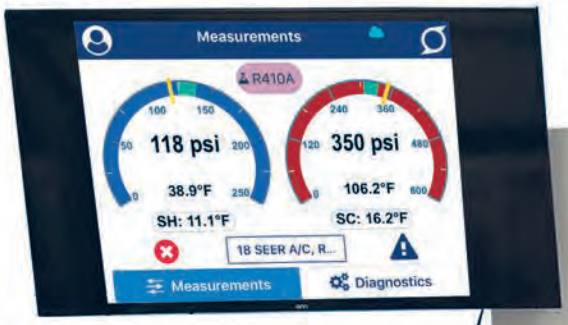
TRAINING UNIT CATALOG

SPECIALIZING IN HVAC/R TRAINING

iConnect® TRAINING

NEW



TU-406C RESIDENTIAL HEAT PUMP TRAINER

BUILDING AUTOMATION SYSTEM UNITS

TU-601 MULTI-HEAD MINI SPLIT HEAT PUMP TRAINING UNIT

TABLE OF CONTENTS

TRAINING UNITS

OUR COMMITMENT TO QUALITY EDUCATION

We strongly believe in providing the HVAC/R student with the knowledge and training for the safe and efficient operation of all types of systems found in our industry.

We also believe that prior to going out into the field, the student should fully understand the theory and operational or service techniques behind each specific system.

iConnect Training provides the finest training units to the educational market. They can be found in high schools, technical colleges, government facilities and other educational settings all over the world (see partial listing of locations on page 37).

The training units in this catalog represent a wide variety of subjects in the heating, refrigeration, air conditioning and electrical industries. The training units range from demonstrating simple concepts to illustrating advanced troubleshooting and servicing techniques. Our expertise certainly does not end here. We can custom design and build trainers to your exact specifications and needs. For custom requirements or applications, please give us a call at 716.699.2031.

Our company's goal is to provide top quality trainers at reasonable prices that fit our customers' precise needs. We look forward to working with you.

iCONNECT TRAINING UNITS BY CATEGORY

CURRICULUM

Model #	HVACR.edu	BAS: BL-01	BAS:BL-02	BAS:PT-201	BAS: PT-181	HVAC Basic
Page #	2	6	7	8	9	15

AIR CONDITIONING

Model #	TU-601	TU-9240	TU-9250	TU-805	TU-810	TU-100	TU-206C	TU-406C	TU-521	EP-525	TU-900
Page #	4	11	12	16	17	18	24	25	29	34	36

REFRIGERATION

Model #	TU-9230	TU-805	TU-810	TU-100	TU-130	TU-105	TU-106	TU-420	TU-155	TU-101
Page #	14	16	17	18	19	20	21	22	23	30

HEATING

Model #	TU-210	TU-9250	TU-208	TU-302	TU-502
Page #	3	12	27	28	28

HEAT PUMP

Model #	TU-601	TU-100	TU-406C	TU-701
Page #	4	18	25	26

ELECTRICAL

Model #	TU-9240	TU-9250	TU-302	TU-521	TUE-150	TUE-200
Page #	11	12	28	29	32	33

BAS BUILDING AUTOMATION SYSTEMS (BAS)

Model #	BL-01	BL-02	PT-201	PT-181
Page #	6	7	8	9

HVAC CONTROLS

Model #	TU-9240	TU-9250	TU-501
Page #	11	12	31

SOLAR, CUSTOM AND EQUIPMENT PACKAGES

Model #	iMANIFOLD KITS	EP-525	CUSTOMIZATIONS	TU-900 SOLAR
Page #	34	34	35	36

TABLE-TOP UNITS

Model #	BL-01	BL-02	PT-201	PT-181	TU-9250	TU-805	TU-810	TU-420	TU-701	TU-302	TU-502
Page #	6	7	8	9	12	16	17	22	26	28	28
Model #	TU-521	TUE-150									
Page #	29	32									

BUILD-UP UNITS

Model #	TU-101	TU-501
Page #	30	31

ANNOUNCING NEW eLEARNING CURRICULUM OFFERINGS!

NEW PRODUCT

iCONNECT TRAINING IN PROUD PARTNERSHIP WITH HVACREDU.NET ARE PLEASED TO PRESENT OUR NEW ELEARNING CURRICULUM PACKAGES.

HVACedu.net maintains the most extensive selection of online courses related to air conditioning, refrigeration, and building automation. These highly accredited programs are now available to our education customers through this unique iConnect Training offer.

HVACRedu.net
Workforce Development Online for the HVACR Industry

LEARN FROM THE BEST

Developed by Subject Matter Experts and Certified Master HVAC Educators, our partnership with HVACRedu.net provides your program with access to over 1,700 hours of content including over 800 hours of streaming video, over 3,000 downloadable PDF handouts, voiced "learn out loud modules", eBooks, games, animations, simulations, assessments, and other instructional assets.

eLEARNING CURRICULUM NOW AVAILABLE FOR EACH ICONNECT TRAINING MODEL.

Students can access the HVACRedu.net eLearning package by simply logging in through the program portal from any device. Instructors are set up as a group manager, and have access to their learners' progress tracking, reports, grades, and the enrolled curriculum. A personal dashboard helps students stay on track as they move through the course materials. Learner groups are identified by school and logo on their pages.

CUSTOMIZED EXPERIENCE

We have carefully selected curriculum packages to accompany each iConnect Training unit.

Additional courses can also be selected from HVACRedu.net's extensive catalog. Subscriptions are available for students using their unique user email ID (one subscription per user), and are available at secondary and post-secondary pricing levels. Consider our suggested curriculum bundle featured with each iConnect Training model, or customize your own package from the HVACRedu.net catalog.

Refer to the orange box listing the Suggested Courses on each page of this catalog.

NORTH PARK INNOVATIONS GROUP, INC. P.O. Box 900 | 6442 Route 242 East | Ellicottville, NY 14731 | 716.699.2031 | iConnectTraining.com

NEW PRODUCT

TU-210 HYDRONIC HEATING TRAINING UNIT

This training unit demonstrates the operation of a boiler (customer chooses one option between gas, electric or oil-fired), unit heater, baseboard and radiator, with 3 zones valves and thermostats, expansion tank, and faults allowing simulations of failed components.

Specifications

Electrical Requirements vary based on options

Overall Size: 70" L x 33" W x 77" H

Electric boiler option

Gas boiler option

CUSTOMERS HAVE THESE BOILER OPTIONS:
Gas *or* **Electric** *or* **Oil-Fired**

***TU-WPP** Optional Water Pump Package comes with 25 gallon tank and convenient cart.*

Shipping Weight: 320 lbs.
Shipping Dimensions: 48" L x 48" W x 64" H

E-LEARNING CURRICULUM NOW AVAILABLE

TU-210: Suggested 4 courses totaling 96 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 191 Hydronics I 161 HVAC Boilers 1
2. 171 HVAC Boilers Low Pressure License Prep
3. 261 Commercial Boiler Fundamentals
4. 265 Small Commercial Boiler Maintenance

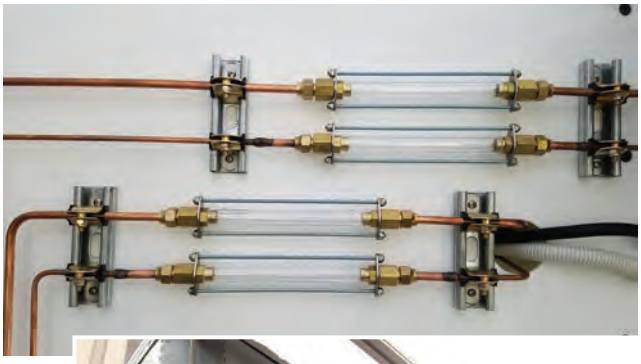
Shipping Weight: 900 lbs.
Shipping Dimensions: 80" L x 48" W x 90" H

NEW PRODUCT

TU-601 MULTI-HEAD MINI SPLIT HEAT PUMP TRAINING UNIT

Ductless mini split technology is the largest growing sector in the industry. Use this new model training unit to teach the skills necessary to capitalize on the growing electrification of HVAC to reduce global warming.

Back side of unit showing louvers and wall-mounted unit

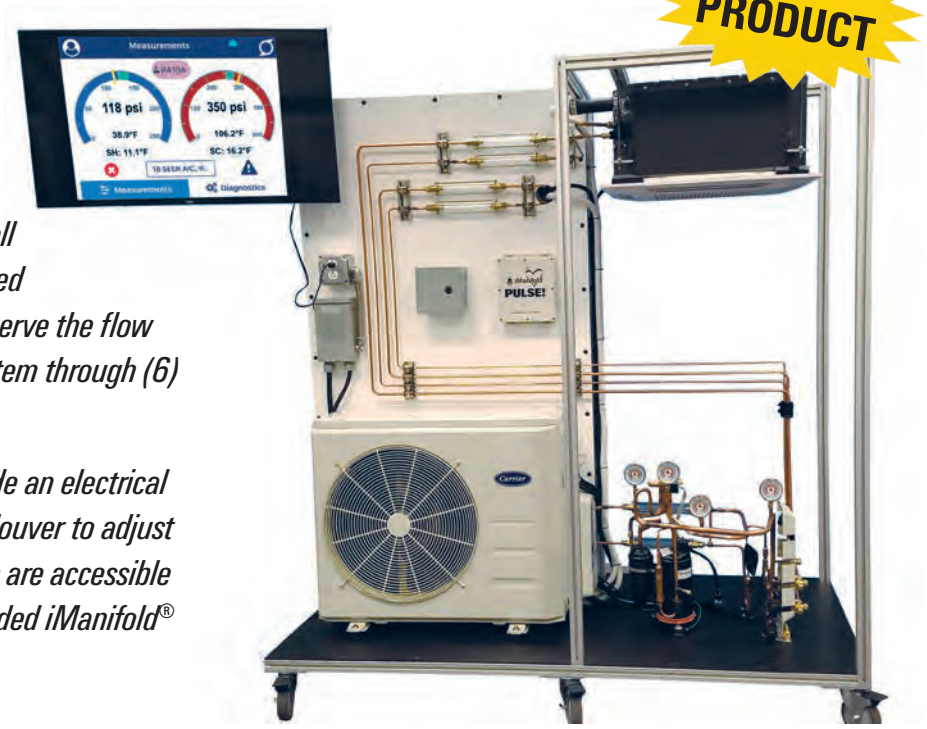


CURRICULUM AVIALABLE SPRING 2021

Skills-based curriculum designed by one of the leading experts and authors in HVAC technical education, Eugene Silberstein, is available for a per-student-seat license. This custom curriculum utilizes the attributes of the TU-601 training unit, as developed for vocational instructors and other advanced programs.

