

Refrigeration Training Equipment

ZM6106 General Refrigeration Trainer



I. Product overview

The training device used for further study of common refrigeration compression cycle. Condenser and evaporator fan are with eight pieces of transparent pipe and fan which speed is adjustable, it can directly observe the condensation and evaporation process of refrigerant in the system, intuitive response under the same conditions of 4 kinds of refrigerants refrigeration change under different throttling device, and through the fan speed change of the condenser and evaporator heat transfer effect, under different conditions of refrigerant refrigeration.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: 280kg
- (4) Operating condition: environment temperature 10°C~30°C, relative humidity <75% (25°C)

Supplied with:

English General Refrigeration Manual, English Experimental Handbook

ZM6107 Computerized General Refrigeration Trainer



I. Product overview: This training equipment is designed to study computerized general refrigerating compression cycle. There are 8 transparent pipes and draught fan with adjustable speed in condenser and evaporator, it can observe condensing and evaporating process of refrigerant directly in system, it directly reflects refrigerating variation of refrigerant in 4 different throttling devices under same working condition, and it directly reflects refrigerating variation of refrigerant under different working conditions when changing heat transfer effect of condenser and evaporator by adjusting speed of draught fan. All parameters and control can be read and controlled by computer.

I. Product overview

This training equipment is designed to study computerized general refrigerating compression cycle. There are 8 transparent pipes and draught fan with adjustable speed in condenser and evaporator, it can observe condensing and evaporating process of refrigerant directly in system, it directly reflects refrigerating variation of refrigerant in 4 different throttling devices under same working condition, and it directly reflects refrigerating variation of refrigerant under different working conditions when changing heat transfer effect of condenser and evaporator by adjusting speed of draught fan.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V±10%, 50Hz, (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: 100kg, (4) Operating condition: environment temperature 10℃~30℃, relative humidity < 75% (25℃)

Supplied with: English General Refrigeration Manual English Experimental Handbook

ZM6108 Domestic Refrigeration Trainer



I. Product overview

This trainer is designed to study domestic refrigeration compression circulation. To study and analyze domestic refrigerating thermo-motive circulation, i.e. refrigeration effect under environment lack of heat exchange, natural condensation and evaporation. All parameters can be read by computer.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. Compressor is with start protector. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: 80kg
- (4) Operating condition: environment temperature 10℃~30℃, relative humidity <75% (25℃)

Supplied with:

General Refrigeration Manual
Experimental handbook



ZM6109 Industrial Refrigeration Trainer



I. Product overview

This trainer is designed to study industrial refrigeration, its main objective is to control temperature and relative humidity of one or more refrigerating chamber. if so, one specific compressor and one specific condenser are used for 2 different refrigerating chambers, one is for freezing, one is for refreshment. This trainer can be also used to identify and analyze behavior of key parts in all circulations. User's

attention should be on key problem, regarding valve balance and conditions against external and internal load to keep working pressure constant.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1800mm \times 800mm \times 1800mm
- (3) Weight: <100kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

General Refrigeration Manual
Experimental Handbook

ZM6110 Computerized Industrial Refrigeration Trainer



I. Product overview

This trainer is designed to study industrial refrigeration, its main objective is to control temperature and relative humidity of one or more refrigerating chamber. if so, one specific compressor and one specific condenser are used for 2 different refrigerating chambers, one is for freezing, one is for refreshment. This training equipment simplify data acquisition process, using proper sensor and processor to show experiment data on computer.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1800mm \times 800mm \times 1800mm
- (3) Weight: <100kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

General Refrigeration Manual
Experimental Handbook



ZM6111 Positive Temperature Room



I. Product Overview

This training equipment designed positive temperature room refrigeration to realize educational and training goal , it contains all industrial refrigeration system required components, including the heating for freezer door, temperature control evaporator automatic heating and defrost, electric heating to simulate indoor temperature change.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: 100kg
- (4) Operating condition: environment temperature 10℃~30℃, relative humidity <75% (25℃)

Supplied with:

General Refrigeration Manual
English Experimental Handbook

ZM6112 Negative Temperature Room



I. Product overview

This training equipment is designed for achieving educational goal for negative temperature room, refrigeration, contains various industrial components, including freezer door heating, temperature, controller evaporator automatically heating and defrosting, a electric heat simulation temperature, room temperature change.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the

strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: 100kg
- (4) Operating condition: environment temperature 10℃~30℃, relative humidity <75% (25℃)

Supplied with:

General Refrigeration Manual
Experimental Handbook

ZM6113 Trainer for the Study of A commercial Multiple Evaporator Refrigerator



I. Product Overview

This trainer is used for achieving teaching purpose, students need 2 piece of evaporator, 1 piece of compressor, 1 piece of condenser, and learn the basic operation and working principle of commercial bridge.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1800mm \times 800mm \times 1800mm
- (3) Weight: 200kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

English General Refrigeration Manual
English Experimental Handbook

ZM6114 Domestic Refrigerator (Two door)



I. Product Overview

This training equipment is designed to make students understand basic structure and working principle of domestic 2-door refrigerator, and learn operation method of domestic refrigerator.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1400mm \times 800mm \times 1800mm
- (3) Weight: 200kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

English General Refrigeration Manual
English Experimental Handbook

ZM6115 Deep- Freezing Trainer



I. Product Overview

This trainer is designed to study deep refrigeration which is improvement of refrigeration technique, this system including 2 different heat exchange systems, natural convective heat exchange and forced convective heat exchange.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1800mm \times 800mm \times 1800mm
- (3) Weight: 220kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

