

TRAINING UNIT CATALOG

SPECIALIZING IN HVAC/R TRAINING

iConnect[®]

TRAINING



TU-406C RESIDENTIAL HEAT PUMP TRAINER



Select Training Units now come with an iManifold or iConnect kit!

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

NEW PRODUCT!



TU-805 AIR CONDITIONING AND REFRIGERATION TRAINER



TU-100 BASIC REFRIGERATION TRAINER

TABLE OF CONTENTS

TRAINING UNITS

TU-805 MOBILE TABLE-TOP

TU-805 AIR CONDITIONING AND REFRIGERATION TRAINER	1
TU-810 EEV TABLE-TOP AIR CONDITIONING AND REFRIGERATION TRAINER	2
TU-100 BASIC REFRIGERATION TRAINER	3
TU-105 COMMERCIAL REFRIGERATION TRAINER	4
TU-106 DUAL-APPLICATION COMMERCIAL REFRIGERATION TRAINER	5
TU-420 REFRIGERATION TRAINER, DEMONSTRATOR	6
TU-155 INDUSTRIAL REFRIGERATION TRAINER	7
TU-206 RESIDENTIAL AIR CONDITIONING TRAINER	8
TU-406 RESIDENTIAL HEAT PUMP TRAINER	9
TU-208 COMBINATION FORCED AIR TRAINER	10
TU-701 TABLE-TOP HEAT PUMP TRAINER	11
TU-302 CONTROL BOARD, ELECTRIC HEAT TRAINER	12
TU-502 GAS FIRED HEATING CONTROL BOARD	12
TU-521 CONTROL BOARD, SINGLE PHASE COMPRESSOR TRAINER	13
TU-101 DOMESTIC REFRIGERATION BUILD-UP TRAINER	14
TU-501 MOTORS, CONTROLS AND CIRCUITS BUILD-UP TRAINER	15
TUE-150 RESIDENTIAL WIRING TRAINER	16
TUE-200 RESIDENTIAL WIRING DEMONSTRATOR	17
EP-525 & EP-625 RESIDENTIAL A/C AND HEAT PUMP EQUIPMENT PACKAGE	18
TESTIMONIALS AND LOCATIONS FEATURING ICONNECT TRAINING UNITS	25

**LEASE
FINANCING
AVAILABLE**



OUR COMMITMENT TO QUALITY EDUCATION

At iConnectTraining 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.

iConnectTraining 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 25).

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.

**NEW
PRODUCT!**

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 in the classroom or mobile training.

Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

Overall Size: 36" L x 16" W x 16" H

Weight: 80 lbs.

Uses HFC 134a Refrigerant

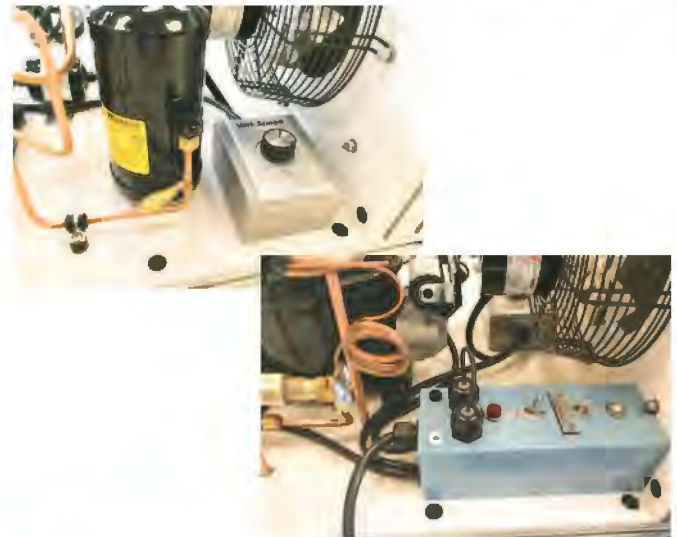
1/3 HP hermetically sealed reciprocating compressor.

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

Training Curriculum, Workbooks, & Certification Available Soon:

The TU-805 training curriculum will be organized with sessions for addressing specific competencies and student learning outcomes. The package of training resources will include lecture notes, power point presentations, instructional videos, and lab exercises. Students will be able to demonstrate knowledge of the refrigeration cycle and complete iManifold® certification using the TU-805 Trainer and the included iConnect® System Analyzer kit. This curriculum package will be priced separately as a per-student add-on and will be available in early 2018.



Shipping Weight: 230#

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

This Training Unit comes with a standard-range iConnect System Analyzer kit by iManifold for real-time system performance analysis suitable for projector or large screen display in the class-room.

