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**PROMAX**



**2007 HVAC/R CATALOG**



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# LEAK DETECTION

## TIFZX-1 Heated Pentode™ Refrigerant Leak Detector

U.S. Patent # D 458,854, 6,644,098, others pending

- ▶ Patent pending Heated Pentode™ Sensor technology:
  - Refrigerant specific detection
  - Elimination of false alarms
  - Unaffected by rapid temperature change
  - Sensor cannot be "poisoned" by excessive refrigerant
- ▶ Detects ALL Halogenated refrigerants, including R410A
- ▶ True Mechanical Pump provides instant response and clearing
- ▶ Tri-color visual leak size indication
- ▶ Tactile keypad controls
- ▶ Adjustable sensitivity & one touch reset
- ▶ Mute feature silences audible alarm
- ▶ Sensor status indication
- ▶ Battery self test
- ▶ 16" Flexible Stainless Probe
- ▶ Nylon Carrying Case and Battery Charger included
- ▶ Certified to SAE J1627
- ▶ CE approved
- ▶ 25 year warranty



TIF ZX-1



Design Certified by MET Laboratories, Inc. to meet SAE J1627 for R134a, R12 and R22

### Specifications

Ultimate Sensitivity	0.1 oz/yr (3 gr/yr) for all refrigerants, as low as 0.05 oz/yr (1.5 gr/yr) for R12
Power Supply	Nickel-Metal Hydride, (Ni-MH) Rechargeable Battery Pack
Battery Life	Ni-MH (5 to 6 hours)
Sensor Life	100 hours
Operating Temp	32° to 122° F (0° to 50° C)

International Versions	Model No.
European – 230V, 50 Hz Charger	TIFZX-1E
Japan – 100V, 50/60 Hz Charger	TIFZX-1J
Australia – 230V, 50 Hz Charger	TIFZX-1A

Optional Accessories	Part Number
230V, 50 Hz Battery Charger (International)	TIFZX-3E
100V, 50/60 Hz Battery Charger (Japan)	TIFZX-3J
230V, 50 Hz Battery Charger (Australia)	TIFZX-3A
Remote Battery Charging Base	TIFZX-6
Nickel-Metal Hydride (NiMH) Battery Pack	TIFZX-7
12VDC Battery Charger (cigarette lighter style)	TIFZX-11
Hard Carrying Case	TIFZX-12
Kit, ZX-1 in Hard Carrying Case with Accessories	TIFZX-1KIT

Replacement Parts (supplied with product)	Part Number
Replacement Heated Pentode™ Sensor	TIFZX-2
110V-60 Hz Battery Charger	TIFZX-3
Nylon Carrying Case	TIFZX-5
Maintenance kit: Filter, Probe tip & Oring	TIFZX-14
Filter Elements (5 pack)	TIFZX-15
Flexible Probe (includes Probe Tip)	TIFZX-10



## TIFZX-1KIT Heated Pentode™ Refrigerant Leak Detector Kit

- ▶ TIFZX-1 Leak Detector, complete in Hard Carrying Case, with all Accessories
- ▶ Case includes individual compartments for each item
- ▶ Kit Includes:
  - Two (2) replacement sensors
  - Spare filter Elements (pkg. of 5)
  - Nickel Cadmium Rechargeable Battery Pack
  - Nickel-Metal Hydride Battery Pack
  - Remote Battery Charging Base
  - 110V, 60 HZ - Battery Charger
  - 12VDC Battery Charger
- ▶ 25 year warranty on the TIF ZX-1

(See TIFZX-1 for specific features & specifications)

International Versions	Model No.
European – 230V, 50 Hz Charger	TIFZX-1KITE
Japan – 100V, 50/60 Hz Charger	TIFZX-1J
Optional Accessories & Replacement Parts	
Listed under TIF ZX-1 Heated Pentode™ Refrigerant Leak Detector	



TIF ZX-1KIT



Design Certified by MET Laboratories, Inc. to meet SAE J1627 for R134a, R12 and R22



## 16600 Electronic Refrigerant Leak Detector

- ▶ Proven Corona Discharge technology
- ▶ Detects all CFC, HCFC and HFC Refrigerants
- ▶ Easy – One Hand operation
- ▶ Audible and visual leak indicators
- ▶ Adjustable Sensitivity Control – infinite control in contaminated areas
- ▶ Adjustable Volume Control
- ▶ 16" Flexible Probe
- ▶ Includes spare Sensing Tip
- ▶ UL Design Certified to SAE J1627
- ▶ One year warranty

### Specifications

Ultimate Sensitivity	Less than 0.5 oz. per year (14 gr/yr)
Power Supply	Four "AA" Alkaline Batteries (Included)
Operating Temp	32° to 105° F (0° to 40° C)
Replacement Parts (supplied with product)	
Sensing Tip	16503



16600



# LEAK DETECTION

## TIFXL-1A, RX-1A, XP-1A Refrigerant Leak Detectors

U.S. Patent #'s Re: 32,552; 4,282,521; 5,400,015

- ▶ Microprocessor controlled circuit monitors the sensing tip up to 2000 times per-second
- ▶ Detects all Halogenated refrigerants
- ▶ Variable frequency audible alarm
- ▶ 14" Flexible stainless steel probe with Teflon™ liner
- ▶ Rubber cushion grip
- ▶ Constant Power Indication
- ▶ Power Supply: 3VDC, two "C" cell alkaline batteries (included)
- ▶ Sensing Tip Life: approx. 20 hours (two tips included)
- ▶ Operating Temp: 30° to 125° F (0° to 52° C)
- ▶ Blow Molded Carrying Case included, optional holster
- ▶ Certified to SAE J1627
- ▶ UL Classified & CE approved
- ▶ See chart for warranty information

TIF XP-1A



TIF RX-1A



TIF XL-1A



Specifications	TIF XL-1A	TIF RX-1A	TIF XP-1A
Ultimate Sensitivity	< 0.4 oz. per year (11 gr/yr)	< 0.25 oz. per year (7 gr/yr)	< 0.1 oz. per year (3 gr/yr)
True Mechanical Pump	n/a	Yes	Yes
Visual Leak Indication Levels	n/a	6 (single color)	18 (tri-color)
Sensitivity Levels	1	2	7
One Touch Reset and Keypad Controls	n/a	Yes	Yes
Mute Button	n/a	n/a	Yes
Battery Test	n/a	n/a	True voltage indication
Battery Life	Approx. 40 hrs.	Approx. 30 hrs.	Approx. 30 hrs.
Warranty	2 Years	2 Years	3 Years

Optional Accessories	Part Number
Maintenance Kit (3 tips with protectors)	TIFXP-2

Replacement Parts (supplied with product)	Part Number
Blow Molded Carrying Case	TIFXP-4A
Battery Cover	TIFXP-5A



Design Certified by MET Laboratories, Inc. to meet SAE J1627 for R134a, R12 and R22



## TIF5750A “Super Scanner™” Refrigerant Leak Detector

U.S. Patent #'s Re: 32,552; 4,282,521; 5,400,015

- ▶ LED Leak Size Indicators
- ▶ Two Sensitivity positions, including our unique ScanMode
- ▶ Reset Button for instant re-calibration
- ▶ Detachable probe
- ▶ High efficiency pump
- ▶ Certified to SAE J1627
- ▶ Detects ALL Halogenated Refrigerants
- ▶ UL Classified for Intrinsic Safety
- ▶ Constant Power Indication
- ▶ Carrying case and spare sensing tip included
- ▶ One year warranty

### Specifications

Ultimate Sensitivity for R12	Less than 0.1 ounces per year (3 gr/yr).
Power Supply	(Two) 1.5V “C” Batteries
Battery Life	30 Hours (Alkaline)
Probe/Cord Length	Probe = 14" (35cm) Cord = 36" (91.4cm)
Operating Temperature	32°–125° F (0°–52° C)

Optional Accessory	Part Number
Maintenance Kit (3 tips, 3 protectors)	TIF555



TIF 5750A



Design Certified by MET Laboratories, Inc. to meet SAE J1627 for R134a, R12 and R22

## TIFH10A A/C Pump Style Refrigerant Leak Detector

*This AC powered Leak Detector is ideal for continuous use and/or bench testing. It has a sensitivity adjust knob for “Fine Tuning.” A unique probe with pump and a built in neon light. Audible alarm and visual indication on all CFC, HCFC, HFC leaks.*

U.S. Patent #'s Re: 32,552

- ▶ High efficiency pump
- ▶ Powered by 115 volts AC (220V Available)
- ▶ Dual sensitivity positions
- ▶ Visual indicator in probe
- ▶ Certified to SAE J1627
- ▶ Built-in carrying case

### Specifications

Ultimate Sensitivity	Less than 0.1 oz. per year
Power Supply	115VAC/60Hz (230V/50Hz)
Warm-up Time	30 seconds
Probe/Cord Length	36" (91.4cm)
Operating Temp	32°–125° F (0°–52° C)

International Versions	Model No.	Optional Accessories	Part Number
220V, International	TIFH10AINTL	Maintenance Kit (3 tips, 3 protectors)	TIF555



TIF H10A



Design Certified by MET Laboratories, Inc. to meet SAE J1627 for R134a, R12 and R22



# LEAK DETECTION

## 16330 UV Leak Detection, HVAC/R Dye Kit



16330

► Complete HVAC/R Leak Detection Kit Includes:

- Cordless UV light
- Injector
- 6 Dye Cartridges
- Charger
- UV Glasses
- Connecting Hose (1/4" FFL)
- "Date Installed" Labels
- Dye Cleaner
- Protective Carrying Case

- Great for pinpointing those elusive "hard to find" leaks
- Super Bright 12 LED array - Cordless, Rechargeable UV Light
- Drop / Shock Proof Light – produces NO heat

- Universal HVAC/R Dye Cartridges – Compatible with ALL Lubricants & Refrigerants
- Compact Injector & Cartridge system – Pre-measured: No mess or waste
- One Year Warranty

### Specifications

Battery Type	Nickel Metal Hydride - Rechargeable
Battery Life/Charge	3 Hours of continuous use
UV LED working life	100,000 hours

International Versions	Model No.
European HVAC/R Master Kit w/ 220 Volt battery charger	16331
Battery Charger (replacement), 220V	16349
UV Light, LED- Rechargeable (Includes 220V Charger)	16353

Replacement Parts (supplied with product)	Part Number
UV Light, LED - Rechargeable (includes 120V charger)	16345
Injector Gun	16339
Hose, replacement	16340
Replacement Dye Cartridges, 1/4 oz. (6 ea.)	16336
Replacement Dye Cartridges, 1/2 oz. (6 ea.)	16337
Replacement Dye Cartridges, 3/4 oz. (6 ea.)	16338
Dye Cleaner, 32 oz. Bottle	16263
Glasses, UV	16257

Optional Accessories	Part Number
Dye Injector Kit - HVAC/R	16332



16332  
Injector Kit

## 16345 True UV Led leak detection lights

### No. 16345

#### Cordless and Rechargeable true UV Led Light

- ▶ 12 Leds producing hi-intensity true UV light
- ▶ UV enhancing glasses
- ▶ Battery charger included



16345  
Cordless UV Light

## 16336, 16337, 16338 HVAC/R Dye Cartridge

### A/C Dye Replacement

#### Cartridges

Pinpoint leaks in A/C Systems

#### No. 16336

- ▶ 6 Cartridges (0.25 OZ./7.5 ml)
- ▶ For Medium Systems: Residential systems up to 4.9 lbs. (2.2 kg) of refrigerant or up to 1.6 qt. (1.8 l) of oil
- ▶ For kits: No. 16330, 16331, 16331 and 16332



No. 16336

#### No. 16337

- ▶ 6 Cartridges (0.5 oz./15 ml)
- ▶ For Medium-Large Systems: Light commercial & large residential systems 5 to 9.9 lbs. (2.3 to 4.5 kg) of refrigerant or 1.7 to 3.2 qt. (1.9 to 3.7 l) of oil
- ▶ For kits: No. 16330, 16331, 16331 and 16332



No. 16337

#### No. 16338

- ▶ 6 Cartridges (0.75 OZ./22.5 ml)
- ▶ For Large Systems: Commercial & light industrial, including all split 10 to 25 lbs. (4.6 to 11.4 kg) of refrigerant or 3.3 qt. to 2 gal. (3.8 to 9.1 l) of oil
- ▶ For kits: No. 16330, 16331 and 16332



No. 16338



# LEAK DETECTION

## TIF8900 Combustible Gas Detector

U.S. Patent #'s Re: 32,552; 4,282,521; 5,400,015



CLASSIFIED BY UNDERWRITERS  
LABORATORIES INC® ONLY AS TO  
INTRINSIC SAFETY IN CLASS I  
GROUPS A, B, C, & D HAZARDOUS  
LOCATIONS.

- ▶ Solid state sensor technology, long life and precision
- ▶ Broad band of combustible gas detection
- ▶ Sensitivity as low as 5 ppm
- ▶ Adjustable sensitivity
- ▶ Audible "Geiger counter" signal
- ▶ LED Leak Intensity Lights
- ▶ Automatic warm up
- ▶ Cordless operation
- ▶ Flexible 16" stainless probe for hard to reach places
- ▶ Rechargeable battery and charger included
- ▶ Rugged custom carrying case
- ▶ Made in the USA

### Applications and Uses:

- ▶ Gas lines and Pipes
- ▶ Exhaust and Fuel leaks
- ▶ Propane filling stations
- ▶ Fuel in marine bilges
- ▶ Heat Exchanger leaks
- ▶ Check manholes for safety
- ▶ Detect arson residue
- ▶ IAQ tests
- ▶ Liquid or gas fired heating systems

### Specifications

Voltage (Charger)	115V, 60Hz
Probe Length	15" (38cm)
Power Supply	(Two) 2.4V Ni-Cad Batteries
Battery Life	4 Hours/Charge
Response Time	Instantaneous
Warm-up Time	30 seconds

### Partial List of Detectable Compounds

Compound	Min. detectable concentration	Compound	Min. detectable concentration
Acetylene	50 ppm	Methyl Chloride	5 ppm
Iso-Butane (R600a)	500 ppm	Hydrogen Sulfide	5 ppm
Methane	500 ppm	Acetone	50 ppm
Ethane (R170)	500 ppm	Methanol	50 ppm
Propane (R290)	500 ppm	Ammonia (R717)	20 ppm
Ethylene	500 ppm	Gasoline	1 ppm
Hydrogen	500 ppm	Chlorine	1 ppm
Methyl Ether	500 ppm		
Vinyl Chloride	5 ppm		



Replacement Parts (supplied with product)	Part Number
Sensor	TIF8801
Rechargeable Ni-Cad batteries (2 each)	TIF8806A
115V battery charger	TIF8803A
220V battery charger	TIF8806B
Carrying Case	ATP-7038
Battery Cover	527690RED



527690RED  
Battery cover



ATP-7038:  
Carrying case

Optional Accessories	Part Number
Cigarette lighter charger	TIF8805



## TIF8800, 8800A, 8850 Combustible Gas Detectors

- ▶ Detects **dangerous** explosive gases
- ▶ Used in almost any situation where combustible gasses, vapor or residues need to be found
- ▶ Applications include: Gas lines and pipes, aids in identifying Heat Exchanger leaks and hazardous living/working environments (Note: *NOT* an effective Carbon Monoxide detector – see TIF-8500A, page 47)
- ▶ Instantaneous response
- ▶ 15" Flexible stainless steel probe
- ▶ Automatic warm up
- ▶ Ultimate sensitivity as low as 1 ppm (gasoline)
- ▶ Adjustable sensitivity
- ▶ Audible “Geiger counter” type signal
- ▶ UL, CE and MSHA approved



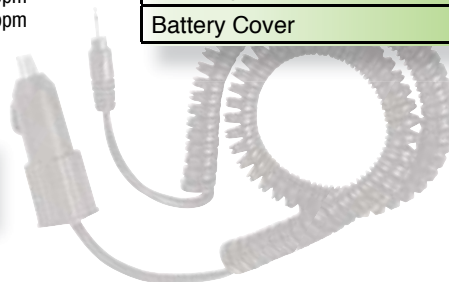
Features	TIF8800	TIF8800A	TIF8850	TIF8800INTL	TIF8800AINTL	TIF8850I
Battery Charger	115V	115V	115V	220V	220V	220V
LED Leak Sensitivity Lights		6 Lights	6 Lights		6 Lights	6 Lights
Audio Mute button to silence alarm			Yes			Yes
Probe Length	15" (38cm)					
Power Supply	(Two) 2.4V Ni-Cad Batteries					
Battery Life	4 Hours/Charge					
Operating Temp	32° F to 125° F (0° C to 52° C)					

### Partial List of Detectable Compounds

Compound	Min. detectable concentration	Compound	Min. detectable concentration
Acetylene	50 ppm	Methyl Chloride	5 ppm
Iso-Butane (R600a)	500 ppm	Hydrogen Sulfide	5 ppm
Methane	500 ppm	Acetone	50 ppm
Ethane (R170)	500 ppm	Methanol	50 ppm
Propane (R290)	500 ppm	Ammonia (R717)	20 ppm
Ethylene	500 ppm	Gasoline	1 ppm
Hydrogen	500 ppm	Chlorine	1 ppm
Methyl Ether	500 ppm		
Vinyl Chloride	5 ppm		

Replacement Parts	Part Number
Sensor	TIF8801
Rechargeable Ni-Cad batteries (2 each)	TIF8806A
115V battery charger	TIF8803A
220V battery charger	TIF8806B
Carrying Case	TIF549
Battery Cover	A10015RR

Optional Accessories	Part Number
Cigarette lighter charger	TIF8805





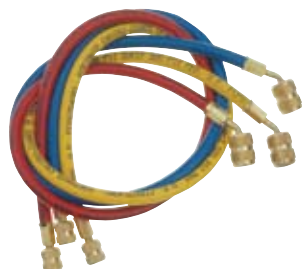
**Manifold Gauge Sets**

Aluminum..... 11

Brass ..... 12



**Replacement Gauges ..... 13**



**Charging Hoses ..... 15**



**Specialty Hoses ..... 17**



**Hose Fittings..... 18**



**General Purpose Valves ..... 19-21**

## Aluminum Block Gauge Sets

We offer a full range of gauge sets; 2-Way and 4-Way, Dry or Glycerine filled, for CFC/HCFC or HFC applications. Manifold Gauge sets are offered in Imperial scales with temperature scales in °F. Designed for use with refrigerants such as R12, R134a, R22 and R502. Model TIF9600 includes temperature conversion scales for R12, R22, and R502.

