

To avoid problems and delays in the mechanical start-up of an air handler manufactured by Unison Comfort Technologies (UCT) please review each of the items shown on this checklist to verify its status. UCT understands that jobsite conditions may require scheduling of mechanical start-up before some checklist items are complete. If any of the checklist items have not been completed at time of submission please check NO and communicate when completion will occur to your UCT contact.

Product:



Job Information:

Job Name:	
Unit Sales Order Number:	
Unit Serial Number:	
Unit Tag:	

This section of checklist items **MUST BE COMPLETED** prior to Unison Comfort Technologies (UCT) Field Service Technicians (FST) arrival to begin the mechanical start-up. Upon the UCT FST's arrival, if these **MUST HAVE requirements** are NOT COMPLETE the UCT FST will be unable to begin the start-up. If the **Must Have items** will not be completed within 4 hours of arrival, the UCT FST will leave the site & a return trip will need to be purchased and rescheduled for when the **Must Have Requirements** are completed.

MUST HAVE COMPLETE REQUIREMENTS (ALL UNITS)		Yes	No	N/A
1	Is the main power permanently hooked up to unit disconnect(s)?			
2	Is the building air ducting system completed to allow full-load testing?			
3	Are shipping duct covers removed from unit?			
4	Are all inlet and exhaust hoods installed and free of debris?			
5	Have all external dampers (control, smoke or fire) been installed and wired?			
6	*Valent Specific: Is the shipped loose supply temperature sensor installed?			
7	*Split AHUs: Has control wiring been reconnected in the field by installing contractor?			
8	*Split AHUs: Has power wiring been reconnected in the field by installing contractor?			

Signature & Date: _____

Completing, signing, and submitting the **Must Have Requirements** section of this Pre-Start-Up Checklist constitutes a guarantee that all listed items are either complete or will be complete prior to mechanical start-up for the air handler manufactured by UCT.

This section of checklist items are **application specific requirements** necessary to complete mechanical start-up of the air handler manufactured by Unison Comfort Technologies (UCT). If any of these items are not completed prior to, or during, mechanical start-up it could result in insufficient time remaining (of the pre-approved Field Service Technicians (FST) start-up time) to complete mechanical start-up. If any aspect(s) of start-up are incomplete due to application specific requirements not being met, mechanical start-up will be considered incomplete. To have the mechanical start-up completed a return trip by a UCT FST will need to be purchased and rescheduled for when application specific requirements are completed.

APPLICATION SPECIFIC REQUIREMENTS		Yes	No	N/A
7	Have all remote sensors been installed (mounted, wired and/or plumbed)?			
8	Is ambient temperature forecasted to allow for heating start-up?			
9	Is ambient temperature forecasted to allow for cooling start-up?			
10	Gas heating equipment (if applicable)			
	• Final gas piping installed?			
	• Flue stacks installed (combustion air ducting installed on outdoor units)?			
	• Gas pressure verified?			
11	Equipment with hydronic coils (if applicable)			
	• Chilled water system piping complete?			
	• Heating (hot water or steam) system piping complete?			
	• Control valves installed and wired?			
	• Water coils balanced to design GPM?			
12	Are split-system refrigeration connections completed?			
	• Is system charged to proper superheat and subcooling temperatures?			
	• Has filter drier core been replaced to remove non-condensables in the system?			
13	Water-source heat pump units (if applicable)			
	• Waterside control valves installed and wired to heat pump control board			
	• Water verified to be clean?			
	• Strainers verified clean of all debris?			
	• Waterside balance complete?			
	• Design GPM verified at each water/refrigerant HX/ circuit?			

APPLICATION SPECIFIC REQUIREMENTS continued		Yes	No	N/A
14	Evaporative condensed units (if applicable)			
	• Condenser makeup water and drains piped and operational?			
	• Water treatment system installed and operational			
	• Has power been connected to and is operational at each pump?			
	• Has float level been adjusted on initial fill to ensure the makeup water valve is completely closed when the water level is 1/2" below the overflow level?			
	• Sump and inlet screens clean of all debris?			
	• Has the water treatment contractor been notified for start-up?			
15	Controls provided and installed by "Others"? (Not Innovent Standard)			
	• Sequence completely installed?			
	• Updates installed?			
	• Controls contractor notified and agreed to be onsite at time of start-up?			
16	Air side balance coordinated (balancing to take place after start-up)?			
17	Are the drain lines connected to (if applicable)			
	• Flat plate HX condensate drain pans?			
	• Cooling coil condensate drain pans?			
	• Condenser sump (main drain and overflow)?			
	• Evaporative cooling sump (main drain and overflow)?			
	• Miscellaneous section floor drains (if applicable)?			

Signature & Date:	
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Completing, signing, and submitting this Pre-Start-Up Checklist constitutes a guarantee that all listed items are either complete or will be complete prior to mechanical start-up for the air handler manufactured by UCT.