English General Refrigeration Manual

English Theoretical Experimental Handbook

ZM6116 Lyophilization Trainer



I. Product overview

This trainer is used for study the process of lyophilization, lyophilization is the method of freezing material which contains water to solidity, then under the condition of vacuum and heating, subliming water from solidity to gas state directly, remove water in this way, and preserve material. This training equipment simplify data collection process, through proper sensor and processor, display data on computer.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

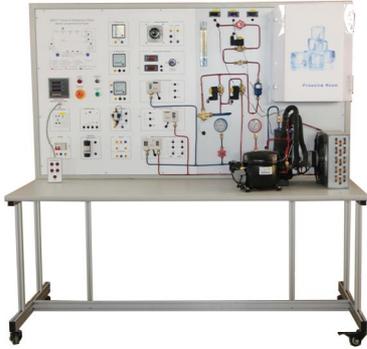
- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1400mm \times 800mm \times 1800mm
- (3) Weight: <220kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

English General Refrigeration Manual

English Theoretical Experimental Handbook

ZM6117 Trainer for Refrigeration



I. Product overview

This trainer design hydraulic circuit, enable students to analysis refrigerator system electronics components feature and reliability, and can simulate main fault in refrigerate cycle circuit.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters

on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1800mm \times 800mm \times 1800mm
- (3) Weight: <260kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

English General Refrigeration Manual theoretical
English Experimental Handbook

ZM6118 Computerized Trainer for studying the Hermetic Compressor



I. Product overview

The training device is designed for teaching and research, its main purpose is used to study the characteristics of hermetic compressor, data acquisition method, using suitable instruments, sensors to collect data, and analysis the characteristics of the compressor according to the experimental data.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure

the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. Refrigeration cycle is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: <320kg
- (4) Operating condition: environment temperature 10℃~30℃, relative humidity <75% (25℃)

Supplied with:

- General Refrigeration Manual
- English Experimental Handbook

ZM6119 Trainer for the Study of the open Type compressor



I. Product overview

The training device is designed to achieve the teaching purpose, make the student to understand the feature of open compressor, the specific operation and the working principle of an open compressor.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal

casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1400mm \times 800mm \times 1800mm
- (3) Weight: <320kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

- English General Refrigeration manual
- English Experimental Manual

ZM6120 Trainer for the study of the semi - hermetic Compressor



I. Product overview

The training device is used for the study of semi-hermetic compressor running features, students can understand the appearance of the open type compressor through the training device, operation mode, the refrigeration effect, etc. Semi-hermetic compressor is controlled by inverter, compressor rotation speed can be adjusted. It's suitable for skill appraisal, evaluation work, higher vocational colleges, vocational schools cooling technology, and household refrigeration equipment principle and maintenance and refrigeration equipment repair and so on teaching practice.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

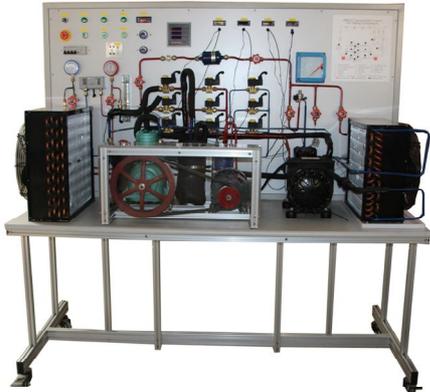
III. Technical data

- (1) Input power: Three phases five wires AC380V±10%, 50Hz
- (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: <300kg
- (4) Operating condition: environment temperature 10°C~30°C, relative humidity <75% (25°C)

Supplied with:

English General Refrigeration manual
English Experimental Manual

ZM6121 Computerized Trainer for Testing Compressors



I. Product overview

The training device includes closed type, semi-closed type and open type three types of refrigeration compressor, it is used for study to contrast three kinds of compressor running characteristics, and students can understand through this training device, comparing the three kinds compressor appearance, operation mode, the refrigeration effect, etc. Through the use of appropriate sensor, measurement data can be uploaded to the PC, PC monitoring system

can real-time display the important data in the process of refrigeration cycle, and can pass the PC monitoring system to realize control of the refrigeration cycle. Suitable for skill appraisal, evaluation work, higher vocational colleges, vocational schools cooling technology, and household refrigeration equipment principle and maintenance and refrigeration equipment repair and so on teaching practice.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

(1) Input power: Three phases five wires AC380V \pm 10%, 50Hz, (2) Overall dimension: 1400mm \times 800mm \times 1800mm, (3) Weight: <300kg, (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

English General Refrigeration manual

English Experimental Manual

ZM6122 Ice Maker Trainer



I. Product overview

This training equipment is designed to study application of refrigeration system on ice maker, ice making process is controlled automatically by computer board, it has 2 options of ice making mode, you can observe ice making process through transparent panel, all parameter and control can be read by computer.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: <300kg
- (4) Operating conditions: environment temperature 10℃~30℃, relative humidity<75% (25℃)

Supplied with:

English General refrigeration manual
English Experimental handbook

ZM6123 Absorption Refrigeration Trainer



I. Product overview

The training device is designed to study the principle of absorption refrigeration. Absorption chillers are different from distinct reciprocating and centrifugal chillers; they do not have movement of the prime mover. At present, there are two kinds of absorption chillers, namely ammonia-water absorption and lithium bromide-water absorption. The device uses the ammonia-water absorption refrigerating machine.

