CLIMATEMASTER®
Geothermal Heat Pump Systems

Tranquility® Digital
Quick Start Guide

97B0107N01

Residential Packaged and Split
DIGITAL Geothermal Heat Pumps

With iGate™ and vFlow™ Technology

Rev.: 5 Dec., 2012B

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ClimateMaster Digital units are shipped from the factory with default values for key parameters such as air flow and water flow settings. The unit will operate with these default settings, however, the installer may wish to customize these settings to better match installation conditions. This guide will walk the installer through those settings. More detail is available in the unit IOM.

The first step is to enter the Installer Menu. The first time the unit is powered up the ATC series thermostat display will take you to the Installer's Menu. Or you can enter the Installer's Menu anytime by placing the thermostat/system in the "OFF" mode, then holding the "UP" and "DOWN" arrow keys simultaneously for 5 seconds. Once in the Installer's Menu the following menus will appear.

Step 1 Thermostat Configuration

Upon initial power up, the communicating thermostat will prompt the installer for the thermostat configuration settings.

The software version of the thermostat and DXM2 board it is connected to, are displayed on the thermostat Installer Screen. If the DXM2 version is not displayed, the ATC thermostat is of an earlier version.

```
           INSTALLER SETTINGS
THERMOSTAT CONFIG
SYSTEM CONFIG
ACCESSORY CONFIG
INPUT DEALER INFO
HUMIDITY CONFIG
TEMPERATURE CONTROL
DEMAND REDUCTION CNFG
SERVICE MODE
RESTORY DEFAULTS

DXM2                                    1.0
ATC32U01                               C 2.1
SELECT OPTION ▲ ▼
◄ PREVIOUS
```

STAGING
Adjust the staging option using the up/down arrow buttons. Press the center button to save changes.
- **Single Stage –** for control of a single stage compressor applications
- **Multi-Stage (default)** – for control of a single stage compressor applications

```
              THERMOSTAT
            CONFIGURATION


SINGLE STAGE



MULTI STAGE


SELECT OPTION ▲ ▼
◄ PREVIOUS                      SAVE ■
```

AUXILIARY HEAT
Adjust the Auxiliary Heat options using the up/down arrow buttons. Press the center button to save changes.
- **Electric (default)** – for control of a system with electric auxiliary heat
- **Multi-Fuel** – for control of a system with furnace for auxiliary heat
- **No Auxiliary Heat** – for control of a system with no auxiliary heat

```
              THERMOSTAT
            CONFIGURATION

ELECTRIC


MULTI FUEL


NO AUXILIARY HEAT


SELECT OPTION ▲ ▼
◄ PREVIOUS                      SAVE ■
```

PROGRAMMING
Adjust the Programming options using the up/down arrow buttons. Press the center button to save changes.
- **Programmable (default)** – enables 7-day programming
- **Non-Programmable** – disables 7-day programming
- **Night Setback** – enables night setback programming

NOTE: When the thermostat is configured for nonprogrammable mode, the Display Date and Time setting defaults to NO.

```
              THERMOSTAT
            CONFIGURATION

PROGRAMMABLE


NON PROGRAMMABLE


NIGHT SETBACK


SELECT OPTION ▲ ▼
◄ PREVIOUS                      SAVE ■
```

Step 2 System Configuration

Use System Configuration to adjust critical equipment settings. The System Configuration information will be automatically obtained from each communicating control in the system.

```
          INSTALLER SETTINGS
THERMOSTAT CONFIG
SYSTEM CONFIG
  ACCESSORY CONFIG
  INPUT DEALER INFO
  HUMIDITY CONFIG
  TEMPERATURE ALGORITHM
  DEMAND REDUCTION CNFG
  SERVICE MODE
  RESTORY DEFAULTS

  ATC32U01
  SELECT OPTION ▲ ▼
◄ PREVIOUS
```

Note 1: The Air flow Selection menu will not be present if the connected communicating control is configured for No blower.

Note 2: The Pump Configuration menu will not be present if the connected communicating control is configured for OTHER.