Unison Air Handler Start-Up Scope of Supply

Unison Comfort Technologies will provide on-site mechanical start-up service performed by a Unison Comfort Technologies (UCT) certified Field Service Technician (FST) for the Air Handling Units (AHU) identified within the Quotation, in accordance with the following General Schedule of Services, applicable elements of the Unison Start-Up Report and subject to satisfactory completion of pre-start-up of each unit, in accordance with the Unison Pre-Start-Up Checklist.

IMPORTANT

Mechanical Start-Up Defined: Mechanical start-up is the process of activating each subsystem within a newly-installed air handling unit after the AHU has been properly installed in the system in which it is expected to operate. A full mechanical start-up cannot be performed unless the occupied space with all its associated ductwork, controls and design options are completed and intact and ready for full-load testing. Each AHU subsystem such as heating, cooling, electrical, energy recovery and controls is tested to verify that it will operate and perform within its design parameters. In addition, the start-up technician inspects the installation for compliance with the manufacturer's installation instructions, guidelines and standards.

IMPORTANT

Each start-up is assigned an adequate amount of on-site time. If more time is required by the UCT FST due to circumstances or conditions resulting from an incomplete installation or incomplete pre-start-up procedure, the firm that ordered and scheduled the start-up will be invoiced for all additional expenses incurred by UCT. If known site conditions will cause excessive delays, please contact UCT for an updated quote to accurately account for the estimated labor.

GENERAL SCHEDULE OF SERVICES

UCT will provide a fully-trained and certified Field Service Technician (FST) who will travel to the job site at a mutually-agreed upon date and perform the start-up of the AHU. Travel expenses are included in the cost of this start-up. Testing equipment and any hand tools needed will be supplied by the UCT Technician.

The UCT FST will perform a complete inspection of the unit(s) to verify compliance with installation requirements as indicated in the unit Installation, Operation, Maintenance Manual (IOM). The UCT FST will perform a complete inspection and test of all unit subsystems. These subsystems include but are not limited to: heating, cooling, electrical, energy recovery and refrigeration. **All operating parameters will be tested subject to ambient conditions (see limitations section for details).** All on-board safety devices will be tested. Gas fired furnace control valves are set for high fire and low fire. Mechanical and electro-mechanical subsystems such as dampers and actuators are tested for correct operation. Each subsystem will be test-run and inspected to ensure proper operation in accordance with engineered specifications.

All factory-provided and installed DDC controllers and end devices will be tested for operational functionality. **See Limitations regarding owner-provided or third-party controls.**

If a manufacturer Shipped Product Deficiency (SPD) has been found, the start-up FST will immediately arrange for corrective actions. Any SPD identified by the FST to be correctable during site visit shall be completed during agreed upon dates. For any SPD identified by the FST unable to be corrected within the agreed upon start-up dates, notifications will be made to the local UCT representative, the installing contractor, and UCT technical support to determine corrective actions.

Detailed data for each subsystem will be collected and recorded, in accordance with the UCT Start-Up Report. The FST will review the data and provide an analysis of whether the unit is functioning within its design parameters and indicate any areas of potential concern.

The completed UCT Start-Up Report will be provided to UCT technical support, the UCT representative, the installing contractor, and the AHU owner. The completed report is to be retained by the owner for future reference by service personnel.

LIMITATIONS

The local UCT representative and/or the installing contractor shall provide a completed Pre-Start-Up Checklist for each unit, and a Pre-Travel Information form, a minimum of **two weeks prior to the desired start-up date. Any changes to the site visit date within two weeks will incur a \$500 change fee.**

If more than one AHU is to receive UCT Start-Up Service, all units are to be scheduled for start-up at the same time so that only one trip by UCT is required. If the request for Start-Up is submitted without all elements of the pre-start-up checklist completed, it is the responsibility of the requester to make certain that all elements are completed prior to arrival of the UCT FST at the job site.

All pre-start-up **must have requirements** shall be completed prior to UCT FST arrival. **If the pre-start-up must have requirements are not completed within 4 hours of arrival, the UCT FST will depart the site and the trip requester will need to purchase and reschedule a trip** for a time when the must have requirements are completed. If the pre-start-up **application specific requirements** are not completed with enough time remaining within the approved start-up time to complete all items, the start-up shall be considered incomplete. A return trip to complete the start-up will need to be purchased and rescheduled by the requester.

If ambient conditions do not allow the completion of the mechanical start-up for AHU subsystems (i.e. refrigeration cooling, heating) it is the responsibility of the local UCT representative to complete start-up, or purchase and reschedule an additional UCT FST trip.

Mechanical start-up does not include full commissioning of the AHU's controls sequence of operation. Third-party control boards and end devices are not tested for operational functionality by the start-up technician. The FST will test the AHU's response to anticipated control signals by inducing a similar control signal and applying it to the AHU to verify correct AHU response. The FST will not make adjustments or corrections to control boards or end devices that were not provided by UCT.

The local UCT representative and/or the installing contractor shall be responsible for providing any needed jobsite-specific equipment such as ladders, refrigerant, or safety equipment.