

## Prefunctional Checklist

Project \_\_\_\_\_

**PC-\_\_\_ FAN COIL UNIT, FCU-#'s \_\_\_\_\_**

**Components included:** \_\_\_SF, \_\_\_ Coils, \_\_\_ Valves (coil), \_\_\_, VFD \_\_\_ Dampers \_\_\_ Ducts

**Associated Checklists:** \_\_\_CHW, \_\_\_HW Piping, \_\_\_Boiler, \_\_\_DX Condenser

### 1. Submittal / Approvals

**Submittal.** The above equipment and systems integral to them are complete and ready for functional testing. The checklist items are complete and have been checked off only by parties having direct knowledge of the event, as marked below, respective to each responsible contractor. This prefunctional checklist is submitted for approval, subject to an attached list of outstanding items yet to be completed. A Statement of Correction will be submitted upon completion of any outstanding areas. None of the outstanding items preclude safe and reliable functional tests being performed. \_\_\_ List attached.

Mechanical Contractor	Date	Controls Contractor	Date
Electrical Contractor	Date	Sheet Metal Contractor	Date
TAB Contractor	Date	General Contractor	Date

Prefunctional checklist items are to be completed as part of startup & initial checkout, preparatory to functional testing.

- This checklist does not take the place of the manufacturer’s recommended checkout and startup procedures or report.
- Items that do not apply shall be noted with the reasons on this form (N/A = not applicable, BO = by others).
- If this form is not used for documenting, one of similar rigor shall be used.
- Contractors assigned responsibility for sections of the checklist shall be responsible to see that checklist items by their subcontractors are completed and checked off.
- “Contr.” column or abbreviations in brackets to the right of an item refer to the contractor responsible to verify completion of this item. A/E = architect/engineer, All = all contractors, CA = commissioning agent, CC = controls contractor, EC = electrical contractor, GC = general contractor, MC = mechanical contractor, SC = sheet metal contractor, TAB = test and balance contractor, \_\_\_ = \_\_\_\_\_.

**Approvals.** This filled-out checklist has been reviewed. Its completion is approved with the exceptions noted below.

Commissioning Agent	Date	Owner’s Representative	Date
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Notes:

**2. Requested documentation submitted**

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->							Contr.
Manufacturer's cut sheets								
Performance data (fan curves, coil data, etc.)								
Installation and startup manual and plan								
Sequences and control strategies								
O&M manuals								

- **Documentation complete as per contract documents for given trade ..... YES \_\_\_ NO**

**3. Model verification**

[Contr = \_\_\_\_\_]

1 = as specified, 2 = as submitted, 3 = as installed. Check if Okay. Enter note number if deficient.

Equip Tag-->								
Manuf. 1								
Manuf. 2								
Manuf. 3								
Model 1								
Model 2								
Model 3								
Serial # 3								
Coil 1								
Capacity 2								
Capacity 3								
Fan 1								
Capacity 2								
Capacity 3								

- **The equipment installed matches the specifications for given trade ..... YES \_\_\_ NO**

**4. Installation Checks**

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->							Contr.
<b>General Installation</b>								
Permanent labels affixed, including for fans								
Casing condition good: no dents, leaks, door gaskets installed								
Access doors close tightly - no leaks								
Boot between duct and unit tight and in good condition								
Vibration isolation equipment installed & released from shipping locks								
Maintenance access acceptable for unit and components								
Sound attenuation installed (wraps in clg. units, etc.)								
Thermal insulation properly installed and according to specification								
Instrumentation installed according to specification (thermometers, pressure gages, flow meters, etc.)								

