1299	1337	1387	1428	1465	
				Power (W)	336	346	355	364	374	389	399	413	423	430	
				CFM	1216	1193	1168	1146	1123	1086	1062	1028	1002	975	
			5	RPM					1268	1301	1333	1394	1426	1473	1491
				Power (W)					452	462	471	490	499	508	478
				CFM					1250	1229	1208	1173	1151	1112	1036
1000	750	Constant Volume ECM	Minimum CFM	RPM	872	928	990	1046	1096	1143	1192	1238	1282	1327	
				Power (W)	71	89	108	127	145	162	181	199	217	235	
				CFM	750	750	750	750	750	750	750	750	750	750	
			Default CFM	RPM	1131	1177	1218	1252	1295	1337	1381	1415			
				Power (W)	251	274	296	315	337	362	387	407			
				CFM	1000	1000	1000	1000	1000	1000	1000	1000			
			Maximum CFM	RPM	1260	1299	1334	1373	1403						
				Power (W)	388	410	431	453	471						
				CFM	1150	1150	1150	1150	1150						

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 ClimaDry is factory wired to operate in stage 2 airflow.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

All TR units with optional CV ECM fan motor automatically adjusts for the reheat coil. The small additional pressure drop of the reheat coil causes the CV ECM motor to slightly increase RPM to overcome the added pressure drop, and maintain selected CFM up to the maximum ESP.

Blower Performance Data: TR036

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)										
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
1150	900	PSC	Low	CFM	970	960	951	941	902					
			Medium	CFM	1106	1096	1086	1067	1009	912				
			High	CFM	1436	1387	1329	1280	1174	1077	931			
1150	900	PSC - High Static	Low	CFM	980	970	960	931	902					
			Medium	CFM	1300	1280	1261	1222	1193	1116	1038			
			High	CFM					1484	1426	1358	1251	1135	931
1150	900	Constant Torque ECM	1	RPM	842	891	945							
				Power (W)	166	175	184							
				CFM	974	941	904							
			2	RPM	936	983	1028	1075	1125	1167	1203	1241		
				Power (W)	241	251	261	272	282	292	299	307		
				CFM	1132	1103	1074	1041	1005	973	944	916		
			3	RPM	988	1032	1076	1117	1160	1205	1246	1282	1315	1354
				Power (W)	294	304	316	326	337	349	359	367	375	385
				CFM	1271	1242	1214	1185	1153	1118	1083	1056	1029	999
			4	RPM	1056	1090	1130	1170	1208	1250	1292	1332	1370	1403
				Power (W)	376	387	399	409	421	433	446	457	468	478
				CFM	1403	1377	1351	1324	1295	1268	1233	1201	1169	1143
			5	RPM			1193	1228	1265	1295	1323	1358	1392	1419
				Power (W)			499	510	523	524	521	519	516	514
				CFM			1485	1460	1434	1396	1347	1295	1240	1194
1150	900	Constant Volume ECM	Minimum CFM	RPM	682	788	898	976	1043	1107	1170	1230	1297	1371
				Power (W)	105	132	164	188	211	233	257	280	307	339
				CFM	900	900	900	900	900	900	900	900	900	900
			Default CFM	RPM	830	895	961	1054	1145	1209	1267	1321	1371	1419
				Power (W)	205	232	261	303	349	382	415	446	475	505
				CFM	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
			Maximum CFM	RPM	1042	1040	1095	1149	1199	1273	1355	1420	1459	1493
				Power (W)	406	403	438	474	511	564	629	680	692	691
				CFM	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 ClimaDry is factory wired to operate in stage 2 airflow.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

All TR units with optional CV ECM fan motor automatically adjusts for the reheat coil. The small additional pressure drop of the reheat coil causes the CV ECM motor to slightly increase RPM to overcome the added pressure drop, and maintain selected CFM up to the maximum ESP.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR042

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)													
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0				
1400	1050	PSC	Low	CFM	1074	1064	[Black]										
			Medium	CFM	1368	1321	1273	1207	1131	1064	[Black]						
			High	CFM	1501	1444	1378	1302	1226	1131	[Black]						
1400	1050	PSC - High Static	Low	CFM	[Black]												
			Medium	CFM	1302	1283	1254	1235	1188	1121	[Black]						
			High	CFM	[Black]	1473	1444	1397	1378	1311	1178	[Black]					
1400	1050	Constant Torque ECM	1	RPM	916	957	1004	1065	[Black]								
				Power (W)	238	248	259	272	[Black]								
				CFM	1186	1152	1113	1056	[Black]								
			2	RPM	1013	1050	1084	1128	1179	1227	1279	1317	1356	1400			
				Power (W)	331	369	352	365	381	396	411	423	437	446			
				CFM	1345	1317	1283	1251	1215	1181	1150	1124	1094	1050			
			3	RPM	1108	1142	1178	1207	1247	1293	1336	1382	1426	1462			
				Power (W)	448	461	474	486	501	518	534	551	568	581			
				CFM	1507	1482	1455	1427	1396	1365	1331	1296	1276	1246			
			4	RPM	1200	1231	1263	1292	1321	1356	1397	1440	1479	1505			
				Power (W)	582	595	609	622	635	651	669	688	706	681			
				CFM	1641	1623	1601	1577	1548	1519	1488	1455	1423	1355			
			5	RPM	[Black]	[Black]	1317	1372	1392	1412	1436	1469	1500	1504			
				Power (W)	[Black]	[Black]	756	775	776	774	772	768	765	679			
				CFM	[Black]	[Black]	1743	1717	1688	1645	1596	1541	1490	1352			
1400	1050	Constant Volume ECM	Minimum CFM	RPM	786	855	920	985	1059	1125	1186	1240	1292	1346			
				Power (W)	154	177	200	224	252	280	306	331	355	383			
				CFM	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050			
			Default CFM	RPM	997	1042	1094	1145	1193	1241	1292	1345	1400	1451			
				Power (W)	334	359	390	421	453	484	517	555	595	636			
				CFM	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400			
			Maximum CFM	RPM	1224	1245	1282	1305	1327	[Black]							
				Power (W)	658	674	703	700	697	[Black]							
				CFM	1750	1750	1750	1750	1750	[Black]							

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 ClimaDry is factory wired to operate in stage 2 airflow.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

All TR units with optional CV ECM fan motor automatically adjusts for the reheat coil. The small additional pressure drop of the reheat coil causes the CV ECM motor to slightly increase RPM to overcome the added pressure drop, and maintain selected CFM up to the maximum ESP.

Blower Performance Data: TR048

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1600	1200	PSC	Low	CFM	1644	1606	1568	1492	1378	1264					
			Medium	CFM	1805	1767	1682	1625	1520	1340					
			High	CFM		1881	1815	1710	1596	1416	1216	1216			
1600	1200	PSC - High Static	Low	CFM	1748	1720	1691	1644	1587	1520	1435	1311			
			Medium	CFM	1938	1891	1843	1796	1739	1691	1625	1539	1416	1254	
			High	CFM				1957	1910	1862	1786	1701	1577	1435	
1500	1200	Constant Torque ECM	1	RPM	767	811	848	886	935						
				Power (W)	225	237	247	257	270						
				CFM	1397	1349	1304	1259	1202						
			2	RPM	826	869	905	940	979	1026	1073				
				Power (W)	287	300	312	322	334	349	363				
				CFM	1527	1484	1441	1398	1351	1294	1240				
			3	RPM	881	925	960	993	1027	1064	1108	1150	1214		
				Power (W)	358	374	387	398	410	423	439	454	473		
				CFM	1660	1619	1577	1537	1494	1452	1399	1349	1254		
			4	RPM	959	997	1034	1064	1093	1124	1157	1195	1206		
				Power (W)	474	491	507	521	533	546	560	576	511		
				CFM	1837	1795	1760	1722	1685	1647	1608	1560	1382		
			5	RPM		1078	1113	1145	1174	1200	1213	1200			
				Power (W)		649	667	684	698	714	695	588			
				CFM		1993	1956	1919	1886	1854	1784	1588			
1500	1200	Constant Volume ECM	Minimum CFM	RPM	703	766	827	886	943	998	1051	1102	1150	1196	
				Power (W)	174	205	237	269	302	336	371	407	444	482	
				CFM	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
			Default CFM	RPM	833	884	932	986	1043	1089	1137	1191	1242	1293	
				Power (W)	287	329	369	412	455	495	536	578	620	662	
				CFM	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
			Maximum CFM	RPM	993	1038	1082	1129	1178	1220	1264	1311	1357	1402	
				Power (W)	562	616	669	724	781	832	885	940	994	1048	
				CFM	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 ClimaDry is factory wired to operate in stage 2 airflow.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

All TR units with optional CV ECM fan motor automatically adjusts for the reheat coil. The small additional pressure drop of the reheat coil causes the CV ECM motor to slightly increase RPM to overcome the added pressure drop, and maintain selected CFM up to the maximum ESP.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR060

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1950	1500	PSC	Low	CFM	1803	1774	1744	1695	1637	1568					
			Medium	CFM	1999	1950	1901	1852	1793	1744	1676	1588			
			High	CFM		1881	1815	1710	1596	1416	1216	1216			
1950	1500	PSC - High Static	Low	CFM	1882	1872	1852	1842	1813	1793	1764	1715	1666	1588	
			Medium	CFM	2107	2097	2038	1999	1980	1940	1891	1842	1460	1715	
			High	CFM	2342	2323	2293	2254	2195	2156	2087	2019	1940	1852	
1950	1500	Constant Torque ECM	1	RPM	768	797	830	863							
				Power (W)	342	354	366	380							
				CFM	1685	1640	1593	1545							
			2	RPM	836	867	895	922	955	989	1020	1048	1081		
				Power (W)	460	476	489	501	518	533	548	561	577		
				CFM	1879	1833	1795	1754	1705	1657	1608	1563	1514		
			3	RPM	923	953	974	1000	1025	1052	1079	1109	1137		
				Power (W)	648	666	678	694	708	724	740	757	773		
				CFM	2113	2069	2039	1998	1963	1925	1885	1840	1795		
			4	RPM	972	994	1020	1041	1066	1090	1114	1144	1170		
				Power (W)	771	785	803	817	832	848	864	883	900		
				CFM	2235	2198	2163	2130	2094	2061	2019	1977	1939		
			5	RPM	1003	1025	1050	1074	1099	1122	1147	1166	1194	1209	
				Power (W)	866	881	899	916	934	951	970	977	973	969	
				CFM	2322	2290	2253	2219	2188	2152	2120	2083	2013	1940	
1950	1500	Constant Volume ECM	Minimum CFM	RPM	705	773	836	894	949	998	1044	1085	1121	1153	
				Power (W)	246	301	354	405	453	500	544	587	627	665	
				CFM	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
			Default CFM	RPM	852	899	949	992	1031	1085	1136	1179	1225	1272	
				Power (W)	501	562	629	683	731	804	871	926	986	1047	
				CFM	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
			Maximum CFM	RPM	995	1020	1044	1069	1094						
				Power (W)	885	896	901	916	937						
				CFM	2200	2200	2200	2200	2200						

See ECM control section for details on setting airflow.
 Airflow is controlled within 5% up to the Max ESP shown with wet coil.
 Do not select Dehumidification mode if HP CFM is on setting 1.
 ClimaDry is factory wired to operate in stage 2 airflow.
 Black areas denote ESP where operation is not recommended.
 PSC: Units factory shipped on medium speed. Other speeds require field selection.
 CT ECM: Units factory shipped on Speed Tap 2 for Fan-Only and Speed Tap 3 for Heating/Cooling.
 All airflow is rated and shown above at the lower voltage if unit is dual voltage rated, e.g. 208V for 208-230V units.
 Only two speed fan (H & M) available on 575V units.
 Performance stated is at the rated power supply. Performance may vary as the power supply varies from the rated.
 All data is shown wet coil with clean 1" filter.
 All data is ran at 80 °F DB and 67 °F WB.
 CFM Tolerance is 7%.
 RPM/Watt Tolerance 10%.

All TR units with optional CV ECM fan motor automatically adjusts for the reheat coil. The small additional pressure drop of the reheat coil causes the CV ECM motor to slightly increase RPM to overcome the added pressure drop, and maintain selected CFM up to the maximum ESP.

Blower Performance Data: TR024 with ClimaDry® II

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)										
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
850	600	PSC	Low	CFM	742	724	698	670	630					
			Medium	CFM	896	862	826	784	735	676				
			High	CFM			917	865	811	737	670			
850	600	PSC - High Static	Low	CFM	948	909	865	814	752	686				
			Medium	CFM			946	891	820	724				
			High	CFM				934	867	785	684			
800	600	Constant Torque ECM	1	CFM	730	699	662							
			2	CFM	806	780	750	713	666	626				
			3	CFM	877	854	828	798	761	718	680	649	625	
			4	CFM	960	939	916	893	866	834	793	755	727	
			5	CFM				980	959	935	905	869		
800	600	Constant Volume ECM	Minimum CFM	CFM	600	600	600	600	600	600	600	600	600	
			Default CFM	CFM	800	800	800	800	800	800	800	800	800	
			Maximum CFM	CFM	1000	1000	1000	1000	1000	1000	1000	1000	1000	

Interpolation is permissible; extrapolation is not.

All performance is based upon the lower voltage of dual voltage rated units.

Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.

See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR030 with ClimaDry® II

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1000	750	PSC	Low	CFM	948	868	865	814	752						
			Medium	CFM	1029	993	946	891							
			High	CFM	1073	1033	988	934	867						
1000	750	PSC - High Static	Low	CFM	926	892	847								
			Medium	CFM		1047	991	925	853						
			High	CFM			1056	996	923	844					
1000	750	Constant Torque ECM	1	CFM	860	825	792								
			2	CFM	972	942	911	882	856	829	800				
			3	CFM	1076	1052	1023	1000	974	948	923	896			
			4	CFM	1142	1123	1096	1074	1051	1025	1002	981			
			5	CFM	1228	1210	1185	1163	1143	1115	1072				
1000	750	Constant Volume ECM	Minimum CFM	CFM	750	750	750	750	750	750	750	750	750	750	
			Default CFM	CFM	1000	1000	1000	1000	1000	1000	1000				
			Maximum CFM	CFM	1150	1150	1150	1150							

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Blower Performance Data: TR036 with ClimaDry® II

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1150	900	PSC	Low	CFM	964	955	945	919							
			Medium	CFM	1099	1089	1073	1030	952						
			High	CFM	1378.83	1327	1283	1193	1105	988					
1150	900	PSC - High Static	Low	CFM	974	964	943	915							
			Medium	CFM	1281	1263	1228	1198	1136	1064					
			High	CFM			1462	1412	1349	1261	1161	1006			
1150	900	Constant Torque ECM	1	CFM	955	920									
			2	CFM	1111	1083	1053	1019	986	956	928				
			3	CFM	1246	1218	1190	1160	1128	1094	1065				
			4	CFM	1374	1349	1323	1296	1274	1244	1211	1179			
			5	CFM		1475	1452	1425	1388	1343	1297	1247	1202		
1150	900	Constant Torque ECM	Minimum CFM	CFM	900	900	900	900	900						
			Default CFM	CFM	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	
			Maximum CFM	CFM	1500	1500	1500	1500	1500	1500	1500	1500	1500		

Interpolation is permissible; extrapolation is not.

All performance is based upon the lower voltage of dual voltage rated units.

Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.

