



...helping you to prepare for a changing industry

Practical Refrigeration Training Centre

Course Details

Service, Maintenance and Installation with Copper Brazing and Ref Handling

Introduction

A good knowledge of correct service and installation techniques will enhance plant operation and reliability. The Combined Service and installation course is aimed at technicians in the refrigeration industry to improve and update service and installation skills, coupled with an understanding of the principles of refrigeration.

The course also covers the practical skills and knowledge necessary for the City and Guilds 2079 (Category 1) and the City and Guilds 6187-21 Copper Brazing qualifications.

Basic mechanical skills are assumed for this course.

Although shown as 12 days, actual training only takes place on weekdays and the weekend in the middle is excluded.

Objective

To attain a basic understanding of the principles of refrigeration and to learn service, installation and commissioning skills including the skills and knowledge necessary to attain Pipework and Brazing and an 'F Gas' Category 1 Refrigerant Handling qualification.

Methodology

The topics will be covered with emphasis on practical work from the delegate. Basic theory will be demonstrated using a visual refrigeration unit. Theoretical work will be assisted by the use of good quality visual aids and discussion session.

Synopsis

Service and Installation Elements

- Basic refrigeration theory & environmental issues
- Single stage operation
- Maintenance & safety
- Components
- Common refrigerants
- Safe handling of refrigerants
- Basic electrics
- Fault analysis



Service and Installation Elements (Continued)

- Failed components
- Leak testing
- Refrigerant charging
- Setting/checking controls
- Expansion of basic principles including PH charts
- System installation
- Overview of system design
- Further refrigerants
- Checking, adding and removing oil
- Evacuation & dehydration
- Defrost operation
- Commissioning
- Refrigerant recovery
- Installation of energy efficiency

Copper Brazing

- Safety 1 - the safe handling and storage of gas cylinders
- Safety 2 - selecting the correct equipment and clothing, recognizing fire hazards
- Gases - properties and good working practices
- Brazing materials
- Pipe preparation and jointing equipment
- Welding methods, blowpipe pressures and welding flame conditions

Refrigerant Handling ('F Gas')

In addition to the topics already covered candidates will learn to:

- Identify units of temperature, pressure, mass, density and enthalpy, including different states of refrigerant
- Understand the Global Warming Potential of refrigerants
- Show knowledge of energy efficiency and ozone depletion including the Montreal and Kyoto Protocols
- Know the legal requirements regarding the storage and transportation of refrigerants, oils and controlled wastes
- Complete the documentation and records which need to be made and kept including a commissioning document, system log, waste documentation and risk assessment
- Ensure refrigerant traceability