### All Gauges Feature

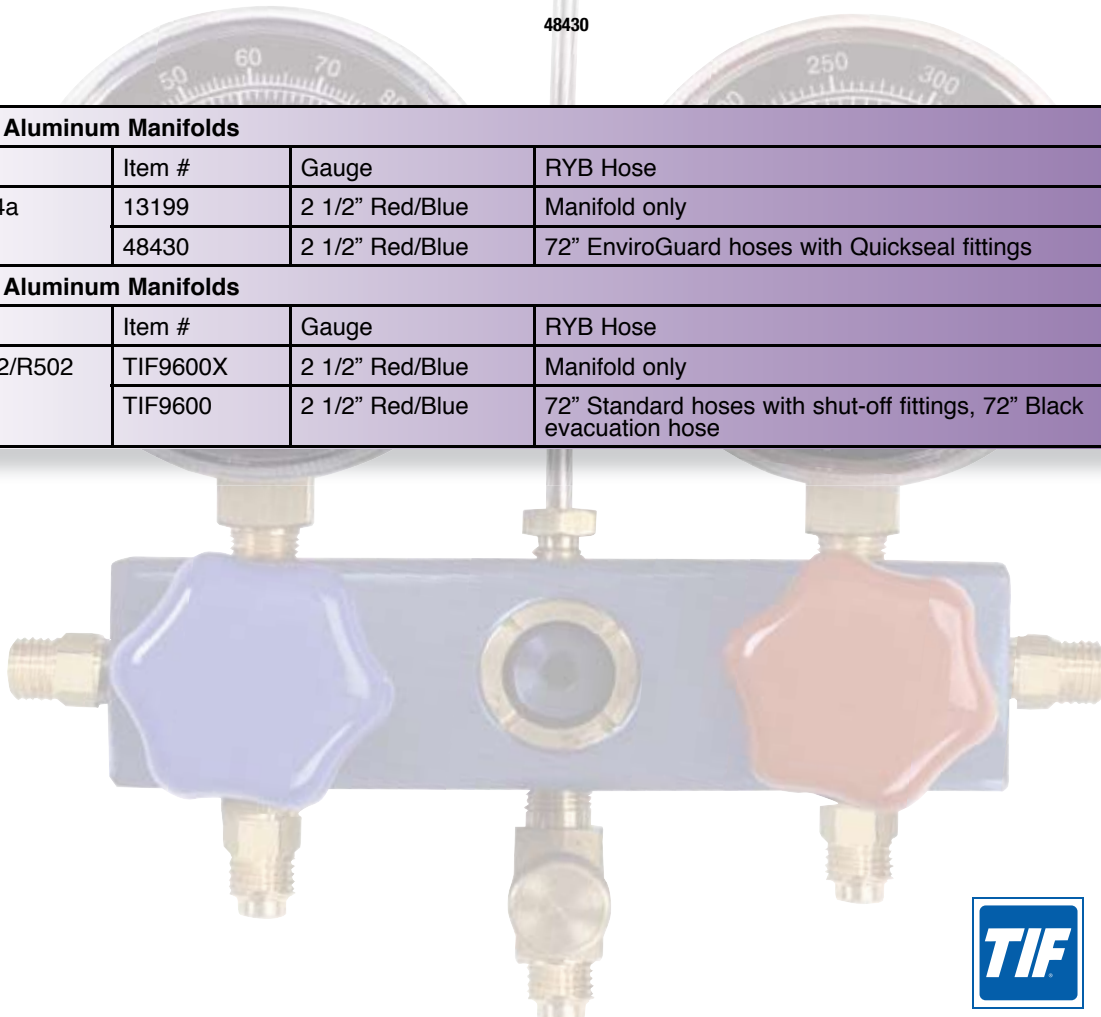
- ▶ Zero Adjustable Gauges
- ▶ Extruded Aluminum Manifold Block
- ▶ Color Coded Knobs
- ▶ High and Low Side gauges
- ▶ Brass fittings
- ▶ Hanging Hook
- ▶ Optical Sight glass for visual contact

### Additional TIF 9600 Features

- ▶ 63 mm Glycerine filled gauges
- ▶ 4 Way Manifold design



2 Valve Aluminum Manifolds			
	Item #	Gauge	RYB Hose
R22/134a	13199	2 1/2" Red/Blue	Manifold only
	48430	2 1/2" Red/Blue	72" EnviroGuard hoses with Quickseal fittings
4 Valve Aluminum Manifolds			
	Item #	Gauge	RYB Hose
R12/R22/R502	TIF9600X	2 1/2" Red/Blue	Manifold only
	TIF9600	2 1/2" Red/Blue	72" Standard hoses with shut-off fittings, 72" Black evacuation hose







## Two Way Brass Manifolds

- ▶ Our popular Side Wheel Manifold is durable and easy to use
- ▶ Solid forged brass for long life; hand wheels are durable, color-coded Lexan®
- ▶ Universal Gauges – Clearly marked so they're easy to read and protected with Lexan™ lenses
- ▶ Field Proven Face Seal Valves – Provide a tight seal, less wear and improved flow
- ▶ Works with all refrigerants (including R410A)

	Item #	Gauge	RYB Hose
<b>R12/22/502</b>	40160	2 1/2" Red/Blue	Manifold only
	40161	2 1/2" Red/Blue	36" Standard hoses with standard fittings
	40162	2 1/2" Red/Blue	60" Standard hoses with standard fittings
	40163	2 1/2" Red/Blue	60" Enviroguard hoses with Quickseal fittings
<b>R22/404A/410A</b>	40170	2 1/2" Red/Blue	Manifold only
	40174	2 1/2" Red/Blue	60" Enviroguard hoses with Quickseal fittings
<b>R134a/404A/507</b>	40180	2 1/2" Red/Blue	Manifold only
	40181	2 1/2" Red/Blue	36" Standard hoses with standard fittings
	40182	2 1/2" Red/Blue	60" Standard hoses with standard fittings
	40186	2 1/2" Red/Blue	60" Enviroguard hoses with Quickseal fittings
<b>R22/134a/404A</b>	40190	2 1/2" Red/Blue	Manifold only
	40192	2 1/2" Red/Blue	60" Standard hoses with standard fittings
	40194	2 1/2" Red/Blue	60" Enviroguard hoses with Quickseal fittings
<b>R22/134a</b>	40152	2 1/2" Red/Blue	Manifold only
	40153	2 1/2" Red/Blue	36" Standard hoses with standard fittings
	40169	2 1/2" Red/Blue	60" Standard hoses with standard fittings
<b>R410</b>	41671	2 1/2" Red/Blue	Manifold only
	41670	2 1/2" Red/Blue	60" Enviroguard hoses with in-line ball valve fittings



Optional Accessories	Part Number
Protective Boot	40001



## Replacement Gauges

General usage gauges for multiple applications where pressure or vacuum readings are required. Dampening helps reduce excessive needle fluttering making the gauge much easier to read. Internal components are compatible with many industry applications. The ability to recalibrate the gauge is a standard feature on all gauges. Temperature scale reads in °F and pressure is displayed in either PSI or BAR.

Item	Description	Size	Press Scale	Refrigerants
11724	Compound Gauge - Blue	2 1/2"	30"- 0 - 250 PSI	R22/404A/410A
11725	Pressure Gauge - Red	2 1/2"	0 - 800 PSI	R22/404A/410A
11734	Compound Gauge - Blue	2 1/2"	30"- 0 - 120 PSI	R12/22/502
11735	Pressure Gauge - Red	2 1/2"	0 - 500 PSI	R12/22/502
11744	Compound Gauge - Blue	2 1/2"	30"- 0 - 120 PSI	R134a/404A/507
11745	Pressure Gauge - Red	2 1/2"	0 - 500 PSI	R134a/404A/507
11754	Compound Gauge - Blue	2 1/2"	30"- 0 - 120 PSI	R22/134a/404A
11755	Pressure Gauge - Red	2 1/2"	0 - 500 PSI	R22/134a/404A
11794	Compound Gauge - Blue	2 1/2"	30"- 0 - 120 PSI	R22/134a
11795	Pressure Gauge - Red	2 1/2"	0 - 500 PSI	R22/134a
13149	Compound Gauge - Blue	2 1/2"	30"- 0 - 250 PSI	R410A
41676	Pressure Gauge - Red	2 1/2"	0 - 800 PSI	R410A

Metric gauges with a temperature scale that reads in °C and pressure is displayed in either PSI or BAR.

Item	Description	Size	Press Scale	Refrigerants
11797	Compound Gauge - Blue - °C	2 1/2"	-1 - 0 - 24 BAR	R22/134a
11798	Pressure Gauge - Red - °C	2 1/2"	0 - 34 BAR	R22/134a



41676



11794



13149



11795

## TIF9675 & TIF9685 Digital Gauges



9675



9685

*TIF digital gauges provide a quick, easy to see, accurate digital reading. These gauges allow you to read both pressure and vacuum. The high side will allow you to measure from 0 to 500 psi, while the low side ranges from - 30.0 in Hg to 99.9 psi.*

*Gauges are compatible with all refrigerants and are individually powered by one 9V battery.*

### Specifications

Range	9675 9685	Low: -30.0 in Hg to 99.9 PSI High: 0-500 PSI
Resolution	9675 9685	Low: 0.1 in Hg and 0.1 PSI High: 1 PSI
Accuracy		±2% of reading
Operating Temp		32°F-125°F (0°C-52°C)
Power Supply		(One) 9V battery
Battery Life		>100 hours (alkaline)

## Manifold Valve Stem Replacement Assembly Kits

Kits include all necessary parts to service **one** manifold valve,  
To replace stems on both valves, order two kits

### TIF 931

Valve Kit TIF930/935

### TIF 9620

Valve Repair Kit (all TIF Aluminum Manifolds)

### 40232

Stem Assy. Kit for Manifolds with Conical Seal (1995 and earlier models)

### 13148

Stem Assy. Kit for Side-wheel Manifolds, with Face Seal (1996 to current models)  
includes stem with O-rings, spring and screw (will not fit Sight glass Manifolds)

### 19695

Stem Assy. Kit for Sight glass Manifolds, with Face Seal

### 41464

Stem Assy. Kit for 41400 Series Manifolds

### 13067

High Vacuum Silicone Grease - 1/2 oz.

## Replacement Knobs/Handles for Manifolds

### 40449

Set of one red and one blue, 1/4" drive ("spoke" style)

### 41698

Set of one red and one blue, 1/4" drive (barrel style)

### 41462

Black, 1/4" drive (barrel style)

### TIF 9509R or B

Large Valve Handle (red or blue) TIF 2-Way Aluminum Manifolds

### TIF 9608R,B,Y or BL

Small Valve Handle (red, blue, yellow, or black) TIF 4-Way Aluminum Block

### TIF 933 B or R

Replacement knobs Blue or Red for TIF 930/935



## 17026 HVAC Replacement Parts Kit

Contains an assortment of the most commonly needed replacement parts for repairing manifolds, hoses and various other A/C tools. Kit contains:

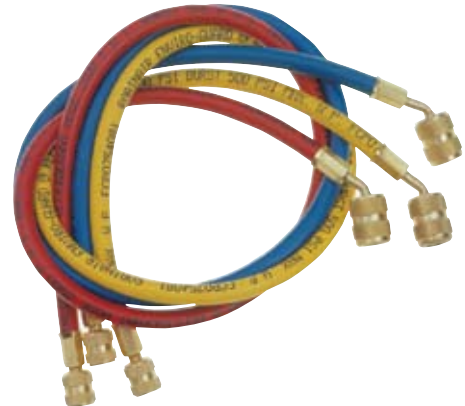
- ▶ 2 Manifold Stem Repair Kits (Conical Seal)
- ▶ 2 Manifold Stem Repair Kits (Face Seal)
- ▶ 12 Valve Cores
- ▶ 12 Valve Core Depressors, 1/4"
- ▶ 12 Hose Gaskets
- ▶ 6 Quick Seal Caps, 1/4"
- ▶ 6 Quick Seal Gaskets
- ▶ O-rings for Quick Seal Fittings
- ▶ 1 Valve Core Remover/Installer with 6 Valve Cores
- ▶ 2 Sets of Color-coded Lexan®, Hand wheels (red and blue)



17026

## Refrigeration Charging Hoses

*Robinair Premium Refrigerant Charging Hoses are built for long life and dependability. A strong, six-sided crimp provides a reliable connection between the hose and the barb, even at maximum pressure. The coupler nuts are deeply knurled for quick finger-tightening. Enviro-Guard™ hoses are ideal for high pressure applications, including R-410A systems.*



- ▶ **Enviro-Guard™ Hoses** – Special **barrier** material prevents permeation of refrigerant, yet remains flexible. 740 psi working pressure/3700 psi burst pressure
- ▶ **Standard Hoses** – Neoprene-coated for flexibility and wear resistance, 500 psi working pressure/2500 psi burst pressure
- ▶ **Quick Seal™ Fittings** – Automatically seal and prevent refrigerant from discharging when hoses are disconnected
- ▶ All hoses are equipped with a 45° bend fitting on one end, for convenient access to the system



## Hose Selection Chart

**1/4" FFL Enviro-Guard™ High Pressure (R-410A) Hoses with standard fittings\*\***  
740 psi working pressure/3700 psi burst pressure

Length (inches)	Yellow	Blue	Red	Set (Yellow, Blue, Red)
72	67172	67272	67372	67072

**1/4" FFL Enviro-Guard™ High Pressure (R-410A) Hoses with Quick Seal™ fittings\***  
740 psi working pressure/3700 psi burst pressure

Length (inches)	Yellow	Blue	Red	Set (Yellow, Blue, Red)
36	68136A	68236A	68336A	69036A
60	68160A	68260A	68360A	69060A
72	68172A	68272A	68372A	69072A
96	68196A	68296A	68396A	69096A

**1/4" FFL Standard Hoses with standard fittings**  
500 psi working pressure/2500 psi burst pressure

Length (inches)	Yellow	Blue	Red	Set (Yellow, Blue, Red)
36	31036	32036	33036	30036
60	31060	32060	33060	30060
72	31072	32072	31079	30072
96	31096	32096	33096	N/A

**1/4" FFL Standard Hoses with Quick Seal™ fittings\***  
500 psi working pressure/2500 psi burst pressure

Length (inches)	Yellow	Blue	Red	Set (Yellow, Blue, Red)
72	38172A	38272A	38372A	39072A

## Special Hoses for Special Jobs

### 20' Charging Hoses

**68020** 20' Enviro-Guard™, 1/4" FFL hose, with standard fittings – Set, Red and Blue

**68420** 20' Enviro-Guard™, 1/4" FFL hose, with Quick Seal™ fittings – Set, Red and Blue

## Special Hoses or Special Jobs

### Enviro-Guard™ Hoses with Ball Valves

In-line ball valves control refrigerant flow with a quarter turn

**65060** 60" Enviro-Guard™, 1/4" FFL hoses, with Ball Valves – Set of three (Yellow, Blue, Red)

**65160** 60" Enviro-Guard™, 1/4" FFL hose, with Ball Valve – Yellow

**65260** 60" Enviro-Guard™, 1/4" FFL hose, with Ball Valve – Blue

**65360** 60" Enviro-Guard™, 1/4" FFL hose, with Ball Valve – Red

### 3/8" FFL Charging and Vacuum Hoses

Reduce pull-down time by as much as 40% with these larger diameter hoses

**34105** 36" Standard Hose, 3/8" FFL, with standard straight fittings – Yellow

**36060** 60" Standard Hose, 3/8" FFL, with standard straight fittings – Yellow

**68060** 60" Enviro-Guard™ Hose, 3/8" FFL, with standard straight fittings – Yellow

**67560** 60" Enviro-Guard™ Hose, 3/8" FFL, with standard straight fittings – BLACK

\*The "A" suffix in the part number denotes equipped with Quick Seal™ fittings

\*\*Also available in **BLACK** – see next page

## Hose Accessories & Replacement Parts

### Ball Valve Adapters

These six inch adapters connect to any 1/4" FFL charging hose for convenient in-line control of refrigerant flow. The ball valve opens and closes in just a quarter turn. The fitting features a 45° bend for easier connections, even in tight spots.