NEW PRODUCT

TU-601 MULTI-HEAD MINI SPLIT HEAT PUMP TRAINING UNIT



This training unit features a 2-zone mini split heat pump system including high wall mounted unit and ceiling cassette mounted on an aluminum frame. Students can observe the flow of refrigerant at key points within the system through (6) extended-view sight glasses.

Advanced troubleshooting features include an electrical fault package via toggle switches, and a louver to adjust air flow to the outdoor unit. Service ports are accessible on high and low side to connect the included iManifold® service tool.

Specifications

Electrical Requirements: 208/230VAC; 60Hz; 30A

Overall Size: 73" L x 33" W x 79" H

Uses R410A Refrigerant

Recommended Accessories:

Smart Phone or Tablet for Data display and HDMI adapter and cable

Features

- Dual Zone Ductless Mini Split Heat Pump system
- Zone 1 – Indoor High Wall Unit
- Zone 2 – Ceiling Cassette
- Louver for control of air flow to outdoor unit
- Toggle switches for electrical faults
- Access to service ports on high and low side of system
- TV display screen

E-LEARNING CURRICULUM NOW AVAILABLE

TU-601: Suggested 5 courses totaling 96 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 141 Refrigeration I
2. 135 Heat Pumps
3. 111 DC Electrical Theory Plus
4. 113 Electrical Components
5. 114 Electric Motors

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 980 lbs.
Shipping Dimensions: 80" L x 48" W x 86" H

iConnect® TRAINING

NORTH PARK INNOVATIONS GROUP, INC. P.O. Box 900 | 6442 Route 242 East | Ellicottville, NY 14731 | 716.699.2031 | iConnectTraining.com

BL-01 BAS CONTROLLER TRAINING UNIT

This benchtop learning system is intended for Building Automation and HVAC controls technicians/programmers who work with BAS controllers. Input/output devices are prewired. The Level 1 Intro to Sedona curriculum is web-based and highly interactive emphasizing BACnet networking and Sedona programming.

Specifications

Power Requirements: 10W 24VDC (via 120 VAC to 24VDC Wall Adapter)
Operating Temperature: 55°F to 85°F
Storage Temperature: 10°F to 110°F
Relative Humidity: 10 to 95% RH non-condensing
Mounting: Benchtop
Dimensions: 10"W x 12"H x 7"D

Features

- Programmable Sedona 22 point unitary controller with BACnet IP, and web interface
- Instrument panel with Input/Output components and 24VDC posts
- 0-10 VDC Digital meter
- 24VDC 1.5A Wall adapter
- USB Drive with included Course Curriculum and Setup/support documents

The BL-01 DDC/BAS Programming system can be purchased in these versions:

BL-01 – Contemporary Controls BAScontrol22 controller, BAS Toolkit software, Intro to Sedona Course Curriculum (USB Drive). Full 1 yr. warranty.

BL-01-DIN – DIN rail mount (No controller included), BAS Toolkit software. Limited 1yr. warranty. No curriculum included. Note: DIN rail model requires some final user wiring due to lack of controller.

E-LEARNING CURRICULUM NOW AVAILABLE

BL-01: Additional suggested 3 courses totaling 57 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 154 Control System Types & BAS Basics
2. 155 BAS Installation and Strategies
3. 159 IT For HVAC Techs

iConnect® TRAINING

Shipping Weight: 8 lbs.
Shipping Dimensions: 12" L x 14" W x 14" H

BL-02 BAS CONTROLLER TRAINING UNIT

The BL-02 is designed specifically for training DDC/ BAS technicians and programmers who work with programmable unitary controllers. Graphical object oriented programming is introduced using the non-proprietary, open-licensed Sedona Framework®. The Intro to Sedona curriculum can be presented as an instructor-led or self-paced learning experience. Designed for the introductory level, users will interact with PC software to communicate with web-based configurations to test and communicate with BAS/DDC field controllers and create a basic DDC program using the Sedona Framework, which includes the three fundamental elements of controls including inputs, logic, and outputs. Offering students hands-on experience with DDC, this benchtop unit features a Contemporary Controls Bc22 BACnet IP controller, a Belimo Actuator, and Senva wall setter.

Specifications

Power Requirements: 20W 24VDC (via 120VAC to 24VDC Wall Adapter)

Operating Temperature: 55°F to 85°F

Storage Temperature: 10°F to 110°F

Relative Humidity: 10 to 95% RH non-condensing

Mounting: Benchtop

Dimensions: 17"W x 12"H x 7"D

Features

- Programmable Sedona 22 point unitary controller with BACnet IP, and web interface
- Instrument panel with Input/Output components and 24VDC posts
- 0-10 VDC Digital meter, 2-10v Belimo actuator
- 24VDC 1.5A Wall adapter
- Senva AQW Wall Setter with integral temperature, setpoint slider and CO2 sensor
- USB Drive with included Course Curriculum and Setup/support documents

The BL-02 DDC/BAS Programming system can be purchased in these versions:

BL-02 – Contemporary Controls BAScontrol22 controller, Senva wall setter, BAS Toolkit software, Intro to Sedona Course Curriculum (USB Drive). Full 1 yr. warranty.

BL-02-DIN – DIN rail mount (No controller included). Limited 1yr. warranty. No curriculum included. Note: DIN rail model requires some final user wiring due to lack of controller.

E-LEARNING CURRICULUM NOW AVAILABLE

BL-02: Additional suggested 3 courses totaling 57 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 154 Control System Types & BAS Basics
2. 155 BAS Installation and Strategies
3. 159 IT For HVAC Techs

iConnect® TRAINING

Shipping Weight: 9 lbs.
Shipping Dimensions: 20" L x 14" W x 14" H

PT-201 DDC/BAS PROGRAMMER TRAINING UNIT

The PT-201 is designed specifically for training DDC/BAS programmers who work with programmable unitary controllers. Graphical object oriented programming is presented using the non-proprietary, open-licensed Sedona Framework®. Students can practice wiring using the included banana plug jumper kit. Includes Level 1 Intro to Sedona curriculum.

Specifications

Power Requirements: 50W; 120VAC; 60Hz

Operating Temperature: 55°F to 85°F

Storage Temperature: 10°F to 110°F

Relative Humidity: 10 to 95% RH non-condensing

Mounting: 5/16" carriage bolts (2) optional

Dimensions: 18.5"W x 14"H x 7"D (w/cover)

Features

- Programmable Sedona 20 point unitary controller with BACnet IP, and web interface
- Instrument panel with Input/Output components and 24VAC posts
- Belimo 2-10VDC Actuator with 2-10VDC position feedback
- Relay with HOA switch
- 0 - 10 VDC Digital meter
- 5 port Ethernet switch 10/100mpbs
- Banana plug jumper kit
- USB Drive with included Course Curriculum

The PT-201 DDC/BAS Programming system can be purchased in two versions:

PT-201 – Contemporary Controls BAScontrol20 controller, BAS Toolkit software, Intro to Sedona Course Curriculum (USB Drive). Pre-wired Banana Test Leads. Full 1 yr. warranty.

PT-201-DIN – DIN rail mount (No controller included), BAS Toolkit, Banana Test Lead Kit. Limited 1yr. warranty. No curriculum included.

E-LEARNING CURRICULUM NOW AVAILABLE

PT-201: Additional suggested 4 courses totaling 72 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 154 Control System Types & BAS Basics
2. 155 BAS Installation and Strategies
3. 156 BAS System Management and Advanced Technologies
4. 159 IT for HVAC Techs

Shipping Weight: 22 lbs.
Shipping Dimensions: 24" L x 18" W x 14" H

iConnect® TRAINING

PT-181 DDC PORTABLE TRAINING UNIT

The PT-181 is a portable training unit specifically designed for the DDC (Direct Digital Controls) industry. It is packaged with Intro to Niagara curriculum that is both embedded in the Trainer and contained in a written workbook resulting in a highly interactive student – trainer experience. The PT-181 incorporates some of the most popular DDC devices currently in use.

Specifications

Power Requirements: 100W; 120VAC; 60Hz

Operating Temperature: 55°F to 85°F

Storage Temperature: 10°F to 110°F

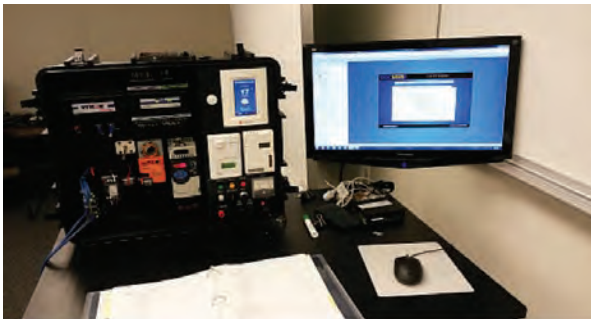
Relative Humidity: 10 to 95% RH non-condensing

Mounting: 3/8" carriage bolts (2) optional

Dimensions: 24"W x 21"H x 10"D (w/cover)

Features

- DDC Controller, Web enabled, JACE 8000 series, with permanent BACnet, LON, Modbus licenses for up to 5 devices
- Uses Niagara N4 framework
- 34 point Remote Input/Output module with integral power supply
- Programmable RTU thermostat with color touchscreen, BACnet MSTP, and web interface
- Communicating FCU thermostat with analog output and BACnet MSTP interface
- CO2 / temperature room sensor with setpoint slider
- Micro VFD with 0 - 10v signal and speed feedback and 3 phase visual output indicators
- 90 degree stroke Actuator with 2-10VDC position feedback
- Status CT, Pilot relay with Auto/On override, Thermistor temp probe
- Instrument panel with Input/Output devices and 24VAC posts
- 0 to 10 VDC Digital Meter
- 5 port Ethernet switch 10/100mpbs
- USB Drive with included Course Curriculum



E-LEARNING CURRICULUM NOW AVAILABLE

PT-181: Additional suggested 5 courses totaling 93 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 154 Control System Types & BAS Basics
2. 155 BAS Installation and Strategies
3. 156 BAS System Management and Advanced Technologies
4. 157 Troubleshooting DDC Systems & Components
5. 159 IT for HVAC Techs

iConnect® TRAINING

Shipping Weight: 42 lbs.
Shipping Dimensions: 28" L x 24" W x 20" H

HVAC ELECTRICAL CONTROLS AND REFRIGERATION TRAINING

iConnect Training has added this line of training units specific for HVAC Electrical Controls and Refrigeration Training. Designed by a master union technician and instructor, they are modular and flexible. Check out these models on pages 12-16.