Note 3: The Valve Configuration menu will not be present if the connected communicating control is configured for OTHER.

```
        SYSTEM CONFIGURATION

AIRFLOW SELECTION

OPTION SELECTION

UNIT CONFIG                    TE026

PUMP CONFIGURATION



SELECT OPTION ▲ ▼
◄ PREVIOUS                     SAVE ■
```

AIRFLOW SELECTION
Adjust the airflow settings for each system operating mode using the up/down arrow buttons. Press the center button to select each item.
- **Airflow Settings (default stored in control)** – valid range: obtained from control (in 25 CFM increments)
- **Blower Off Delay (default 60 seconds)** – valid range: 0 to 255 seconds (in 5 second increments)

NOTE: The Airflow Settings will only be present if the connected communicating control is configured for ECM blower.

```
          AIRFLOW SELECTION
                                    CFM
HEAT STAGE 1                        600
HEAT STAGE 2                        750
AUXILIARY HEAT                      850
EMERGENCY HEAT                      850
COOL STAGE 1                        525
COOL STAGE 2                        700
COOL DEHUMID 1                      425
COOL DEHUMID 2                      550
CONTINUOUS FAN                      350
HEAT OFF DELAY                       60
COOL OFF DELAY                       30

◄ PREVIOUS                    NEXT ►
```

OPTION SELECTION
Adjust the Option settings using the up/down arrow buttons. Press the center button to select each item.
- **Motorized Valve (defaults stored in control) –** valid range: Off, On
- **Compressor ACSD (default stored in control) –** valid range: 5 to 8 (in 1 minute increments)

NOTE: The Compressor Anti-Short Cycle Delay setting provides equipment protection by forcing the compressor to wait a few minutes before restarting.

```
           OPTION SELECTION

MOTORIZED VALVE                     OFF


COMPRESSOR ASCD                       5






◄ PREVIOUS                    NEXT ►
```

UNIT CONFIGURATION
The controller should be configured from the factory for its unit model. However, it is a good idea to review the configuration to ensure it is correctly configured.

⚠ NOTICE! ⚠

NOTICE: If installing <u>MULTIPLE</u> vFlow™ Internal VS Flow Controller units (in parallel) on one loop, <u>ALWAYS</u> select 'VS PUMP PARALLEL' under Installer Settings ➡ System Config ➡ Unit Config ➡ Loop Config. Also, follow proper pump selection procedures for parallel pumping applications.

Adjust the Unit Configuration settings including Heat Pump Family, Heat Pump Size, Blower Type, and Loop Configuration using the up/down arrow buttons. Press the center button to select each item.
- **Heat Pump Family (default stored in control)** – valid range: TE, TZ, TES, TEP, TAH
- **Heat Pump Size (default stored in control) –** valid range: depends on Heat Pump Family setting
- **Blower Type (default stored in control)** – valid range: NONE, PSC–2SPD, ECM, PSC–1SPD
- **Loop Config (default stored in control) –** valid

range: Other, VS PUMP SINGLE, VS PUMP PARALLEL, MOD VALVE, MOD VALVE MIN POS

```
┌─────────────────────────────────────┐
│         UNIT CONFIGURATION           │
│                                      │
│ CURRENT CONFIG              TE026     │
│                                      │
│ HEAT PUMP FAMILY              TE      │
│                                      │
│ HEAT PUMP SIZE               026     │
│                                      │
│ BLOWER TYPE                  ECM     │
│                                      │
│ LOOP CONFIG             VS PUMP      │
│                         PARALLEL     │
│                                      │
│ SELECT OPTION ▲ ▼                    │
│ ◄ PREVIOUS                SAVE ■     │
└─────────────────────────────────────┘
```

vFlow™ PUMP CONFIGURATION
vFlow™ VS internal flow control pump can be controlled either through temperature differential (Delta T) or can be set to specific speed (fixed; % of full speed for each heat and cool stage).

Configure temperature differentials at the thermostat for vFlow™ units with an internal flow control pump.

