



CPS[®]

**TOOLS, INSTRUMENTS
AND EQUIPMENT FOR
THE HVAC/R INDUSTRY**

2015 PRODUCT CATALOG

**HVAC/R
Specialist**

BLACKMAX[®]

Pro-Set[®]

Tech-Set[™]

1.800.561.8187

www.**itm**.com

information@itm.com

Just some of the reasons to choose CPS® ...

Electronic Leak Detection.....	4-8
UV Leak Detection	9-12
Refrigerant Charging Scales.....	13-16
Charging Stations.....	17-18
Recovery Equipment	19-28
Vacuum Pumps	29-36
Digital Vacuum Gauges	37-38
Electrical and Specialty Meters.....	39-42
Temperature and System Measurement	43-48
Service Manifolds and Gauges.....	49-65
Charging Hoses.....	66-69
Charging Hose Valves.....	70-71
Tubing Tools	72-83
Specialty Hand Tools	84-90
Brazing and Soldering.....	91-93
Brass Adapters, Fittings and Valve Core Tools	94-97

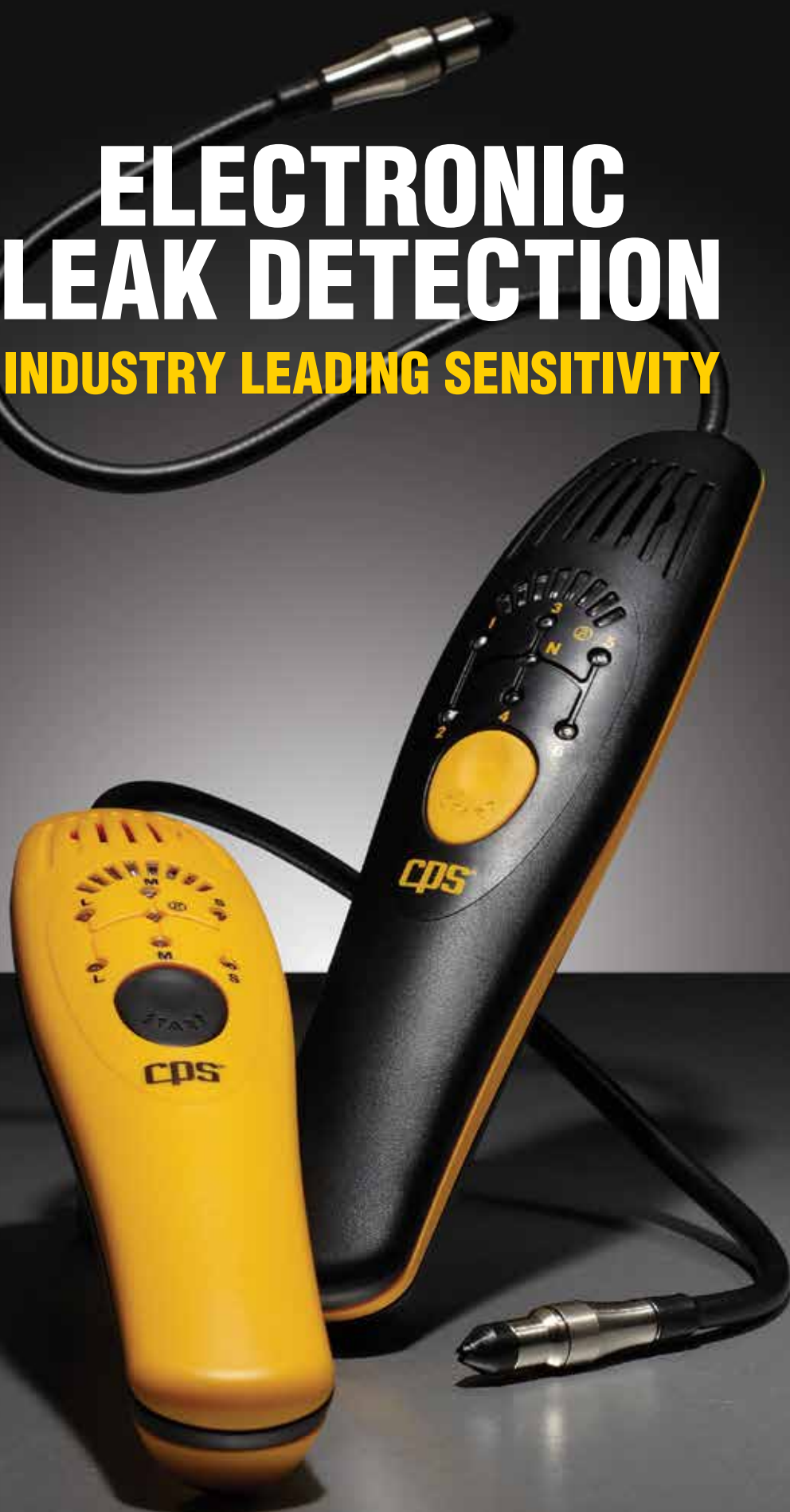


The Leader in Intuitive Innovation.

You already work hard. CPS tools are designed to help you work smarter, too—and to get more done—quicker. And while everybody wants to be *innovative*, few launch as many new products each year or can use *patent pending* as a descriptor as often. That's because we make most of what we design at our 100,000 sq. ft. headquarters in Hialeah, Florida. So you get American engineered tools and equipment—at reasonable pricing. Use your hands. Use your head. CPS designs for both.

ELECTRONIC LEAK DETECTION

INDUSTRY LEADING SENSITIVITY



1.800.561.8187

www.**itm**.com

information@itm.com

LEAK-SEEKER® ELECTRONIC REFRIGERANT LEAK DETECTORS



CPS Products has raised the bar again for leak detectors. The revolutionary E_MOS Technology developed by CPS is more sensitive, stable and accurate than any other detection method on the market.

FEATURES AND BENEFITS

- One button controls On/Off and all functions
- Microprocessor controlled sensor improves sensitivity and reduces false alarms
- Patented E_MOS detection technology increases battery and sensor life
- Replaceable EMOS2 sensor, sensor filter and sensor tip
- Metal sensor housing with patented water vapor stabilizing filter eliminates false alarms due to condensate
- Optimal leak-finding performance under a broad range of conditions
- Simple, intuitive bar graph LED display
- Software managed sensor rejuvenation at startup ensures highest sensitivity
- Meets or exceeds all US and international standards for automotive and commercial use
- Ergonomic, high-impact housing with high output alarm speaker
- Low battery indication
- Includes owner's manual
- Designed and manufactured in U.S.A. with U.S. and globally sourced components



LEAK-SEEKER I & II with patented EMOS® Technology
 *U.S. Patent # 8,555,701

LEAK-SEEKER® I

- **Progressive Alarm Mode:**
Alarm pitch and number of lighted LEDs progressively increase as the leak source is approached. Allows searching for a broad range of leak sizes.
- **Threshold Alarm Mode:**
Provides a quick go, no/go verifying a leak has been found and approximate size.

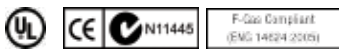
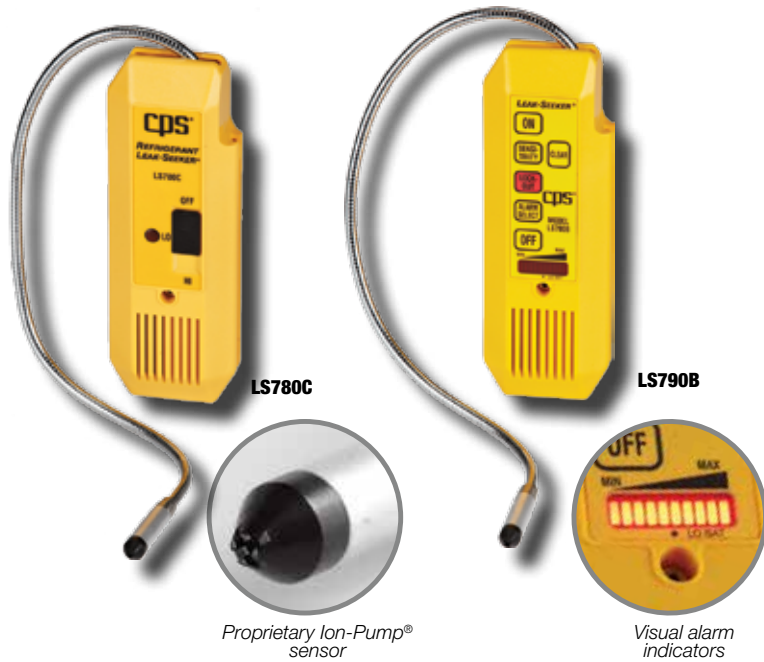
LEAK-SEEKER® II

SIMPLY TURN IT ON AND PINPOINT THE LEAK.

- Simple, intuitive bar graph LED display
- 56 levels of sensitivity automatically selected by proprietary Powershift™ software
- Optimal leak-finding performance under a broad range of conditions
- The world's only leak detector with fully automatic sensitivity selection and control.

LEAK-SEEKER® ELECTRONIC REFRIGERANT LEAK DETECTORS WITH ION-PUMP® SENSOR TECHNOLOGY

Combines microcomputer circuitry with field proven Ion-Pump® sensor technology creating a highly sensitive, accurate electronic refrigerant leak detector. 128 computer-generated tones and display alerts the user to varying halogen concentrations. Leak-Seekers are designed and manufactured in the U.S.A. with U.S. and globally sourced components.



Specifications	Leak-Seeker® I	Leak-Seeker® II	Tech-Set™ LS780C	Leak-Seeker® LS790B
Detector Type	Patented E_Mos Detection Technology		Proprietary Ion-Pump sensor with built-in selective filter housing	
Sensitivity	Better than 0.1 oz (3g) / year		Better than 0.25 oz (7g) / year leak rate of HFC	
Sensitivity Selection	Manual	Fully automatic	Manual	
Refrigerant Sensitivity	All, including those with hydrocarbon components (CFC, HCFC, HFC, HFO, NH3, HC. Hydrogen trace gas in 95% N2, 5% H2 mixture)		All, including those with hydrocarbon components (CFC, HCFC, HFC, HFO, NH3, HC)	
Visual Alarm	Visual tachometer-like bar graph display with 8 high intensity LEDs		High intensity LED (Varies in brightness)	High intensity bar graph display
Flex Probe	15.5" flexible probe for hard-to-reach areas		18" long metal flex probe	
Operating Temperature	0 to 140°F (-18 to 60°C)			
Controls	One button controls on/off and all functions		OFF, LO & HI sensitivity modes	6 button keypad
Power (Battery Life)	3 "C" batteries (>50 hr continuous use)		4 "AA" alkaline batteries (>40 hr continuous use)	
Weight	18 oz (500g)			
Audible Alarms	In Progressive Mode: Extended tone range In Threshold Mode: Single high pitch tone	2 user selectable alarm ranges	128 computer generated tones to precisely guide user to the source of the leak	
Lock-Out Mode	N/A		N/A	Yes
Low Battery Indication	Green (middle) LED turns off when batteries at 10% capacity	Rightmost (No Battery) LED stays on when batteries at 10% capacity	Center LED above "★" lights during operation	
Auto-Off	Yes, after 10 minutes of inactivity		No	Yes, after 15 minutes of inactivity
Sensor Life	>500 hr continuous use		Replace seasonally	
Warranty	1 year	2 years	1 year	2 years

GAS-SEEKER® PORTABLE COMBUSTIBLE GAS DETECTOR

The **GS40** is a low maintenance, easy-to-use portable combustibile gas leak detector engineered to pinpoint leaks in residential, commercial and industrial appliances. Advanced semiconductor sensor and electronic control package enables detection of gases commonly found in service applications including; carbon monoxide, natural gas, propane, ammonia, methane, acetone, hydrogen and iso-butane, with a virtually instantaneous alarm response period. Applications include the inspection of furnaces, valves, regulators, pipelines, meters and other devices associated with combustibile gases. The **GS40** is designed and manufactured in U.S.A. with U.S. and globally sourced components.



GS40

GAS SEEKER® GS40 SPECIFICATIONS

Detecting Range	0 - 100% LEL referenced to methane.
Alarm Indication	Both visual and audible (>40db) alarm indicators
Low Level Alarm	Preset at 10% Methane LEL
High Level Alarm	Preset at 30% Methane LEL
Operating Conditions	0°F to 140°F (-20°C to +40°C) at less than 98% RH (non-condensing)
Power	3VDC working voltage using four 1.5V AA batteries.
Battery Life/Indicator	20 hr continuous use. Orange LED constant on when low battery
Sampling	Natural diffusion
Dimensions	7.2 x 0.71 in (183 x 18 mm)
Weight	18 oz (500g) including battery

REFRIGERANT MONITORS

Compact, highly reliable, yet economical refrigerant leak monitoring systems. Designed to monitor a single refrigerant in a single zone providing early warning of costly and environmentally damaging refrigerant leakage. Adjustable sensitivity settings between 100 to 1000 PPM with an auxiliary 1/2 HP N.O. and N.C. dry contact control function for operating an additional alarm or other safety device. Replacement sensors are interchangeable enabling the replacement of a failed sensor directly in the field without recalibration, minimizing downtime.



RM

Refrigerant Monitor
Control Box and
Sensor Housing



REFRIGERANT MONITOR RM SPECIFICATIONS

Sensitivity	100 to 1,000 ppm
Accuracy	±3% of setting (or ± 25 ppm)
Visual Alarms	High intensity LED display
Audible Alarm	85 dB @ 12"
Operating Temperature (Control Module & Sensor)	14 to 150°F (-10 to 65°C)
Relative Humidity Range (Control Model & Sensor)	10 to 95% (Non-condensing)
Power	12 to 24V AC or DC
Sensor Failure Indicator	Visual indication in control module
Weight	18 oz (500 g)
Warranty	1 year

Refrigerant Monitor	Detects Refrigerant	Replacement Sensor
RM134	R-134	RMX12
RM22	R-22	
RM404	R-404	
RM407	R-407	
RM407a	R-407A	
RM410	R-410A	
RM502	R-502	
RM507	R-507	


REPLACEMENT PARTS FOR LEAK-SEEKER® & GAS-SEEKER®

ITEM	Description	LS780A*	LS780B*	LS780C	LS790A*	LS790B	LS3000*	LS3000B*	LS1	LS2	GS40
LSXSF	Selective Filter Housing (replaces LSXVF)	✓	✓	✓	✓	✓					
LSXBMK	Maintenance Kit: (1) LSXS + (1) LSXSF (replaces LSXMK)	✓	✓	✓	✓	✓					
LSXS	Ion-Pump Sensor	✓	✓	✓	✓	✓					
LSXBC	Battery Compartment Cover (Yellow)	✓	✓	✓	✓	✓					
LSXC	Carrying Case (Fabric)	✓	✓	✓	✓	✓					✓
LSXE	Earphone	✓	✓	✓	✓	✓					✓
EMOS2	E_MOS Technology Sensor								✓	✓	
LS2XF	E_MOS Technology Sensor Filters (10-Pk)								✓	✓	
LS2XVF	Vapor Filter Sensing Tip								✓	✓	
LSXC3	Molded Carrying Case						✓	✓	✓	✓	
LSXS3	CCD Sensor						✓	✓			

* Discontinued model

UV LEAK DETECTION

VISUAL LEAK DETECTION



UVPRO KIT INCLUDES BOTH MOONLIGHT™ FLASHLIGHT AND MOONSHINE™ GLASSES

Our MoonLight™ flashlight is the most compact and efficient ultraviolet light we have ever designed. It contains nine high intensity, true ultraviolet LED engineered to maximize the fluorescing capabilities of today's most commonly used detection dyes used in AC systems, while greatly reducing the amount of "nuisance" background blue light emitted. MoonLight™ components are housed in a rugged, anodized aluminum body with an O-ring sealed battery compartment that will stand up to handle harsh field conditions.

- MoonLight™ flashlight with 9, true ultraviolet emitting LEDs
- Operates 8 hr (continuous on)
- Inspection range up to 3' (0.9 m)
- 100,000 hour LED life
- Instant "ON" with no heat produced
- Compact, durable, anodized, lightweight aluminum flashlight body
- Works with all common dye additives
- 3 AAA batteries

MOONSHINE™ BLUE-LIGHT BLOCKING GLASSES (included with UVPRO kit)

MoonShine™ glasses, when used in conjunction with the MoonLight™ flashlight, block the remaining amount of visible blue light, which provides an ideal means of viewing a fluorescing dye that might leak from a closed, pressurized AC system, thereby indicating where a repair is needed.



UVPRO



OTHER ACCESSORIES FOR UV LEAK DETECTION

UVS5	Squeeze-Injector Universal Automotive Dye-Cartridges (4 Pk), (1 cartridge = 5 Applications)
UVMINI	Clip-on UV light
UVXB	12V Rechargeable Battery Pack for 50W or 100W Light
UVXBC	Battery Carrying Case
UVXBLB	UV Bulb for 50W Light
UVXC	110V Battery Charger

MOONSHINE™ BOTTLED UNIVERSAL REFRIGERANT DYE

- Works with alkyl benzene, PAG, ester and mineral oil
- Lowest cost per application
- Excellent for large systems
- Built-in measuring cap
- For A/C&R, add 1/4 o.z (7.5 ml) per 20 oz (591 ml) of system lubricants
- For automotive applications, use 1/4 oz (7.5 ml) per vehicle (32 vehicles per bottle)



UVUD6

UVUDS









UVCLNR

MOONSHINE™ UNIVERSAL DYE AND CLEANER

UVUD6	MoonShine™ Bottled Universal Refrigerant Dye	8 oz (237 ml)
UVUDS	MoonShine™ Bottled Universal Refrigerant Dye	1 oz (30 ml)
UVCLNR	MoonShine™ Dye Cleaner	32 oz (946 ml)

MOONSHINE™ PREFILLED/ DISPOSABLE REFRIGERANT DYE CAPSULES AND CARTRIDGES

- Universal OEM approved dye formula
- Cleanest, easiest and fastest method of injection
- No refrigerant to inject dye
- 4 sizes to match capacity of system
- Eliminate air entering system
- Eliminates over-injection of dye
- All dyes include I.D. labels
- All MoonShine™ dye meets SAE J2297 standard.

AC System Size	For Refrigerant Charge Size	Refrigerant Oil	MoonShine™ Refrigerant Dye Capsule (Qty. 6)	MoonShine™ Refrigerant Dye Squeeze Cartridges (Qty. 6)
SMALL Ice machines, window AC units, autos, refrigerators	Up to 2.9 lbs. (1.3 kg)	Up to 15 oz (.44 L)	 UV101	 UVS101 (Gold)
MEDIUM Residential systems	3 to 4.9 lbs. (1.4 to 2.2 kg)	16 oz to 1.6 qt. (.45 to 1.8 L)	 UV1	 UVS1 (Purple)
MEDIUM-LARGE Light commercial and large residential systems	5 to 9.9 lbs. (2.3 to 4.5 kg)	1.7qt. to 3.2 qt. (1.9 to 3.7 L)	 UV2	 UVS2 (Orange)
LARGE Commercial and light industrial, including all split systems	10 to 25 lbs. (4.6 to 11.4 kg)	3.3 qt. to 2 gal. (3.8 to 9.1 L)	 UV3	 UVS3 (Green)

UV Leak Detection

REFILLABLE. EXPANDABLE SQUEEZE GUN™ DYE INJECTORS

Step 1: Load Cartridge



Step 2: Attach hose



Step 3: Connect and inject



Step 4: Clean port and discard empty cartridge



UVNJS
HVAC Squeeze gun 1/4"
* cartridges sold separately



UVNJ
In-line AC&R 1/4"
1/4 to 1/2 oz (7.5 to 14 ml)



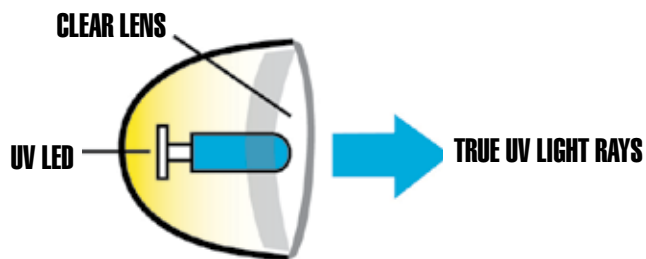
TLJ2
R-12 1/4" SAE oil dye injector

TECH-SET™ DYE BASED REFRIGERANT LEAK DETECTION KIT

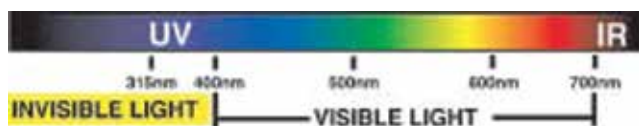
Refrigerant leaks are the number one cause of poor A/C cooling. Having the correct amount of refrigerant in an A/C system is critical to achieve proper cooling. Any loss of refrigerant will reduce a system's ability to transfer heat, causing the compressor to work harder and the system to cool less efficiently. Therefore, finding and fixing refrigerant leaks is more important than ever before.

The Tech-Set™ UV55 Leak Detection Kit enables you to conduct a fast, easy, mess-free air conditioning "leakdown" test whereby an orange, universal dye is injected into a closed (sealed) A/C system under full pressure. The orange dye will be visible under a "correctly tuned" ultraviolet light at the point of a leak anywhere in the system. Included in this detection kit are the following:

- MoonLight™ flashlight with 9, true ultraviolet LEDs
- Operates 8 hr (continuous on)
- Instant "ON" with no heat produced
- Compact, durable, anodized aluminum flashlight body
- Works with all common dye additives
- 3 AAA batteries
- MoonShine™ blue light-blocking glasses.
- Mess-free and easy-to-use Squeeze Gun™ injector
- UVS2 universal (orange) OEM approved dye cartridge
- R-34a 90° low side snap coupler
- Molded carrying case with internal padding.
- Operating instructions



UV LEDs produce only true and efficient UV light. The CPS UVPRO provides UV-A (Long wave UV) 325-375nm. Instant on LED provides the fastest leak inspection of any light available.



*Light spectrum wavelengths in nanometers

WHY BLUE IS NOT NECESSARILY COOL...

A correctly tuned ultraviolet (UV) lamp should predominantly emit invisible UV light waves, with a trace of visible "purple" or "blue" light. A small amount of visible light is required to direct the user's eyes to the leak search area, while the invisible UV light rays actually illuminate a leaking dye.

Lamps that emit large amounts of visible blue light have been marketed as being more powerful and more effective at fluorescing leaks, backed by the obvious high output of visible light.

Knowing that UV dye additives require invisible true UV light rays to effectively fluoresce dispels this claim altogether. In fact, special "blue blocking" glasses are required for use with these high output blue lamps in order to remove the nuisance blue light from the vision of the user during the leak search process. Otherwise, the high output of light will mask the actual leak or illuminating dye additive.

COMPUTE-A-CHARGE® REFRIGERANT CHARGING SCALES

WORTH THEIR WEIGHT IN COLD



COMPUTE-A-CHARGE®

THE MOST TRUSTED BRAND OF CHARGING/RECOVERY SCALES ON THE PLANET

Recommended by OEMs and professional service technicians for over 30 years, the Compute-A-Charge series of scales have become the preferred tool for accurate, reliable charging of today's advanced AC&R systems. The range consists of fully automatic programmable or manually operated units, with or without wireless remote hand held controls. Models include variations in capacity and resolution specifications to meet all your job specific needs.

FEATURES AND BENEFITS (ALL UNITS)

- The world's most advanced strain gage bridge load cell technology
- Unparalleled accuracy, precision and reliability
- Calibrated to strict NIST (National Institute of Standards & Technology) standards
- Ergonomic hand held remote controls with large, high contrast wide angle LCD displays
- Rugged cast aluminum platform and base assemblies for stability and long life
- Electronic and mechanical overload protected to withstand 150% of capacity

- Environmentally sealed and temperature compensated for reliable operation in extreme environments
- Automatic tare upon every start up and manual zero function
- Magnetic backing on hand held display for mounting to metal services or 360° swivel hanging hook
- Durable protective transport case enables operation of scale in or out of enclosure
- Ideal for critical charging of systems large or small and all refrigerant recovery applications
- The widest range of programmable, manual, or wireless/hand-held configurations
- Designed and manufactured in the U.S.A. with U.S. and globally sourced components
- RF controlled unit, featuring "set it and forget it" software (**CC240RF** is non-programmable)
- **CC840RF** features 4 operating modes: Weigh, Set, Handle, Hold
- **CC840RF** is fully programmable in charging/recovery mode using the hand-held remote
- Weight Resolution: ± 0.25 oz

WIRELESS HIGH CAPACITY CHARGING/RECOVERY SCALES

Full specifications listed on page 16



CC240RF
with Wireless Remote Hand-Held Controller



CC840RF
with Wireless Remote Hand-Held Controller



CC240RF HIGH CAPACITY SCALE

- 220lb (100kg) capacity / 0.25oz (10g) resolution
- Wireless remote, best-in-class accuracy & large capacity
- Accommodates 30, 50, 90 & 125lb cylinders
- Removable platform for operation in or out of protective case
- Easy to read, fast response measurement on large LCD
- Visual and mechanical overload protection



Scale operable inside or outside of case

CC840RF HIGH CAPACITY SCALE

- 220lb (100kg) capacity / 0.25oz (1g) resolution
- Programmable for automatic charging or recovery via integrated solenoid valve
- Accommodates 30, 50, 90 & 125 lb cylinders
- Easy to read, fast response measurement
- Visual and mechanical overload protection



Rugged carrying case (included with all models)

CHARGING/RECOVERY SCALES

Full specifications listed on page 16



CC50 HIGH RESOLUTION SCALE

- 55lb (25kg) capacity / 0.05oz / 1g resolution
- Ideal for critical charge, small volume systems
- Removable platform for operation in or out of protective case
- Easy to read, fast response measurement
- Visual and mechanical overload protection



CC110 STANDARD SCALE

- 110lb (25kg) capacity / 0.20oz (5g) resolution
- Best in class value and accuracy
- Accommodates 30 & 50lb cylinders
- Removable platform for operation in or out of protective case
- Easy to read, fast response measurement
- Visual and mechanical overload protection



CC220 HIGH CAPACITY SCALE

- 220lb (100kg) capacity / 0.25oz (10g) resolution
- Our most versatile unit with best-in-class accuracy and enlarged capacity
- Accommodates 30, 50, 90 & 125 lb cylinders
- Removable platform for operation in or out of protective case
- Easy to read, fast response measurement
- Visual and mechanical overload protection

AUTOMATIC PROGRAMMABLE CHARGING/RECOVERY SCALES

Full specifications listed on page 16



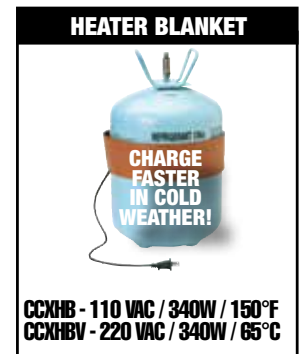
CC850 HIGH RESOLUTION SCALE

- 55lb (25kg) capacity / 0.05oz / 1g resolution
- Ideal for critical charge, small volume systems
- Programmable for automatic charging or recovery via integrated solenoid valve
- Versatile with best in class accuracy and resolution
- Easy to read, fast response measurement
- Visual and mechanical overload protection



CC800A HIGH CAPACITY SCALE

- 220lb (100kg) capacity / 0.25oz (1g) resolution
- Programmable for automatic charging or recovery via integrated solenoid valve
- Accommodates 30, 50, 90 & 125 lb cylinders
- Easy to read, fast response measurement
- Visual and mechanical overload protection



REPLACEMENT PARTS FOR COMPUTE-A-CHARGE SCALES

CCXC	Protective carrying case for CC50, CC110, CC110, CC220
CCXC1	Protective carrying case for CC240RF, CC840RF
CCXHB	110V heater blanket for refrigerant cylinders
CCXHBV	220V heater blanket for refrigerant cylinders
CCX220BC	Battery door with magnet for CC50, CC110, CC220, CC800A, CC240RF, CC840RF

CHARGING/RECOVERY SCALE SPECIFICATIONS



Specifications	CC850	CC840RF	CC800A	CC240RF	CC220	CC110	CC50	CCLT
Programmable Recovery Mode	Yes				No			
Display (Maximum Load)	55 lbs (25 kg)	240 lbs (108.8 kg)	220 lbs (100 kg)	240 lbs (108.8 kg)	220 lbs (100 kg)	110 lbs (50 kg)	55 lbs (25 kg)	50 kg
Platform Dimensions	10" x 10" (25.4 cm x 25.4 cm)		8.75" x 8.75" (22.3x22.3 cm)	10" x 10" (25.4 cm x 25.4 cm)	8.75" x 8.75" (22.3x22.3 cm)			
Display to Scale Connection	Flexcord	Wireless (RF)	Flexcord	Wireless (RF)	Flexcord			
RF Transmission Range	n/a	30' (9.1 m)	n/a	30' (9.1m)	n/a			
RF Frequency Range	n/a	2.4 GHz, ISM Band (Worldwide)	n/a	2.4 GHz, ISM Band (Worldwide)	n/a			
Power Source	Remote: (2) 9V Alkaline (Included)	Remote: (1) 9V Alkaline, (Included); Scale Platform: (4) AA Alkaline (Included)	Remote: (2) 9V Alkaline (Included)	Remote: (1) 9V Alkaline, (Included); Scale Platform: (4) AA Alkaline (Included)	Remote: (2)9V Alkaline (Included)			
Continuous Battery Life	30 hr	32 hr	30 hr	32 hr	60 hr			
Display Resolution, oz (Gm) Increments	.05 oz /1 Gm	.25 oz /10 Gm				.20 oz /5 Gm	.05 oz /1 Gm	20 Gm
Weight Accuracy	0.05% of reading, or ± 0.05 oz/1 gm (whichever greater)	0.05% of reading, or ± 0.25 oz/10 gm (whichever greater)				0.05% of reading, or ± 0.20 oz/5 Gm (whichever greater)	0.05% of reading, or ± 0.05 oz/1 gm (whichever greater)	Class III (Legal for Trade)
Legal for Trade	n/a							Yes
Unit Weight	9.8 lbs (4.4 kg)		8.5 lbs (3.9 kg)	8.9 lbs (4 kg)	5.6 lbs (2.5 kg)			
Display Flex Cord Length	6' Extended	n/a	6' Extended	n/a	6' Extended			
Maximum Working Pressure	n/a	500 Psig	500 Psig	n/a	n/a			
Maximum Operating Differential	n/a	485 Psig	485 Psig	n/a	n/a			
Rubber Platform Cover	Yes		No	Yes	No			
Weight Readout	lbs, oz, kg, g							kgs
Molded Carrying Case	Yes							
Tare (Empty) Weight Mode	Yes							
Overload Protection	Mechanical (Internal Overload Stop)							
Battery Status Indicator	3 Segment Symbol (Display)							
Remote Control Mount	Magnetic Back and 360° Swivel Hook							
Operating Temperature Range	14°F to +122°F (-10°C to +50°C)							
Operating Humidity Range	0% to 95% (Non-Condensing)							

Refrigerant Charging Scales



CHARGING STATIONS

COMPACT, FULLY EQUIPPED AND READY-TO-GO

1.800.561.8187

www.**itm**.com

information@itm.com



CS16DMV5D2P5E

PRO-SET® PORTABLE VACUUM CHARGING STATIONS

Pro-Set® charging stations combine all the necessary tools required to perform a full system evacuation and subsequent charging in a single, compact, mobile unit. Each station includes a Vortech™ or BLACKMAX® service manifold, a Pro-Set vacuum pump, a Compute-A-Charge® refrigerant scale, and premium charging hoses. The lightweight tubular steel frame incorporates rear wheels for easy transport to and from the job site with integrated storage areas for all components.

- Unsurpassed charging accuracy of $\pm 0.05\%$ of reading
- Hanging ports and hooks for hose storage
- Rear wheels on frame for ease of mobility
- Contains all tools needed for charging and evacuation
- All components store easily on cart



Hard mounted manifolds



All components store easily on cart

Specifications	CS12 SMBDS5E	CS12 SMBHP5E	CS12 DMV4TP6Q	CS14 CMBHP5E	CS16 SMV4H2P5E	CS16 DMV4D2P5E	CS16 DMV5H2P5E	CS16 DMV5D2P5E
Application	Appliance, Light Refrigeration	Air Conditioning	Air Conditioning, Refrigeration	Air Conditioning		Refrigeration	Air Conditioning	Refrigeration
Manifold Type	2 Valve (BLACKMAX®)		4 Valve (Vortech™)	2 Valve	4 Valve	4 Valve	5 Valve	5 Valve (Vortech™)
Refrigerant	R22, R134A, R404A	R22, R404A, R410A	R22, R134A, R404A	R22, R404A, R410A	R22, R134A, R404A, 410A	R22, R134A, R404A	R22, R134A, R404, 410A	R22, R134A, R404A
Gauge Diameter	2.5" (68 mm)				3 1/8" (80 mm)			
Pressure Temperature Scales	Psi / °F		kPa / Psi / °C		Psi / °F			
Charging Hoses	3-Pk, Standard 5' Blue, Red Yellow (Ball Valve)		3-Pk Premium 6' Blue, Red, Yellow Hoses & Cplrs.	3-Pk, Premium 5' Blue, Red, Yellow (Ball Valve)				
Vacuum Pump	One Stage, 2 CFM, Dual Voltage (VP2S)		Two Stage 2 CFM, Dual Voltage (VP2D)	One Stage, 4 CFM, Single Voltage (VPC4SU)	One Stage 6 CFM, Dual Voltage (VP6S)	Two Stage, 6CFM, Dual Voltage (VP6D)		
Vacuum Gauge	n/a						VG200	n/a
Charging, Recovery Scale	Compute-A- Charge® (Display Maximum Load: 220 Lb; 100 kg)							

RECOVERY EQUIPMENT

**RECOVER REFRIGERANTS
QUICKLY and EFFICIENTLY**



The ultimate in dependability.

TR700 SERIES REFRIGERANT RECOVERY MACHINES

Designed for servicing residential and commercial refrigeration systems, the BLACKMAX[®] TR700 is the industry's best-looking and best-performing refrigerant recovery machine incorporating non-restrictive piston manifold valves, a powerful two cylinder oil-less reciprocating compressor and twin fans. The resulting system provides superior airflow and condensing, which maximizes speed in both direct liquid and direct vapor recovery.

- **Designed with high temperature materials**
- **High strength bourdon tubed gauges**
- **Twin fan design for ultra cool operation**
- **Simple inlet and outlet valve blocks**
- **2 year warranty**

KEY FEATURES

- Powerful 2/3 HP oil-less 2 cylinder reciprocating recovery compressor
- Exceptional compressor, condensing and cooling systems allow fast recovery in high temperature environments
- Automatic low pressure shut-off feature turns unit off when recovery is completed
- Rugged high density, double walled, contemporary plastic housing with easy view top mounted controls
- R-410a ready with 550 Psi high pressure shut-off switch
- Ergonomic, well balanced design for easy transport includes shoulder strap - weighs 32 lbs (14.5 kg)
- Built-in, removable, replaceable suction filter located under suction port
- Worldwide patents pending
- Compact design with easy 4 bolt access
- Externally serviceable valves and gauges
- Integrated component moorings for quiet operation
- Less parts provide greater reliability





COMPETITOR COMPARISON

Refrigerant	TEST CONDITIONS (kg/s)	CPS TR700	Appion G5	Yellow Jkt 95760	Promax RG5410EX	Promax RG5410A	Inficon Vortex AC	Stinger 2000-3300	
R410a	@ 75°F	Liquid	5.42	1.58	0.76	2.33	1.85	1.37	
		Push / Pull	14.38	4.63	5.54	6.39	4.91	5.15	6.63
		Vapor	0.32	0.3	0.22	0.2	0.16	0.08	0.1
R22	@ 75°F	Liquid	4.02	2.82	0.9	1.9	1.81	1.35	1.6
		Push / Pull	14.3	7.54	6.12	6.58	4.32	2.5	5.58
		Vapor	0.27	0.28	0.15	0.18	0.15	0.11	0.13
	@ 104°F	High Temp Vapor	0.39	0.19	0.15	0.14	0.13	0.13	0.13
R134a	@ 75°F	Liquid	3.54	1.97	1.13	1.09	1.57	1.13	1.21
		Push / Pull	11.64	5.03	6.12	5.3	3.63	3.44	4.98
		Vapor	0.23	0.19	0.1	0.14	0.11	0.1	0.1
ARI Ratings		(UL) QVBC SA12068	(UL) QVBC SA13136	(UL) QVBC SA12038	(UL) QVBC SA12994	(UL) QVBC SA12994	(UL) QVBC SA12798	(AR) RRRR-05040-1Q	

All trademarks are owned by their respective companies.

REPLACEMENT PARTS AND ACCESSORIES FOR CR & TR SERIES RECOVERY MACHINES

CRXCR1	Compressor Rebuild Kit for CR600 series (all)
CRXCR2	Compressor Rebuild Kit for CR500 (115V)
CRXCR3	Compressor Rebuild Kit for CR500 (230V)
CRXCR8	Compressor Rebuild Kit for CR700 series (all)
CRXTOS2	Overfill Sensor Cord Kit 115V
CRXTOS3	Overfill Sensor Cord Kit 230V
CRXF2	(6) Suction Filters for CR300, 400, 500, 600
CRXF3	(6) Suction Filters for CR700, TR700, TR19, TR21, TR600

TR700 SERIES SERVICE PARTS

Item	Description	Where Used (Series)
TR21X1	Valve Rebuild Kit	All TR Recovery Machines
TR21X3	TR21 Piston/Connecting Rod Replacement	
TR21X2	Complete Rebuild Kit	
TR21X5	Eccentric Crank Set	TR700
TR700X1	Head Replacement	

BLACKMAX® TR700 SERIES SPECIFICATIONS

Attribute	TR700	TR710	TR700C	TR710C	TR700S	TR710S
Voltage	115V (50 Hz)			220-240V (50/60 Hz)		
Motor Size (Horsepower)	2/3 HP					
Overload Protection	15 Amp			10 Amp		
Power Consumption	1000W					
Tank Overfill Switch	✗	✓	✗	✓	✗	✓
Two Cylinder, Oil-less Reciprocating Compressor	✓					
ON-Off Power Switch	✓					
Selectable Manual OR Automatic Shut-Off Mode Settings	✓					
Suction Pressure Gauge	-30" hg to 350 Psig					
	-76 cm hg to 35 kg/cm					
Discharge Pressure Gauge	0-800 Psig					
	0 to 55 kg/cm					
High Pressure Shut-Off	550 Psig (38 bar)		450 Psig (31 bar)		550 Psig (38 bar)	
Maximum Flow Rate @ 60 Hz (Reduce 15% for 50 Hz)	Direct Vapor		2.1 lb/min (57 kg/hr)			
	Direct Liquid		11 lb/min (293 kg/hr)			
	Push-Pull Liquid		860 lb/min (830 kg/hr)			
Refrigerants	R-12, R-22, R-134a, R-401A/B/C, R-402A/B, R-404A, R-406A, R-407A/B/C/D/E/F, R408A, R-409A, R-410A, R-411A/B, R-412A, R-500, R-502, R-507					
Operating Temperature Range	32° to 120°F (0° to 49°C)					
Twin Fans, High Airflow, High Efficiency Condensing Capability	✓					
Suction and Discharge Shut-Off valves	✓					
Large 2-1/4" (44 mm) Diameter Suction & Discharge Gauges	✓					
Cleanable, 100-Mesh Screen Filtration (Into Suction Port)	✓					
Indicator Lights for High Pressure or Low Pressure Status	✓					
Heavy Gauge Aluminum Chassis & High Density Polyethylene Case	✓					
Skid Resistant Rubber Feet	✓					
Power Cord Length, Type	6' (1.82 m) Detachable					
Dimensions (W x L x H)	Inch: 9.75" x 21" x 14.0" (cm: 24.7x 53.3x 35.6)					
Weight	28 lbs (12.7 kg)					
Certifications	UL, CSA. Meets Or Exceeds EPA Regulations per ARI Standard 740-98					
Warranty	1 Year					

Pro-Set®

Reliable. Compact. Fast.

TR600 SERIES REFRIGERANT RECOVERY MACHINES

CPS introduces a new addition to its recovery machine line-up, the Pro-Set TR600. A lightweight, efficient and reliable refrigerant recovery machine in a compact, rugged, contemporary housing – the TR600 offers the ideal combination of form and function to make refrigerant recovery fast and easy!



TR600 Series

Recovery Equipment



KEY FEATURES

- Powerful 2/3 HP oil-less 2 cylinder reciprocating recovery compressor
- Exceptional compressor, condensing and cooling systems allow fast recovery in high temperature environments
- Automatic low pressure shut-off feature turns unit off when recovery is completed
- Rugged high density, double walled, contemporary plastic housing with easy view top mounted controls
- R-410a ready with 550 Psi high pressure shut-off switch
- Ergonomic well balanced design for easy transport - weighs 28 lbs (12.7 kg)
- No tool access suction housing for easy filter clean/change
- Worldwide patents pending
- Durable inlet and outlet ball valve construction with gauges
- Integrated component moorings for quiet operation
- Less parts provides greater reliability



TR600 SERIES SPECIFICATIONS

Attribute	TR600	TR610	TR600C	TR610C	
Voltage	115V (50Hz)				
Motor Size (Horsepower)	2/3 HP				
Overload Protection	15 amp				
Power Consumption	1000W				
Tank Overfill Switch	✗	✓	✗	✓	
Two Cylinder, Oil-less Reciprocating Compressor	✓				
ON-Off Power Switch	✓				
Selectable Manual OR Automatic Shut-Off Mode Settings	✓				
Suction Pressure Gauge	-30" hg to 350 Psig -76 cm hg to 35 kg/cm				
Discharge Pressure Gauge	0-800 Psig 0 to 55 kg/cm				
High Pressure Shut-Off	550 Psig (38 bar)		450 Psig (31 bar)		
Maximum Flow Rate @ 60 Hz (Reduce 15% for 50 Hz)	Direct Vapor				2.1 lb/min (57 kg/hr)
	Direct Liquid				11 lb/min (293 kg/hr)
	Push-Pull Liquid				860 lb/min (830 kg/hr)
Refrigerants	R-12, R-22, R-134a, R-401A/B/C, R-402A/B, R-404A, R-406A, R-407A/B/C/D/E/F, R408A, R-409A, R-410A, R-411A/B, R-412A, R-500, R-502, R-507				
Operating Temperature Range	32° to 120°F (0° to 49°C)				
Single Fan, High Airflow, High Efficiency Condensing Capability	✓				
Suction and Discharge Shut-Off valves	✓				
Large 2-1/4" (44 mm) Diameter Suction & Discharge Gauges	✓				
Cleanable, 100-Mesh Screen Filtration (Into Suction Port)	✓				
Skid Resistant Rubber Feet	✓				
Power Cord Length	3' (1.82 m)				
Dimensions (W x L x H)	Inch: 9.75" x 21" x 14.0" (cm: 24.7x 53.3x 35.6)				
Weight	28 lbs (12.7 kg)				
Certifications	UL, CSA. Meets Or Exceeds EPA Regulations per ARI Standard 740-98				
Warranty	1 Year				

TR600 SERIES SERVICE PARTS

Item	Description	Where Used (Series)
TR21X1	Valve Rebuild Kit	All TR Recovery Machines
TR21X3	TR21 Piston/Connecting Rod Replacement	
TR21X2	Complete Rebuild Kit	TR600
TR21X5	TR19/TR21 Eccentric Set	
TR700X1	Head Replacement	

RECOVER LOST TIME

The smallest, lightest, fastest and most reliable recovery machine found anywhere in the world!

Anybody can say they are the "fastest." We can prove it!

Pro-Set® TR21 certified ARI recovery rates are shown below as well as online at UL <http://database.ul.com> . Compare them to other brands (competing machines are listed on our website) **NOBODY is FASTER or MORE RELIABLE!**



TR21

FEATURES & BENEFITS:

- Weighs only 25 lbs!
- Fastest ARI recovery rates in its class, best speed-to-weight ratio in the industry!
- Revolutionary "vacuum pump" style design.
- Five unique patented and patent pending design elements
- Vapor or liquid recovery, including R-410A
- Extremely compact and easy to carry

TR19, TR21, TR22 SERIES SERVICE KITS

Item	Description	Where Used (Series)
TR21X1	Valve Rebuild Kit	All TR Recovery Machines
TR21X3	TR21 Piston/Connecting Rod Replacement	
TR19X1	TR 19 Complete Rebuilt Kit	TR19
TR19X2	Eccentric Crank Set	
TR21X4	TR21 Complete Head Replacement	TR19, TR21, TR22
TR21X2	Complete Rebuild Kit	TR21, TR22
TR21X5	Eccentric Set	



Premium Brass Fittings

TR21 SERIES RECOVERY RATES PER ARI-740 - 98

Type	Push Pull	Liquid	Vapor	High Temp Vapor (104°F)	Push Pull	Liquid	Vapor	High Temp Vapor (104°F)
	lbs/min				kg/min			
R22	31.53	8.86	0.597	0.86	14.3	4.02	0.271	0.39
R134a	25.66	7.8	0.503	N/A	11.64	3.54	0.228	N/A
R407C	29.14	9.5	0.536	N/A	13.22	4.31	0.243	N/A
R410A	31.7	11.95	0.703	0.816	14.38	5.42	0.319	0.37

Recovery Equipment

RECOVERY EQUIPMENT SPECIFICATIONS

Attribute	TECH-SET®			PRO-SET®					
	TR19	TR19C	TR19S	TR21	TR21C	TR21S	TRS21 Ignition Proof	TR22	TR22C
Voltage	115V (60Hz)		220-240V (50 Hz)	115V (60 Hz)		220- 240V (50 Hz)	115V (60Hz)		
Motor Size (Horsepower)	2/3 HP								
Overload Protection	15 Amp		10 Amp	15 Amp	10 Amp	15 Amp	15 Amp		
Power Consumption	550W			850W					
Two Cylinder, Oil-less Reciprocating Compressor	✓								
ON-Off Power Switch	✓								
Spark Proof Starting Components	No						✓	No	
High Pressure Shut-Off (Psig/bar)	550 Psig (38 bar)	450 Psig (31 Bar)	550 Psig (38 bar)	550 Psig (38 bar)	450 Psig (31 Bar)	550 Psig (38 bar)	550 Psig (38 bar)	550 Psig (38 bar)	450 Psig (31 Bar)
Selectable Manual OR Automatic Shut-Off Mode Settings	Auto Reset High Pressure Switch								
Tank Overfill Switch Kit	No							✓	
Maximum Flow Rate @ 60 Hz (Reduce 15% for 50 Hz)	Direct Vapor	Up to 1.2 lb/min (33 kg/hr)			Up to 2.5 lb/min (67 kg/hr)				
	Direct Liquid	Up to 9.5 lb/min (260 kg/hr)			Up to 12 lb/min (271 kg/hr)				
	Push-Pull Liquid	Up to 20.3 lb/min (550 kg/hr)			Up to 34 lb/min (922 kg/hr)				
Refrigerants	R-12, R-134a, R-22, R-401A, R-401B, R-401C, R-402A, R-402B, R-404A, R-406A, R-407A, R-407B, R-407C, R-407D, R-407E, R-407F, R408A, R-409A, R-410A R-411A, R-411B, R-412A, R-500, R-502, R-507, R-509			R-12, R-134a, R-401C, R-406A, R-500, R-401A, R-409A, R-401B, R-412A, R-411A, R-407D, R-22, R-411B, R-502, R-407C, R-402B, R408A, R-509, R-407A, R-404A, R-402A, R-507, R-407B, R-410A					
Operating Temperature Range	32° to 120°F (0° to 49°C)								
Cleanable, 100-Mesh Screen Filtration (Into Suction Port)	✓								
High Pressure Cutout LED	✓								
Heavy Gauge Aluminum Chassis	✓								
Skid Resistant Rubber Feet	✓								
Power Cord Length, Type	6' (1.82 m) Detachable								
Dimensions (W x L x H)	6" x 12" x 9" (15 x 30 x 23 cm)								
Weight	18.7 lbs (8.5 kg)			24.3 lbs (11 kg)					
Certifications	UL (ARI740-98)	CSA	UL (ARI740-98)	UL (ARI740-98)	CSA	UL (ARI740-98)	UL (ARI740-98)	UL (ARI740-98)	CSA
Warranty	1 Year								

TRANSFORM YOUR BOTTOM LINE WITH THE MT69 MOLECULAR TRANSFORMATOR. IT DRAMATICALLY INCREASES THE SPEED OF ANY RECOVERY MACHINE.

CUT YOUR RECOVERY TIME IN HALF.

The MT69 is the *only* commercialized recovery subcooler manufactured for the professional A/C & R technician. It transforms molecules of hot refrigerant gas into molecules of refrigerant liquid and also transforms molecules of cold refrigerant liquid into a warm refrigerant gas. Use the MT69 in-line with the discharge line of any recovery machine to dramatically increase the speed of recovery.

