One-Day Training Course: Installing a Refrigeration Split System for a Cold Room

Course Objective

By the end of the day, participants will be able to:
- Understand the design and operation of a split refrigeration system for cold rooms.
- Correctly install, pipe, and wire the system.
- Evacuate, charge, and commission the system safely and efficiently.
- Diagnose and prevent common installation issues.

Course Schedule

08:30 – 09:00 | Registration & Introduction

- Welcome and course overview
- Health & safety briefing (PPE, refrigerant handling, electrical safety)
- Review of system components and layout

09:00 – 10:30 | Theory Session: System Design & Principles
Topics Covered:

- Split refrigeration system types (medium vs. low temperature)
- Component overview:
- Condensing unit
- Evaporator unit
- Expansion device
- Control panel and thermostat
- System selection based on cold room size and temperature
- Pipe sizing and layout principles
- Pressure and temperature relationships
- Superheat and subcooling concepts

Learning Outcome:
Participants will understand how a split system operates and how to select and design one correctly for a cold room.

10:30 – 10:45 | Break

T: 01283 33 00 77
E: info@climacold.co.uk
W: www.climacold.co.uk

10:45 – 12:30 | Practical Session 1: System Preparation & Installation

Activities:
- Reading manufacturer data and wiring diagrams
- Setting up the condensing and evaporator units
- Mounting considerations (airflow, vibration, accessibility)
- Measuring and installing interconnecting pipework
- Brazing and leak prevention techniques
- Installation of drain lines and insulation

Learning Outcome:
Participants will be able to correctly mount and connect the main system components.

10:45 – 12:30 | Practical Session 1: System Preparation & Installation

Activities:
- Reading manufacturer data and wiring diagrams
- Setting up the condensing and evaporator units
- Mounting considerations (airflow, vibration, accessibility)
- Measuring and installing interconnecting pipework
- Brazing and leak prevention techniques
- Installation of drain lines and insulation

Learning Outcome:
Participants will be able to correctly mount and connect the main system components.

12:30 – 13:15 | Lunch

13:15 – 15:00 | Practical Session 2: Electrical & Control Wiring

Activities:
- Electrical supply requirements and protection devices
- Wiring the condensing unit, evaporator, and controls
- Thermostat and solenoid valve connections
- Control sequence for cold room operation (fan delay, defrost, etc.)
- Testing continuity and verifying correct operation

Learning Outcome:
Participants will understand and perform correct electrical and control wiring for a split refrigeration system.

15:00 – 15:15 | Break

- Checking system pressures, temperatures, and superheat/subcooling
- Setting defrost cycles and thermostat controls
- Recording commissioning data

Learning Outcome:
Participants will be able to safely install and commission a cold room split system to manufacturer standards.

15:15 – 16:30 | Practical Session 3: Evacuation, Charging & Commissioning

Activities:
- Pressure testing with nitrogen
- Deep evacuation and moisture removal
- Refrigerant charging (weigh-in and fine adjustment)
- Checking system pressures, temperatures, and superheat/subcooling
- Setting defrost cycles and thermostat controls
- Recording commissioning data

Learning Outcome:
Participants will be able to safely install and commission a cold room split system to

16:30 – 17:00 | Assessment & Wrap-Up

- Short knowledge check / quiz
- Group discussion: Common installation mistakes and troubleshooting tips
- Issuing of completion certificates

Trainee Prerequisites
Should be a qualified engineer holding F-Gas certification

Outcome
Participants leave with:
Practical skills in installing and commissioning cold room split systems
Understanding of design and control logic
Awareness of safety, environmental, and regulatory requirements