

TRAINING UNIT CATALOG

SPECIALIZING IN HVAC/R TRAINING

iConnect[®]

TRAINING



TU-406C RESIDENTIAL HEAT PUMP TRAINER



INCLUDED IMANIFOLD KIT WITH SUBSCRIPTION
ALLOWS REAL-TIME PROJECTION IN THE CLASSROOM



TU-805 AIR CONDITIONING AND REFRIGERATION TRAINER



TU-106 DUAL-APPLICATION COMMERCIAL REFRIGERATION TRAINER

NORTH PARK INNOVATIONS GROUP, INC.

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**LEASE
FINANCING
AVAILABLE**



OUR COMMITMENT TO QUALITY EDUCATION

At iConnect Training 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 29).

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

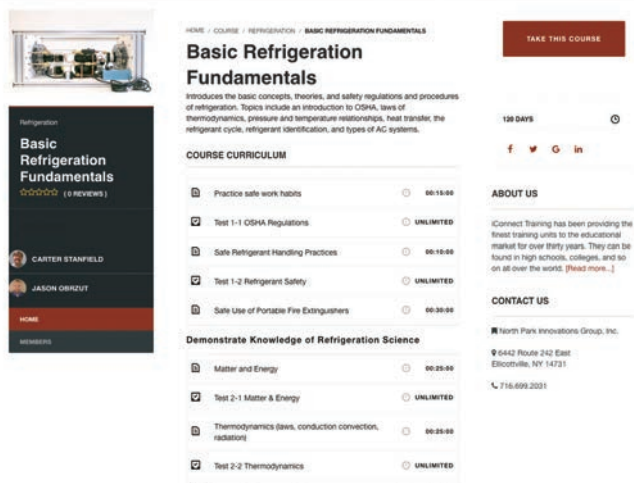
This is the first curriculum package powered by the iManifold® platform. Students will utilize today's cutting-edge technology to understand the key principles of refrigeration while learning to practice safe work habits.

This package provides an affordable solution which will help attract new students and ensure their future success in the workforce. Designed to be combined with the TU-805 Mobile Table Top Refrigeration training unit and included iManifold® 900C kit, the iConnect® Training System is a complete solution that can benefit all types of students and programs.

Basic Refrigeration Fundamentals covers basic concepts and theories of refrigeration as well as safe working procedures. It includes an introduction to OSHA, the laws of thermodynamics, pressure and temperature relationships, heat transfer, the refrigeration cycle, refrigerant identification and types of AC systems.

Students will be able to demonstrate safe work habits, knowledge of refrigeration science and different types of cooling systems as well as explain the vapor compression refrigeration cycle.

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The program includes 14 labs, 9 tests, 11 PowerPoint presentations and 7 short videos.

This course utilizes the popular textbook, *Fundamentals of HVACR* by Carter Stanfield and David Skaves. This book is available at an additional cost. Future iConnect Training curriculum will also utilize this text. It is a valuable resource for any future technician.

Basic Refrigeration Fundamentals will be delivered electronically from iConnectTraining.com.

Each student seat is available by a subscription with access for 24-months.

Our online learning management system houses videos, Power Point presentations, lab sheets and quizzes for each unit in the course. Lecture notes have been created to assist the instructor in the delivery of this material in the classroom.

Contact your iConnect® Training representative for pricing information.

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TRAINING

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 HFC 134a Refrigerant

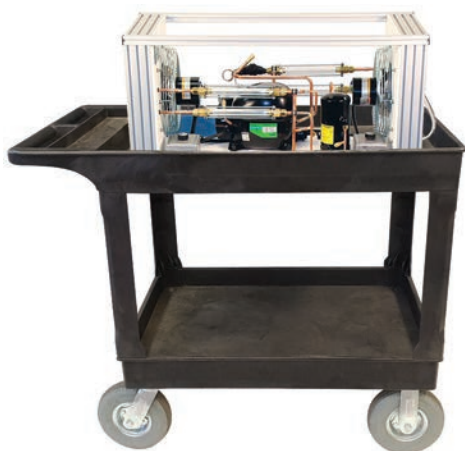
Overall Size: 34" L x 16" W x 16" H

Weight: 80 lbs.

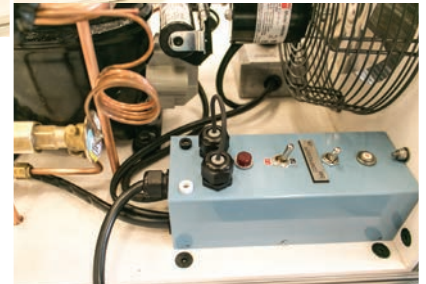
1/3 HP hermetically sealed reciprocating compressor.

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



**Convenient push cart
available separately*



Shipping Weight: 230#

Shipping Dimensions: 44" W x 36" L x 25" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.



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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 HFC 134a Refrigerant

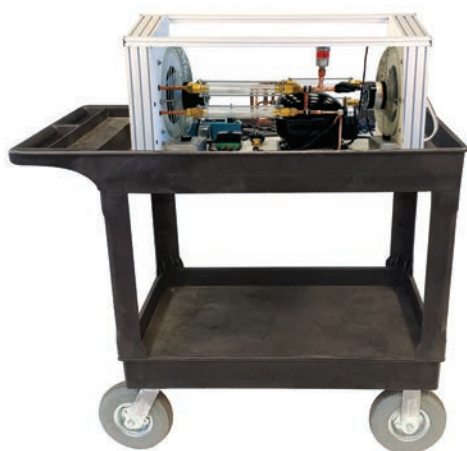
Overall Size: 34" L x 16" W x 16" H

Weight: 80 lbs.

1/3 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

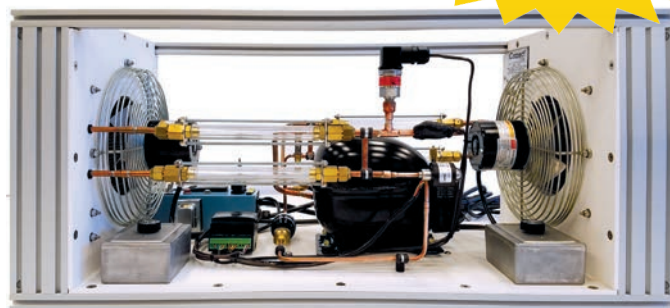


**Convenient push cart available separately*

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Shipping Weight: 230#

Shipping Dimensions: 44" W x 36" L x 25" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold[®] Pro+ subscription is included for one user; additional student subscriptions are available.



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 HFC 134a refrigerant

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

1/3 HP hermetically sealed reciprocating compressor.

Panels are 1/4" 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 evaporator and condenser
- 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)
- Evaporator and condenser copper tube coils with aluminum fins and variable speed fans
- A combination low pressure control and high pressure cutout and a thermostatic 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 evaporator and condenser load adjustment
- Includes booklet which contains a lab manual, instruction guide, and operation guide



Shipping Weight: 450 lbs.

Shipping Dimensions: 49" L x 45" W x 87" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.



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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 HFC 134a refrigerant

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

1/3 HP hermetically sealed reciprocating compressor.

Panels are 1/4" 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
- Thermostatic control with a range of -30°F to 100°F
- High pressure cutout in the circuit at all times to prevent damage to the compressor
- Includes Operation Manual

**NEW
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Shipping Weight: 450 lbs.

Shipping Dimensions: 49" L x 45" W x 87" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.

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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 HFC 134a refrigerant

Overall Size: 72" L x 18" W x 77.5" H

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

Panels: 1/4" 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
- Thermostatic 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



Shipping Weight: 950 lbs.

Shipping Dimensions: 81" L x 45" W x 88" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.

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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 HFC 134a refrigerant

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

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

Panels: 1/4" 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
- Thermostatic 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



**NEW
PRODUCT!**



Electrical Fault Package on the back of the trainer

Shipping Weight: 950 lbs.

Shipping Dimensions: 81" L x 45" W x 88" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.



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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 HFC 134a 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



Shipping Weight: 380 lbs.

Shipping Dimensions: 37" L x 37" W x 61" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.

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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: 115VAC; 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 and 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



OPTIONAL WATER TOWER AND WATER PUMP

WILL SHIP IN 1 OR 2 CRATES

Shipping Weight and Dimensions:

Crate 1: 1,200 lbs. / 99" L x 48" W x 92" H

Crate 2: 350 lbs. / 49" L x 41" W x 70" H

(Crate 2 is the optional Water Tower)

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.



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TU-206 RESIDENTIAL AIR CONDITIONING TRAINER

Real world experience in troubleshooting wiring, piping and controls of a working air conditioning unit for a whole house.

Specifications

Electrical requirements: 240VAC; 60Hz; 15A

Uses R410a refrigerant (can be pumped down)

TU-206 Overall Size: 33" L x 70" W x 65" 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 Lab Manual and book *Refrigeration and Air Conditioning Technology*
- Operation Manual describing how the unit works as well as its faults
- Optional add-on equipment package provides all the professional tools necessary to complete service checks (see page 20)

Optional Unit Configuration

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

* NOTE: 240V plug not included



* NOTE: 206C Overall Size: 33" L x 70" W x 73" H

Shipping Weight: 600 lbs.

Shipping Dimensions: 80" L x 43" W x 72" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.

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TU-406 RESIDENTIAL HEAT PUMP TRAINER

Real world experience in troubleshooting wiring, piping and controls of a working air conditioner / heat pump unit for a whole house.

Specifications

Electrical requirements: 240VAC; 60Hz; 15A

Uses R410a refrigerant (can be pumped down)

TU-406 Overall Size: 70" L x 33" W x 65" 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
- Operation Manual describing how the unit works as well as its faults
- Optional add-on equipment package provides all the professional tools necessary to complete service checks (see page 20)

Optional Unit Configuration

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

* NOTE: 240V plug not included



* NOTE: 406C Overall Size: 70" L x 33" W x 73" H

Shipping Weight: 600 lbs.

Shipping Dimensions: 80" L x 43" W x 72" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.

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TRAINING UNITS

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: 240VAC; 60Hz (Amp requirement varies with model)

Uses R410a refrigerant

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

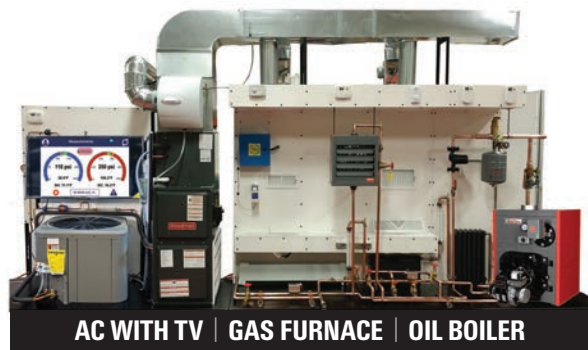
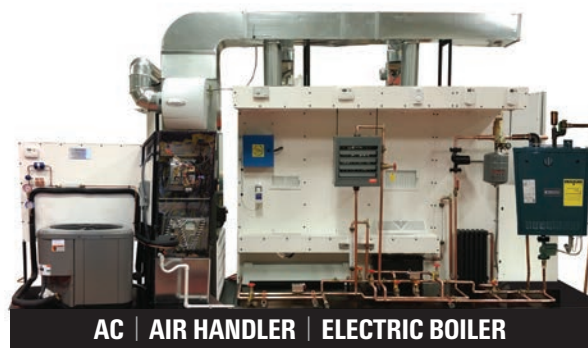
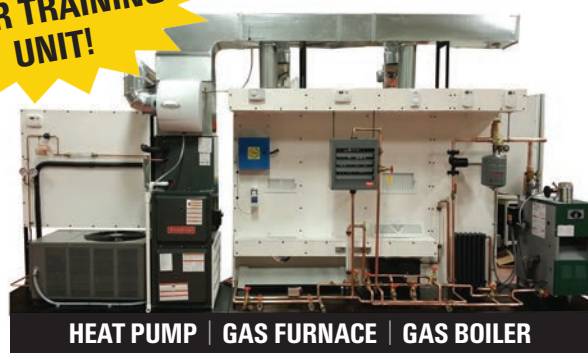
This training unit includes a standard-range iManifold® 900C System Analyzer kit for real-time system performance analysis suitable for projector or large screen display in the class-room. This kit works with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.



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TRAINING

**CUSTOMIZE
YOUR TRAINING
UNIT!**



MORE COMBINATIONS AVAILABLE!

4 CRATES Shipping Weight:
(3) at 600 lbs, (1) at 200 lbs; 2,000 lbs total
Shipping Dimensions:
Crates 1-3: 79" L x 43" W x 72" H
Crate 4: 79" L x 43" W x 36" H

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 HFC 134a refrigerant

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

Features

- Pre-piped and pre-wired trainer with all in complete view
- 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
- 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



Shipping Weight: 175 lbs.

Shipping Dimensions: 37" L x 48" W x 40" H

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.



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TU-302 CONTROL BOARD, ELECTRIC HEAT TRAINER

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

Specifications

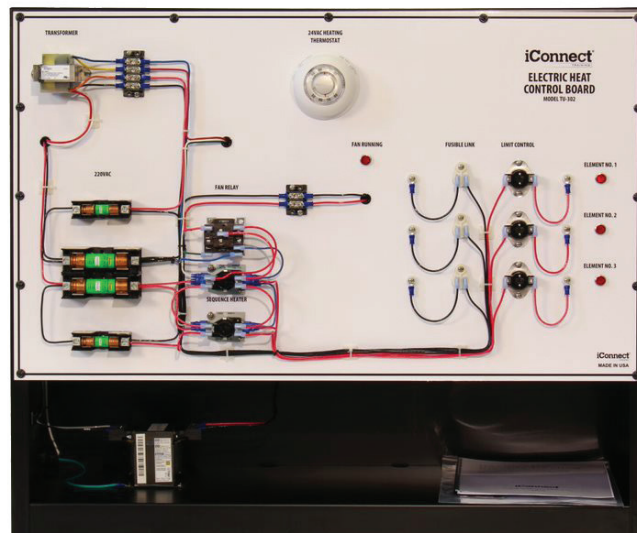
Electrical Requirements: 120VAC; 60Hz; single phase

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
- Sequences
- Klaxon 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



Shipping Weight: 110 lbs.

Shipping Dimensions: 37" L x 48" W x 40" 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

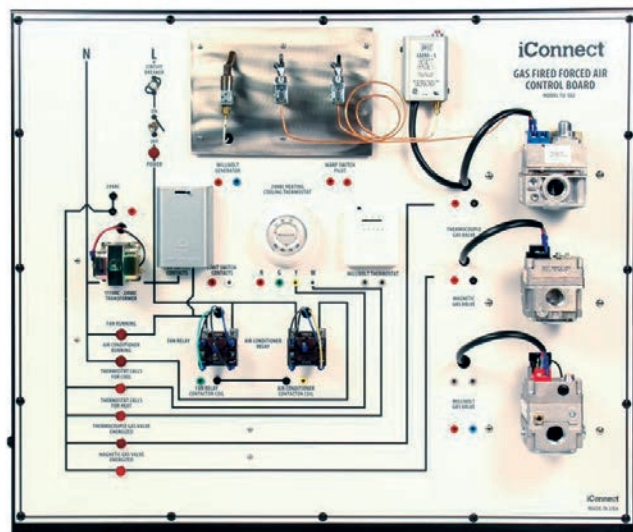
Electrical Requirements: 120VAC; 60Hz; single phase

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



Shipping Weight: 130 lbs.

Shipping Dimensions: 37" L x 48" W x 40" H

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TRAINING

TU-521 CONTROL BOARD, SINGLE PHASE COMPRESSOR TRAINER

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

Specifications

Electrical Requirements: 120VAC; 60Hz; single phase

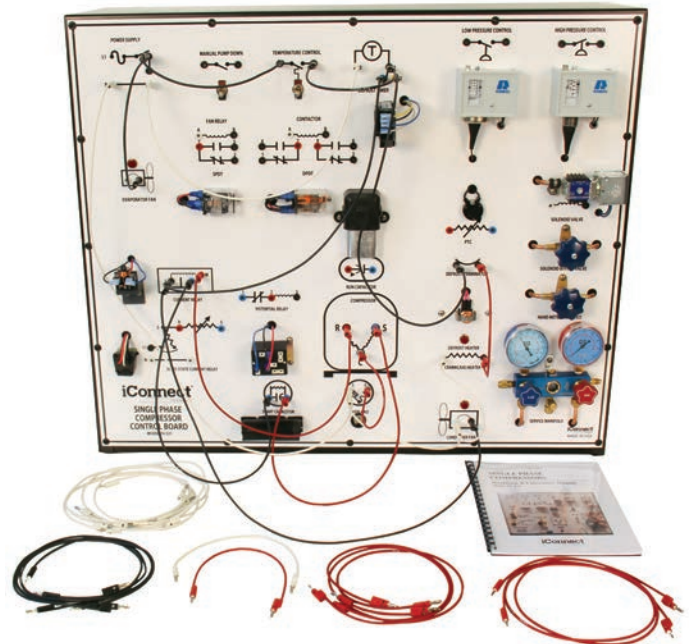
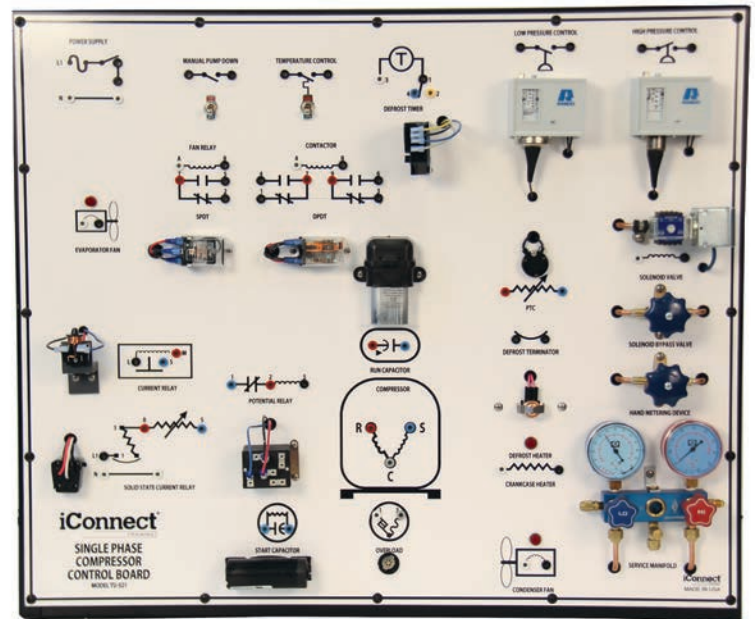
Uses HFC 134a refrigerant

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

Weight: 70 lbs.

Features

- Components are put 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



Shipping Weight: 190 lbs.

Shipping Dimensions: 37" L x 48" W x 40" H

iConnect[®]

TU-101 DOMESTIC REFRIGERATION BUILD-UP TRAINER

Companion to the Motors, Controls and Circuit Trainer (Model TU-501) described on page 17. 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.

The double evaporator simulates a dual evaporator system application that demonstrates basic principles and provides service experience.

Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

Uses HFC 134a 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

- 1/4 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



Shipping Weight: 350 lbs.

Shipping Dimensions: 49" L x 45" W x 87" H

iConnect[®]
TRAINING

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; single phase

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
- 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.



Shipping Weight: 350 lbs.

Shipping Dimensions: 49" L x 45" W x 87" H

iConnect[®]

TRAINING

TUE-150 RESIDENTIAL WIRING TRAINER

This Trainer Panel is used to demonstrate electrical principles typically found in a residential use. It also 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 circuit breaker 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 breadboarding 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 Electro-Lock to apply 120 VAC. Students learn wiring as well as the proper electrical hookups from the manual that is included.

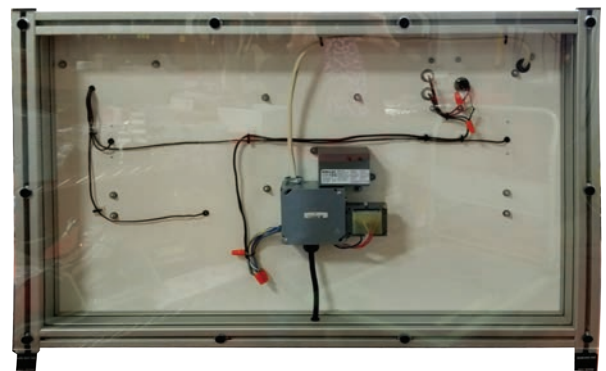
Specifications

Electrical requirements: 120VAC

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

Features

- Low voltage pushbutton "doorbell" switch
- Pilot light to indicate low voltage, 24V, "ON"
- A low voltage doorbell
- 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



Shipping Weight: 175 lbs.

Shipping Dimensions: 37" L x 48" W x 40" H

iConnect®

TRAINING

TUE-200 RESIDENTIAL WIRING DEMONSTRATOR

Students gain a full understanding of National Electrical Code residential electrical circuits. Through real-world application practice, students attain a substantial beginning level skill and proficiency using tools of the electrical trade.

Specifications

Electrical requirements: 240VAC

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 & 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 DL429 Multimeter to this trainer so you can project electrical readings real-time in the classroom using the iManifold® app.

iConnect[®]

TRAINING

Shipping Weight: 350 lbs.
Shipping Dimensions: 93" L x 44" W x 64" H

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



EP-626 DELUXE RESIDENTIAL A/C AND HEAT PUMP EQUIPMENT PACKAGE

All the same great tools and analytic equipment found in the EP-525, plus an iManifold kit.

Features

- All the features in EP-525 kit shown above, plus:
- A standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold® Pro+ subscription is included for one user; additional student subscriptions are available.



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

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

*This new training unit will be presented for the first time
at the AHR Expo 2019.*

Technicians will learn the newest technology in HVAC/R with this hybrid thermal demonstrator trainer: a 3.5-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.



*Display from the AHR Expo 2018 shows some of
the featured elements of this new training unit.*

FEATURES

**This Hybrid-Thermal approach uses the sun's energy to displace 25% - 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



iConnect[®]

TRAINING

This training unit includes a standard-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 with most smart devices (customer to provide, with appropriate cable.) 1-year iManifold[®] Pro+ subscription is included for one user; additional student subscriptions are available.



The Platform for Productivity



The simple and smart solution for HVAC/R installation and service.

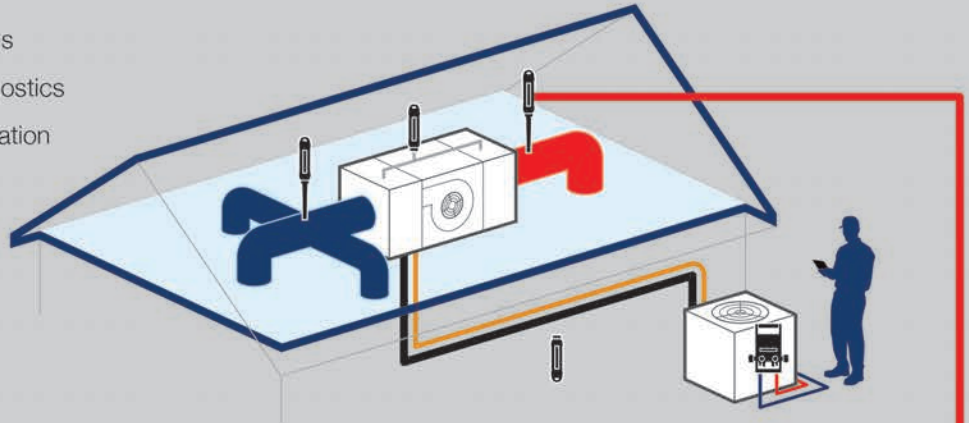
iManifold® Works the Way You Do!

From residential to refrigeration, the iManifold system replaces the mechanical manifold and accommodates the simplest to the most complex systems you service. Modular and expandable, the Zigbee mesh network of wireless probes outperforms all Bluetooth solutions by talking probe to probe, or probe to your iManifold® 900C hub. Using this cutting-edge technology, the signal can be repeated and transmitted to almost unlimited distances.



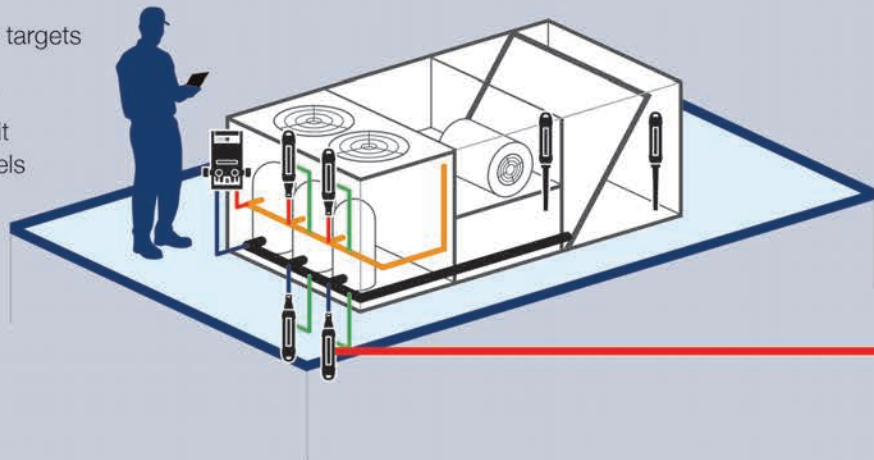
Residential

- Real-time system performance calculations
- Powerful onboard diagnostics
- Automatic airflow calculation
- Powerful reporting features
- Efficiency and time savings



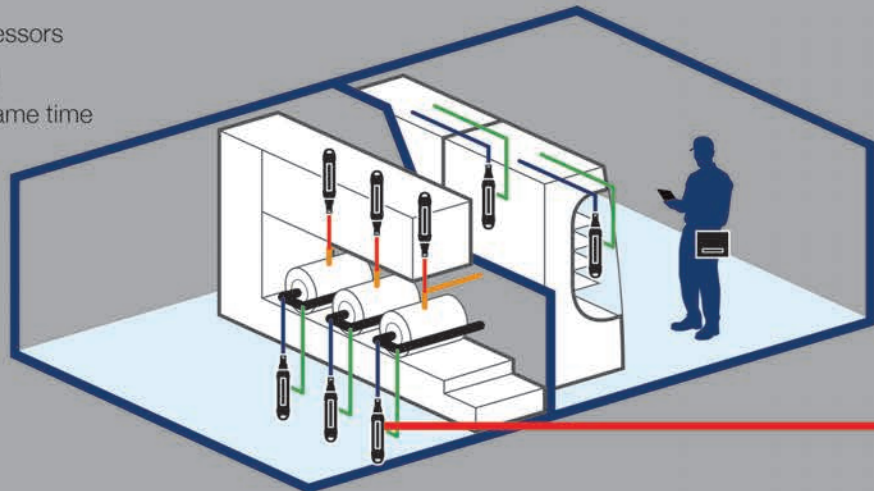
Commercial

- Calculates performance targets
- Monitor multiple stages
- Wireless probes transmit through equipment panels
- Automatic airflow calculation



Refrigeration

- Monitor multiple compressors
- Monitor evaporator and total superheat at the same time
- Monitor and set superheats on up to 12 cases simultaneously
- View superheat, box temperature, saturation temperature and pressure from a single probe



Intelligent Communications Platform

Easily getting the “smart” from your smart device

From the probes to the iManifold® 900M or 900C into the iManifold Pro+ cloud then back to the interested party, the iManifold platform is all about getting verifiable data from the field to the decision maker. Show your customers with confidence and professionalism that the service you sell provides the value they expect.



iManifold Pro+™ Solutions

Data is power. iManifold offers a true data access solution for the pro.

Contractor		Distributor	
<ul style="list-style-type: none">• Increased profitability; typical return on investment in 3 months or less• Reduced call backs• Uniform service and installation processes• Lightning-fast field technical support using Tech Connect• Huge productivity gains		<ul style="list-style-type: none">• Offer real cutting-edge technology solutions• Increased equipment sales• Increased contractor satisfaction• Reduced warranty claim processing	
OEM		ESCO/Utility	
<ul style="list-style-type: none">• Verify new install system performance• Delivery of engineered efficiency• Access to quality field data• Increased brand satisfaction through optimal operation• Reduced warranty claims		<ul style="list-style-type: none">• Verified field data• 3rd party verification without travel• Easy integration of exported data• Rock-solid software and hardware	

Support Tech Connect™



Remotely view a live version of what your technicians are seeing in the field.