Adjust the Pump Configuration settings using the up/down arrow buttons. Press the center button to select each item.
- **Heating Delta T (default stored in control) –** valid range: 4 to 12°F (in 1°F increments)
- **Cooling Delta T (default stored in control) –** valid range: 9 to 20°F (in 1°F increments)

Maximum Heat LWT (valid range based on specific model; refer to model IOM). Minimum Cool LWT (valid range based on specific model; refer to model IOM).

```
┌─────────────────────────────────────┐
│       VARIABLE SPD INTERNAL          │
│       PUMP CONFIGURATION             │
│                                      │
│ PUMP CONTROL              DELTA T     │
│                                      │
│ HEATING DELTA T                7     │
│ COOLING DELTA T               10     │
│                                      │
│ MAXIMUM HEAT LWT              80     │
│ MINIMUM COOL LWT              40     │
│                                      │
│ ◄ PREVIOUS              SELECT ■     │
└─────────────────────────────────────┘
```

To control vs pump by fixed speed, select 'Pump Control', press ■, use down arrow to select 'Fixed', and press ■ to save.

Default stored in control. Valid range: 15% - 90% (in 1% increments)

```
┌─────────────────────────────────────┐
│       VARIABLE SPD INTERNAL          │
│       PUMP CONFIGURATION             │
│                                      │
│ PUMP CONTROL                FIXED     │
│                                      │
│ HEATING STAGE 1               60%    │
│ COOLING STAGE 2               75%    │
│                                      │
│ COOLING STAGE 1               50%    │
│ COOLING STAGE 2               70%    │
│                                      │
│ ◄ PREVIOUS              SELECT ■     │
└─────────────────────────────────────┘
```

If Pump Configuration is set to 'VS PUMP PARALLEL', valid range changes to 50-90% (in 1% increments).

vFlow™ VALVE CONFIGURATION
Adjust the Valve Configuration settings using the up/down arrow buttons. Press the center button to select each item.
- **Heating Delta T (default stored in control) –** valid range: 4 to 12°F (in 1°F increments)
- **Cooling Delta T (default stored in control) –** valid range: 9 to 20°F (in 1°F increments)

```
┌─────────────────────────────────────┐
│        MODULATING VALVE              │
│         CONFIGURATION                │
│                              DEG      │
│ HEATING DELTA T                8     │
│                                      │
│ COOLING DELTA T               15     │
│                                      │
│                                      │
│                                      │
│ ◄ PREVIOUS                NEXT ■     │
└─────────────────────────────────────┘
```

Step 3 Accessory Configuration

The ATC32 series thermostat can be configured to provide reminders to users when certain system maintenance is needed. A service message will flash at the top of the Main screen when a service timer expires to alert the user that it is time to service accessory options.

```
┌─────────────────────────────────────┐
│        INSTALLER SETTINGS            │
│                                      │
│ THERMOSTAT CONFIG                    │
│ SYSTEM CONFIG                        │
│ ACCESSORY CONFIG                     │
│ INPUT DEALER INFO                    │
│ HUMIDITY CONFIG                      │
│ TEMPERATURE ALGORITHM                │
│ DEMAND REDUCTION CNFG                │
│ SERVICE MODE                         │
│ RESTORY DEFAULTS                     │
│                                      │
│ ATC32U01                             │
│ SELECT OPTION ▲ ▼                    │
│ ◄ PREVIOUS                           │
└─────────────────────────────────────┘
```

AIR FILTER
This feature displays an alert to remind the user to change the air filter after the selected time has passed. Adjust the Air Filter Reminder settings using the up/down arrow buttons. Press the center button to save changes.
- **Cumulative Run Time (default Off)** – valid range: Off, 400 to 3600 hours (in 100 hour increments)
- **Calendar Time (default Off)** – valid range: Off, 3 to 48 months (in 3 month increments)

HUMIDIFIER
This feature displays an alert to remind the user to change the humidifier pad after the selected time has passed.

Adjust the Humidifier Reminder settings using the up/down arrow buttons. Press the center button to save changes.
- **Cumulative Run Time (default Off)** – valid range: Off, 400 to 3600 hours (in 100 hour increments)
- **Calendar Time (default Off)** – valid range: Off, 3 to 24 months (in 3 month increments)

UV LAMP
This feature displays an alert to remind the user to change the UV lamps after the selected time has passed.