II. Product feature

The training bench takes an aluminum frame structure, which is concise and fast. It is not only light but also ensures the strength of the equipment. It is equipped with four universal casters on its bottom, which is easy to move. Traditional ammonia-water absorption chillers use gas as power, but gas has the characteristics of being flammable and explosive. This device adopts AC 220V as the power supply, ensuring safe environmental protection. Supply software can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc., which can be displayed on a PC in real time and can print reports.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1800mm×800mm×1800mm
- (3) Weight: <200kg
- (4) Operating condition: environment temperature 10°C~30°C, relative humidity <75% (25°C)

Supplied with:

- English General Refrigeration manual
- English Experimental Manual



Should Shine

Jinan Should Shine Import And Export Co., Ltd.

ZM6124 General Air Conditioning Trainer



I Introduction

This trainer is designed for an exhaustive study of the thermodynamic transformations the air undergoes when crossing the various stages of a modern air conditioning unit that serves a room where temperature and relative humidity must be checked.

Measuring air temperature and humidity in different points enables to analyze air cooling, heating, humidification, dehumidification.

Moreover some simulators of room and outdoor temperature and of room humidity are included to verify the logic of control system in all the conditions that can occur in an air handling unit.

Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1800mm \times 800mm \times 1800mm
- (3) Weight: <320kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

- English General refrigeration manual
- English Theoretical-Experimental handbook

ZM6125 Computerized Air Conditioning Trainer



I Introduction

This trainer is designed for studying of the thermodynamic transformations the air undergoes when crossing the various stages of a modern air conditioning unit that serves a room where temperature and relative humidity must be checked. Measuring air temperature and humidity in different points enables to analyze air cooling, heating, humidification, dehumidification. Moreover some simulators of room and outdoor temperature and of room humidity are included to verify the logic of control system in all the conditions

that can occur in an air handling unit. The equipment is also provided with sensible and latent heat generators installed in the test room that can be used to vary the thermal load in the same room and to check the response of the control system. The controller includes the functions of calibration and control, it enables students to energy to enter the points of control system, such as set points, measurement values, etc... via a PC (demand), so that any alarm along the circuit can be detected and a different management of the system can be programmed. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

II Training Program

Using the psychrometric chart to study the transformations the air undergoes in the different sections of and air handling unit, that is: sensible heating, steam humidification, cooling and dehumidification. Assessing the heat balances corresponding to the different sections of the air handling unit Analyzing the operation of temperature and humidity controllers for AHU, Direct and reverse acting proportional control, ON/OFF step control, Dampers temperature control, Checking the behaviour of control system versus thermal loads

III. Technical data

- (1) Input power: 220V±10%, 50Hz, (2) Overall dimension: 1800mm×800mm×1800mm
- (3) Weight: <320kg,(4) Operating condition: environment temperature 10°C~30°C, relative humidity < 75% (25°C)

Supplied with:

- English General refrigeration manual
- English Theoretical-experimental handbook

ZM6126 Domestic Air Conditioning Trainer



I Introduction

This trainer has been designed specifically for educational aims so that students can delve into the hydraulic mechanical and thermodynamic aspects characterizing split-type air-conditioning systems. Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

II Training Program

Plant starting and safety devices intervention checking

Studying the operation of a split-type air conditioner

Operation in cooling and dehumidification mode

Modulating control

Examining the system behaviour versus the variation of

- Operation mode

- Set-point temperature

Plotting the refrigeration cycle on refrigerant pressure-enthalpy diagram

Data acquisition and calculation of:

Heat balances corresponding to evaporator, condenser, compressor

Volumetric compressor efficiency

Heat balances on air side

III. Technical data

(1) Input power: 220V±10%, 50Hz

(2) Overall dimension: 1800mm×800mm×1800mm

(3) Weight: <280kg

(4) Operating condition: environment temperature 10°C~30°C, relative humidity <75% (25°C)

Supplied with:

English General air-conditioning manual

English Experimental handbook

ZM6127 Domestic Air Conditioning Trainer with Inverter



I Introduction

This trainer has been designed specifically for educational aims so that students can delve into the hydraulic, mechanical and thermodynamic aspects characterizing split-type air-conditioning system equipped with inverter. Moreover it shows how energy can be saved considerably by the modulation of compressor r.p.m. It also includes manual fault setting.

Supply software which can monitor voltage, current, frequency, power, power factor, pressure, temperature, etc, they can be displayed on PC in real time, and can print report.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1800mm \times 800mm \times 1800mm
- (3) Weight: <200kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

- English general air-conditioner manual
- English experimental hand book

ZM6128 Air-Conditioning Trainer With Heat Pump



I. Product overview

This trainer is used to study the practical device and working principle of the heat pump air conditioning system operation, in-depth study in a heat pump system, four-way reversing valve and the operation of other components. Research among media use liquid (water) from the production site to the transmission process of using the target.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move.

The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish.

The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1800mm \times 800mm \times 1800mm
- (3) Weight: 100kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

English General air-conditioning manual

English Experimental handbook



Should Shine

Jinan Should Shine Import And Export Co., Ltd.

ZM6129 Computerized Heat Pump Trainer



I. Product overview

This trainer is designed to study principle and operation of air conditioning system with heat pump, in-depth study operation of four-way reversing valve and other parts in heat pump system, to study transport process of intermedia liquid (water) from production field to use objective. It can conduct data collection by using proper instrument, sensor and son on, and analysis character of heat pump air conditioner according to experiment data.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move.

The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish.