See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR042 with ClimaDry® II

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1400	1050	PSC	Low	CFM	1067										
			Medium	CFM	1320	1277	1217	1149	1085						
			High	CFM	1427.92	1369	1303	1236	1153						
1400	1050	PSC - High Static	Low	CFM											
			Medium	CFM	1284	1257	1237	1197	1138						
			High	CFM	1458	1417	1387	1350	1282	1196					
1400	1050	Constant Torque ECM	1	CFM	1160	1124	1075								
			2	CFM	1317	1285	1254	1220	1188	1157	1131	1103	1065		
			3	CFM	1471	1447	1420	1391	1362	1330	1297	1277	1249		
			4	CFM	1600	1579	1554	1528	1502	1475	1446	1409			
			5	CFM		1697	1668	1633	1595	1552	1510	1441			
1400	1050	Constant Volume ECM	Minimum CFM	CFM			1050	1050	1050						
			Default CFM	CFM	1400	1400	1400	1400	1400	1400	1400	1400	1400		
			Maximum CFM	CFM	1750	1750									

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Blower Performance Data: TR048 with ClimaDry® II

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1600	1200	PSC	Low	CFM	1622	1585	1529	1438	1329						
			Medium	CFM	1775	1709	1648	1568	1434						
			High	CFM		1825	1739	1641	1505	1329	1216				
1600	1200	PSC - High Static	Low	CFM	1728	1701	1662	1612	1551	1478	1379				
			Medium	CFM	1892	1848	1804	1753	1706	1651	1578	1479	1345		
			High	CFM			1948	1908	1866	1800	1726	1627	1505		
1500	1200	Constant Torque ECM	1	CFM	1376	1329	1285	1235							
			2	CFM	1505	1464	1422	1377	1326	1271					
			3	CFM	1636	1595	1555	1515	1473	1427	1377	1308			
			4	CFM	1803	1768	1733	1697	1662	1624	1581	1472			
			5	CFM		1948	1917	1888	1857	1797	1658				
1500	1200	Constant Torque ECM	Minimum CFM	CFM				1200	1200	1200	1200	1200	1200	1200	
			Default CFM	CFM	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
			Maximum CFM	CFM	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	

Interpolation is permissible; extrapolation is not.

All performance is based upon the lower voltage of dual voltage rated units.

Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.

See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR060 with ClimaDry® II

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)										
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
1950	1500	PSC	Low	CFM	1780	1752	1711	1659	1598					
			Medium	CFM	1941	1901	1857	1804	1756	1699	1624			
			High	CFM		1824.71	1739	1641	1505	1329	1216			
1950	1500	PSC - High Static	Low	CFM	1873	1854	1843	1818	1797	1771	1729	1683	1621	
			Medium	CFM	2059	2019	1992	1969	1933	1892	1847	1602	1587	
			High	CFM	2265	2225	2185	2151	2099	2046	1990	1928		
1950	1500	Constant Torque ECM	1	CFM	1658	1613	1567							
			2	CFM	1839	1802	1764	1720	1675	1629	1583	1537		
			3	CFM	2050	2019	1986	1955	1921	1887	1851	1809		
			4	CFM	2159	2131	2100	2071	2037	2001	1966			
			5	CFM	2235	2207	2179	2150	2123	2091	2042	1987		
1950	1500	Constant Torque ECM	Minimum CFM	CFM			1500	1500	1500	1500	1500	1500		
			Default CFM	CFM	1950	1950	1950	1950	1950	1950	1950	1950	1950	
			Maximum CFM	CFM	2200	2200	2200	2200						

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Blower Performance Data: TR Hybrid 006

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
225	150	Constant Torque ECM	1	RPM	1019	1081	1165	1240	1322						
				Power (W)	30	33	35	37	40						
				CFM	228	211	190	168	158						
			2	RPM			1265	1336	1418	1475	1545	1616	1686		
				Power (W)			45	48	50	53	55	58	60		
				CFM			241	228	211	191	179	167	159		
			3	RPM				1381	1454	1522	1583	1646	1715	1782	
				Power (W)				57	60	61	64	66	68	70	
				CFM				247	235	220	202	190	180	169	
			4	RPM						1559	1624	1683	1741	1806	
				Power (W)						71	74	76	78	80	
				CFM						244	232	220	210	195	
225	150	Constant Volume ECM	Minimum CFM	RPM	926	1027	1124	1231	1343	1434	1531	1638	1740	1841	
				Power (W)	20	25	30	35	40	45	50	55	60	65	
				CFM	150	150	150	150	150	150	150	150	150	150	
			Default CFM	RPM	1029	1137	1248	1353	1456	1569	1680	1785	1893	2001	
				Power (W)	40	45	50	55	60	65	70	75	80	85	
				CFM	225	225	225	225	225	225	225	225	225	225	
			Maximum CFM	RPM	1084	1185	1285	1386	1487	1587	1687	1788	1888	1989	
				Power (W)	33	41	50	56	60	71	80	86	93	101	
				CFM	250	250	250	250	250	250	250	250	250	250	

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR Hybrid 009

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
325	225	Constant Torque ECM	1	RPM	1199	1256	1310	1373	1452						
				Power (W)	50	53	55	57	60						
				CFM	283	269	255	243	229						
			2	RPM	1325	1374	1431	1477	1541	1605	1670	1730	1783		
				Power (W)	60	63	65	67	70	71	74	76	78		
				CFM	332	314	298	286	276	263	251	239	228		
			3	RPM	1461	1505	1553	1600	1645	1699	1746	1804	1823	1843	
				Power (W)	80	83	85	88	90	93	95	98	100	103	
				CFM	374	358	348	338	328	321	302	287	256	223	
			4	RPM						1819	1834	1822	1827	1849	
				Power (W)						130	120	110	100	90	
				CFM						372	353	300	265	231	
325	225	Constant Volume ECM	Minimum CFM	RPM	976	1080	1182	1290	1401	1499	1601	1709	1814	1918	
				Power (W)	33	41	50	56	60	71	80	86	93	101	
				CFM	225	225	225	225	225	225	225	225	225	225	
			Default CFM	RPM						1684	1714	1753	1754	1765	1795
				Power (W)						110	109	110	104	100	99
				CFM						325	325	325	325	325	325
			Maximum CFM	RPM						1757	1766	1774	1783		
				Power (W)						120	108	100	98		
				CFM						375	375	375	375		

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Blower Performance Data: TR Hybrid 012

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)										
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
400	300	Constant Torque ECM	1	RPM	1402	1449	1492	1539	1597					
				Power (W)	70	73	75	78	80					
				CFM	348	335	325	311	299					
			2	RPM	1524	1570	1604	1649	1690	1737	1794			
				Power (W)	90	93	97	100	103	107	110			
				CFM	377	374	365	354	345	335	317			
			3	RPM	1727	1765	1790	1794	1796	1802	1807			
				Power (W)	130	128	124	121	120	115	110			
				CFM	435	427	416	397	376	351	320			
			4	RPM	1760	1780	1784	1786	1796	1798	1816			
				Power (W)	140	137	132	130	122	117	110			
				CFM	445	432	416	391	376	354	324			
400	300	Constant Volume ECM	Minimum CFM	RPM	1318	1404	1487	1576	1667	1748	1831	1920	2006	2092
				Power (W)	50	60	70	80	90	100	110	120	130	140
				CFM	300	300	300	300	300	300	300	300	300	300
			Default CFM	RPM	1648	1716	1787	1852	1913	1988	2059	2124	2192	2260
				Power (W)	97	109	120	134	150	159	170	184	197	209
				CFM	400	400	400	400	400	400	400	400	400	400
			Maximum CFM	RPM	2023	2028	2032	2038	2045	2048	2052	2058	2063	2068
				Power (W)	200	195	190	185	180	175	170	165	160	155
				CFM	450	450	450	450	450	450	450	450	450	450

Interpolation is permissible; extrapolation is not.

All performance is based upon the lower voltage of dual voltage rated units.

Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.

See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR Hybrid 015

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)												
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0			
525	375	Constant Torque ECM	1	RPM		838	902	974	1055	1126						
				Power (W)		83	90	96	103	110						
				CFM		589	549	505	452	393						
			2	RPM			935	996	1070	1146	1210	1266				
				Power (W)			107	110	118	126	132	137				
				CFM			618	561	517	460	411	371				
			3	RPM				1016	1081	1150	1233	1291	1338			
				Power (W)				125	132	141	149	155	159			
				CFM				615	576	529	471	428	386			
			4	RPM							1163	1241	1316	1365	1413	
				Power (W)							160	169	177	184	189	
				CFM							602	557	493	454	417	
			5	RPM								1252	1317	1391	1438	
				Power (W)								191	198	208	215	
				CFM								626	577	519	480	
525	375	Constant Volume ECM	Minimum CFM	RPM	723	793	813	934	1004	1074	1161					
				Power (W)	27	44	62	80	97	115	133					
				CFM	375	375	375	375	375	375	375					
			Default CFM	RPM	756	830	872	976	1049	1123	1207	1269	1343			
				Power (W)	53	76	99	121	143	166	189	211	234			
				CFM	525	525	525	525	525	525	525	525	525			
			Maximum CFM	RPM	777	851	924	1000	1078	1149	1221	1298	1372	1446		
				Power (W)	84	107	131	154	176	200	224	247	270	293		
				CFM	625	625	625	625	625	625	625	625	625	625		

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Blower Performance Data: TR Hybrid 018

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)												
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0			
600	450	Constant Torque ECM	1	RPM	774	842	914	1002	1101							
				Power (W)	87	93	100	110	120							
				CFM	659	634	600	557	505							
			2	RPM	823	873	942	1017	1100	1209	1267	1318				
				Power (W)	104	110	118	127	136	149	155	161				
				CFM	707	691	658	622	580	515	464	426				
			3	RPM	866	905	975	1038	1111	1191	1299	1354	1397			
				Power (W)	124	129	138	146	156	166	180	188	192			
				CFM	754	749	715	685	648	608	542	496	456			
			4	RPM				1070	1133	1201	1277	1378	1443	1487		
				Power (W)				174	184	194	205	220	230	236		
				CFM				756	726	691	653	597	543	507		
			5	RPM								1288	1359	1442	1532	
				Power (W)								236	248	262	276	
				CFM								737	702	659	593	
600	450	Constant Volume ECM	Minimum CFM	RPM	682	772	860	950	1041	1128	1216	1306	1395	1484		
				Power (W)	46	69	93	115	136	161	185	207	230	253		
				CFM	450	450	450	450	450	450	450	450	450	450		
			Default CFM	RPM	752	829	904	982	1062	1136	1211	1289	1366	1442		
				Power (W)	75	99	122	145	167	191	215	238	261	284		
				CFM	600	600	600	600	600	600	600	600	600	600		
			Maximum CFM	RPM	831	902	967	1042	1123	1183	1248	1323	1394	1464		
				Power (W)	123	150	177	205	234	260	287	315	342	370		
				CFM	750	750	750	750	750	750	750	750	750	750		

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR Hybrid 024

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
800	600	Constant Torque ECM	1	RPM	816	871	928	988	1045	1119					
				Power (W)	125	133	141	149	157	168					
				CFM	787	756	723	686	649	604					
			2	RPM	875	925	974	1030	1084	1137	1196	1271	1315		
				Power (W)	160	168	177	186	195	204	214	227	235		
				CFM	876	848	819	787	753	720	684	634	603		
			3	RPM	934	979	1026	1070	1124	1174	1224	1275	1339	1399	
				Power (W)	200	209	218	226	237	247	257	267	280	293	
				CFM	962	936	909	883	851	820	789	755	715	676	
			4	RPM			1083	1127	1167	1218	1263	1309	1355	1405	
				Power (W)			270	280	289	301	311	322	333	345	
				CFM			1004	980	954	925	896	867	838	807	
			5	RPM							1314	1357	1399	1444	
				Power (W)							380	391	403	416	
				CFM							1004	977	950	923	
800	600	Constant Volume ECM	Minimum CFM	RPM	766	833	899	967	1037	1101	1167	1235	1302	1369	
				Power (W)	80	99	118	136	154	174	193	211	229	248	
				CFM	600	600	600	600	600	600	600	600	600	600	600
			Default CFM	RPM	890	950	1006	1071	1141	1192	1247	1312	1372	1433	
				Power (W)	148	172	194	218	244	265	287	312	335	359	
				CFM	800	800	800	800	800	800	800	800	800	800	
			Maximum CFM	RPM	1034	1088	1144	1195	1244	1302	1358	1409	1463	1516	
				Power (W)	256	285	316	343	368	401	432	459	488	517	
				CFM	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Blower Performance Data: TR Hybrid 030

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)										
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
1000	750	Constant Torque ECM	1	RPM	886	927	965	994	1040	1071	1101			
				Power (W)	205	214	222	229	239	246	252			
				CFM	916	886	857	837	799	772	749			
			2	RPM	969	1009	1045	1077	1109	1139	1168	1214	1234	1267
				Power (W)	277	287	297	306	314	322	330	342	348	357
				CFM	1030	1004	977	951	929	907	883	838	828	807
			3	RPM	1058	1097	1131	1162	1192	1221	1249	1281	1322	1330
				Power (W)	369	382	393	404	414	423	432	443	456	460
				CFM	1147	1123	1098	1075	1052	1030	1012	986	947	949
			4	RPM		1180	1213	1243	1272	1300	1326	1352	1377	1400
				Power (W)		494	507	518	530	541	551	561	571	580
				CFM		1244	1219	1198	1176	1152	1134	1116	1098	1082
			5	RPM								1434	1458	1477
				Power (W)								711	722	723
				CFM								1246	1228	1200
1000	750	Constant Volume ECM	Minimum CFM	RPM	841	892	942	994	1048	1096	1146	1198	1249	1300
				Power (W)	160	184	208	232	256	280	304	328	352	375
				CFM	750	750	750	750	750	750	750	750	750	750
			Default CFM	RPM	1027	1070	1112	1156	1202	1243	1285	1330	1373	1416
				Power (W)	324	354	383	413	443	472	502	532	561	591
				CFM	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
			Maximum CFM	RPM	1211	1245	1271	1312	1361	1379	1405			
				Power (W)	604	626	635	671	720	716	725			
				CFM	1250	1250	1250	1250	1250	1250	1250			

Interpolation is permissible; extrapolation is not.

All performance is based upon the lower voltage of dual voltage rated units.

Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.