Verify



Verification in Field assures that the data reported is the actual data measured in the field.

Reporting



All reports include your company, customer and equipment information as well as measurement data collected.

Productivity Gains with the iManifold® Platform

The award-winning iManifold 900M - the first smart device compatible digital manifold - uses remote viewing on a technician's smart device. Download the free iManifold App and your smart device will display system pressures, temperatures, superheat and subcooling while simultaneously calculating performance targets. Eliminate manual calculations, analyze data, troubleshoot and generate performance reports directly from your smart device.

The 900M with Integrated Manifold.



Tech Connect™



Share field data in real time: tech-to-tech, tech to wholesaler, or tech to manufacturer. Tech Connect allows you to stream data to anyone within your group for troubleshooting help or simply a second set of eyes. Use video, voice, text, and email to communicate.

Equipment Profiling



Profile A/C, refrigeration or heat pump systems. The iManifold application troubleshoots over 40 different problems and measures airflow, performance, efficiency and more.

Reporting



Powerful reporting software gathers all of the field data in seconds. Formatted, verified, and delivered to email, standard and custom reports are available to keep your technicians consistent and wow your customers.

Quick Tests



The iManifold application offers several quick tests for airflow and heating applications. These standard industry tests, now automated by the iManifold application and software, are super fast and done to a high degree of accuracy.

Trending



Trending allows the technician to see changes in performance, visually, by graphing measurements as they happen. See where measurements are headed to ensure that equipment performance is trending in the right direction.

Probe Mapping



The iManifold application allows the user to have almost complete control of what probes are used to take what measurements. Users can quickly map probes for ambient temperatures, air temperatures, pressures and more.

iManifold Pro+



This service allows access to Tech Connect, data storage, web-based reporting, report storage and gives your company access to data from the field or the office.

Wireless



Let's face it: wireless is only great when it works. Zigbee mesh allows for multiple-path communication in an easily expandable network and provides long-range communication.

The 900C Hub for Full Mobility.



Products & Accessories

Shop Online
at
www.iManifold.com

Part No. Description

- 900M** **iManifold® Wireless Digital Refrigeration Manifold.** Includes strap with hook, (2) 901M pipe strap probes, (6) AA batteries and Quick Start Guide.
- 900C** **iManifold 900C Portable Measurement System.** Use wireless and wired probes to simultaneously measure and monitor temperatures, pressures, or relative humidity. Includes (6) AA batteries.

Accessories for iManifold

- 901M** **Thermistor Pipe Strap Surface Probe.** Temp range: -25° to 212°F. 8" elastic strap.
- 902M** **Thermistor Air Probe (0.5") with 4" cord.** Temp range: -40° to 200°F.
- 903M** **Thermistor Air Probe (0.5") with 12 ft. cord.** Temp range: -40° to 200°F.
- 904M** **General Purpose Thermistor Puncture Probe (3.5").** Used to measure temperatures by insertion or immersion. Temp range: -40° to 300°F. 6 ft. cable (uncoiled).
- 905M** **Thermistor Pipe Clamp Surface Probe.** For pipe diameters up to 1-3/8" (3.5cm).

Wireless Probes

All wireless probes also act as repeaters

- 911M** **Relative Humidity and Temperature.** Measures return & supply wet-bulb, dry-bulb, relative humidity.
- 912M** **Temperature.** Has 2 side ports to plug in any optional wired probes for auxiliary temperatures.
- 913M** **Low Pressure & Temperature.** Use for measuring low side system pressure & line temperatures with optional wired probes.
- 914M** **High Pressure & Temperature.** Use for measuring high side system pressure & line temperatures with optional wired probes.
- 921M** **Manometer.** ± 2" WC (500Pa) range. Zero-drift. 0.000 resolution. Ideal for total external static pressure, airflow measurements, or zonal de-pressurization. Includes (2) 5' lengths of 1/8" I.D. translucent silicone tubing with flush mount magnetic static pressure tips.



Organize your gear & outfit yourself with a new backpack!
Included with all kits.

iManifold Performance Test Kits

- 915M** **iManifold 900M Performance Test Kit.** 900M, 911M (2), 902M, 905M, BP17 Backpack.
- 916M** **iManifold 900M Performance Test Kit with Hoses.** 900M, 911M (2), 902M, 905M, 955MRS hose set, BP17 Backpack.
- 917M** **iManifold 900M A/C Heat Pump Performance Test Kit.** 900M, 911M (2), 912M, 903M, 955MRS hose set, BP17 Backpack.
- 918M** **iManifold 900M Custom Refrigeration Multi Compressor/4 Circuits Performance Test Kit.** 900M, 911M (2), 912M, 913M (3), 914M (3), 901M (6), 903M, 955MRS hose set, BP17 Backpack.
- 919M** **NYSERDA Approved 900M Quality Maintenance Kit.** 900M, 911M (2), 912M, 913M, 914M, 901M (2), 902M, 903M, 905M, 900C, and BP17 Backpack.
- 920M** **iManifold 900M Performance Test Kit with Repeater Probe.** 900M, 911M (2), 912M, 902M, 905M, 955MRS hose set, and BP17 Backpack.