**18501** 1/4" MFL x 1/4" FFL, Blue

**18512** 1/4" MFL x 1/4" FFL, Red

**18513** 1/4" MFL x 1/4" FFL, Yellow

**18514** 1/4" MFL x 1/4" FFL, Blue, Red and Yellow (set of 3)

**18511** 1/4" MFL x 3/16" FFL, Red



### Flexible Adapters

Flexible adapters feature brass fittings and durable neoprene-coated hose, 6".

**10293** 1/4" MFL x 1/8" FFL, Blue

**10470A** 1/4" MFL x 3/16" FFL, Red

**10778** 1/4" MFL x 1/4" FFL, Yellow



## Hose Accessories & Replacement Parts



### Hose Extension Coupler

For connecting any number of hoses to get the required length  
**40404** 1/4" MFL x 1/4" MFL (with valve core), pkg/3



### 90° Style Adapters

Solid brass fitting is ideal for tight spots.

**10469A** 1/4" MFL x 3/16" FFL

**40563A** 1/4" MFL x 1/4" FFL



### Straight Style Adapters

**10468A** 1/4" MFL x 3/16" FFL

**40560A** 1/4" MFL x 1/4" FFL

### Quick Seal™ Adapters

Quick Seal™ fitting automatically shuts off the charging hose when you disconnect it from the system, so any refrigerant left in the hose is not released. This also prevents "finger burn" and adds an extra measure of safety. Made of solid brass.

**10292** 1/4" MFL to 1/4" FFL

**10296** 1/4" MFL to 3/16" FFL

**10250** 1/4" MFL to 1/4" FFL, 90° Elbow

### Quick Seal™ Repair Kits (for hoses and adapters)

**40300** 1/4" Quick Seal Repair Kit

**18451** 45°, 1/4" Quick Seal Repair Kit

**18180** 1/4" Quick Seal O-Rings Set, pkg/6



10292



40572

## Replacement Parts for Hoses, Adapters & Couplers

**40653B** 3/16" Valve Core Depressors for Hoses & Adapters, pkg/6

**40082** 1/4" Valve Core Depressors for Hoses & Adapters, pkg/6

**40677** 3/16" Gaskets for Hoses & Adapters, pkg/6

**40083** 1/4" Gaskets for Hoses & Adapters, pkg/6

**40084** 3/8" Gaskets for Hoses & Adapters, pkg/6

### Brass Caps

**40572** 1/4" solid brass Quick Seal™ caps, pkg/6

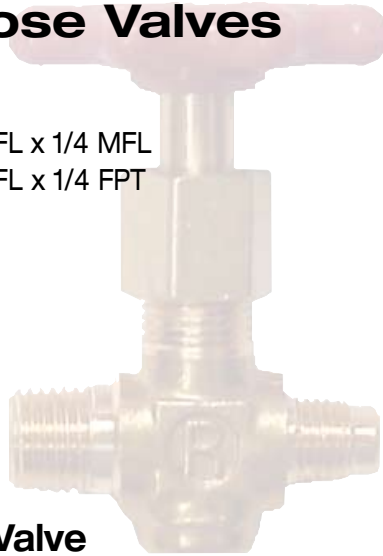
**50570** 1/4" solid brass Quick Seal™ cap, with chain

## General Purpose Valves

### Straight Type

**40464** Straight Type 1/4 MFL x 1/4 MFL

**13144** Straight Type 1/4 MFL x 1/4 FPT



40464

### Quick Coupler Style Valve

**40380** Quick Coupler Style Valve 1/4 FFL Coupler x 1/4 MFL



40380

### Gauge Cocks

#### Brass Tee Handle

**40479** 1/4 FPT x 1/4 MPT



40479

## Tube Piercing Valves

### Piercing Valves with Flow Control and 1/4 S.A.E. Connector Size

**40288** Fits 3/16, 1/4, 5/16, 3/8 OD

**13139** Fits 1/2, 9/16, 5/8 OD

**40291** Gaskets for 40288/40330, pkg/3



40288

### Piercing Valves with Valve Cores

**40330** Fits 3/16, 1/4, 5/6, 3/8 OD

**40336** Fits 1/2, 5/8 OD



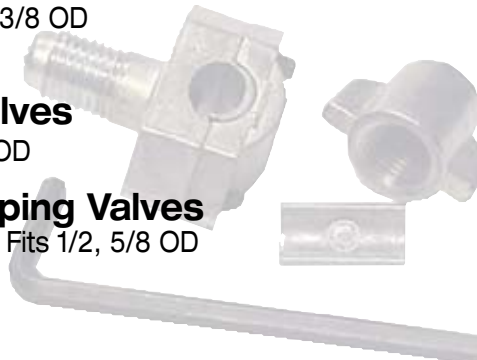
40330

### Straight Line Top Valves

**40472** Fits 1/4, 5/16, 3/8 OD

### “Easy Tap” Line Tapping Valves

**14809** 90° Line Tap (R-2) Fits 1/2, 5/8 OD



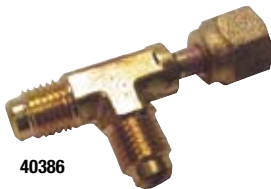
40472



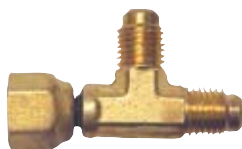
## General Purpose Fittings



40382



40386



40396



40398



40410



40553

### Tees/Fittings

- 40382** 1/4 MFL Branch with core x 1/4 OD tube or 3/8 OD solder, pkg/3\*
- 40383** 1/4 MFL Branch with core x 5/16 OD tube or 3/8 OD solder, pkg/3\*
- 40384** 1/4 MFL Branch with core x 3/8 OD tube or 1/2 OD solder, pkg/3\*
- 40386** 1/4 MFL run x 1/4 FFL run with depressor x 1/4 MFL Branch with core, pkg/3
- 40396** 1/4 MFL Branch with core 1/4 MFL run x 1/4 FFL swivel run, pkg/3
- 40390** 1/4 MFL Branch with core x 1/8 MPT run x 1/8 MPT, pkg/3
- 40423** 1/8 MPT Branch x 1/4 MFL run x 1/4 MFL run with core, pkg/3
- 40398** 1/4 FFL Swivel Branch with depressor x 1/4 MFL run with core x 1/4 MFL run, pkg/3
- 40399** 1/4 FFL Swivel Branch x 1/4 MFL run x 1/4 MFL run with core, pkg/3

\*Comes with 40535 Valve Core Remover

### FFL Coupling

- 40410** 1/4 MFL with core x 1/4 FFL with copper gasket, pkg/6

### Quick Couplers with Depressors

- 40553** 1/8 FPT x 1/4 FFL, ea.
- 40555** 1/4 FPT x 1/4 FFL, ea.

## Access Fittings



40416



40417



40419



40420

### Solder Union Type

- 40416** 1/4 MFL x 1/8 OD Copper Tube Ext., pkg/6
- 40417** 1/4 MFL x 3/16 OD Copper Tube Ext., pkg/6
- 13142** 1/4 MFL x 1/4 OD Copper Tube Ext., pkg/6
- 40419** 1/4 MFL x 5/16 OD Copper Tube Ext., pkg/3\*
- 40420** 1/4 MFL x 3/8 OD Copper Tube Ext., pkg/3\*
- 13143** 1/4 MFL x 1/4 OD or 3/8 ID Solder with cap and chain\*
- 40427** 1/4 MFL x 1/4 OD or 3/8 ID Solder, pkg/6\*

\*Comes with 40535 Valve Core Remover

### Elbow Access Fitting

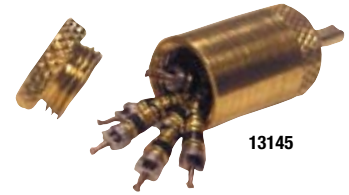
- 40422** 1/4 MFL with core x 1/8 MPT Elbow, pkg/6

### Straight Swivel Fitting

- 40421** 1/4 FFL Swivel x 1/4 MFL with core, pkg/6

## 1/4" Valve Core Remove Installers

**13145** Valve core remover/installer with 6 valve cores

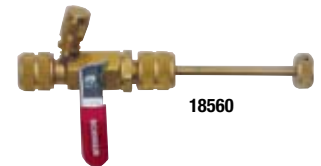


## Charging Valve

**43657** Replacement spine valve for 14476 Charging Valve

## Valve Core Remover/Installer

**18560** Remove and install valve cores from a 1/4" male flare access fitting without the loss of refrigerant. Durable, solid brass tool has a ball valve that can be opened or closed in just a quarter-turn, rather than a stem-type valve. Designed with a stainless steel ball and brazed side fitting for durability and long life.



## Valve Core Remover/Installers

**18561** Replace leaking valve cores quickly and easily, or remove the valve core and hold it out of place for evacuation or charging. Features a solid brass body with a convenient handle that opens and closes in a quarter-turn to speed service. Compact design easily fits most locations.



## Pick Extractor

**14774** For use with 14599 or 14650, extractor lets you remove damaged cores in the service line while the system is fully charged, without releasing refrigerant into the atmosphere.



## ProVax NextGen Portable AC Service System

US Patent #4,523,897; 5,209,653; others pending

### A Revolution in Refrigerant Recovery and Evacuation

#### Features

- ▶ Combines a Refrigerant Recovery Unit and Vacuum Pump in one portable system
- ▶ Recovers all halogenated refrigerants (CFC/HCFC/HFC), including the new high pressure refrigerants, R410A
- ▶ Proprietary "Oil-Less" compressor capable to handling both liquid and vapor
- ▶ Selectable high pressure safety "cut-off" switches (400 or 550 psi)
- ▶ 2 Stage , 6 CFM Vacuum Pump, rated to 20 microns
- ▶ Portable wheels and handle for all types of terrain
- ▶ 1/2 HP motor drives both recovery and vacuum processes
- ▶ Easy operation, one simple connection for Recovery and Evacuation, no additional hoses needed
- ▶ 2 powerful fans and 3-row condenser provides better cooling and flow rates
- ▶ All units pre-wired to accept ProVax 80% Tank Shut Off Kit (PN# KT-5002)
- ▶ Weight: 57 lbs; Dimensions: 25" H x 22" W x 10" D
- ▶ One year warranty with full year over-the-counter exchange
- ▶ Made in the USA



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To meet EPA Regulations per ARI 740  
8EA7

International Versions	Model No.
Europe – Bar gauge/°C scale 220V 50 Hz	ProVax-E
Japan – Kpa gauges/°C scale 100V 50/60 Hz and 80% Shut Off Kit included	ProVax-J
Australia - 230V 50 Hz	ProVax-A

Replacement Parts (supplied with product)	Part Number
Filter-Drier, 1/4" MFL x 1/4" MFL	16345
Hose, Blue 4" Long	100345

Optional Accessories	Part Number
ProVax 80% Tank Shut Off Kit	KT-5002
30Lb (14kg) Recovery Tank	17121
30Lb (14kg) Recovery Tank with 80% capacity sensor	17605
50Lb (23kg) Recovery Tank	17506
50Lb (23kg) Recovery Tank with 80% capacity sensor	17572
50Lb (23kg) High Pressure Recovery Tank with 80% capacity sensor (use with R-410A)	RGT50HP
Tool Caddy	TC-2000



## RG5410AEX Refrigerant Recovery Machine

US Patent #D474,209

- ▶ Recovers all commonly used CFC, HFC, HCFC Refrigerants (including **R410-A** [Puron™])
- ▶ Designed for use with High Pressure refrigerants
- ▶ Selectable High Pressure safety “cut off” switches (400 or 550 psi)
- ▶ Proprietary “Oil-less” compressor capable of handling both liquid and vapor
- ▶ All new ergonomic design for easier handling
- ▶ 3/8" – 3-row condenser for maximum performance in even the harshest conditions
- ▶ Corrosion proof polyethylene blow molded case
- ▶ Field serviceable semi-hermetic compressor
- ▶ Self purge feature
- ▶ Includes Filter-Drier
- ▶ Power Source – 115 V 60 Hz
- ▶ UL approved
- ▶ One year warranty with full year over-the-counter exchange
- ▶ Weight: 34 lbs.; dimensions: 13" H x 9" W x 19" D

# NEW!



RG5410EX

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To meet EPA Regulations per ARI 740

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Replacement Parts (supplied with product)	Part Number
Filter-Drier, 1/4" MFL x 1/4" MFL	100343
Hose, Blue 4" Long	100345

Optional Accessories	Part Number
80% Tank Shut Off Kit	KT-5001
30Lb (14kg) Recovery Tank	17121
30Lb (14kg) Recovery Tank with 80% capacity sensor	17605
50Lb (23kg) Recovery Tank	17506
50Lb (23kg) Recovery Tank with 80% capacity sensor	17572
50Lb (23kg) High Pressure Recovery Tank with 80% capacity sensor (use with R-410A)	RGT50HP
Tool Caddy	TC-2000



## RG5410A Refrigerant Recovery Machine

US Patent #D474,209



RG5410A

UL CERTIFIED  
To meet EPA Regulations per ARI 740  
8EA7

- ▶ Recovers all commonly used CFC, HFC, HCFC Refrigerants (including **R410-A** [Puron™])
- ▶ Designed for use with High Pressure refrigerants
- ▶ Selectable High Pressure safety “cut off” switches (400 or 550 psi)
- ▶ Proprietary “Oil-less” compressor capable of handling both liquid and vapor
- ▶ All new ergonomic design for easier handling
- ▶ 3/8" – 3-row condensor for maximum performance in even the harshest conditions
- ▶ Corrosion proof polyethylene blow molded case
- ▶ Field serviceable semi-hermetic compressor
- ▶ Self purge feature
- ▶ Includes Filter-Drier
- ▶ All units pre-wired to accept 80% Tank Shut Off Kit (Part No. KT 5001)
- ▶ RG5410A-KT available with Optional 80% Tank Shut Off Kit installed at the factory
- ▶ Power Source – 115 V 60 Hz
- ▶ UL/C (-KT version only\*) & CE, TÜV approved (-E version only)
- ▶ One year warranty with full year over-the-counter exchange
- ▶ Weight: 32 lbs.; dimensions: 13" H x 9" W x 19" D



“Oil-less” Compressor

International Versions	Model No.
Europe – Bar gauge/°C scale 220V 50 Hz	RG5410A-E
Japan – Kpa gauges/°C scale 100V 50/60 Hz and 80% Shut Off Kit included	RG5410AJKT
Australia - 230V 50 Hz	RG5410A-A

Optional Version	Part Number
RG5410A (115V 60 Hz) with 80% Tank Shut Off Kit installed	RG5410A-KT
* UL/C Approved	

Replacement Parts (supplied with product)	Part Number
Filter-Drier, 1/4" MFL x 1/4" MFL	100343
Hose, Blue 4" Long	100345

Optional Accessories	Part Number
80% Tank Shut Off Kit	KT-5001
30Lb (14kg) Recovery Tank	17121
30Lb (14kg) Recovery Tank with 80% capacity sensor	17605
50Lb (23kg) Recovery Tank	17506
50Lb (23kg) Recovery Tank with 80% capacity sensor	17572
50Lb (23kg) High Pressure Recovery Tank with 80% capacity sensor (use with R-410A)	RGT50HP
Tool Caddy	TC-2000

## Minimax Refrigerant Recovery Machine

US Patent D482,373

- ▶ Maximum size - Maximum performance; ideal for residential and appliance service
- ▶ Recovers all commonly used CFC, HFC, HCFC Refrigerants (including Puron™ **R-410A**)
- ▶ Proprietary “Oil-less” compressor capable of handling both liquid and vapor
- ▶ Ergonomic design for easier handling
- ▶ Tough corrosion proof polyethylene blow molded case
- ▶ Field serviceable semi-hermetic compressor
- ▶ Self purge feature
- ▶ Includes Filter-Drier
- ▶ 550 psi safety cut off switch
- ▶ All units pre-wired to accept 80% Tank Shut Off Kit (Part No. KT-5001)
- ▶ Minimax-KT Model available with 80% Tank Shut Off Kit installed at the factory
- ▶ Power Source - 115 V 60 Hz
- ▶ UL/C (-KT version only\*) & CE, TÜV approved (-E version only)
- ▶ One year warranty with full over the counter exchange
- ▶ Weight: 28 lbs.; dimensions: 11" H x 9" W x 16" D