Adjust the UV Lamp Reminder settings using the up/down arrow buttons. Press the center button to save changes.
- **Cumulative Run Time (default Off)** – valid range: Off, 400 to 3600 hours (in 100 hour increments)
- **Calendar Time (default Off)** – valid range: Off, 3 to 48 months (in 3 month increments)

AIR CLEANER
This feature displays an alert to remind the user to clean the filter(s) after the selected time has passed.

Adjust the Air Cleaner Reminder settings using the up/down arrow buttons. Press the center button to save changes.
- **Cumulative Run Time (default Off)** – valid range: Off, 400 to 3600 hours (in 100 hour increments)
- **Calendar Time (default Off)** – valid range: Off, 3 to 24 months (in 3 month increments)

Step 4 Input Dealer Information

Enter/edit the Dealer Information settings, including Brand, Name, Model Number, Serial Number, Contractor Name, and Contractor Phone number, using the up/down arrow buttons. Press the center button to save changes.

Step 5 Humidity Configuration

Configure humidity control settings (dehumidification/ humidification).

Adjust the Humidity Control settings using the up/down arrow buttons. Press the center button to save changes.

- **Dehumidification** – This logic will communicate a Dehumidification output when the humidity is greater than the setpoint (acts as a dehumidistat). The Dehumidification output will not be communicated when the humidity is below the setpoint.
- **Humidification** – This logic will communicate a Humidification output when the humidity is less than the setpoint (acts as a humidistat). When the Humidification output is active, the fan output will also be active. The Humidification output will not be communicated when the humidity is above the setpoint.
- **Both** – Incorporates both Dehumidification and Humidification logic.
- **None (default)** – Dehumidification and Humidification outputs will not be communicated.

Step 6 Temperature Algorithm

Configure the logic the thermostat uses to meet the temperature setpoints.
- **Proportional Integral (default)** – This logic will use a combination of temperature differential and operating time to determine the appropriate heating or cooling stages for operation (see NOTE 1).
- **Proportional Integral (No Down Staging)** – This logic includes the Proportional Integral logic, but in addition the logic keeps all active heating or cooling stages energized until the demand is fully satisfied (see NOTE 1).
- **Differential** – This logic will only use temperature differential to determine the appropriate heating or cooling stages for operation. This logic will keep all active heating or cooling stages energized until the demand is fully satisfied (see NOTE 2).

NOTE 1: The Proportional Integral options require first stage heating or cooling to be active for a minimum of 5 minutes, before energizing second stage when configured for multi stage operation.
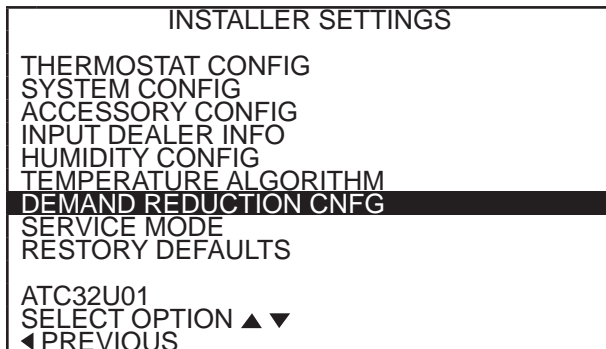
NOTE 2: The Differential option will activate first stage heating or cooling when the temperature is more than the first stage differential value (UM section 5.6.2.3), below or above the setpoint. Second stage heating or cooling will be activated when the temperature is more than the first and second stage differential values combined, below or above the setpoint. Third stage heating will be activated when the temperature is more than the first, second, and third stage differential values combined (UM section 5.6.2.3), below the setpoint.

Step 7 Demand Reduction Configuration

Users may wish to take advantage of the Demand Reduction feature where utility companies offer special rates for demand reduction, or simply to save energy during certain time periods. Demand Reduction is activated by an input signal at the unit control board to reduce the electric load while peak utility rates are high. The Demand Reduction Configuration mode selects which of the available unit control inputs is to be used as the activation signal. While a physical input signal is present at the selected input, the thermostat will implement load reduction by limiting operation or capacity.

Adjust the Demand Reduction Configuration setting using the up/down arrow buttons. Press the center button to save changes.