iManifold 900C Performance Test Kits

- 915C** **iManifold 900C Airside Performance Test Kit.** 900C, 911M (2), BP17 Backpack.
- 916C** **iManifold 900C Performance Test Kit with Airflow Measurement.** 900C, 901M (2), 902M, 905M, 911M (2), 912M, 913M, 914M, BP17 Backpack.
- 917C** **iManifold 900C Residential Test Kit with Airflow Measurement.** 900C, 911M (2), 912M, 913M, 914M, 901M (2), 903M, BP17 Backpack.
- 918C** **iManifold 900C Custom Refrigeration Multi Compressor/4 Circuits Performance Test Kit.** 900C, 911M (2), 912M, 913M (4), 914M (4), 901M (8), 903M, BP17 Backpack.
- 925C** **iManifold 900C Basic Performance Test Kit.** 900C, 901M (3), 902M, 911M (2), 913M, 914M, Backpack.

Custom Program Test Kits

- 950M** **iManifold Custom Program Test Kit, 2-Circuit Extended Range.** 900M, 912M, 911M (3), 901M (2), 913M, 914M, 955-MRS, Backpack.
- 951M** **iManifold Custom Program Test Kit, 4-Circuit Extended Range.** 900M, 912M, 911M (3), 901M (6), 913M (3), 914M (3), 955-MRS, Backpack.
- 952C** **iManifold 900C Custom Program Test Kit, 1-Circuit Extended Range.** 900C, 911M (3), 901M (2), 905M, 912M, 913M, 914M, Backpack.



iManifold®
DRIVEN BY iCONNECT®

www.iManifold.com
The iManifold app is available for free download



Available on the
App Store



GET IT ON
Google play



Get it from
Microsoft

North Park Innovations Group, Inc.
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Patented US 723 4313 and Other Patents Pending.

Scan to learn more

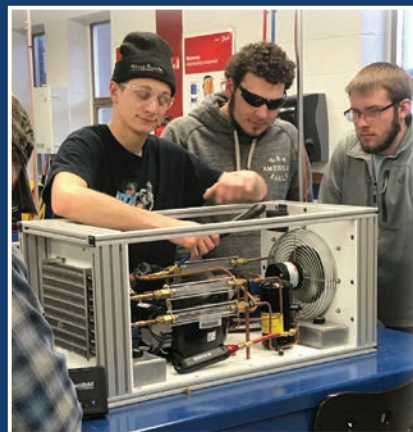


Download free app

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:

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
Northwest Technical College, MN

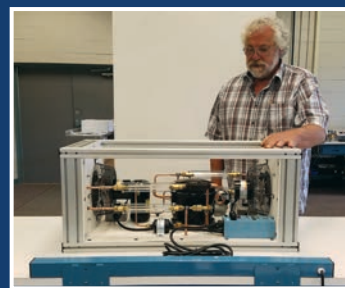
"I like the fact that we have an unobstructed view of the workings of the air handler, and we can show students the parts without having to take covers off. Now that they are on a smaller platform, it's easier to move from classroom to classroom. These Training Units are well put together, and everything 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.**



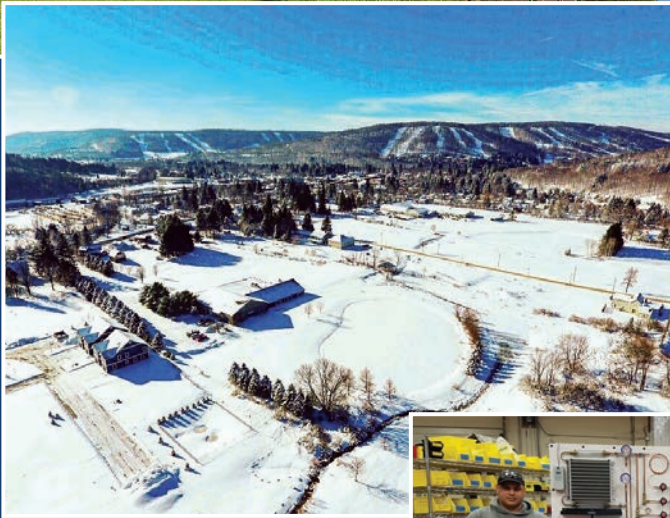
iConnect[®]
TRAINING

Left and Above: Production in progress on various Training Units in our plant.



Weighing only 80#, the TU-805/810 trainer can be easily carried by two people for re-locating in your classroom or lab.

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



iConnect[®]
TRAINING

NORTH PARK INNOVATIONS GROUP, INC.
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