Minimax



**UL CERTIFIED**  
To meet EPA Regulations per ARI 740  
**8EA7**

International Versions	Model No.
Europe – Bar gauge/°C scale 220V 50 Hz	Minimax-E
Japan – Kpa gauges/°C scale 100V 50/60 Hz and 80% Shut Off Kit included	Minimax-JKT
Australia - 230V 50 Hz	Minimax-A

Optional Version	Part Number
Minimax (115V 60 Hz) with 80% Tank Shut Off Kit installed	Minimax-KT
* UL/C Approved	

Replacement Parts (supplied with product)	Part Number
Filter-Drier, 1/4" MFL x 1/4" MFL	100343
Hose, Blue 4" Long	100345

Optional Accessories	Part Number
80% Tank Shut Off Kit	KT-5001
30Lb (14kg) Recovery Tank	17121
30Lb (14kg) Recovery Tank with 80% capacity sensor	17605
50Lb (23kg) Recovery Tank	17506
50Lb (23kg) Recovery Tank with 80% capacity sensor	17572
50Lb (23kg) High Pressure Recovery Tank with 80% capacity sensor (use with R-410A)	RGT50HP



“Oil-less” Compressor

## 25175B Refrigerant Recovery Machines



### Feature:

- ▶ Recovers all commonly used CFC, HCF, HFCF refrigerants, including **R-410A**
- ▶ Automatic High Pressure cut-out switch for safety
- ▶ Direct liquid recovery without damaging the compressor
- ▶ All new proprietary "Oil-less" compressor and 1/2 hp motor
- ▶ Field serviceable compressor
- ▶ Multi-refrigerant capable with Self-Clearing feature, which prevents cross-contamination
- ▶ Especially suited for residential and commercial HVAC applications
- ▶ Efficient fan for cooling compressor and large 3-row condenser for use in high temperatures
- ▶ One 60" hose included
- ▶ 1/4" MFL fittings
- ▶ Optional Float Cable provides automatic shut off when tanks are 80% full
- ▶ Power Source - 115V 60 Hz
- ▶ Weight: 34 lbs.; dimensions: 20" H x 12.5" W x 10.5" D



**UL CERTIFIED**  
To meet EPA Regulations per ARI 740  
8EA7



ATP "Oil-less" Compressor

International Versions	Model No.
220V-240V 50/60 Hz, metric gauges, CE approved (power cord not included)	25176B
100V 60 Hz, metric gauges, includes tank overfill cable	25177B

Optional Accessories	Part Number
30Lb (14kg) Recovery Tank	17121
30Lb (14kg) Recovery Tank with 80% capacity sensor	17605
50Lb (23kg) Recovery Tank	17506
50Lb (23kg) Recovery Tank with 80% capacity sensor	17572
50Lb (23kg) High Pressure Recovery Tank with 80% capacity sensor (use with R-410A)	RGT50HP
100V Optional Float Cable Assembly	KT-5001
Filter-Drier, 1/4" MFL x 1/4" MFL	100343
Hose, Blue 4" Long	100345

## 25200B Refrigerant Recovery Machine

- ▶ Designed for the recovery medium and high-pressure refrigerants, including **R-410A**
- ▶ Automatically switches from liquid to vapor recovery
- ▶ Provides continuous recovery without the need to change the hose or flip a switch
- ▶ Automatic high pressure cut-out switch for safety
- ▶ Direct liquid recovery without damaging the compressor
- ▶ Oil-less compressor allows rapid transfer of large amounts of liquid
- ▶ Efficient fan and large condenser can handle high ambient temperatures
- ▶ Multi-refrigerant capable with Self-Clearing feature, which prevents cross-contamination
- ▶ Four 60" hoses, with ball-valves included
- ▶ Optional Float Cable provides automatic shut off when tanks are 80% full
- ▶ 1/4" MFL fittings
- ▶ Power Source – 115V 60 Hz
- ▶ Weight: 32 lbs.; dimensions: 20" H x 12.5" W x 10.5" D



25200B



UL CERTIFIED

To meet EPA Regulations per ARI 740

8EA7

International Versions	Model No.
220V-240V 50/60 Hz, metric gauges, CE approved (power cord not included)	25201B
220V Optional Float Cable Assembly	19498

Optional Accessories	Part Number
30Lb (14kg) Recovery Tank	17121
30Lb (14kg) Recovery Tank with 80% capacity sensor	17605
50Lb (23kg) Recovery Tank	17506
50Lb (23kg) Recovery Tank with 80% capacity sensor	17572
50Lb (23kg) High Pressure Recovery Tank with 80% capacity sensor (use with R-410A)	RGT50HP
100V Optional Float Cable Assembly	KT-5001
Filter-Drier, 1/4" MFL x 1/4" MFL	100343
Hose, Blue 4" Long	100345

## 17800B

### Refrigerant Recovery, Recycle, Evacuate and Recharge Machine



- ▶ **Recovers, Recycles, Evacuates and Recharges**
- ▶ **Continuous operation** – all through one hook up
- ▶ **In-plant maintenance** – Ideal for departments that use different types of refrigerants for various systems
- ▶ **Multiple Refrigerants** – R-12, R-134a, R-22, R-500, R-502, MP and HP Blends – and many more
- ▶ **Microprocessor** controlled functions prompt you through programming and signal preventative maintenance
- ▶ **Float Chamber** – Automatically adjusts from liquid to vapor for most efficient recovery
- ▶ **Electronic Scale** – Makes it simple to recharge to factory specifications; also weighs recovered refrigerant and provides tank overflow protection
- ▶ **Cool-Tech Vacuum Pump** – 6 CFM, has the capacity to thoroughly evacuate system
- ▶ **Lockout Panel** – Prevents mixing of refrigerants; slides to one side for 1/4" fittings and to the other for 1/2" Acme fittings
- ▶ **Single Pass Recycling** – Makes an initial pass through the filter-drier; additional recycling can be programmed in case of compressor burn-out, or other conditions
- ▶ **Heavy Duty Filter-Drier** – Removes moisture and acid from the refrigerant; can handle up to 300 Lbs. between changeovers
- ▶ **Power Supply** – 115V 60 Hz.
- ▶ Supplied with two 50 Lb. Tanks; one with 1/4" fittings and the other with 1/2" Acme fittings
- ▶ Includes three sets of hoses – Two sets for refrigerants using 1/4" SAE fittings and one set with R-134a field service couplers
- ▶ Design certified by UL to meet SAEJ-1770

International Versions	Model No.
220V-240V 50 Hz, readout in kilograms	17801B
Replacement Parts (supplied with product)	Part Number
Recycling Filter-Drier	17677
50 lb. (23 kg) Refillable Tank. 1/4" fittings	17506
50 lb. (23 kg) Refillable Tank. 1/2" Acme fittings	34750



## The Importance of Deep Vacuum

The purpose of a vacuum pump is to remove moisture and air from an A/C-R system.

Modern systems are built tighter and charges are more critical. That means these systems have a greater sensitivity to moisture and other contaminants, making thorough evacuation more important than ever before.

Moisture in a refrigeration system, directly or indirectly, is the cause of most problems and complaints. First, moisture can cause freeze-up in a system. Moisture is picked up by the refrigerant and transported through the refrigerant line in a fine mist, with ice crystals forming at the point of expansion.

“Freeze-up” is not the only problem caused by moisture. It can also result in corrosion, the effects of which are not apparent until the real damage has occurred. Moisture alone is bad enough, but combined with refrigerants containing chlorine, hydrochloric acids can form. These greatly increase the corrosion of metals.

Also, refrigerant oil rapidly absorbs moisture. Water-formed acids combine with the refrigerant, forming a closely bonded mixture of fine globules. The effect is called sludging and it greatly reduces the lubricating ability of the oil.

A vacuum pump removes troublesome moisture by lowering the pressure within the system and vaporizing (or boiling off) the moisture, then exhausting it along with air.

### CoolTech™ – The Inside Story

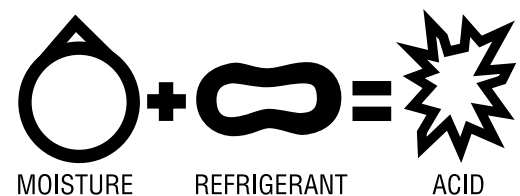
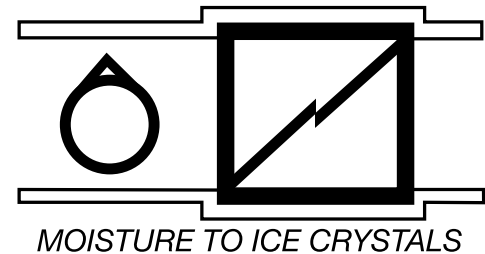
A vacuum pump that’s fast and thorough saves you not only time, but also the expense of callbacks and dissatisfied customers. Robinair pumps perform better than other pumps in the industry, ensuring you complete dehydration before recharging.

Robinair pumps are engineered specifically to meet the needs of the kind of A/C work you’re doing today, and to give you trouble-free operation. We’ve put our years of experience and know-how into developing pumps that help you do the job faster and better.

All Robinair pumps are backed by our exclusive “No Hassle” over-the-counter replacement warranty. You can return a pump to your Robinair distributor for an immediate exchange — with no hassle! (In U.S. and Canada only; in other locations, see your Robinair distributor.)

Robinair CoolTech vacuum pumps are designed for use on A/C-R systems using CFCs, HCFCs, and HFCs in conjunction with mineral oil, ester oil, alkylbenzene oil, and PAG oil as lubricants. Do not use them with ammonia or lithium bromide systems; not for use with flammable refrigerants.

U.S. Patent Numbers: 4,523,897; 4,631,006; 5,209,653.



- 
- 1 Oil Fill Port**  
Makes adding oil simple since the port is accessible from the front or either side. The sight glass on the front of the pump shows you when enough oil has been added.
  - 2 Two-stage Design**  
Cleans the system more thoroughly than a single-stage pump; the second stage starts pumping at a lower pressure so you can pull a deeper ultimate vacuum.
  - 3 Die-Cast Aluminum Housing**  
Cast aluminum housings make the pumps lightweight but durable.
  - 4 Heavy Duty Motor**  
High torque design for easy startup and efficient operation.
  - 5 Molded Base**  
Durable polycarbonate base improves pump balance and minimizes vibration during operation.
  - 6 Iso-Valve™**  
Isolates the pump from the system with just a quarter-turn.
  - 7 Offset Rotary Vanes**  
Our proven design builds a powerful compression within the pumping chamber to reduce system pressure and vaporize moisture, so it can be exhausted along with air.
  - 8 Oil Drain Valve**  
Positioned at the bottom of the oil reservoir and angled for faster, more complete draining.

## Selecting the Right Size Pump

The more air a pump moves, the faster it can reach an acceptable vacuum. A smaller pump takes more time to evacuate a system than one that's the correct size for the job.

Use this Chart as a Guide to Selecting the Right Size Pump

System	Recommended Pump Size	
	CoolTech™	VacuMaster™
Up to 10 tons (35kW); Domestic Refrigeration, Passenger Cars	1.2 CFM (28 l/m)	1.5 CFM (35 l/m)
Up to 30 tons (105kW); Residential A/C, Panel Trucks & RV's	4 CFM (93 l/m)	3 CFM (71 l/m)
Up to 50 tons (176kW); Rooftop A/C systems, Tractor/Trailers, Buses	6 CFM (142 l/m)	5 CFM (118 l/m)
Up to 70 tons (246kW)	10 CFM (236 l/m)	-

	Oil Fill Port	Heavy Duty Motor	Two-Stage Design	Molded Base	Die-Cast	Oil Drain Valve	Offset Rotary Vanes	Iso-Valve	Gas Ballast
CoolTech™ Pumps	●	●	●	●	●	●	●	●	●
VacuMaster® Pumps	●	●	●		●	●			

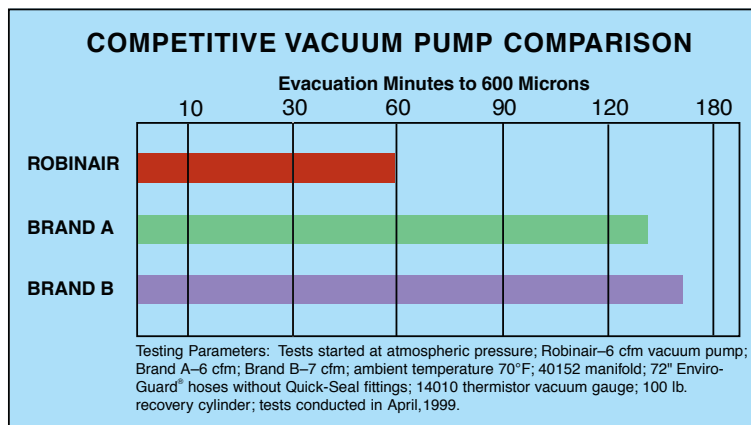
Tests done under the same laboratory conditions confirm that Robinair vacuum pumps consistently out perform other major brands. Our Model 15600 reaches a vacuum of 600 microns in just 60 minutes, while the competition's pumps took more than two hours to reach the same micron level.

### Robinair pumps weigh less!

You'll appreciate the difference a few pounds make when you're carrying the pump up a ladder or through an access hatch.

### Robinair pumps use less oil!

Smaller oil capacity means that your maintenance costs will be lower over the life of the pump.



<b>Robinair (6 CFM)</b>	<b>27 lbs</b>
Brand A (6 CFM)	34.5 lbs
Brand B (7 CFM)	27.5 lbs

<b>Robinair</b>	<b>15 oz.</b>
Brand A	24 oz.
Brand B	30 oz.

## Premium High Vacuum Pump Oil

The performance of your pump depends largely on the quality and purity of the vacuum pump oil. Robinair's oil is engineered to maintain maximum viscosity at high running temperatures and to improve cold weather starts.

To keep the pump operating at peak efficiency, change the oil frequently. Moisture and other contaminants can quickly deteriorate the purity of the oil, thinning the oil, and reducing the pump's ability to reach deep vacuum conditions.

### Thermally Stable

Laboratory tests prove that Robinair oil is more thermally stable in comparison to other leading brands, which means it resists breaking down due to heat for a longer period of time.

### Lower Moisture Content

Robinair oil has a lower moisture content than other oils, thanks to our special packaging and handling procedures. Moisture degrades the oil's purity, thinning it, and reducing the pump's ability to reach a deep vacuum.



**13119** – Pint bottle, 12 per case.

**13203** – Quart bottle, 12 per case.

**13204** – Gallon bottle, 4 per case.

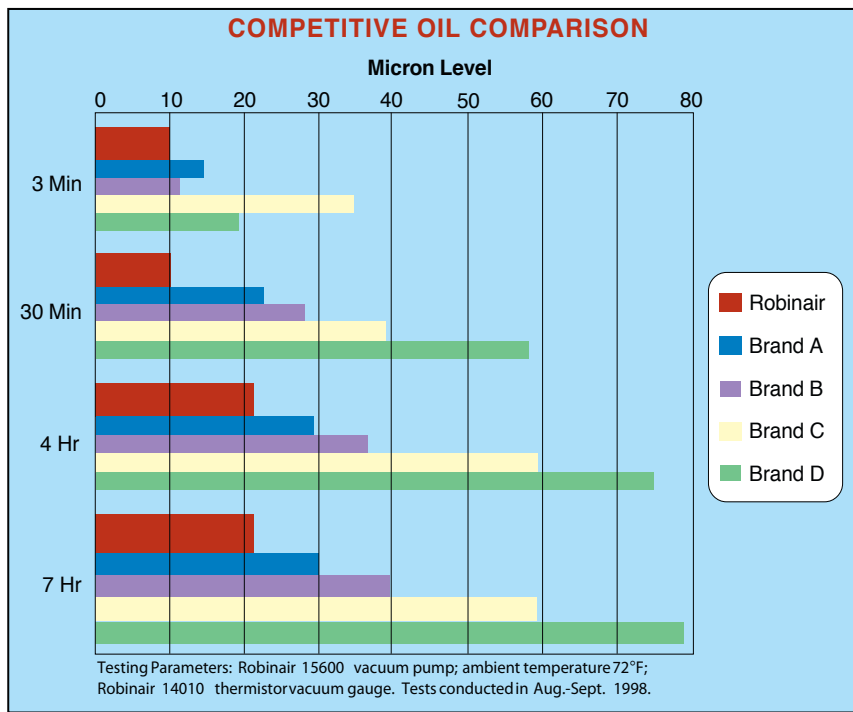
### Also Available

**17191** – Oil spout for quart bottle, 10" long, handy for adding oil to a pump mounted on a station.

## Change Your Vacuum Pump Oil Frequently

Clean oil is important for peak vacuum pump performance. When the oil is contaminated, it reduces your pump's ability to remove moisture from a system. You should change the pump oil frequently, and especially in the following situations:

- ▶ You have just evacuated a system that you suspect was overly moisture-laden.
- ▶ You have just evacuated a system with a compressor burnout.
- ▶ The pump oil looks cloudy or milky.
- ▶ The pump will not pull to factory specifications when blanked off to an electronic thermistor vacuum gauge.
- ▶ Every 10 hours of operation.