Notes:

FAN-COIL UNIT CHECKLIST  
PC-\_\_\_\_\_

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->						Contr.
Clean up of equipment completed per contract documents							
Filters installed and replacement type and efficiency permanently affixed to housing--construction filters removed							
<b>Valves, Piping and Coils</b>							
Pipe fittings complete and pipes properly supported							
Pipes properly insulated							
Pipes properly labeled							
Strainers in place and clean							
Piping system properly flushed							
No leaking apparent around fittings							
All coils are clean and fins are in good condition							
All condensate drain pans clean and slope to drain, per spec							
Condensate line trap installed per mfr							
Valves properly tagged							
Valves installed in proper direction							
P/T plugs and isolation valves installed per drawings							
OSAT, SAT, RAT, water supply sensors properly located and secure							
Sensors calibrated (See calibration section below)							
Measures taken to deal with condensation, especially if fan will cycle. List:							
<b>Fans and Dampers</b>							
Fan and motor alignment appear correct							
Fan belt tension & condition good							
Fan protective shrouds for belts in place and secure							
Fan area clean							
Fan and motor properly lubricated							
Smoke and fire dampers installed properly per contract docs (proper location, access doors, appropriate ratings verified)							
All dampers close tightly and linkages have minimum play							
Other (list):							
<b>Ducts</b> (preliminary check)							
Sound attenuators installed							
Duct joint sealant properly installed							
No apparent severe duct restrictions							
Turning vanes in square elbows as per drawings							
OSA intakes located away from pollutant sources & exhaust outlets							

Notes:

FAN-COIL UNIT CHECKLIST  
PC-\_\_\_\_\_

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->						Contr.
Pressure leakage tests completed							
Ducts cleaned as per specifications							
Balancing dampers installed as per drawings and TAB's site visit							
Outside air capability to space serviced by FCU installed							
<b>Electrical and Controls</b>							
Power disconnects in place and labeled							
All electric connections tight							
Proper grounding installed for components and unit							
Safeties in place and operable							
Sensors calibrated (see below)							
Control system interlocks hooked up and functional							
Smoke detectors in place							
All control devices, pneumatic tubing and wiring complete							

- **The checklist items of Part 4 are all successfully completed for given trade.** \_\_\_ YES \_\_\_ NO

**5. Operational Checks** (These augment mfr's list. This is not the functional performance testing.)

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->						Contr.
Fan rotation correct							
Fan has no unusual noise or vibration							
All dampers (OSA, RA, EA, etc.) stroke fully without binding and spans calibrated (see calibration section below). List each actuated damper here when spanned:							
Valves stroke fully and easily and spanning is calibrated (see calibration section below). List each actuated valve here when spanned:							
Valves that require a positive shut-off are verified to not be leaking when closed at normal operating pressure per "Calibration and Leak-by Test Procedures" document. List: _____							
The HOA switch properly activates and deactivates the unit							
Specified sequences of operation and operating schedules have been implemented with all variations documented							
Specified point-to-point checks have been completed and documentation record submitted for this system							

- **The checklist items of Part 5 are all successfully completed for given trade.** \_\_\_ YES \_\_\_ NO

Notes:

**6. Sensor and Actuator Calibration [                      ]**

All field-installed temperature, relative humidity, CO, CO<sub>2</sub> and pressure sensors and gages, and all actuators (dampers and valves) on this piece of equipment shall be calibrated using the methods and tolerances given in the Calibration and Leak-by Test Procedures document. All test instruments shall have had a certified calibration within the last 12 months: Y/N\_\_\_\_\_. Sensors installed *in* the unit at the factory with calibration certification provided need not be field calibrated.

Sensor or Actuator & Location	Location OK	1st Gage or BAS Value	Instr. Meas'd Value	Final Gage or BAS Value	Pass Y/N?

Sensor & Location	Location OK	1st Gage or BAS Value	Instr. Meas'd Value	Final Gage or BAS Value	Pass Y/N?

Gage reading = reading of the permanent gage on the equipment. BAS = building automation system. Instr. = testing instrument. Visual = actual observation. The Contractor's own sensor check-out sheets may be used in lieu of the above, if the same recording fields are included and the referenced procedures are followed.

- **All sensors are calibrated within required tolerances.....**  **YES**  **NO**

**-- END OF CHECKLIST--**

Notes: