

	SMALL TONNAGE CHILLERS Quality Assurance	
ENGINEERING SUPPLEMENT	New Release	Form 150.00-ES1 (701)

GENERAL

DX liquid chillers are subjected to a rigorous Quality Assurance inspection and test procedure during manufacturing in an ISO 9000 registered facility. Detailed checklists contain inspection requirements for a larger number of key process operations and observations. Each item must be initialed and dated by the production worker and/or inspector. Each checklist follows the components to completion and is retained for future reference. Written procedures and Engineering Standards back each test and inspection. The major inspections and tests follow.

HEAT EXCHANGERS

Shell and tube heat exchangers are designed and tested in full conformance to the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 and any exemptions there-in.

DX Cooler (Evaporator) - YCAZ/YEAJ/YDAJ Models - 235 PSIG DWP Refrigerant Side/150 PSIG Water Side; YCAL/YCAS/YCAR Models - 350 PSIG Refrigerant Side/150 PSIG Water Side.

Strength test using water as a test medium on the shell (water) side at 1-1/2 X DWP. Strength test using water on the tube (refrigerant) side at 1-1/2 X DWP. Submerge the shell in water and leak test using air on the shell (water) side at 1-1/4 X DWP. Refrigerant leak test the tubeside at 1-1/4 X DWP.

Air Condenser Coil - 450 PSIG DWP Refrigerant Side

Each coil is leak checked at 450 PSIG.

Water Cooled Condenser - 330 PSIG DWP Refrigerant Side/150 PSIG Water Side

Strength test using water as a test medium on the shell (water) side at 1-1/2 X DWP. Strength test using air on the shell (refrigerant) side at 1-1/4 X DWP. Refrigerant leak test at 1 X DWP.

YORK COMPRESSORS

Reciprocating Compressors - The compressor housing (high and low side) is pressurized using air to 450 to 470 PSIG with dry air to check for leaks. The compressor high and low sides are further held with 285 to 300 PSIG air under water to check for leaks. The compressor is operated with air flowing through at the fully loaded position and then at each step of unloaded capacity. The compressor is stopped and the leads to it are reversed to create reverse rotation at full load. The compressor is refrigerant leak tested again to 285 to 315 PSIG.

Screw Compressors - Pressurize the compressor housing using dry air at 450 PSIG for casing integrity and leak checking. The compressor is operated with air discharging at 90 PSIA. The following characteristics are measured, recorded and compared to set of manufacturing parameters: voltage; discharge pressure; oil pressure; bearing oil flow; main oil flow; motor power; motor current; air flow; discharge temperature; oil temperature; motor high potential; and vibration. The compressor is evacuated and prepared for shipment.

HIGH POTENTIAL TESTING

System wiring is high potential tested for electrical integrity through the microcomputer control panel.

UNIT OPERATIONAL RUN TEST

Fully factory packaged systems are subjected to an operational run test. ***(This is not a factory performance run test.)*** The compressors systems are run at whatever the shop ambient and water test loop temperatures are at the time of the test. First, compressor #1 circuit is run for 10 to 20 minutes to check that all of its components and controls are operating properly. The #1 compressor is turned off and the test is repeated for each remaining compressor circuit. A computer printout report is collected for each circuit. A copy of the print-out is placed into the control panel and retained in the quality control files. *[This test is not performed with split systems such as YCR, YCU or Remote DX cooler systems. The YCR or air-cooled condensing sections each refrigeration system is run until the suction pressure cutout shuts down the compressor to confirm component operation.]*

60 HERTZ SYSTEMS INDEPENDENT LABORATORY TESTING

Prior to production, the 60-hertz system designs have undergone the rigorous review qualification and testing per UL 1995 by either the Underwriters Laboratories or Intertek Testing Services NA Inc. [ITS] (formerly ETL). This provides for an independent company confirmation, that the design meets the high requirements of operational integrity and human safety requirements. The design has met these and is listed with either UL or ITS. York has the privilege of displaying their prestigious UL/cUL or ETL label on this equipment.