Choose our standard model or customize your TU-9240 HVAC Electrical Control Training System by adding additional panels that meet your classroom and lab needs. See our web site for the full description of panels available: www.iConnectTraining.com/Panels.

See a few examples of the individual panels below:

PART NUMBER	PHOTO	DESCRIPTION
3009100		**Transformer Panel:** Power panel for the unit. 120V supply to the transformer, reducing the voltage to 24 volts. Fused on low voltage side for 5 amps and the high voltage side for 6 amps. Gives user the choice of using direct wiring or plug and play. Also gives a diagram of the transformer, as found on an electrical or engineering print.
3009101		**ETC Control Panel:** (Electronic Temperature Control): 2-stage temperature controller, could be used for heating or cooling applications. Thermistor type temperature sensor. Powered by 24 volt. Direct wiring.
3009102		**Time Delay Panel:** This shows a delay scenario, useful for demonstrating a delay in time for starting a load. Normally used in refrigeration systems to prevent short-cycling a compressor. Plug and play.

TU-9240 HVAC ELECTRICAL CONTROL TRAINER

This system gives students the opportunity to learn the basics of electricity, and then proceed to learn how to set up a control circuit. It is designed for courses teaching the apprentice or vocational student early in their training. Built on a rolling frame with 36 modular panels, the instructor can position 12 panels on the front display for the lessons of the day. All refrigeration controls used are designed for the HVAC industry. The student can learn from connecting the controls using two different methods, depending on the panel:

a. Plug and play type: plug the wiring into the jacks and build the circuit from that point.

b. Direct wiring: using terminal strips, by cutting and running the wire, and then terminating at the control, as they would in the field.

The instructor can teach the principles of circuitry, all with this low voltage system (24-volt) to ensure beginner safety. Students can experience taking voltage, amperage and resistance readings to build their basic understanding of an electrical system. Lessons with this unit will also teach them basic knowledge of series (as seen in pressure controls) and parallel circuitry (as seen in relays).

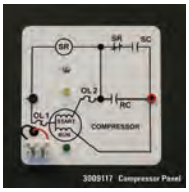
Manual, including electrical diagrams to construct working control circuits, are included.

The TU-9240 HVAC Electrical Control Trainer can be used for lectures explaining the controls and how they function and/or for practice demos. This unit is designed for electrical programs, HVAC programs, and control calibration courses.

Specifications

Electrical requirements: 120VAC; 60Hz;15A

Overall size: 45" L x 24" W x 69" H



Features

- Low voltage 24-volt system
- The unit comes standard with 36 panels
- The lower rack and back rack provide storage for the panels not being used in the current lessons
- Circuits including basic electricity, basic refrigeration, heating and air conditioning, commercial air conditioning and other load circuits can be created.
- Controls include power transformer, lamp holder panels, single, three-way, and four-way switches, single pole contactor, switching relays, programmable thermostat, fan relay, stop-start station, 3-pole contactors with auxiliary contacts and overload protection, high and low pressure controls both in-line and commercial, commercial step controller, load fans, mechanical temperature control

E-LEARNING CURRICULUM NOW AVAILABLE

TU-9240: Suggested 3 courses totaling 54 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 111 Electrical DC Theory Plus
2. 112 Electrical AC Theory Plus
3. 113 Electrical Common Components

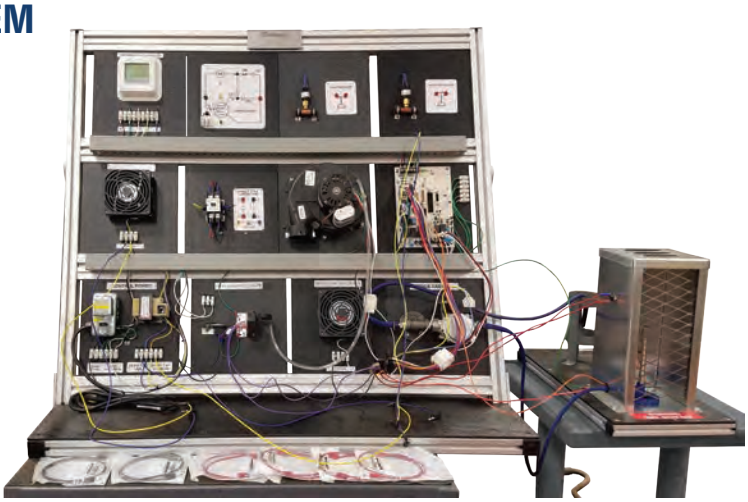
Shipping Weight: 600 lbs.
Shipping Dimensions: 80" L x 48" W x 78" H

TU-9250 HVAC CONTROLS TRAINING SYSTEM

See details on all 12 of the panels in this training unit at www.iConnectTraining.com/Panels. See a few examples of the individual panels below:

PART NUMBER	PHOTO	DESCRIPTION
3009130		**Combustion Blower Panel:** This 2-stage fan operation demonstrates airflow to the burner section of a furnace. 120VAC
3009131		**Control Module Panel:** This unit is common for furnace applications. Once power is applied to the board, it will start the combustion blower motor, which will activate the pressure switch, so that the panel will get the "go signal" to start the burner.
3009132		**Control Power Panel:** This demonstrates how power is supplied to both furnace and air conditioning systems. Includes a fused surface switch, a 24-volt transformer, and is direct wired to both 120-volt and 24-volt control systems.
3009134		**High/Low Pressure Safety Panel:** This is used in the safety circuit of a furnace operation, to sense pressure created from the combustion blower through a pitot tube. If it fails to register pressure, it will shut the system down.
3009135 (Panel) 3009136 (Burner Assembly)		**Combination Gas Valve Panel and Burner:** This 2-stage gas valve receives a signal from the Control Board. Once there is a call for heating, the igniter is started, and gas is supplied to the burner for ignition. Includes Gas Valve panel and Burner Assembly with cage and regulator. Safety Note: the regulator provided has low-, medium- and high-pressure settings; it is recommended to operate only on low pressure in this application. The recommended 1-pound propane tank can be purchased by user at any local hardware supply.

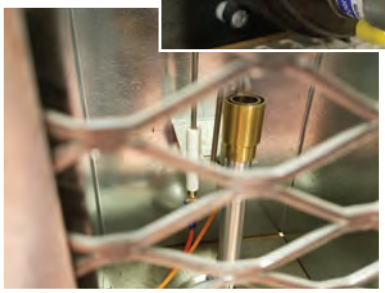
TU-9250 HVAC CONTROLS TRAINING SYSTEM



This trainer is a great demonstrator to show the complete cycle of a residential heating and cooling system. Built as a tabletop unit with 12 modular panels, it functions as a working model so the instructor can teach the basic principles of heating and cooling controls, complete with all the elements.

For the heating system, the unit includes a working model of a furnace burner, so the student gains familiarity of the operation of an entire furnace system.

The air conditioning portion of this system is simulated with the compressor contactor, high-pressure and low-pressure controls, and the compressor panel, with direct wiring or plug and play options.



Specifications

Electrical requirements: 120VAC; 60Hz; 15A

Overall size: 45" L x 24" W x 39" H

Features

- 120VAC with transformer supplying 24VAC low voltage
- The unit comes standard with 12 panels
- Wiring harnesses provided
- Fuel source is a customer-supplied standard propane canister
- Operations manual included with electrical configurations

E-LEARNING CURRICULUM NOW AVAILABLE

TU-9250: Suggested 3 courses totaling 54 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 111 Electrical DC Theory Plus
2. 112 Electrical AC Theory Plus
3. 113 Electrical Common Components

Shipping Weight: 450 lbs.
Shipping Dimensions: 48" L x 48" W x 48" H

TU-9230 REFRIGERATION TRAINING SYSTEM

This training unit teaches the principals of medium and low-temp refrigeration. The unit is a split-system design with an evaporator featuring an EEV (electronic expansion valve), a suction pressure transducer, and temperature sensors to control the evaporator. With the Heatcraft intelliGen Refrigeration Controller, the student can perform educational tasks using advanced commercial refrigeration controls, such as programming of parameters and troubleshooting common failures. Airflow can be controlled to simulate various refrigeration field situations. Various faults which can be triggered to teach the student to recognize and troubleshoot common refrigeration problems, such as an open run capacitor, defective compressor valves, and open temperature sensors.

Specifications

Electrical Requirements: 208/240VAC; 60Hz; 15A

Uses R449A refrigerant

Includes a fused disconnect, emergency stop switch, thermostat, condensate drain pan, condensate pump, and auxiliary heater to control load

NOTE: 240V plug not included

The freezing effects can be visually seen and clearly felt as the temperatures reduce in the upper chamber.

