



## START-UP PROCEDURE

### **HOT WATER COIL AIR MAKE-UP SYSTEMS**

Start-up must be performed by a trained experienced service person.

The following general start-up procedure applies directly to units with standard hot water unit control schemes. Please note any added options which may affect the control sequence, terminal numbering, or control components of a specific unit prior to attempting start-up or service work. Read the entire start-up procedure and all reference material supplied with the unit.

#### **STEP 1**

Turn off incoming electrical power and hot water supply to the unit. Electrical power can be turned off at the disconnect on the unit.

Turn the unit off and the temperature selector to the highest setting.

#### **STEP 2**

Verify that incoming electrical and hot water supply match the name plate requirements (i.e., voltage/amp capacity, entering water temperature, etc). If they do not, stop at this point and contact Titan Air and/or the contractor responsible for the hot water supply.

#### **STEP 3**

Open the access doors to the blower and control vestibule sections. Check all electrical connections and hardware (blower drives, bearings, damper linkages, etc.) for tightness and correct field wiring connections.

#### **STEP 4**

Check that all water piping lines are properly connected and that allowances have been made for pipe expansion. Check that coil casing is level. Verify water supply components are properly installed.

#### **STEP 5**

Turn on incoming electrical power at unit disconnect.

#### **STEP 6**

Make sure the blower access door is securely held open. Turn the blower service switch (SW-5) on.

#### **STEP 7**

If an optional intake or discharge damper is installed, the blower will not start until the damper motor's internal "proof open" end switch closes. Generally, the damper motor and end switch wiring are completed in the field after it is mounted. Otherwise, the blower should start immediately. Check the blower for proper rotation direction. If the rotation is reversed, turn both SW-5 and the disconnect switch off. For 3 phase motors, reverse any two leads. For single phase motors, see instructions on the motor.

#### **STEP 8**

With proper blower rotation verified, check and record the RPM of the blower.

#### **STEP 9**

Turn the unit off. Close and latch the blower access door.

#### **STEP 10**

Start the unit with SW-5. Check and record the motor amp draw. If the motor amp draw exceeds listed Full Load Amps (FLA), stop and contact the factory.



## START-UP PROCEDURE

### STEP 11

With water supply available to the unit, turn SW-5 and the heat service switch (SW-6) on.

### STEP 12

If the unit is equipped with a factory built-in outside air/return air (OA/RA) mixing section, check the operation of the OA/RA dampers and positioning controls according to the unit's sequence of operation.

### STEP 13

The maximum temperature rise of the unit should be checked at this point. If the discharge temperature selector cannot be set high enough to check the maximum discharge temperature rise, it will be necessary to force the unit into a maximum discharge temperature condition. The method for accomplishing this will vary depending upon the type of control system utilized. Contact Titan Air, Inc. if assistance is needed with a unit equipped with a factory installed discharge temperature control system. If the unit is equipped with OA/RA dampers, these dampers should be run to the full OA position when checking temperature rise.

### STEP 14

If the unit is equipped with a freeze-stat, check the control's operation. The serpentine element freeze-stat will respond to the coldest 1 foot section along its length. Therefore, one can cool only a portion of the element (ice-water or cold spray) to get the control to trip. Valves and dampers should immediately run to fail-safe positions (see sequence and schematic). If the cold condition persists for one minute, the unit should shut down and indicate freeze-stat lockout on the remote panel.

### STEP 15

Turn SW-5, SW-6 and the disconnect off. Verify all terminals, electrical connections and hardware (bearings, sheaves, blower wheels, etc.) are securely tightened. Adjust all controls to desired settings. Remove all gauges, meters, and hand tools from the unit. Replace all covers on controls. Make sure all safety devices are reset.

### STEP 16

Turn the disconnect on. Start the unit and verify proper operation of the unit in all modes according to unit's sequence of operation.

To assure long lasting and efficient operation of Titan equipment, a regular service inspection should be set up. During this inspection, bearings should be greased, belts checked, and filters inspected and changed or cleaned if needed. Operation of the damper(s) and linkage(s) should be verified and linkages lubricated if need. The coil should be cleaned if necessary. Also check the operation of the discharge temperature control.