1-year iManifold Cloud Subscription is included for one user; additional student subscriptions are available.



iConnect®

TRAINING

**NEW
PRODUCT!**

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

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

Specifications

Electrical Requirements: 120VAC; 60Hz; 15A

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

Weight: 80 lbs.

Uses HFC 134a Refrigerant

1/3 HP hermetically sealed reciprocating compressor.

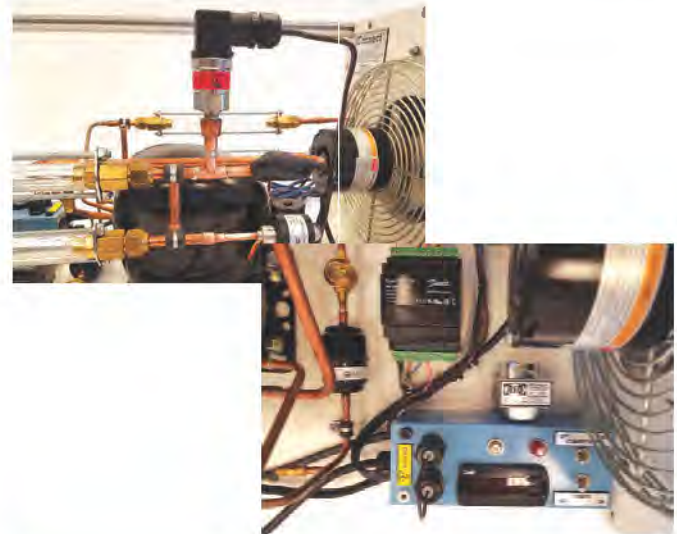
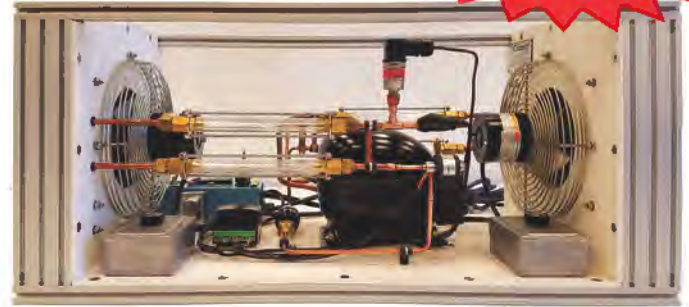
Features

- **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

Training Curriculum, Workbooks, & Certification

Available Soon:

The TU-810 training curriculum will be organized with sessions for addressing specific competencies and student learning outcomes. The package of training resources will include lecture notes, power point presentations, instructional videos, and lab exercises. Students will be able to demonstrate knowledge of the refrigeration cycle and complete iManifold® certification using the TU-810 Trainer and the included iConnect® System Analyzer kit. This curriculum package will be priced separately as a per-student add-on and will be available in early 2018.



Shipping Weight: 230#

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

This Training Unit comes with a standard-range iConnect System Analyzer kit by iManifold for real-time system performance analysis suitable for projector or large screen display in the class-room.

1-year iManifold Cloud Subscription is included for one user; additional student subscriptions are available.



iConnect[®]

TRAINING

TU-100 BASIC REFRIGERATION TRAINER

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

Specifications

1/3 HP hermetically sealed reciprocating compressor.

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

Uses HFC 134a refrigerant

Electrical requirements: 120VAC; 50/60 Hz; 10A

Overall size: 36" L x 18" W x 73" H

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 furnished
- High pressure cutout in the circuit at all times to prevent damage to the compressor
- Includes Lab Manual and Instructor Guide



Shipping Weight: 450 lbs.

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

This Training Unit includes an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



iConnect[®]
TRAINING

TU-105 COMMERCIAL REFRIGERATION TRAINER

Specifications

Compressor: Single phase, 1/2 HP semi-hermetic (bolted reciprocating-type) 120VAC, 60 Hz, 15 Amp

Evaporators and condenser: Copper tube coils with aluminum fins and variable speed fan mounted on back of panel

Uses HFC 134a refrigerant

Mounting stand: 72" L x 18" W x 72" H

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

Electrical requirements: 120VAC, 60 Hz

Features

- Evaporator Pressure Regulator (ERP)
- 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 control and high pressure cut-out
- Thermostatic control with an adjustable range of -30°F to 100°F
- 2 solenoid liquid line valves
- Includes Lab Manual and Operation Instructions



Shipping Weight: 950 lbs.

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

This Training Unit includes an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



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

Compressor: Single phase, 1/2 HP semi-hermetic (bolted reciprocating-type) 120VAC, 60 Hz, 15 Amp

Condenser and Low and Medium Temperature Evaporators: Copper tube coils with aluminum fins and adjustable speed fans mounted on back of panel.

Uses HFC 134a refrigerant

Mounting stand: 72" L x 20.75" W x 72" H

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

Electrical requirements: 120VAC, 60 Hz

Features

- Customizable isolated access ports for alternate metering devices
- Defrost Timer
- Electrical Fault Package
- 2 Refrigerant Flow Meters
- 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
- Dual Pressure Control
- Thermostatic control with an adjustable range of -30°F to 100°F
- 2 solenoid liquid line valves
- Includes Lab Manual and Operation Instructions



Shipping Weight: 950 lbs.
Shipping Dimensions: 81" L x 45" W x 88" H

This Training Unit includes an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



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, 60 Hz, 15A

Uses HFC 134a refrigerant

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

Weight: 115 lbs.

Features

- Components arranged to illustrate the cycle nature of refrigeration
- 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 Lab Manual



Shipping Weight: 380 lbs.

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

This Training Unit includes an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



iConnect[®]
TRAINING

TU-155 INDUSTRIAL REFRIGERATION TRAINER

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

Specifications

Electrical Requirements: Single phase, 240VAC, 60 Hz, 30A

Uses R422B refrigerant

Overall Size: 100" L x 27" W x 74" H

Water Tower: 60 Hz, single phase, 60,000 BTU/hour. 115 VAC, 60Hz.
(This is an optional add-on)

Utility Requirements: city water, drain, and means of venting water tower

Features

- Trainer: Self-contained and freestanding with storage space underneath
- Compressor: Semi-hermetic type with 2 HP capacity
- Crankcase heater with automatic control system
- 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



BASED ON OPTIONS, WILL SHIP IN 1 TO 2 CRATES

Shipping Weight and Dimensions:

Crate 1: 1200 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 an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



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; 50/60 Hz; 15A

Uses R410a refrigerant

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
- R410a refrigerant can be pumped down
- Metering device/thermostatic expansion valve
- 2 sets of pre-connected high and low pressure refrigeration gas/liquid gauges
- Necessary line and low voltage wiring
- Low voltage transformer and wiring
- Includes Lab 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 18)

Optional Unit Configuration

- **TU-206:** Base unit (*as shown*)
- **TU-206D:** Base Unit with Duct Work ONLY
- **TU-206TV:** Base Unit and TV ONLY
- **TU-206C:** Base Unit with TV and duct work added (*Deluxe as shown*)

iConnect[®]
TRAINING

BASE UNIT



SEVERAL
TU-206 OPTIONS
AVAILABLE
(see below left)

DELUXE UNIT



Optional
Duct Work

Optional Large
Digital Display
shows iManifold
Live Readings

Shipping Weight: 600 lbs.

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

This Training Unit includes an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



TRAINING UNITS

TU-406 RESIDENTIAL HEAT PUMP TRAINER

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

Specifications

Electrical requirements: 240VAC; 50/60 Hz; 15A

Uses R410a refrigerant

Overall size: 60" L x 48" W x 73" 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
- R410a refrigerant can be pumped down
- Reversing valve that is operated through a digital thermostat
- Metering device/thermostatic expansion valve
- 2 sets of pre-connected high and low pressure refrigeration gas/liquid gauges
- Operation Manual describing how the unit works as well as its faults
- Necessary line and low voltage wiring
- Low voltage transformer and wiring
- Includes Lab 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 18)

Optional Unit Configuration

- **TU-406:** Base unit (*as shown*)
- **TU-406D:** Base Unit with Duct Work ONLY
- **TU-406TV:** Base Unit and TV ONLY
- **TU-406C:** Base Unit with TV and duct work added (*Deluxe as shown*)

iConnect[®]
TRAINING

BASE UNIT



SEVERAL
TU-406 OPTIONS
AVAILABLE
(see below left)

DELUXE UNIT



Optional
Duct Work

Optional Large
Digital Display
shows iManifold
Live Readings

Shipping Weight: 600 lbs.

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

This Training Unit includes an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



TU-208 COMBINATION FORCED AIR & HYDRONIC HEATING TRAINER

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

Specifications

Trainer can be custom built to meet your needs

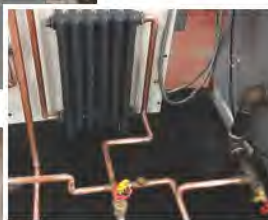
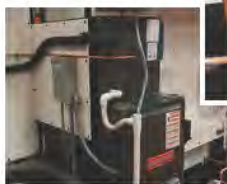
Uses R410a refrigerant

Electrical Requirements

240VAC, 50/60 Hz

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 Lab Manual and two books, *Refrigeration and Air Conditioning Technology* and *Heat Pumps: Operation, Installation, & Service, with student assignments*



iConnect[®]

TRAINING



This unit has multiple customizations.