- **No Demand Reduction (default)** – Demand Reduction operating mode will not be activated by a DXM2/CXM2 input.
- **DXM2 Inputs** – Assigns a DXM2 input to activate Demand Reduction operating mode.

```
        INSTALLER SETTINGS

THERMOSTAT CONFIG
SYSTEM CONFIG
ACCESSORY CONFIG
INPUT DEALER INFO
HUMIDITY CONFIG
TEMPERATURE ALGORITHM
DEMAND REDUCTION CNFG
SERVICE MODE
RESTORY DEFAULTS

ATC32U01
SELECT OPTION ▲ ▼
◄ PREVIOUS
```

Start-Up Guide

Step 8 Unit and System Pre-Start Check List

BEFORE POWERING SYSTEM, please check the following:

UNIT CHECKOUT
- ❏ Shutoff valves: Insure that all isolation valves are open.
- ❏ 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: Insure that transformer has the properly selected voltage tap. Residential 208-230V units are factory wired for 230V operation unless specified otherwise.
- ❏ Loop/water piping is complete and purged of air. Water/piping is clean.
- ❏ Antifreeze has been added if necessary.
- ❏ Entering water and air: Insure that entering water and air temperatures are within operating limits.
- ❏ Low water temperature cutout: Verify that low water temperature cut-out on the DXM2 control is properly set. (Only cut JW3 if you have anti-freeze protection to 15°F (-9°C) in the loop)
- ❏ Unit fan: Manually rotate fan to verify free rotation and insure 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 permanently lubricated.
- ❏ Condensate line: Verify that condensate trap is properly installed and pitched.
- ❏ Verify that HWG pump is turned off unless piping is completed and air has been purged from the system. (S3 dipswitch #4)
- ❏ Unit air coil and filters: Insure that filter is clean and accessible. Clean air coil of all manufacturing oils.
- ❏ Unit controls: Verify that DXM2 field selection options are properly set and that low voltage wiring is complete.
- ❏ Desired Blower CFM and Water ΔT is set via communicating thermostats or diagnostic tool.
- ❏ Service/access panels are in place.

SYSTEM CHECKOUT
- ❏ System water temperature: Check water temperature for proper range.
- ❏ 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 Water Quality Table in unit IOM).
- ❏ System flushing: Verify that all air is purged from the system. Air in the system can cause poor operation or system corrosion. Water used in the system must be potable quality initially and clean of dirt, piping slag, and strong chemical cleaning agents. Some antifreeze solutions may require distilled water.

- ❏ Internal Flow Controller: Verify that it is purged of air and in operating condition.
- ❏ Low water temperature cutout: Verify that low water temperature cut-out controls are set properly (LT1 - JW3).
- ❏ Miscellaneous: Note any questionable aspects of the installation.

⚠ CAUTION! ⚠

CAUTION! Verify that ALL water 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.