E-LEARNING CURRICULUM NOW AVAILALBLE

TU-9230: Suggested 6 courses totaling 108 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 111 Electrical DC Theory Plus
2. 112 Electrical AC Theory Plus
3. 113 Electrical Common Components
4. 121 Air Properties and Measurement
5. 141 Refrigeration I
6. 241 Intro to Cooling System Troubleshooting

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 600 lbs.
Shipping Dimensions: 51" L x 48" W x 89" H

iCONNECT TRAINING'S BASIC REFRIGERATION FUNDAMENTALS CURRICULUM

NEW PRODUCT

1 PRACTICE SAFE WORK HABITS

- OSHA Regulations
- Safe refrigerant handling practices
- Safe use of a portable fire extinguisher

2 DEMONSTRATE KNOWLEDGE OF REFRIGERATION SCIENCE

- Matter & Energy
- Thermodynamics
- P/T Relationships
- Refrigerants

3 COMFORT CONDITIONS AND TYPES OF COOLING SYSTEMS

- Comfort Conditions
- Identifying Cooling Systems

4 EXPLAIN THE OPERATION OF THE VAPOR COMPRESSION CYCLE

- Vapor compression cycle operation
- Different refrigeration system applications

FEATURES:

- Specifically for use with the TU-805 training unit and the included iManifold 900C kit.
- Smart device for display of iManifold® gauges is not included. The iManifold® app is a free download off the Apple or Android app store.
- Recommended text is *Fundamentals of HVACR , 3rd Edition,* by Carter Stanfield and David Skaves
- Hosted platform by Digitell – they provide technical support
- Delivered online – Power Point presentations, videos, lab sheets and tests are available on the website, lecture notes are sent directly to instructor.
- Lab sheets are downloadable PDF forms
- Lecture notes are emailed to instructor in PDF format
- Unused student licenses will roll over until they are all assigned.
- Once assigned, the student license is 2 year access
- No minimum number of licenses per purchase
- Contact your iConnect® Training representative for pricing and package options

iCONNECT® TRAINING BASIC REFRIGERATION FUNDAMENTALS COURSE
BY CARTER STANFIELD AND JASON OBRZUT, CMHE

NORTH PARK INNOVATIONS GROUP, INC. P.O. Box 900 | 6442 Route 242 East | Ellicottville, NY 14731 | 716.699.2031 | iConnectTraining.com

TU-805 MOBILE TABLE-TOP AIR CONDITIONING AND REFRIGERATION TRAINER

This training unit demonstrates basic refrigeration and air conditioning principles in a compact size perfect for classroom or mobile training.

Specifications

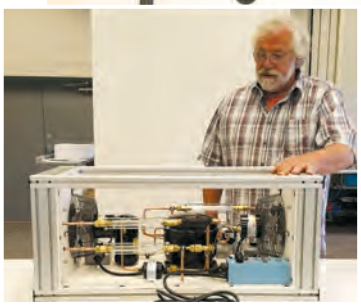
Electrical Requirements: 120VAC; 60Hz; 15A

Uses R134a Refrigerant

Overall Size: 34" L x 16" W x 16" H

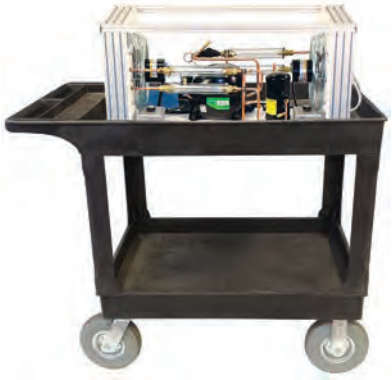
Weight: 80 lbs.

⅓ HP hermetically sealed reciprocating compressor.



Features

- Lightweight for easy on-the-go training; weighing only 80 lbs., this unit can be easily moved, transported and stored.
- Variable fan speed controls for evaporator and condenser load adjustment
- Sight glasses at inlet and outlet of evaporator and condenser constructed of explosion-proof, tie-bolt design
- Conditions of refrigerant and oil can be observed under fluid and gas stages of operation
- Evaporator and condenser copper tube coils with aluminum fins
- Drip pan located under the evaporator for condensation drain
- Includes Operation Manual
- Easy access for electrical measurements
- Recommended Basic Refrigeration Fundamentals Course, see prior page.



**Convenient push cart available separately*

FULL CURRICULUM AVAILABLE SPECIFICALLY FOR TU-805: iCONNECT TRAINING'S BASIC REFRIGERATION FUNDAMENTALS *(see prior page)*

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 230 lbs.
Shipping Dimensions: 36" L x 44" W x 25" H

iConnect® TRAINING

TU-810 EEV TABLE-TOP AIR CONDITIONING AND REFRIGERATION TRAINER

This training unit demonstrates a basic refrigeration and air conditioning system featuring an electronic expansion valve.

Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

Uses R134a Refrigerant

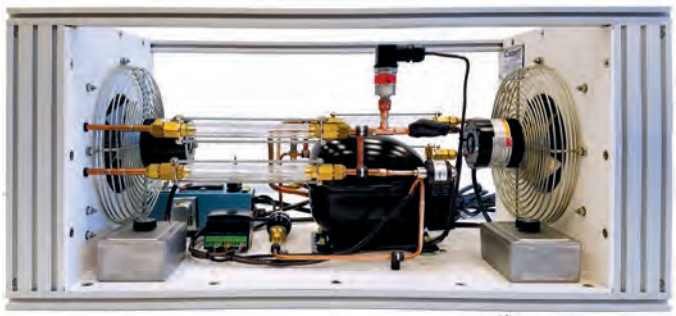
Overall Size: 34" L x 16" W x 16" H

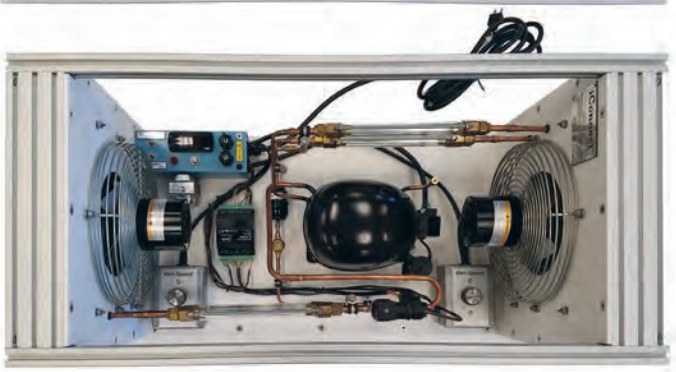
Weight: 80 lbs.

⅓ HP hermetically sealed reciprocating compressor.

Features

- **Electronic Expansion Valve (EEV) to control the flow of refrigerant with a sophisticated design. This cutting-edge technology can also operate as a fixed orifice metering device.**
- Demonstrate, operate and program an EEV electronic controller.
- Easy access for electrical measurements.
- Lightweight for easy on-the-go training; weighing only 80 lbs., this unit can be easily moved, transported and stored.
- Variable fan speed controls for evaporator and condenser load adjustment
- Sight glasses at inlet and outlet of evaporator and condenser constructed of explosion-proof, tie-bolt design
- Conditions of refrigerant and oil can be observed under fluid and gas stages of operation
- Evaporator and condenser copper tube coils with aluminum fins
- Drip pan located under the evaporator for condensation drain
- Includes Operation Manual





Top view

**Convenient push cart available separately*

E-LEARNING CURRICULUM NOW AVAILABLE

TU-810: Suggested 2 courses totaling 36 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 141 Refrigeration I
2. 142 Refrigeration II

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 230 lbs.
Shipping Dimensions: 36" L x 44" W x 25" H

iConnect® TRAINING

TU-100 BASIC REFRIGERATION TRAINER

This training unit demonstrates domestic refrigerators, freezers, self-contained air conditioning units and reverse cycle or heat pump systems.

Specifications

Electrical requirements: 120VAC; 60Hz; 15A

Uses R134a Refrigerant

Overall Size: 34.5" L x 18" W x 77.5" H

⅓ HP hermetically sealed reciprocating compressor.

Panels are ¼" thick HDPE with steel reinforced component shelf

Features

- Sight glass tubes at inlet and outlet of evaporator and condenser constructed of explosion-proof, tie-bolt design
- Drip pans with drains located under each both indoor coil and outdoor coil
- Uses popular, brand name components
- Color-coded valves, gauges, and hand valves to bypass various components and change from cooling to heating (heat pump operation)
- Conditions of refrigerant and oil can be observed under various methods of operation
- Pressure gauges located at each point in which pressure variation is likely to occur
- Refrigerant flow to evaporator metered either by capillary tube, automatic expansion valve (AXV), or thermostatic expansion valve (TXV)
- Indoor and outdoor copper tube coils with aluminum fins and variable speed fans
- A combination low pressure control and high pressure cutout and an electronic temperature control with a range of -30°F to 100°F
- High and low pressure cutout in the circuit at all times to prevent damage to the compressor
- Variable fan speed controls for indoor coil and outdoor coil load adjustment
- Includes booklet which contains a Lab Manual, Instructor's Guide, and Operation Guide

E-LEARNING CURRICULUM NOW AVAILALBLE

TU-100: Suggested 5 courses totaling 84 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 135 HVACR Heat Pumps
3. 141 Refrigeration I
4. 142 Refrigeration II
5. 143 Refrigeration Cycle Service Procedures

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 470 lbs.
Shipping Dimensions: 49" L x 45" W x 87" H

iConnect® TRAINING

TU-130 BASIC REFRIGERATION TRAINING UNIT WITH WATER COOLED CONDENSER

This training unit demonstrates domestic refrigerators, freezers, and self-contained air-conditioning units with a co-axial, tube-in-tube heat exchanger/condenser.

Specifications

Electrical requirements: 120VAC; 60Hz; 15A

Uses R134a Refrigerant

Overall Size: 34.5" L x 18" W x 77.5" H

⅓ HP hermetically sealed reciprocating compressor.

Panels are ¼" thick HDPE with steel reinforced component shelf

Features

- Sight glass tubes at inlet and outlet of evaporator and condenser constructed of explosion-proof, tie-bolt design
- Drip pan with drain located under evaporator
- Color-coded valves, gauges, and hand valves to bypass various components
- Conditions of refrigerant and oil can be observed under various methods of operation
- Pressure gauges located at each point in which pressure variation is likely to occur
- Refrigerant flow to evaporator metered either by capillary tube, automatic expansion valve (AXV), or thermostatic expansion valve (TXV)
- Aluminum fin, copper tube evaporator with variable speed fan for load adjustment
- Water cooled condenser with standard hose connections and ball valves to meter water flow
- A combination low and high pressure control in the circuit at all times to prevent damage to the compressor
- Electronic temperature control with a range of -30°F to 100°F
- Includes Operation Manual
- Water Hoses not Included

E-LEARNING CURRICULUM NOW AVAILABLE

TU-130: Suggested 4 courses totaling 63 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 141 Refrigeration I
3. 142 Refrigeration II
4. 143 Refrigeration Cycle Service Procedures

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 480 lbs.
Shipping Dimensions: 49" L x 45" W x 87" H

iConnect® TRAINING

TU-105 COMMERCIAL REFRIGERATION TRAINER

This commercial refrigeration trainer is an advanced unit used to train students in commercial refrigeration and air conditioning systems.

Specifications

Electrical requirements: 120VAC; 60Hz; 15A

Uses R134a Refrigerant

Overall Size: 72" L x 20.75" W x 77.5" H

Compressor: Single phase, 1/2 HP semi-hermetic (bolted reciprocating-type)

Panels: ¼" thick HDPE with steel reinforced component shelf

Features

- Evaporator Pressure Regulator (EPR)
- 2 Liquid Refrigerant Flow Meters
- Customizable isolated access ports for alternate metering devices
- Sight glass tubes at inlet and outlet of evaporators and condenser constructed of explosion-proof, tie-bolt design
- Cut-out and by-pass valves
- Hand valves allow malfunctions to be simulated
- Many control changes are possible
- Combination low pressure and high pressure control
- Electronic temperature control with an adjustable range of -30°F to 100°F
- 2 solenoid liquid line valves
- Evaporators and condenser: Copper tube coils with aluminum fins and variable speed fans mounted on back of panel
- Includes Lab Manual and Operation Instructions

E-LEARNING CURRICULUM NOW AVAILABLE

TU-105: Suggested 7 courses totaling 126 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 135 HVACR Heat Pumps
3. 141 Refrigeration I
4. 142 Refrigeration II
5. 143 Refrigeration Cycle Service Procedures
6. 441 Commercial Refrigeration I for HVAC Techs
7. 442 Commercial Refrigeration II for HVAC Techs

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 900 lbs.
Shipping Dimensions: 81" L x 45" W x 88" H

iConnect® TRAINING

TU-106 DUAL-APPLICATION COMMERCIAL REFRIGERATION TRAINER

This deluxe trainer can show operation of multi-evaporator systems, dual temperature applications (low and medium) and an electric resistant heat defrost cycle.

Specifications

Electrical requirements: 120VAC; 60Hz; 15A

Uses R134a Refrigerant

Overall Size: 72" L x 20.75" W x 79" H

Compressor: Single phase, 1/2 HP semi-hermetic (bolted reciprocating-type)

Panels: ¼" thick HDPE with steel reinforced component shelf

Features

- Customizable isolated access ports for alternate metering devices
- Defrost Timer
- 2 Liquid Refrigerant Flow Meters
- Electrical Fault Package
- Evaporator Pressure Regulator (EPR)
- Sight glass tubes at inlet and outlet of evaporators and condenser constructed of explosion-proof, tie-bolt design
- Cut-out and by-pass valves
- Hand valves allow malfunctions to be simulated
- Many control changes are possible
- Electronic temperature control with an adjustable range of -30°F to 100°F
- 2 solenoid liquid line valves
- Condenser and Low and Medium Temperature Evaporators: Copper tube coils with aluminum fins and adjustable speed fans mounted on back of panel.
- Combine low pressure and high pressure control
- Includes Lab Manual and Operation Instructions

Electrical Fault Package on the back of the trainer

E-LEARNING CURRICULUM NOW AVAILABLE

TU-106: Suggested 7 courses totaling 126 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 135 HVACR Heat Pumps
3. 141 Refrigeration I
4. 142 Refrigeration II
5. 143 Refrigeration Cycle Service Procedures
6. 441 Commercial Refrigeration I for HVAC Techs
7. 442 Commercial Refrigeration II for HVAC Techs

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 900 lbs.
Shipping Dimensions: 81" L x 45" W x 88" H

iConnect® TRAINING

TU-420 REFRIGERATION TRAINER DEMONSTRATOR

This refrigeration demonstrator uses the 4 main parts of the refrigeration system (condenser, compressor, evaporator and control device) that demonstrate basic refrigeration principles. The components then work together to cool a small enclosed refrigerator compartment fully featured with an electronic temperature control device.

Specifications

Electrical requirements: 120VAC; 60Hz; 15A

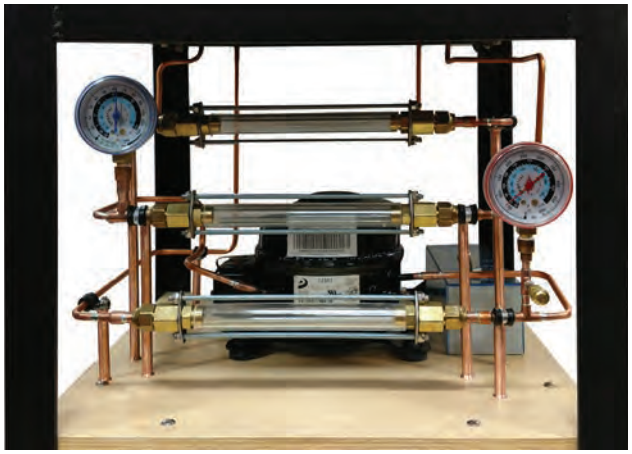
Uses R134a Refrigerant

Overall Size: 19" L x 19" W x 50" H

Weight: 115 lbs.

Features

- Components arranged to illustrate the refrigeration cycle
- 3 strategically located explosion-proof sight glasses permit monitoring of the refrigerant as it circulates throughout the entire refrigeration system
- 120VAC with circuit breaker
- Comes completely assembled, charged with refrigerant, and ready to operate
- Includes Operation Manual



E-LEARNING CURRICULUM NOW AVAILABLE

TU-420: Suggested 2 courses totaling 36 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 141 Refrigeration I

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 260 lbs.
Shipping Dimensions: 37" L x 37" W x 61" H

iConnect® TRAINING

TU-155 INDUSTRIAL REFRIGERATION TRAINER

This trainer enables students to learn principles of commercial and industrial refrigeration systems.

Specifications

Electrical Requirements: 240VAC; 60Hz; 30A

Uses R422B Refrigerant

Compressor: Semi-hermetic type with 2 HP capacity

Overall Size: 95" L x 25.25" W x 80" H

Water Tower: 120VAC; 60Hz; single phase; 60,000 BTU/hour
(This is an optional add-on)

Utility Requirements: city water, drain, and means to vent water vapor

Features

- Trainer is self-contained and freestanding with storage space underneath
- 2 forced air type evaporators have 2 common types of defrost mechanisms complete with solenoids, timers, and associated equipment
- 2 standard types of water cooled condensers (tube-in-tube and shell-in-tube) are supplied and piped to be used with city water or optional water tower
- Hot gas by-pass system keeps operating pressures of the compressor constant regardless of the evaporator level
- Crankcase pressure regulator allows the compressor to start easily under high evaporator pressures
- Includes Instructor Guide

** NOTE: 240V plug not included*

PLEASE NOTE: Customer is responsible for installation, including on-location setting, plumbing, and wiring the optional Water Tower.

OPTIONAL WATER TOWER AND WATER PUMP

E-LEARNING CURRICULUM NOW AVAILABLE

TU-155: Suggested 8 courses totaling 132 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 135 HVACR Heat Pumps
3. 141 Refrigeration I
4. 142 Refrigeration II
5. 143 Refrigeration Cycle Service Procedures
6. 441 Commercial Refrigeration I for HVAC Techs
7. 442 Commercial Refrigeration II for HVAC Techs
8. 203 Cooling Tower Overview

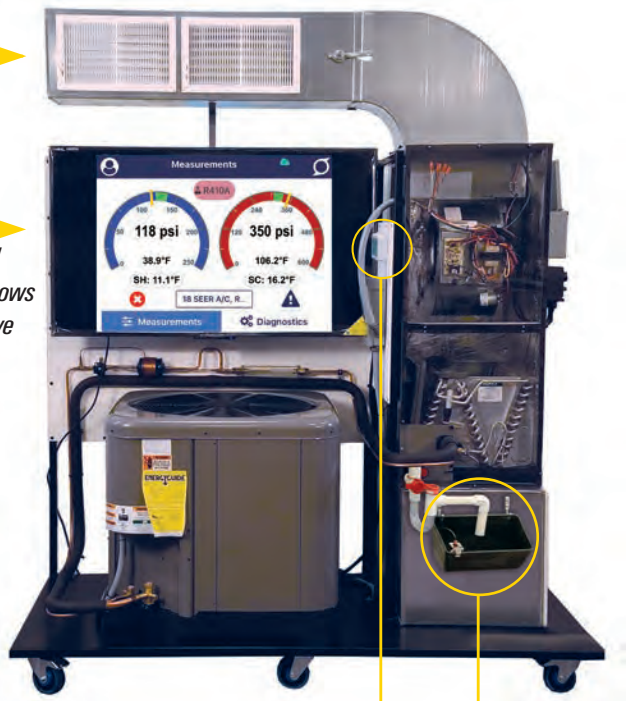
INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

WILL SHIP IN 1 OR 2 CRATES
Shipping Weight and Dimensions:
Crate 1: 1,300 lbs. / 99" L x 48" W x 92" H
Crate 2: 380 lbs. / 58" L x 46" W x 70" H
(Crate 2 is the optional Water Tower)

iConnect® TRAINING

TU-206C RESIDENTIAL AIR CONDITIONING TRAINER

Teach real world experience in troubleshooting wiring, piping and controls of a working air conditioning unit for a whole house. This residential split system shows indoor and outdoor components, with a 1.5 ton straight cool condenser and matching air handler.



Specifications

Electrical requirements: 208/240VAC; 60Hz; 20A

Uses R410A Refrigerant

TU-206 Overall Size:70" L x 33" W x 67" H

TU-206C Overall Size:70" L x 33" W x 85" H

Features

- Fault simulation with two refrigerant faults and four electrical faults
- Provides numerous real-world applications and trouble-shooting examples
- Refrigeration cycle can be observed
- High-pressure refrigeration tubing piped to sight glass for direct observation of the fluid stage of the refrigeration cycle
- Pressure, temperature and electrical readings can be made
- Visible wiring and piping
- Metering device/thermostatic expansion valve
- Necessary line and low voltage wiring
- Low voltage transformer and wiring
- Includes Operation Manual and book *Refrigeration and Air Conditioning Technology*
- Optional add-on equipment package provides all the professional tools necessary to complete service checks (see page 34)

Optional Unit Configuration

- **TU-206:** Base Unit (without TV and duct work)
- **TU-206C:** Base Unit plus TV and duct work

** NOTE: 240V plug not included*

***Customer provides smart phone or tablet and necessary adapters and cables to mirror iManifold app to TV display.*

E-LEARNING CURRICULUM NOW AVAILABLE

TU-206C: Suggested 12 courses totaling 213 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 111 Electrical DC Theory Plus
3. 112 Electrical AC Theory Plus
4. 113 Electrical Common Components
5. 114 Electrical Motors
6. 121 Air Properties and Measurement
7. 141 Refrigeration I
8. 142 Refrigeration II
9. 143 Refrigeration Cycle Service Procedures
10. 241 Intro to Cooling System Troubleshooting
11. 242 R-410A Refrigerant Technology
12. 243 Advanced Troubleshooting

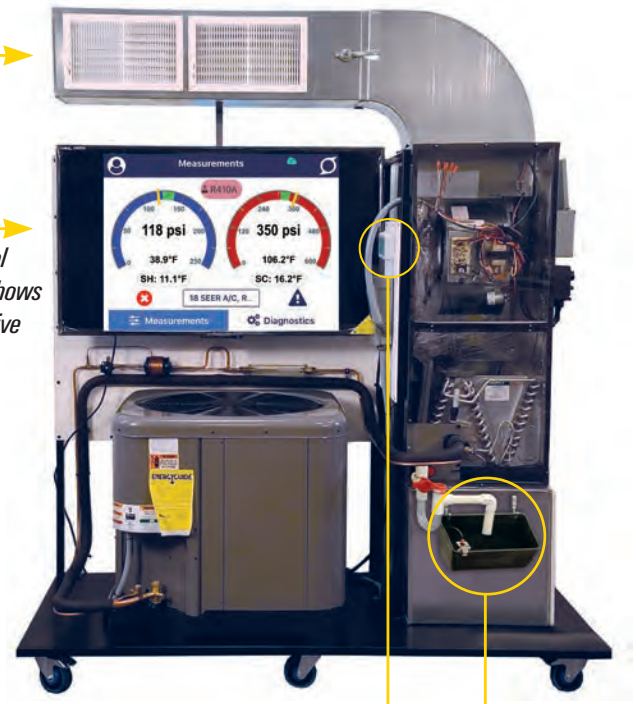
INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 960 lbs.
Shipping Dimensions: 80" L x 48" W x 78" H

iConnect® TRAINING

TU-406C RESIDENTIAL HEAT PUMP TRAINER

Teach real world experience in troubleshooting wiring, piping and controls of a working air conditioner/heat pump unit for a whole house. This residential split system shows indoor and outdoor components, with a 1.5 ton heat pump condensing unit and matching air handler.



**Customer provides smart phone or tablet and necessary adapters and cables to mirror iManifold app to TV display.*

Specifications

Electrical requirements: 208/240VAC; 60Hz; 20A

Uses R410A Refrigerant

TU-406 Overall Size:70" L x 33" W x 67" H

TU-406C Overall Size:70" L x 33" W x 85" H

Features

- Fault simulation with two refrigerant faults and four electrical faults
- Provides numerous real-world applications and trouble-shooting examples
- Refrigeration heat pump cycle can be observed
- High-pressure refrigeration tubing piped to sight glass for direct observation of the fluid stage of the refrigeration cycle
- Pressure, temperature and electrical readings can be made
- Visible wiring and piping
- Reversing valve operated through a digital thermostat
- Metering device/thermostatic expansion valve
- Necessary line and low voltage wiring
- Low voltage transformer and wiring
- Includes Operation Manual and book *Heat Pumps: Operation, Installation & Service,* with student assignments and Instructor's Guide CD
- Optional add-on equipment package provides all the professional tools necessary to complete service checks (see page 34)

Optional Unit Configuration

- **TU-406:** Base Unit (without TV and duct work)
- **TU-406C:** Base Unit plus TV and duct work

** NOTE: 240V plug not included*

E-LEARNING CURRICULUM NOW AVAILALBLE

TU-406C: Suggested 13 courses totaling 234 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 111 Electrical DC Theory Plus
3. 112 Electrical AC Theory Plus
4. 113 Electrical Common Components
5. 114 Electrical Motors
6. 121 Air Properties and Measurement
7. 135 HVACR Heat Pumps
8. 141 Refrigeration I
9. 142 Refrigeration II
10. 143 Refrigeration Cycle Service Procedures
11. 241 Intro to Cooling System Troubleshooting
12. 242 R-410A Refrigerant Technology
13. 243 Advanced Troubleshooting

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 960 lbs.
Shipping Dimensions: 80" L x 48" W x 78" H

iConnect® TRAINING

TU-701 TABLE-TOP HEAT PUMP TRAINER

Real world experience in troubleshooting wiring, piping and controls on a working heat pump unit. The trainer is perfect for introduction to heat pump theory.

Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

Uses R134a Refrigerant

Overall Size: 34" L x 17" W x 32" H

Features

- Refrigeration heat pump cycle can be observed
- Pressure, temperature and electrical readings can be made
- Sight glass tubes before and after metering device constructed of explosion-proof, tie-bolt design
- Evaporator and condenser: copper tube coils with aluminum fins and fixed speed fans
- Condensate drain pans under both coils
- Pre-piped suction and high pressure refrigeration tubing is visible for direct observation of the fluid and gas stages of the refrigeration cycle
- All necessary line voltage wiring
- 120VAC with circuit breaker
- Includes Operation Manual and book *Heat Pumps: Operation, Installation & Service,* with student assignments and Instructor's Guide CD

E-LEARNING CURRICULUM NOW AVAILALBLE

TU-701: Suggested 3 courses totaling 57 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 135 HVACR Heat Pumps
2. 141 Refrigeration I
3. 142 Refrigeration II

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

Shipping Weight: 255 lbs.
Shipping Dimensions: 37" L x 48" W x 42" H

iConnect® TRAINING

CUSTOMIZE YOUR TRAINING UNIT!

TU-208 COMBINATION FORCED AIR & HYDRONIC HEATING TRAINER

This combination trainer provides demonstration and service practice with forced air and hydronic heating systems, including hot water heating systems. All components are standard brands of equipment, full size, and completely operational.

Specifications

Electrical requirements: 208/240VAC; 60Hz (Amp requirement varies with model)

Uses R410A Refrigerant

Overall Size:191" L x 34" W x 95" H

Trainer can be custom built to meet your needs

Features

- A student experiment manual specifically written for this equipment
- Experiments include: Introduction of Principles, References, Pre-Lab Questions, Lab Procedure, Post-Lab Exercises
- Experiment topics include: Forced Air Furnace, Circulation Systems, Burner Systems, Flue Gas Analysis, Duct System, Air Balancing, Flame Safety Devices, Temperature and Humidity Control, Heat Transfer Devices, Oil Fired Boiler and Burner Systems, Draft Regulators and Piping Systems
- Includes Operations Manual and various textbooks depending on customization

NOTE: 240V plug not included

"See optional Water Pump Package TU-WPP (on page 3.)

E-LEARNING CURRICULUM NOW AVAILALBLE

TU-208: Suggested 12 courses totaling 195 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 121 Air Properties and Measurement
3. 133 Gas Heat
4. 135 HVACR Heat Pumps
5. 141 Refrigeration I
6. 142 Refrigeration II
7. 143 Refrigeration Cycle Service Procedures
8. 191 Hydronics I
9. 241 Intro to Cooling System Troubleshooting
10. 242 R-410A Refrigerant Technology
11. 243 Advanced Troubleshooting
12. 265 Small Commercial Boiler Maintenance

iConnect® TRAINING

EXAMPLES

HEAT PUMP | GAS FURNACE | GAS BOILER

HEAT PUMP WITH TV | AIR HANDLER | GAS BOILER

AC | AIR HANDLER | ELECTRIC BOILER

CUSTOMERS HAVE THESE OPTIONS:

- **Heat Pump** *or* **Condensing Unit**
- **Gas Furnace** *or* **Air Handler**
- **Oil-Fired Boiler** *or* **Electric Boiler** *or* **Gas Boiler**

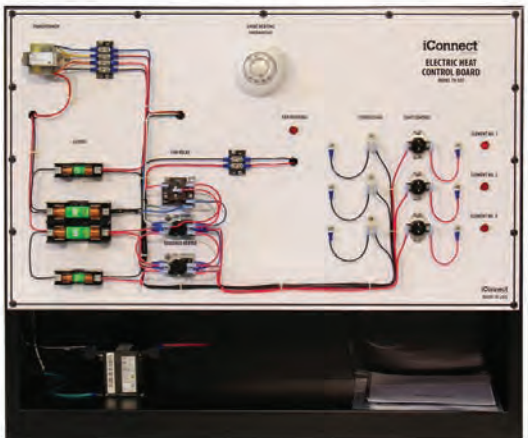
MORE COMBINATIONS AVAILABLE!

4 CRATES **Shipping Dimensions and Weight:**

80" L x 48" W x 78" H, 800 lbs.
80" L x 48" W x 84" H, 650 lbs.
60" L x 48" W x 84" H, 840 lbs.
80" L x 48" W x 37" H, 400 lbs.