FEATURES & BENEFITS:

- Dramatically increases the speed and performance of your recovery machine- (**up to 95% increase in recovery speed!**)
- The hotter it gets, the better it works
- Functions as a submersible condenser or evaporator
- Rugged, compact and easy to use
Eliminates the need to change tanks when recovering R410A
- Patents Pending
- Eliminates annoying shutdown due to high pressure switch limit
- Essential for recovering R410A on hot days
- Essential for recovering liquid refrigerant on cold days
- Eliminates liquid slugging at colder temperatures
- Designed and manufactured in U.S.A. with U.S. and globally source components



MT69

Recovery Equipment

MT69 SPECIFICATIONS

Dimensions	4.25" Dia x 9" H. (10.9 cm Dia. x 22.9 cm H)
Weight	3.6 Lb (1.6 kg)
Maximum Operation Pressure	500 Psig
Discharge Pressure Gauge	0 to 600 Psig
Inlet/Outlet Connections	¼" SAE male
Refrigerant Compatibility	All

COMPARATIVE DATA

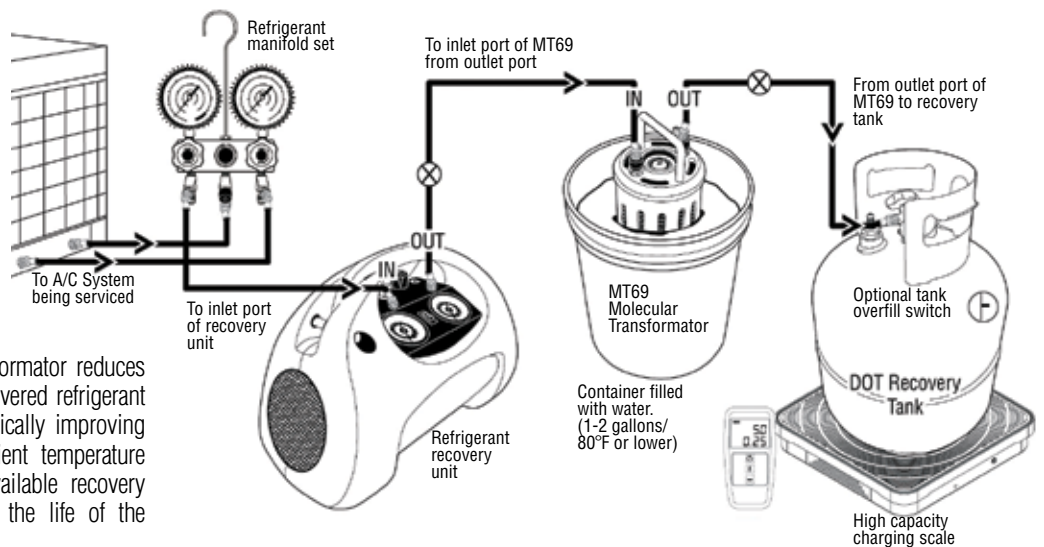
Time needed to recover 15 lbs of R22 at 120° F:	WITH CPS MT69	WITHOUT CPS MT69
	17 minutes	32 minutes

Item	Description
MT69	MT69 Molecular Transformator
TR21MT69KIT	TR21 & MT69 kit

HOW THE MT69 MOLECULAR TRANSFORMATOR WORKS:

The effects of ambient temperature and elevated tank pressures on the speed of the refrigerant recovery process are in many cases more important than the speed of the recovery machine itself. As ambient temperature increases, pressure in the recovery cylinder increases, reducing the recovery speed and in many cases can lead to a high pressure shutdown as the recovery equipment and tank pressure limits are reached.

The Pro-Set MT69 Molecular Transformator reduces the temperature and pressure of recovered refrigerant during the recovery process, dramatically improving the recovery speed and high ambient temperature performance of all commercially available recovery machines in addition to extending the life of the equipment.



REFRIGERANT RECOVERY TANKS

- Recover, reclaim, transport, recycle, and use for storage
- Available in sizes ranging from 30 to 90 lbs
- All cylinders meet DOT specifications 4BA and 4BW
- Cylinders for R11, R12, R22, R134A, R500, R502, R410A, and many others
- Reusable and refillable
- Working pressures of 260-400 Psi
- Cylinders available for automotive or HVAC use
- All cylinders have powder coat paint for maximum rust protection
- UL listed valves



30lb tank with 1/4" SAE M

Automotive 50lb tank w/ ACME fitting

50lb tank with 1/4" SAE M fitting

90lb tank 1/4" SAE FM x 1/2" ACME M included

ITEM	DESCRIPTION	WATER CAPACITY	DOT SPECIFICATION	SERVICE PRESSURE
ARX134T	Automotive 50 lb tank with 1/2" ACME male fitting	47.7 lb (21.7 kg)	DOT04BA-400	400 Psig
ARX134TS	Automotive 50 lb tank with 1/2" ACME male fitting and overfill sensor			
CRX390T	90 lb tank with 1/4" SAE male fitting on tank. 1/4" SAE female x 1/2" ACME male adapter fitting included	92 lb (41.7 kg)	DOT04BW-400	
CRX390TS	90 lb tank with 1/4" SAE male fitting on tank and overfill sensor. 1/4" SAE female x 1/2" ACME male adapter fitting included			
CRX400T	50 lb tank with 1/4" SAE male fitting	47.7 lb (21.7 kg)	DOT04BA-400	
CRX400TS	50 lb tank with 1/4" SAE male fitting and overfill sensor			
CRX430T	30 lb tank with 1/4" SAE male fitting	26.2 lb (11.9 kg)		
CRX430TS	30 lb tank with 1/4" SAE male fitting and overfill sensor			

RECOVERY TANK ACCESSORIES	
CCXHB	Refrigerant Cylinder Heater/Strap (110V)
CCXHBV	Refrigerant Cylinder Heater/Strap (220V/240V)

VACUUM PUMPS

**LIGHT WEIGHT DESIGN
HEAVY WEIGHT PERFORMANCE**



Pro-Set®

PRO-SET® VACUUM PUMPS

There are good pumps, better pumps, then Pro-Set® Vacuum Pumps! Innovative changes in vacuum cartridge design, materials, lubrication and cooling enable Pro-Set vacuum pumps to achieve incredibly deep vacuum performance ratings that are unmatched in the industry. Pro-Set has the product line breadth and depth to suit just about any HVAC/R job or fit any job site requirement you might have!

Pro-Set vacuum pumps are offered in a variety of single and dual stage models with numerous voltage, horsepower and free air displacement (CFM) options, while contained in either standard size or compact size housings to suit your work environment. All Pro-Set vacuum pumps boast the same high quality, high value features engineered into all of our products, providing years of reliable performance while servicing air conditioning and refrigeration equipment.

PRO-SET® VACUUM PUMP KEY FEATURES

- All models are for use with class A1 (non-toxic, non-flammable), class A2 (non-toxic, low-flammable) refrigerants
- Air cooled, thermally protected motors encased in a durable aluminum housing
- Oil filled rotary vacuum pump cartridge construction
- Large oil-fill port with proprietary, mist-free exhaust cap
- Easily accessible oil drain port
- Large oil sight glass
- Multiple SAE and ACME intake fittings with check valve
- On/Off power switch
- Rubber lined handle, skid resistant rubber feet
- Gas ballast valve



Sealed starting switch on ignition-proof models



Pro-Set® DUAL STAGE VACUUM PUMPS

Pro-Set® Dual Stage Vacuum Pumps

Pro-Set dual stage vacuum pumps are your premium solution for obtaining the deepest ultimate vacuum (10 to 25 microns, depending on model), the greatest range of horsepower (1/3 to 1) and free air displacement (from 2 CFM to 12 CFM) within the Pro-Set line. These pumps also include a gas ballast valve which speeds attainment of deep vacuum and are offered in both single and dual voltage models. All models are for use with Class A1 (non-toxic, non-flammable) and A2 (non-toxic, low flammable) refrigerants. The VPS Series with its sealed components is also for use with Class A3 (non-toxic, explosive) refrigerants and ammonia systems.

**SMALL SIZE,
BIG
PERFORMANCE**



***Pro-Set*
DUAL OR SINGLE
STAGE COMPACT
VACUUM PUMPS**

**Pro-Set® Dual Or Single Stage
Compact Vacuum Pumps**

The Pro-Set line of dual or single stage compact vacuum pumps provide an ultimate vacuum ranging from 15 to 100 microns, horsepower ratings from 1/5 to 1/4, and free air displacement from 2 CFM to 4 CFM. These pumps offer dedicated 115VAC or 220-240VAC operation and are hardwired with either NEMA 115VAC or 220-240VAC plugs. Best of all, these pumps feature some of the smallest, lightest and most compact aluminum housings in the industry.



***Pro-Set*
SINGLE STAGE
VACUUM
PUMPS**

Pro-Set® Single Stage Vacuum Pumps

Pro-Set single stage standard size vacuum pumps provide a deep vacuum (down to 50 microns), with horsepower ratings from 1/3 to 1, and free air displacement from 2 CFM to 12 CFM. These pumps include a gas ballast valve and are offered in both single and dual voltage and have a voltage selector switch.



Pro-Set® DUAL STAGE VACUUM PUMPS

Pro-Set® dual stage vacuum pumps are your premium solution for obtaining the deepest ultimate vacuum (10 or 25 microns, depending on model) and provide the greatest range of horsepower (1/3 to 1) and free air displacement (from 2 CFM to 12 CFM) within the Pro-Set line. These pumps also include a gas ballast valve which speeds attainment of deep vacuum and are offered in both single and dual voltage models. All models are for use with Class A1 (non-toxic, non-flammable) and A2 (non-toxic, flammable) refrigerants. Model VPS6DU with its sealed components is also for use with Class A3 (non-toxic, explosive) refrigerants and ammonia systems.

Vacuum Pumps

Model	VP2D	VP2DE	VP4D	VP4DE	VP6D	VP6DE	VPS6DE	VPS6DU
Stage	2							
Ultimate Vacuum	10 Microns							
Refrigerant Class	A1, A2						A1, A2, A3	
Dimensions (Inches)	12.2" x 5" x 9.6"		13.1" x 5.5" x 10"					
Weight	17.7 lb (8.0 kg)		22.1 lb (10.0 kg)			22.5 lb (10.2 kg)		
Free Air Displacement	2 CFM @ 60Hz (48 l/m @ 50Hz)		4 CFM @ 60Hz (96 l/m @ 50Hz)			6 CFM @ 60 Hz (144 l/m @ 50 Hz)		
Motor Size (HP), RPM @ 50/60Hz	1/3 HP (1440, 1720 RPM)		1/2 HP (2880, 3440 RPM)					
Voltage	110-120V Or 220-240V @ 50/60Hz	220-240V, 50 Hz	110-120V Or 220-240V @ 50/60Hz	220-240V, 50 Hz	110-120V Or 220-240V @ 50/60Hz	220-240V, 50 Hz	220-240V, 50Hz	115V 60Hz
Power Cord Connection to Pump	Universal IEC Socket & Voltage Selector Switch	Universal IEC Socket	Universal IEC Socket & Voltage Selector Switch	Universal IEC Socket	Universal IEC Socket & Voltage Selector Switch	Universal IEC Socket	Hard Wired Schuko Plug	Hard Wired
On/Off Power Switch	Yes						Yes (Ignition-proof sealed starting components)	
Operating Temperature Range	32°F to 125°F (0°C to 52°C)							
Pro-Set® Vacuum Pump Oil Capacity	11.5 oz (330 ml)		15.5 oz (450 ml)			16 oz (470 ml)		
Gas Ballast Valve	Yes							
Intake Fittings	SAE: 1/4", 3/8", ACME: 1/2"						SAE 1/4", 3/8", 1/2"	
Warranty	1 Year							

Legend: VP= Vacuum Pump, VPS = Ignition Proof VP; 2,4,6,8,10,12 = CFM; D = Dual stage; A or E = 220-240VAC 50 Hz; J = 100VAC 50/60 Hz; U=115VAC 60Hz, No Consonant After "D" =Dual Voltage 110-120VAC or 220-240VAC 50/60Hz. Refrigerant Classes: A1 (non-toxic, non-flammable); A2 (non-toxic, flammable); A3 (non-toxic, explosive)



PRO-SET® PREMIUM VACUUM PUMP OILS

Pro-Set® Premium Vacuum Pump Oil is an extremely high quality, severely hydrotreated vacuum pump oil. The oil is compatible for use in pumps made by most manufacturers. Pro-Set Premium Vacuum Pump Oil should always be clean and free of contaminants such as moisture, acids, vapors, dirt etc. It is strongly recommended that the vacuum pump oil be changed after each use to improve service and the life of the pump.

VP0P12

VP0Q12

VP0G6

Model	VP8D		VP8DE		VP10D		VP10DE		VP12D		VP12DE		VPS12DE		VPS12DU	
Stage	2															
Ultimate Vacuum	25 Microns															
Refrigerant Class	A1, A2															
Dimensions (Inches)	14.9" x 5.7" x 10.6"															
Weight	29.8 lb (13.5 kg)				30.3 lb (13.7 kg)				30.9 lb (14.0 kg)							
Free Air Displacement	8 CFM @ 60 Hz (192 l/m @ 50 Hz)				10 CFM @ 60Hz (240 l/m @ 50Hz)				12 CFM @ 60Hz (288 l/m @ 50Hz)							
Motor Size (HP), RPM @ 50/60Hz	2/3 HP (2880, 3440 RPM)				3/4 HP (2880, 3440 RPM)				1 HP (2880, 3440 RPM)							
Voltage	110-120V Or 220-240V @ 50/60Hz		220-240V, 50 Hz		110-120V Or 220-240V @ 50/60Hz		220-240V, 50 Hz		110-120V Or 220-240V @ 50/60Hz		220-240V, 50 Hz		115V 60Hz			
Power Cord Connection to Pump	Universal IEC Socket, Voltage Selector Switch		Universal IEC Socket		Universal IEC Socket, Voltage Selector Switch		Universal IEC Socket		Universal IEC Socket, Voltage Selector Switch		Universal IEC Socket		Hard Wired Schuko Plug		Hard wired	
On/Off Power Switch	Yes												Yes (Ignition-proof sealed starting components)			
Operating Temperature Range	32°F to 125°F (0°C to 52°C)															
Pro-Set® Vacuum Pump Oil Capacity	29 oz (860 ml)				28 oz (830 ml)				27 oz (800 ml)							
Gas Ballast Valve	Yes															
Intake Fittings	SAE 1/4", 3/8", 1/2"															
Warranty	1 Year															





Pro-Set[®] DUAL OR SINGLE STAGE COMPACT VACUUM PUMPS

The Pro-Set[®] line of dual or single stage, compact vacuum pumps provide an ultimate vacuum ranging from 15 to 100 microns, horsepower ratings from 1/5 to 1/4, and free air displacement from 2 CFM to 4 CFM. These pumps offer dedicated 115VAC or 220-240VAC operation and are hardwired with either NEMA 115VAC or 220-240VAC plugs. Best of all, these pumps feature some the smallest, lightest, most compact aluminum housings in the industry.

Model	VPC2DU	VPC2DE	VPC2SU	VPC2SE	VPC4SE	VPC4SU
Stage	2			1		
Ultimate Vacuum	15 Microns			100 Microns		
Refrigerant Class	A1, A2					
Dimensions (Inches)	11.3" x 4.5" x 8.0"		9.1" x 4.5" x 8.0"		11.3" x 4.5" x 8.0"	
Weight	12.1 lb (5.5 kg)		9.3 lb (4.2 kg)		11.0 lb (5 kg)	
Free Air Displacement	2 CFM @ 60Hz (48 l/m @ 50Hz)				4 CFM @ 60 Hz (96 l/m @ 50 Hz)	
Motor Size (HP) RPM @ 50/60Hz	1/4 HP (2880, 3440 RPM)		1/5 HP (2880, 3440 RPM)		1/4 HP (2880, 3440 RPM)	
Voltage	115V @ 60 Hz	220-240V @ 50 Hz	115V @ 60 Hz	220-240V @ 50 Hz	115V @ 60 Hz	220-240V @ 50 Hz
Power Cord Connection to Pump (& Plug Type)	Hardwired, Nema 115V Plug	Universal IEC, Schuko Plug	Hardwired, Nema 115V Plug	Universal IEC, Schuko Plug	Hardwired, Nema 115V Plug	Universal IEC, Schuko Plug
On/Off Power Switch	Yes					
Operating Temperature Range	32°F to 125°F (0°C to 52°C)					
Oil Capacity	9 oz (250 ml)	9 oz (250 ml)			10 oz (300 ml)	
Gas Ballast	No					
Intake Fittings	SAE: 1/4", ACME: 1/2"					
Warranty	1 Year					

Legend: VP= Vacuum Pump; C = Compact; 2,4 = CFM; E = 220-240VAC 50 Hz; S = Single Stage; U = 115VAC, 50/60 Hz.
Refrigerant Classes: A1 (non-toxic, non-flammable); A2 (non-toxic, flammable)



ANTI-SIPHON VALVE KITS

The CPS anti-siphon valve is an essential accessory to any vacuum pump application. The anti-siphon valve prevents the cross-contamination of vacuum pump oil and the compressor oil in the A/C or refrigeration system being serviced. Mixing of vacuum pump oil and compressor oil can cause premature failure in the A/C or refrigeration system. CPS makes three models that fit all CPS and other brands of vacuum pumps.

VPAS4	1/4" SAE female knurl nut
VPAS8	3/8" SAE female knurl nut
VPASU	1/4" SAE, 3/8" SAE, 1/2"-20 UNF female knurl nut



Pro-Set[®] SINGLE STAGE VACUUM PUMPS

Pro-Set[®] single stage, standard size vacuum pumps provide a deep vacuum (down to 50 microns), with horsepower ratings from 1/3 to 1, and free air displacement from 2 CFM to 12 CFM. These pumps include a gas ballast valve and are offered in both single and dual voltage and have a voltage selector switch.

Model	VP2S	VP4S	VP6S
Stage	1		
Ultimate Vacuum	50 Microns		
Refrigerant Class	A1, A2		
Dimensions (Inches)	12.2" x 5" x 9.6"		13.1" x 5.5" x 10"
Weight	13.7 lb (6.2 kg)	15.0 lb (6.8 kg)	18.3 lb (8.3 kg)
Free Air Displacement	2 CFM @ 60Hz (48 l/m @ 50Hz)	4 CFM @ 60Hz (96 l/m @ 50Hz)	6 CFM @ 60 Hz (144 l/m @ 50 Hz)
Motor Size (HP), RPM @ 50/60Hz	1/4 HP (1440 1720 RPM)	1/3 (HP) 2880/3440	1/2 HP (2880, 3440 RPM)
Voltage	Dual (110-120V Or 220-240V @ 50/60Hz)		
Power Cord Connection to Pump (& Plug Type)	Universal IEC Socket, Voltage Selector Switch, Nema 15 Plug		
On/Off Power Switch	Yes		
Operating Temperature Range	32°F to 125°F (0°C to 52°C)		
Oil Capacity	16 oz (470 ml)	19 oz (540 ml)	
Gas Ballast	No		
Intake Fittings	SAE: 1/4" & 3/8", ACME: 1/2"		
Warranty	1 Year		

Legend: VP= Vacuum Pump; 2,4,6 = CFM; S = Single Stage; **Dual Voltage:** 110-120VAC or 220-240VAC 50/60 Hz.
Refrigerant Classes: A1 (non-toxic, non-flammable); A2 (non-toxic, flammable)



VACUUM PUMP CAP KIT

Vacuum pump cap kit with chains on one common ring



Tech-Set™

SINGLE STAGE, COMPACT VACUUM PUMPS

The Tech-Set line of vacuum pumps are designed for the working HVAC technician, and feature a core, essential line of good value vacuum pumps that provide affordable, reliable and dependable service. All models are single stage and feature small, lightweight and compact housings with dedicated 115VAC or 220VAC IEC plug configurations. Models range from 1.5, 3 or 5 CFM, 1/5 to 1/3 horsepower, and ultimate vacuum ratings from 50 to 100 microns.



Model	TAVPC48SU	TAVPC48SE	TAVPC96SU	TAVPC96SE	TAVPC144SU	TAVPC144SE
Stage	1					
Ultimate Vacuum	100			50		
Refrigerant Class	A1, A2					
Dimensions (Inches)	8.75" x 4.1" x 9.25"		11.25" x 4.1" x 9.25"		12.62" x 4.8" x 9.62"	
Weight	9.5 lbs (4.3 kg)		11 lbs (5.0 kg)		14.8 lbs (6.7 kg)	
Free Air Displacement	1.5 CFM @ 60 Hz (48 l/m @ 50 Hz)		3 CFM @ 60 Hz (96 l/m @ 50 Hz)		5 CFM @ 60 Hz (144 l/m @ 50 Hz)	
Motor Size (HP) RPM @ 50/60Hz	1/5 HP (2880, 3440 RPM)		1/4 HP (2880, 3440 RPM)		1/3 HP (2880, 3440 RPM)	
Voltage	115V @ 50/60 Hz	220-240V @ 50 Hz	115V @ 50/60 Hz	220-240V @ 50 Hz	115V @ 50/60 Hz	220-240V @ 50 Hz
Power Cord Connection to Pump (& Plug Type)	Hardwired, Nema 115V Plug	Universal IEC, Schuko Plug	Hardwired, Nema 115V Plug	Universal IEC, Schuko Plug	Hardwired, Nema 115V Plug	Universal IEC, Schuko Plug
On/Off Power Switch	Yes					
Operating Temperature Range	32°F to 125°F (0°C to 52°C)					
Oil Capacity	9 oz (250 ml)			14 oz (400 ml)		
Gas Ballast	No					
Intake Fittings	SAE: 1/4". ACME: 1/2"					
Warranty	1 Year					

Legend: **T** = Tech-Set; **VP** = Vacuum Pump; **C** = Compact; 48, 96 or 144 = l/m; **E** = 220-240VAC 50 Hz; **S** = Single Stage; **U** = 115VAC, 50/60 Hz
Refrigerant Classes: **A1** (non-toxic, non-flammable); **A2** (non-toxic, flammable)

PORT CAPS

Oil mist preventer exhaust port.

VPXOMP for 2-6 CFM Models

VPXOMP2 for 8-12 CFM Models



JUMPER CORD KIT

220 VAC jumper power cord for locations where 110 voltage is not available.



VPXJ220

DIGITAL VACUUM GAUGES

PERFORMANCE THAT CAN BE MEASURED



VG100A & VG200 VACROMETER DIGITAL VACUUM GAUGES

VG100A & VG200:

- Calibrated to strict NIST standards for best-in-class accuracy and reliability
- Advanced sensor design with self-heated thermistor bridge and automatic temperature compensation
- Field cleanable sensor designed to withstand 400 Psi of positive pressure
- Brass T adapter, hanging hook and carrying case included
- Designed and manufactured in the U.S.A. with U.S. and globally sourced components

VG100A:

- Vacuum level indication at Atm (Atmosphere), 5000, 2000, 1000, 500, 250, 100, 50 & 25 microns

VG200:

- Continual digital readout of evacuation process on large, easy to read 5 digit LCD display
- User selectable units: Microns, Torr, in/hg or mBar



Specifications	VG200	VG201	VG100A	VG101
Sensor Type	Self - heated thermistor bridge [with integral temperature compensation from 32 to 122° F (0 to 50° C)]			
Field Cleanable Sensor	Yes			
Accuracy	+/- 10% Of Reading		+/- 10% Value Of Lighted LED	
Display Type	5 Digit LCD		9 High Intensity LEDs	
Display Auto-Off	After 5 Minutes Of Operation			
Operating Vacuum Range	Atmospheric pressure to 0 microns		Atmospheric pressure to 25 microns	
Maximum Working Pressure	400 Psig			
Operating Temp Range	Compensated (accuracy as stated): 32°F - 122°F (0°C - 50°C) Non-compensated: Add +/- 0.5% error for every °C outside compensated range			
Storage Temperature	-22° F to 185° F (-30° C to 85° C)			
Operating & Storage Humidity	0 - 95%, Non-condensing			
Power Source	One 9V Alkaline Battery (ANSI 1604AC – IEC 6LR61), included			
Battery Life	20 hr continuous use		18 hr continuous use	
Battery Indicator	Battery symbol with 3 segment Power Level Bar Graph		Symbol for 500 Microns Glows	
Weight (Excluding Battery)	5.5 oz (156 g)		4.8 oz (136 g)	
Dimensions	2.7" dia. by 1.6" Dp x 5" H (68 mm Dia. x 40 mm Dp x 124 H)			
Mechanical Connection	Standard 1/4" female SAE refrigerant hose w/core depressor	1/8" NPT thread connection	Standard 1/4" female SAE refrigerant hose w/ core depressor	1/8" NPT thread connection

GAUGE ADAPTERS

The **AVT45/48/87** are premium built brass adapters. The **AVT45** is included for use with the **VG100A & VG200** (purchased separately for **VG201 & VG101**) and has a 1/4" SAE male to 1/4" SAE male to 1/4" SAE swivel female tee.