See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR Hybrid 036

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)												
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0			
1150	900	Constant Torque ECM	1	RPM	791	831	872	912	954							
				Power (W)	180	189	198	206	215							
				CFM	1032	1003	970	938	903							
			2	RPM	838	875	912	950	990	1033	1071					
				Power (W)	218	227	236	246	255	265	275					
				CFM	1116	1089	1062	1031	997	963	930					
			3	RPM	902	937	971	1006	1041	1076	1111	1150	1193	1249		
				Power (W)	280	290	300	310	320	330	340	351	364	380		
				CFM	1229	1206	1180	1153	1125	1095	1068	1036	1001	944		
			4	RPM	993	1026	1057	1088	1119	1152	1184	1214	1247	1283		
				Power (W)	391	402	414	425	436	448	459	470	482	496		
				CFM	1398	1374	1354	1329	1304	1278	1252	1226	1201	1172		
			5	RPM	1046	1079	1107	1139	1170	1186	1226	1258	1287	1318		
				Power (W)	474	487	498	511	530	527	544	557	570	584		
				CFM	1503	1480	1458	1438	1428	1388	1361	1338	1313	1290		
1150	900	Constant Volume ECM	Minimum CFM	RPM	728	784	838	895	953	1006	1060	1117				
				Power (W)	126	148	171	193	215	238	261	284				
				CFM	900	900	900	900	900	900	900	900				
			Default CFM	RPM	883	931	976	1026	1077	1120	1166	1215	1263	1310		
				Power (W)	253	283	311	341	372	400	429	459	489	518		
				CFM	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150		
			Maximum CFM	RPM	1023	1065	1107	1150	1194							
				Power (W)	446	485	524	563	601							
				CFM	1500	1500	1500	1500	1500							

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Blower Performance Data: TR Hybrid 042

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1400	1050	Constant Torque ECM	1	RPM	883	918	954	992	1030						
				Power (W)	248	257	266	277	287						
				CFM	1189	1156	1126	1089	1053						
			2	RPM	970	1001	1033	1065	1097	1130	1168	1207	1245		
				Power (W)	338	349	359	370	380	391	403	417	429		
				CFM	1348	1320	1290	1259	1227	1195	1163	1124	1087		
			3	RPM	1068	1098	1126	1153	1182	1211	1240	1271	1302	1340	
				Power (W)	465	479	490	502	513	525	537	550	562	578	
				CFM	1513	1485	1460	1432	1405	1375	1349	1319	1287	1254	
			4	RPM	1160	1185	1213	1237	1262	1289	1314	1340	1367	1395	
				Power (W)	611	625	638	649	661	675	688	700	714	728	
				CFM	1679	1655	1628	1604	1577	1553	1529	1503	1476	1450	
			5	RPM			1271	1292	1309	1327	1346	1364	1385	1405	
				Power (W)			753	761	759	757	756	754	753	751	
				CFM			1736	1709	1672	1634	1595	1558	1514	1472	
1400	1050	Constant Volume ECM	Minimum CFM	RPM	816	870	921	976	1034						
				Power (W)	176	204	232	260	288						
				CFM	1050	1050	1050	1050	1050						
			Default CFM	RPM	986	1032	1077	1125	1173	1217	1262	1309	1356	1402	
				Power (W)	360	397	434	471	508	545	582	619	656	693	
				CFM	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	
			Maximum CFM	RPM			1265	1284							
				Power (W)			778	776							
				CFM			1750	1750							

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Blower Performance Data: TR Hybrid 048

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
1500	1200	Constant Torque ECM	1	RPM	731	770	807	840							
				Power (W)	251	263	275	285							
				CFM	1396	1328	1262	1206							
			2	RPM	798	833	867	900	931	963	1000				
				Power (W)	340	354	366	378	389	401	415				
				CFM	1576	1517	1449	1393	1343	1291	1235				
			3	RPM	864	902	935	965	995	1024	1054	1085	1121	1183	
				Power (W)	458	476	491	505	519	533	547	561	578	608	
				CFM	1767	1715	1655	1599	1546	1497	1449	1400	1345	1259	
			4	RPM	927	956	986	1016	1044	1084	1112	1138	1166	1194	
				Power (W)	598	615	632	649	666	682	698	713	729	747	
				CFM	1980	1928	1877	1824	1772	1697	1651	1609	1565	1521	
			5	RPM					1103	1129	1155	1181	1207	1232	
				Power (W)					831	848	866	885	904	921	
				CFM					1963	1916	1872	1830	1791	1755	
1500	1200	Constant Volume ECM	Minimum CFM	RPM	724	774	824	875	928	977	1026	1078	1129	1179	
				Power (W)	192	231	272	310	348	389	429	468	508	547	
				CFM	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	
			Default CFM	RPM	883	925	965	1008	1052	1091	1131	1174	1216	1257	
				Power (W)	408	453	498	544	589	634	679	725	770	815	
				CFM	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
			Maximum CFM	RPM	993	1031	1068	1109	1151	1187	1224	1264	1303	1342	
				Power (W)	625	678	730	786	843	893	945	1000	1054	1108	
				CFM	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Blower Performance Data: TR Hybrid 060

Rated CFM	Min CFM	Motor Type	Motor Speed Setting	External Static Pressure (in. wg)												
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0			
1950	1500	Constant Torque ECM	1	RPM	856	886	916	946	978							
				Power (W)	448	462	476	490	505							
				CFM	1739	1693	1646	1595	1546							
			2	RPM	943	969	997	1026	1054	1081	1110	1140	1170	1199		
				Power (W)	622	637	654	670	687	702	719	736	753	770		
				CFM	1954	1915	1872	1828	1780	1736	1692	1648	1604	1562		
			3	RPM	1029	1053	1079	1106	1133	1159	1185	1210	1230	1250		
				Power (W)	833	850	868	887	906	925	943	960	957	953		
				CFM	2166	2126	2087	2045	2000	1954	1914	1872	1814	1755		
			4	RPM	1049	1073	1099	1125	1149	1169	1189	1208	1228	1248		
				Power (W)	897	915	934	952	963	959	955	952	948	946		
				CFM	2224	2186	2145	2107	2055	1988	1926	1864	1804	1745		
			5	RPM												
				Power (W)												
				CFM												
1950	1500	Constant Volume ECM	Minimum CFM	RPM	814	862	908	956	1006	1051	1097	1145	1192	1240		
				Power (W)	324	376	428	479	530	582	634	685	736	788		
				CFM	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500		
			Default CFM	RPM	1046	1072	1093	1123	1158	1175	1196					
				Power (W)	854	872	874	908	956	943	945					
				CFM	1950	1950	1950	1950	1950	1950	1950					
			Maximum CFM	RPM	1078	1097	1116									
				Power (W)	955	950	946									
				CFM	2200	2200	2200									

Interpolation is permissible; extrapolation is not.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 See performance correction tables for operating conditions other than those listed above.

Tranquility® (TR) Series

Rev.: November 4, 2024

Constant Volume (CV) ECM

The Intelligent Constant Volume (CV) ECM blower motor provides unmatched functionality that saves installing and service technicians time while also providing increased comfort levels to occupants.

CV ECM's are programed to maintain a constant CFM across a wide range of external static pressures (ESP). This functionality differs from traditional PSC or even Constant Torque (CT) ECM's. With traditional PSC and CT ECM fan motors, as ESP is increased CFM is reduced. To increase or decrease the speed of the fan motor requires a fan motor switch or a technician to wire into a different motor tap. CT ECM's provide increased efficiency over PSC motors but with no additional functionality. With a CV ECM, as changes in ESP occur the fan motor will adjust its speed to deliver the desired CFM (within its operating range). This ensures the system is delivering the airflow and capacity it was designed for.

A major benefit of the CV ECM over other fan motor types its ability to adjust airflow remotely through the iGate® 2 web portal/mobile app or directly at the unit with a communicating diagnostic service tool or thermostat. Airflow levels can be adjusted in increments of 25 CFM from the units minimum and maximum CFM range (see CV ECM configuration table for details). This functionality allows technicians to dial in airflow during start-up and commissioning via an easy to use service tool. During operation occupants may have a desire for airflow adjustments. Reducing CFM can reduce airflow sound levels and increase cooling dehumidification (latent capacity). Technicians can easily make these adjustments without making wiring changes reducing service time with minimal disruption to the occupants.

The fan motor operating modes include:

- First Stage Cooling (Y1 & O)
- Second Stage Cooling (Y1, Y2, & O)
- First Stage Heating (Y1)
- Second Stage Heating (Y1 & Y2)
- Fan (G with no Y1, Y2, or W)

The CV ECM motor includes “soft start” and “ramp down” features. The soft start feature gently increases the motors rpm at blower start up resulting quieter blower start cycles. Likewise, the ramp down feature allows the blower to slowly decrease rpm to a full stop resulting in a quieter end to each blower cycle. The ramp down feature (also known as the heating or cooling “Off Delay”) also has the functionality to be field selected by the technician in the allowable range of 0 to 255 seconds.



Airflow Configuration Screen on Mobile App

Constant Torque (CT) ECM

The Constant Torque (CT) ECM blower

motor combines high efficient airflow movement with simplistic operation.

The CT ECM is designed to maintain a fixed RPM. The delivered unit airflow will depend on the total static applied on the system (ductwork, grilles, etc.). This is similar to the operation of a PSC motor and differs from the CV ECM motor which will adjust RPM to deliver a constant CFM. Also, like a traditional PSC blower motor, the CT ECM blower motor has 4-5 Speed Taps depending on unit size (see blower tables for details). The blower comes factory wired into two speed taps. To adjust speeds in the field a technician manually changes the electrical connection either at the fan motor or connecting wire harness (varies by size).

The blower offers a “soft start” feature. Soft start gently increases the blower motors rpm resulting in quieter operation during start up cycles. The blower does not include a “ramp down” feature like the CV ECM motor. When the fan call is removed the blower will immediately shut down. If the ramp down feature is required please select a CV ECM blower.

The CT ECM blower is not a communicating component and does not contain the high functionality like the CV ECM blower does. It offers an entry level ECM option for applications seeking high efficiency with simplistic functionality. Constant Volume (CV) and Constant Torque (CT) styles of ECM blower motors are both equally efficient in their operation. The difference between the two motors is in their operational functionality.



Speed Taps 1-5



Tranquility® (TR) Series

Rev.: November 4, 2024

Wiring Diagram Matrix

All current diagrams can be located online at climatemaster.com.

Click 'Commercial Professional'.

1. Click 'Products' in the main navigation
2. Select 'Small Packaged Units'
3. Select the TR product series
4. Click the Wire Diagrams tab in the middle of the page
5. Select your voltage and controls

Unit Controller	Fan Motor	Hydronic Coil	208v/1		265v/1		208v/3	460v/3	575v/3		
			006-012	015-060	006-012	015-060	024-060	024-060	042-060		
CXM2	PSC	None	96B0514N11				96B0514N21	96B0514N31			
	CT ECM	None	96B0514N12				96B0514N22	96B0514N32			
		Hybrid	96B0516N12				96B0516N22	96B0516N32			
DXM2.5	PSC	None	96B0521N11				96B0521N21	96B0521N31			
		Reheat		96B0524N11		96B0524N11	96B0524N21	96B0524N31			
	CT ECM	None	96B0527N11				96B0527N21	96B0527N31			
		Hybrid	96B0532N11				96B0532N21	96B0532N31			
		Reheat		96B0528N11		96B0528N11	96B0528N21	96B0528N31			
	CV ECM	None	96B0523N01	96B0523N11	96B0523N01	96B0523N11	96B0523N21	96B0523N31			
		Hybrid	96B0530N01	96B0530N11	96B0530N01	96B0530N11	96B0530N21	96B0530N31			
		Reheat		96B0525N11		96B0525N11	96B0525N21	96B0525N31			
	Auxiliary WD for MPC Controls			96B0147N14							
Control Box Layout			96B0500N00								

Controls: CXM2 and DXM2.5



CXM2 Controls

For detailed controller information, see the CXM2 Application, Operation, and Maintenance (AOM) manual (part # 97B0137N01). To confirm the controller type of your particular unit, refer to digit 9 on the unit model number and the unit nomenclature diagram found on page 3 of this manual.



DXM2.5 Controls

For detailed controller information, see the DXM2.5 Application, Operation, and Maintenance (AOM) manual (part # 97B0142N01). To confirm the controller type of your particular unit, refer to digit 9 on the unit model number and the unit nomenclature diagram found on page 3 of this manual.

Tranquility® (TR) Series

Rev.: November 4, 2024

ClimaDry® II Modulating Reheat Option

ClimaDry® II Sequence Of Operation

A heat pump equipped with ClimaDry® II can operate in three modes, cooling, cooling with reheat, and heating. The cooling/heating modes are like any other ClimateMaster WSHP. The reversing valve (“O” signal) is energized in cooling, along with the compressor contactor(s) and blower relay. In the heating mode the reversing valve is de-energized. The DXM2.5 microprocessor board, which is standard with the ClimaDry II option, will accept either heat pump (Y, O) thermostats or non-heat pump (Y, W) thermostats.

Almost any thermostat will activate the heat pump in heating or cooling modes. The reheat mode requires either a separate humidistat/dehumidistat or a thermostat that has an integrated dehumidification function for activation. The DXM2.5 board is configured to work with either a humidistat or dehumidistat input to terminal “H” (DIP switch settings for the DXM2.5 board are shown in Table 4). Upon receiving an “H” input, the DXM2.5 board will activate the cooling mode and engage reheat. Table 5 shows the relationship between thermostat input signals and unit operation.

There are four operational inputs for single stage units and six operational inputs for dual stage units:

- Fan Only
- 1st Stage Cooling
- 2nd Stage Cooling
- 1st Stage Heating
- 2nd Stage Heating
- Reheat Mode

Fan Only: A (G) call from the thermostat to the (G terminal of the DXM2.5 control board will bring the unit on in fan only mode.

1st Stage Cooling: A simultaneous call from (G), (Y1), and (O) to the (G), (Y1), (O/W2) terminals of the DXM2.5 control board will bring the unit on in 1st Stage Cooling.

2nd Stage Cooling: A simultaneous call from (G), (Y1), (Y2), and (O) to the (G), (Y1), (Y2), and (O/W2) terminals of the DXM2.5 control board will bring the unit on in 2nd Stage Cooling. When the call is satisfied at the thermostat the unit will continue to run in 1st Stage Cooling until the 1st Stage Cooling call is removed or satisfied, shutting down the unit. Note: Not all units have two-stage cooling functionality (e.g. GC series units).

1st Stage Heating: A simultaneous call from (G) and (Y1) to the (G) and (Y1) terminals of the DXM2.5 control board will bring the unit on in 1st Stage Heating.

2nd Stage Heating: A simultaneous call from (G), (Y1), and (Y2) to the (G), (Y1), and (Y2) terminals of the DXM2.5 control board will bring the unit on in 2nd Stage Heating. When the call is satisfied at the thermostat the unit will continue to run in 1st Stage Heating until the call is removed or satisfied, shutting down the unit. NOTE: Not all units have two-stage heating functionality (e.g. GC series units).

Reheat Mode: A call from the Humidistat/Dehumidistat to the (H) terminal of the DXM2.5 control board will bring the unit on in Reheat Mode if there is no call for cooling at the thermostat. When the Humidistat Dehumidification call is removed or satisfied the unit will shut down. **Note: Cooling always overrides Reheat Mode.** In the Cooling mode, the unit cools and dehumidifies. If the cooling thermostat is satisfied but there is still a call for dehumidification, the unit will continue to operate in Reheat Mode.

ClimaDry® II Component Functions

The ClimaDry® II option consists of the following components:

- Proportional Controller
- Supply Air Sensor
- Motorized Valve
- Loop Pump
- Hydronic Coil

The Proportional Controller operates on 24 VAC power supply and automatically adjusts the water valve based upon the Supply Air Sensor. The Supply Air Sensor senses supply air temperature at the blower inlet providing the input signal necessary for the proportional control to drive the motorized valve during the reheat mode of operation.

The Motorized Valve is a proportional actuator/three-way valve combination used to divert the condenser water from the coax to the hydronic reheat coil during the reheat mode of operation. The proportional controller sends a signal to the motorized valve based on the supply air temperature of the supply air sensor.

ClimaDry® II Modulating Reheat Option, Cont'd.

The Loop Pump circulates condenser water through the hydronic reheat coil during the reheat mode of operation. In this application, the loop pump is only energized during the reheat mode of operation. The Hydronic Coil is utilized during the reheat mode of operation to reheat the air to the setpoint of the proportional controller. Condenser water is diverted by the motorized valve and pumped through the hydronic coil by the loop pump in proportion to the control setpoint. The amount of reheating is dependent on the setpoint and how far from setpoint the supply air temperature is. The factory setpoint is 70–75°F [21–24°C], generally considered “neutral” air.

ClimaDry® II Application Considerations

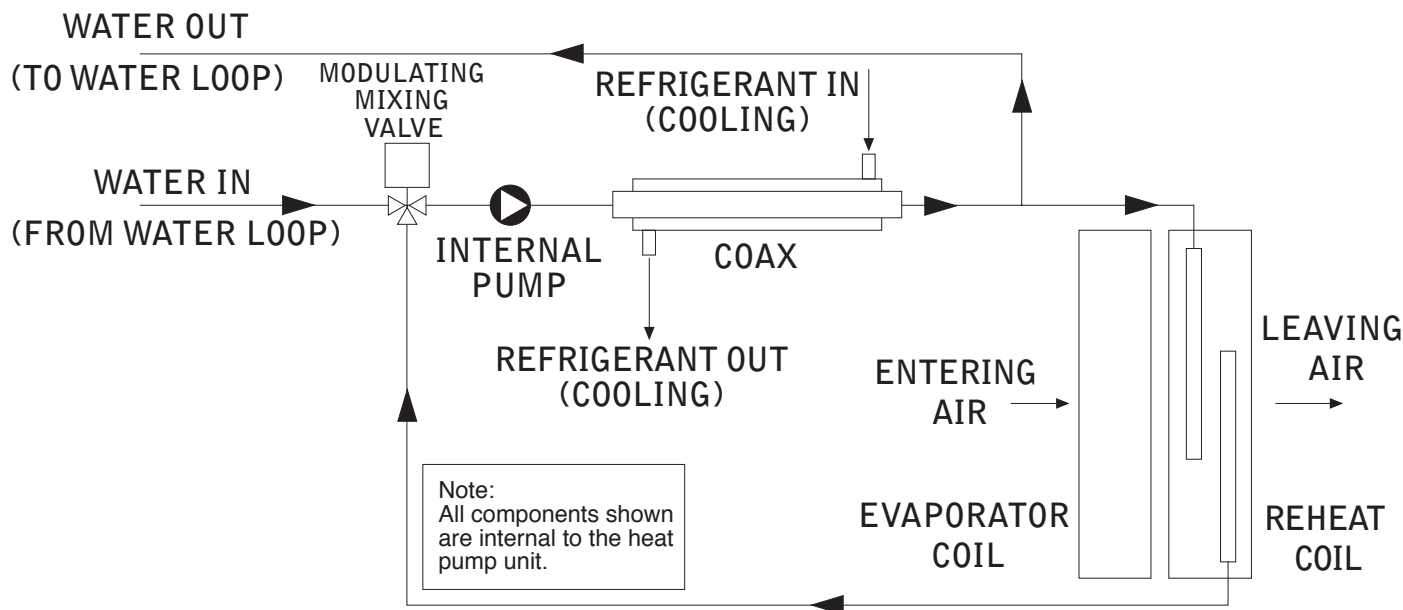
Unlike most hot gas reheat options, the ClimaDry® II option will operate over a wide range of EWTs. Special flow regulation (water regulating valve) is not required for low EWT conditions. However, below 55°F [13°C], supply air temperatures may not be maintained at 72°F [22°C] because the cooling capacity exceeds the reheat coil capacity at low water temperatures. Below 55°F [13°C], essentially all water is diverted to the reheat coil (no heat of rejection to the building loop).

Although the ClimaDry II option will work fine with low EWTs, overcooling of the space may result with well water systems or on rare occasions with ground loop (geothermal) systems (**NOTE: Extended range units are required for well water and ground loop systems**). Since dehumidification is generally only required in cooling, most ground loop systems will not experience overcooling of the supply air temperature. If overcooling of the space is a concern (e.g. computer room well water application), auxiliary heating may be required to maintain space temperature when the unit is operating in the dehumidification mode.

Unit minimum entering air temperature while in the dehumidification, cooling, or continuous fan modes is **65°F DB/55°F WB**. Operation below this minimum may result in nuisance faults.

Water-Source Heat Pumps with ClimaDry II should not be used as make-up air units. These applications should use equipment specifically designed for makeup air.

Figure 23: ClimaDry® II Schematic



Tranquility® (TR) Series

Rev.: November 4, 2024

ClimaDry® II Modulating Reheat Option, Cont'd.

Table 4: Humidistat/Dehumidistat Logic & DXM2.5 (2.1, 2.2., 2.3) DIP Settings

Sensor	2.1	2.2	2.3	Logic	Reheat (ON)–H	Reheat (OFF)–H
Humidistat	OFF	OFF	OFF	Reverse	0 VAC	24 VAC
Dehumidistat	OFF	ON	OFF	Standard	24 VAC	0 VAC

Table 5: ClimaDry® II Operating Modes

Mode	Input					Output				
	O	G	Y1	Y2 ³	H	RV	Fan	1 st stg H/C	2 nd stg H/C ³	Reheat
No Demand	ON/OFF	OFF	OFF	OFF	OFF	ON/OFF	OFF	OFF	OFF	OFF
Fan Only	ON/OFF	ON	OFF	OFF	OFF	ON/OFF	ON	OFF	OFF	OFF
Cooling 1st Stage	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF
Cooling 2nd Stage	ON	ON	ON	ON	OFF	ON	ON	ON	ON	OFF
Cooling & Dehumidistat ¹	ON	ON	ON	ON/OFF	ON	ON	ON	ON	ON/OFF	OFF
Dehumidistat Only	ON/OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON
Heating 1st Stage	OFF	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
Heating 2nd Stage	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF
Heating & Dehumidistat ²	OFF	ON	ON	ON/OFF	ON	OFF	ON	ON	ON/OFF	OFF

¹Cooling input takes priority over dehumidify input.

²DXM2.5 is programmed to ignore the H demand when the unit is in heating mode.

³N/A for single stage units; Full load operation for dual capacity units.

⁴ON/OFF = Either ON or OFF.

Operating Limits and Commissioning Conditions

Operating Limits

Environment – Units are designed for indoor installation only. Never install units in areas subject to freezing or where humidity levels could cause cabinet condensation (such as unconditioned spaces subject to 100% outside air).

Power Supply – A voltage variation of +/- 10% of nameplate utilization voltage is acceptable.

Determination of operating limits is dependent primarily upon three factors: 1) return air temperature. 2) water temperature, and 3) ambient temperature. When any one of these factors is at minimum or maximum levels, the other two factors should be at normal levels to ensure proper unit operation. Extreme variations in temperature and humidity and/or corrosive water or air will adversely affect unit performance, reliability, and service life. Consult Table 6a for operating limits.

Commissioning Conditions

Starting conditions vary depending upon model and are based upon the following notes:

NOTES:

1. Conditions in Table 6b are not normal or continuous operating conditions. Minimum/maximum limits are start-up conditions to bring the building space up to occupancy temperatures. Units are not designed to operate under these conditions on a regular basis.
2. Voltage utilization range complies with AHRI Standard 110.

Table 6a: Operating Limits

Operating Limits	TC	
	Cooling	Heating
Air Limits		
Min. ambient air, DB	45°F [7°C]	39°F [4°C]
Rated ambient air, DB	80.6°F [27°C]	68°F [20°C]
Max. ambient air, DB	130°F [54.4°C]	85°F [29°C]
Min. entering air, DB/WB	*65/50°F [18/10°C]	45°F [7.2°C]
Rated entering air, DB/WB	80.6/66.2°F [27/19°C]	68°F [20°C]
Max. entering air, DB/WB	95/75°F [35/24°C]	80°F [27°C]
Water Limits		
Min. entering water	30°F [-1°C]	20°F [-6.7°C]
Normal entering water	50-110°F [10-43°C]	30-70°F [-1 to 21°C]
Max. entering water	120°F [49°C]	90°F [32°C]
Normal Water Flow	1.5 to 3.0 gpm/ton [1.6 to 3.2 l/m per kW]	

*If with ClimaDry® II 65/55°F (18/13°C)

Table 6b: Commissioning Conditions

Commissioning Conditions	Cooling	Heating
Air Limits		
Min. ambient air, DB	45°F [7°C]	39°F [4°C]
Rated ambient air, DB	80.6°F [27°C]	68°F [20°C]
Max. ambient air, DB	130°F [54.4°C]	85°F [29°C]
Min. entering air, DB/WB	50/45°F [10/7°C]	40°F [4.5°C]
Rated entering air, DB/WB	80.6/66.2°F [27/19°C]	68°F [20°C]
Max. entering air, DB/WB	110/83°F [43/28°C]	80°F [27°C]
Water Limits		
Min. entering water	30°F [-1°C]	20°F [-6.7°C]
Normal entering water	50-110°F [10-43°C]	30-70°F [-1 to 21°C]
Max. entering water	120°F [49°C]	90°F [32°C]
Normal Water Flow	1.5 to 3.0 gpm/ton [1.6 to 3.2 l/m per kW]	

Tranquility® (TR) Series

Rev.: November 4, 2024

Piping System Cleaning and Flushing

Piping System Cleaning and Flushing - Cleaning and flushing the WLHP piping system is the single most important step to ensure proper start-up and continued efficient operation of the system.

Follow the instructions below to properly clean and flush the system:

1. Ensure that electrical power to the unit is disconnected.
2. Install the system with the supply hose connected directly to the return riser valve. Use a single length of flexible hose.
3. Open all air vents. Fill the system with water. DO NOT allow system to overflow. Bleed all air from the system. Pressurize and check the system for leaks and repair as appropriate. ClimaDry®-equipped units have a manual air bleed valve at the top of the reheat coil. This valve must be used to bleed the air from the reheat coil after filling the system, for ClimaDry to operate properly.
4. Verify that all strainers are in place (ClimateMaster recommends a strainer with a #20 stainless steel wire mesh). Start the pumps, and systematically check each vent to ensure that all air is bled from the system.
5. Verify that make-up water is available. Adjust make-up water as required to replace the air which was bled from the system. Check and adjust the water/air level in the expansion tank.
6. Set the boiler to raise the loop temperature to approximately 85°F [29°C]. Open a drain at the lowest point in the system. Adjust the make-up water replacement rate to equal the rate of bleed.
7. Refill the system and add trisodium phosphate in a proportion of approximately one pound per 150 gallons (.8 kg per 1000 l) of water (or other equivalent approved cleaning agent). Reset the boiler to raise the loop temperature to 100°F [38°C]. Circulate the solution for a minimum of 8 to 24 hours. At the end of this period, shut off the circulating pump and drain the solution. Repeat system cleaning if desired.
8. When the cleaning process is complete, remove the short-circuited hoses. Reconnect the hoses to the proper supply, and return the connections to each of the units. Refill the system and bleed off all air.
9. Test the system pH with litmus paper. The system water should be in the range of pH 6.0 - 8.5 (see Table 3). Add chemicals, as appropriate to maintain neutral pH levels.
10. When the system is successfully cleaned, flushed, refilled and bled, check the main system panels, safety cutouts and alarms. Set the controls to properly maintain loop temperatures.



CAUTION! DO NOT use “Stop Leak” or similar chemical agent in this system. Addition of chemicals of this type to the loop water will foul the heat exchanger and inhibit unit operation.

NOTE: The manufacturer strongly recommends all piping connections, both internal and external to the unit, be pressure tested by an appropriate method prior to any finishing of the interior space or before access to all connections is limited. Test pressure may not exceed the maximum allowable pressure for the unit and all components within the water system. The manufacturer will not be responsible or liable for damages from water leaks due to inadequate or lack of a pressurized leak test, or damages caused by exceeding the maximum pressure rating during installation.

Flushing/Purging Units with ClimaDry® II

When flushing/purging units equipped with ClimaDry® II the unit should be fully flushed/purged before attempting to flush/purge the ClimaDry II coil. Once the unit is flushed, energize the modulating three-way dehumidification valve to allow flow through the ClimaDry II hydronic circuit.

The unit must be powered (but not operating) during flushing/purging. Unit power is required to operate the three-way modulating valve during flushing.

Disable the ClimaDry II sensor located in the supply air stream by removing the white wire from the low voltage terminal block (LVTB) as shown in Figure 24. Energize the modulating three-way dehumidification valve by removing the red wire from the ACC1 'N.O.' terminal on the DXM2.5 board. Connect this wire to the ACC1 'NC' terminal of the DXM2.5 controller, as shown in Figure 24, to energize the modulating three-way dehumidification valve. Once energized, the valve will take 45 – 75 seconds to fully shift. Continue flushing during this time. After the valve has completed its shift, use the air bleed from the top of the reheat coil to purge air from the coil.

De-energize the valve by removing the red wire from the ACC1 'NC' terminal on the DXM2.5 board. The valve will spring return to its normal position in just a few seconds. After the valve has fully returned, repeat the process of running the valve through its cycle and purging air from the reheat coil.

Under extreme circumstances this procedure may be required multiple times to purge all air from the circuit. After completing the flushing/purging procedure, reconnect the red wire to the ACC1 'N.O.' terminal on the DXM2.5 for normal operation. Reconnect the white sensor wire to the LVTB, as shown in Figure 25. If air is allowed to collect in the ClimaDry II piping, nuisance trips may occur. Additional flush/purge cycles may be used when required.

Figure 24: Flushing/Purging Wiring

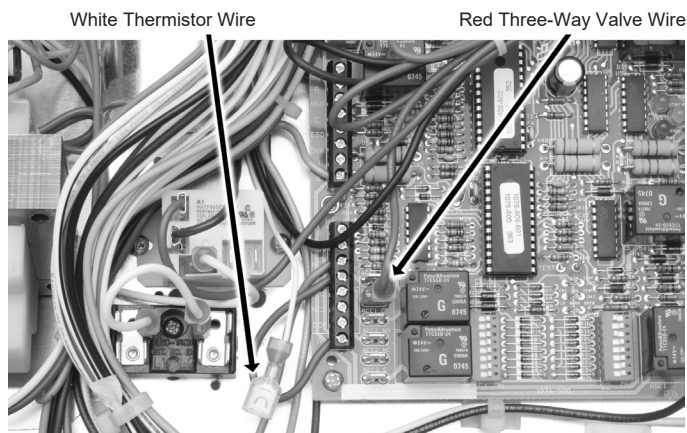
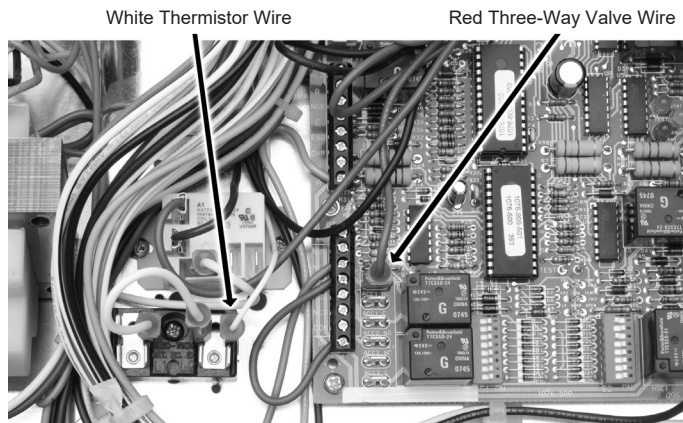


Figure 25: Normal Unit Wiring



Tranquility® (TR) Series

Rev.: November 4, 2024

Unit and System Checkout

WARNING!

WARNING! Polyolester Oil, commonly known as POE oil, is a synthetic oil used in many refrigeration systems including those with HFC-410A refrigerant. POE oil, if it ever comes in contact with PVC or CPVC piping, may cause failure of the PVC/CPVC. PVC/CPVC piping should never be used as supply or return water piping with water source heat pump products containing HFC-410A as system failures and property damage may result.

Unit and System Checkout

BEFORE POWERING SYSTEM, please check the following:

UNIT FEATURES

- Balancing/shutoff valves: Ensure that all isolation valves are open and water control valves are wired.
- Line voltage and wiring: Verify that voltage is within an acceptable range for the unit and wiring and fuses/breakers are properly sized. Verify that low voltage wiring is complete.
- Unit control transformer: Ensure that transformer has the properly selected voltage tap.
- Entering water and air: Ensure that entering water and air temperatures are within operating limits of Tables 6a-b.
- Low water temperature cutout: Verify that low water temperature cut-out on the CXM2/DXM2.5 control is properly set.
- Unit fan: Manually rotate fan to verify free rotation and ensure that blower wheel is secured to the motor shaft. Be sure to remove any shipping supports if needed. DO NOT oil motors upon start-up. Fan motors are pre-oiled at the factory. Check unit fan speed selection and compare to design requirements.
- Condensate line: Verify that condensate line is open and properly pitched toward drain.
- Water flow balancing: Record inlet and outlet water temperatures for each heat pump upon startup. This check can eliminate nuisance trip outs and high velocity water flow that could erode heat exchangers.
- Unit air coil and filters: Ensure that filter is clean and accessible. Clean air coil of all manufacturing oils.
- Unit controls: Verify that CXM2 or DXM2.5 field selection options are properly set.

SYSTEM CHECKOUT

- System water temperature: Check water temperature for proper range and also verify heating and cooling set points for proper operation.
- System pH: Check and adjust water pH if necessary to maintain a level between 6 and 8.5. Proper pH promotes longevity of hoses and fittings (see Table 3).
- System flushing: Verify that all hoses are connected end to end when flushing to ensure that debris bypasses the unit heat exchanger, water valves and other components. Water used in the system must be potable quality initially and clean of dirt, piping slag, and strong chemical cleaning agents. Verify that all air is purged from the system. Air in the system can cause poor operation or system corrosion.
- Cooling tower/boiler: Check equipment for proper setpoints and operation.
- Standby pumps: Verify that the standby pump is properly installed and in operating condition.
- System controls: Verify that system controls function and operate in the proper sequence.
- Low water temperature cutout: Verify that low water temperature cut-out controls are provided for the outdoor portion of the loop. Otherwise, operating problems may occur.
- System control center: Verify that the control center and alarm panel have appropriate setpoints and are operating as designed.
- Miscellaneous: Note any questionable aspects of the installation.

CAUTION!

CAUTION! Verify that ALL water control valves are open and allow water flow prior to engaging the compressor. Freezing of the coax or water lines can permanently damage the heat pump.

CAUTION!

CAUTION! To avoid equipment damage, DO NOT leave system filled in a building without heat during the winter unless antifreeze is added to the water loop. Heat exchangers never fully drain by themselves and will freeze unless winterized with antifreeze.

Unit Start-Up Procedure

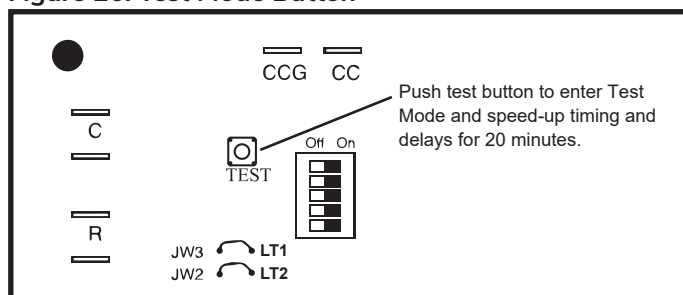
Unit Start-up Procedure

1. Turn the thermostat fan position to “ON”. Blower should start.
2. Balance air flow at registers.
3. Adjust all valves to their full open positions. Turn on the line power to all heat pumps.
4. Room temperature should be within the minimum-maximum ranges of Tables 6a-b. During start-up checks, loop water temperature entering the heat pump should be between 60°F [16°C] and 95°F [35°C].
5. Two factors determine the operating limits of ClimateMaster heat pumps, (a) return air temperature, and (b) water temperature. When any one of these factors is at a minimum or maximum level, the other factor must be at normal level to ensure proper unit operation.
 - a. Adjust the unit thermostat to the warmest setting. Place the thermostat mode switch in the “COOL” position. Slowly reduce thermostat setting until the compressor activates.
 - b. Check for cool air delivery at the unit grille within a few minutes after the unit has begun to operate.

NOTE: Units have a five minute time delay in the control circuit that can be eliminated on the CXM2/DXM2.5 control board as shown below in Figure 26. See controls description for details.
 - c. Verify that the compressor is on and that the water flow rate is correct by measuring pressure drop through the heat exchanger using the P/T plugs and comparing to Table 7.
 - d. Check the elevation and cleanliness of the condensate lines. Dripping may be a sign of a blocked line. Check that the condensate trap is filled to provide a water seal.
 - e. Refer to Table 8. Check the temperature of both entering and leaving water. If temperature is within range, proceed with the test. Verify correct water flow by comparing unit pressure drop across the heat exchanger versus the data in Table 7. Heat of rejection (HR) can be calculated and compared to submittal data capacity pages. The formula for HR for systems with water is as follows:
 $HR (Btuh) = TD \times GPM \times 500$, where TD is the temperature difference between the entering and leaving water, and GPM is the flow rate in U.S. GPM, determined by comparing the pressure drop across the heat exchanger to Table 7. In S-I units, the formula is as follows: $HR (kW) = TD \times l/s \times 4.18$.
 - f. Check air temperature drop across the air coil when compressor is operating. Air temperature drop should be between 15°F and 25°F [8°C and 14°C].
 - g. Turn thermostat to “OFF” position. A hissing noise indicates proper functioning of the reversing valve.
6. Allow five (5) minutes between tests for pressure to equalize before beginning heating test.
 - a. Adjust the thermostat to the lowest setting. Place the thermostat mode switch in the “HEAT” position.
 - b. Slowly raise the thermostat to a higher temperature until the compressor activates.
 - c. Check for warm air delivery within a few minutes after the unit has begun to operate.
 - d. Refer to Table 8. Check the temperature of both entering and leaving water. If temperature is within range, proceed with the test. If temperature is outside of the operating range, check refrigerant pressures and compare to Table 5. Verify correct water flow by comparing unit pressure drop across the heat exchanger versus the data in Table 7. Heat of extraction (HE) can be calculated and compared to submittal data capacity pages. The formula for HE for systems with water is as follows:
 $HE (kW) = TD \times GPM \times 500$, where TD is the temperature difference between the entering and leaving water, and l/s is the flow rate in U.S. GPM, determined by comparing the pressure drop across the heat exchanger to Table 7. In S-I units, the formula is as follows: $HE (kW) = TD \times l/s \times 4.18$.
 - e. Check air temperature rise across the air coil when compressor is operating. Air temperature rise should be between 20°F and 30°F [11°C and 17°C].
 - f. Check for vibration, noise, and water leaks.
7. If unit fails to operate, perform troubleshooting analysis (see troubleshooting section). If the check described fails to reveal the problem and the unit still does not operate, contact a trained service technician to ensure proper diagnosis and repair of the equipment.
8. When testing is complete, set system to maintain desired comfort level.

NOTE: If performance during any mode appears abnormal, refer to the CXM2/DXM2.5 section or troubleshooting section of this manual. To obtain maximum performance, the air coil should be cleaned before start-up. A 10% solution of dishwasher detergent and water is recommended.

Figure 26: Test Mode Button



Tranquility® (TR) Series

Rev.: November 4, 2024

Unit Start-Up Procedure, Cont'd.

Motorized Water Valve
Option Corrections

Model	Cv	MOPD	WPD Adders		
			GPM	PSI	FT
006	4.9	150	0.8	0.03	0.06
	4.9	150	1.1	0.05	0.12
	4.9	150	1.5	0.09	0.22
009	4.9	150	1.1	0.05	0.12
	4.9	150	1.7	0.12	0.28
	4.9	150	2.2	0.2	0.47
012	4.9	150	1.5	0.09	0.22
	4.9	150	2.3	0.22	0.51
	4.9	150	3	0.37	0.87
015	4.9	150	1.8	0.13	0.31
	4.9	150	2.6	0.28	0.65
	4.9	150	3.5	0.51	1.18
018	4.9	150	2.3	0.22	0.51
	4.9	150	3.4	0.48	1.11
	4.9	150	4.5	0.84	1.95
024	4.9	150	3	0.37	0.87
	4.9	150	4.5	0.84	1.95
	4.9	150	6	1.5	3.46
030	10.3	150	3.8	0.14	0.31
	10.3	150	5.5	0.29	0.66
	10.3	150	7.5	0.53	1.22
036	10.3	150	4.5	0.19	0.44
	10.3	150	6.8	0.44	1.01
	10.3	150	9	0.76	1.76
042	10.3	150	5.3	0.26	0.61
	10.3	150	7.9	0.59	1.36
	10.3	150	10.5	1.04	2.4
048	10.3	150	6	0.34	0.78
	10.3	150	9	0.76	1.76
	10.3	150	12	1.36	3.14
060	10.3	150	7.5	0.53	1.22
	10.3	150	11.3	1.2	2.78
	10.3	150	15	2.12	4.9

ClimaDry® II Option Corrections - (When Operating in Non-ClimaDry II Mode)

Model	WPD Adders		
	GPM	PSI	FT
024	3.0	0.881	2.036
	4.5	1.983	4.581
030	3.8	0.622	1.437
	5.6	1.351	3.121
036	4.5	0.872	2.015
	6.8	1.992	4.602
042	5.3	1.210	2.796
	7.9	2.689	6.212
048	6.0	1.551	3.583
	9.0	3.490	8.062
060	7.5	1.491	3.445
	11.3	3.385	7.820

Table 7: TR Coax Water Pressure Drop

Model	U.S. GPM	l/s	Pressure Drop, psi [kPa]*			
			30°F [-1°C]	50°F [10°C]	70°F [21°C]	90°F [32°C]
TR 006	0.75	0.05	0.5 [3.7]	0.3 [2.3]	0.2 [1.6]	0.2 [1.6]
	1.1	0.07	0.8 [5.3]	0.5 [3.5]	0.4 [2.7]	0.3 [2.2]
	1.5	0.09	1.3 [8.8]	0.9 [6.1]	0.7 [4.8]	0.6 [4.0]
TR 009	1.1	0.07	1.3 [9.0]	0.6 [4.4]	0.4 [2.8]	0.3 [1.9]
	1.8	0.11	2.1 [14.1]	1.4 [9.4]	1.1 [7.4]	0.9 [6.2]
	2.3	0.14	3.5 [24.3]	2.6 [17.9]	2.1 [14.7]	1.8 [12.7]
TR 012	1.5	0.09	1.9 [12.8]	1.1 [7.6]	0.8 [5.3]	0.6 [4.1]
	2.3	0.15	3.6 [25.0]	2.6 [17.8]	2.1 [14.3]	1.8 [12.1]
	3.0	0.19	6.7 [46.1]	5.0 [34.3]	4.1 [28.3]	3.6 [24.5]
TR 015	1.9	0.12	1.0 [6.9]	0.6 [4.4]	0.5 [3.4]	0.4 [2.8]
	2.8	0.18	1.8 [12.4]	1.4 [9.3]	1.1 [7.6]	1.0 [6.9]
	3.8	0.24	3.3 [22.7]	2.5 [17.5]	2.1 [14.7]	1.9 [13.1]
TR 018	2.3	0.14	2.1 [14.5]	1.4 [9.9]	1.1 [7.6]	0.9 [6.2]
	3.4	0.21	3.4 [23.4]	2.6 [17.6]	2.1 [14.7]	1.8 [12.4]
	4.5	0.28	5.9 [40.6]	4.6 [31.5]	3.9 [26.9]	3.4 [23.4]
TR 024	3.0	0.19	2.2 [15.2]	1.7 [11.6]	1.4 [9.6]	1.2 [8.3]
	4.5	0.28	4.0 [27.6]	3.2 [22.2]	2.8 [19.3]	2.5 [17.2]
	6.0	0.38	7.2 [49.6]	5.9 [40.6]	5.2 [35.8]	4.7 [32.4]
TR 030	3.8	0.24	1.3 [9.0]	0.9 [6.1]	0.7 [4.8]	0.6 [4.1]
	5.6	0.35	2.3 [15.8]	1.8 [12.5]	1.5 [10.3]	1.4 [9.6]
	7.5	0.47	4.2 [28.9]	3.4 [23.2]	2.9 [20]	2.6 [17.9]
TR 036	4.5	0.28	1.8 [12.4]	1.4 [9.6]	1.2 [8.3]	1.0 [6.9]
	6.8	0.43	3.1 [21.4]	2.4 [16.8]	2.1 [14.7]	1.9 [13.1]
	9.0	0.57	5.4 [37.2]	4.4 [30.0]	3.8 [26.2]	3.4 [23.4]
TR 042	5.3	0.33	2.3 [15.8]	1.8 [12.1]	1.5 [10.3]	1.3 [9.0]
	7.9	0.50	4.3 [29.6]	3.5 [24.2]	3.1 [26.4]	2.8 [19.3]
	10.5	0.66	7.9 [54.4]	6.5 [44.8]	5.7 [39.3]	5.2 [35.8]
TR 048	6.0	.038	1.8 [12.4]	1.5 [10.1]	1.3 [9.0]	1.2 [8.3]
	9.0	0.57	3.4 [23.4]	3.0 [20.4]	2.7 [18.6]	2.6 [17.9]
	12.0	0.76	6.2 [42.7]	5.5 [37.9]	5.1 [35.1]	4.8 [35.1]
TR 060	7.5	0.47	3.4 [23.4]	2.8 [19.2]	2.4 [16.5]	2.2 [15.2]
	11.3	0.71	6.8 [46.9]	5.9 [40.8]	5.4 [37.2]	5.0 [34.5]
	15.0	0.95	12.6 [86.8]	11.1 [76.8]	10.3 [71.0]	9.6 [66.1]

⚠ WARNING! ⚠

WARNING! When the disconnect switch is closed, high voltage is present in some areas of the electrical panel. Exercise caution when working with energized equipment.

⚠ CAUTION! ⚠

CAUTION! Verify that ALL water control valves are open and allow water flow prior to engaging the compressor. Freezing of the coax or water lines can permanently damage the heat pump.

⚠ CAUTION! ⚠

CAUTION! Many units are installed with a factory or field supplied manual or electric shut-off valve. **DAMAGE WILL OCCUR** if shut-off valve is closed during unit operation. A high pressure switch must be installed on the heat pump side of any field provided shut-off valves and connected to the heat pump controls in series with the built-in refrigerant circuit high pressure switch to disable compressor operation if water pressure exceeds pressure switch setting. The field installed high pressure switch shall have a cut-out pressure of 300 psig and a cut-in pressure of 250 psig.

Unit Operating Conditions

Operating Pressure/Temperature tables include the following notes:

- Airflow is at nominal (rated) conditions;
- Entering air is based upon 70°F [21°C] DB in heating and 80/67°F [27/19°C] in cooling;
- Subcooling is based upon head pressure at compressor service port;
- Cooling air and water values can vary greatly with changes in humidity level.

Table 8: TR Series Typical Unit Operating Pressures and Temperatures

006		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	124-134	159-179	17-22	5-10	18.7-20.7	17-23	71-81	295-315	13-18	5-10	5.9-7.9	17-23
	2.25	120-130	147-167	20-25	5-10	13.6-15.6	18-24	72-82	296-316	14-19	5-10	4.2-6.2	17-23
	3	117-127	136-156	24-29	5-10	8.5-10.5	18-24	74-84	297-317	15-20	5-10	2.5-4.5	17-23
50	1.5	132-142	210-230	7-12	5-10	16.2-18.2	18-24	105-115	330-350	8-13	9-14	8.2-10.2	22-28
	2.25	131-141	199-219	8-13	5-10	11.9-13.9	19-25	110-120	335-355	9-14	9-14	6.1-8.1	22-28
	3	130-140	189-209	9-14	4-9	7.7-9.7	19-25	115-125	339-359	9-14	9-14	4-6	23-29
70	1.5	136-146	275-295	5-10	5-10	15.1-17.1	17-23	136-146	362-382	9-14	10-15	11.3-13.3	27-33
	2.25	136-146	262-282	6-11	4-9	11.1-13.1	18-24	141-151	368-388	9-14	10-15	16.9-18.9	28-34
	3	135-145	250-270	6-11	4-9	7.2-9.2	18-24	147-157	374-394	9-14	10-15	5.6-7.6	29-35
90	1.5	142-152	365-385	5-10	4-9	13.8-15.8	16-22	170-180	402-422	14-19	12-17	14.4-16.4	33-39
	2.25	141-151	353-373	5-10	4-9	10.2-12.2	16-22	173-183	407-427	15-20	12-17	11.1-13.1	33-39
	3	140-150	340-360	5-10	4-9	6.6-8.6	16-22	177-187	412-432	17-22	12-17	7.7-9.1	34-40
110	1.5	148-158	462-482	5-10	4-9	12.5-14.5	14-20						
	2.25	147-157	449-469	5-10	3-8	9.2-11.2	14-20						
	3	146-156	438-458	5-10	3-8	5.9-7.9	14-20						

*Based on 15% Methanol antifreeze solution

009		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	113-123	160-180	22-27	13-18	19.5-21.5	17-23	69-79	331-351	11-16	20-25	7.3-9.3	17-23
	2.25	110-120	147-167	25-30	11-16	14.2-16.2	17-23	72-82	335-355	11-16	20-25	5.4-7.4	18-24
	3	108-118	135-155	28-33	9-14	8.9-10.9	16-21	75-85	339-359	11-16	21-26	3.5-5.5	19-25
50	1.5	124-134	211-231	9-14	10-15	18-20	17-23	101-111	360-380	9-14	20-25	9.8-11.8	23-29
	2.25	122-132	199-219	12-17	9-14	13.2-15.2	17-23	105-115	363-383	9-14	19-24	7.4-9.4	24-30
	3	120-130	187-207	15-20	8-13	8.4-10.4	17-23	110-120	366-386	9-14	19-24	4.9-6.9	24-30
70	1.5	129-139	275-295	7-12	8-13	17.4-19.4	16-22	130-140	400-420	10-15	20-25	12.8-14.8	28-34
	2.25	128-138	261-281	8-13	7-12	12.8-14.8	16-22	137-147	407-427	10-15	19-24	9.6-11.6	29-35
	3	127-137	247-267	8-13	6-11	8.2-10.2	16-22	144-154	414-434	10-15	18-23	6.4-8.4	30-36
90	1.5	136-146	364-384	7-12	3-8	15.7-17.7	15-21	170-180	449-469	13-18	17-22	16-18	34-40
	2.25	135-145	350-370	7-12	4-9	11.7-13.7	15-21	178-188	455-475	14-19	15-20	12-14	35-41
	3	134-144	336-356	7-12	4-9	7.6-9.6	15-21	186-196	460-480	15-20	13-18	7.9-9.9	36-42
110	1.5	142-152	467-487	5-10	4-9	13.5-15.5	13-19						
	2.25	141-151	451-471	5-10	4-9	9.9-11.9	13-19						
	3	140-150	435-455	5-10	3-8	6.3-8.3	13-19						

*Based on 15% Methanol antifreeze solution

Tranquility® (TR) Series

Rev.: November 4, 2024

Unit Operating Conditions, Cont'd.

Table 8, Cont'd.: TR Series Typical Unit Operating Pressures and Temperatures

012		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	116-126	155-175	14-19	9-14	19.4-21.4	18-24	70-80	311-331	8-13	8-13	6.9-8.9	18-24
	2.25	113-123	144-164	15-20	8-13	14.3-16.3	18-24	72-82	315-335	8-13	8-13	5.1-7.1	19-25
	3	111-121	132-152	17-22	6-11	9.1-11.1	18-24	75-85	319-339	8-13	8-13	3.2-5.2	19-25
50	1.5	123-133	208-228	8-13	9-14	18.1-20.1	17-23	102-112	354-364	8-13	9-14	9.3-11.3	25-31
	2.25	122-132	196-216	9-14	7-12	13.4-15.4	18-24	106-116	355-375	8-13	9-14	7-9	26-32
	3	121-131	184-204	9-14	5-10	8.6-10.6	18-24	110-120	355-375	8-13	9-14	4.6-6.6	26-32
70	1.5	127-137	266-286	7-12	8-13	17.2-19.2	16-22	131-141	392-412	9-14	8-13	12-14	30-36
	2.25	126-136	255-275	8-13	7-12	12.7-14.7	16-22	137-147	395-415	9-14	8-13	9-11	31-37
	3	126-136	244-264	8-13	5-10	8.2-10.2	16-22	144-154	398-418	9-14	7-12	6-8	32-38
90	1.5	133-143	362-382	6-11	7-12	16-18	15-21	175-185	443-463	10-15	3-8	15-17	36-42
	2.25	132-142	342-362	7-12	5-10	11.8-13.8	15-21	183-193	452-472	11-16	3-8	11.2-13.2	37-43
	3	132-142	331-351	7-12	4-9	7.6-9.6	15-21	190-200	461-491	13-18	3-8	7.4-9.4	38-44
110	1.5	140-150	459-479	6-11	4-9	14.4-16.4	13-19						
	2.25	140-150	441-461	6-11	4-9	10.6-12.6	13-19						
	3	139-149	431-451	6-11	3-8	6.9-8.9	13-19						

*Based on 15% Methanol antifreeze solution

015		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	116-126	167-187	15-20	9-14	18.3-20.3	18-24	70-80	279-299	6-11	1-5	7-8	16-22
	2.25	116-126	154-174	15-20	7-12	13.9-15.9	19-25	73-83	281-301	7-12	1-5	5.1-7.1	17-23
	3	116-126	140-160	15-20	7-12	9.5-11.5	19-25	75-85	284-304	7-12	1-5	3.3-5.3	17-23
50	1.5	128-138	194-214	11-14	9-14	17.9-19.9	18-24	102-112	312-332	10-15	2-6	9.9-11.9	22-28
	2.25	128-138	180-200	11-14	7-12	13.7-15.7	19-25	106-116	316-336	10-15	2-6	7.4-9.4	23-29
	3	128-138	166-186	11-14	7-12	9.4-11.4	19-25	110-120	321-341	10-15	2-6	4.9-6.9	23-29
70	1.5	136-146	289-309	7-12	9-14	17.4-19.4	17-23	128-138	335-355	12-17	3-8	12.9-14.9	27-34
	2.25	136-146	275-295	7-12	7-12	15.3-17.3	18-24	134-144	340-360	12-17	3-8	9.7-11.7	28-35
	3	136-146	261-281	7-12	6-11	8.8-10.8	18-24	141-151	346-366	12-17	3-8	6.5-8.5	28-35
90	1.5	139-149	386-406	6-11	9-14	16.8-18.8	16-22	160-170	373-393	15-20	3-8	15.8-17.8	30-38
	2.25	139-149	370-390	6-11	7-12	12.5-14.5	16-22	167-177	380-400	16-21	3-8	12-14	31-39
	3	139-149	356-376	6-11	6-11	8.2-9.2	16-22	174-184	388-408	17-22	3-8	8.1-10.1	32-40
110	1.5	145-155	483-503	6-11	9-14	15.8-17.8	15-21						
	2.25	144-154	466-486	6-11	7-12	11.7-13.7	15-21						
	3	143-153	449-469	6-11	6-11	7.5-9.5	15-21						

*Based on 15% Methanol antifreeze solution

018		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	122-132	171-191	15-20	14-19	22.5-24.5	20-28	70-80	272-292	4-9	2-6	7.4-9.4	18-24
	2.25	122-132	157-177	15-20	13-18	16.8-19.8	20-28	73-83	275-295	4-9	2-6	5.5-7.5	19-25
	3	122-132	145-165	15-20	13-18	11.2-13.2	20-28	77-87	278-298	4-9	2-6	3.5-5.5	19-25
50	1.5	136-146	198-218	10-15	14-19	22-24	19-25	101-111	302-322	8-13	3-7	10.3-12.3	23-29
	2.25	134-144	183-203	10-15	13-18	16.5-18.5	19-25	105-115	306-326	8-13	3-7	7.9-9.9	24-30
	3	133-143	171-191	11-16	13-18	11-13	19-25	109-119	311-331	8-13	3-7	5.5-7.5	25-31
70	1.5	139-149	293-313	6-10	14-19	19-21	18-24	130-140	329-349	10-15	4-9	13.6-15.6	27-33
	2.25	138-148	280-300	6-10	13-18	14.4-16.4	18-24	137-147	337-357	10-15	4-9	10.4-12.4	29-35
	3	137-147	267-287	7-11	13-18	9.8-11.7	18-24	139-149	342-362	10-15	4-9	7.2-9.2	30-36
90	1.5	142-152	389-409	5-10	17-22	16-18	17-23	160-170	360-380	13-18	5-10	17-19	33-41
	2.25	141-151	376-396	5-10	15-20	12.3-14.3	17-23	169-179	368-388	14-19	5-10	12.9-14.9	35-43
	3	140-150	363-383	5-10	13-18	8.5-10.5	17-23	178-188	376-396	14-19	4-9	8.8-10.8	36-44
110	1.5	148-158	486-506	5-10	17-22	14.9-16.9	16-22						
	2.25	147-157	472-492	5-10	15-20	11.4-13.4	16-22						
	3	146-156	458-478	5-10	13-18	7.8-9.8	16-22						

*Based on 15% Methanol antifreeze solution

Unit Operating Conditions, Cont'd.

Table 8, Cont'd.: TR Series Typical Unit Operating Pressures and Temperatures

024		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	121-131	174-194	13-18	6-11	19.3-21.3	20-28	65-75	287-307	4-9	3-8	6.8-8.8	17-23
	2.25	120-130	165-185	13-18	5-10	14.5-16.5	20-28	68-78	290-310	5-10	3-8	5-7	18-24
	3	120-130	155-175	13-18	5-10	9.6-11.6	20-28	71-81	292-312	5-10	3-8	3.2-5.2	18-24
50	1.5	127-137	245-265	8-13	6-11	18.3-20.3	19-27	96-106	318-338	6-11	3-8	9.8-11.8	22-28
	2.25	128-138	231-251	8-13	7-12	13.7-15.7	19-27	101-111	322-342	7-12	3-8	7.2-9.2	23-29
	3	128-138	217-237	8-13	7-12	9.1-11.1	19-27	105-115	327-347	8-13	3-8	4.8-6.8	24-30
70	1.5	130-140	352-372	6-11	8-13	17.5-19.5	18-26	127-137	349-369	9-14	3-8	12.7-14.7	27-34
	2.25	130-140	334-354	6-11	9-14	26.2-28.2	18-26	132-142	353-373	9-14	3-8	9.5-11.5	28-35
	3	130-140	306-326	6-11	9-14	8.7-10.7	18-26	137-147	358-378	10-15	3-8	6.3-8.3	29-36
90	1.5	134-144	439-459	5-10	11-16	16.7-18.7	17-23	159-169	379-399	13-18	3-8	15.6-17.6	32-40
	2.25	133-143	416-436	5-10	12-17	12.5-14.5	17-23	164-174	384-404	14-19	3-8	11.7-13.7	33-41
	3	133-143	394-414	5-10	12-17	8.3-10.3	17-23	170-180	390-410	16-21	3-8	7.8-9.8	34-42
110	1.5	140-150	536-556	4-9	22-27	17.1-19.1	17-23						
	2.25	139-149	512-532	4-9	19-23	12.6-14.6	17-23						
	3	138-148	488-508	4-9	17-22	8-10	17-23						

*Based on 15% Methanol antifreeze solution

030		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	113-123	188-208	14-19	14-19	19.5-21.5	18-26	67-77	322-342	8-13	15-20	6.9-8.9	17-25
	2.25	114-124	177-197	14-19	13-18	14.5-16.5	19-27	69-79	324-344	8-13	15-20	5.1-7.1	18-26
	3	114-124	166-186	14-19	13-18	9.5-11.5	19-27	71-81	326-346	8-13	15-20	3.3-5.3	18-26
50	1.5	124-134	248-268	11-16	14-19	18.7-20.7	18-26	95-105	346-366	10-15	15-20	9.8-11.8	23-31
	2.25	124-134	233-253	11-16	13-18	13.9-15.9	19-27	99-109	350-370	10-15	15-20	7.3-9.3	24-32
	3	124-134	218-238	11-16	13-18	9.1-11.1	19-27	103-113	355-375	11-16	15-20	4.8-6.8	25-33
70	1.5	132-142	333-353	9-14	13-18	17.5-19.5	18-26	125-135	376-396	13-18	14-19	12.7-14.7	27-35
	2.25	132-142	313-333	9-14	12-17	13-15	18-26	133-143	386-406	13-18	14-19	9.8-11.8	28-36
	3	132-142	293-313	9-14	12-17	8.5-10.5	18-26	136-146	393-413	13-18	14-19	6.4-8.4	30-38
90	1.5	135-145	431-451	7-12	17-22	16.5-18.5	17-25	155-165	415-435	15-20	13-18	15.6-18.6	33-41
	2.25	135-145	411-431	7-12	15-20	12.3-14.3	17-25	167-177	422-442	16-21	13-18	11.8-13.8	34-42
	3	135-145	391-411	7-12	13-18	8-10	17-25	170-180	430-450	17-22	13-18	7.9-9.9	36-44
110	1.5	140-150	528-548	6-11	17-22	16.2-18.2	16-24						
	2.25	140-150	506-526	7-12	15-20	11.9-13.9	16-24						
	3	139-149	485-505	7-12	13-18	7.6-9.6	16-24						

*Based on 15% Methanol antifreeze solution

036		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	113-123	185-205	17-22	9-14	19.5-21.5	18-26	64-74	327-347	4-9	15-20	7.7-9.7	19-27
	2.25	113-123	174-194	17-22	8-13	14.5-16.5	19-27	66-76	331-351	4-9	15-20	5.7-7.7	19-27
	3	113-123	163-183	17-22	8-13	9.6-11.6	19-27	69-79	335-365	4-9	15-20	3.7-5.7	20-28
50	1.5	121-131	249-269	12-17	9-14	19.4-21.4	17-25	91-101	360-380	10-15	15-20	11.2-13.2	25-33
	2.25	120-130	231-251	12-17	8-13	14.4-16.4	18-26	96-106	370-390	9-14	16-21	8.2-10.2	26-34
	3	120-130	214-234	12-17	8-13	9.4-11.4	18-26	102-112	380-400	8-13	16-21	5.2-7.2	27-35
70	1.5	128-138	327-347	9-14	13-18	19.1-21.1	16-24	125-135	402-422	10-15	14-19	14.7-16.7	32-40
	2.25	128-138	304-324	9-14	11-16	14.1-16.1	17-25	132-142	413-433	10-15	14-19	11-13	33-41
	3	127-137	282-302	9-14	10-15	9.1-11.1	17-25	140-150	423-443	10-15	14-19	7.3-9.3	34-42
90	1.5	132-142	416-436	8-13	20-25	18.8-20.8	15-23	158-168	445-465	13-18	12-17	18.1-20.1	37-45
	2.25	132-142	396-416	8-13	18-23	13.9-15.9	16-24	167-177	456-476	13-18	11-16	13.8-15.8	38-46
	3	131-141	376-396	8-13	16-21	8.9-10.9	16-24	177-187	467-487	14-19	11-16	9.4-11.4	40-48
110	1.5	138-148	550-570	8-13	20-25	18.5-20.5	15-23						
	2.25	136-146	525-545	8-13	18-23	13.6-15.6	15-23						
	3	135-145	500-520	8-13	16-21	8.7-10.7	15-23						

*Based on 15% Methanol antifreeze solution

Tranquility® (TR) Series

Rev.: November 4, 2024

Unit Operating Conditions, Cont'd.

Table 8, Cont'd.: TR Series Typical Unit Operating Pressures and Temperatures

042		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	115-125	174-194	12-17	10-15	19.8-21.8	16-24	66-76	314-334	6-11	11-16	7.3-9.3	18-26
	2.25	115-125	159-179	12-17	9-14	14.6-16.6	16-24	69-79	318-338	5-10	12-17	5.4-7.4	19-27
	3	115-125	144-164	12-17	9-14	9.5-11.5	16-24	72-82	321-341	4-9	12-17	3.4-5.4	19-27
50	1.5	123-133	233-253	9-14	10-15	19-21	16-24	97-107	354-374	9-14	13-18	10.2-12.2	24-32
	2.25	122-132	219-239	9-14	9-14	14-16	16-24	101-111	360-380	8-13	13-18	7.6-9.6	25-33
	3	122-132	205-225	9-14	9-14	9.1-11.1	16-24	106-116	365-385	6-11	13-18	5-7	26-34
70	1.5	128-138	309-329	6-11	12-17	18.3-20.3	16-24	130-140	394-414	7-12	13-18	13.3-15.3	30-38
	2.25	128-138	290-310	6-11	11-14	13.5-15.5	16-24	136-146	401-421	7-12	13-18	9.9-11.9	31-39
	3	128-138	271-291	6-11	11-14	8.7-10.7	16-24	143-153	409-429	8-13	13-18	6.6-8.6	32-40
90	1.5	133-143	406-426	5-10	14-19	17.6-19.6	16-24	164-174	434-454	10-15	12-17	16.4-18.4	37-45
	2.25	133-143	386-406	5-10	13-18	12.9-14.9	16-24	172-182	443-463	11-16	12-17	12.3-14.3	38-46
	3	132-142	367-387	5-10	13-18	8.3-10.3	16-24	180-190	453-473	11-16	12-17	8.3-10.3	39-47
110	1.5	138-148	505-525	5-10	19-24	16.8-18.8	16-24						
	2.25	138-148	484-504	5-10	16-21	12.4-14.4	16-24						
	3	138-148	463-483	5-10	14-19	7.9-9.9	16-24						

*Based on 15% Methanol antifreeze solution

048		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	119-129	190-210	15-20	10-15	19.3-21.3	18-26	63-73	284-304	5-10	3-8	6.9-8.9	17-25
	2.25	119-129	179-199	15-20	9-14	14.6-16.6	19-27	66-76	288-308	6-10	3-8	5-7	18-26
	3	119-129	158-178	15-20	9-14	9.8-11.8	19-27	69-79	292-312	6-11	3-8	3.1-5.1	18-26
50	1.5	124-134	248-268	10-15	10-15	19-21	18-26	92-102	309-329	8-13	3-8	9.5-11.5	23-31
	2.25	123-133	230-250	10-15	9-14	14.3-16.3	19-27	96-106	313-333	9-14	3-8	7-9	24-32
	3	123-133	213-233	10-15	9-14	9.6-11.6	19-27	100-110	317-337	9-14	3-8	4.6-6.6	24-32
70	1.5	129-139	337-357	8-13	12-17	18.6-20.6	17-25	123-133	339-359	11-16	3-8	12.5-14.5	29-37
	2.25	129-139	328-348	8-13	11-16	14-16	18-26	128-138	344-364	11-16	3-8	9.3-11.3	29-37
	3	129-139	300-320	8-13	11-16	9.4-11.4	18-26	133-143	350-370	12-17	3-8	6.2-8.2	30-38
90	1.5	134-144	426-446	6-11	15-20	18.2-20.2	16-24	153-163	369-389	14-19	1-6	15.4-17.4	33-41
	2.25	134-144	406-426	6-11	15-20	13.7-15.7	17-25	160-170	376-396	15-20	1-6	11.6-13.6	35-43
	3	134-144	386-406	6-11	15-20	9.2-11.2	17-25	167-177	384-404	16-21	1-6	7.8-9.8	36-44
110	1.5	140-150	560-580	4-9	23-28	17.7-19.7	16-24						
	2.25	140-150	536-556	4-9	20-25	13.4-15.4	16-24						
	3	139-149	511-531	4-9	18-22	9-11	16-24						

*Based on 15% Methanol antifreeze solution

060		Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
Entering Water Temp °F	Water Flow GPM/ton	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Rise °F	Air Temp Drop °F DB	Suction Pressure PSIG	Discharge Pressure PSIG	Superheat °F	Subcooling °F	Water Temp Drop °F	Air Temp Rise °F DB
30*	1.5	108-118	180-200	16-21	10-15	20.6	19-27	61-71	314-334	6-11	14-19	7.6-9.6	19-27
	2.25	108-118	165-185	16-21	9-14	15.2-17.2	20-28	64-74	317-337	7-12	13-18	5.6-7.6	20-28
	3	108-118	150-170	16-21	9-14	9.7-11.7	20-28	66-76	319-339	7-12	13-18	3.6-5.6	20-28
50	1.5	113-123	206-226	11-14	10-15	19.8-21.8	18-26	90-100	350-370	11-16	14-19	10.5-12.5	25-33
	2.25	113-123	190-210	11-14	9-14	14.5-16.5	19-27	95-105	357-377	11-16	14-19	7.9-9.9	27-35
	3	113-123	173-193	11-14	9-14	9.3-11.3	19-27	99-109	364-384	10-15	14-19	5.2-7.2	28-36
70	1.5	119-129	305-325	9-14	12-17	18.8-20.8	17-25	123-133	391-411	12-17	14-19	13.7-15.7	33-41
	2.25	118-128	287-307	9-14	11-14	13.8-15.8	18-26	129-139	399-419	12-17	14-19	10.3-12.3	34-42
	3	118-128	269-289	9-14	11-14	8.8-10.8	18-26	135-145	407-427	13-18	14-19	6.9-8.9	35-43
90	1.5	124-134	402-422	7-12	14-19	17.8-19.8	16-24	157-167	431-451	13-18	13-18	16.8-18.8	38-46
	2.25	124-134	382-402	7-12	13-18	13.1-15.1	17-25	164-184	440-460	14-19	13-18	12.7-14.7	39-47
	3	123-133	363-383	7-12	13-18	8.3-10.3	17-25	172-182	450-470	16-21	12-17	8.6-10.6	41-49
110	1.5	130-140	500-520	7-12	20-25	17-19	16-24						
	2.25	129-139	479-499	6-11	16-21	12.4-14.4	16-24						
	3	128-138	458-478	5-10	13-18	7.8-9.8	16-24						

*Based on 15% Methanol antifreeze solution

Unit Operating Conditions, Cont'd.

Table 9: Water Temperature Change Through Heat Exchanger

Water Flow, gpm [l/m]	Rise, Cooling °F, [°C]	Drop, Heating °F, [°C]
For Closed Loop: Ground Source or Closed Loop Systems at 3 gpm per ton [3.2 l/m per kW]	9 - 12 [5 - 6.7]	4 - 8 [2.2 - 4.4]
For Open Loop: Ground Water Systems at 1.5 gpm per ton [1.6 l/m per kW]	20 - 26 [11.1 - 14.4]	10 - 17 [5.6 - 9.4]

Tranquility® (TR) Series

Rev.: November 4, 2024

Preventive Maintenance

Water Coil Maintenance - (Direct ground water applications only) If the system is installed in an area with a known high mineral content (125 P.P.M. or greater) in the water, it is best to establish a periodic maintenance schedule with the owner so the coil can be checked regularly. Consult the well water applications section of this manual for a more detailed water coil material selection. Should periodic coil cleaning be necessary, use standard coil cleaning procedures, which are compatible with the heat exchanger material and copper water lines. Generally, the more water flowing through the unit, the less chance for scaling. Therefore, 1.5 gpm per ton [1.6 l/m per kW] is recommended as a minimum flow. Minimum flow rate for entering water temperatures below 50°F [10°C] is 2.0 gpm per ton [2.2 l/m per kW].

Water Coil Maintenance - (All other water loop applications) Generally water coil maintenance is not needed for closed loop systems. However, if the piping is known to have high dirt or debris content, it is best to establish a periodic maintenance schedule with the owner so the water coil can be checked regularly. Dirty installations are typically the result of deterioration of iron or galvanized piping or components in the system. Open cooling towers requiring heavy chemical treatment and mineral buildup through water use can also contribute to higher maintenance. Should periodic coil cleaning be necessary, use standard coil cleaning procedures, which are compatible with both the heat exchanger material and copper water lines. Generally, the more water flowing through the unit, the less chance for scaling. However, flow rates over 3 gpm per ton (3.9 l/m per kW) can produce water (or debris) velocities that can erode the heat exchanger wall and ultimately produce leaks.

Hot Water Generator Coils - See water coil maintenance for ground water units. If the potable water is hard or not chemically softened, the high temperatures of the desuperheater will tend to scale even quicker than the water coil and may need more frequent inspections. In areas with extremely hard water, a HWG is not recommended.

Filters - Filters must be clean to obtain maximum performance. Filters should be inspected every month under normal operating conditions and be replaced when necessary. Units should never be operated without a filter.

Washable, high efficiency, electrostatic filters, when dirty, can exhibit a very high pressure drop for the fan motor and reduce air flow, resulting in poor performance. It is especially important to provide consistent washing of

these filters (in the opposite direction of the normal air flow) once per month using a high pressure wash similar to those found at self-serve car washes.

Condensate Drain - In areas where airborne bacteria may produce a “slimy” substance in the drain pan, it may be necessary to treat the drain pan chemically with an algaecide approximately every three months to minimize the problem. The condensate pan may also need to be cleaned periodically to ensure indoor air quality. The condensate drain can pick up lint and dirt, especially with dirty filters. Inspect the drain twice a year to avoid the possibility of plugging and eventual overflow.

Compressor - Conduct annual amperage checks to ensure that amp draw is no more than 10% greater than indicated on the serial plate data.

Fan Motors - All units have permanently lubricated fan motors. Fan motors should never be lubricated unless obvious, dry operation is suspected. Periodic maintenance oiling is not recommended, as it will result in dirt accumulating in the excess oil and cause eventual motor failure. Conduct annual dry operation check and amperage check to ensure amp draw is no more than 10% greater than indicated on serial plate data.

Air Coil - The air coil must be cleaned to obtain maximum performance. Check once a year under normal operating conditions and, if dirty, brush or vacuum clean. Care must be taken not to damage the aluminum fins while cleaning.
CAUTION: Fin edges are sharp.

Cabinet - Do not allow water to stay in contact with the cabinet for long periods of time to prevent corrosion of the cabinet sheet metal. Generally, vertical cabinets are set up from the floor a few inches [7 - 8 cm] to prevent water from entering the cabinet. The cabinet can be cleaned using a mild detergent.

Refrigerant System - To maintain sealed circuit integrity, do not install service gauges unless unit operation appears abnormal. Reference the operating charts for pressures and temperatures. Verify that air and water flow rates are at proper levels before servicing the refrigerant circuit.

Functional Troubleshooting

Fault	Htg	Clg	Possible Cause	Solution
Main power problems	X	X	Green Status LED Off	Check line voltage circuit breaker and disconnect.
				Check for line voltage between L1 and L2 on the contactor.
				Check for 24VAC between R and C on CXM2/DXM2.5.
				Check primary/secondary voltage on transformer.
HP Fault Code 2 High Pressure		X	Reduced or no water flow in cooling	Check pump operation or valve operation/setting. Check water flow adjust to proper flow rate.
		X	Water Temperature out of range in cooling	Bring water temp within design parameters.
	X		Reduced or no airflow in heating	Check for dirty air filter and clean or replace.
				Check fan motor operation and airflow restrictions.
				Dirty Air Coil - construction dust etc.
				Too high of external static? Check static vs blower table.
	X		Air temperature out of range in heating	Bring return air temp within design parameters.
X	X	Overcharged with refrigerant	Check superheat/subcooling vs typical operating condition table.	
X	X	Bad HP Switch	Check switch continuity and operation. Replace.	
LP/LOC Fault Code 3 Low Pressure / Loss of Charge	X	X	Insufficient charge	Check for refrigerant leaks.
	X		Compressor pump down at start-up	Check charge and start-up water flow.
LT1 Fault Code 4 Water coil low temperature limit	X		Reduced or no water flow in heating	Check pump operation or water valve operation/setting.
				Plugged strainer or filter? Clean or replace.
				Check water flow. Adjust to proper flow rate.
	X		Inadequate antifreeze level	Check antifreeze density with hydrometer.
	X		Improper temperature limit setting (30°F vs 10°F [-1°C vs -2°C])	Clip JW3 jumper for antifreeze (10°F [-12°C]) use.
X	X	Bad thermistor	Check temp and impedance correlation per chart.	
LT2 Fault Code 5 Air coil low temperature limit		X	Reduced or no airflow in cooling	Check for dirty air filter and clean or replace. Check fan motor operation and airflow restrictions. Too high of external static? Check static vs blower table.
		X	Air Temperature out of range	Too much cold vent air? Bring entering air temp within design parameters.
		X	Improper temperature limit setting (30°F vs 10°F [-1°C vs -12°C])	Normal airside applications will require 30°F [-1°C] only.
	X	X	Bad thermistor	Check temp and impedance correlation per chart.
	Condensate Fault Code 6	X	X	Blocked drain
X		X	Improper trap	Check trap dimensions and location ahead of vent.
		X	Poor drainage	Check for piping slope away from unit.
				Check slope of unit toward outlet.
				Poor venting? Check vent location.
		X	Moisture on sensor	Check for moisture shorting to air coil.
X		X	Plugged air filter	Replace air filter.
X	X	Restricted Return Airflow	Find and eliminate restriction. Increase return duct and/or grille size.	

Table continued on next page.

Tranquility® (TR) Series

Rev.: November 4, 2024

Functional Troubleshooting, Cont'd.

Table continued from previous page.

Fault	Htg	Clg	Possible Cause	Solution
Over/Under Voltage Code 7 (Auto resetting)	X	X	Under Voltage	Check power supply and 24VAC voltage before and during operation.
				Check power supply wire size.
				Check compressor starting. Need hard start kit?
				Check 24VAC and unit transformer. Tap for correct power supply voltage.
	X	X	Over Voltage	Check power supply voltage and 24VAC before and during operation. Check 24VAC and unit transformer. Tap for correct power supply voltage.
Unit Performance Sentinel Code 8	X		Heating mode LT2>125°F [52°C]	Check for poor airflow or overcharged unit.
		X	Cooling Mode LT1>125°F [52°C] OR LT2< 40°F [4°C]	Check for poor water flow or airflow.
Swapped Thermistor Code 9	X	X	LT1 and LT2 swapped	Reverse position of thermistors
No Fault Code Shown	X	X	No compressor operation	See "Only Fan Operates".
	X	X	Compressor overload	Check and replace, if necessary.
	X	X	Control board	Reset power and check operation.
Unit Short Cycles	X	X	Dirty air filter	Check and clean air filter.
	X	X	Unit in "test mode"	Reset power or wait 20 minutes for auto exit.
	X	X	Unit selection	Unit may be oversized for space. Check sizing for actual load of space.
	X	X	Compressor overload	Check and replace, if necessary.
Only Fan Runs	X	X	Thermostat position	Ensure thermostat set for heating or cooling operation.
	X	X	Unit locked out	Check for lockout codes. Reset power.
	X	X	Compressor Overload	Check compressor overload. Replace if necessary.
	X	X	Thermostat wiring	Check thermostat wiring at heat pump. Jumper Y and R for compressor operation in test mode.
Only Compressor Runs	X	X	Thermostat wiring	Check G wiring at heat pump. Jumper G and R for fan operation.
	X	X		Check thermostat wiring at heat pump. Jumper Y and R for compressor operation in test mode.
	X	X	Fan motor relay	Jumper G and R for fan operation. Check for line voltage across BR contacts.
	X	X		Check fan power enable relay operation (if present).
	X	X	Fan motor	Check for line voltage at motor. Check capacitor.
Unit Doesn't Operate in Cooling		X	Reversing valve	Set for cooling demand and check 24VAC on RV coil and at CXM2/DXM2.5 board.
		X		If RV is stuck, run high pressure up by reducing water flow and while operating engage and disengage RV coil voltage to push valve.
		X	Thermostat setup	Check for 'O' RV setup not 'B'.
		X	Thermostat wiring	Check O wiring at heat pump. Jumper O and R for RV coil 'click'.
		X		Put thermostat in cooling mode. Check 24 VAC on O (check between C and O); check for 24 VAC on W (check between W and C). There should be voltage on O, but not on W. If voltage is present on W, thermostat may be bad or wired incorrectly.