The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1800mm×800mm×1800mm
- (3) Weight: 100kg
- (4) Operating condition: environment temperature 10°C~30°C, relative humidity <75% (25°C)

Supplied with:

English General air-conditioning manual

English Experimental handbook

ZM6130 Trainer For The Study Of A Chiller



I. Product overview

This trainer is designed to study heat exchange system of a plate heat exchange device, in-depth study working principle and character of plate heat exchanger. It is to train and master professional theory and practical skill of air conditioning and refrigerating technology, to train technical upgrading technology, reformation design, installation, debugging, maintenance, repair, technical management on air conditioning and refrigerating equipment. This training equipment simplify data acquisition process, using proper sensor and processor to show experiment data on computer.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move.

The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish.

The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal.

III. Technical data

- (1) Input power: 220V±10%, 50Hz
- (2) Overall dimension: 1800mm×800mm×1800mm
- (3) Weight: 100kg
- (4) Operating condition: environment temperature 10°C~30°C, relative humidity <75% (25°C)

Supplied with:

- English General air-conditioning manual
- English Experimental handbook

ZM6131 Automotive Air-Conditioning Trainer



I. Product overview

This trainer can describe vapour compression circulation, and also all questions in automobile air conditioner, due to this circulation in automobile needs to overcome a lot of adverse factor and variable mechanical energy caused by high temperature, movement and vibration. We can get familiar with composition, running characters and electrical connections of automobile air conditioner.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. Car refrigerating compressor, drive motor, condenser and other parts are installed on base of bench, measuring instrument, evaporator control unit and other parts are installed on top of bench or training panel, it is painted with different color on high and low temperature area, which is for easy observation and distinguish.

The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal.

III. Technical data

- (1) Input power: 380V \pm 10%, 50Hz, single phases, five wire
- (2) Overall dimension: 1800mm \times 800mm \times 1400mm
- (3) Weight: <200kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

- English General air-conditioning manual
- English Experimental handbook



Should Shine

Jinan Should Shine Import And Export Co., Ltd.

ZM6132 Trainer For Water Condensing Units



I. Product overview

This trainer is designed to study working principle and operation of heat pump air conditioning system with cooling tower, in-depth study working principle and usage of cooling tower. It can conduct data acquisition by proper instrument and sensor, and it can analysis character of heat pump air conditioner with cooling tower according to experiment data.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal.

III. Technical data

(1) Input power: 220V±10%, 50Hz, (2) Overall dimension: 1800mm×800mm×1800mm

(3) Weight: 100kg, (4) Operating condition: environment temperature 10℃~30℃, relative humidity < 75% (25℃)

Supplied with:

English General air-conditioning manual

English Experimental handbook



ShouldShine

Jinan Should Shine Import And Export Co., Ltd.

ZM6133 Aeraulic Networks Balance Study Module



I Introduction

Among the ventilation, thermo ventilation, air conditioning installations, the verifications of a correct aeraulic network balance is an essential condition to avoid vane efforts of a correct design.

The module, properly designed for educational purposes, allows the study of a duct network balance with field evaluation of parameters such as the static pressure and the air speed in correspondence of different points of the circuit.

The student will be able to deepen the knowledge on the problems related with the air with the pressure losses.

II Training Program

Study of the components of a ventilation system: fan exhaust grilles, ducts, calibration dampers, supply grilles, etc.

Connection of the different installation components and verification of the system functionality

Field measurements of the static, dynamic and total pressure and of the air speed in different points of the air circuit

Localized and distributed pressure losses

The loss coefficients

Dampers calibration to respect the prescribed values of the room air flow

Spare parts

English user manual

ZM6134 Computerized Trainer on Thermodynamic Cycle of Compressed Air



I. Product overview

This trainer is designed to study character of a 2-step air compressor, observe and study character of compressed air, when running, it needs to be connected with ZM6135 compressed-air dehumidification trainer at the same time to make sure air in storage tank is available compressed air which is dry and clean. This training equipment simplify data acquisition process, using proper

sensor and processor to show experiment data on computer and achieve control of computer on trainer.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The air compressor and motor are integrated on bench, structure is compact, one outlet of 2-step compressed air can measure temperature, pressure and humidity at the same time, which is convenient for student to observe and record. The equipment is fitted with good safety protection system. Outlet of 2-step compressed air is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal.

III. Technical data

- (1) Input power supply: 380V±10%, 50Hz
- (2) Overall dimension: 1400mm×800mm×1800mm
- (3) Weight: 110kg
- (4) Operating condition: environment temperature 10°C~30°C, RH <75% (25°C)

Spare parts

- English product manual
- English user manual

ZM6135 Compressed-Air Dehumidification Trainer



I. Product overview

This trainer is designed to conduct cooling and dehumidification on compressed air, cooling compressed air to required dew point temperature, and make inside vapour water into liquid water, and then using gas-water separator to separate out liquid water, finally obtain dry compressed air. This equipment takes typically general refrigeration circulation principle, using water as medium, filter water in compressed air. This training equipment simplify data acquisition process, using proper sensor and processor to show experiment data on computer.

II. Product feature

The training bench takes aluminum frame structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move.

The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish.

The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor can stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal.

