

Commercial Refrigeration Skills Trainer

39-301

Description

With over 50 years of experience in the design, manufacture and supply of high quality educational products, Feedback's range of refrigeration and air conditioning equipment provide an ideal platform for students to gain a thorough understanding of the subject by means of practical experimentation.

Feedback Instruments' Commercial Refrigeration Skills Trainer enables students to conduct practical training and experiments on a typical system whilst learning the principles of refrigeration. Utilising authentic, industry standard components it allows the student to perform fault finding and servicing using a safe and accessible system. Students can learn how to perform the safe recovery and recharging of refrigerant and use the system to practice the repair and replacement of pipework.

The unit constitutes a vapour compression refrigeration system that emulates the plant and control system of a typical small commercial chiller or walk in cold store. The unit comprises a 0.5hp condensing unit, forced air evaporator; thermostatic expansion valve and an electronic thermostat controller with natural defrost capability.

The system is protected by a filter drier and high and low pressure switches for safety and protection of the compressor. A sight glass with a moisture indicator enables monitoring of the refrigerant charge as well as alerting the user of potentially damaging moisture ingress within the circuit. The system is equipped with 100mm glycerine filled gauges indicating high and low pressure and service ports for the fitting of an industry standard manifold service gauge.

The unit is suitable for bench top mounting and can easily be transported by vehicle if required. The system incorporates a forced air evaporator situated inside a small cooling chamber which can be sealed off with a transparent cover. The control panel consists of a dual pressure HP/LP switch, electronic thermostat with digital temperature read out showing the internal temperature of the cooling chamber, 100 mm glycerine filled HP and LP gauges monitoring suction and discharge pressures, thermostatic expansion valve and a liquid line solenoid valve which allows a full system pump down when the thermostat set point is reached.



Features

- Uses industrial grade components
- Suitable for both technician training and vocational teaching
- Portable design permits on-site training
- Uses non-ozone depleting gas (R134a)
- Open frame design allows hands-on access to all areas
- Option available incorporating four simulated faults
- Available for either 110V or 230V mains supply
- Options for standard or large capacity receiver



The system can be de-gassed, stripped, re-assembled, pressure tested, evacuated and recharged. In addition, it is ideal for demonstrating the following: superheat adjustment, refrigerant handling, system under-charge/overcharge, pressure switch calibration and electrical diagnostics at mains potential.

The unit is ideally suited to vocational colleges that teach courses on the principles of refrigeration and the safe handling of refrigerant. The open frame lends itself to the student conducting fault finding exercises, making replacement pipework and the repair and replacement of components.

The student will observe the effect of the faults by monitoring changes in the cooling duty, observing changes on the digital thermometer and observing the state of the refrigerant in the sight glass. A high pressure cut-out switch also serves as a guide to the student if the condenser unit is faulty.

Comprehensive courseware is supplied to allow students to carry out a number of experiments and practical exercises to underpin the theory content and exercises.

While the unit operates at mains potential, students must be supervised when carrying out exercises on the electrical circuits. Protection is offered by a 30 mA RCCD and a 6 A MCB housed in the main control box.

The unit may be stripped down and rebuilt by the students in order to practice designing their own pipework layout and routing, or the original pipework can simply be reused. The same approach can be taken with the wiring and electrical system. This teaches the necessary skills required to install and maintain small coldrooms.

It is possible to order a version of the unit that is compatible with R404a refrigerant, in order that it satisfies compliance with regional directives.

A further product is available to meet the requirement to teach refrigerant handling only (39-303) and more details are available from your local Feedback representative.

Subject Areas

- The fundamentals of refrigeration
- The vapour compression cycle
- Basic thermodynamics
- Refrigerant handling
- Setting refrigeration controls
- Setting system superheat
- Refrigeration system fault diagnosis
- Refrigeration pipework design and manufacture
- Small commercial refrigerator electrical wiring and circuit diagnoses
- Commercial refrigeration installation, servicing and repair

Specification

Voltage: 230v 50Hz

Electrical Power Consumption: 490W Refrigerant type: R134a

Refrigerant charge: 450 grams

Duty: 880W @ 3°C

Dims: H 1500 mm, W 460 mm, L 480 mm

Weight: 45kg



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Feedback reserves the right to change these specifications without notice.