No. 15120A  
10 CFM



No. 15600 – 6 CFM  
No. 15400 – 4 CFM  
No. 15434 – 4 CFM



No. 15234  
1.2 CFM

## CoolTech® Vacuum Pumps

- ▶ Power and capacity for a wide range of service applications.
- ▶ High CFM rating for fast, thorough evacuation.
- ▶ Two-stage rotary vane design.

### Features:

**Iso-Valve™** – Isolates the pump from the system with just a quarter-turn.

**Gas Ballast** – Moisture laden air passing through the pump mixes with relatively dry air to such a degree that compression does not cause condensation.

**Two-stage Design** – Cleans the system more thoroughly than a single-stage pump; the second stage starts pumping at a lower pressure so you can pull a deeper, ultimate vacuum.

**Oil Drain Valve** – Positioned at the bottom of the oil reservoir and angled for faster, more complete draining.

**Oil Fill Port** – Makes adding oil simple since the port is accessible from the front or either side. The sight glass on the front of the pump shows you when enough oil has been added.

**Heavy-Duty Motor** – High torque design for easy startup and efficient operation.

**Offset Rotary Vanes** – Our proven design builds a powerful compression within the pumping chamber to reduce system pressure and vaporize moisture so it can be exhausted along with air.

**Molded Base** – Durable polycarbonate base improves pump balance and minimizes vibration during operation.

**Die-Cast Aluminum Housing** – Cast aluminum housings make the pumps lightweight but durable.

Model	Free Air Displacement	Factory Micron Rating	No. of Stages	Intake Fitting	Oil Capacity	Motor Size	Voltage	Approvals	Weight	Dimensions
<b>Domestic Models</b>										
15234	1.2 CFM	50 microns	2	1/4" MFL and 1/2" Acme	5 oz. (148 ml)	1/8 hp	115V 50/60 Hz	UL	10 lbs. (4.5 kg)	8.5" H x 4.3" W x 9.5" L 215 mm x 108 mm x 240 mm
15400	4 CFM	20 microns	2	1/4" MFL and 1/2" MFL	13 oz. (445 ml)	1/3 hp	115V 60 Hz	UL	29 lbs. (12.2 kg)	9.75" H x 5.625" W x 15" L 247 mm x 142 mm x 381 mm
15434	4 CFM	20 microns	2	1/4" MFL and 1/2" Acme	13 oz. (384 ml)	1/3 hp	115V 60 Hz	UL	29 lbs. (12.2 kg)	9.75" H x 5.5" W x 15" L 247 mm x 142 mm x 381 mm
15600	6 CFM	20 microns	2	1/4" MFL and 1/2" MFL	13 oz. (445 ml)	1/2 hp	115V 60 Hz	UL	30 lbs. (12.2 kg)	9.75" H x 5.625" W x 15" L 247 mm x 142 mm x 381 mm
15120A	10 CFM	20 microns	2	1/4" MFL and 1/2" MFL	16.5 oz. (445 ml)	1/2 hp	115V 60 Hz	UL	30 lbs. (12.2 kg)	10.75" H x 5.625" W x 16" L 247 mm x 142 mm x 381 mm
<b>International Models</b>										
15226	28 liters/minute	50 microns	2	1/4" MFL and 1/2" Acme	5 oz. (148 ml)	1/8 hp	220V 50/60 Hz	CE	10 lbs. (4.5 kg)	8.5" H x 4.5" W x 9.5" L 215 mm x 108 mm x 240 mm
15401	93 liters/minute	20 microns	2	1/4" MFL and 1/2" MFL	15 oz. (445 ml)	1/3 hp 50/60 Hz	115V/220-250V	CE	32 lbs. (14.5 kg)	9.5" H x 5.5" W x 15" L 247 mm x 142 mm x 381 mm
15424	93 liters/minute	20 microns	2	1/4" MFL and 1/2" Acme	15 oz. (445 ml)	1/3 hp 50/60 Hz	115V/220-250V	CE	29 lbs. (14.5 kg)	9.5" H x 5.5" W x 15" L 247 mm x 142 mm x 381 mm
15601	142 liters/minute	20 microns	2	1/4" MFL and 1/2" MFL	15 oz. (445 ml)	1/3 hp 50/60 Hz	115V/220-250V	CE	33 lbs. (15 kg)	9.5" H x 5.5" W x 15" L 247 mm x 142 mm x 381 mm
15121A	236 liters/minute	20 microns	2	1/4" MFL and 1/2" MFL	17 oz. (500 ml)	1/2 hp	115V/220V 50/60 Hz	CE	38 lbs. (17.2 kg)	10" H x 5.5" W x 16" L 272 mm x 142 mm x 419 mm

## VacuMaster™ Economy Vacuum Pumps

- ▶ Performance tested to meet Robinair's high standards
- ▶ Power and capacity for a wide range of service applications.
- ▶ High CFM rating for fast, thorough evacuation.
- ▶ Two-stage rotary vane design.

### Features:

**Two-stage Design** – Cleans the system more thoroughly than a single-stage pump; the second stage starts pumping at a lower pressure so you can pull a deeper, ultimate vacuum.

**Oil Drain Valve** – Positioned at the bottom of the oil reservoir and angled for faster, more complete draining.

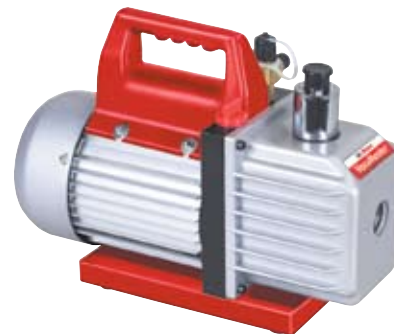
**Oil Fill Port** – Makes adding oil simple since the port is accessible from the front or either side. The sight glass on the front of the pump shows you when enough oil has been added.

**Heavy-Duty Motor** – High torque design for easy startup and efficient operation.

**Die-Cast Aluminum Housing** – Cast aluminum housings make the pumps lightweight but durable.



No. 15150  
1.5 CFM



No. 15500  
5 CFM

Model	Free Air Displacement	Factory Micron Rating	No. of Stages	Intake Fitting	Oil Capacity	Motor Size	Voltage	Weight	Dimensions
<b>Domestic Models</b>									
15150	1.5 CFM	50 microns	2	1/4" MFL and 3/8" Acme 3/8" FFL x 1/2" Acme adaptr.	7.4 oz. (219 ml)	1/4 hp	115V 60Hz	22 lbs. (10 kg)	9.5" H x 4.75" W x 12.5" L 240 mm x 120 mm x 315 mm
15300	3 CFM	40 microns	2	1/4" MFL and 3/8" MFL 3/8" FFL x 1/2" Acme adaptr.	7.5 oz. (220 ml)	1/3 hp	115V 60Hz	28 lbs. (12.5 kg)	10" H x 5" W x 13" L 255 mm x 123 mm x 336 mm
15500	5 CFM	40 microns	2	1/4" MFL and 3/8" Acme 3/8" FFL x 1/2" Acme adaptr.	7.5 oz. (220 ml)	1/3 hp	115V 60Hz	28 lbs. (12.2 kg)	10" H x 5" W x 13" L 255 mm x 123 mm x 336 mm
<b>International Models</b>									
15151 1.5 CFM	35 liters/minute	50 microns	2	1/4" MFL and 1/2" Acme 3/8" FFL x 1/2" Acme adaptr.	7.5 oz. (220 ml)	1/4 hp	220V 50Hz	21 lbs. (9.6 kg)	9.5" H x 4.5" W x 12.5" L 240 mm x 120 mm x 315 mm
15301 3 CFM	71 liters/minute	40 microns	2	1/4" MFL and 1/2" MFL 3/8" FFL x 1/2" Acme adaptr.	7.5 oz. (220 ml)	1/3 hp	220V 50Hz	28 lbs. (12.5 kg)	10" H x 5" W x 13" L 255 mm x 123 mm x 336 mm
15501 5 CFM	118 liters/minute	40 microns	2	1/4" MFL and 1/2" Acme 3/8" FFL x 1/2" Acme adaptr.	7.5 oz. (220 ml)	1/3 hp	220V 50Hz	28 lbs. (12.5 kg)	10" H x 5" W x 13" L 255 mm x 123 mm x 336 mm



## Vacuum Valve Assembly

Valve assemblies give the service technician maximum control during evacuation and recharging. Installed directly to the vacuum pump, they connect the pump, manifold and thermistor gauge, providing one central control. Saves time – no need to connect/disconnect hoses. Made of durable forged brass for long life.

**13047A** 1/2" FFL Coupler x 1/4" MFL x 3/8" MFL,  
Large internal porting for high CFM-flow



13047A

## Screw-on Inlet tee Adapter

**15555** 1/4" FFL Coupler x 1/4" MFL x 1/2" Acme  
Converts any vacuum pump to dual inlet, R-12/R-134a

## Optional Vacuum Pump Intake Fitting Adapters

**10459** 1/2" FFL to 1/4" MFL

**13110** 3/8" FFL to 1/4" MFL

**13066** 1/2" FFL to 3/8" MFL



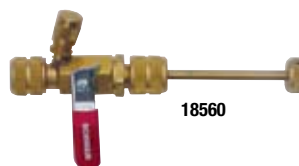
10459

## 18560/18561 Valve Core Remover/Installers

- ▶ These handy tools remove valve cores without losing the system charge
- ▶ They are designed specifically for use during evacuation or recharging on any system with valve core type access ports
- ▶ See page 54 for pictures and individual information



18561



18560

## The Importance of Measuring Vacuum

Moisture in an A/C system is a serious problem for the technician – it causes freeze-ups and corrosion, seriously damaging the A/C system. The most effective way to eliminate moisture is to create a vacuum deep enough to boil it away. For that, you need a high vacuum pump, and a tool to tell you when the vacuum is deep enough to adequately dehydrate the system.

Without a means of measurement, evacuation time is based on guesswork. The length of time required for thorough dehydration will vary from system to system because of several factors – so using a clock isn't foolproof. You risk not removing all the moisture – or wasting time by running the pump long after evacuation is complete.

Many service technicians rely on the compound gauge of the manifold to read vacuum. While the manifold is good for gross measurements, it's simply not accurate enough to determine exact vacuum levels. It's designed to read low pressures in inches of mercury, but there's no way to read exact levels when you're pulling the last, most critical inch of vacuum.

If you look at the compound gauge face, you can see that it's not possible to clearly differentiate between 29" Hg and 29.9" Hg, for example. But in microns – the precise measurements for the last inch of vacuum – that's the difference between roughly 23,000 and 250 microns.

A closed-end, U-tube, mercury manometer is capable of reading to 500 microns. However, it's a delicate instrument, more suited to a laboratory or controlled environment.

The most economical, effective, and easy-to-use option is an electronic thermistor vacuum gauge. It eliminates the guesswork by measuring the vacuum to precise micron levels, ensuring the system is leak-free, moisture-free, and ready to be recharged. Although originally developed as a laboratory instrument, today's thermistor vacuum gauges are rugged enough – and reliable enough – for field service work.

## 14777 Compact Electronic Thermistor Vacuum Gauge

- ▶ Compact, pocket-size – 2.5" x 3"
- ▶ Takes guess work out of evacuation – accurately indicates when system is ready for recharge
- ▶ Designed for use under high vacuum, reads down to 10 microns
- ▶ Easy-to-read LCD, automatically registers smaller numeric segments as system pulls-down
- ▶ 6' long lead and magnetic mounting strip – allows for convenient, easy to read, positioning

### Specifications

Range	25,000 to 10 microns
Vacuum Fitting	1/4" MFL
Power Supply	One 9V battery (included)



14777

Thermistor Vacuum Gauge

Solid-state instrument constantly monitors and visually indicates the vacuum level in 10 segments from atmosphere to 50 microns.

- ▶ LCD screen can be read even in direct sunlight and minimizes battery consumption.
- ▶ There are no adjustments to make, no calibrations for atmospheric pressure or altitude.
- ▶ Durable carrying case protects the instrument and has a built-in compartment for storing the 24" charging hose (included).

No. 14830A Thermistor vacuum gauge.



No. 14830A

Specifications

Range . . . . .	25,000 to 50 microns in 10 segments
Power Supply . . . . .	Four "D" cell batteries (not included) . . . . . or optional A/C adapter
Display . . . . .	Custom LCD, 10 segments
Weight . . . . .	.238 lbs. (1.08 kg) without batteries
Dimensions . . . . .	10" H x 7.5" W x 3.375" D . . . . . (25.4 cm x 19 cm x 8.6 cm)

14010A Thermistor Vacuum Gauge



14010A

- ▶ Large analog meter – clearly marked for easy reading of micron levels
- ▶ Indicates actual vacuum level in the system
- ▶ Measures from 25,000 to 0 microns
- ▶ Two operation modes – select between the null method for greatest accuracy or direct meter reading for continuous monitoring of the evacuation process
- ▶ Proven bridge circuit compensates for changes in ambient temperature from 30° to 120° F (-1° to 49° C) and also for variances in battery voltage
- ▶ Rugged Carrying Case, protects unit during transit and use

Specifications

Range	25,000 to 0 microns
Vacuum Fitting	1/4" FFL
Power Supply	Six "C" cell batteries

Replacement Parts (supplied with product)	Part Number
Replacement Thermistor Tube	17162

Optional Accessories	Part Number
Optional A/C Power Adapter	17160

## TIF9450D Digital Micron Gauge

U.S. Patent # 5,136,8855

- ▶ Patented sensor technology - requires no calibration for fluctuating ambient and/or sensor housing temperatures
- ▶ Not affected by the specific gas being evacuated
- ▶ Liquid Crystal Display (LCD) - Reads 500,000 to 200 microns
- ▶ Dual power supply - 9V battery or auxiliary A/C adapter (not included)
- ▶ Three foot sensor cord
- ▶ Built into ABS Carrying Case
- ▶ One year warranty



TIF 9450D

### Specifications

Range	500,000 to 200 microns Hg (auto ranging)
Resolution	100/10/1 microns Hg
Vacuum Fitting	1/4" FFL
Power Supply	One 9V battery or 9VDC optional adapter
Battery Life	8 hours (Alkaline)
Probe Cord Length	36" (91.4 cm)
Operating Temp	32° to 125° F (0° to 52° C)

Replacement Parts (supplied with product)	Part Number
Sensing Probe Assembly	TIF9453
Connector hose with Filter	TIF9454





## TIF9010A Slimline Refrigerant Scale



- ▶ Touch Key controls
- ▶ Three display modes – Lbs./oz.; Decimal Lbs., Kilograms
- ▶ High Resolution – 0.1 oz./0.005 Lbs./2 grams
- ▶ Extremely Accurate
- ▶ 110 Pound/50kg capacity
- ▶ Auto Zero
- ▶ Removable platform and control box with prop stand/hanging hook
- ▶ Compact design, completely portable
- ▶ Can be used with all refrigerants
- ▶ Removable control box with prop stand/hanging hook
- ▶ Compatible with TIF 9020 for automatic capability
- ▶ CE approved
- ▶ Two year warranty



TIF 9010A

## ADS-100 Slimline Refrigerant Scale



- ▶ 200Lb or 100Kg capacity
- ▶ Three display modes, Lbs./oz.; Decimal Lbs.; Kilograms
- ▶ High resolution – 0.2 oz./0.010 Lbs./4 grams
- ▶ Compact design and completely portable
- ▶ Extremely Accurate
- ▶ Auto Zero
- ▶ Removable platform and control box with prop stand/hanging hook
- ▶ Charging and recovery capabilities
- ▶ Compatible with TIF9020 for automatic capability
- ▶ CE approved
- ▶ Two year warranty

ADS-100

### Specifications



	TIF9010A	ADS-100
Range 15.8 oz., OR	0 lbs. 0.0 oz. to 110 lbs. 0.0 oz., 0.000 lbs. to 110.000 lbs., OR 0.000 kg to 55.000 kgs	0 lbs. 0.0 oz. to 199 lbs. 0.000 lbs. to 199.990 lbs., OR 0.000 kg to 100.000 kg
Resolution	0.1 oz./0.005 lbs./2 grams	0.2 oz./0.010 lbs./4 grams
Accuracy	± 0.5% of reading	± 0.5% of reading ± 1 digit
Operating Temp	32° to 120°F (0° to 49°C)	32° to 120°F (0° to 49°C)
Power Supply	9VDC	9VDC
Battery Life	30 hours	20 hours
Coil Cord Length	6 ft. (1.8m)	6 ft. (1.8m)