III. Technical data

- (1) Input power: 220V \pm 10%, 50Hz
- (2) Overall dimension: 1400mm \times 800mm \times 1800mm
- (3) Weight: 110kg
- (4) Operating condition: environment temperature 10 $^{\circ}$ C \sim 30 $^{\circ}$ C, relative humidity <75% (25 $^{\circ}$ C)

Supplied with:

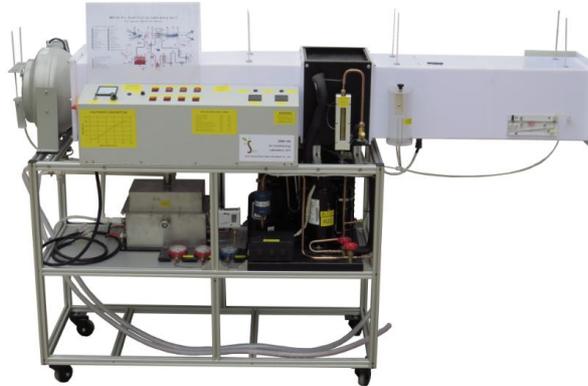
- English Experimental handbook
- English product instruction manual



Should Shine

Jinan Should Shine Import And Export Co., Ltd.

ZM6136 Recirculating Air Conditioning Trainer With Data Acquisition System



The system should be mounted on a movable bench with all refrigeration components clearly visible and controls are within easy access. Supply air is moved through a air ventilation duct which are made from polypropylene (PP) ducting covered with acrylic panels (plexiglass) to facilitate observations of the air condition in several monitoring points along the duct. All materials are corrosion resistant including all fasteners are stainless steel, industrial fan with plastic housing, and the humidification tank is made from stainless steel. The explanation of monitoring points in the ventilation duct and system electrical circuit are displayed on a colorful printed diagram for easy reference. Refrigeration lines are color coded to indicate the state of the refrigerant. Control panel with instrumentation including Line Voltage, Ampere (Total Current), Watt meter and Temperature and Humidity display panel meters are provided as a standard to control the trainer and to facilitate measurements. The unit comes with instruction manual and student job sheets.

Configurations:

Trainer with Air Cooled Condensing unit and refrigerant to air heat exchanger (evaporator). This is the standard and the most basic configuration in RAD-RAC series trainers that represents air conditioning and ventilation system using commercial package unit or direct cooling with refrigerant to air heat exchanger.

Supplied with Training manual to be provided during the bidding process to ensure all experiments are met.

Supplied with:

English Experimental handbook

English product instruction manual

ZM6149 Air Conditioning Teaching Unit



I. Product overview

The training device used for further study of common refrigeration compression cycle. Condenser and evaporator fan are with eight pieces of transparent pipe and fan which speed is adjustable, it can directly observe the condensation and evaporation process of refrigerant in the system, intuitive response under the same conditions of 4 kinds of refrigerants refrigeration change under different throttling device, and through the fan speed change of the condenser and evaporator heat transfer effect, under different conditions of refrigerant refrigeration.

II. Product feature

The training bench takes aluminum frame with cabinet structure, it is concise and fastness, it is not only to lighten the equipment, but also ensure the strength of equipment, it is equipped with 4 universal casters on its bottom, which is easy to move. The refrigeration circulation pipeline is laid on installation panel, it is painted with different colors on high and low temperature area, which is easy for observation and distinguish. The equipment is fitted with good safety protection system. It is equipped with high-low pressure protection switch in refrigerating cycle, when system pressure is abnormal, the compressor must stop work immediately to protect compressor and system. It is equipped with earth leakage circuit breaker, emergency stop and reliable ground protection in electrical circuit, which is to ensure safety of equipment and personal.

III. Technical data

- (1) Input power: 220V±10%, 50Hz, (2) Overall dimension: 1600mm×800mm×1800mm, (3) Weight: 100kg
- (4) Operating condition: environment temperature 10℃~30℃, relative humidity <75% (25℃)
- (5) Refrigerant: R134a

Supplied with:

- English Experimental handbook
- English product instruction manual



SS6101C Refrigerator Model Training System



1 Product overview

1.1 Overview

Refrigerator refrigeration is used to elevate the low pressure gas to high pressure gas through the compressor. It suction low temperature low pressure refrigerant gas, through the motor run a piston to compress, to exhaust high temperature and high pressure refrigerant gas through exhaust pipes, provide power for refrigeration cycle. So as to realize compression→condensing (heat release) →expansion→evaporation (suction heat) refrigerant cycle.

The training equipment through the relevant experiment, enable students be familiar with the principle and control mode of the refrigerator, trains the student to the corresponding knowledge and skills, suits, higher vocational colleges, secondary vocational schools and vocational school related professional teaching and skills training examination.

1.2 Features:

(1) The refrigerator's practical training device adopts aluminum profile frame structure, with light weight and universal wheel at the bottom, which can be moved flexibly, with firm structure and beautiful appearance. The practical training elements are installed on the panel, easy to use and not easy to damage

(2) the training platform has a good safety protection system.

2 performance parameters:

(1) input power: AC220V/50Hz.

(2) external dimensions: 510mm×460mm×1700mm

(3) machine capacity: < 1KVA

(4) weight: < 50kg.

(5) working conditions: temperature - 10 °C ~ + 40 °C

relative humidity < 85% (25 °C)

Basic knowledge of electric control circuit system of refrigerator.

A qualified, fully functional refrigerators should have four functions: refrigeration, heat preservation, temperature control and the frost, electric control system's mission is to guarantee the compressor normal start and protection; Realize the control of temperature in the box; Implement frost and lighting.