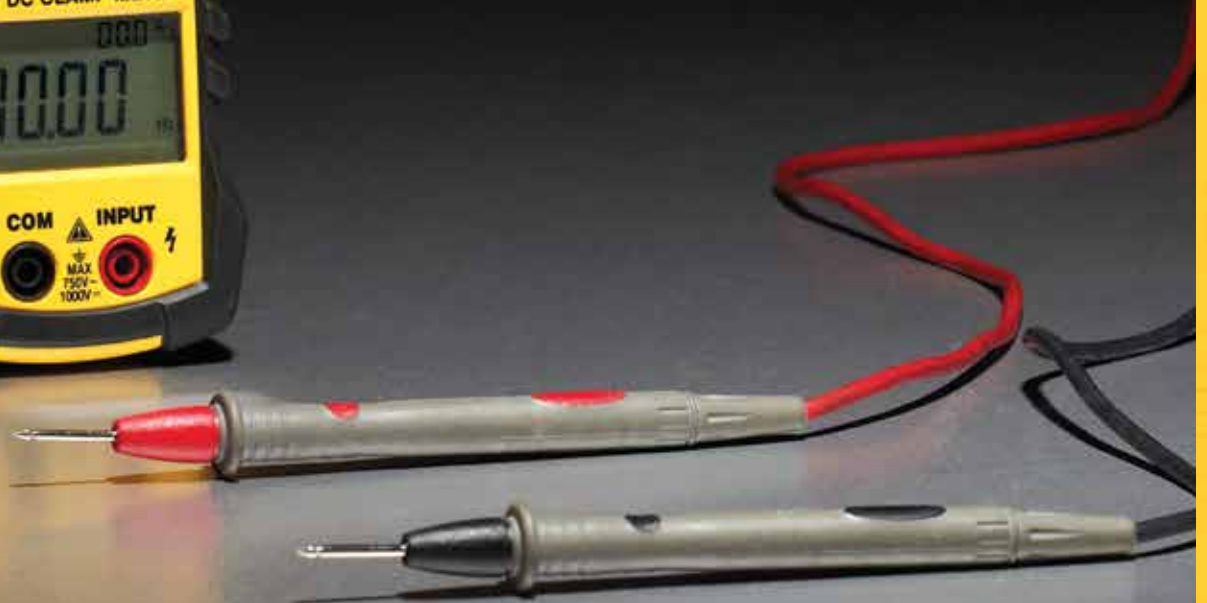


VACUUM GAUGE ACCESSORIES & SPARE PARTS FOR VG200, VG201, 100A, VG101

AVT44	1/4" SAE female hex nut x 1/4" SAE male x 1/4" SAE male w/cap & core
AVT45	1/4" SAE female knurl nut x 1/4" SAE male x 1/4" SAE male w/cap & core
AV87	1/4" SAE male x 1/2-20" SAE female x 1/2-20" SAE male tee adapter
VGXC	Carrying case for VG Series
VGXH	Hanging hook for VG Series

ELECTRICAL & SPECIALTY METERS

MEASURE WITH CONFIDENCE



DIGITAL CLAMP METER

The **AC750** is a multi-functional AC/DC clamp meter and hosts an array of enhanced features such as ability to capture true InRush measurements, non-contact voltage detection, and data logging of output readings to a PC (USB connection cable included).

FEATURES AND BENEFITS

- Versatile for testing AC/DC voltage, AC/DC current, resistance and frequency
- True RMS AC measurement
- Max/min value measurement
- Audible continuity and diode test
- Non-contact voltage detection
- Integrated clamp light and LCD backlight
- Auto zero key for DCA measurement
- Auto/Manual range, auto power off
- Secondary injection molded case, safety as per IEC1010 1000V CAT III
- Includes **DMXTL** CAT 3, 1000V test leads (shown below)



AC750



USB data connection



Extra strength grip clamp



Built-in flashlight



Back view

AC750 DIGITAL CLAMP METER SPECIFICATIONS

Display	6000 count dual display
Range Control	Auto range mode
Battery	9V battery (one piece)
Dimensions (W,H,D)	8.8" x 3.4" x 1.3" (225 mm x 86 mm x 33 mm)
Weight	0.70 lb (320 g)

DMXTL 1000V CAT 3 TEST LEADS



Captures True
Motor InRush Current



Includes Built-in Data
Logging with Software

**DMXTL (Replacement
Probes For AC750)**



AM50
CE N11445

VELOCITOR™ AIR VELOCITY METER

A professional grade, precision, hand held, detached vane anemometer that provides fast, accurate air velocity measurements for balancing HVAC systems or determining CFM calculations. Includes large ¾" display digits and low battery indicator, as well as Data Hold, Max Hold (°F,°C); Function Selection (°F,°C, Anemometer); Units Selection (m/s, ft/min, Knots, Km/Hr). Kit also includes a convenient K Type thermocouple integrated into the remote vane providing quick measurement of grill/duct outflow temperatures from 32° to 122°F (0° to 50°C). An easy-to-read chart allows quick conversion of air velocity measurements into CFM data. Also included is an instruction manual, CFM Chart (Grill Size, Free Air), 9 V battery, molded carrying case. Factory calibrated.

AM50 AIR VELOCITY METER SPECIFICATIONS

Temperature Sensor	K-type thermocouple			
Average Period (Seconds) for Wind Speed Measurement	Feet/Minute	~1.2		
	Meters/Second	~0.6		
	Knots	~1.2		
	Km/Hr	~2.2		
Flex Cord	5'			
Power Consumption	Approx 6 mA			
Battery Life	9V			
Battery Type	50 hr (for 300 mA-hr battery)			
Operating Pressure	500 mb ~ 2 Bar			
Operating Temperature Range (Meter)	32°F to 122°F (0°C to 50°C)			
Operating Temperature Range (Vane)	32°F to 140°F (0°C to 60°C)			
Operating Humidity for Thermocouple	<80% RH			
Storage Temperature Range	-40°F to 140°F (-40°C to 60°C)			
Bearing	Ultralow friction sapphire jewel			
Weight	12.3 oz (350 g)			
Mounting Nut	¼" x 20			
Dimensions (L x W x H)	Inch: 6.6" x 3.5" x 1"; mm: 168 x 88 x 26			
Units	Range	Threshold	Resolution	Accuracy
Feet/Minute	0 to 8,800	60	0.1	±3% or 0.1
Meters/Second	0 to 45	0.3		
Kilometers/Hour	0 to 140	1.0		
Knots	0 to 88	0.6		

TECH-SET™ AUTO-RANGING DIGITAL MULTIMETER CAT III 600V

The **DM350** is a Multi-Functional Meter and is designed to international safety standard IEC1010 CAT III 600V. The **DM350** is encased in a secondary injection mold and supports such features as auto ranging, data hold and maximum value measurement.

DM350 AUTO-RANGING DIGITAL MULTIMETER SPECIFICATIONS

Display	4 digit large character LCD
Range Control	Auto range mode
Battery	(2) 1.5V AA batteries
Dimensions	158 x 74 x 31mm
Weight	Approx. 220g (including batteries)
DC Voltage	200m / 2 / 20 / 200 / 600V ±0.7%
AC Voltage	200m / 2 / 20 / 200 / 600V ±0.7%
DC Current	200µ / 2000 µ / 20m / 200mA ±1.2%, 2/10A±2.0%
(with optional clamp)	200/2000A (0.1mV/0.1A) ±1.2%
AC Current	200 µ / 2000 µ / 20m / 200mA ±1.5%, 2/10A±3.0%
(with optional clamp)	200/2000A (0.1mV/0.1A) ±1.5%
Resistance	200 / 2k / 20k / 200k / 2M ± 1.2%; 20M ± 2.0%
Temperature	-20°C - 1000°C ± 3.0%, 0°F ~ 1800°F ± 3.0%
Capacitance	20n / 200n / 2µ / 20µ / 200µ / 2000µF ± 4.0%



CE N11445 DM350

Electrical & Specialty Meters



SM150
 CE N11445

SOUND LEVEL METER

A professional grade, hand held, lightweight sound level meter for measuring noise levels from 35 to 130dB. Common applications include monitoring sound output from HVAC/R compressors, blowers, health and safety requirements, offices, factory machinery, airports, auditoriums, studio acoustics, etc. Features switches for Hi/Lo dB, slow/fast/impulse, and A & C Weighting. Includes a large, 4 digit LCD display, maximum hold (captures & holds maximum noise level), Over/under range indicator, peak and average response settings. Includes a 3.5 mm output jack for downloading AC or DC signals to a frequency analyzer, level recorder, FFT analyzer, graphic recorder, etc. Kit includes instruction manual, foam windscreen, 3.5 mm plug, calibration screwdriver, 9 V battery, foam padded carrying case. Factory calibrated. CE approved. Meets or exceeds ANSI S1.4 Type 2; IEC 61672-1 Class 2.

TECH-SET™ DIGITAL CLAMP METER

The **AC400** is a auto-ranging clamp on meter. The **AC400** is designed to international safety standard IEC1010 CAT III 600V. The **AC400** is encased in a secondary injection mold and supports such features as auto ranging, data hold and maximum value measurement.



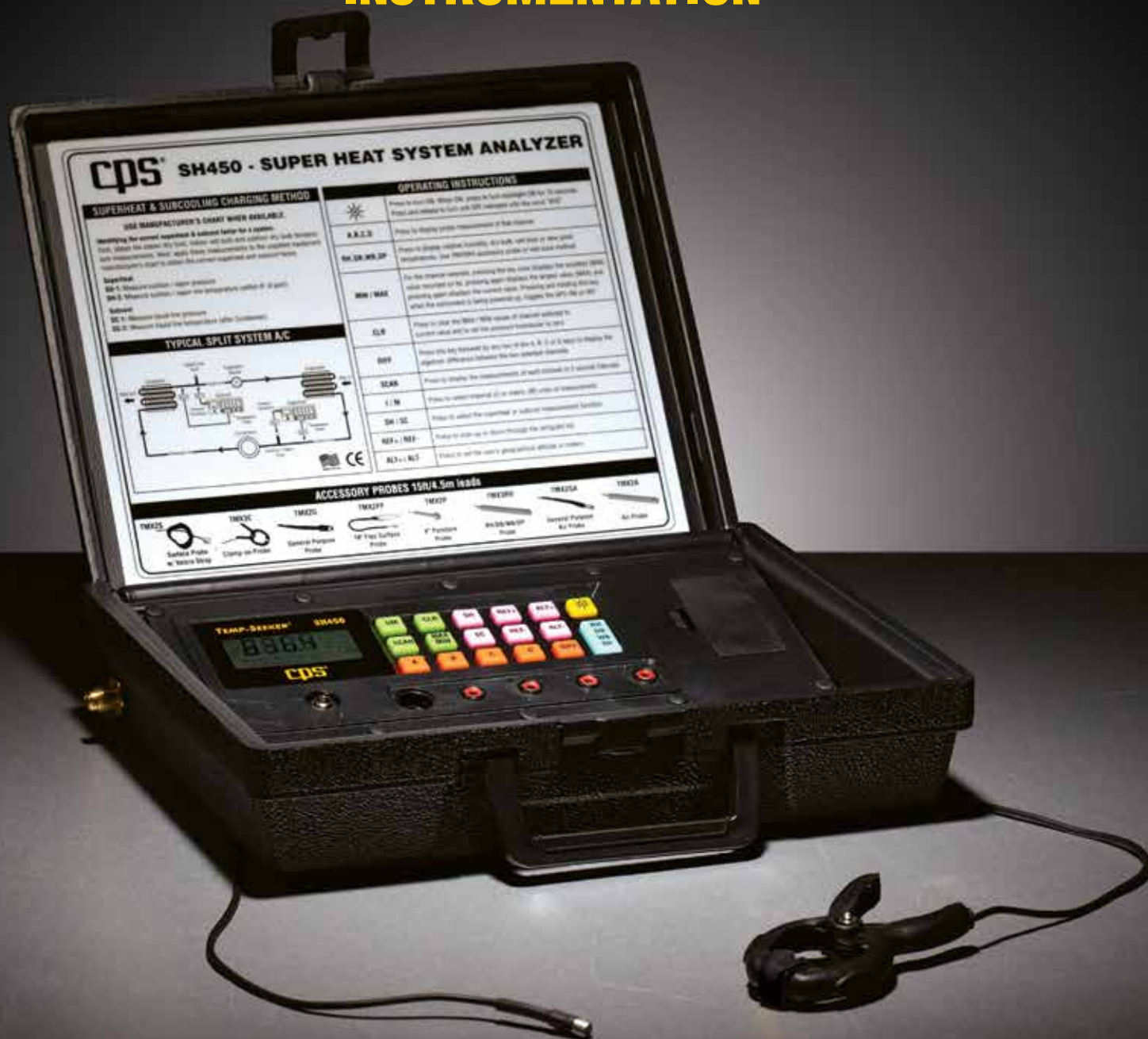
AC400
 CE N11445

SM150 SOUND LEVEL METER SPECIFICATIONS

Frequency Range	20 Hz ~ 8KHz
Measuring Level Range	35~ 130 dB
Frequency Weighting	A/C
Time Weighting	Fast (125 mS), Slow (1 sec.) Impulse (35 mS)
Microphone	½" Electret Condenser
Display	LCD (4 Digits)
Resolution	0.1 dB
Display Period	0.5 sec.
Level Ranges	Lo (35-95dB); Hi (65~130dB)
Accuracy	±1.4dB (Under Reference Conditions)
Dynamic Range	65 dB
Alarm Function	"OVER" displays when input out of range
Weight	12.3 oz (350 g)
Mounting Nut	¼" x 20
Dimensions (LxWxH)	Inch: 6.6" x 3.5" x 1"; mm: 168 x 88 x 26
Maximum Hold	Hold readings, with decay , 1 dB/3 minutes
Calibration	Electrical calibration via internal oscillator (1 KHz) sine wave
AC Output	0.6 Vrms at FS (full scale), output impedance approx. 5KΩ
DC Output	10mV/dB, output impedance approx. 5KΩ
Power Supply	One 9V battery
Power Life	Approx 50 hr (alkaline)
Operating Temperature Range	32° F to 104°F (0°C to 40°C)
Operating Humidity Range	25% to 90% RH
Storage Temperature	14°F to 140°F (-10°C to 60°C)
Storage Humidity	10% to 70% RH
Dimensions (L x W x H)	Inch: 9.4" x 2.7" x 0.98" mm: 240 x 68 x 25
Weight	7.5 oz (215 g)

ELECTRONIC TEMPERATURE & SYSTEM MEASUREMENT

INNOVATIVE SYSTEM ANALYSIS INSTRUMENTATION



SH450 MULTI-FUNCTION SUPERHEAT THERMOMETER & SYSTEM ANALYZER

The **SH450** system analyzer is a versatile diagnostic tool for accurately measuring and evaluating the performance of today's advanced HVAC/R systems. Measurement capabilities include pressure, superheat, sub cooling, relative humidity, wet bulb, dry bulb and dew point with a range of highly accurate, job specific probes and sensors. The unit is also an advanced multi-channel thermometer, incorporating 4 discrete temperature channels with temperature differential between any 2 of the 4 inputs, min/max, scan and data record functions. Powered by one 9V alkaline battery (included), the unit is designed for portability, yet can still be powered via an optional 110V power supply for permanent, stationary applications.

The versatile **SH450** comes standard with one clamp-on temperature probe **TMX3C**, one Velcro™ strap pipe probe, one general purpose temperature probe **TMX2G** and a six pack of wet bulb socks **TMX3WB**. Optional accessory probes are shown on page 46 and offer the convenience of interchangeable use with other CPS manufactured products including our advanced line of digital manifolds.



SH450

SH450 SUPERHEAT/SUBCOOL SPECIFICATIONS

Pressure Range	-14.7 Psig to 725.0 Psig (-100 kPa to 5000 kPa)
Pressure Accuracy	±1% of reading or ± 0.5 Psig (± 3.5 kPa)
Pressure Units	Psig, kPa, bar, Hg, kg/cm2
Proof Pressure	1000 Psi (7000 KPa)
Dew or Bubble Saturation Temperature	±1.8°F (±1.0°C)

SH450 TEMPERATURE & HUMIDITY SPECIFICATIONS

Measurement Temperature Range	-40°F to +300°F (-40°C to +150°C) Actual temp range depends on the probe being used
Temperature Resolution	±0.1°F or °C
Superheat/Subcool Accuracy	±0.4°F / ±0.2°C from 14.0°F to 158°F / -10.0°F to 70°C; 0.6°F / 0.3°C elsewhere in the range
RH Range	0 to 100%RH
RH Accuracy (TMX3RH)	±1.8%RH from 10 to 90%RH; ± 3% elsewhere in the range
DB Accuracy (TMX3RH)	±1.2% of reading ± 1.0°F from -40°F to 200°F (± 1.2% of reading ± 0.5°C from -40°C to 90°C)

SH450 GENERAL SPECIFICATIONS

Power Source	9V alkaline battery or optional TMX3PS AC adapter for 100 to 240VAC (40 to 60 Hz) - USA Plug
Battery Life	30hr continuous use
Automatic Power Off	After 10 minutes of inactivity
Dimensions	12" x 10" x 3" (30.5 x 25.4 x 7.6cm)
Weight	3lb (1.4 kg) with probes
Warranty	1 year

SH450 KEY FEATURES:

- Integrated 90+ refrigerant PT (pressure/temperature) table
- Four discrete temperature channels
- Superheat and subcool measuring functions
- Displays bubble and vapor saturation temperatures
- Direct relative humidity and wet bulb measurements
- Temperature differential with min / max memory
- Stainless steel pressure-vacuum sensor with a range of -14.7 Psi to 725 Psi
- Reads in Psig, KPa, bar, Hg, kg/cm2
- High accuracy silicon humidity transducer probe port
- Operates on 9V battery or optional wall transformer
- Auto-off or continuous on mode
- Large 4-digit backlit display
- Calibrated to NIST traceable standards
- Includes: general purpose probe **TMX2G**; clamp-on surface probe **TMX3C**; 9V alkaline battery and owner's manual



Premium build pressure port

TM360 SERIES, 4 STATION THERMO-PSYCHROMETER

TM360 Series are professional grade instruments that can accommodate all your temperature, humidity, dry/wet bulb and dew point measurements. TM360 incorporates 4 discrete temperature ports capable of min/max and memory functions including temperature differential between any 2 of the 4 available ports. Press the SCAN key and the display will alternate between all 4 ports in 3 second intervals, providing continuous monitoring of multiple probe points during critical system diagnosis.

A dedicated special purpose port accommodates an optional state-of-the-art silicon humidity transducer probe for fast and accurate measurements during superheat calculations. Housed in a rugged polyethylene case, the TM360 is engineered to provide laboratory accuracy in rough field conditions. A generous probe storage area is provided to contain all your job specific probes.



TM360 & TM360C

TM360 SERIES THERMO-PSYCHROMETER SPECIFICATIONS

Temperature Resolution	±0.1°F or °C
Temperature	±0.4°F / ±0.2°C from 14.0 to 158°F -10.0 to 70°C; 0.6°F / 0.3°C elsewhere in the range
RH Range	0 to 100%RH
RH Accuracy (TMX3RH)	±1.8% RH from 10 to 90%RH; ± 3% elsewhere in the range
DB Accuracy (TMX3RH)	±1.2% of reading ± 1.0°F from -40°F to 200°F (± 1.2% of reading ± 0.5°C from -40°C to 90°C)

TM360 SERIES GENERAL SPECIFICATIONS

Power Source	9V alkaline battery or optional TMX3PS AC adapter for 100 to 240VAC (40 to 60 Hz)
Battery Life	30hr continuous use
Automatic Power	Off After 10 minutes of non-use, or user selectable continuous ON mode
Backlight	15 seconds
Dimensions	12" x 10" x 3" (30.5cm x 25.4cm x 7.6cm)
Weight	3lb (1.4 kg) with probes
Warranty	1 year

TM360 KEY FEATURES:

- Four discrete temperature channels
- High accuracy silicon humidity transducer probe port
- Large 4-digit, easy-to-read, backlit display
- Min/Max and memory functions
- Temperature differential between any 2 of the 4 temperature ports
- Direct relative humidity and wet bulb measurements
- Calibrated to NIST traceable standards
- Auto-off after 10 minutes of non-use or continuous ON mode
- Operates 30 continuous hr on (1) 9V alkaline battery
- Integrated battery eliminator jack
- Rugged polyethylene carrying case
- Large probe storage area
- Switchable °C/°F
- TM360 includes accessory probes **TMX2A, TMX2G, TMX2S**
- TM360C includes accessory probes **TMX2A, TMX2S, TMX3C**

**ACCESSORIES & SPECIFICATIONS
FOR USE WITH SH450, TM360 AND TM360C**

for Use With



TMX2A



TMX2G



TMX2GA



TMX2P



TMX2S



TMX3C



TMX2RH



TMX3RH

Item	Description	Common Uses	Qty	Operating Temperature Range	for Use With		
					TM360	TM360C	SH450
TMX2A	Moving Air Probe, 15' (4.5 m) Lead	Air: Ducting, registers, air movement across condensers, ambient air.	1	-40°F to 221°F (-40C to +105°C)	Yes*	Yes*	Yes
TMX2G	General Purpose Probe, 15' (4.5 m) Lead	Surface, Air, Liquids: Copper pipe, ambient air, RH wet sock method.	1	-40°F to 257°F (-40C to +125°C)	Yes*	n/a	Yes*
TMX2GA	General Purpose Air Probe, 15' (4.5 m) Lead	Air, Surface, Liquids: Ambient air, ducting, registers, air movement across condensers.	1	-40°F to 257°F (-40C to +125°C)	n/a	n/a	Yes
TMX2P	Puncture Probe, 15' (4.5 m) Lead	Surface, Liquids (Shaft Only): Internal temperatures of frozen materials, air ducts.	1	-40°F to 257°F (-40C to +125°C)	Yes	n/a	Yes
TMX2S	Velcro Strap Pipe Probe, 15' (4.5 m) Lead	Surface: Surface temperatures of copper tubing	1	-40°F to 257°F / -40°C to +125°C	Yes*	Yes*	Yes
TMX3C	Clamp-On Surface Probe, 15' (4.5 m) Lead	Surface: Surface temperatures of copper tubing	1	-40°F to 221°F (-40C to +105°C)	Yes	Yes*	Yes*
TMX2RH	Relative Humidity / Dewpoint Probe	Specialty RH Probe: Measure indoor air quality, set/troubleshoot humidity devices	1	-40°F to 194°F (-40C to +90°C)	Yes	Yes	No
TMX3RH	Relative Humidity / Dry Bulb / Wet Bulb / Dew Point Probe	Specialty RH Probe: Measure indoor air quality, set/troubleshoot humidity devices	1	-40°F to 194°F (-40C to +90°C)	Yes	Yes	Yes
TMX3WB	Wet Bulb Socks	for Use With TM360	6	-40°F to 194°F (-40C to +90°C)	Yes	Yes	n/a
TMX3PS	AC Adapter for 100 to 240V (40-60 Hz)- USA Plug	for TM360, SH450	1	32°F to 140°F (0 C to +60°C)	Yes	Yes	Yes

*Indicates accessory is included with the model

TMINI12 NON-CONTACT THERMOMETER

The **TMINI12** infrared thermometer provides easy, instant temperature measurement over a wide range of applications. **TMINI12** offers convenient one-hand operation, laser point sighting, a backlit LCD display, °C/°F selection, automatic power off feature, built-in LED light, K-Type input for use with optional accessory temperature probes.

Use the **TMINI12** to quickly and easily measure temperatures of registers, ductwork, furnaces, evaporators, condensers, compressors, relays, manifolds, radiators, exhaust systems, thermostats, bearings and more. Includes carrying case and 9V alkaline battery.



Built in LED Light



TMINI12

TECH-SET™ TMINI12 THERMOMETER SPECIFICATIONS

Temperature Range	Temperature -76°F to 932°F (-60°C to 500°C)
D:S (Distance to Spot Size)	12:1
Emissivity	Emmissivity pre-set at 0.95 - adjustable
Accuracy	Accuracy ±2°C (±4°F) or ±2% of reading
Display	Display Digital Backlit LCD
Resolution	Resolution 1°C/F°
Batteries	2 AAA
Warranty	1 year



TMAP



TMAPC



TMDP

TECH-SET™ DIGITAL AND ANALOG POCKET THERMOMETER SPECIFICATIONS

Item	Description	Temperature Range	Probe Length	Probe Cord Length
TM50	Hand held digital pocket thermometer with stainless steel puncture probe	-58° to 572°F (-50° to 300°C)	3.8" (96 mm)	4' (122 cm)
TMDP	Digital pocket thermometer with stainless steel probe	-58° to 302°F (-50° to 150°C)	5" (127 mm)	n/a
TMAP	Analog pocket thermometer (Fahrenheit scale) with 1" dial and stainless steel probe and pocket clip	0°F to 220°F	5" (127 mm)	n/a
TMAPC	Analog pocket thermometer (Celsius scale) with 1" dial and stainless steel probe and pocket clip.	-40°C to 80°C	5" (127 mm)	n/a

TM50 DIGITAL POCKET THERMOMETER

A step above the standard pocket thermometer, the **TM50** is packed full of features, including a user selectable temperature alarm, a countdown timer, min/max, °F/°C selectable and memory functions. The unit incorporates a highly accurate stainless steel 3.8" (96 mm) puncture probe with a 4' (122 cm) cord. Temperature measurement range is -58° to 572°F (-50° to 300°C). The **TM50** operates on a single AAA alkaline battery with 25 hr of battery life and a low battery indicator.