## TIF9030 Compact Refrigerant Scale

- ▶ New molded design, easy to carry and storage
- ▶ Capacity up to 220 Lbs (100 Kg)
- ▶ High accuracy ( $\pm 0.5$  oz) and resolution (0.1oz)
- ▶ Display provides Lbs/oz; decimals Lbs and Kilograms measurements
- ▶ 9V Battery powered
- ▶ Platform adapts to most existing tanks (9" x 9")
- ▶ 3 Control keys: ON/OFF, Automatic zeroing and measurement units
- ▶ Charging and Recovery capabilities
- ▶ CE approved
- ▶ One year warranty



TIF 9030



Optional Accessories	Part Number
Soft case	TIF9031

## TIF9055 Programmable Charging/ Recovery Meter

- ▶ 220 pound OR 100 kg capacity
- ▶ Allows automatic Charging or Recovery operations
- ▶ Color-coded keypad controls
- ▶ Three display modes - Lbs./oz.; Decimal Lbs.; Kilograms
- ▶ Very High Resolution - 0.2 oz./0.010 Lbs./4 grams
- ▶ Can be used with all refrigerants, including High Pressure (R-410A)
- ▶ Advanced Charge and Recovery Modes - uses tare weight & Max. capacity of cylinder to calculate maximum Charge/Recovery available
- ▶ User Programmable memory for up to 99 different stored values
- ▶ "Repeat" charge feature
- ▶ Removable platform and control box with prop stand/hanging hook
- ▶ Compact Design - completely portable, battery powered
- ▶ Low battery indicators
- ▶ Five year warranty



TIF 9055



### Specifications

Range Resolution	0 lbs. 0.0 oz. to 219.99 lbs. 0.0 oz., OR 0.000 lbs. to 219.990 lbs., OR 0.000 kg to 100.000 kg 0.2 oz./0.010 lbs./4 grams
Accuracy	+/- 0.5% of reading
Power Supply	Four AA batteries and one 9V battery
Battery Life	30 hours
Max. Solenoid operating pressure	500 psi
Operating Temp	32 to 120° F (0 to 49°)
Inlet/Outlet Ports	1/4" MFL fittings with 1/2" ACME adapters



## Dial-A-Charge® Charging Cylinders

U.S. Patent No. 3,052,101; Canadian Patent No. 688,223



- ▶ Allows systems to be charged quickly, with the precise amount of refrigerant required by the manufacturer
- ▶ Simply “dialing” the shroud to correspond with the pressure gauge, allows you to compensate for any ambient temperature changes
- ▶ Sight glass allows you see the level of refrigerant in the cylinder
- ▶ Accurate charging eliminates call-backs caused by under or over-charging
- ▶ Cylinders may be economically filled from a bulk tank
- ▶ Includes Heater, to increase cylinder pressure and speed refrigerant transfer
- ▶ For safety, all cylinders are equipped with pressure relief valves, which automatically reset once a safe working pressure is restored
- ▶ Includes a durable Polyethylene Case
- ▶ Made in USA

Model No.	R-12, R-22, R-502	R-134a	110V	220V CE Approved	Graduations	Capacity
43299B	✓		✓		1 oz.	2.5 lb.
43678B	✓		✓		1 oz.	5 lb.
43134B		✓	✓		1 oz. 25 g	2.5 lb. 1100 g
43534B		✓	✓		1 oz. 25 g	5 lb. 2200 g
20349B	✓			✓	25 g	2200 g

**Note: All Models are equipped with 1/4" SAE fittings**

## 16258 Oil Injector

- ▶ Syringe-Type, allows you to add refrigerant oil to a fully charged A/C system
- ▶ Simply fill the barrel with the amount of oil required
- ▶ Check valve prevents any “back flow” of refrigerant
- ▶ 1/4" SAE fitting
- ▶ Capacity – 1/2 ounce (15 ml)

Replacement Parts (supplied with product)	Part Number
Replacement Plunger	16262
Replacement O-Ring for Plunger (pkg. of 5)	16267



16258

## 10994 Heater Blanket

- ▶ Speeds charging by raising temperature, thus creating a positive pressure difference between tank and A/C system
- ▶ Fits 30 and 50 pound refrigerant tanks
- ▶ Includes Thermostat – set at 125° F (55° C)
- ▶ Safety thermal cut-off switch protects against overheating
- ▶ 300 watts, 2.6 amps



10994

(Tank not included)

## 14388 Refrigerant Oil Pump

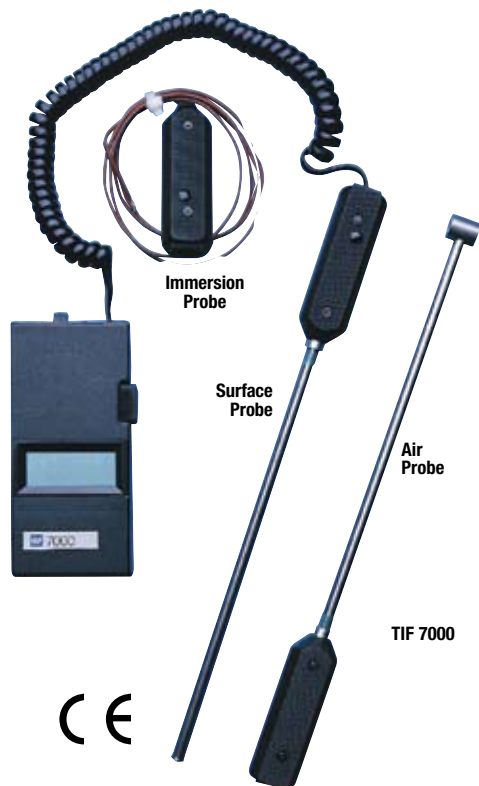
- ▶ Oil-Pump design allows you to add refrigerant oil to a system under pressure
- ▶ Designed for larger systems
- ▶ Siphon hose allows for the removal of old oil, preventing over-charging
- ▶ Pump universally mounts directly to one-gallon containers
- ▶ Allows the pumping of oil directly from the container, keeping oil free from dirt & moisture
- ▶ Pump can remain mounted on oil container during storage
- ▶ Oil is pumped at a rate of 3 ounces (90 ml) per stroke

Optional Accessories/Replacement Parts	Part Number
Adapter	44885
Oil Pump Rebuild Kit	18171
Cap and Seal Assembly	44884



14388

## TIF7000 Digital Thermometer/Pyrometer



The TIF7000, the original TIF Thermometer, comes with 3 different probes. The first is the Air Probe which can be used for instant readings of air temperatures from  $-40^{\circ}\text{F}$  to over  $1000^{\circ}\text{F}$ . The second probe, the Surface Probe, is used for quick surface readings from  $-40^{\circ}\text{F}$  to  $1999^{\circ}\text{F}$ . The Immersion probe tests liquid temperature from  $-40^{\circ}\text{F}$  to  $500^{\circ}\text{F}$ .

- ▶ Field calibratable, interchangeable probes
- ▶ Custom fitted ABS carrying case
- ▶ Auto Zero each reading with display updates 3 times per second
- ▶ Wide sensing range
- ▶ Superfast response
- ▶ Universal connector
- ▶  $^{\circ}\text{F}$  or  $^{\circ}\text{C}$  selectable
- ▶ 9V Battery powered
- ▶ One year warranty

- Also available as TIF7000AC, includes probes: TIF7002, TIF7003, TIF7007

### Specifications

Range	$-40^{\circ}$ to $1999^{\circ}\text{F}$ ( $-40^{\circ}$ to $1100^{\circ}\text{C}$ )
Resolution	$1^{\circ}\text{F}$ ( $1^{\circ}\text{C}$ )
Accuracy	$\pm 1\%$ , $\pm 1$ digit ( $32^{\circ}$ to $212^{\circ}\text{F}$ )
Operating Temp	$32^{\circ}$ to $125^{\circ}\text{F}$ ( $0^{\circ}$ to $52^{\circ}\text{C}$ )
Power Supply	(1) 9V battery
Battery Life	100 hours
Response Time	1-10 seconds
Warm-up Time	Instantaneous
Probe Cord Length	36" (91.4cm)

Replacement Parts (supplied with product)	Part Number
Coil Cord	TIF7005
Carry Case	TIF7006

Accessory Probes	Part Number
General Purpose	TIF7009
Penetration	TIF7010
Surface	TIF7002
Air	TIF7003
Immersion	TIF7004
Superheat	TIF7007
Tire	TIF7008



## TIF7620, TIF7612, TIF7610 IR Thermometer PRO

- ▶ Complete IR design is incorporated inside of a single chip, reducing space and creating a compact and light weight product
- ▶ Innovative optical lens – accurate measurements; wide temperature range
- ▶ Laser pointer – Easy to define the target area to be measured
- ▶ Extend temperature – TIF7612 and TIF7620 have a thermocouple interface that can extend the temperature up to 1999°F.
- ▶ Simple and easy to operate – Simply point at desired target and press the trigger button for a temperature reading
- ▶ Set alarm temperatures (Low and High Temperatures) to receive alert information when the you are measured out of the range (TIF7612 and TIF7620 only)
- ▶ (MAX), (MIN), Difference between MAX and MIN (DIF), and average (AVG) modes are available in TIF7612 and TIF7620
- ▶ The new TIF IR thermometers incorporate visual low battery indication and simple operation of two “AAA” batteries



Specification	TIF7610	TIF7612	TIF7620
Measurement Range	-76 to +932°F (-60 to +500°C)	-76 to +932°F (-60 to +500°C)	-76 to +1400°F (-60 to +760°C)
Thermocouple Measurement Range	N/A	-83.2 to +1999°F (-64 to +1400°C)	
Accuracy: Tobj=59°-95°F (15-35°C) Tamb=77°F (25°C)	±1.8°F (1.0°C)		
Accuracy: Tobj= -27-932°F (-33-500°C) Tamb= 73°F ±5°F (23 ± 3°C)	±2% of reading or 4°F (2°C) whichever is greater		
Thermocouple Accuracy	N/A	±1% of reading or 1.8°F (1°C) whichever is greater (Test under Tamb=73±11°F[23+6°C])	
Emissivity	0.95 fixed	Adjustable	
Resolution: 14.2° F~199.9° F (-9.9~199.9°C)	0.1°F/0.1°C (1° below 9.9 and above 199.9)		
Spectral Response	5 ~ 14μm	8 ~ 14μm	
Response Time (90%)	.5 sec		
Distance:Spot	10:1	12:1	20:1
Battery Life	Typ.18 hours		
Dimensions	175.2 x 39.0 x 71.9mm		
Weight	179 grams including batteries (AAA*2pcs)		



Replacement Parts (supplied with product)	Part Number
Thermocouple	TPK-56



## TIF7201 Pocket IR Thermometer



- ▶ System-on-a-Chip SoC technology:  
compact and lightweight
- ▶ Backlit LCD display w/ dual readings
- ▶ °C / °F Switch and MAX function
- ▶ Auto power off after 15 sec.
- ▶ Battery level indication
- ▶ Distance to spot (D/S): 1:1

Applications:  
Automotive  
Electrical  
General home use  
HVAC/R

Available in 4pk. display: TIF7201D  
(Includes 4 of the TIF7201)

### Specifications

Temperature measurement range	-27° to +428°F (-33° to +220°C)
Operating temperature range	14 to +122°F (-10 to +50°C)
Accuracy (Tamb=23±3°C)	±2% of reading or ±4°F (2°C)
Resolution	0.1 °F/°C
Distance to Spot	1:1 optical
Emissivity setting	0.95 fixed
Field of View	1:1
Battery Life	Typ.25 hours / Min.20 hours
Battery	1 CR2032 lithium cell battery

## 3665 Phototach (Contact/Non-Contact)



- ▶ Can be used as a contact as well as a non-contact tachometer.
- ▶ Four styles of contact adapter tips clip easily to the top of the phototach.
- ▶ Infrared technology makes the phototach accurate, convenient, and easy to use.
- ▶ Infrared beam not affected by ambient light.
- ▶ Non-contact design results in zero torque loss for true precision.
- ▶ Phototach is equipped with a laser pointer for accurate targeting.
- ▶ Reflective tape placed on a revolving object can be measured at distances from 2" to 20".
- ▶ Wide measuring range and high resolution, 2.5 to 99,999 rpm with a large 5-digit display, autoranging, min/max memory storage, and low-battery indicator.

## Analog Thermometers

- ▶ These pocket thermometers include a protective sheath with pocket clip.

Model No.	Temperature Range	Dial Diameter
10596	-40° to 160°F	1"
10597	0° to 220°F	1"
40859	-40° to 70°C	1"
10945	0° to 220°F	1-3/4"



10945

## 43240 Digital Thermometer

- ▶ Compact - with many capabilities
- ▶ Accurate
- ▶ Celsius or Fahrenheit selectable
- ▶ Min./Max. and Hold features
- ▶ Battery saver mode
- ▶ For surface, liquid and air temperatures
- ▶ Durable cover to protect probe



43240

### Specifications

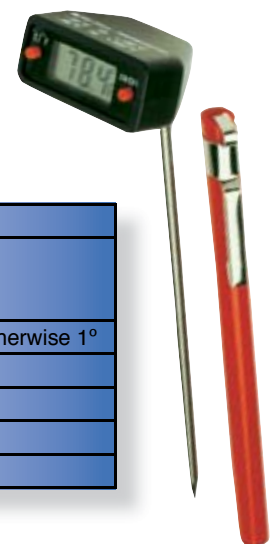
Temp Range	-40° to 390° F (-40° to 200° C)
Accuracy	± 2° F between -14° and 212° F ± 1° C between -10° and 100° C (otherwise ± 3° F or ± 1° C)
Display Resolution	0.1° F/C throughout range
Sampling Time	One second
Battery	One 1.5 Volt, size LR44

## 43230 Swivel-Head Digital Thermometer

- ▶ Head swivels 180° - easy to see at any angle
- ▶ Compact size - convenient to carry & store
- ▶ Selectable - Celsius and Fahrenheit
- ▶ Reliable readings over entire range
- ▶ For surface, liquid and air temperatures
- ▶ Protective sheath with pocket clip

### Specifications

Temp Range	-58° to 302° F (-50° to 150° C)
Accuracy	± 2° F between -4° and 248° F ± 1° C between -20° and 120° C (otherwise ± 4° F or ± 2° C)
Display Resolution	0.1° between -19.9 and 199.9, otherwise 1°
Sampling Time	One second
Auto Power off	10 minutes
Battery	One 1.5 Volt, size LR44
Probe Cord Length	36" (91.4cm)



## TIFVA500A Digital HVAC Analyzer



TIF VA500A



*The TIF VA500A offers a range of features never before included in a single instrument. More than just an Anemometer, the VA500A measures all HVAC inlet and outlet variables, allowing an intelligent analysis of system performance. This one tool can replace up to four others, and eliminates the need for cumbersome flow hoods, psychrometers, etc. So easy to use, you will be performing complex measurements within minutes of unpacking the tool.*

- ▶ Measures Temperature (°F) and Humidity (%RH)
- ▶ Measures Dew Point (°F)
- ▶ Measures Velocity (FPS) and Volume (CFM)
- ▶ Measures Power in BTU/HR
- ▶ Direct Readings – no additional calculations needed
- ▶ Allows measurement of rectangular and ROUND GRILLS
- ▶ Lightweight and Completely portable
- ▶ Three simple keypad controls operate ALL FUNCTIONS
- ▶ Low Battery Indication
- ▶ Audible and Visual Prompts
- ▶ Large 3/4" LCD Readout
- ▶ Memory holds cumulative volume (CFM) and power (BTU/HR) measurements
- ▶ Six foot connector cord to probe
- ▶ 9V Battery Operated
- ▶ CE approved
- ▶ Protective Carrying Case Included
- ▶ One year warranty

### Specifications

Ranges	
Temperature	23°F to 149°F (-5° to 65°C)
Humidity	10-95% RH
Velocity Range	2.6 to 49.2 FPS (0.8 to 15 m/sec)
Accuracy	
Temperature	± 2°F
Humidity	± 3%
Dew Point	± 3%
Velocity	± 3% of rdg
Response Time	
Temperature	< 5 secs
Humidity	<10 secs
Velocity	< 3 secs
Display	4 digit 3/4" LCD
Coil Cord Length	72 inches (1.8m)
Operating Temperature	32°F to 122°F (0° to 50°C)
Power Supply	One 9V Alkaline battery
Battery Life	Approx. 8 hours continuous

### APPLICATIONS

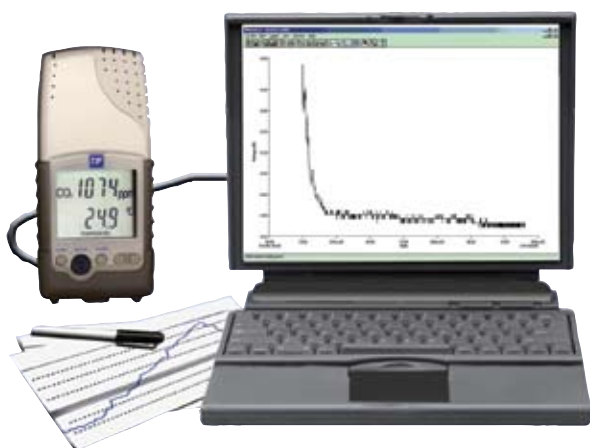
Ambient Temperature, Inlet and Outlet Temperatures, Cooling Efficiency, Ambient Humidity, Inlet and Outlet Humidity, (De-) Humidification Efficiency, Inlet and Outlet Velocity, System Balancing, Calibrating/ Setting Vents, Airflow Measurements, Power Measurements (BTU), System Efficiency (BTU IN vs BTU OUT), System Adjustments, Performance Checks, Fan Adjustments, Blower Performance, Heating and Air Conditioning, Air Circulation and Exchange, Refrigeration, Industrial.