Supplied with: English Experimental handbook English product instruction manual

SS6102C Compressor Training System



1 Product overview

1.1 Profile

Compressor is a kind of moving fluid machinery which elevates low pressure gas to high pressure gas, and is the heart of refrigeration system. It from the suction suction low temperature low pressure refrigerant gas, through the motor run a piston to compress, the exhaust pipes of high temperature and high pressure refrigerant gas, provide power for refrigeration cycle. So you can realize compression→condensing(heat release)→expansion→evaporation (absorption of heat) refrigeration cycle. The training device through the relevant experiment, can be familiar with the use of the compressor, master the principle and control mode, the corresponding knowledge and skills, suits, higher vocational colleges, secondary vocational schools and vocational school related professional teaching and skills training examination.

1.2 Feature

(1) Compressor training system adopts aluminum profile frame structure with light weight, strong structure and beautiful appearance. The practical training elements are installed on the panel, easy to use and not easy to damage.

(2) Compressor training system has a good safety protection system.

2 Capacity

(1) input power: AC220V/50Hz.

(2) external dimensions: 670mm×340mm×650mm

(3) machine capacity: < 1KVA.



(4) weight: < 50kg.

(5) working conditions: temperature - 10 °C ~ + 40 °C

relative humidity < 85% (25 °C)+40°C

3 Product composition

3.1 Compressor

Use the refrigerator special piston compressor L72CZ1.

Note: the compressor should not be tilted or inverted while storing the transportation or installation, while avoiding impact.

The compressor work with horizontal tilt is not more than 5 °.

The compressor is filled with the best amount of special frozen oil, and shall not be poured or added at will.

In order to ensure the system balance, the operation time of the compressor shall not be less than 4 minutes.

The compressor can't be operated under high pressure or under vacuum condition.

Compressor working environment temperature not higher than 43 °C.

3.2 Holder

Aluminum material profile support, light weight, strong structure, beautiful and generous.

3.3 Control panel configuration

(1) AC220V power supply safety output terminal is controlled by the leakage circuit breaker.

(2) Equip with start indicator light and the start button.

(3) Equip with the heavy hammer starter (electric current starter), PTC thermistor starter, overload protector, start capacitor, and run capacitance.

Supplied with:

English Experimental handbook

English product instruction manual



ShouldShine

Jinan Should Shine Import And Export Co., Ltd.

SS6103C Refrigeration Cycle and Heat Pump Trainer



I.Product overview

The practical training device is used to study the operating principle and operation of the refrigeration heating and circulation system, and to study the operation of the four-way reversing valve and other components in the refrigeration heating system. The study uses intermediate media fluid (water) from the production site to the target transmission process.

II.Feature

Training platform adopts aluminum chassis frame type structure, the structure is simple and firm, in reducing the overall weight at the same time to ensure that the equipment of the overall strength, installed at the bottom of the four universal wheel, can be convenient to move.

The refrigeration circulation line is installed on the equipment installation board. The high and low temperature area is painted with different colors to facilitate the observation and differentiation.

The equipment has a good safety protection system. The refrigeration cycle is equipped with a high and low pressure protection switch, which can stop compressor work immediately when the system pressure is abnormal, and protect compressor and system safety. The electrical circuit is equipped with leakage protection switch, reliable grounding protection measures to ensure equipment and personal safety.

III.Technical specifications

- (1) input power: 220V plus or minus 10% 50Hz.
- (2) external dimensions: 1400mm * 800mm * 1680mm.
- (3) weight: <100kg.
- (4) working conditions: temperature 10 °C ~ 30 °C relative humidity < 75% (25 °C)
- (5) refrigerant: R134a.

Supplied with:

- English Experimental handbook
- English product instruction manual



Should Shine

Jinan Should Shine Import And Export Co., Ltd.

SS6104C Air Conditioner Training System

1 Product overview



1.1 Profile

Window air-conditioner is the whole of the indoor and outdoor machine is an organic whole to plastic, air-cooled air conditioner, can be directly mounted on the room reserved air hole (hole) or windowsill, installation (migration) convenient and cheap, applicable to a small area of the room (below 30 squared). Because there are fresh air inlet window air-

refrigerant line adopts the method of welding connection, the refrigerant is difficult to leak, the machine performance is good, and was deeply loved by consumers. The weakness of the window type air conditioner is the noise level air conditioner. With the development of science and technology, the noise of new window air conditioners has been greatly reduced. The training device through the relevant experiment, can be familiar with the principle and control mode of window type air conditioner, trains the student to the corresponding knowledge and skills, suits, higher vocational colleges, secondary vocational schools and vocational school related professional teaching and skills training examination.

1.2 Feature

(1) The practical training device of window air conditioner is made of aluminum profile frame structure with light weight and universal wheel at the bottom. It can be moved flexibly, with firm structure and beautiful appearance. Panel surface to simulate the installation position of condenser and evaporator, and installed in the in and out of the end of the evaporator and condenser are depending on the liquid mirror, conditions for convenient observation of refrigerant in different locations, convenient observation and research. (2) The training platform has a good safety protection system.

2 Capacity parameter

(1) Input power: AC220V/50Hz. (2) External dimension: 1110mm * 1110mm * 1620mm. (3) Machine capacity: < 1KVA. (4) Weight: < 150kg. (5) Working conditions: temperature - 10 °C ~ + 40 °C relative humidity < 85% (25 °C)

Supplied with:

English Experimental handbook

English product instruction manual

SS6105C Single Split Type Cooling/Heating Air Conditioner Training System



I.Product Overview

The operation of the system is based on a real split air conditioner, including an indoor unit and an outdoor unit. The installation is on the same bracket, which will help the students to further understand the indoor and outdoor conditions of each unit to cooperate with each other to understand the refrigerant path in its cycle. The practical training device is used to study the study and operation of a home air conditioner and its thermodynamic characteristics.