Performance Troubleshooting

Symptom	Htg	Clg	Possible Cause	Solution
Insufficient capacity/ Not cooling or heating	X	X	Dirty filter	Replace or clean.
	X		Reduced or no airflow in heating	Check for dirty air filter and clean or replace.
				Check fan motor operation and airflow restrictions.
				Too high of external static? Check static vs blower table.
		X	Reduced or no airflow in cooling	Check for dirty air filter and clean or replace.
				Check fan motor operation and airflow restrictions.
				Too high of external static? Check static vs blower table.
	X	X	Leaky duct work	Check supply and return air temperatures at the unit and at distant duct registers if significantly different, duct leaks are present.
	X	X	Low refrigerant charge	Check superheat and subcooling per chart.
	X	X	Restricted metering device	Check superheat and subcooling per chart. Replace.
		X	Defective reversing valve	Perform RV touch test.
X	X	Thermostat improperly located	Check location and for air drafts behind stat.	
X	X	Unit undersized	Recheck loads & sizing. Check sensible clg. load and heat pump capacity.	
X	X	Scaling in water heat exchanger	Perform scaling check and clean if necessary.	
X	X	Inlet water too hot or too cold	Check load, loop sizing, loop backfill, ground moisture.	
High Head Pressure	X		Reduced or no airflow in heating	Check for dirty air filter and clean or replace.
				Check fan motor operation and air flow restrictions.
				Too high of external static? Check static vs blower table.
		X	Reduced or no water flow in cooling	Check pump operation or valve operation/setting.
	Check water flow. Adjust to proper flow rate.			
		X	Inlet water too hot	Check load, loop sizing, loop backfill, ground moisture.
	X		Air temperature out of range in heating	Bring return air temperature within design parameters.
		X	Scaling in water heat exchanger	Perform scaling check and clean if necessary.
X	X	Unit overcharged	Check superheat and subcooling. Re-weigh in charge.	
X	X	Non-condensables in system	Vacuum system and re-weigh in charge.	
X	X	Restricted metering device	Check superheat and subcooling per chart. Replace.	
Low Suction Pressure	X		Reduced water flow in heating	Check pump operation or water valve operation/setting.
				Plugged strainer or filter? Clean or replace.
				Check water flow. Adjust to proper flow rate.
	X		Water temperature out of range	Bring water temperature within design parameters.
		X	Reduced airflow in cooling	Check for dirty air filter and clean or replace.
				Check fan motor operation and air flow restrictions.
			Too high of external static? Check static vs blower table.	
	X	Air temperature out of range	Too much cold vent air? Bring entering air temperature within design parameters.	
X	X	Insufficient charge	Check for refrigerant leaks.	
Low Discharge Air Temperature in Heating	X		Too high of airflow	Check fan motor speed selection and airflow chart.
	X		Poor performance	See 'Insufficient Capacity'.
High humidity		X	Too high of airflow	Check fan motor speed selection and airflow chart.
		X	Unit oversized	Recheck loads & sizing. Check sensible cooling load and heat pump capacity.

Tranquility® (TR) Series

Rev.: November 4, 2024

Start-Up Log Sheet

Installer: Complete unit and system checkout and follow unit start-up procedures in the IOM. Use this form to record unit information, temperatures and pressures during start-up. Keep this form for future reference.

Job Name: _____ **Street Address:** _____

Model Number: _____ **Serial Number:** _____

Unit Location in Building: _____

Date: _____ **Sales Order No:** _____

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

Fan Motor	Description	Value
PSC	Speed Tap	
CT ECM	Speed Tap	
CV ECM	CFM Setting	

Temperatures: F or C

Antifreeze: _____ %

Pressures: PSIG or kPa

Type: _____

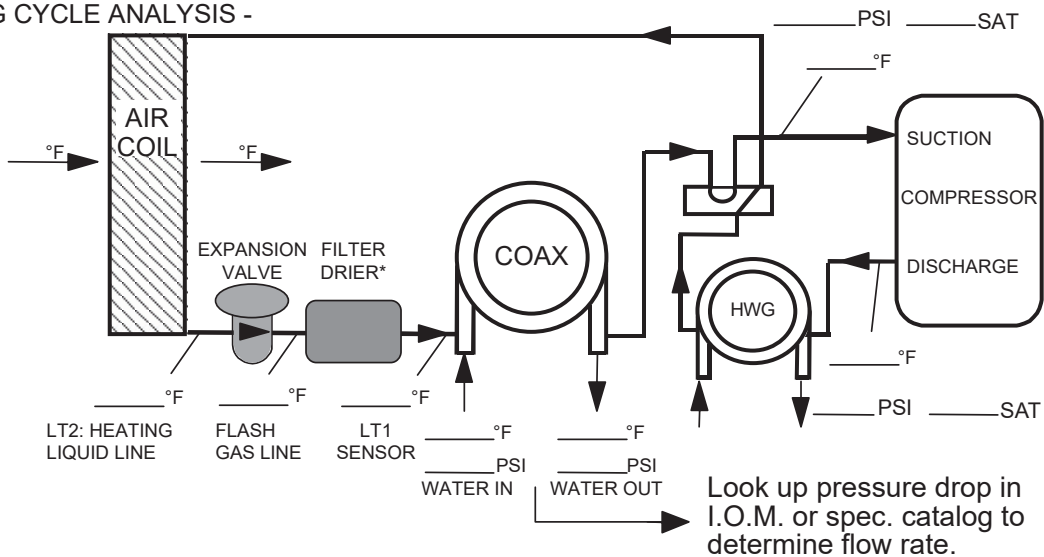
	Cooling Mode	Heating Mode
Entering Fluid Temperature		
Leaving Fluid Temperature		
Temperature Differential		
Return-Air Temperature	DB	WB
Supply-Air Temperature	DB	WB
Temperature Differential		
Water Coil Heat Exchanger (Water Pressure IN)		
Water Coil Heat Exchanger (Water Pressure OUT)		
Pressure Differential		
Water Flow GPM		
Compressor		
Amps		
Volts		
Discharge Line Temperature		
Motor		
Amps		
Volts		

Allow unit to run 15 minutes in each mode before taking data.

Note: Never connect refrigerant gauges during startup procedures. Conduct water-side analysis using P/T ports to determine water flow and temperature difference. If water-side analysis shows poor performance, refrigerant troubleshooting may be required. Connect refrigerant gauges as a last resort.

Functional Troubleshooting Form

HEATING CYCLE ANALYSIS -



COOLING CYCLE ANALYSIS -

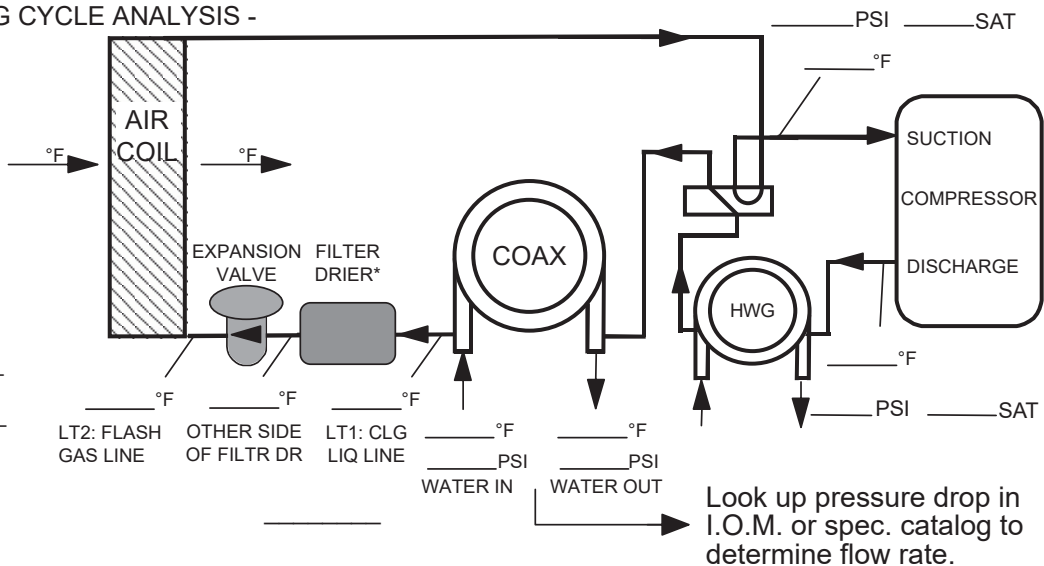
Refrigerant Type:

HFC-410A

Voltage: _____

Comp Amps: _____

Total Amps: _____



Heat of Extraction (Absorption) or Heat of Rejection =
 _____ flow rate (gpm) x _____ temp. diff. (deg. F) x _____ fluid factor† = _____ (Btu/hr)

Superheat = Suction temperature - suction saturation temp. = _____ (deg F)

Subcooling = Discharge saturation temp. - liquid line temp. = _____ (deg F)

† Use 500 water for water, 485 for antifreeze.

Rev. 08/22

NOTE: Never connect refrigerant gauges during startup procedures. Conduct water-side analysis using P/T ports to determine water flow and temperature difference. If water-side analysis shows poor performance, refrigerant troubleshooting may be required. Connect refrigerant gauges as a last resort.

Tranquility® (TR) Series

Rev.: November 4, 2024

Warranty (U.S. & Canada)

**CLIMATE MASTER, INC.
LIMITED EXPRESS WARRANTY/ LIMITATION OF REMEDIES AND LIABILITY**



It is expressly understood that unless a statement is specifically identified as a warranty, statements made by Climate Master, Inc., a Delaware corporation, ("CM") or its representatives, relating to CM's products, whether oral, written or contained in any sales literature, catalog or any other agreement, are not express warranties and do not form a part of the basis of the bargain, but are merely CM's opinion or commendation of CM's products.

EXCEPT AS SPECIFICALLY SET FORTH HEREIN, THERE IS NO EXPRESS WARRANTY AS TO ANY OF CM'S PRODUCTS. CM MAKES NO WARRANTY AGAINST LATENT DEFECTS. CM MAKES NO WARRANTY OF MERCHANTABILITY OF THE GOODS OR OF THE FITNESS OF THE GOODS FOR ANY PARTICULAR PURPOSE.

GRANT OF LIMITED EXPRESS WARRANTY
CM warrants CM products purchased and retained in the United States of America and Canada to be free from defects in material and workmanship under normal use and maintenance as follows: (1) All complete air conditioning, heating and/or heat pump units built or sold by CM for twelve (12) months from date of unit start up or eighteen (18) months from date of shipment (from factory), whichever comes first; (2) Repair and replacement parts, which are not supplied under warranty, for ninety (90) days from date of shipment (from factory). All parts must be returned to CM's factory in Oklahoma City, Oklahoma, freight prepaid, no later than sixty (60) days after the date of the failure of the part; if CM determines the part to be defective and within CM's Limited Express Warranty, CM shall, when such part has been either replaced or repaired, return such a factory recognized dealer, contractor or service organization, F.O.B. CM's factory, Oklahoma City, Oklahoma, freight prepaid. The warranty on any parts repaired or replaced under warranty expires at the end of the original warranty period.

This warranty does not cover and does not apply to: (1) Air filters, fuses, refrigerant, fluids, oil; (2) Products relocated after initial installation; (3) Any portion or component of any system that is not supplied by CM, regardless of the cause of the failure of such portion or component; (4) Products on which the unit identification tags or labels have been removed or defaced; (5) Products on which payment to CM is or has been in default; (6) Products which have defects or damage which result from improper installation, wiring, electrical imbalance characteristics or maintenance; or are caused by accident, misuse or abuse, fire, flood, alteration or misapplication of the product; (7) Products which have defects or damage which result from a contaminated or corrosive air or liquid supply, operation at abnormal temperatures, or unauthorized opening of refrigerant circuit; (8) Mold, fungus or bacteria damages; (9) Products subjected to corrosion or abrasion; (10) Products manufactured or supplied by others; (11) Products which have been subjected to misuse, negligence or accidents; (12) Products which have been operated in a manner contrary to CM's printed instructions; or (13) Products which have defects, damage or insufficient performance as a result of insufficient or incorrect system design or the improper application of CM's products.

CM is not responsible for: (1) The costs of any fluids, refrigerant or other system components, or associated labor to repair or replace the same, which is incurred as a result of a defective part covered by CM's Limited Express Warranty; (2) The costs of labor, refrigerant, materials or service incurred in removal of the defective part, or in obtaining and replacing the new or repaired part; or, (3) Transportation costs of the defective part from the installation site to CM or of the return of any part not covered by CM's Limited Express Warranty.

Limitation: This Limited Express Warranty is given in lieu of all other warranties. If, notwithstanding the disclaimers contained herein, it is determined that other warranties exist, any such warranties, including without limitation any express warranties or any implied warranties of fitness for particular purpose and merchantability, shall be limited to the duration of the Limited Express Warranty.

LIMITATION OF REMEDIES
In the event of a breach of the Limited Express Warranty, CM will only be obligated at CM's option to repair, the failed part or unit or to furnish a new or rebuilt part or unit in exchange for the part or unit which has failed. If after written notice to CM's factory in Oklahoma City, Oklahoma of each defect, malfunction or other failure and a reasonable number of attempts by CM to correct the defect, malfunction or other failure and the remedy fails of its essential purpose, CM shall refund the purchase price paid to CM in exchange for the return of the sold good(s). Said refund shall be the maximum liability of CM. **THIS REMEDY IS THE SOLE AND EXCLUSIVE REMEDY OF THE BUYER OR THEIR PURCHASER AGAINST CM FOR BREACH OF CONTRACT, FOR THE BREACH OF ANY WARRANTY OR FOR CM'S NEGLIGENCE OR IN STRICT LIABILITY.**

LIMITATION OF LIABILITY
CM shall have no liability for any damages if CM's performance is delayed for any reason or is prevented to any extent by any event such as, but not limited to: any war, civil unrest, government restrictions or restraints, strikes or work stoppages, fire, flood, accident, shortages of transportation, fuel, material, or labor, acts of God or any other reason beyond the sole control of CM. **CM EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGE IN CONTRACT, FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, OR IN TORT, WHETHER FOR CM'S NEGLIGENCE OR AS STRICT LIABILITY.**

OBTAINING WARRANTY PERFORMANCE
Normally, the contractor or service organization who installed the products will provide warranty performance for the owner. Should the installer be unavailable, contact any CM recognized dealer, contractor or service organization. If assistance is required in obtaining warranty performance, write or call:

Climate Master, Inc. • Customer Service • 7300 S.W. 44th Street • Oklahoma City, Oklahoma 73179 (405) 745-6000

NOTE: Some states or Canadian provinces do not allow limitations on how long an implied warranty lasts, or the limitation or exclusions of consequential or incidental damages, so the foregoing exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and from Canadian province to Canadian province.

Please refer to the CM Installation, Operation and Maintenance Manual for operating and maintenance instructions.



Rev.: 11/09

Notes:

Tranquility® (TR) Series

Rev.: November 4, 2024

Notes:

Notes:

Tranquility® (TR) Series

Rev.: November 4, 2024

Revision History

Date:	Item:	Action:
11/04/24	Hybrid Thermostat Connection	Removed Heat/Cool thermostat requirement for Hybrid units
01/24/23	All	Introduced CXM2 unit controls, Upgraded DXM2 to DXM2.5 unit controls
10/5/21	Pages 20-23	Updated Water Quality Standards table
9/24/21	Pages 3, 57	Removed LON option, discontinued
07/08/21	All	Font Update, Added Polymer Drain Pan
11/2/20	All	Added Hydronic Heating Option
5/26/20	Pg. 48	Add Wiring Diagram Matrix
5/15/20	All	Updated to DXM2 and took off "II" from ClimaDry
10/26/18	Decoder	Added disconnect to controls
07/25/17	Page 7	Updated hanger mounting instructions
10/16/16	Page 38	Added Note For ClimaDry®
06/22/16	Photo Cover	Revised
04/15/15	Text	Updated
03/4/16	Pages 39 and 40	Edit ECM control text
01/22/15	All	Added ECM (sizes 015 to 060)
06/16/14	Page 8 & 11	Changed Text - Filter "rack" to "frame"
05/29/14	Physical Data Table	Removed Fan Motor (hp)
05/12/14	Physical Data Table and Water Quality Table	Updated Ref. Charge Size 024 and Unit Maximum Working Water Pressure; Updated Water Quality Table
10/07/13	Figure 10a: Vertical Condensate Drain	Updated
07/18/13	Operating Limit EAT ClimaDry® and Wiring Diagrams on Pages 34 and 36	Updated
02/05/13	Electrical Tables	Miscellaneous Edits
11/09/12	POE Oil Warning	Added
09/27/12	Water Quality Table Condensate Drain Connection EAT Limits	Updated Updated Updates to Text - ClimaDry® Option
04/16/12	ClimaDry® II Option Information	Merge Data From ClimaDry® II Submittal
08/09/11	Unit Maximum Working Water Pressure	Updated to Reflect New Safeties



7300 S.W. 44th Street
 Oklahoma City, OK 73179
 Phone: 405-745-6000
 Fax: 405-745-6058
 climatemaster.com

ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time for order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-405-745-6000 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products.