Step 9 Unit Start-up Procedure

Unit Start-up Procedure
1. Turn the thermostat fan position to "ON." Blower should start.
2. Turn Blower off.
3. Ensure all valves are adjusted to their full open position. Ensure line power to the heat pump is on.
4. Room temperature should be within the minimum-maximum ranges of listed in the unit IOM. During start-up checks, loop water temperature entering the heat pump should be between 30°F [-1°C] and 95°F [35°C].
5. It is recommended that water-to-air units be first started in the cooling mode, when possible. This will allow liquid refrigerant to flow through the filter-drier before entering the TXV, allowing the filter-drier to catch any debris that might be in the system before it reaches the TXV.
6. Two factors determine the operating limits of geothermal heat pumps, (a) return air temperature, and (b) entering water temperature. When either of the factors is at a minimum or maximum level, the other factor must be at normal levels to insure proper unit operation.
   a. Place the unit in Manual Operation. When in manual mode activate Y1,Y2, and O to initiate the cooling mode. Also manually increase CFM until desired cooling CFM is achieved. Next adjust pump speed % until desired loop temperature difference (leaving water temperature minus entering water temperature) is achieved. (For modulating valve adjust valve %).

```
┌─────────────────────────────────────────┐
│            INSTALLER SETTINGS            │
│                                          │
│  THERMOSTAT CONFIG                       │
│  SYSTEM CONFIG                           │
│  ACCESSORY CONFIG                        │
│  INPUT DEALER INFO                       │
│  HUMIDITY CONFIG                         │
│  TEMPERATURE ALGORITHM                   │
│  DEMAND REDUCTION CNFG                   │
│  SERVICE MODE                            │
│  RESTORY DEFAULTS                        │
│                                          │
│  ATC32U01                                │
│  SELECT OPTION ▲ ▼                       │
│  ◄ PREVIOUS                              │
└─────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────┐
│              SERVICE MODE                │
│                                          │
│  MANUAL OPERATION                        │
│                                          │
│  CONTROL DIAGNOSTICS                     │
│                                          │
│  DIPSWITCH CONFIG                        │
│                                          │
│  FAULT  HISTORY                          │
│                                          │
│  CLEAR FAULT HISTORY                     │
│                                          │
│                                          │
│  SELECT OPTION ▲ ▼                       │
│  ◄ PREVIOUS                    SELECT ■  │
└─────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────┐
│           MANUAL OPERATING MODE          │
│  Y1     COMM   OUTPUT            OFF      │
│  Y2     COMM   OUTPUT            OFF      │
│  W      COMM   OUTPUT            OFF      │
│  O      COMM   OUTPUT            OFF      │
│  G      COMM   OUTPUT            OFF      │
│  H      COMM   OUTPUT            OFF      │
│  DH     COMM   OUTPUT            OFF      │
│  ECM    AIRFLOW                    0      │
│  PUMP   SPEED                     0%      │
│  TEST   MODE                     OFF      │
│                                          │
│  SELECT OPTION ▲ ▼                       │
│  ◄ PREVIOUS                    SELECT ■  │
└─────────────────────────────────────────┘
```

   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 bypassed on the DXM2 control board by placing the unit in the "Test" mode as shown in the unit IOM. Check for normal air temperature drop of 15°F to 25°F (cooling mode).

   c. Verify that the compressor is on and that the water temperature rise (cooling mode) is within normal range.

Water Flow, gpm (l/m)	Rise, Cooling °F
For Closed Loop: Ground Source or Closed Loop Systems at 3 gpm per ton (3.9 l/m per kw)	9 - 12
For Open Loop: Ground Water Systems at 1.5 gpm per ton (2.0 l/m per kw)	20 - 26

   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. Turn thermostat to "OFF" position. A hissing noise indicates proper functioning of the reversing valve.

7. Allow five (5) minutes between tests for pressure to equalize before beginning heating test.

   a. Go into Manual Mode activate Y1, and Y2 for Heating. Also manually increase CFM until desired heating CFM is achieved. Next adjust pump speed % until desired loop temperature difference (entering water temperature minus leaving water temperature) is achieved. (For modulating valve adjust valve %).

   b. Check for warm 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 bypassed on the DXM2 control board by placing the unit in the "Test" mode as shown in the unit IOM. Check for normal air temperature rise of 20°F to 30°F (heating mode).

   c. Verify that the compressor is on and that the water temperature fall (heating mode) is within normal range.

   e. Check for vibration, noise, and water leaks.

Water Flow, gpm (l/m)	Drop, Heating °F
For Closed Loop: Ground Source or Closed Loop Systems at 3 gpm per ton (3.9 l/m per kw)	4 - 8
For Open Loop: Ground Water Systems at 1.5 gpm per ton (2.0 l/m per kw)	10 - 17

8. If unit fails to operate properly, perform troubleshooting analysis (see troubleshooting section in the unit IOM). If the check described fails to reveal the problem and the unit still does not operate, contact a trained service technician to insure proper diagnosis and repair of the equipment.

9. When testing is complete, exit the Installer Menu and set thermostat to maintain desired comfort level for normal operation.

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

> ### ⚠ 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 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.

Revision History

Date	Page #	Description
5 Dec. 12	4	TES, TEP and TAH Digital Information Added
1 Oct., 12	4, 5	Unit Config, vFlow Pump Config Sections Updated
8 May, 12	All	First Published

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PARTNER

CLIMATEMASTER®
Geothermal Heat Pump Systems
7300 S.W. 44th Street
Oklahoma City, OK 73179
Phone: 405-745-6000
Fax: 405-745-6058
climatemaster.com

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