II.Equipent feature

2.1 training platform adopts aluminum structure, the structure is simple and firm, in reducing the overall weight at the same time to ensure that the equipment's overall strength, installed at the bottom of the have four wheels, can be convenient to move. 2.2 four valves are installed on the front panel, allowing students to easily install the connecting piping (gas pipe and liquid pipe) between the indoor and outdoor Spaces. 2.3 provide the voltmeter and ammeter on the front panel to monitor the real-time system power supply. 2.4 provide high and low pressure pressure gauges on the front panel to monitor the inlet and outlet pressure of the compressor. 2.5 students can use the built-in instrumentation to record the experimental data, further draw the humidity chart and Mollier diagram to understand the performance of the air conditioner. 2.6 the equipment has a good safety protection system.

III. Equipment composition

3.1 the high voltage end of TE compressor; TO compressor low pressure end; The end of TC condenser; TS evaporator inlet; TD evaporator out end.

3.2 indoor and outdoor terminals.

3.3 the enthalpy diagram is clearly printed on the front panel for quick reference.

3.4 high and low pressure gauges to monitor the inlet and outlet pressure of the compressor.

3.5 AC voltmeter; AC ammeter, monitor real-time system power supply.

3.6 Outdoor machine

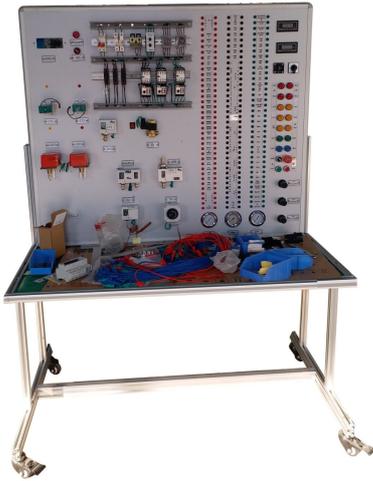
3.7 Inndor machine



Supplied with:

English Experimental handbook English product instruction manual

SS6106C Chilled Water Refrigeration Trainer



I.Product overview

The training device is used to study the refrigeration system and compressor (using three phase asynchronous motor) instead of compressor working principle and operation of the system, and in-depth study of various components in the refrigeration system operation. The refrigeration device and the motor system can be used and adjusted independently, so that learners can have a clearer understanding of the function of each component.

II.Equipment feature

1. Practice using aluminum chassis frame type structure, the structure is simple and firm, in reducing the overall weight at the same time to ensure that the equipment of the overall strength, installed at the bottom of the four universal wheel, can be convenient to move.
2. The control elements commonly used in the chiller are installed on the panel for easy learning.
3. Three-phase motor replaces compressor. Learners can do hands-on exercises step by step.
4. Start with interlocking circuit, motor start and forward and reverse control circuit.
5. The pressure elements used are triggered by direct steam pressure, so the system can be close to real pressure.
6. The input steam pressure can be divided into three types: low pressure, high pressure and oil pressure. Use and adjust alone, so that learners have a clearer understanding of the function of each component.
7. This training device is connected to the panel terminals by connecting terminals of all devices.

III.Technical data

- (1) input power: 380V, three phases. Five wires $\pm 10\%$, 50Hz.
- (2) external dimension: 1600mm * 700mm * 1900mm.
- (3) weight: <320kg.
- (4) working conditions: temperature 10 °C ~ 30 °C relative humidity < 75% (25 °C)

Supplied with:



ShouldShine

Jinan Should Shine Import And Export Co., Ltd.

English Experimental handbook

English product instruction manual

SR2022 Energy Efficiency in Refrigeration Systems



I. Learning Objectives / Experiments

- Variables affecting energy efficiency, * controller parameters, * refrigerant super cooling, - Interconnected operation of compressors, - Operation of a multi compressor controller, - Methods for returning oil in a multi compressor refrigeration system, - Representation of the thermodynamic cycle in the log p-h diagram

II. Specification

[1] Refrigeration system in multi compressor operation to investigate energy efficiency, [2] Refrigeration circuit with 3 compressors connected in parallel, condenser, thermostatic expansion valve and coaxial coil heat exchanger as evaporator, [3] Heat exchanger for refrigerant super cooling can be added via valves, [4] Glycol-water circuit includes pump and tank with heater serving as cooling load at the evaporator, [5] Multi compressor controller for the parallel operation of the compressors, [6] Separation of oil from the refrigerant on the delivery side and return to the intake side of the compressors, [7] Fan at the condenser with adjustable speed, [8] LabVIEW software for data acquisition via USB under Windows XP or Windows Vista, [9] Refrigerant R134a, CFC-free

III. Components consist of

3 compressors, - refrigeration capacity: each 1584W at -10°C/55°C, - power consumption: each 1156W at -10°C/55°C, Condenser with fan, - capacity: 4100W, - air flow: 1250m³/h, Coaxial coil heat exchanger capacity, - 4kW at ΔT=9K; 0,6m³/h glycol-water mixture, Glycol-water mixture pump, - max. flow rate: 5m³/h, - max. head: 6m, Heater power: 3kW, Tank- glycol-water mixture: 23L - refrigeration circuit receiver: 5,8L, Measuring ranges, - temperature: 4x 0...100°C, 4x -100°C...100°C, - pressure: 1x -1...9bar, 1x -1...24bar, - flow rate: 1x 1..25L/min, - compressor power: 0...4995W, Dimensions and Weight: l x w x h: 1800x700x1900mm, Weight: approx. 300kg, Connections: 400V, 50/60Hz, 3 phases