TU-302 CONTROL BOARD, ELECTRIC HEAT TRAINER

This trainer is perfect for students to learn the basics of electric heat control systems.



Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

Overall Size: 35" L x 13" W x 30" H

Weight: 70 lbs.

Features

- Complete set of operating controls of an electric furnace
- Wired 3 element furnace circuit
- Simulated heater elements operation shown by signal lamps
- Head Sequencers
- Klixon limit switch
- Fusible link safety device
- Thermostat
- Transformer steps voltage from 120 VAC to 240 VAC
- Fan delay control
- Board designed for use on a bench or table
- Includes Instructor Guide

E-LEARNING CURRICULUM NOW AVAILABLE

TU-302: Suggested 5 courses totaling 90 credit hours

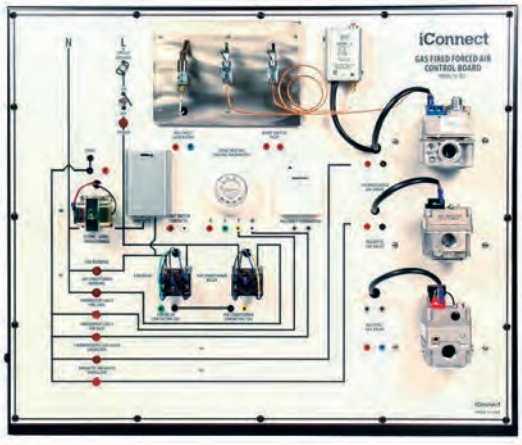
Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 111 Electrical DC Theory Plus
2. 112 Electrical AC Theory Plus
3. 113 Electrical Common Components
4. 139 Electric Heat
5. 243 Advanced Troubleshooting

Shipping Weight: 200 lbs.
Shipping Dimensions: 37" L x 48" W x 42" H

TU-502 GAS FIRED HEATING CONTROL BOARD

The control board contains a complete set of electrical controls for a furnace, with air conditioning, to demonstrate basic principles and provide electrical service experience.



Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

Overall Size: 35" L x 13" W x 30" H

Weight: 70 lbs.

Features

- All components are panel mounted and the wires are brought to terminals on the front panel
- Equipped for both thermocouple and thermopile systems
- Signal lamps show simulated operation of burner valves, circulating fan air, and air conditioning compressor
- Includes Operation Manual

E-LEARNING CURRICULUM NOW AVAILABLE

TU-502: Suggested 5 courses totaling 90 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 111 Electrical DC Theory Plus
3. 112 Electrical AC Theory Plus
4. 113 Electrical Common Components
5. 133 Gas Heat

Shipping Weight: 220 lbs.
Shipping Dimensions: 37" L x 48" W x 42" H

iConnect® TRAINING

TU-521 CONTROL BOARD, SINGLE PHASE COMPRESSOR TRAINER

Consists of a single phase compressor with components necessary to demonstrate all common types of controls in refrigeration and air conditioning systems.

Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

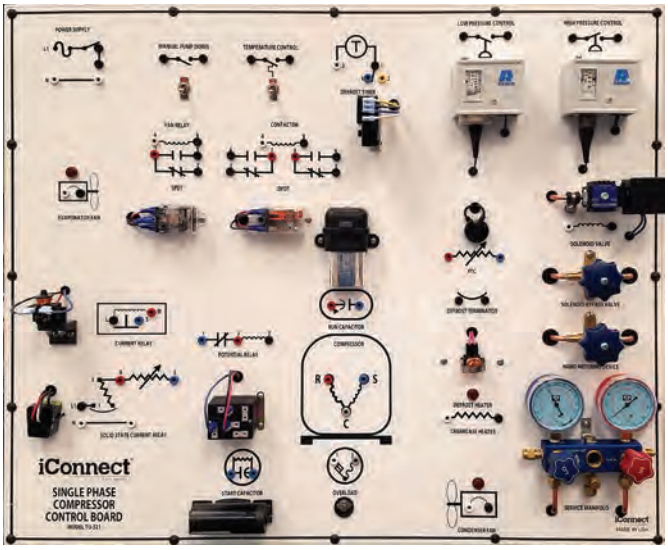
Uses R134a Refrigerant

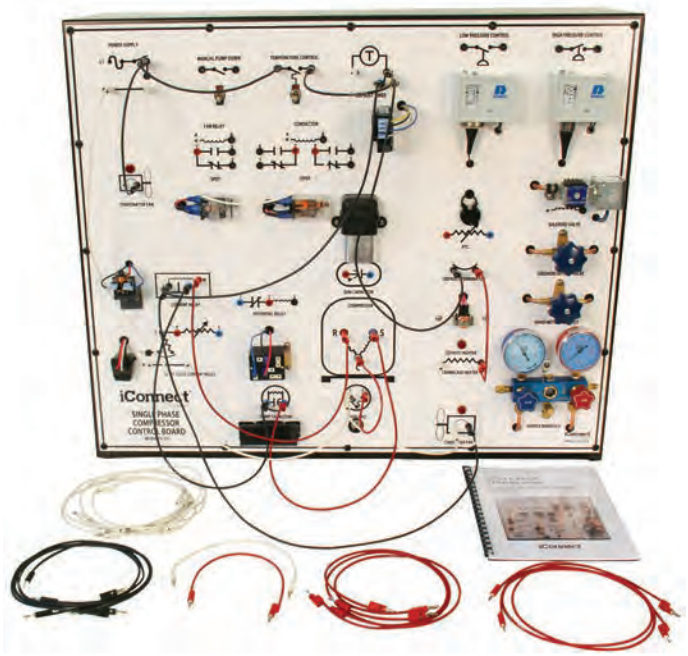
Overall Size: 35" L x 13" W x 30" H

Weight: 70 lbs.

Features

- Components are wired into the system with patch cords
- Shut-off valves in suction and pressure lines allow pressures to be varied to operate the low pressure control and high pressure cutout
- PSC (permanent split capacitors) and run capacitors are supplied for capacitor (capacitive) start systems
- Includes Operation Manual





E-LEARNING CURRICULUM NOW AVAILABLE

TU-521: Suggested 4 courses totaling 75 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 111 Electrical DC Theory Plus
2. 112 Electrical AC Theory Plus
3. 113 Electrical Common Components
4. 114 Electrical Motors

iConnect® TRAINING

Shipping Weight: 225 lbs.
Shipping Dimensions: 37" L x 48" W x 42" H

TU-101 DOMESTIC REFRIGERATION BUILD-UP TRAINER

Designed for the student who has a working knowledge of the theory of refrigeration. Using this trainer, students are asked to design a system to match specifications of a particular situation. Instruction kit and experiment manual provide set-up and assembly directions.

Students will create a dual evaporator system that demonstrates basic principles and provides service experience.

Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

Uses R134a Refrigerant

Overall Size: 34.5" L x 18" W x 73" H

Build-up Trainer

Components are provided for backboard mounting in preferred arrangement. (Mounting hardware not included.)

Features

- ¼ HP hermetic compressor with air-cooled condenser
- Domestic freezer static evaporator
- Finned high humidity evaporator
- Capillary tube
- Dehydrator
- Temperature control
- Hand valve to regulate temperature differences in evaporator
- Includes Lab Manual Instructor Guide

E-LEARNING CURRICULUM NOW AVAILABLE

TU-101: Suggested 4 courses totaling 63 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 101 Fundamentals
2. 141 Refrigeration I
3. 142 Refrigeration II
4. 143 Refrigeration Cycle Service Procedures

iConnect® TRAINING

Shipping Weight: 350 lbs.
Shipping Dimensions: 49" L x 45" W x 87" H

TU-501 MOTORS, CONTROLS AND CIRCUITS BUILD-UP TRAINER

Designed for the student with a working knowledge of the theory of refrigeration electrical control systems. Using this trainer, students are required to design a system to match specifications of a particular situation.

Connections between components are wired by the students.

Specifications

Electrical Requirements: 120/240VAC; 60Hz

HDPE Panels: 1/4" thick with steel reinforced component shelf

Overall Size: 34.5" L x 18" W x 77.5" H

Build-up Trainer

Components are provided for backboard mounting in preferred arrangement. (Mounting hardware not included.)

Features

- Single phase disconnect
- 3 phase disconnect
- 24V transformer
- Duplex receptacle
- Low voltage thermostat
- Defrost timer
- Low-pressure switch
- High-pressure switch
- Oil pressure switch
- Fan/limit switch
- Heating sequencer
- Motor starter
- Start/stop switch
- Current relay-potential relay
- Start capacitor-run capacitor
- Single-phase compressor
- Capacitor start motor-PSC motor
- Enclosed storage compartment
- Includes a textbook with explanations of the theory of operation

Example of lay-out build-up.

E-LEARNING CURRICULUM NOW AVAILABLE

TU-501: Suggested 4 courses totaling 75 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

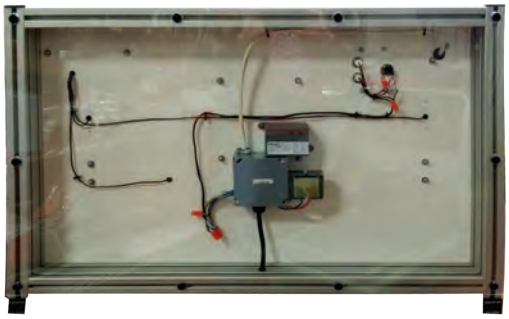
1. 111 Electrical DC Theory Plus
2. 112 Electrical AC Theory Plus
3. 113 Electrical Common Components
4. 114 Electrical Motors

Shipping Weight: 512 lbs.
Shipping Dimensions: 49" L x 45" W x 87" H

iConnect® TRAINING

TUE-150 RESIDENTIAL WIRING TRAINER

This trainer demonstrates electrical principles typically found in a residential use. It has provisions for extensive switching and connection of lamps and outlets. The trainer has a 24 volt power supply that is used to wire and test all circuits. After the instructor has approved wiring, 120 VAC can be applied using the key lock voltage control. The ability to use low voltage for testing and 120 VAC for final wiring is a valuable teaching aid. The inclusion of the dual 24 VAC power supply makes this a very useful trainer for introductory classes. Since all initial wiring and testing can be done at low voltage, the 120 VAC is only made available after the instructor has used the key to turn on the key lock switch to apply 120 VAC. Students learn wiring as well as the proper electrical hookups from the manual that is included.