## TIF8600/TIF8600D CO<sub>2</sub>, Temperature, Humidity, Ventilation Rate Monitor

- ▶ Patented dual Beam, Absorption Infrared™ gas sensor ensures long term stability and durability
- ▶ Handheld, assuring portability, mobility and flexibility
- ▶ Large, easy to read digital display
- ▶ CO<sub>2</sub> readings in ppm
- Temperature in Celsius or Fahrenheit and Relative Humidity (%)
- ▶ Display Ventilation rate in CFM per person
- ▶ Up to 80 hours using "AA" battery
- ▶ External AC power adapter for continual monitoring
- ▶ Fast, simple calibration procedure
- ▶ Flip out stand for desktop monitoring



TIF 8600



### Specifications

Ranges	
Carbon Dioxide (CO <sub>2</sub> )	0 to 10,000 ppm
Temperature	32°F to 122°F (0°C to 50°C)
Temperature (Datalogger)	-4°F to +248°F (-20°C to +70°C)
Relative Humidity (Datalogger)	25% to 95%
Accuracy	
Carbon Dioxide (CO <sub>2</sub> )	±50 ppm or 5% of rdg
Temperature	±2°F (±1°C)
Temperature (Datalogger)	±1.27°F (±0.7°C)
Relative Humidity (Datalogger)	±5%
Response Time	
Carbon Dioxide (CO <sub>2</sub> )	< 60 seconds
Temperature	20 to 30 minutes
Temperature (Datalogger)	15 minutes typical
Relative Humidity (Datalogger)	10 minutes typical in air D only
Display	LCD with dual readings
Operating Temperature	32°F to 122°F (0°C to 50°C)
Power Supply	Four "AA" Alkaline battery or external power adapter 6Vdc
Battery Life	80 hours (Alkaline)

Additional Versions	Part Number
Datalogging capability, 110V / 60Hz	TIF8600D

Optional Accessories	Part Number
External AC/DC adapter	TIF 8601
Datalogger kit	TIF 8602



## TIF8500A Carbon Monoxide Analyzer



TIF 8500A

*The TIF8500A is a professional grade service tool for accurate measurements of Carbon Monoxide (CO) levels in any environment or application, including ambient, appliance surroundings and furnace flues.*

- ▶ Measures level of Carbon Monoxide (CO) in any environment
- ▶ Voice feature for audible read out
- ▶ Tactile keypad controls
- ▶ Protective Rubber "Boot"
- ▶ 15" Stainless Probe, with 5' hose
- ▶ Field replaceable electrochemical sensor
- ▶ Rapid warm up
- ▶ Headphones included for high noise areas or for privacy
- ▶ Cordless and portable
- ▶ Ranges from 1 – 10,000 ppm with resolution of 1-ppm

Replacement Parts (supplied with product)	Part Number
Replacement Filter	TIF8501
Replacement Sensor	TIF8505
Sensor Cover and Tubing	TIF8507

## TIF4000A Electronic Sight Glass

U.S. Patent #'s 4,138,879; 4,235,095



TIF 4000A

*The TIF4000A "sees" into the refrigerant tubing by means of ultrasonics. Two sensors are used, one for transmitting and one for receiving. These sensors are in the form of clamps which attach to any metallic refrigeration tubing. An audible beeping sound quickens as bubbles or floodback are sensed, and a row of LED's light, simulating bubble movement in the tubing.*

- ▶ Optimizes refrigerant charge for maximum cooling
- ▶ Operates on any metal tubing
- ▶ Four foot cord
- ▶ Operates through use of ultrasonics
- ▶ Eliminates the need for an optical sight glass
- ▶ Checks for refrigerant floodback
- ▶ Built into ABS carrying case
- ▶ One year warranty

### Specifications

Operating Temp	32° to 125°F (0° to 52°C)
Power Supply	(1) 9V battery
Battery Life	60 hours (alkaline)
Response Time	Instantaneous
Probe Cord Length	48" (1.2 m)

## 42160 Gas Manifold Pressure Test Kits

- ▶ Use these handy kits to Measure Natural gas or LP gas pressure across appliance manifolds
- ▶ Test gas stoves, furnaces, dryers and other gas appliances
- ▶ Economical and accurate – easier to use than a manometer
- ▶ Diaphragm gauge is calibrated in inches of water column, also shows ounces per square inch
- ▶ Includes fitting for quick connection to the appliance manifold
- ▶ Packed in high impact plastic case for protection during transit and use



42160

**42160** Manifold Pressure Test Kit, Pressure measurements from 0 – 35" of water column

**42162** Manifold Pressure Test Kit, Pressure measurements from 0 – 10" of water column

## 16910 Refrigerant Identifier Plus

- ▶ Identifies refrigerant type and purges damaging air
- ▶ Displays the actual percent of R-12, R-134a, R-22, and air in the system or tank
- ▶ Air purge
- ▶ Visual and audible hydrocarbon alarm
- ▶ On-board printer port
- ▶ Specifications  
Power Source: 115V 60 Hz; configurable to 220V  
Dimensions: 11" H x 9" W x 4-1/2" D  
(27.94 cm x 22.86 cm x 11.43 cm)  
Weight: 1.75 lbs. (740 g)



16910

## 3591 Fluorescent Dye Flex-View

- ▶ Quick detection of leak dye in hard-to-see and reach places.
- ▶ Ability to inspect inside components.
- ▶ Confirms leaks where component removal would normally be required.
- ▶ Flex-scope fluoresces UV dyes.
- ▶ Can also be used as a traditional bore-scope.
- ▶ Battery powered.

### Uses

- ▶ A/C Systems — Evaporator/Condenser, Hoses, Compressor.

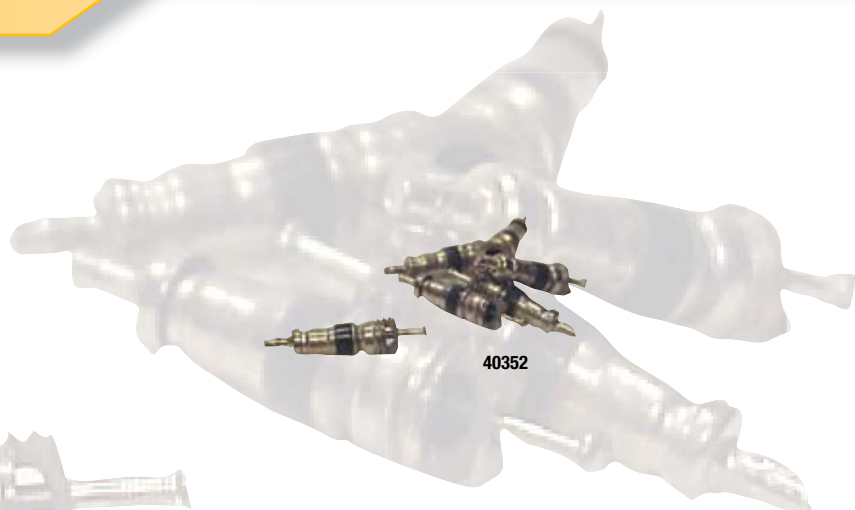


3591

## Valve Cores

**40352**

- ▶ Replacement valve cores (pkg/6)



## Pinch-Off Tool

**12294**

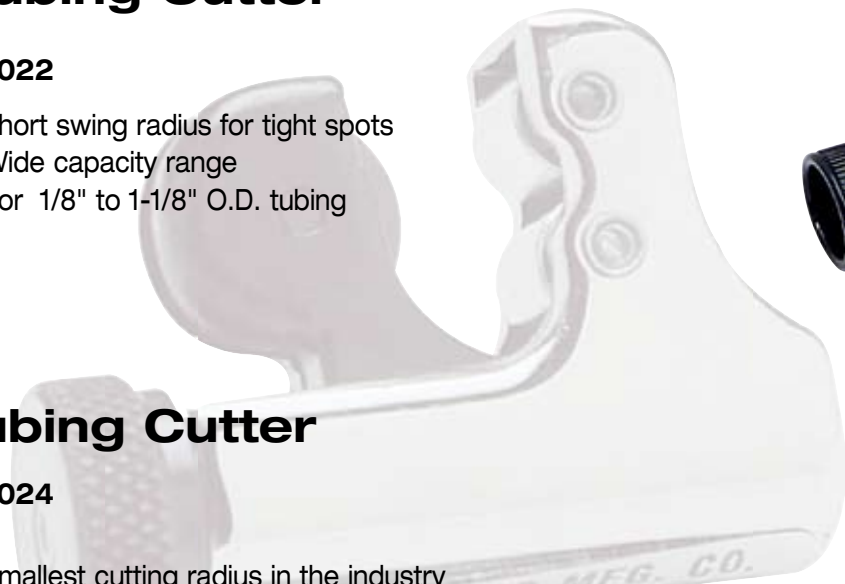
- ▶ Patented clamping mechanism quickly and securely pinches off tubing and cloth-reinforced hose
- ▶ Comfortable cushion grip
- ▶ Ideal for closing off compressor process tubes
- ▶ For 3/16", 1/4", 5/16" and 3/8" tubing



## Mini Tubing Cutter

**42022**

- ▶ Short swing radius for tight spots
- ▶ Wide capacity range
- ▶ For 1/8" to 1-1/8" O.D. tubing



## Mini Tubing Cutter

**42024**

- ▶ Smallest cutting radius in the industry
- ▶ Ideal for extremely tight places
- ▶ Fine thread screw provides easier tightening
- ▶ For 1/8" to 5/8" O.D. tubing



## Tubing Cutter with Deburring Tool

**42028**

- ▶ Aluminum alloy body and nickel-chrome durable finish
- ▶ Includes tubing deburring tool located on the head of cutter
- ▶ For use on copper, aluminum, steel and stainless steel tubing
- ▶ Wide capacity range
- ▶ For 1/4" to 1-1/2" tubing



## Ratcheting Tubing Cutter

- ▶ Designed for confined spaces
- ▶ Unique ratcheting action operates like a socket ratchet but cuts copper, aluminum, stainless steel, and PVC
- ▶ Spring-loaded adjusting screw applies continuous pressure while cutting.

**42071** - Ratcheting tubing cutter for 1/8" to 1/2" tubing.

**42080** - Ratcheting tubing cutter for 1/4" to 7/8" tubing.

**42090** - Ratcheting tubing cutter for 1/4" to 1-1/8" tubing



## Slip-Adjust Tubing Cutter

**42035**

- ▶ All metal construction
- ▶ Spring-loads cutting tool for faster cutting
- ▶ Two locations for spare cutting wheels (included)
- ▶ Includes attached reaming tool
- ▶ For 1/4" to 2" tubing



## Six-in-One Swaging Tool

**12479**



12479

- ▶ One convenient tool, forms solder cups on six (6) different sizes of tubing
- ▶ Made of fatigue proof steel
- ▶ Works on 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" tubing



## Double Flaring Tool Set

### 6506

- ▶ Also performs 45° single flares on 4mm, 4.75mm, 6mm, 8mm, 10mm, 12mm, and 14mm copper, aluminum, brass, and magnesium tubing.
- ▶ Includes tubing cutter and adapters for double flaring 4mm, 4.75mm, 6mm, 8mm, and 10mm tubing



### 6503

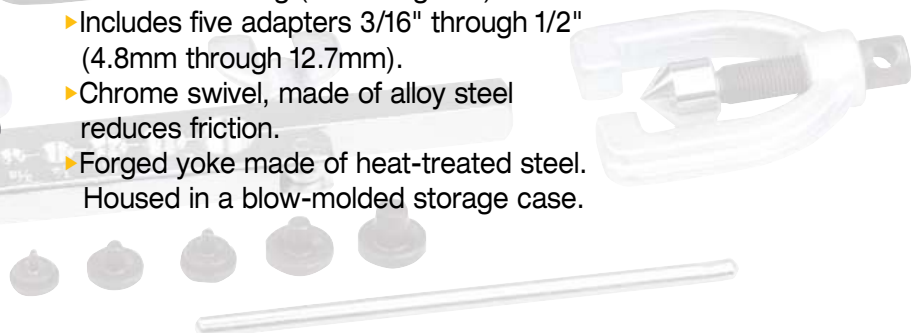
- ▶ Also performs 45° single flares on 3/16", 1/4", 3/8", 7/16", 1/2", and 5/8" copper, aluminum, brass, and magnesium tubing.
- ▶ Includes tubing cutter and adapters for double flaring 3/16", 1/4", 5/16", 3/8", and 1/2" tubing



## Double Flaring Tool Kit

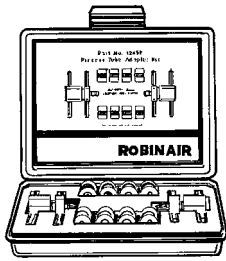
### 4503

- ▶ Designed for double or single flare in copper, aluminum, soft steel brake line, and brass tubing (to 45 degrees).
- ▶ Includes five adapters 3/16" through 1/2" (4.8mm through 12.7mm).
- ▶ Chrome swivel, made of alloy steel reduces friction.
- ▶ Forged yoke made of heat-treated steel. Housed in a blow-molded storage case.

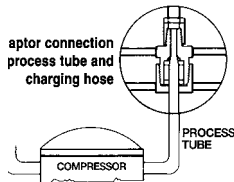


## Process Tube Adapter Kit

**12458**



12458



- ▶ Kit provides the quickest and easiest means of connecting charging lines to process tubes for evacuating and recharging a system
- ▶ Assures an absolute seal between tubing and the charging hose
- ▶ Eliminates the need for flaring and the possibility of metal chips getting into the system
- ▶ Includes Carrying Case with individual compartments
- ▶ Adapts 3/16", 1/4" 5/16" and 3/8" copper tubing to charging hose

## A/C Ratchet Wrenches

**11008**

Reversible, 1/2" and 9/16" HEX openings on one end, 3/16" and 1/4" SQUARE on the other

**10696**

Reversible, four SQUARE openings, 1/4" and 3/16" on one end, 3/8" and 5/16" on the other

**11012**

Reversible, with 25° OFFSET, four SQUARE openings, 1/4" and 3/16" on one end, 3/8" and 5/16" on the other



10696



11012

## Heavy Duty Pipe Wrenches

- ▶ High-tensile iron handles
- ▶ Hardened steel parts to withstand the toughest demands
- ▶ Offset style wrenches provide longer swing in hard-to-reach places



Offset Style		
Model No.	Length	Pipe Size
42044	10"	1/8" to 1-1/2"
Straight Style		
Model No.	Length	Pipe Size
42050	12"	1/8" to 2"

## 4-In-1 Tube Bender



**18548**

- ▶ Bends four sizes of soft or annealed tubing
- ▶ Prevents crimping, flattening or scratching
- ▶ Calibration allows duplication of any angle
- ▶ Long handles (8-1/2") no extensions required
- ▶ "Glass/plastic" construction combines strength with lightweight durability
- ▶ For use on 3/16", 1/4", 5/16" and 3/8" tubing

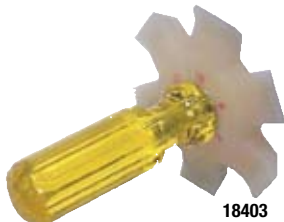
## Three-in-One 180° Tubing Bender



**6515**

- ▶ Capable of making 180° bends in copper, brass, aluminum and steel tubing
- ▶ Just one tool works on three sizes of tubing 1/4", 5/16", 3/8"

## Fin Straightener



**18403**

- ▶ Six-in-one
- ▶ Cleans & straightens condenser and evaporator coil fins
- ▶ Each section clearly marked with fin size
- ▶ Compact size, head 3-1/8" in diameter/handle 3 1/2" long

**18403** 8, 9, 10, 12, 14, & 15 fins per inch

## Inspection Light



**13182**

**13182**

- ▶ "Must have" tool for a variety of applications: checking for cracks on heat exchangers, inspecting coils and contacts for dirt & damage, reading serial numbers, -etc.
- ▶ Fiber optics provide a bright light, while the shaft is only 7.6 mm in diameter
- ▶ 15" flexible shaft
- ▶ Includes a durable protective cover
- ▶ Powered by three AA batteries
- ▶ Replacement Bulb – P/N 45331

## Mechanical Grip-O-Matic Puller

### 1023

- ▶ 2-ton, 2/3-jaw, 1 Lb. ; 5 Oz (Reversible Jaws)
- ▶ Forged from quality steel, heat treated, and subjected to rigorous tests which exceed its rated capacity.