TM50



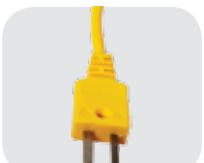
TMXSK90



Coiled lead



Flat-spring ribbons



K-type accessory probe



Ribbed handle

TMXSK90 K-TYPE TEMPERATURE PROBE

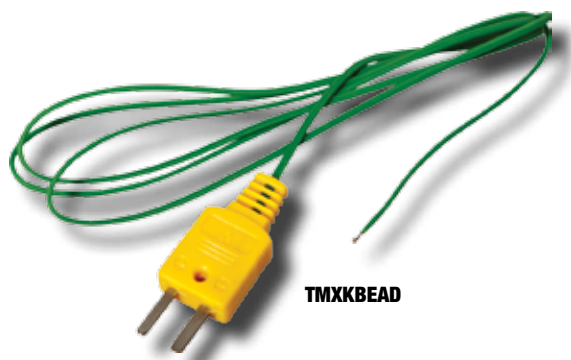
The **TMXSK** is the fastest and most accurate handheld K-type surface probe providing accurate readings in less than 5 seconds. The sensor is made from flat-spring ribbons of thermocouple material for contact on uneven surfaces. A square, ribbed handle for grip and a 3' coiled lead for durability and long reach. The exposed junction provides for fast response and is compatible with any other instrument with a K-type input.

TMXSK TEMPERATURE PROBE

Identical to the **TMXSK90**, but with a straight probe and round, ribbed handle.



TMXSK



TMXKBEAD

TMXKBEAD TEMPERATURE PROBE

The **TMXKBEAD** is a standard K-type bead probe ideally suited for getting fast results when measuring temperature in a variety of media. This 36" long (1 m) probe provides accurate readings in less than 5 seconds over -58° to 400° F (-50 to 204° C) range.

THERMOMETER ACCESSORY SPECIFICATIONS

TMXSK90	K-Type Surface Probe (Angled, 90 Degree Head)	Max Temp: 752°F (400°C)
TMXSK	K-Type Surface Probe (Straight Head)	Max Temp: 752°F (400°C)
TMXKBEAD	K-Type Flexible 36" Probe (0,9 M)	Max Temp: 400°F (204°C) Min Temp: -58°F (-50°C)



Used as seen above on the CPS TMINI12 and is compatible with any other instrument with a K Type input.

BLACKMAX[®]

DIGITAL MANIFOLDS

INDUSTRY LEADING ACCURACY



1.800.561.8187

www.itm.com

information@itm.com

Perform any function on your manifold using your iPhone, iPad, or Android device.

BLACKMAX® WIRELESS DIGITAL MANIFOLDS

CPS is pleased to announce the introduction of a mobile application (APP) for either iOS or Android operated mobile devices that will communicate and control wireless versions of BLACKMAX Digital Manifolds.

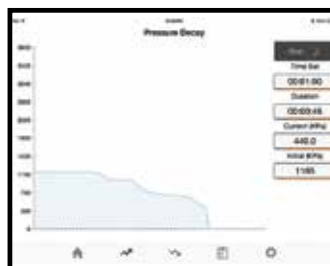
FULL SYSTEM CONTROL FROM ANY SMART DEVICE

Monitor full system measurements as they happen. Export, save or e-mail results to your company, yourself or your customer.

- Perform and monitor full system measurements—in real time
- Fast, convenient touch screen control
- Perform all key manifold functions without the need to physically touch the manifold
- Data logging
- Alternate views for smaller mobile devices
- Color scheme change according to refrigerant
- Real-time information displayed on screen
- Perform multiple system tests
- Pressure decay test can be viewed, saved, stored or emailed as a graph
- Support over 90 common refrigerants, with quick access to your favorite five
- Change manifold units; (Pressure, Temperature, Vacuum)



Small screen option



Pressure decay test chart

Time	Pressure (PSI)	Temperature (C)	Vacuum (inHg)
00:01:00	315.0	10.2	0
00:01:30	315.0	10.2	0
00:02:00	315.0	10.2	0
00:02:30	315.0	10.2	0
00:03:00	315.0	10.2	0
00:03:30	315.0	10.2	0
00:04:00	315.0	10.2	0
00:04:30	315.0	10.2	0
00:05:00	315.0	10.2	0
00:05:30	315.0	10.2	0
00:06:00	315.0	10.2	0
00:06:30	315.0	10.2	0
00:07:00	315.0	10.2	0
00:07:30	315.0	10.2	0
00:08:00	315.0	10.2	0
00:08:30	315.0	10.2	0
00:09:00	315.0	10.2	0
00:09:30	315.0	10.2	0
00:10:00	315.0	10.2	0
00:10:30	315.0	10.2	0
00:11:00	315.0	10.2	0
00:11:30	315.0	10.2	0
00:12:00	315.0	10.2	0
00:12:30	315.0	10.2	0
00:13:00	315.0	10.2	0
00:13:30	315.0	10.2	0
00:14:00	315.0	10.2	0
00:14:30	315.0	10.2	0
00:15:00	315.0	10.2	0
00:15:30	315.0	10.2	0
00:16:00	315.0	10.2	0
00:16:30	315.0	10.2	0
00:17:00	315.0	10.2	0
00:17:30	315.0	10.2	0
00:18:00	315.0	10.2	0
00:18:30	315.0	10.2	0
00:19:00	315.0	10.2	0
00:19:30	315.0	10.2	0
00:20:00	315.0	10.2	0
00:20:30	315.0	10.2	0
00:21:00	315.0	10.2	0
00:21:30	315.0	10.2	0
00:22:00	315.0	10.2	0
00:22:30	315.0	10.2	0
00:23:00	315.0	10.2	0
00:23:30	315.0	10.2	0
00:24:00	315.0	10.2	0
00:24:30	315.0	10.2	0
00:25:00	315.0	10.2	0
00:25:30	315.0	10.2	0
00:26:00	315.0	10.2	0
00:26:30	315.0	10.2	0
00:27:00	315.0	10.2	0
00:27:30	315.0	10.2	0
00:28:00	315.0	10.2	0
00:28:30	315.0	10.2	0
00:29:00	315.0	10.2	0
00:29:30	315.0	10.2	0
00:30:00	315.0	10.2	0
00:30:30	315.0	10.2	0
00:31:00	315.0	10.2	0
00:31:30	315.0	10.2	0
00:32:00	315.0	10.2	0
00:32:30	315.0	10.2	0
00:33:00	315.0	10.2	0
00:33:30	315.0	10.2	0
00:34:00	315.0	10.2	0
00:34:30	315.0	10.2	0
00:35:00	315.0	10.2	0
00:35:30	315.0	10.2	0
00:36:00	315.0	10.2	0
00:36:30	315.0	10.2	0
00:37:00	315.0	10.2	0
00:37:30	315.0	10.2	0
00:38:00	315.0	10.2	0
00:38:30	315.0	10.2	0
00:39:00	315.0	10.2	0
00:39:30	315.0	10.2	0
00:40:00	315.0	10.2	0
00:40:30	315.0	10.2	0
00:41:00	315.0	10.2	0
00:41:30	315.0	10.2	0
00:42:00	315.0	10.2	0
00:42:30	315.0	10.2	0
00:43:00	315.0	10.2	0
00:43:30	315.0	10.2	0
00:44:00	315.0	10.2	0
00:44:30	315.0	10.2	0
00:45:00	315.0	10.2	0
00:45:30	315.0	10.2	0
00:46:00	315.0	10.2	0
00:46:30	315.0	10.2	0
00:47:00	315.0	10.2	0
00:47:30	315.0	10.2	0
00:48:00	315.0	10.2	0
00:48:30	315.0	10.2	0
00:49:00	315.0	10.2	0
00:49:30	315.0	10.2	0
00:50:00	315.0	10.2	0
00:50:30	315.0	10.2	0
00:51:00	315.0	10.2	0
00:51:30	315.0	10.2	0
00:52:00	315.0	10.2	0
00:52:30	315.0	10.2	0
00:53:00	315.0	10.2	0
00:53:30	315.0	10.2	0
00:54:00	315.0	10.2	0
00:54:30	315.0	10.2	0
00:55:00	315.0	10.2	0
00:55:30	315.0	10.2	0
00:56:00	315.0	10.2	0
00:56:30	315.0	10.2	0
00:57:00	315.0	10.2	0
00:57:30	315.0	10.2	0
00:58:00	315.0	10.2	0
00:58:30	315.0	10.2	0
00:59:00	315.0	10.2	0
00:59:30	315.0	10.2	0
01:00:00	315.0	10.2	0

Data Logging

Service Manifolds and Gauges

BLACKMAX® DIGITAL MANIFOLDS

BLACKMAX® digital manifolds from CPS Products, Inc. combine the latest manifold design and electronic measurement features into one easy-to-use, accurate and water resistant product in a rugged nylon plastic housing, incorporating a durable elastomeric keypad and large backlit LCD display. Two and four valve manifolds are designed and manufactured in the U.S.A. with U.S. and globally sourced components.

BEST-IN-CLASS ACCURACY

- Pressure: 1% of reading pressure
- Temperature: superior thermistor sensors for +/- 0.2°C (+/- 0.4°F) accuracy
- Vacuum: direct system attachment achieves +/- 10 microns from 0 to 25,000 microns

SIMPLICITY AND VERSATILITY

- One key ON/OFF and function select
- Preloaded with over 93 refrigerants
- Compatible with R744 subcritical CO2 refrigerants
- One-touch access to your 5 favorite refrigerants
- Performs pressure decay and vacuum rise tests
- Uses 4AA alkaline or rechargeable batteries
- 25 hours of continuous battery life with backlight; 40 hours without

FULL SYSTEM MEASUREMENT

- 2 Pressures, 2 temperatures and vacuum (using MDXVG accessory)
- Vacuum rise and pressure decay test functions
- Simultaneously displays:
 - HI & LO Pressures, Superheat & Subcooling
 - HI & LO Pressures, T1 & T2
 - HI & LO Pressures, Saturation T1 & Saturation T2
 - HI & LO Pressures, Displays T1, T2 & Delta T

RUGGED DESIGN

- Rain-proof, high strength glass-filled nylon housing
- Precision machined anodized aluminum manifold body
- Proprietary Vortech™ valve systems (certified to 15 microns)
- High-impact polycarbonate LCD window
- Advanced sight glass design



MD100



MD50



BLACKMAX® Digital Manifolds	Number Of Valves	Wireless	5' Black & Chrome Ball Valve Charging Hoses 3 Pk (HP5BKEZ)	5' Heavy Duty Black & Chrome Vacuum Hose (1) (HV5Z)	Thermistor Sensor with 6' leads (MDXCP) x 2	Vacuum Gauge Accessory Kit* (MDXVG)	Rechargeable NiMH Battery & Universal Plug Kit** (MDXBK)	Soft Case for MD Series (MDXSC)
MD50	2				✓	Optional	Optional	Optional
MD50W		✓			✓	Optional	Optional	Optional
MD50HE			✓		✓	Optional	Optional	Optional
MD50WHE		✓	✓		✓	Optional	Optional	Optional
MD50VHE			✓		✓	✓	Optional	Optional
MD50VVHE		✓	✓		✓	✓	Optional	Optional
MD100	4		Optional		✓	Optional	Optional	Optional
MD100W		✓			✓	Optional	Optional	Optional
MD100HE			✓	✓	✓	Optional	Optional	Optional
MD100WHE		✓	✓	✓	✓	Optional	Optional	Optional
MD100VHE			✓	✓	✓	✓	Optional	Optional
MD100VVHE		✓	✓	✓	✓	✓	Optional	Optional

*Includes Vacuum Accessory & 1 AVT45 1/4" SAE Brass Tee Connector. **Includes 1 Universal Charger With 5' Cord; 4 rechargeable NiMH batteries, 1 U.S. Plug, 1 Euro Plug, 1 Australia/New Zealand/China Plug, 1 UK/Ireland/Singapore/Hong Kong Plug.



Service Manifolds and Gauges

BLACKMAX[®]

BLACK & CHROME MANIFOLDS

ENGINEERED FOR PERFORMANCE
AND RELIABILITY



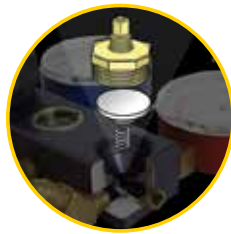
1.800.561.8187

www.**itm**.com

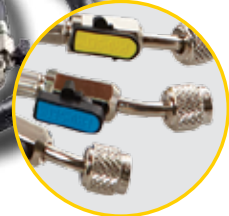
information@itm.com

BLACKMAX® BLACK & CHROME MANIFOLDS WITH VORTECH™ VALVES

- Two and four valve manifolds designed and manufactured in U.S.A. with U.S. and globally sourced components
- Proprietary Vortech™ valves (certified to 15 microns)
- Black anodized aluminum body with large sight glass
- Heavy duty nickel plated metal handles
- Auxiliary center access port with Schrader valve (2 valve units)
- Protective gauge boots and packaged in display tin
- Superior refrigerant metering and control



MV4H4P5EZ



BLACKMAX® BLACK & CHROME VORTECH™ VALVE MANIFOLDS

Specifications		3 1/8" (80 mm)	
		North America	South America
Gauge Description	Refrigerant Scales	R134a, R22, R404a, R410a	R410a, R22, R407c
	Gauge Size / Type	Class 1.0 accuracy * Gauges built with internal silicon dampening cup for flutter-free operation	
	Pressure Scales	Psi	bar / Psi
	Temperature Scales	°F	°C
Fittings	Manifold & Hose fittings	1/4" SAE 45° fittings	
Two Valve Manifolds	3 Premium 5' Pro-Set® Black & Chrome Hoses	MV2H4P5Z	MV2O4P5Z
	3 Premium 5' Pro-Set® Black & Chrome BV Hoses	MV2H4P5EZ	MV2O4P5EZ
Four Valve Manifolds	3 Premium 5' Pro-Set® Black & Chrome Hoses	MV4H4P5Z	MV4O4P5Z
	3 Premium 5' Pro-Set® Black & Chrome BV Hoses	MV4H4P5EZ	MV4O4P5EZ
Replacement Gauges	Low Side Gauge	RGH4L	RG04L
	High Side Gauge	RGH4H	RG04H
	Gauge Boot	RGX80B	RGX80B



RGH4L



RGH4H



MV4H4Z

BLACKMAX® BLACK & CHROME BARRIER CHARGING HOSES



HP5BKEZ
5' premium barrier ball valve chrome charging hoses (black)



HP5BKZ
5' premium chrome charging hoses (black)



HV5Z
5' premium 3/8" chrome hose (black)

BLACKMAX® BLACK & CHROME MANIFOLDS WITH TRIPLE-SEAL VALVES



MBH4P5EZ

- Proprietary Triple Seal valve systems
- 2 valve units designed and manufactured in U.S.A. with U.S. and globally sourced components
- Black anodized aluminum block body
- No flutter gauges with protective boots and rugged metal housings
- Nickel plated 1/4" SAE 45 fittings
- Auxiliary center access port with Schrader valve
- Heavy duty nickel plated metal handles
- Protective gauge boots and packaged in display tin
- Proprietary Vortech™ valves



RGH5L



RGH5H



RGX681B
(Spider Design)



RGX801B
(Ribbed Design)

BLACKMAX® BLACK & CHROME TRIPLE SEAL VALVE MANIFOLDS

Specifications		3 1/8" (80 mm)		2 1/2" (68 mm)	
		North America	South America	North America	South America
Gauge Description	Refrigerant Scales	R134a, R22, R404a, R410a	R410A, R22, R407C	R410a	R134a, R22, R404a, R410a
	Gauge Size / Type	Class 1.0 accuracy		Class 1.6 accuracy	
	Pressure Scales	Psi	bar / Psi	Psi / kPa	Psi
	Temperature Scales	°F	°C	°F / °C	°F
Fittings	Manifold and Hose Fittings	1/4" SAE 45° fittings			
Two Valve Manifolds	Manifold & Gauges Only	MBH4Z	MBO4Z	MBB5Z	MBH5Z
	3 Premium 5' Pro-Set® Black & Chrome Hoses	MBH4P5Z	MBO4P5Z	MBB5P5Z	MBH5P5Z
	3 Premium 5' Pro-Set® Black & Chrome BV Hoses	MBH4P5EZ	MBO4P5EZ	MBB5P5EZ	MBH5P5EZ
Replacement Gauges	Low Side Gauge	RGH4L	RG04L	RGB5L	RGH5L
	High Side Gauge	RGH4H	RG04H	RGB5H	RGH5H
	Gauge Boot	RGX801B Ribbed	RGX801B Ribbed	RGX681B Spider	RGX68SB Spider

Service Manifolds and Gauges

Pro-Set[®]

PREMIUM PISTON SERIES

**PROPRIETARY TRIPLE SEAL VALVES
BEST IN CLASS 1% MEASUREMENT ACCURACY**



1.800.561.8187

www.**itm**.com

information@itm.com

PRO-SET® THE WORKINGMAN'S CHOICE PREMIUM PISTON SERIES

The Workingman's Choice series 2 valve anodized aluminum block body with 1/4" SAE 45° fittings, Triple Seal piston valves, sure grip rubber over metal valve handles, easy-to-read 3 1/8" (80 mm) Class 1.0 accuracy gauges, protective gauge boots, extra access port in center with Schrader valve and hanging hook.

TRIPLE SEAL™ VALVES

- 3 super Neoprene o-ring design
- Back-seating o-ring seals valve nut when fully open
- Floating nylon sealing disk
- Valve stems retract fully to provide maximum flow
- Mirror-like port finish for smooth valve movement



MT2H7P5E



Durable, protective gauge boots



RGH7L



RGH7H

PRO-SET® WORKINGMAN'S CHOICE 2 VALVE MANIFOLDS

Specifications		3 1/8" (80 mm)	
		North America	South America
Gauge Description	Refrigerant Scales	R134a, R22, R404a, R410a	R410a, R22, R407c
	Gauge Size / Type	Class 1.0 accuracy * Gauges built with internal silicon dampening cup for flutter-free operation	
	Pressure Scales	Psi	bar / Psi
	Temperature Scales	°F	°C
Fittings	Manifold and Hose fittings	1/4" SAE 45° fittings	
Two Valve Manifolds	Manifold & Gauges Only	MT2H7	MT207
	3 Premium 5' Pro-Set® Hoses	MT2H7P5	MT207P5
	3 Premium 5' Pro-Set® AB Hoses	MT2H7P5A	MT207P5A
	3 Premium 5' Pro-Set® BV Hoses	MT2H7P5E	MT207P5E
Replacement Gauges	Low Side Gauge	RGH7L	RG07L
	High Side Gauge	RGH7H	RG07H
	Replacement Gauge Boot	RGXBW	RGXBW

TRIPLE SEAL™ PISTON 2 VALVE BLACK BODY SERIES

- 2 valve anodized aluminum block body
- ¼" SAE 45° fittings
- 2 ½" (68 mm) class 1.6 accuracy gauges
- Extra access port in center with Schrader valve and hanging hook



MBDP5E



TRIPLE SEAL™ VALVES

- 3 super Neoprene o-ring design
- Back-seating o-ring seals valve nut when fully open
- Floating nylon sealing disk
- Valve stems retract fully to provide maximum flow
- Mirror-like port finish for smooth valve movement



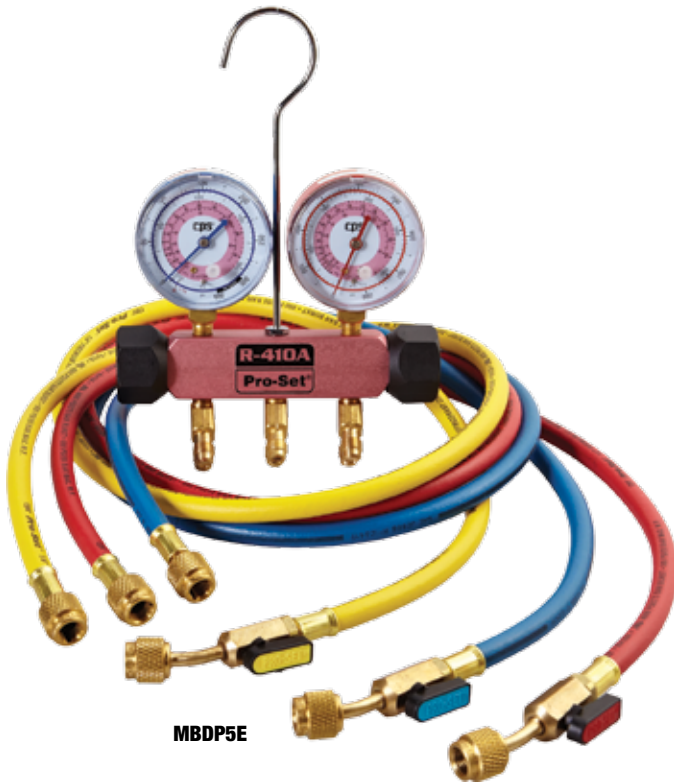
MBH

MBC

MBD

TRIPLE SEAL™ PISTON 2 VALVE BLACK BODY MANIFOLDS

Specifications		2 ½" (68 mm)					
		North America			South America	South America	South America
					Asia	Australia	South America
Gauge Description	Refrigerant Scales	R12, R22, R502	R134a, R22, R404a	R22, R404a, R410a,	R12, R134a, R22	R134a, R22, R404a	R410a, R22, R407c
	Gauge Size / Type	Class 1.6 accuracy					
	Pressure Scales	Psi			Psi / kPa	Psi / kPa	
	Temperature Scales	°F			°F / °C	°C	
Fittings	Manifold & Gauges Only	¼" SAE 45° fittings					
Two Valve Manifolds	Manifold & Gauges Only	MBC	MBD	MBH	MBZ	MBT	MBO
	Three 3' Pro-Set® Hoses	MBCS3	MBDP3	MBHP3	MBZS3	MBTP3	MBOP3
	Three 5' Pro-Set® Hoses	MBCS5	MBDP5	MBHP5	MBZS5	MBTP5	MBOP5
	Three 5' Pro-Set® AB Hoses	NA	MBDP5A	MBHP5A	NA	MBTP5A	MBOP5A
	Three 5' Pro-Set® BV Hoses	NA	MBDP5E	MBHP5E	NA	MBTP5E	MBOP5E
Replacement Gauges	Low Side Gauge	RGCL	RGDL	RGHL	RGZL	RGTL	RGOL
	High Side Gauge	RGCH	RGDH	RGHH	RGZH	RGTH	RGOH



MBDP5E

PISTON PINK BODY MANIFOLD SERIES

Piston series 2 valve anodized aluminum block body with 1/4" SAE 45° fittings, Triple Seal piston valves, 2 1/2" (68 mm) Class 1.6 accuracy gauges, extra access port in center with Schrader valve and hanging hook.

NON-FLUTTER GAUGE

Design with Rugged Metal Housing

FRONT CALIBRATION

Access Port

ANODIZED ALUMINUM

Block Body

EASY-TO-GRAB

Large Knob

TRIPLE SEAL™ VALVES

- 3 super Neoprene o-ring design
- Back-seating o-ring seals valve nut when fully open
- Floating nylon sealing disk
- Valve stems retract fully to provide maximum flow
- Mirror-like port finish for smooth valve movement



MEB



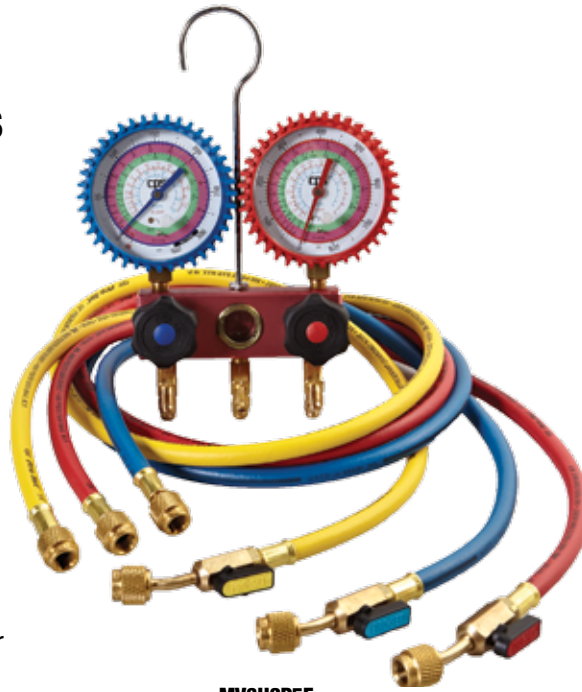
MEH

TRIPLE SEAL™ PISTON 2 VALVE PINK BODY MANIFOLDS

Specifications		2 1/2" (68 mm)		
		North America		South America
				Australia
Gauge Description	Refrigerant Scales	R410a	R410a, R22, R404a	R410a
	Gauge Size / Type	Class 1.6 accuracy		
	Pressure Scales	Psi / kPa	Psi	Psi / kPa
	Temperature Scales	°F / °C	°F	°F / °C
Fittings	Manifold & Gauges Only	1/4" SAE 45° fittings		1/2" - 20 UNF
Two Valve Manifolds	Manifold & Gauges Only	MEB	MEH	MCB
	3 Premium 3' Pro-Set® Hoses	MEBP3	MEHP3	MCBJ3
	3 Premium 5' Pro-Set® Hoses	MEBP5	MEHP5	MCBJ5
	3 Premium 5' Pro-Set® AB Hoses	MEBP5A	MEHP5A	MCBJ5A
	3 Premium 5' Pro-Set® BV Hoses	MEBP5E	MEHP5E	MCBJ5E
Replacement Gauges	Low Side Gauge	RGBL	RGHL	RGBL
	High Side Gauge	RGBH	RGHH	RGBH

VORTECH™ DEEP VACUUM MANIFOLD SERIES

- Two-valve, r410A pink anodized aluminum block body
- 1/4" SAE 45° fittings
- Vortech™ deep vacuum valves
- Extra large sight glass
- Easy-to-read 3 1/8" (80 mm) Class 1.6 accuracy gauges
- Protective gauge boots
- Extra access port in center with Schrader valve and hanging hook



MV3H2P5E



MV3H2



MV3H3



MV13H2



MV13H3

VORTECH™ DEEP VACUUM VALVE MANIFOLDS

Specifications		31/8" (80 mm)			
		North America	North America	South America	South America Australia
Gauge Description	Refrigerant Scales	R410a, R22, R404a, R134a	R410a, R22, R404a, R143a	R410a, R22, R407c	R410a
	Gauge Size / Type	Class 1.6 accuracy			
		* Gauges built with internal silicon dampening cup for flutter-free operation			
			*Oil-Filled		*Oil-Filled
	Pressure Scales	Psi	Psi	Psi / bar	Psi / kPa
	Temperature Scales	°F	°F	°C	°F / °C
Fittings	Manifold & Gauges Only	1/4" SAE 45° fittings			
Two Valve Manifolds	Manifold & Gauges Only	MV3H2	MV3H3	MV302	MV3B3
	3 Premium 5' Pro-Set® Hoses	MV3H2P5	MV3H3P5	MV302P5	MV3B3P5
	3 Premium 5' Pro-Set® AB Hoses	MV3H2P5A	MV3H3P5A	MV302P5A	MV3B3P5A
	3 Premium 5' Pro-Set® BV Hoses	MV3H2P5E	MV3H3P5E	MV302P5E	MV3B3P5E
Four Valve Manifolds	Manifold & Gauges Only	MV13H2	MV13H3	MV1302	MV13B3
	3 Premium 5' Pro-Set® Hoses	MV13H2P5	MV13H3P5	MV1302P5	MV13B3P5
	3 Premium 5' Pro-Set® AB Hoses	MV13H2P5A	MV13H3P5A	MV1302P5A	MV13B3P5A
	3 Premium 5' Pro-Set® BV Hoses	MV13H2P5E	MV13H3P5E	MV1302P5E	MV13B3P5E
Replacement Gauges	Low Side Gauge	RGH2LB	RGH3L	RG02LB	RGB3L
	High Side Gauge	RGH2HB	RGH3H	RG02HB	RGB3H

Service Manifolds and Gauges

BALL VALVE BODY MANIFOLD SERIES

Ball Valve series 2 valve anodized aluminum block body with 1/4" SAE fittings, full flow ball valve design, 2 1/2" (68 mm) Class 1.6 accuracy gauges and hanging hook.



MGO



MGH



MGHP5E

Specifications		2 1/2" (68 mm)	
		North America	South America
Gauge Description	Refrigerant Scales	R410a, R22, R404a	R410a, R22, R407c
	Gauge Size / Type	Class 1.6 accuracy	
	Pressure Scales	Psi	bar / Psi
	Temperature Scales	°F	°C
Fittings	Manifold and Hose Fittings	1/4" SAE 45° fittings	
Two Valve Manifolds	Manifold & Gauges Only	MGH	MGO
	3 Premium 5' Barrier Hoses	MGHP5	MGOP5
	3 Premium 5' Barrier AB Hoses	MGHP5A	MGOP5A
	3 Premium 5' Barrier BV Hoses	MGHP5E	MGOP5E
Replacement Gauges	Low Side Gauge	RGHL	RGOL
	High Side Gauge	RGHH	RGOH

*Tech-Set*TM

BRASS BODY SERIES

THE ORIGINAL MANIFOLD DESIGN



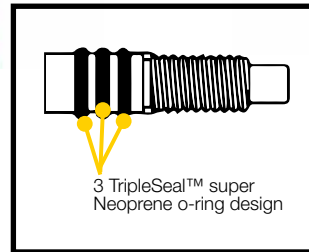
TECH-SET™ BRASS BODY MANIFOLD SERIES

2 valve forged brass body with 1/4" SAE 45° fittings, TripleSeal™ piston valves and hanging hook.

- Quality forged brass body
- Full sized porting for maximum flow
- No flutter gauges with rugged molded housings
- Large easy-to-grip knobs

TRIPLE SEAL VALVES

- 3 super Neoprene o-ring design
- Back-seating o-ring seals valve nut when fully open
- Floating nylon sealing disk
- Valve stems retract fully to provide maximum flow
- Mirror-like port finish for smooth valve movement



TECH-SET™ BRASS BODY 2 VALVE MANIFOLDS & HOSE SETS					
SPECIFICATIONS		N. America	S. America	N. America	S. America
Gauge Description	Refrigerant Scales	R410a, R22, R404a, R134a		R22, R134a, R404a, R507	
	Gauge Size / Type Gauges built with internal silicon dampening cup for flutter-free operation	3-1/8" (80 mm) Class 1.6 accuracy		2-5/8" (68 mm) Class 1.6 accuracy	
	Pressure Scales	Psi/bar	bar/Psi	Psi/bar	bar/Psi
	Temperature Scales	°F	°C	°F	°C
Fittings	Manifold and Hose fittings	1/4" SAE 45° fittings			
Two Valve Manifolds	3 Standard 3' Hoses	NA	NA	M64G3	M63G3
	3 Prem-Flex 5' (1.52 m) Hoses	M62PF5	M61PF5	NA	NA
Replacement Hoses	3 Prem-Flex 3' (0.91 m) Hoses	HPF3	HPF3	HPF3	HPF3
	3 Prem-Flex 5' (1.52 m) Hoses	HPF5	HPF5	HPF5	HPF5
	3 Standard 3' (0.91 m) Hoses	HG3	HG3	HG3	HG3
	3 Standard 5' (1.52 m) Hoses	HG5	HG5	HG5	HG5

MANIFOLD/GAUGE ACCESSORIES AND REPLACEMENT PARTS

A complete line of repair kits, parts and accessories to keep your manifold in brand-new condition. If you are looking for something or are unsure of the part you need, give us a call and let our specialists assist you.



MXC2



ITEM	DESCRIPTION
M2XHA	2-way hose anchor bracket for Vortech™ & diaphragm
M2XRK	Diaphragm valve repair kit: services 2 valves
M4XHA	4-way hose anchor bracket for Vortech™ & diaphragm
M4XRK	Diaphragm valve repair kit: services 4 valves
M5XRK	Diaphragm valve repair kit: services 5 valves
MV2XRK	Vortech™ valve repair kit: services 2 valves
MV4XRK	Vortech™ valve repair kit: services 4 valves
MV5XRK	Vortech™ valve repair kit: services 5 valves
MVXK	Replacement valve handle w/ plugs for Vortech™ manifolds
MXBK	Replacement valve handle for brass manifold
MXC	Plastic carrying case for manifolds
MX2C	Rugged canvas carrying case for manifolds
MXK	Replacement valve handle w/ labels for diaphragm manifolds
MXMH	Hanging hook for all manifolds
MXPK	Replacement valve handle w/ labels for BLACKMAX® manifolds
MXPV	Complete BLACKMAX® piston valve assembly
MXPVO	BLACKMAX® piston valve seals repair kit: services 2 valves



MXVK



MXVKC



MXPK



MXPVO



M2XHA



MXPV



MXMH



M2XRK



MXPVO



MXC



GT SERIES GAS TEST GAUGES

Our **GT Series** are designed to test the integrity of new installations for pressure leaks. Available with either a 3/4" or 1" FPT brass bell.

Simply connect the gauge, pressurize the system using the supplied access port and monitor the easy-to-read 3 1/2" 80 mm gauge for potential pressure drops that would indicate a leak.

GAS TEST GAUGE SPECIFICATIONS

Test Gauge Model	Large 3-1/8" (80 mm) Gauge	Psi (bar) Pressure Scale Range	Gauge Psi (bar) Increments	Brass Bell	Access Valve
GT1	✓	0-30 Psi (0-2 bar)	1 Psi (0.05 bar)	3/4" FPT	✓
GT2	✓	0-100 Psi (0-7 bar)	2 Psi (0.20 bar)	3/4" FPT	✓
GT4	✓	0-30 Psi (0-2 bar)	1 Psi (0.05 bar)	1" FPT	✓



FUEL OIL TEST KIT

The **GT3** is a comprehensive test kit which includes the components necessary to test oil fuel pump performance while diagnosing related burner efficiency issues such as cleaner light-offs and coasting stops.

INCLUDES:

- 2 1/2" gauge, scale 30", 0-150 lbs
- 2 1/2" gauge, scale 30", 0-300 lbs
- 12" hose 1/4" female swivel x 1/4" female 45° swivel
- 1/8 NPT x 1/4 Male SAE adapter
- 1/8 NPT x 1/4 Male SAE 90° adapter
- 1/4 NPT x 1/4 Male SAE adapter
- 1/4 NPT x 1/4 Male SAE 90° adapter
- Carrying Case

CHARGING HOSES

OUR OFFERING IS AS FLEXIBLE AS OUR HOSES



1.800.561.8187

www.**itm**.com

information@itm.com

PRO-SET® CHARGING HOSES

PREMIUM UL/SAE BARRIER REFRIGERANT SERVICE HOSES

- Nylon permeation barrier (Meets SAE J2196)
- Leak-proof 8-sided crimp
- 800 Psi working pressure (per UL1963)
- 4000 Psi burst pressure
- Extra deep knurling on nuts for easy grip
- Adjustable valve core depressor
- Blow off grooves preventing spray back
- R-410A compatible, as well as CFC, HCFC and HFC refrigerants and blends

* UL listed, File SA11622

STANDARD REFRIGERANT SERVICE HOSES

- All-weather flexibility and strength
- Leak-proof 8-sided crimp
- 750 Psi working pressure
- 3000 Psi burst pressure
- Extra deep knurling on nuts for easy grip
- Adjustable valve core depressor
- Blow off grooves preventing spray back



Hose Length and Color		1/4" Hoses for all refrigerants		1/4" Hoses w/45° ball valve on end		1/4" Hoses w/Microseal™ anti-blowback valve on one end		1/4" In-line ball valve hoses		R-410A Hose w/ special 1/2" -20 UNF fittings	w/45° ball valve fitting in one end
		Premium	Standard	Premium	Standard	Premium	Standard	Premium	Standard	Premium	
3' (90 cm)	Yellow	HP3Y	HS3Y*	HP3YE	HS3YE*	HP3YA*	HS3YA*	HP3YL*	HS3YL*	HJ3Y*	HJ3YE*
	Blue	HP3B	HS3B*	HP3BE	HS3BE*	HP3BA	HS3BA	HP3BL	HS3BL*	HJ3B*	HJ3BE*
	Red	HP3R*	HS3R	HP3RE*	HS3RE*	HP3RA	HS3RA*	HP3RL*	HS3RL*	HJ3R*	HJ3RE*
	3-Pack	HP3*	HS3	HP3E*	HS3E	HP3A*	HS3A	HP3L*	HS3L*	HJ3*	HJ3E*
4' (120 cm)	Yellow	na	HS4Y*	na	na	na	na	na	na	na	na
	Blue	na	HS4B*	na	na	na	na	na	na	na	na
	Red	na	HS4R*	na	na	na	na	na	na	na	na
	3-Pack	na	HS4*	na	na	na	na	na	na	na	na
5' (150 cm)	Yellow	HP5Y*	HS5Y*	HP5YE	HS5YE	HP5YA	HS5YA	HP5YL	HS5YL*	HJ5Y*	HJ5YE*
	Blue	HP5B	HS5B*	HP5BE	HS5BE*	HP5BA	HS5BA	HP5BL	HS5BL*	HJ5B*	HJ5BE*
	Red	HP5R	HS5R	HP5RE*	HS5RE	HP5RA*	HS5RA	HP5RL	HS5RL*	HJ5R*	HJ5RE*
	3-Pack	HP5*	HS5*	HP5E	HS5E*	HP5A*	HS5A	HP5L*	HS5L	HJ5*	HJ5E*
6' (180 cm)	Yellow	HP6Y*	HS6Y*	HP6YE	HS6YE*	HP6YA*	HS6YA*	HP6YL*	HS6YL*	na	na
	Blue	HP6B	HS6B*	HP6BE	HS6BE	HP6BA	HS6BA	HP6BL	HS6BL*	na	na
	Red	HP6R	HS6R	HP6RE*	HS6RE*	HP6RA*	HS6RA*	HP6RL*	HS6RL*	na	na
	3-Pack	HP6*	HS6	HP6E	HS6E*	HP6A*	HS6A	HP6L*	HS6L*	na	na
8' (240 cm)	Yellow	na	HS8Y*	na	HS8YE*	na	HS8YA*	na	HS8YL*	na	na
	Blue	na	HS8B*	na	HS8BE*	na	HS8BA*	na	HS8BL*	na	na
	Red	na	HS8R*	na	HS8RE*	na	HS8RA*	na	HS8RL*	na	na
	3-Pack	na	HS8*	na	HS8E*	na	HS8A*	na	HS8L*	na	na
10' (300 cm)	Yellow	na	HS10Y*	na	na	na	na	na	na	na	na
	Blue	na	HS10B*	na	na	na	na	na	na	na	na
	Red	na	HS10R*	na	na	na	na	na	na	na	na
	3-Pack	na	HS10*	na	na	na	na	na	na	na	na

*Non-stock item (made to order). Call Customer Service for price and lead time.

SPECIALTY HOSES

PRO-SET® PREMIUM 6" to 12" BALL VALVE HOSE EXTENSIONS

- Nylon permeation barrier (Meets SAE J2196)
- Leak-proof 8-sided crimp
- 800 Psi working pressure
- 4000 Psi burst pressure
- Extra deep knurling on nuts for easy grip
- Adjustable valve core depressor
- Blow off grooves (prevents spray back)
- R-410A compatible, as well as CFC, HCFC and HFC refrigerants and blends



Length	Description	Yellow	Blue	Red	3-Pack
6" (15,2 cm)	1/4" SAE	HTYE	HTBE	HTRE	HTE
12" (30,5 cm)	1/4" SAE	HT1YE	HT1BE	HT1RE	HT1E
6" (15,2 cm)	1/2" - 20 UNF	HT410YEJ*	HT410BEJ*	HT410REJ*	HT410EJ

PRO-SET® PREMIUM PRESSURE CONTROL HOSES

Pro-Set pressure control hoses are constructed with a thermoplastic polymer inner tube and cover to eliminate the vibration failures of copper capillary tube installations. The higher temperature ratings of the thermoplastic (to 266° F) eliminates failures caused by maximum load conditions on rubber type pressure control hoses.

Length	90° x 90°	Straight x 90°	Straight x Straight	Fitting	Operating Temperature Range	Minimum Bend Radius
2' (60 cm)	HHC2*	HHC2S	HHC2SS*	1/4" SAE Hex Style. Straight & 90°, With Copper Gaskets	-49° F to 266°F (-45° to 130°C)	4" 102 mm
3' (90 cm)	HHC3*	HHC3S	HHC3SS*			
4' (120 cm)	HHC4*	HHC4S*	HHC4SS*			

*Non-stock item (made to order). Call Customer Service for price and lead time



PRO-SET® PREMIUM 3/8" VACUUM/CHARGING HOSES (HEAVY DUTY)

- 5/16" I.D. heavy-duty hose
- Permeation resistant barrier
- 460 Psi working pressure; 2300 Psi burst

Length	Without Ball Valve	With In-Line Ball Valve	Nylon Permeation Barrier	Leak Proof 8 Sided Crimp	Working Pressure	Burst Pressure	Deep Knurl On Fittings
3' (90 cm)	HV3*	na	Yes	3/8" SAE	460 Psi	2300 Psi	Yes
5' (150 cm)	HV5	HV5E					
6' (180 cm)	HV6*	na					
8' (240 cm)	HV8*	na					



TECH-SET™ CHARGING HOSES

Tech-Set charging hoses are all-weather resistant with rugged flexibility and durability.

- Leak-proof 8-sided crimp
- 800 Psi working pressure
- 4000 Psi burst pressure
- Extra deep knurling on nuts for easy grip
- Adjustable valve core depressor
- Blow off grooves (prevent spray back)
- Compatible with CFC, HCFC, HFC refrigerants and blends



TECH-SET™ 1/4" CHARGING HOSES

Length	3-Pack	Hose Type
3' (90 cm)	HG3	Standard
5' (150 cm)	HG5	Standard
3' (150 cm)	HPF3	Prem-Flex Premium
5' (150 cm)	HPF5	Prem-Flex Premium

*Non-stock item (made to order). Call Customer Service for price and lead time.

REPLACEMENT HOSE GASKETS, DEPRESSORS & O-RINGS

REPLACEMENT PARTS FOR ALL PRO-SET® HOSES

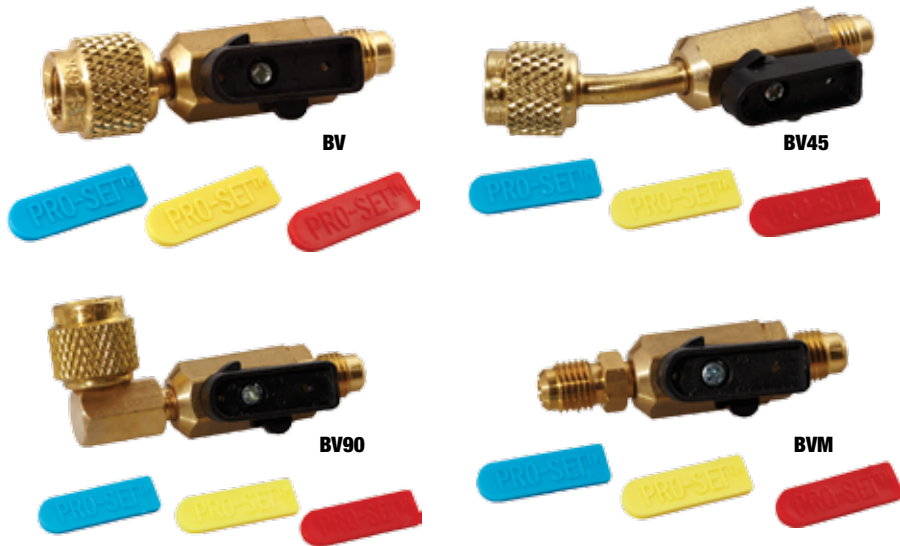
Item	Description	Qty
HXG	Hose Gaskets, 1/4" SAE Neoprene	10
HXGD	Hose Gasket & Core Depressor 1/4" SAE Neoprene	10+10
HX38G	Hose Gaskets, 3/8" SAE Neoprene	10
HXGD2	Hose Gaskets, 1/2"-20 UNF	6,6
HXG2	Hose Gaskets, Core Depressors, 1/2" UNF	10+10
HXGA	Hose Gaskets, 1/4" SAE Microseal Antiblowback	10
HXGA410	Hose Gaskets, 1/2"-20 UNF Microseal Antiblowback	10
HXTG	Hose Gaskets, 1/4" SAE Teflon	10
HXTG2	Hose Gaskets, 1/2"-20 UNF & 1/2" ACME Teflon	10



CHARGING HOSE VALVES

PRECISION MACHINED, SOLID BRASS





PRO-SET® PREMIUM BALL VALVES

Pro-Set® premium ball valves can be added to any existing hose to eliminate refrigerant loss and comply with EPA regulations.

- Easy 1/4 turn open/close with rugged plastic composite color-coded handles
- Oversized chrome ball for smooth operation and non-restrictive flow
- Individual valves include all three color-coded handle inserts

PRO-SET® BALL VALVE SPECIFICATIONS

ITEM	Qty / Pk	Female	Male	Other
BV	1	1/4" SAE	1/4" SAE	Straight
BV3	3	1/4" SAE	1/4" SAE	Straight
BV38	1	3/8" SAE	3/8" SAE	Straight
BV410	1	1/2" - 20 UNF	1/2" - 20 UNF	Straight
BV410A	1	1/2" - 20 UNF	1/4" SAE	Straight
BV45	1	1/4" SAE 45°	1/4" SAE	45° female
BV453	3	1/4" SAE 45°	1/4" SAE	45° female
BV90	1	1/4" SAE 90°	1/4" SAE	90° female
BV903	3	1/4" SAE 90°	1/4" SAE	90° female
BVAD38	1	3/8" SAE	1/4" SAE	Straight
BVM	1		1/4" SAE x 1/4" SAE	Straight
BVM3	3		1/4" SAE x 1/4" SAE	Straight
BVXH	3	Replacement Ball Valve Handle w/1 ea (Yellow, Blue, Red) inserts		

MICROSEAL™ ANTI-BLOWBACK VALVE SPECIFICATIONS

ITEM	Qty / Pk	Female	Male	Other
AB	1	1/4" SAE	1/4" SAE	Straight
AB12	1	1/2" ACME	1/2" ACME	Straight
AB3	3	1/4" SAE	1/4" SAE	Straight
AB41090A	1	1/2" - 20 UNF	1/4" SAE	90° female
AB410A	1	1/2" - 20 UNF	1/4" SAE	Straight
AB90	1	1/4" SAE 90°	1/4" SAE	90° female
AB903	3	1/4" SAE 90°	1/4" SAE	90° female
ABG18	1	1/4" SAE x 1/8" FNPT		1/8" FNPT is not an AB



TUBING TOOLS

ERGONOMIC TOOLS FOR CUTTING,
FORMING and BENDING



BLACKMAX® PREMIUM TUBING TOOLS

Introducing BLACKMAX® hand tools- a new line of premium grade, good-looking and hard-working hand tools from CPS. BLACKMAX tools make easy work out of cutting, deburring, flaring, expanding and bending soft copper and aluminum tubing. BLACKMAX tubing tools also include a line of 2 and 3 jaw gear and pulley removers. Premium form, function and ergonomics at affordable prices. Try them today and see the difference!



