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## Practical Refrigeration Training Centre

### Course Details

## City and Guilds 2079 Category 1 or 2 with extra Theory

### Introduction

**For experienced engineers who have the required practical skills but would like some extra theory training.**

**This course is not suitable for inexperienced engineers or apprentices or anyone requiring extra practical training.**

PRTC is approved by city and Guilds to assess candidates for the City and Guilds 2079 (Categories 1 - 4) qualification. Holding a valid 'F Gas' qualification is mandatory for anyone handling F Gas refrigerants after July 2011.

Candidates will usually take category 1 (charging and recovering for systems with more than 3 kg of refrigerant in them) but category 2 (charging and recovering for systems with less than 3 kg of refrigerant in them) may also be taken. The dates are the same - please let us know which you would prefer when you book the course.

**Anyone needing extra practical training should take the 3 day course.**

### Objective

To achieve the skills and knowledge necessary to obtain the City and Guilds 2079 (F Gas) refrigerant handling qualification in the category specified.

### Methodology

On the first day a presentation/talk-through will be followed by training in specific topics as required by the candidates and practice in completing the paperwork needed.

The assessment day will comprise a practical test demonstrating the skills listed below and an 'on-line' multiple-choice question paper.



## Synopsis

### Theory - you will need to have an understanding of the following:

- Units of temperature, pressure, mass, density and enthalpy, including different states of refrigerant
- The basic theory of the vapour cycle and the use of pH diagrams
- The function of the major components, their performance and indications of leakage
- The operating conditions and efficiency of a system
- Azeotropic and non azeotropic refrigerants
- The GWP (global warming potential) of refrigerants
- Energy efficiency and ozone depletion, including the Montreal and Kyoto Protocols
- Identification of leakage points and the associated risks
- The legal requirements regarding the storage and transportation of refrigerants, oils and controlled wastes
- The documentation and records which need to be made and kept and how to complete them
- The hazards involved in handling refrigerants, oils and waste products
- The hazards involved in nitrogen pressure testing and flame brazing

### Practical - you will need to demonstrate the following practical skills:

- Be able to braze and flare pipe
- Carry out and complete nitrogen pressure test
- Carry out and complete leak test direct and indirect
- Vacuum out system using vacuum gauge
- Prove system structure is sound and leak tight
- Charge system with non azeotropic refrigerants (over 3 kg for category 1)
- Prove system efficiency
- Produce commissioning document
- Complete a system log
- Recover refrigerant
- Drain oil from a compressor
- Produce waste documentation
- Ensure refrigerant traceability