Choose from:

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

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

This Training Unit includes an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



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; 50/60 Hz; 10A

Uses HFC 134a refrigerant

Overall Size: 32" L x 17½" W x 31" H

Features

- Trainer – pre-piped and pre-wired 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 Lab 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 an iManifold Kit for full diagnostic testing and troubleshooting of system components. The kit comes complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and the iConnect hub are also available.



iConnect[®]
TRAINING

TU-302 CONTROL BOARD, ELECTRIC HEAT TRAINER

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

Specifications

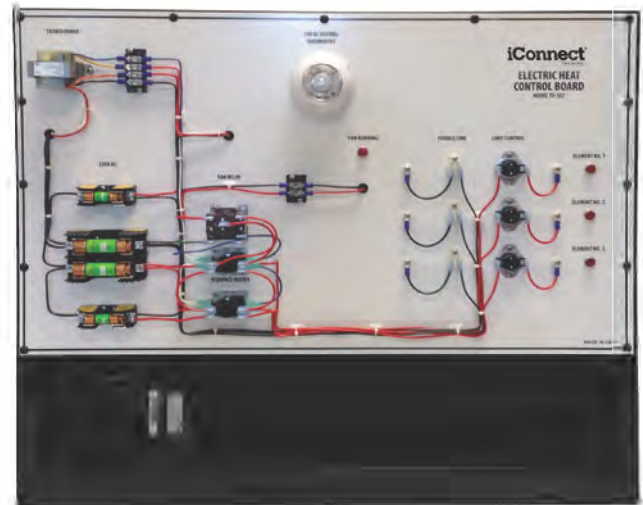
Electrical Requirements: 120VAC, single phase, 60 Hz

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
- 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



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.

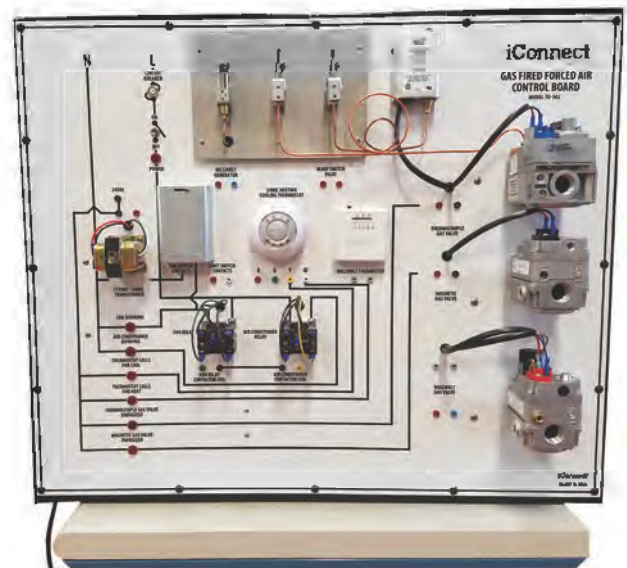
Specifications

Electrical Requirements: 120VAC, single phase, 60 Hz

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

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



Shipping Weight: 130 lbs.

