



2017 SEMINAR PROGRAM



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MACC MISSION STATEMENT

To assist and enable MACC members to acquire, serve and satisfy their customers by: Providing the highest quality technical and management information and services. Promoting good business ethics and sound business practices. Being the standard of excellence by which others are measured. Influencing public policy to improve the business climate Enhancing the image of contractor professionalism to government, industry and the public Maintaining and expanding MACC's membership base and sphere of influence.

MACC 2017 SEMINARS

The objective of these education classes is to provide tangible value to current and future contractor members of MACC.

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AIR CONDITIONING MAINTENANCE

COURSE DESCRIPTION

HVAC/R technicians must be familiar with common items such as gaskets, belts and filters. The service and repair of equipment requires technicians to make decisions regarding correct materials to use in specific situations. Lubrication is also an important part of maintenance activities. Technicians must understand the application in order to select and apply the appropriate lubricant. This seminar will present information related to maintenance-oriented materials, as well as guidelines for the inspection and periodic maintenance with a basic overview of cooling in regards to refrigerants.

8 HOUR PROGRAM

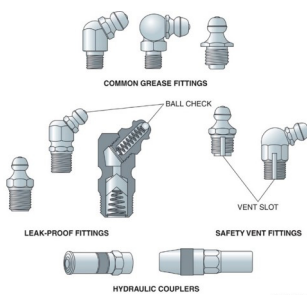
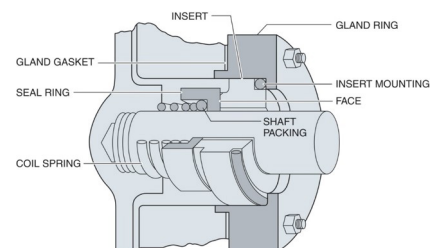


SATURDAY

8:00 AM - 4:00 PM

WHAT YOU WILL LEARN

- **Identify different types of belt drives and describe how they are installed and adjusted.**
 - Identify various types of drive belts.
 - Explain how to install & adjust drive belts.
- **Describe the inspection and/or maintenance requirements for selected equipment.**
 - Identify common health hazards associated with HVAC maintenance activities.
 - Describe the common inspection & maintenance procedures for DX cooling & heat pump systems.
 - Describe the common inspection & maintenance procedures for various systems accessories.
 - Describe how to properly complete common HVAC service reports.
- **Explain the fundamental concepts of refrigeration cycle**
 - Describe how the heat affects the state of substances.
 - Explain how heat is transferred from one substance to another.
 - Describe pressure-temperature relationships.
 - Describe the basic pattern of refrigerant flow & the changes of state that occur in the refrigeration cycle.
 - Identify common instruments used to measure pressure and temperature.
- **Identify the major components of cooling systems and how they function**
 - Identify basic compressors and their function in the system.
 - Identify different condensers used to transfer heat.
 - Identify different evaporators used to transfer heat.
 - Describe the devices used to meter refrigerant flow.
 - Discuss basic refrigerant piping concepts.
 - Identify various accessories used in reeeration circuits.



COMPRESSOR MAINTENANCE & REPAIR

COURSE DESCRIPTION

The compressor is considered to be the heart of the HVAC system. It provides the force that moves the refrigerant through the cycle and it raises the pressure of the refrigerants so that the heat absorbed in the evaporator can be transferred again at the condenser. It is important to understand compressors and to know how to service and troubleshoot them. Improper servicing can result in serious damage to the compressor, and incorrect problem diagnosis can result in unnecessary replacement task.

WHAT YOU WILL LEARN

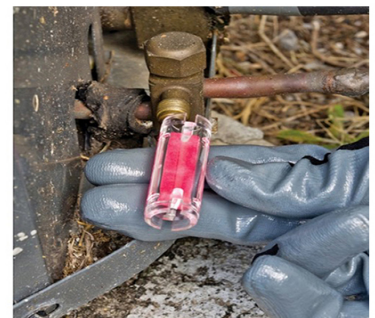
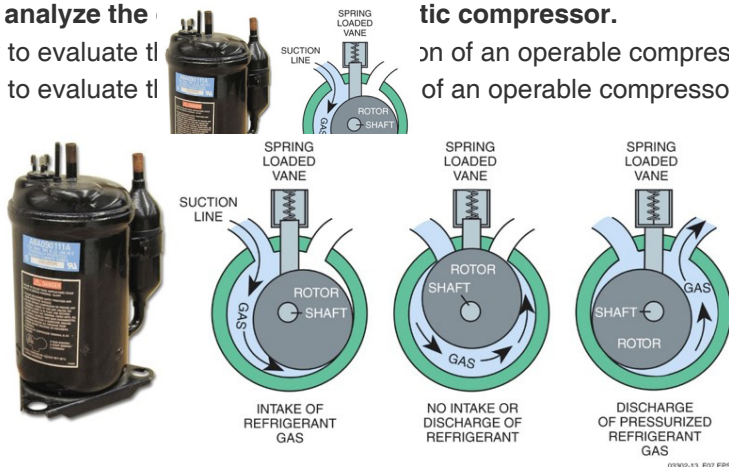
- **Identify and describe the operation of various compressor types.**
 - Identify and describe the operation of reciprocating compressors, various hermetic & semi-hermetic compressors, rotary compressors, scroll compressors, screw compressors & centrifugal compressors.
- **Identify and describe various approaches to compressor capacity control.**
 - Identify and describe capacity control methods for reciprocating and scroll compressors.
 - Identify and describe capacity control methods for screw and centrifugal compressors.
- **Describe common compressor failures.**
 - Describe compressor failures related to the refrigerator circuit.
 - Describe compressor failures related to electrical issues.
- **Identify and explain the operation of various compressor protection devices.**
 - Identify and explain the operation of various overload devices.
 - Identify and explain the operation of other compressor protection devices.
- **Explain how to analyze the operation of an operable compressor.**
 - Explain how to evaluate the operation of an operable compressor.
 - Explain how to evaluate the operation of an operable compressor.

8 HOUR PROGRAM

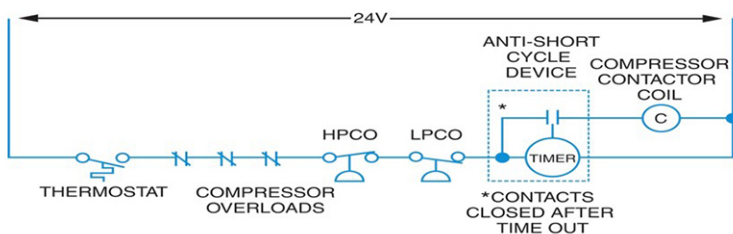
June
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SATURDAY

8:00 AM - 4:00 PM



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INTRODUCTION TO HEATING

COURSE DESCRIPTION

Most homes have some type of heating. Installing and servicing furnaces is a big responsibility. Because flame and combustible fuels are involved, there is a potential for fire or explosion types of equipment for heating shall be installed by manufactures instructions, and periodically inspected and serviced by qualified technicians, they will operate satisfactorily for many years.

WHAT YOU WILL LEARN

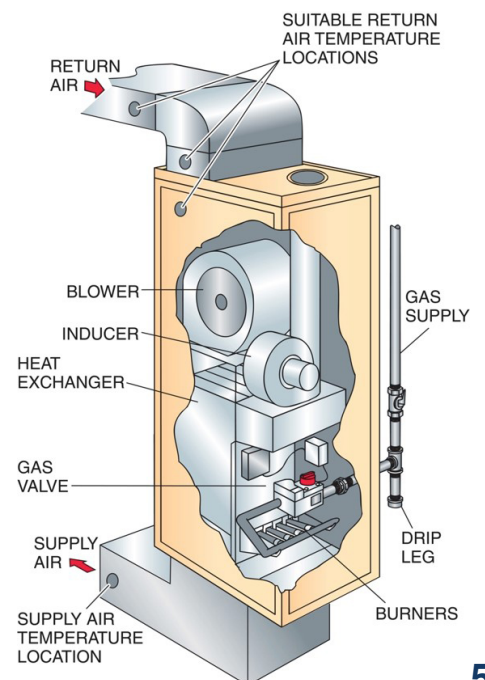
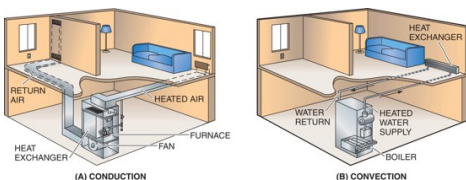
- **Explain the fundamental concepts of heating and combustion.**
 - Describe the heat transfer process.
 - Identify gas fuels and their combustion characteristics.
- **Describe the role of forced-air gas furnaces in residential heating.**
 - Describe the types of gas furnaces and how they operate.
 - Identify and describe the equipment and controls used in gas furnaces.
 - Describe the basic installation and maintenance requirements for gas furnaces.
- **Describe hydronic and electric heating systems**
 - Describe the operation of hydronic heating systems.
 - Describe the operation of electric heating equipment.
- **Describe how to troubleshoot the components related to gas heating**
 - Describe the control circuits and typical sequence of operation of various gas heating units.
 - Describe the operation & troubleshooting process for thermocouples.
 - Describe the operation & troubleshooting process of ignition devices.
 - Describe the operation & troubleshooting process for flame sensors.
 - Identify common problems associated with system airflow.

8 HOUR PROGRAM



SATURDAY

8:00 AM - 4:00 PM



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SEMINAR DETAILS

TO REGISTER FOR CLASSES PLEASE VISIT WWW.MACCNY.ORG

Attendee Pricing

- The pricing for the classes will be as follows:
- MACC Member Attendees- \$199 per class
- Non-Member Attendees- \$299 per class

Class Size

- Maximum 12 people per class. Seating is be limited so register now!

Location

- The classes will all be held at the Electrical Training Center, 65 Elm Street, Copiague, NY 11726. For directions visit www.electricaltrainingcenter.edu

Additional Details

- All attendees will receive class specific books and literature, covering the topics discussed in the class.
- Hands on training
- Continental breakfast and lunch included

SEATING IS LIMITED PLEASE REGISTER NOW



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