

ADVANCED AIR CONDITIONING

Maintaining air conditioning systems is two fold. Troubleshooting and immediate action is required to repair issues as they occur. And proper preventive maintenance can lessen the frequency of the problems and lengthen equipment life.

This class assumes that the participants have a basic understanding of Air Conditioning Systems and focus on advance concepts.

CLASS FORMAT:

Classroom

STANDARD CLASS SIZE:

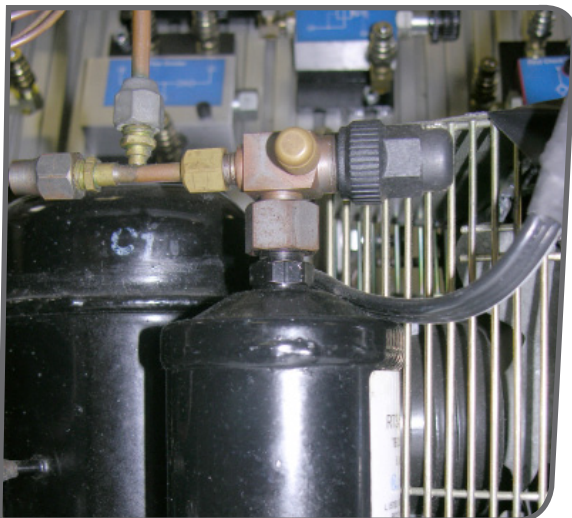
NTT recommends a class of 35 participants to obtain the best results.

NTT PROVIDES:

- 3 days (24 contact hours) of on-site instruction
- Participant textbooks
- Classroom consumables
- Completion certificates
- Shipping and instructor travel logistics

CLIENT PROVIDES:

- Classroom of 500 square feet or greater
- Projection screen, white board and/or flip chart(s)



COURSE AGENDA

THERMODYNAMICS

- Objectives
- Principles and fundamentals of heat transfer
- Pressure and vacuum
- Pressure/temperature/volume relationships
- Gas laws
- Cycle construction

VAPOR-COMPRESSION REFRIGERATION CYCLE

- Heat-transfer process
- Follow the heat
- Typical operating conditions

REFRIGERANTS AND OILS

- Refrigerant composition
- R-410A
- Refrigerant classifications
- Refrigerant safety
- Refrigerant cylinders
- Environmental refrigerant regulations

REFRIGERANT EQUIPMENT COMPONENTS

- Evaporators
- Compressors
- Condensers
- Metering devices
- Refrigeration-system accessories

HEAT LOAD IN REFRIGERATION SYSTEM

- Survey
- Calculating the total product load
- Miscellaneous heat load

PSYCHROMETERICS

- Psychrometrics
- Comfort
- EPA 420-K-02-003
- Moisture control in the key mold control
- Humidity
- Preservation
- Dew point
- CRM Requirements
- Air Condition System Design

ADVANCED AIR CONDITIONING

COURSE AGENDA, CONTINUED

REFRIGERATION BASELINING

- Manufacturer
- System types
- Nameplate informational
- Voltage and amps
- Refrigerant types and charge
- Oil and types
- Temperature readings
- Condensing and evaporating coils and their conditions
- Refrigerant pressures
- Types of metering devices
- Piping design
- System accessories
- Material compatibility

CHARACTERISTICS OF EVAPORATORS

- Heat or energy
- Evaporative coil
- The superheat of metering devices
- Superheat of a thermostatic expansion valve
- Refrigeration
- Altitude correction
- Temperature difference in A/C
- Temperature difference in refrigeration space
- Air condition system design
- Calculation of heat
- CFM
- Enthalpy (h1-H2)

TROUBLESHOOTING AN AIR CONDITIONING SYSTEM

- Voltage and amps
- Evaporator superheat
- Condensing subcooling
- Temperature difference in A/C evaporator
- Temperature difference in A/C condenser

CHARGING RESIDENTIAL AIR CONDITIONING R-22

- Compressor
- Condenser
- Metering devices
- Evaporators
- Charging methods
- Thermostatic expansion valve R-22
- Fixed orifice R-22
- Total superheat method
- Refrigeration