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

iConnectTM
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

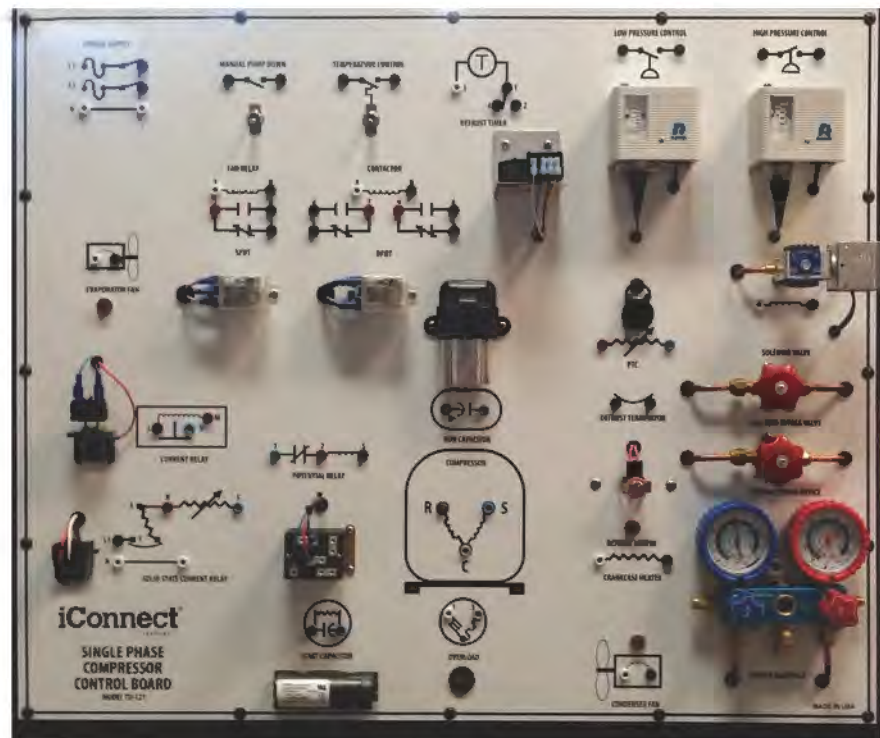
Electrical requirements: 120VAC, single phase, 60 Hz

Uses HFC 134a refrigerant

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

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 running capacitors are supplied for capacitor (capacitive) start systems
- Includes Lab Manual



Shipping Weight: 190 lbs.

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

iConnect[®]
TRAINING

TU-101 DOMESTIC REFRIGERATION BUILD-UP TRAINER

Companion to the Motors, Controls and Circuit Trainer (Model TU-501) described on page 15. Designed for the student that 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

Uses HFC 134a refrigerant

Electrical Requirements: 120VAC, 50/60 Hz, 10 A

Overall Size: 36" 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 and



Shipping Weight x85 lbs.

Shipping Dimensions x49" L x x45" W x x87" 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

Panels are 1/4" thick with steel reinforced component shelf

Electrical Requirements: 120/240VAC, 1 Phase, 60 Hz

Overall Size: 36" L x 18" W x 73" 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 Lab Manual 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

TUE-150 RESIDENTIAL WIRING TRAINER

This Trainer Panel is used to demonstrate electrical principles similar to those found in a residential dwelling. 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 to the trainer 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.

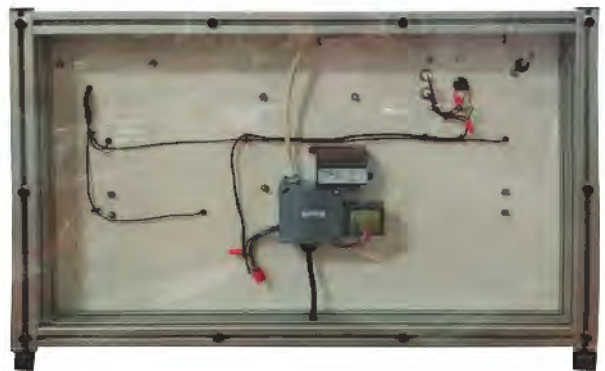
Specifications

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 buzzer
- 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 Lab Manual



Add an optional UEI DL429 Multimeter to this trainer so you can project electrical readings real-time in the classroom using the iManifold app.

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.

Shipping Weight: 350 lbs.

Shipping Dimensions: 93" L x 44" W x 64" H

iConnect[®]
TRAINING

EQUIPMENT KITS

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:
- iManifold kit, complete with the award-winning iManifold wireless digital refrigeration manifold, (1) 902M Thermistor Air Probe, (3) 901M Thermistor Pipe Strap Surface Probes, (1) 955MRS 5' hose set with low loss ball valve shut off, and (1) iManifold backpack. Additional accessories such as wireless probes and iConnect hub are available.



iConnect[®]
TRAINING

The Platform for Productivity



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

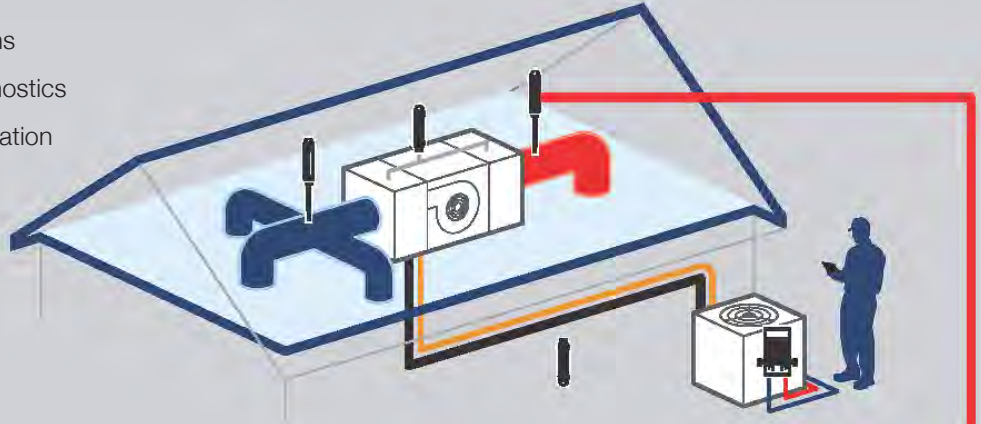
iManifold™ Works the Way You Do!