Specifications

Electrical requirements: 120VAC

Overall size: 31" L x 36" W x 25" H

Features

- Low voltage doorbell with push button switches
- Pilot light to indicate low voltage, 24V, "ON"
- Two standard duplex receptacles
- GFI duplex receptacle
- Two lamp sockets
- Pilot light to indicate 120VAC is "ON"
- Two three-way toggle light switches
- Standard residential 4 circuit breaker panel
- Three wire grounding 120VAC cord
- Includes Operation Manual

Add an optional UEI DL429B Multimeter to this trainer so you can project electrical readings real-time in the classroom using the iManifold® app.

E-LEARNING CURRICULUM NOW AVAILALBLE

TUE-150: Suggested 3 courses totaling 54 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 111 Electrical DC Theory Plus
2. 112 Electrical AC Theory Plus
3. 113 Electrical Common Components

Shipping Weight: 250 lbs.
Shipping Dimensions: 37" L x 45" W x 33" H

iConnect® TRAINING

TUE-200 RESIDENTIAL WIRING DEMONSTRATOR

Students gain a full understanding of residential electrical circuits. Through real-world application practice, students attain a substantial beginning level skill and proficiency using tools of the electrical trade, while gaining an understanding of the practices and guidelines contained in the National Electric Code.

Specifications

Electrical requirements: 240VAC; 60Hz; 30A

Overall size: Triangular Layout: 67" x 67" x 99", 90" Height

Features

- Casters, locking hardware, inter-connecting twist lock plugs and caps to connect the ceiling section. Folds to occupy minimum floor space. Sturdy construction and completely wired. Trainer will provide 100-Amp service.
- 2 and 3-way switches
- Lights controlled from 1 or more locations
- Central distribution with circuit breakers
- EMT conduit, romex and greenfield wiring
- In-wall and surface mounted wiring devices
- Low voltage signaling devices, 120 and 240VAC, 3-wire Edison wiring
- Control and installation – fluorescent lighting
- Control and installation – incandescent lighting
- Includes two books, *National Electrical Code Book* and *Electrical Wiring Residential,* that offer students opportunities for hands-on practice in interpreting and applying Code requirements, making this an ideal resource for those who will work in the residential electrical industry.

** NOTE: 240V plug not included*

Add an optional UEI DL429B Multimeter to this trainer so you can project electrical readings real-time in the classroom using the iManifold® app.

E-LEARNING CURRICULUM NOW AVAILABLE

TUE-200: Suggested 3 courses totaling 54 credit hours

Subscription includes Instructor's selection of any 5 courses in catalog. Add more courses by request.

1. 111 Electrical DC Theory Plus
2. 112 Electrical AC Theory Plus
3. 113 Electrical Common Components

Shipping Weight: 780 lbs.
Shipping Dimensions: 97" L x 45" W x 80" H

iConnect® TRAINING

INCLUDED FREE WITH EVERY TRAINING UNIT WITH A REFRIGERATION CYCLE:

Training units with a refrigeration cycle include an extended-range iManifold® 900C System Analyzer kit for real-time system performance analysis suitable for projector or large screen display in the class-room. This kit works on most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available. Also, included is a card to request a complementary iManifold PULSE Kit (single-circuit 801PL) with a one-year Pulse Subscription. Value of $815! We hope you can use this latest technology, a leave-behind installation for a package unit, to teach your students the installation and monitoring process and watch the continuous data feed for educational opportunities.

Every iConnect Training Unit shown in this catalog with this green text box will include these kits, free!

BOTH A 900C iMANIFOLD SERVICE KIT AND AN iMANIFOLD PULSE KIT!

EP-525 RESIDENTIAL A/C AND HEAT PUMP EQUIPMENT PACKAGE

This is a great selection of tools and analytic equipment for the HVAC Tech. A service wrench sized for accessing refrigerant ports and valves, a Halide Leak Detector for detecting refrigerant leaks, a Super Vak-Check for measuring vacuum, a multi meter for electrical readings, and a high quality vacuum pump for pulling vacuum on a system.

Features

- 1/4" x 5/16" service wrench
- Leak detector kit
- Multimeter with temperature probes and clamp
- Vak-Check
- 6.0 CFM Vacuum pump

iConnect® TRAINING

CUSTOMIZATIONS

We are pleased to quote any specialty training unit you would like! We can customize our training units to meet your needs. From accommodating your country's electrical needs to helping you create something completely new, we are here to work with you.

Here at North Park Innovations Group, designing your custom training unit is a personalized, collaborative, and enjoyable experience. Once we have received your request, we will join you for a team consultation where we get to know you and gain an understanding of your needs and vision. Since our training units are built on site, we can keep you updated through all stages of the design and build process. Partnering in this way ensures you'll have great support and service while we design and build your new training unit, and for years to come as you put it to work.

Our custom training units are used on Air Force bases, at HVAC contractor training facilities and in vocational programs around the world. We would be delighted to discuss your custom training unit design. Please visit us at www. iConnectTraining.com and send us your requests today, or call 716.699.2031.

Customized TU-106

Customized TU-130

Customized for a leading contractor in Colorado, with selected features from our TU-208.

iConnect® TRAINING

NEW PRODUCT!

TU-900 SunTrac HYBRID TRAINING UNIT: Demonstrating the power of the sun for the refrigeration and cooling cycle

Technicians will learn the newest technology in HVAC/R with this hybrid thermal demonstrator trainer: a 3 ton package unit, combined with the patented SunTrac thermal system. It will have our popular, high-quality sight glasses for viewing the refrigerant cycle, clear panels to observe the internal systems of the package unit, and heavy duty wheels for ease of rolling from the classroom into the outdoor sun for a live demonstration of the panel's tracking technology. It will be integrated with data acquisition, connecting with the iManifold platform to show real time data. This energy-efficient learning tool will be a must in the classroom of the future.

FEATURES

The Hybrid Thermal approach uses the sun's energy to displace an average of 40% of the electrical energy used by the HVAC system.

SunTrac features the iManifold platform for installation, monitoring & reports

Demonstrate real-time savings and reports

INCLUDES: The popular iManifold 900C service kit, and a new iManifold Pulse kit for permanent installation and 24/7 monitoring on a package unit. See page 34 for more details.

SUNTRAC™
HYBRID CLIMATE SYSTEMS

iConnect® TRAINING

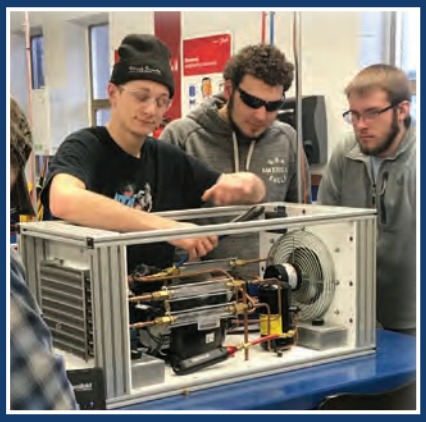
Completing installation of a TU-900 at Chino Valley, California.

NORTH PARK INNOVATIONS GROUP, INC. P.O. Box 900 | 6442 Route 242 East | Ellicottville, NY 14731 | 716.699.2031 | iConnectTraining.com

WHAT OUR CUSTOMERS ARE SAYING

"The TU-805 trainers we purchased have been the best money I have spent for my lab, they really help explain the refrigeration cycle to my students. It makes it so much easier when they can see what is going on and follow the flow. I also like the ability to control the fan speeds so you can demonstrate plugged filters and coils, they are truly amazing. One of my first year students even made the comment that they are the greatest thing since sliced bread!!! I have to agree with him, as they really help get that "Ah ha" moment when the students get what is going on. Thank you again and I look forward to more products from NPI."

– Kyle Braun, HVAC-R Coordinator
Iowa Central Community College



Iowa Central Community College HVAC students learning trouble-shooting on the TU-805.

We are proud to have iConnect Training units used for training and teaching HVAC/R techs around the world, including at these facilities:

Northwest Technical College – Bemidji, MN
Texas State Tech College, TX
Salt Lake City Community College, UT
Tennessee Valley Authority, TN
Saskatchewan Power, Canada
Sacramento Job Corps Center, CA
Lawrence Gardner High School, KS
Columbus State Community College, OH
Pulaski Technical College, AR
Bruce Power, Canada
Browns Ferry Nuclear Plant, AL
Delgado Community College, LA
Sheppard Air Force Base, TX
Marine Corps Base Camp LeJeune, NC
Vermont Technical College, VT
The Refrigeration Institute, NY
Entrade Aps, Denmark
Iowa Central Community College, IA
Travis County, TX

"I like the fact that we have an unobstructed view of the workings of the air handler, and we can show students the parts without having to take covers off. Now that they are on a smaller platform, it's easier to move from classroom to classroom. These Training Units are well put together, and everything is sturdy. They give us the ability to mimic service problems and have students try to overcome them with good methodology."

– Emilio Gelfenstein,
Campus Director & Chair of HVAC Program
Florida Career College, where TU-206 and TU-406 units are installed.

iConnect® TRAINING

"We have the TU-9250, TU-9240, and the TU-701. They are all central points for reference and practice built into our foundation curriculum. We use the (TU-9240 and TU-9250) electrical trainers every day! Our newest, the heat pump trainer (TU-701) has been awesome for taking p/t measurements and allowing the apprentices to be able to see "what's in the box" and really trace it out. Great products!"

– Nick Bell, Instructor
Steamfitters LU 464 in Omaha, NB

All Training Units are built right here in our plant in Western New York State.

iConnect®
TRAINING

NORTH PARK INNOVATIONS GROUP, INC.
P.O. Box 900 | 6442 Route 242 East | Ellicottville, NY 14731
716.699.2031 | iConnectTraining.com