



Refrigeration & Air Conditioning Equipment

Refrigeration

The Fundamentals of Refrigeration
Commercial Refrigeration Trainers
Air Conditioning Systems
Semi-Hermetic Air Compressors
Refrigeration Controls
Automotive Air Conditioning
Chilled Water Air Conditioning Plant

More and more countries are using Air Conditioning in their offices, homes and cars. Refrigeration systems, for example, for keeping food products fresh and computer rooms operable, are now in everyday use around the world. The importance of these systems and their increasing use means that there is a growing requirement to train Engineers and Technicians on the operation and maintenance of associated products.

Feedback's wide range of refrigeration equipment cover a variety of techniques and disciplines, suitable for technicians and engineers alike. They provide a hands on approach, whilst showing the fundamentals of refrigeration principles.



This transportable, bench mounted apparatus teaches students the fundamentals of the refrigeration cycle. Using authentic, commercial grade components it allows the student to perform fault finding and servicing exercises using a safe and accessible system.

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.

Students are able to 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 comprises a 0.5 hp condensing unit,

forced air evaporator, thermostatic expansion valve and an electronic thermostat controller. Service ports for the fitting of optional manifold service gauges are provided. A basic version of this product suitable for refrigerant handling only is also available (see ordering guide).

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

Features

- Uses commercial 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
- Available for either 110 V or 230 V mains supply

39-305 SYSTEM

Air-Conditioning Trainer



Features

- Uses actual automotive components
- Suitable for both technician and vocational teaching
- Portable design
- Uses non-ozone depleting HFC refrigerant
- Enables hands-on access to all components
- Simulates four common faults
- Variable speed motor simulates car engine
- Available for either 110 V or 230 V mains connection

Feedback Instruments automotive air conditioning trainer enables students to understand the operation of a typical system whilst learning the principles of refrigeration. By using authentic components, students learn how to perform fault finding and servicing using a safe and accessible system.

The product has been designed specifically with hands-on training in mind and can also be used by students to perform the safe recovery and recharging of refrigerant. A digitally controlled electric motor simulates the vehicle engine, therefore making the unit ideal for the classroom training environment.

Complete with compressor, condenser, receiver dryer, expansion valve and evaporator, the unit is pre-installed with R134a type refrigerant. The system is furnished with high and low-side pressure service ports that facilitate connection of an optional gauge set or for the recovery and re-charging of refrigerant.

Subject Areas

- The fundamentals of refrigeration
- The vapour compression cycle
- Refrigerant handling
- Refrigeration system fault diagnosis
- Air conditioning installation, servicing and repair
- Refrigeration controls



Feedback Instruments Air Conditioning and Heat Pump Demonstrator is a genuine commercial air conditioner built onto a rigid frame for bench or floor mounting. The unit will demonstrate the principles of air conditioning, reverse cycle heat pump technology and refrigeration.

The unit comes ready to run pre-charged with environmentally friendly non-polluting R404a refrigerant. The front and top panels of the outdoor unit are sectioned, illuminated and have a transparent covering to enable observation of the internal components and electronic PCB.

Students can carry out the following exercises: system pump down, recovery of the refrigerant charge, pressure testing, evacuating and recharging. The system can also be used as a model to teach air conditioning installation considering location, mounting and electrical connection.

Subject Areas

- The fundamentals of refrigeration
- The principle of heat pumps
- The vapour compression cycle
- Refrigerant handling
- Setting refrigeration controls
- Refrigeration system fault diagnosis
- Air conditioning installation, servicing and repair

Features

- Uses commercial grade components
- Suitable for technician training
- Portable design permits on-site training
- Unit is pre-charged with non-ozone depleting refrigerant (R404a)
- Open frame design allows hands-on access to all areas
- Can be used to teach refrigerant handling skills
- Available for either 110 V or 230 V mains supply
- Teaching material supplied



39-307 Refrigeration & Air conditioning Controls Simulator

39-307 Commercial Refrigeration and Air-Conditioning Controls Skills Trainer - This trainer is an authentic, self-contained bench mounted small refrigeration system complete with thermostat, pressure controls and fans. The system teaches students how to diagnose common faults with refrigeration controls and wiring as well as how to set up and calibrate the controls correctly.

There are fifteen faults for the student to trace using a multi-meter and the provided wiring diagram. The unit is supported by manuals that explain how to trace each fault and set up the controls.

Features

- Includes complete refrigeration circuit
- Diagnosis of common faults
- Uses R134a non-ozone depleting refrigerant
- Suitable for on-site technician training
- Teaching material and digital multi-meter supplied



39-308 Hermetic Compressor Fault simulator

39-308 Hermetic Compressor Fault Simulator - Feedback Instruments' Hermetic Compressor Fault Simulator is a bench mounted unit designed to enable students and technicians to diagnose common electrical faults associated with small single-phase hermetic refrigeration compressors.

There are a total of fifteen faults that can be assigned to the unit by push

button and these can be traced by the student by following and using the multi-meter and supplied manual. The unit is charged with N2 OFN and is completely non-polluting.

Features

- Simulates common compressor faults
- Uses N2 OFN non-ozone depleting refrigerant
- Suitable for on-site technician training
- Uses commercial grade components
- Teaching material supplied
- Supplied with digital multi-meter and current clamp meter



Feedback Instruments Chilled Water Air Conditioning Skills Trainer is a complete water chiller plant consisting of water chiller, primary circuit and secondary circuit. It can be used to demonstrate the principles of chilled water systems but can also be used as a training aid in the selection of chilled water equipment and the setting up and commissioning of chilled water systems.

There is also an optional 1 Hr DVD available to support this product. The rig is supplied with a training manual that has balancing exercises for the students.

The unit is designed to fit through a pair of standard swing double doors if the cassette unit and top frame is removed. The cassette unit is coupled onto the hydronic system via two self-sealing couplers, to allow the cassette to be removed without loss of glycol in the system. The top frame is also easily removable to allow the rig to be moved through a standard double door.

The system has one fixed speed pump housed inside water chiller unit. It also has additional dummy circuits that can be used to carry out flow experiments.

Features

- Features primary and secondary circuits
- Covers principles of cold water a.c.
- Suitable for technician training
- Portable design permits on-site training
- Teaching material supplied
- Introduction to chilled water systems