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 or iConnect®. Using this cutting-edge technology, the signal can be repeated and transmitted to almost unlimited distances.



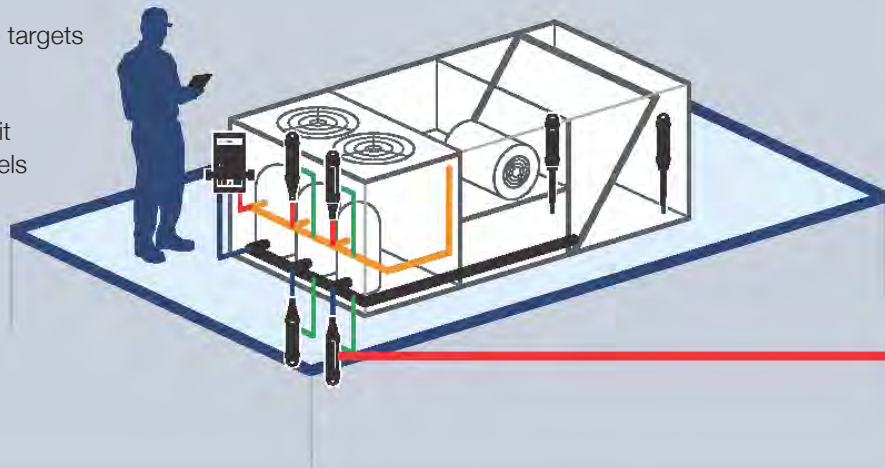
Residential

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



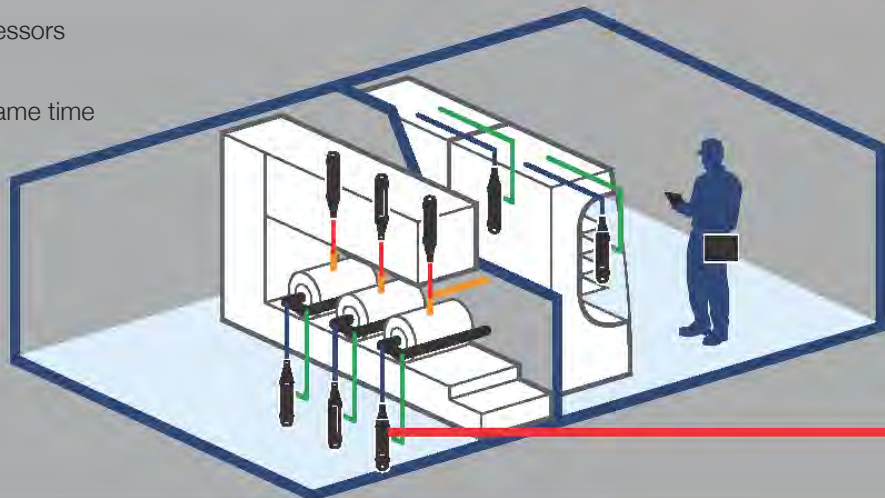
Commercial

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



Refrigeration

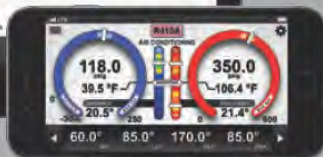
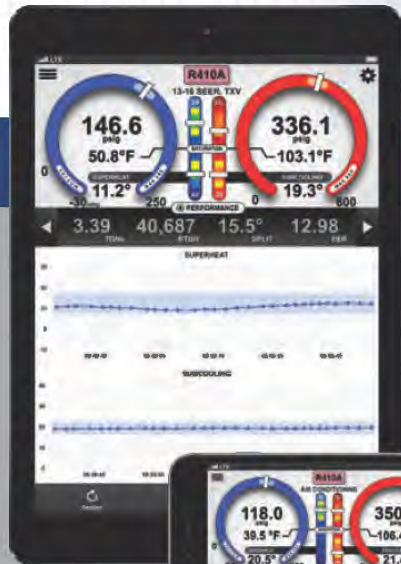
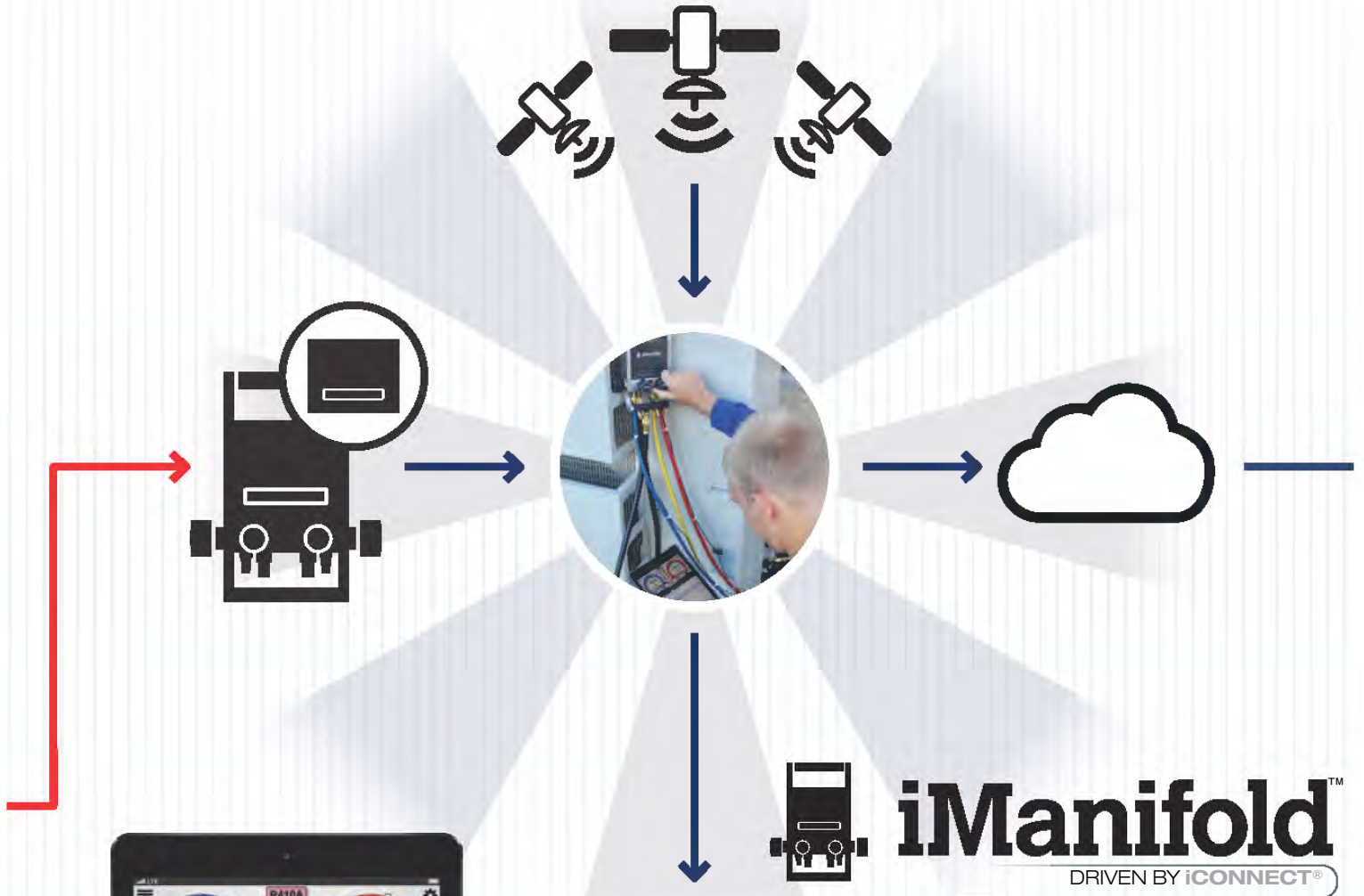
- Monitor multiple compressors
- Monitor evaporator and total superheat at the same time
- Monitor and set superheats on up to 12 cases simultaneously
- View superheat, box temperature, saturation temperature and pressure from a single probe



Intelligent Communications Platform

Easily getting the “smart” from your smart device

From the probes to the iManifold™/iConnect® into the iManifold 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.



The iManifold App

- Easy to read display
- Target pressure calculated and displayed
- Over 45 refrigerant profiles
- Equipment profiling
- Calculates target superheat for fixed metering device
- Calculated target zones for superheat, subcooling and discharge line
- Troubleshooting

iManifold™ Cloud Solutions

Data is power. iManifold offers a true data access cloud solution.