IV. Technical specifications

- (1) Input power: 380V±10% 50Hz
- (2) Dimensions: 1800mm × 850mm × 1900mm, (3) Weight: <300kg
- (4) Working conditions: ambient temperature 10 ° C ~ 30 ° C Relative humidity <75% (25 ° C)
- (5) Refrigerant: R134a

ZM6301 Refrigeration Failures Didactic Bench



I.Product overview

The training device was used to simulate failures in 30 typical refrigeration equipment. All faults are operated by setting up different refrigeration lines and convenient switching buttons. Various safety protection measures ensure that the equipment will not cause irreversible damage under the premise of failure.

II.Equipment feature

The training platform adopts integrated sheet metal spray molding, the structure is simple and firm, all

the pipelines are laid on the front panel reasonably and have an intuitive schematic introduction. The bottom is equipped with four universal wheels, which can be easily moved.

The five fault-simulated solenoid valves provided can be combined with enough faults, and only the required solenoid valves can be opened and closed to form various faults. The equipment has a good safety protection system. The high and low pressure protection switch is installed in the refrigeration cycle. When the system pressure is abnormal, the compressor can be stopped immediately to protect the compressor and the system. The electric circuit is equipped with a leakage protection switch and reliable grounding protection measures to ensure equipment and personal safety.

III.Technical specifications

- (1) Input power: 220V±10% 50Hz
- (2) Dimensions: 1800mm × 750mm × 1800mm
- (3) Weight: about 100kg
- (4) Working conditions: ambient temperature 10 ° C ~ 30 ° C
relative humidity <75% (25 ° C)
- (5) Refrigerant: R134a

ZM6302 Air Conditioning Training Bench



I.Product overview

The training device is designed for in-depth study of room air conditioning ventilation systems, allowing air to pass through different stages of cooling, heating and simulating humidification devices, and then entering a space where temperature and humidity can be monitored in real time to measure the temperature of different points of air. And humidity to analyze the cooling, heating, and humidification of the air. The sensor records the air temperature and air humidity before and after each stage, as well as the pressure and temperature of

the refrigerant. The temperature and humidity data can be read on a digital display. At the same time, the measured values can also be transferred directly to the PC via USB. Includes data acquisition software.

II.Equipment feature

The training platform adopts aluminum frame structure, which is simple and firm in structure. It can reduce the overall weight of the equipment while ensuring the overall strength of the equipment. There are 4 universal wheels installed at the bottom for easy movement. The equipment has a good safety protection system. The system power supply adopts leakage circuit breaker control to protect the compressor and system safety; in the electric control circuit, the emergency stop button and reliable grounding protection measures can ensure equipment and personal safety.

1. The effect of typical air conditioning system components on indoor air conditioning
2. Air conditioning system with open air duct, air cooler, steam humidifier, fan, air preheating.
3. All components can be turned on and off separately
4. Determine the volumetric air flow rate by using a differential pressure measurement of a tilted tube pressure gauge or an anemometer.
5. The non-contact tachometer measures the fan speed.
6. Combination sensor for air humidity and temperature before and after each phase.
7. The sensor is used for the pressure and temperature of the refrigerant, and the refrigerant mass flow is calculated in the software based on the recorded measurements.
8. With communication software for data acquisition via USB under Windows 7, 8.1, 10.
9. Refrigerant: R134A



III. Technical specifications

(1) Input power: 220V \pm 10% 50Hz; (2) Dimensions: 1800mm \times 800mm \times 1800mm; (3) Weight: <350kg;

V. Training goal

air conditioning of room air

setup of an air conditioning system: main components and their function

variables in air conditioning

measure temperature and air humidity

effect of the air flow

changes of state in the h-x diagram

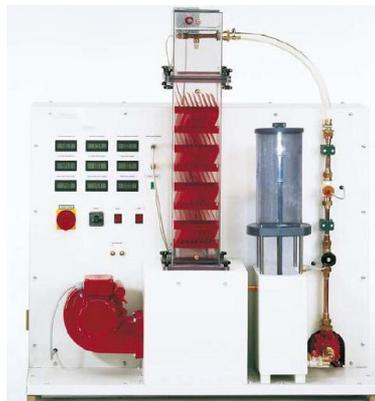
setup of a refrigeration system: main components and their function

measurements in the refrigeration circuit

cyclic process in the log p-h diagram

determine heating and cooling capacities

SR2000 Wet Cooling Trainer



Wet cooling towers are a proven method of closed-circuit cooling and heat dissipation. Typical areas of application are: air conditioning, heavy industry and power stations.

In wet cooling towers the water to be cooled is sprayed over a wet deck surface. Water and air come into direct contact in the counterflow. The water is cooled by convection. Some of the water evaporates and the evaporation heat removed further cools down the water. The examines the main components and principle of a wet cooling tower with forced ventilation. Water is heated in a tank and transported by a pump to an atomiser. The atomiser sprays the water to be cooled over the wet deck surface. The water trickles from the top to the bottom along the wet deck surface whilst air flows from the bottom to the top. The heat is transferred directly from the water to the air by convection and evaporation. The evaporated water volume is recorded. The air flow is generated by a fan and adjusted using a throttle valve. The cooling column is transparent allowing clear observation of the wet deck surface and the trickling water.