Set N Cut™ BLACKMAX® MINI RATCHET TUBE CUTTER

- Excellent for small tube, confined spaces
- Use with or without ratchet handle
- Quick release pin for fast replacement of cutting wheels
- Chromed, hardened cutting wheel
- Patented SetNCut™ spring-loaded center groove rollers for fast, automatic cuts. Provides a smooth cut, even for slightly deformed tube
- “Soft” setting for annealed or soft copper and aluminum
- “Hard” setting for rigid copper and aluminum
- Durable aluminum and rubber knob

Set N Cut™ BLACKMAX® MINI TUBE CUTTER

- Quick release pin for fast replacement of cutting wheels
- Chromed, hardened cutting wheel
- Patented SetNCut™ spring-loaded center groove rollers for fast, automatic cuts. Provides a smooth cut, even for slightly deformed tube
- “Soft” setting for annealed or soft copper and aluminum
- “Hard” setting for rigid copper and aluminum
- Durable aluminum and rubber knob



Set N Cut™ BLACKMAX® TUBE CUTTER

- Two quick-change, chromed, hardened cutting wheels
- Enclosed feed screw eliminates clogging, jamming
- SetNCut™ spring-loaded cutting wheel for a perfect cut every time

BLACKMAX® TUBE CUTTERS

Item	Description
BTC 200	Mini Tube Cutter (1/8" - 7/8") 3-22 mm O.D.
BTC 200R	Mini Ratchet Tube Cutter (1/8" - 7/8"), 3-22 mm O.D.
BTC 300	Tube Cutter (3/16" - 1 1/4"), 5 - 32 mm O.D.
BTC 400	Heavy Duty Tube Cutter (1/4" - 1 1/4"), 6 - 32 mm O.D. (shown next page)
BTC 500	Large Tube Cutter (3/8" - 2 5/8"), 10 - 67 mm O.D. (shown next page)

"O.D." = Outside Diameter (of tube)



Soft or hard setting for copper or aluminum tube

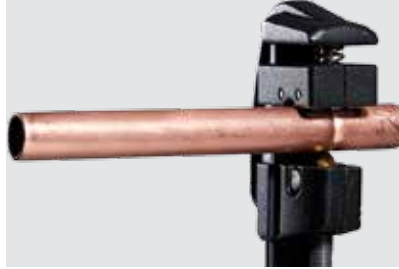


Quick release pin for fast replacement of cutting wheels

Set N Cut™

BLACKMAX® HEAVY DUTY TUBE CUTTER

- For brass, copper, aluminum, stainless tube and electrical conduit
- Patented SetNCut™ technology for the perfect cut every time
- Spring-loaded rollers for easy, precision cut
- Heavy duty performance from lightweight aluminum forged body
- Quick change cutting wheel
- Titanium finish cutting wheel included



BTC400



Four grooved rollers for precise tube rotation

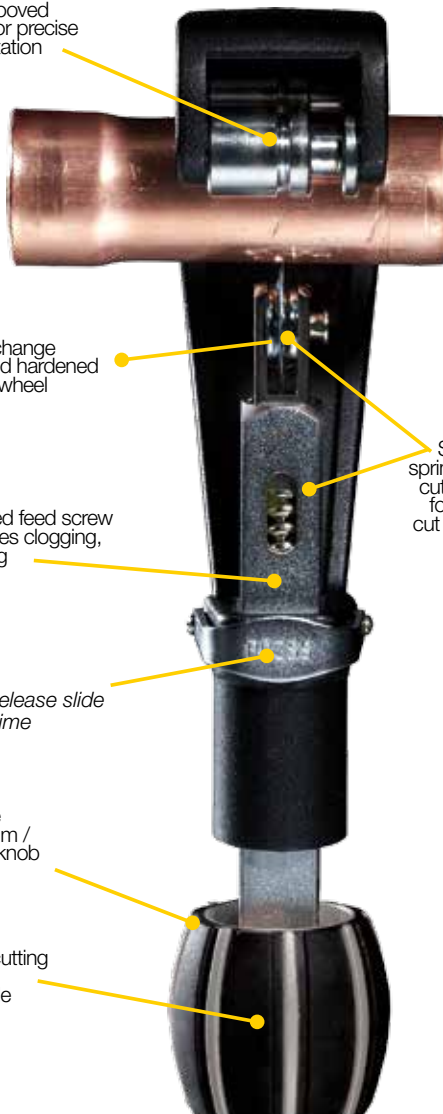
Quick-change chromed hardened cutting wheel

Enclosed feed screw eliminates clogging, jamming

Quick release slide saves time

Durable aluminum / rubber knob

Spare cutting wheel in handle



SetNCut™ spring-loaded cutting wheel for a perfect cut every time



Set N Cut™

BLACKMAX® LARGE TUBE CUTTER

- Patented SetNCut™ Technology for the perfect cut every time
- Two hardened cutting wheels with quick-change pin design
- Enclosed feed screw eliminates clogging and jamming
- Four grooved rollers for precise tube rotation
- Rapid adjustment with quick-slide feed mechanism
- Durable aluminum/rubber knob

REPLACEMENT PARTS FOR BLACKMAX® TUBE CUTTERS

Item	Description
BTCXB	Cutting Wheel Bearing (Std for BTC400, optional for BTC500)
BTCXR	Plastic Ratchet (for BTC 200R)
BTCXC1	Cutting Wheel (Chrome Plated) for BTC 200, 300
BTCXC2	Cutting Wheel (Chrome Plated) for BTC 400, 500
BTCXCT1	Cutting Wheel (Titanium Coated) for BTC200, 300
BTCXCT2	Cutting Wheel (Titanium Coated) for BTC400, 500
BTCXP1	Quick Release Pin (BTC200, 200R, 300)
BTCXP2	Quick Release Pin (BTC400)
BTCXP3	Quick Release Pin (BTC500)



**BTLE9M
TUBE EXPANDER KIT**

BLACKMAX® TUBE EXPANDERS

- Nine quick-change tube expanders for soft copper and aluminum tube
- Durable, color-coded, aluminum heads
- Compact, professional, patented design
- Strong carrying case



**BTLE9
TUBE EXPANDER KIT**



BLACKMAX® TUBE EXPANDERS (IMPERIAL)

Item	Description	
BTLE9	Tube Expander Set (9 Heads) includes all parts listed below:	
REPLACEMENT PARTS		
BTLEXH	Tube Expander (Replacement Tool)	
Expander Heads	BTLEX14	1/4"
	BTLEX516	5/16"
	BTLEX38	3/8"
	BTLEX12	1/2"
	BTLEX58	5/8"
	BTLEX34	3/4"
	BTLEX78	7/8"
	BTLEX1	1"
	BTLEX118	1 1/8"
Expander Blades	BTLEX14B	1/4"
	BTLEX516B	5/16"
	BTLEX38B	3/8"
	BTLEX12B	1/2"
	BTLEX58B	5/8"
	BTLEX34B	3/4"
	BTLEX78B	7/8"
	BTLEX1B	1"
	BTLEX118B	1 1/8"

BLACKMAX® TUBE EXPANDERS (METRIC)

Item	Description	
BTLE9M	Tube Expander Set (9 Heads) includes all parts listed below:	
REPLACEMENT PARTS		
BTLEXH	Tube Expander (Replacement Tool)	
Expander Heads	BTLEX6M	6 mm
	BTLEX8M	8 mm
	BTLEX10M	10 mm
	BTLEX12M	12 mm
	BTLEX15M	15 mm
	BTLEX18M	18 mm
	BTLEX22M	22 mm
	BTLEX28M	28 mm
	BTLEX32M	32 mm
Expander Blades	BTLEX6MB	6 mm
	BTLEX8MB	8 mm
	BTLEX10MB	10 mm
	BTLEX12MB	12 mm
	BTLEX15MB	15 mm
	BTLEX18MB	18 mm
	BTLEX22MB	22 mm
	BTLEX28MB	28 mm
	BTLEX32MB	32 mm



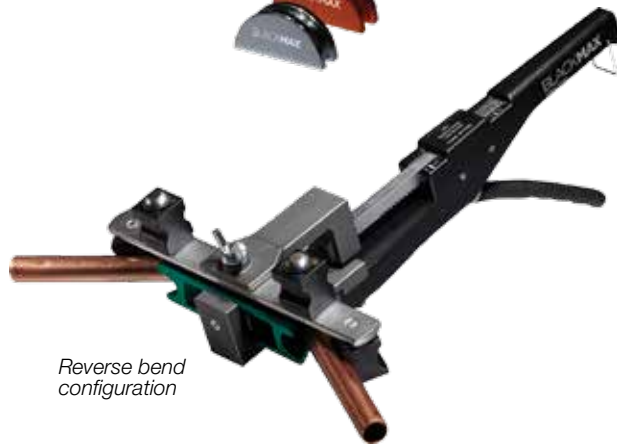
**BTB300
TUBE BENDER KIT**

**BLACKMAX®
PREMIUM TUBE BENDERS**

- Solid aluminum, color-coded mandrels
- Forward or reverse bends from 0° to 90°
- Reverse bend mechanism for tight quarters
- For soft copper and aluminum tube
- Rugged carrying case



Forward bend configuration



Reverse bend configuration

BLACKMAX® TUBE BENDERS (IMPERIAL)

Item	Description
BTB300	Tube Bender Set (7 Benders) includes all parts listed below:
REPLACEMENT PARTS	
Imperial Mandrels	BTBX14 1/4" O.D.
	BTBX516 5/16" O.D.
	BTBX38 3/8" O.D.
	BTBX12 1/2" O.D.
	BTBX58 5/8" O.D.
	BTBX34 3/4" O.D.
	BTBX78 7/8" O.D.
	BTBXH Ratchet Tool
BTBXA1 1/4"-3/8" Shoe Arm	
BTBXA2 1/2"-7/8" Shoe Arm	
BTBXR1 Reverse Bender Mandrel Arm	
BTBXR2 Reverse Bender Shoe Arm	

"O.D." = Outside Diameter (of tube)

BLACKMAX® TUBE BENDERS (METRIC)

Item	Description
BTB300M	Tube Bender Set (7 Benders) includes all parts indicated below. (not BTBX16M)
REPLACEMENT PARTS	
Metric Mandrels	BTBX6M 6 mm O.D.
	BTBX8M 8 mm O.D.
	BTBX10M 10 mm O.D.
	BTBX12M 12 mm O.D.
	BTBX15M 15 mm O.D.
	BTBX16M 16 mm O.D. Optional for BTB300M
	BTBX18M 18 mm O.D.
	BTBX22M 22 mm O.D.
	BTBXHM Ratchet Tool, Metric
	BTBXA1 6-10 mm Shoe Arm
BTBXA2 12 - 22 mm Shoe Arm	
BTBXR1 Reverse Bender Mandrel Arm	
BTBXR2 Reverse Bender Shoe Arm	

"O.D." = Outside Diameter (of tube)



BLACKMAX® TUBE FLARING TOOL

- Aluminum body is 50% lighter than steel designs
- Internal clutch indicates when formed flare is complete
- Seven quick-change positions for flaring soft copper and aluminum tube
- Compact, professional, patented design
- Eccentric cone forms precise 45° flared ends
- Strong carrying case
- Imperial tool for 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" O.D.
- Metric tool for 6, 8, 10, 12, 15, 16, 18 mm O.D.
- Built in slide gauge for tube height adjustment



BFT850



Seven quick change positions



Slide gauge for perfect tube alignment



Eccentric flaring cone for precision flares

BLACKMAX® TUBE FLARING TOOLS	
Item	Description
Imperial BFT 850	Tube Flaring Tool, Imperial Eccentric (7 Position for: 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" O.D. Tube)
Metric BFT 850M	Tube Flaring Tool, Metric Eccentric (7 Position for: 6, 8, 10, 12, 15, 16, 18 mm O.D. Tube)

"O.D." = Outside Diameter (of tube)



BTLD3 BLACKMAX® Premium Deburring Tool
TLDB2X Replacement Blade for BTLD3



Rugged carrying case

BLACKMAX® GEAR PULLER

- Quick-change: 2 or 3 reversible jaw
- Internal/external pull
- 3.75" reach, 5.75" spread
- Forged chrome, vanadium steel
- Patented design enables fast configuration of two or three puller arms for inward or outward gripping positions.



BLACKMAX® GEAR & PULLEY REMOVERS

Item	Description
BTLGP4	Gear Pulley Remover, 4" (10.1 cm)
BTLGP7	Gear Pulley Remover, 7" (17,8 cm)



BLACKMAX® LEVER TUBE BENDERS

- Patented 2-position handle
- For soft copper, aluminum tube
- Double hinged bending arms for tight quarters
- Two pull points for smooth, easy bends
- Bends from 0° to 180°



LEVER TUBE BENDERS (IMPERIAL)

	Item	Description
Imperial	BTB06	Lever Tube Bender, for 3/8" O.D. Tube
	BTB08	Lever Tube Bender, for 1/2" O.D. Tube
	BTB10	Lever Tube Bender, for 5/8" O.D. Tube
	BTB12	Lever Tube Bender, for 3/4" O.D. Tube
	BTB14	Lever Tube Bender, for 7/8" O.D. Tube

"O.D." = Outside Diameter (of tube)

LEVER TUBE BENDERS (METRIC)

	Item	Description
Metric	BTB10MM	Lever Tube Bender, for 10 mm O.D. Tube
	BTB12MM	Lever Tube Bender, for 12 mm O.D. Tube
	BTB15MM	Lever Tube Bender, for 15 mm O.D. Tube
	BTB16MM	Lever Tube Bender, for 16 mm O.D. Tube
	BTB18MM	Lever Tube Bender, for 18 mm O.D. Tube

"O.D." = Outside Diameter (of tube)



PRO-SET® HEAVY DUTY TITANIUM TUBE CUTTERS

You need tools that work as hard as you do and nothing outperforms like the power of the Pro-Set® Titanium HD series. Put them to work for you on your next job.

- All cutter wheels are precision machined from high grade chromium steel and plated with titanium nitride to extend life—up to 5 times longer!
- Precision machined rollers feature cut-off groove to reduce tube loss in damaged flare removal
- Durable metal handle with industrial grade rubber boot provides comfortable grip
- Integrated retractable and replaceable rotary reamer tool for ease in deburring pipe
- Enclosed hardened steel, thrust bearing feed mechanism for smooth cutting action and trouble free operation
- Available in 5 popular configurations to accommodate cutting of 1/8" (4 mm) up to 2 5/8" (66 mm) O.D. tubing
- Produces clean right angle cuts every time

PRO-SET® TITANIUM TUBE CUTTERS

ITEM	Cutting Range	
	Inches	Millimeters
TCPVC	1/4" to 2 5/8"	6 to 68 mm
TCT174	1/8" to 1 1/8"	3 to 30 mm
TCT206	1/4" to 2 5/8"	6 to 68 mm
TCT127	1/8" to 5/8"	3 to 16 mm
TCT274	1/8" to 1 3/8"	3 to 35 mm
TCT312	1/8" to 1 3/4"	3 to 45 mm

PRO-SET® TUBE CUTTERS

- Easy grip knobs with rubber boot over solid metal core
- Advanced tracking system will not walk while cutting
- Rollers feature flare cut-off groove to reduce tube loss
- Integrated retractable rotary deburring tool
- Durable metal handle with industrial grade rubber boot provides sure comfortable grip
- Produces clean right angle cuts every time.
- Precision machined rollers feature cut-off groove to reduce tube loss in damaged flare removal.

PRO-SET® TUBE CUTTERS

ITEM	DESCRIPTION
TC100	Tube Cutter for 1/4"-7/8" (6 - 22 mm) O.D.
TCX100CS	TC 100 Cutting Wheel (1) & Screw (1)
TC174	Big Mini Tube Cutter for 3/8" - 1 1/8" (10 - 29 mm) O.D.
TCX4CTS	Titanium Cutting Wheel and Screw for TCTC174/274/312
TCPVC	Ratcheting PVC Tube Cutter up to 5/8" (16 mm) O.D.

"O.D." = Outside Diameter (of tube)



PRO-SET® LEVER TUBE BENDERS

Imperial	ITEM	DESCRIPTION
	TB04	1/4" O.D. Lever Tube Bender
	TB05	5/16" O.D. Lever Tube Bender
	TB06	3/8" O.D. Lever Tube Bender
	TB08	1/2" O.D. Lever Tube Bender
	TB10	3/4" O.D. Lever Tube Bender
	TB12	5/8" O.D. Lever Tube Bender
	TB14	7/8" O.D. Lever Tube Bender

Metric	ITEM	DESCRIPTION
	TB6 MM	6 mm O.D. Lever Tube Bender
	TB10 MM	10 mm O.D. Lever Tube Bender
	TB12 MM	12 mm O.D. Lever Tube Bender
	TB15 MM	15 mm O.D. Lever Tube Bender
	TB16 MM	16 mm O.D. Lever Tube Bender
	TB10XH	TB10 Replacement Hook with Screw
	TB12XH	TB12 Replacement Hook with Screw

"O.D." = Outside Diameter (of tube)



PRO-SET® RATCHET TUBE BENDER

TB250	Ratchet Tube Bender Set: includes all parts shown below plus TC274, Reamer (1)
REPLACEMENT PARTS	
TBXM6	Molded Plastic Mandrel 1/4" (6 mm)
TBXM8	Molded Plastic Mandrel 5/16" (8 mm)
TBXM10	Molded Plastic Mandrel 3/8" (10 mm)
TBXM14	Molded Plastic Mandrel 1/2" (14 mm)
TBXM16	Molded Plastic Mandrel 5/8" (16 mm)
TBXM19	Molded Plastic Mandrel 3/4" (19 mm)
TBXM22	Molded Plastic Mandrel 7/8" (22 mm)
TBXR	Ratchet Mechanism
TBxB1	Small bending bar replacement
TBxB2	Large bending bar replacement

"O.D." = Outside Diameter (of tube)

Efficiently connect gas pipes and copper tubing with premium Pro-Set® branded flaring and swaging tools.

R-410A Imperial Concentric Flaring Tool & Ratchet

- Engineered specifically to create stronger flare joints for higher pressure R-410A systems
- Unique clutch driven feed screw and eccentrically mounted cone produces uniform, clean flare walls without galling
- Exclusive 3/8"sq drive incorporated directly in yoke handle for use with ratchet (included)
- Rugged polyethylene storage case included



FT800FN

PRO-SET® FLARING TOOLS

	ITEM	DESCRIPTION
Imperial	FS226	Tube Cutting/Double Flaring Set 1/8"-3/4"
	FT806A	Imperial Eccentric Flaring Tool & Ratchet (3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4")
	FT800FN	R-410A Imperial Concentric Flaring Tool & Ratchet (3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4")
	FTX800B410	FT800FN R410A Imperial Flaring Bar (Replacement)
	FTX800BA	FT806A Imperial Flaring Bar (Replacement)
Metric	FT806M	Metric Eccentric Flaring Tool & Ratchet (6, 8, 10, 12, 15, 16, 18 mm)
	FTX800BM	FT806M Metric Flaring Bar (Replacement)
	FTX800Y	Yoke Assembly (for FT800FN, FT806A, FT806M)



FS275

TECH-SET™ FLARING/SWAGING TOOLS AND REPLACEMENT PARTS

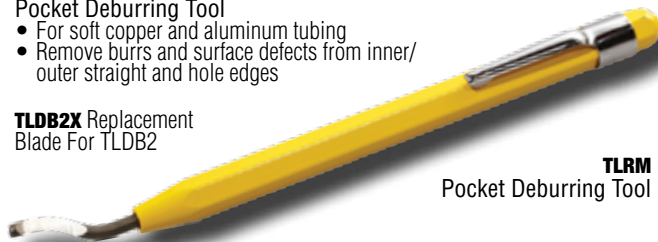
	ITEM	DESCRIPTION
Imperial	FS275	45° Flaring & Swaging Kit 1/8" - 3/4"
	FSX501	FS275 Bar (7/16", 1/4", 1/8", 3/16", 5/16", 3/8")
	FSX502	FS275 Short Bar (1/2", 5/8", 3/4" O.D.)
	FSX503	FS275 5/16" Swaging Adapter
	FSX504	FS275 3/16" Swaging Adapter
	FSX505	FS275 1/2" Swaging Adapter
	FSX506	FS275 5/8" Swaging Adapter
	FSX509	FS275 Yoke Assembly
	FSX513	FS275 Compressor Cone
	FSX508	FS275 3/4" Swaging Adapter
Metric	FS275M	45° Flaring & Swaging Kit, Metric
	FSX507	FS275M 8, 12, 14, 16, 22 mm Swaging Adapter

TLDB2

Pocket Deburring Tool

- For soft copper and aluminum tubing
- Remove burrs and surface defects from inner/outer straight and hole edges

TLDB2X Replacement Blade For TLDB2



TLRM Pocket Deburring Tool



PRO-SET® DEBURRING AND UNIVERSAL REAMER TOOL

Professional interchangeable jaw torque wrench set ensures compliance with OEM torque settings for high pressure systems.

TECH-SET™ TUBE CUTTERS

You need tools that work as hard as you do and nothing outperforms like the power of the Tech-Set series. Put them to work for you on your next job.

TECH-SET™ TUBE CUTTERS AND REPLACEMENT PARTS

ITEM	DESCRIPTION
TC127	Mini Tube Cutter for 1/8" to 5/8" (3 to 16 mm) O.D.
TCX7C	TC127 Cutting Wheel (10 PK)
TCX7S	TC127 Cutting Wheel Screws (10 PK)
TCX7CTS	TC127 Titanium Cutting Wheel (1) & Screw (1)
TCX7CS	TC127 Cutting Wheel (1) and Screw (1)
TCSET	TC127 Tube Cutter (1) & TC274 Tube Cutter (1) Combo Pack
TC206	Sliding Tube Cutter for 3/8" to 2 5/8" (10 to 67 mm) O.D.
TCX6CTS	TC 206 Titanium Cutting Wheel (1) and Screw (1)
TC274	Tube Cutter for 1/8" to 1 1/8" (3 to 29 mm) O.D.
TCX4R	TC274/TC312 Reamer Blade
TCX4RS	TC274/TC312 Reamer Blade Screw
TCX4C	TC274/312 Cutting Wheel (10 PK)
TCX4CS	TC274/TC312 Cutting Wheel and Screw
TCX4S	TC274/TC312 Cutting Wheel Screw- (10 PK)
TCX4C	TC274/TC312 Cutting Wheel (10-pack)
TCX4CS	TC274/TC312 (1) Cutting Wheel and (1) Screw
TCX4R	TC274 Reamer Blade B636 (1) and Screw (1)
TCX4S	TC274/TC312 Cutting Wheel Screws (10-pack)
TC312	Tube Cutter for 1/4" to 1 5/8" (6 to 41 mm) O.D.
TCAP	Capillary Tube Cutter



TLDB
 Pocket Deburring Tool (With Blade Storage)
 • for soft copper and aluminum tubing
 • Remove burrs and surface defects from inner/outer straight and hole edges
TLDBX Replacement Blade for TLDB

TECH-SET™ TUBE BENDERS

ITEM	DESCRIPTION
TB368	Tech-Set Universal Tube Bender (1/4", 5/16", 3/8")
TBS04	1/4" Spring Tube Bender
TBS05	5/16" Spring Tube Bender
TBS06	3/8" Spring Tube Bender
TBS08	1/2" Spring Tube Bender
TBS10	5/8" Spring Tube Bender
TBS12	3/4" Spring Tube Bender



TC127

- Ideal for cutting pipe in limited access areas
- Screw feed mechanism for smooth operation
- Precision machined chromium steel cutting wheels
- Rollers feature flare cut-off groove to reduce tube loss



TC206
 Premium ratchet feed tube cutter
 Capacity: 3/8" to 2-5/8" O.D.
 * Ratchet feed mechanism speeds up cutting operation.

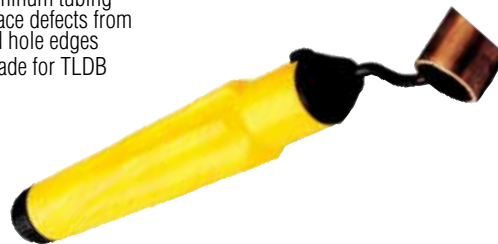


TC274

- Hardened steel thrust bearing feed mechanisms for smooth operation
- Precision machined chromium steel cutting wheels
- Rollers feature flare cut-off groove to reduce tube loss
- Foldaway hardened steel reamers for deburring



TC312
 Heavy duty tube cutter
 Capacity: 1/4" to 1-5/8" (7 mm to 41 mm)
 * Spare cutting wheel located under retractable locking reamer.



TBS08

TBS04



TECH-SET™ TUBE FLARING TOOLS AND REPLACEMENT PARTS		
ITEM	DESCRIPTION	
Imperial	FT195	45° Flaring Tool (3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8")
	FTX501	FT195 Flaring Bar (5/16", 3/8", 7/16")
	FT500	45° Flaring/Burnishing Tool (3/16" to 5/8")
	FTX514	FT500 Die Holder Assembly
	FT203	45° Flaring Tool (5/8", 3/4", 7/8", 1 1/16") O.D. Tube
Metric	FT500M	45° Flaring/Burnishing Tool (6 - 16 mm)
	FT525	Universal Adjustable Flaring Tool 3/16" to 5/8" (5 to 16 mm)
	FTX515	FT500M Die Holder Assembly

PRO-SET® TUBE EXPANDER/SWAGING SET

- Create professional grade one seam pipe unions in the field.
- Multi-faceted interchangeable heads ensure equal linear expansion of tubing and uniformed wall thickness.
- Extended handle length provides added leverage for ease of operation.
- Re-round deformed tubing and fabricate couplings.
- Components are heat treated for durability.
- Ideal for copper, aluminum and soft steel tubing.
- Includes storage case for long-term protection.