Contractor



- 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
- Includes latest AHRI Database
- Huge productivity gains

Distributor



- Offer real cutting-edge technology solutions
- Increased equipment sales
- Increased contractor satisfaction
- Reduced warranty claim processing

OEM



- Verify new install system performance
- Delivery of engineered efficiency
- Access to quality field data
- Increased brand satisfaction through optimal operation
- Reduced warranty claims

ESCO/Utility



- 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 either the iManifold™ or iConnect®

The award-winning iManifold - 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 iManifold App becomes more powerful with each new release. New wireless probes for temperature, humidity, and pressure are designed to greatly improve technician productivity and jobsite efficiency.

The iConnect provides a portable wireless solution. Range issues are eliminated because the iConnect travels with you. A roaming node within the network, the iConnect reconfigures its path to the probes, providing the technician with significant jobsite mobility.

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 with a push of a button. 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.

The 900C Hub for Full Mobility.



Cloud Services



Cloud Services allows access to Tech Connect, cloud storage, web-based reporting, report storage, sorting, and gives your technicians access to data from the field.

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.

Products & Accessories



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	iConnect® 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/iConnect

901M	Thermistor Pipe Strap Surface Probe. Temp range: -25° to 212°F. Patented. 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.
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 in all kits.

iManifold Performance Test Kits

915M	iManifold Performance Test Kit. 900M, 911M (2), 902M, 905M, BP17 Backpack.
916M	iManifold Performance Test Kit with Hoses. 900M, 911M (2), 902M, 905M, 955MRS hose set, BP17 Backpack.
917M	iManifold A/C Heat Pump Performance Test Kit. 900M, 911M (2), 912M, 903M, 955MRS hose set, BP17 Backpack.
918M	iManifold 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 Quality Maintenance Kit, 900M, 911M (2), 912M, 913M, 914M, 901M (2), 902M, 905M, and BP17 Backpack.
920M	iManifold Performance Test Kit with Repeater Probe. 900M, 911M (2), 912M, 902M, 905M, 955MRS hose set, BP17 Backpack.

iConnect Performance Test Kits

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

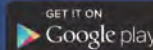
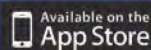
Custom Program Test Kits

950M	iManifold Custom Program Test Kit, 1-Circuit Extended Range. 900M, 912M, 911M (3), 901M (2), 913M, 914M, 955-MRS, BP17
951M	iManifold Custom Program Test Kit, 4-Circuit Extended Range. 900M, 912M, 911M (3), 901M (6), 913M (3), 914M (3), 955-MRS, BP17
952C	iConnect Custom Program Test Kit, 1-Circuit Extended Range. 900C, 911M (3), 901M (2), 905M, 912M, 913M, 914M, BP17



iManifold™
DRIVEN BY iCONNECT®

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



North Park Innovations Group, Inc.
P.O. Box 900, 6442 Route 242 East | Ellicottville, NY 14731 | (716) 699-2031
©2017 North Park Innovations Group, Inc. All rights reserved.
Patented US 723 4313 and Other Patents Pending.

Scan to learn more



Download free app

WHAT OUR CUSTOMERS ARE SAYING

"Your training units are fabulous! I teach 4 year-long HVAC classes each year. I bought two of each of your training units that I have, because they are great value. I love your products. They look professional, and I plan on buying more next year."

**- Mark Vernon, HVAC Instructor
Cochise College, Arizona**



Mark Vernon working on the TU-100



One of the Cochise College HVAC students learning trouble-shooting on the TU-100.

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

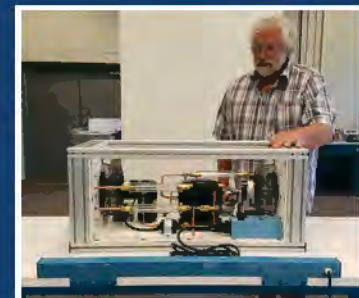
Texas State Tech College, TX
Salt Lake City Community College, UT
Tennessee Valley Authority, TN
Sacramento Job Corps Center, CA
Lawrence Gardner High School, KS
Columbus State Community College, OH
Pulaski Technical College, AR
Browns Ferry Nuclear Plant, AL
Delgado Community College, LA
Sheppard Air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

"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 were installed in early 2017**



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.

iConnect[®]
TRAINING

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



iConnect[®]
TRAINING

 **X-CAL**
1-800-445-1088
x-cal.us

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