



7639 Highway 79
Pinson, AL 35126
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Test and Balance Procedures for Air and Water Balance

Phase - One

1. Test and adjust blower RPM to design requirements.
2. Test and record motor load amperes.
3. Make Pitot Tube traverse of main supply ducts and obtain design CFM at fans.
4. Test and record system static pressures, suction and discharge.
5. Test and adjust system for design recirculated air, CFM.
6. Test and adjust system for design CFM outside air.
7. Test and record entering air temperatures. (D.B. heating and cooling)
8. Test and record leaving air temperatures. (W.B. cooling)
9. Test and record leaving air temperatures. (D.B. heating and cooling)
10. Test and record leaving air temperatures. (W.B. cooling)
11. Adjust all zones to proper design CFM, supply and return.
12. Test and adjust each diffuser, grill and register to within 10% of design requirements.
13. Each diffuser, grill and register shall be identified as to location.
14. Size, type and manufacture of diffusers, grill registers and all tested equipment shall be identified and listed. Manufacturer's ratings on all equipment shall be used to make required calculations.
15. Readings and tests of diffusers, grills and registers shall be with direct reading flow hood or will include required FPM velocity and test resultant velocity, required CFM and test resultant CFM after adjustments.
16. In cooperation with the control manufacturer's representative, setting adjustments of automatically operated dampers to operate as specified, indicated, and /or noted. Test agency shall check all controls for proper calibrations and list all controls requiring adjustment by control installers.
17. All diffusers, grills and registers shall be adjusted to minimize drafts in all areas.
18. As part of the work of this contract, THE AIR CONDITIONING CONTRACTOR shall make changes in the pulleys, belts and dampers or the addition of dampers as required for correct balance as recommended by Air Balance Agency.



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Test and Balance Procedures for Air and Water Balance

Phase - Two

1. Set chilled water and hot water pumps to proper gallons per minute delivery.
2. Adjust water flow of chilled water through chiller.
3. Adjust water flow of hot water through boilers.
4. Check leaving water temperatures and return water temperatures through chiller and boilers. Reset to correct design temperatures.
5. Check water temperatures at inlet side of cooling and heating coils. Note rise or drop of temperatures from source.
6. Proceed to balance each chilled water coil and hot water coil.
7. Upon completion of flow readings and adjustments at coils, mark all settings and record data.

Phase - Three

Upon completion of Phase-One and Phase-Two the balance technician shall proceed with Phase-Three as follows:

1. After adjustments to coils are made, recheck settings at the pumps, chillers and boilers and readjust if required.
2. Install pressure gauges on coil, read pressure drop through coil at set flow rate on call for full cooling and on full heating. Set pressure drop across bypass valve to match coil flow pressure drop. This prevents unbalances flow conditions when coils are on full by-pass.
3. Same procedure on chiller to adjust chiller bypass valve.
4. Record and check the following items at each cooling and heating element.
5. Inlet water temperatures.
6. Leaving water temperatures.
7. Pressure drop of each coil.
8. Pressure drop across bypass valve.
9. Pump operating suction and discharge pressures and final T.D.H.
10. List all mechanical specifications of pumps.
11. Rated and actual running amperage of pump motor.
12. Water metering device readings.

Upon completion of Phase-Three all information shall be inserted on a sheet listing all items required by specifications and be included in a complete Test & Balance Report. All sheets will be typed.