### 1025

- ▶ 2-ton, Long 2-Jaw; 21 lbs. (Reversible Jaws)



1023

## Folding Floor Crane

### 2002

- ▶ Folds up for compact storage, out of your way.
- ▶ Front wheels are 3-1/2" with 5-7/8" rear casters.
- ▶ This 2000 lb. capacity crane has a reach of 24" to 36".



2002

## Hydraulic Bottle Jacks

- ▶ Jacks can be used in vertical or horizontal positions.
- ▶ Fewer working parts, extremely smooth bearing surfaces and close tolerances ensure long life.
- ▶ Oil bypass system prevents the lifting ram from being over-extended.



Cap. (tons)	Stroke	OTC No.	Retracted Height Min.	Length of Screw Extension	Height with Screw Extended	Pump Strokes to Extend Piston One Inch	Saddle Dia.	Base Size	Carry Handle	Weight
4	6 <sup>3</sup> / <sub>4</sub> "	4304A	7 <sup>5</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "	14 <sup>5</sup> / <sub>8</sub> "	9	1 <sup>1</sup> / <sub>8</sub> "	3 <sup>5</sup> / <sub>8</sub> " x 3 <sup>7</sup> / <sub>8</sub> "	No	7 lbs.
8	6 <sup>3</sup> / <sub>4</sub> "	4308A	9"	3 <sup>1</sup> / <sub>4</sub> "	18 <sup>1</sup> / <sub>2</sub> "	13	1 <sup>3</sup> / <sub>8</sub> "	4 <sup>1</sup> / <sub>8</sub> " x 4 <sup>3</sup> / <sub>4</sub> "	Yes	13 lbs.
12	6 <sup>3</sup> / <sub>4</sub> "	4314A*	6 <sup>1</sup> / <sub>16</sub> "	1 <sup>5</sup> / <sub>8</sub> "	11 <sup>1</sup> / <sub>8</sub> "	16	1 <sup>1</sup> / <sub>2</sub> "	5 <sup>1</sup> / <sub>4</sub> " x 5 <sup>3</sup> / <sub>8</sub> "	Yes	13 lbs.
20	6 <sup>3</sup> / <sub>4</sub> "	4322A*	6 <sup>3</sup> / <sub>8</sub> "	1 <sup>3</sup> / <sub>8</sub> "	11 <sup>1</sup> / <sub>4</sub> "	26	1 <sup>3</sup> / <sub>4</sub> "	6" x 6 <sup>3</sup> / <sub>8</sub> "	Yes	19 lbs.

\*Low profile models

## Ratcheting Terminal Crimper



### 4497

- ▶ Heavy-gauge steel crimping tool designed for insulated wire terminals.
- ▶ Ratcheting action crimps terminal to correct tightness on the wire, making crimping fast and easy.
- ▶ Insulated handles with compound mechanical leverage for power.
- ▶ For wire sizes: AWG 22-18 (0.6mm—1.0mm) red terminal; AWG 16-14 (1.3mm—1.6mm) blue terminal; AWG 12-10 (2.0mm—2.6mm) yellow terminal.

## 7-in-1 Wire Stripper & Crimper



### 4498

- ▶ Strips insulation off electrical wires ranging from 10 AWG—22 AWG (0.6mm—2.6mm) in diameter. Pliers on tip of jaw for looping or grabbing wire in tight places.
- ▶ Heat-treated steel jaws cut solid or multi-strand wire.
- ▶ Screw cutter shears screws clean, with no thread clean-up required. Works on machine screw sizes 4-40, 5-40, 6-32, 8-32, 10-24, and 10-32.
- ▶ Crimps insulated and non-insulated wire terminals, 7mm—8mm spark plug wire connectors.

## Wire Stripper & Cutter



### 4499

- ▶ Only 6" in length. Clean size separations and markings allow ease of use in tight areas.
- ▶ Strips insulation off of electrical wires ranging from 10 AWG—22 AWG (0.6mm—2.6mm) in diameter. Heat-treated steel construction with durable grips.
- ▶ Spring-loaded jaws stay open for ease of use, and lock for storage; gripping area at tip of jaws for working in tight areas, wire cutter at base of jaws





## Hose Clamp Plier Set

**4502**

- ▶ Includes a cross-slotted jaw pliers and a wide, flat-band hose clamp pliers. Services most ring-type or flat-band hose clamps.
- ▶ The clamps are held open with a ratchet locking mechanism. Jaws swivel to access hose clamps in any position.



## Bushing Driver Set

**4505**

- ▶ Enables you to remove and install bushings ranging from 3/8" to 1-3/8" in diameter, # Includes: Large, medium, and small driver handles with nuts; sixteen bushing adapters ranging from 3/8" to 1-3/8".
- ▶ Housed in a blow-molded storage case.



## Bearing Race & Seal Driver Set

**4507**

- ▶ Permits installation of tapered bearing races and seals without damage to the component or housing. Includes a driver handle plus popular bearing and seal drivers, ranging from 1.565" to 3.180".
- ▶ Tapered side of driver is used to install races. Invert the driver to the flat side to install seals. Set is housed in a blow-molded plastic storage case.
- ▶ Includes driver handle with bolt, plus these tool sizes: 1.565", 1.750", 1.965", 2.325", 2.470", 2.555", 2.830", 2.995", and 3.180".



## Straight-Blade Hose Cutter



**4509**

- ▶ Cuts rubber hoses ranging from 1/4" to 1-1/2".
- ▶ Simply place hose in tool and squeeze handle to cut.

## Hose Pinch-off Pliers Set



**4510**

- ▶ Shuts off flow through vacuum lines, fuel lines, coolant lines, etc.
- ▶ Cocking ratchet mechanism holds pivoting jaws tightly in place. Heavy-duty swivel jaws pivot to assure parallel pinching.
- ▶ Contents of set:
  - 8" tool for small hoses and tight areas**
  - 10" tool for radiator and vacuum lines**
  - 12" tool for radiator and vacuum lines**

## "Guillotine" Hose Cutter Tool



**4511**

- ▶ Hooks and cuts plastic lines and rubber hoses from 1/8" to 1" diameter. Simply hook hose in V-shaped end, and squeeze handle to cut. Compound mechanical leverage provides power. Spring-loaded blade returns to open position after use, so blade is not exposed.
- ▶ Linear design with hook feature reaches, grabs, and cuts hoses in tight areas.

## Snap Ring Pliers Set



**4512**

- ▶ For internal or external snap rings; thumbscrew permits quick conversion. Made of heavy-gauge tempered steel. Also includes two stainless steel handled picks.
- ▶ Contained in a blow-molded plastic storage case.

Contents of Set:

.090" tip - straight pliers	.047" tip - straight pliers
.090" tip - 90° pliers	.047" tip - 90° pliers
.070" tip - straight pliers	.038" tip - straight pliers
.070" tip - 90° pliers	.038" tip - 90° pliers
.047" tip - straight pliers	Straight tip pick 90° tip pick

## Mini Snap Ring Plier Set

- 4514** ▶ Small-size pliers for work in tight areas. Service S-ring and R-ring clips, internal or external, straight or angled. Ruggedly built of heat-treated chrome molybdenum steel.
- ▶ Set includes two internal snap ring pliers (one straight, one 45°) and two external snap ring pliers (one straight, one 45°).
  - ▶ All pliers have .038" (1.0mm) diameter tips.



## Mini Pick & Hook Set

- 4515** ▶ Sturdy stainless steel points and shafts designed for marking, removing o-rings, accessing snap rings, and performing other tasks. Assorted angle tips allow you to reach awkward locations.
- ▶ Knurled shaft design enhances finger control for delicate jobs.



## Scraper Set

- 4550** ▶ Scrapers feature polished, heat-treated, stiff, stainless steel blades. Handles are ergonomic two-component plastic and feature a non-slip grip and steel bolstered end. Packaged in a storage tray. Includes: 1-1/4" straight blade, 1-1/4" bent blade, and 2" straight blade.



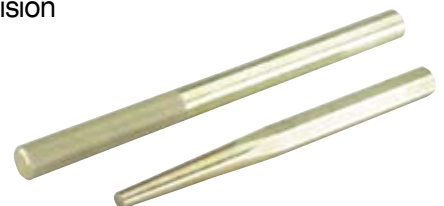
## Punch & Chisel Set

- 4600** ▶ Durable set of heat-treated chrome vanadium steel punches and chisels. Storage tray included.
- ▶ Set Includes, (also available separately):
    - 3 – Cold chisels (with gauge): 3/8" x 5-1/2"; 1/2" x 6"; 5/8" x 6-1/2"
    - 2 – Center punches: 1/8" x 5"; 3/16" x 6"
    - 5 – Pin punches: 3/32" x 4-1/4"; 1/8" x 4-3/4"; 5/32" x 5"; 3/16" x 5-1/4"; 1/4" x 5-3/4"
    - 5 – Taper punches: 3/32" x 5-1/4"; 1/8" x 5-3/4"; 5/32" x 6"; 3/16" x 6-1/4"; 1/4" x 6-3/4"



## Brass Punch Set

- 4602** ▶ Two large, brass non-sparking punches. Ideal for use near precision parts or in locations where sparks from ferrous metal could be hazardous.
- ▶ Includes an 8" punch (5/8" hex, tapered to 3/8") and 10" straight punch (3/4" dia., chamfered at both ends.)



# GENERAL TOOLS

## Punch & Chisel Set



### 4605

- ▶ Safety protective handle allows easy grip and protects hand from being hit by hammer.
- ▶ 12 punches and chisels included:
  - 5 flat chisels: 1/2", 5/8", 3/4", 7/8", and 1" wide blades
  - 1 cape chisel: 1/4" wide blade
  - 2 taper punches: 1/8" and 1/4" diameter
  - 2 pin punches: 3/16" and 1/4" diameter
  - 2 center punches: 1/8" and 3/16" diameter
- ▶ Double locking ball detent holds punch or chisel securely in the driver handle.

## Brass Hammer and Punch Set



### 4606

- ▶ Brass-head hammer and punches are ideal to use where sparks from ferrous metals would be hazardous, or where precision metal parts could be damaged by steel tools.
- ▶ Hammer head weighs 24 oz.; brass drift punch is 10" x 3/4" diameter; brass tapered punch is 8" x 5/8" hex tapered to 3/8" diameter point.

## 1/2" Impact Driver



### 4607

- ▶ Loosens hard-to-turn screws, bolts or nuts.
- ▶ Handle design prevents possibility of hitting hand with hammer when striking impact driver.
- ▶ Bit holder 1/2" drive and 5/16" hex for Phillips and flat screwdriver bits.
- ▶ Includes eight screwdriver bits:
  - No. 2 Phillips bit, 1-3/8" long with 5/16" hex
  - No. 2 Phillips bit, 3-1/8" long with 5/16" hex
  - No. 3 Phillips bit, 1-3/8" long with 5/16" hex
  - No. 3 Phillips bit, 3-1/8" long with 5/16" hex
  - 5/16" wide x 1-3/8" long with 5/16" hex slotted bit
  - 5/16" wide x 3-1/8" long with 5/16" hex slotted bit
  - 3/8" wide x 1-3/8" long with 5/16" hex slotted bit
  - 3/8" wide x 3-1/8" long with 5/16" hex slotted bit

## 3/8" Impact Driver

**4608**

- ▶ Loosens hard-to-turn screws, bolts or nuts.
- ▶ Handle design prevents possibility of hitting hand with hammer when striking impact driver.
- ▶ Bit holder has 3/8" drive and 5/16" hex for Phillips and flat screwdriver bits.
- ▶ Includes eight screwdriver bits:

No. 2 Phillips bit, 1-3/8" long with 5/16" hex  
 No. 2 Phillips bit, 3-1/8" long with 5/16" hex  
 No. 3 Phillips bit, 1-3/8" long with 5/16" hex  
 No. 3 Phillips bit, 3-1/8" long with 5/16" hex  
 5/16" wide x 1-3/8" long with 5/16" hex slotted bit  
 5/16" wide x 3-1/8" long with 5/16" hex slotted bit  
 3/8" wide x 1-3/8" long with 5/16" hex slotted bit  
 3/8" wide x 3-1/8" long with 5/16" hex slotted bit



## Mirror and Magnet Set

**4650**

- ▶ Handles telescope from 6-1/2" to 25". Swivel heads allow access to tight areas.
- ▶ Large, rectangular swivel mirror is 2" x 3-1/2", and is attached to one telescoping handle; small mirror is 1-1/4" in diameter, and is interchangeable with magnets on the other handle.
- ▶ Magnets can lift up to 8 lbs.





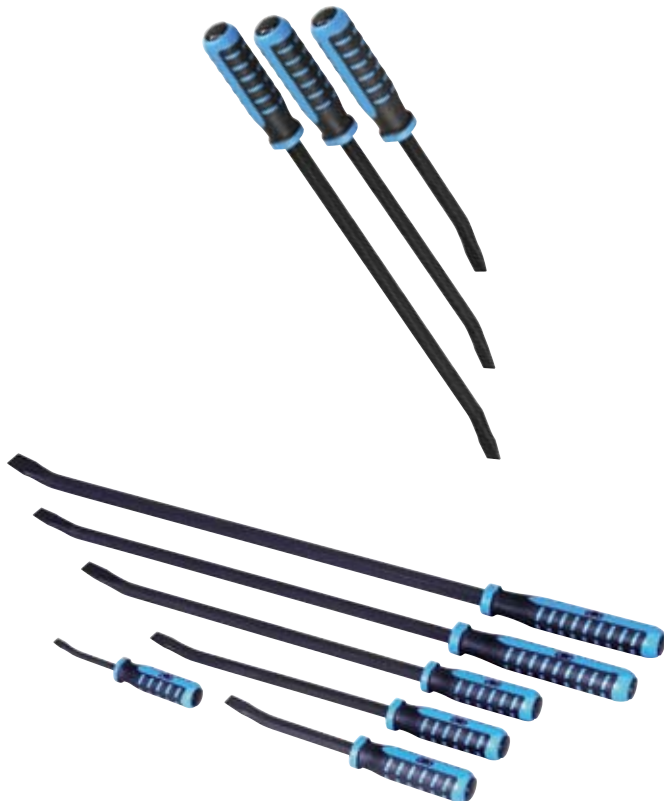
## Screw Extractor Set



### 4651

- ▶ Removes broken studs and bolts.
- ▶ Includes ten guide bushings, five drill bits and five screw extractors with extractor nuts.
- ▶ Drill bits are left handed to help removal.

## Blue Force — Handled Pry Bar Set



- ▶ Finally, a heavy-duty pry bar made of tempered square steel that you can hit without damaging the handle.
- ▶ Black chrome striking cap allows hitting the bar without damage to the handle.
- ▶ Ergonomic handle – dual durometer composite handle for user comfort; reduces hand fatigue.
- ▶ Polished tip with black oxide finish. Long-life finish resists rust and wear during use.

### 8203

- ▶ Set includes 12", 18", and 24" bar shank lengths packaged in a gray molded tray.

### 8206

- ▶ Set includes 8", 12", 18", 24", 32" and 36" bar shank lengths packaged in a gray molded tray.

## Heat Gun

### 14450

- ▶ Direct heat source with three settings – 500° F/750° F/Air-only
- ▶ Lightweight, shock-proof & cool running with tough Lexan® housing
- ▶ Fast heating/drying of materials
- ▶ Quick curing/drying of epoxies
- ▶ Applying shrink tubing
- ▶ Softening tubing for bending
- ▶ Speed-drying of touch-up paint to eliminate “haze”
- ▶ Drying out condensation in motors, clutches, controls, etc.
- ▶ 115V 50/60 Hz
- ▶ Made in USA



## Cordless Rechargeable 30-LED Light

### 16440

- ▶ Cordless: freedom to move and work anywhere anytime without worrying about tangled cords.
- ▶ Rechargeable: One-hour recharge time provides up to 8 hours of continuous operation.
- ▶ 30 LED: 30 Super-bright, long-life LEDs provide forward directed pure white light. LEDs produce very little heat, therefore eliminating the possibility of burns to the Technician or components during continuous use.
- ▶ Ergonomic: Slim design (1-7/8") diameter allows access into tight areas.
- ▶ International versions: 220V, 50/60Hz - European, Australian and UK version
- ▶ Made in USA



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