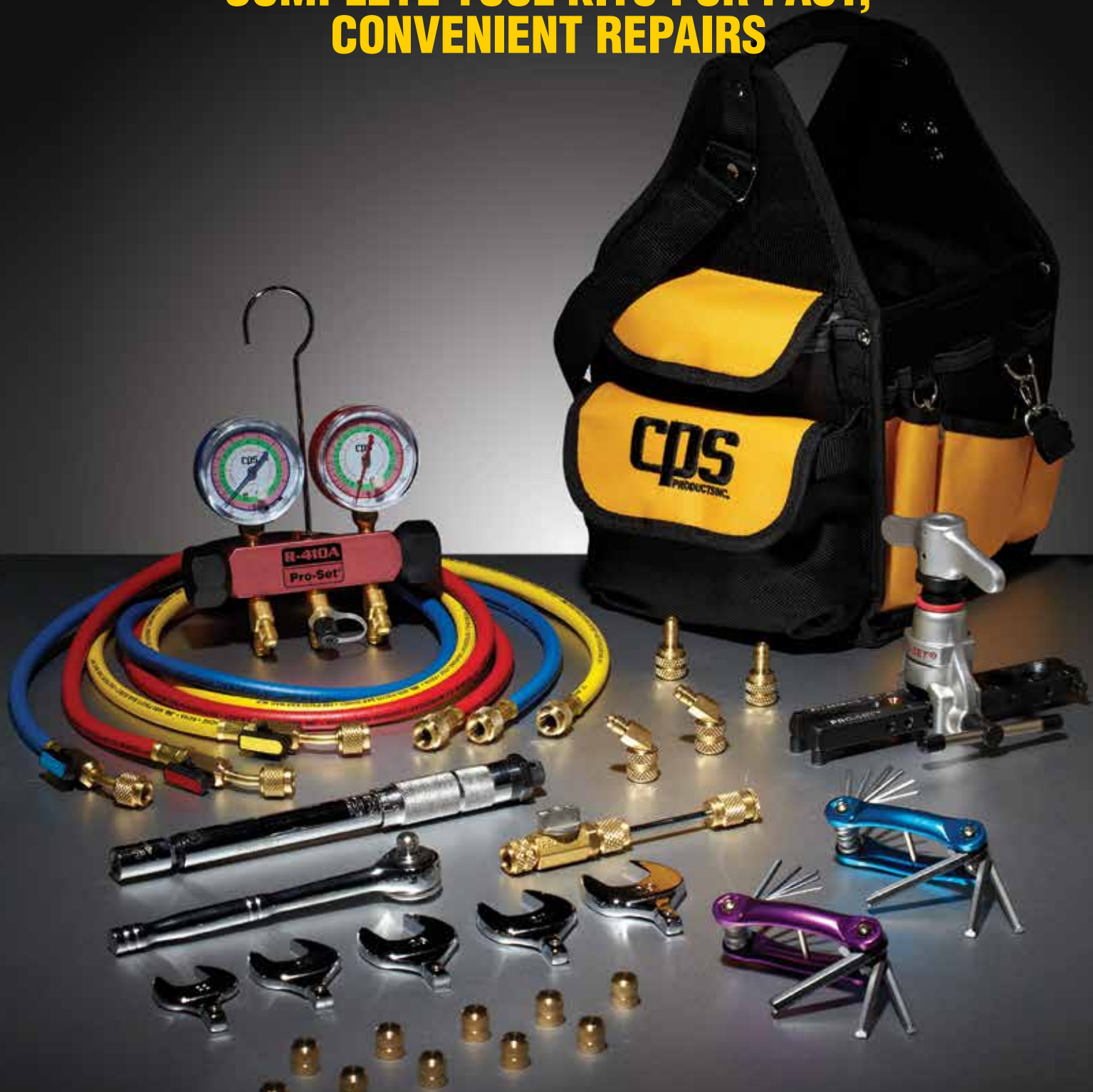
TLE6/TLE6M
Metric

TECH-SET TUBE EXPANDERS (IMPERIAL)			
ITEM	DESCRIPTION		
Imperial	TLE6	Tube Expander Set With Case (6 Heads) includes all parts shown below, plus Debur Tool (1)	
	REPLACEMENT PARTS		
	TLE601	Expander Tool	
	TLH06	3/8" Expander Head (Standard in TLE6)	
	TLH08	1/2" Expander Head (Standard in TLE6)	
	TLH10	5/8" Expander Head (Standard in TLE6)	
	TLH12	3/4" Expander Head (Standard in TLE6)	
	TLH14	7/8" Expander Head (Standard in TLE6)	
	TLH16	1" Expander Head (Optional)	
	TLH18	1 1/8" Expander Head (Standard in TLE6)	
	TLH22	1 3/8" Expander Head (Optional)	
	TLH26	1 5/8" Expander Head (Optional)	

TECH-SET TUBE EXPANDERS (METRIC)			
ITEM	DESCRIPTION		
Metric	TLE6M	Tube Expander Set With Case includes all parts shown below, plus Debur Tool (1)	
	REPLACEMENT PARTS		
	TLE601	Expander Tool	
	TLHM10	10 mm Expander Head (Standard in TLE6M)	
	TLHM12	12 mm Expander Head (Standard in TLE6M)	
	TLHM15	15 mm Expander Head (Standard in TLE6M)	
	TLHM16	16 mm Expander Head (Optional)	
	TLHM18	18 mm Expander Head (Standard in TLE6M)	
	TLHM20	20 mm Expander Head (Optional)	
	TLHM22	22 mm Expander Head (Standard in TLE6M)	
	TLHM28	28 mm Expander Head (Standard in TLE6M)	
	TLHM35	35 mm Expander Head (Optional)	
	TLHM42	42 mm Expander Head (Optional)	

SPECIALTY HAND TOOLS

COMPLETE TOOL KITS FOR FAST,
CONVENIENT REPAIRS



1.800.561.8187

www.itm.com

information@itm.com

UNIVERSAL R-410A SERVICE TOOL KITS

Our tool kits contain everything you need to service ductless mini-split and central A/C systems with 1/4" & 5/16" service ports including the following components;

TLB410A



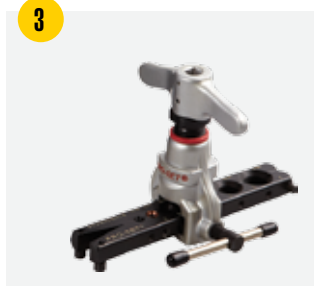
Two Valve Service Manifold
(Varies by kit. See chart below)

- R-410A/R-22/R404A gauges
- 1/4" SAE fittings
- Triple seal valve system



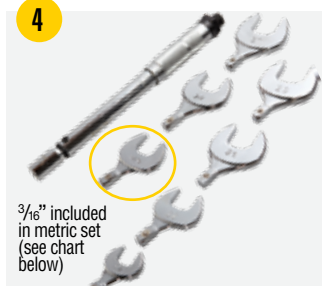
Premium 3-Pack 5' Hoses
(Varies by kit. See chart below)

- 1/4" SAE 45° fittings
- 800Psi working pressure
- 4000Psi burst pressure



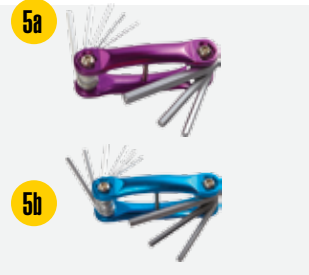
Flaring Tool

- Clutch driven feed screw
- Eccentrically mounted cone
- Creates perfect, strong flares
- Ratchet drive in yoke
- 3/16", 1/4", 1/8", 3/8", 1/2", 1/8", 3/4"



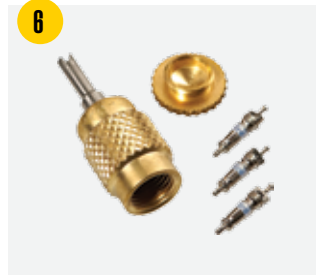
Torque Wrench Sets;

- Metric Set: 12, 22, 24, 26, 27, 29 mm and 19/16" jaw sizes
- or-
- Imperial Set: 5/8", 11/16", 13/16", 15/16", 11/16", 15/16"



(1) Imperial and (1) Metric Hex Key Set

- Metric Set: 1.5, 2, 2.5, 3, 4, 5, 6, 8 mm
- Imperial Set: 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4"



Valve Core Tool

- 5/16" female fitting allows direct connection to mini-split service ports
- 5/16" female x 1/4" SAE male



Brass Adapters and Caps

- (10) 1/2"-20 UNF Caps, (2) Male: 1/4" SAE 55D; female; 1/2"-20 UNF SWVL, and (2) Male: 1/4" SAE female; 1/2"-20 UNF



13" Large Square Tool Bag

- 24 separate compartments for quick, easy-access
- Molded handle for durability and comfort

Kit Contents	Qty	UNIVERSAL SERVICE TOOL KITS				
		TLB410A	TLB410SAE	TLB410AC	TLB410ACE	TLB410M
1 2 Valve Manifold	1	Pro-Set® Piston Pink Body 1/4" SAE 45° fittings "H" Gauge (MEHP5E)		BLACKMAX® Black & Chrome 1/4" SAE 45° fittings "H5" Gauge (MBH5P5Z)	BLACKMAX® Black & Chrome 1/4" SAE 45° fittings "H5" Gauge (MBH5P5EZ)	No Manifold
2 Hoses	1	Pro-Set® Premium (3) 5' red/blue/yellow ball valve hoses		Pro-Set® Premium (3) 5' Black & Chrome hoses	Pro-Set® Premium (3) 5' Black & Chrome ball valve hoses	No Hoses
3 Flaring Tool	1			FT800N		
4 Torque Wrench Set	1	Metric TLTWSM	SAE/Imperial TLTWSAE		Metric TLTWSM	
5a Hex Wrench Set (Metric)	1			TLSWHM		
5b Hex Wrench Set (Imperial)	1			TLSWH		
6 Valve Core Tool	1			TLVC410A		
7 Brass Adapters and Brass Caps	14	Includes; (10) AVC410 1/2"-20 UNF SAE Brass Caps, (2) AD87 Brass Adapter Male: 1/4" SAE 55D; female; 1/2"-20 UNF SWVL w/ Valve Core Tool, and (2) AD87S Brass Adapter (Male: 1/4" SAE; female; 1/2"-20 UNF) w/Valve Core Tool				
8 Tool Bag	1			TLBAG1		

CPS® EXTRA DURABLE TOOL BAGS

Organize your tools with care with this extra strong, premium built series of tool bags from CPS.



TLBAG1
Square Tool Organizer



TLBAG2
16" Rubber Bottom Tool Organizer



TLBAG3
Tool Belt Tool Organizer

ALUMINUM, RECHARGEABLE WORK LIGHT- WITH 53 LEDs, HANGING HOOK, CAR & WALL PLUG CHARGER

Simply the best work light you will ever own, the **TLWL53A** is precision machined from aircraft grade aluminum and anodized for long life. Fifty three proprietary high output LEDs are incorporated in the work light segment with a 1W Luxeon LED integrated in the top. A powerful 2500mAh Ni-Mh rechargeable battery keeps the lights burning for hours; 7-8 hr for Luxeon spot, 4-5 hr for 53 white LEDs. The professional quality and intense output of the **TLWL53A** outperforms many competitive units incorporating 70 or more standard LEDs. Ideal for air conditioning contractors municipalities, law enforcement, fire fighters,

automotive technicians, and wherever else a high performance, professional, durable work light is needed.

- Rugged anodized aluminum body
- Super bright 1w Luxeon spot
- 53 Proprietary high lumen output LEDs
- Integrated 2500mah 3.5V rechargeable battery
- Strong magnetic base for attaching to metal surfaces
- Universal UL/CUL electronic wall and car chargers included
- Superior durability and shock resistance
- High quality reflector lens
- Wall and car charger included
- One year warranty



TLWL53A

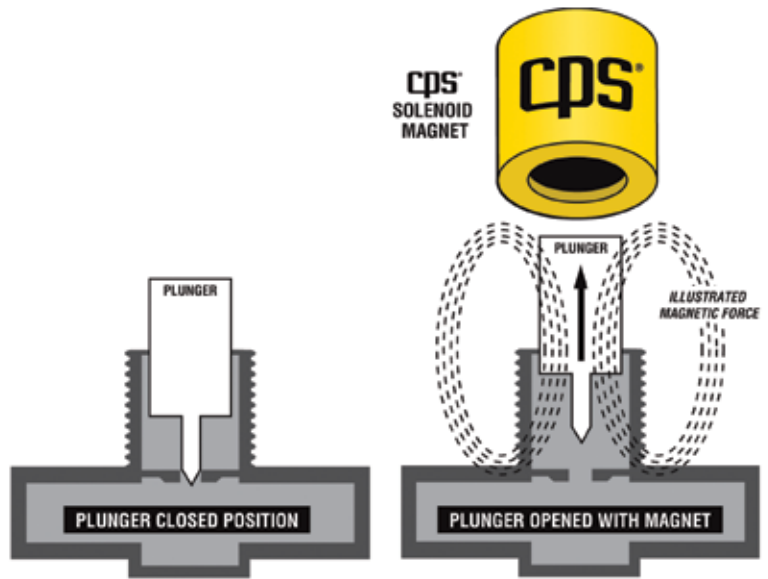


TLMKC18

CPS® SOLENOID MAGNET

The **TLMKC18** is designed to manually open solenoid valves by magnetically lifting the stem assembly and plunger. Simply slide the **TLMKC18** over the valve's enclosing tube and the industrial grade magnets incorporated inside the rugged ABS plastic housing does the rest. It is an ideal tool for trouble shooting/servicing both direct connected or pilot operated 2-way solenoid, 3-way reclaim or 4-way reversing valves.

- 0.75"/18 mm opening fits all common manufactured valves



CPS® COMPACT MAGNETIZER/DEMAGNETIZER

Use the **TLMAG1** to magnetize tools in order to keep small screws and nuts in position, especially helpful when working in confined spaces, or demagnetize tools when working on or near electronic circuit boards. Simply insert a screwdriver or nut driver into the (+) opening, slowly draw it out and it's magnetized. Leave the magnetizer on the tool for extra strength. To demagnetize, slowly draw the tool through the smallest area of the (-) opening.

- Instantly magnetize or demagnetize steel tools & parts
- Incorporates two C5 industrial strength magnets
- Impact resistant ABS molded plastic
- No batteries or electricity required
- Compact design: 2" x 2" x 1"



TLMAG1

CPS® DUCT KNIVES

Used to fabricate fiberglass duct board. Stainless steel double edge resharpenable blade facilitates easy piercing for inside cuts. The double edge is also ideal for tapping into and trimming flex duct. Available with either ergonomic cushioned or a comfortable walnut wooden handle.



TLDWH
6" (152 mm)
Duct Knife With Wood Handle



TLDKRH
6" (152 mm) Duct
Knife With Rubber
Handle

SUPER-STRONG TOOLS THAT EXCEED ANSI SPECIFICATIONS, PROVIDING YEARS OF SERVICE

PRO-SET® ADJUSTABLE HANDLE WRENCH

- Patented light weight composite handle design
- Wide jaw opening with 45% more torque
- Precision machined for smooth operation
- Ergonomic, comfortable grip reduces fatigue
- Durable and environment-resistant
- One year warranty



TLWA06
Size: 6"
Jaw Capacity:
1⁵/₁₆" / 24 mm

TLWA08
Size: 8"
Jaw Capacity:
1¹/₈" / 29 mm

TLWA10
Size: 10"
Jaw Capacity:
1⁵/₁₆" / 33 mm

PRO-SET® HEX KEY WRENCH SETS

Item	Description
TLSWH	Inch Hex Key Set (3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4"). Nickel plated finish
TLSWHM	Metric Hex Wrench Set (1.5, 2, 2.5, 3, 4, 5, 6, 8 mm). Nickel Plated
TLSWT	Torx Wrench Set (Nickel Plated)
TLSWB	Inch Ball Point Key Set (3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4"). Nickel plated finish
TLSWHB	Inch Hex Wrench Combo Set: Includes TLSWH (Inch Hex Key) & TLSWB (Inch Ball Point Key Set)



TLSWH



TLSWHM



TSLWT



TSLWB



PRO-SET® SERVICE WRENCHES

Item	Description
TLSWL	3/16", 1/4" Square; 1/2", 9/16" Hex
TLSWO	Offset 3/16", 1/4", 5/16", 3/8" Square
TLSWS	3/16", 1/4", 5/16", 3/8" Square
TLSWSA	3/16", 1/4", 5/16", 3/8" Square, 3/16" & 5/16" Hex Driver Bit



TLTWSM

PRO-SET® TORQUE WRENCHES

Professional interchangeable jaw torque wrench set ensures compliance with OEM torque settings for high pressure systems.

- Interchangeable 17, 22, 24, 26, 27 & 29 mm jaw sizes
- Corresponding settings clearly marked on torque wrench in Newton Meters (10-75Nm)
- Provides consistently accurate readings and rugged, trouble free performance
- Includes storage case for long-term protection

PRO-SET® TORQUE WRENCHES

Item	Description
TLTWSM	Metric Multi-Head Torque Wrench Set (17, 22, 24, 26, 27, 29 mm)
TLTWSAE	SAE Multi-Head Torque Wrench Set ($\frac{5}{8}$ ", $\frac{11}{16}$ ", $\frac{13}{16}$ ", $\frac{15}{16}$ ", $1\frac{1}{16}$ ", $1\frac{5}{16}$ ")



TLPK

PRO-SET® SWAGE PUNCH SET

5 Punches (1/4", 5/16", 3/8", 1/2", 5/8")



TLPP

PRO-SET® TUBE PIERCING PLIERS

Tube Piercing Pliers 1/4"

PRO-SET® HAND OIL PUMP



TLOP



TLPORR

PRO-SET® PINCH-OFF & RE-ROUND TOOL

Pinch-Off tool & rerounds 1/4", 5/16", 3/8", and 1/2" copper and tubing



TLPO

PINCH-OFF PLIERS

- Tool locks onto tubing to prevent loss of refrigerant during service
- Rounded jaws to avoid cutting tubing
- Fast release mechanism
- 1 year warranty



TLMSP

6-in-1 SWAGING PUNCH

- (3/16", 1/4", 5/16", 3/8", 1/2", 5/8")
- Swages six sizes of tubing
- Chrome plated for strength and durability



TLFC1
Universal Metal Fin Comb



TLFC6
Repair bent condenser fins with the TLFC6 Universal 6-sided fin comb straightening tool.



TLFC2
Fin Straightener with large durable, easy grip handle.



TECH-SET™ SERVICE WRENCHES

Item	Description
TSWS	Small Service Wrench: 3/16", 1/4", 5/16", 3/8" Square Drive
TSWSO	Small Offset Service Wrench: 3/16", 1/4", 5/16", 3/8" Square Drive
TSWSH	Large Service Wrench: 3/16" & 1/4" Square Drive; 1/2" & 9/16" Hex Drive

TECH-SET™ INSPECTION MIRRORS

For fast, accurate inspection of any hidden area. Universal ball joints hold mirrors firmly at any angle.



TLMIR1
Circular Telescoping Mirror
1 1/4" diameter



TLMIR2
Circular Telescoping Mirror
2 1/4" diameter



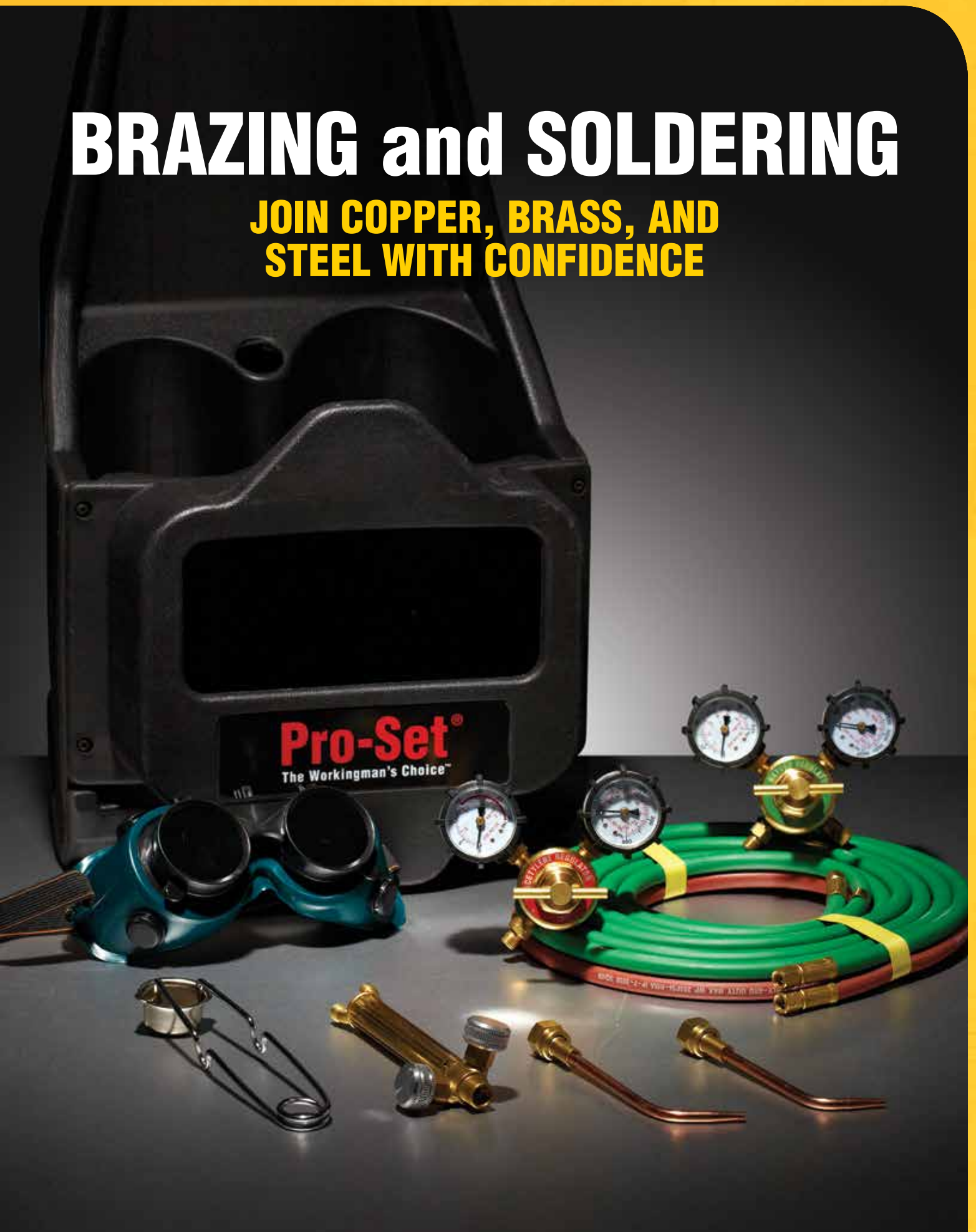
TLMIR3
Rectangular Telescoping Mirror
3 1/2" x 2"



TLMIR4
Oval Pocket Mirror
1" x 2"

BRAZING and SOLDERING

JOIN COPPER, BRASS, AND
STEEL WITH CONFIDENCE



1.800.561.8187

www.itm.com

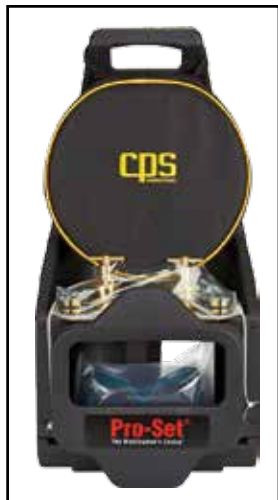
information@itm.com

PRO-SET® OXYACETYLENE WELDING/BRAZING KIT

Comes with oxy regulator, acetylene regulator, torch handle, torch tips, goggles, hoses, plastic tote and check valves. Brazes up to 1" copper tubing and welds up to 1/8" steel. The **BRHVACR1** OxyAcetylene Welding/Brazing Kit comes with oxy regulator, acetylene regulator, torch handle, torch tips, goggles, hoses, plastic tote and check valves.

Kit Includes:

- Torch handle
- Oxygen regulator
- Acetylene regulator
- Brazing tips
- Check valves
- Striker
- Goggles
- 12.5' twin hose
- Carrying tote
- Circular storage case



* tanks not included



BRHVACR1

PRO-SET® BRAZING & SOLDERING ACCESSORIES OR REPLACEMENT PARTS

Item	Optional Replacement Part	Description
BRAA1	✓	Acetylene/Fuel Regulator "A" Ftg. Outlet / CGA 200 Inlet (UL Listed)
BRRN1		Nitrogen Regulator
BRR01	✓	Oxygen Regulator "A" Ftg. Outlet CGA / 540 Inlet (UL Listed)
BRXCVA1	✓	Check-Valve Set / Left & Right "A" Ftg.
BRXG1	✓	Welding / Brazing Goggles
BRXHTA12	✓	12.5', 3/16" Oxy-Acetylene Twin Hose Set "A" Ftg.
BRXHTPTB1		C-Shaped Burner Head Accessory for BRHTPKIT
BRXHTPTB2		Flame Spreading Burner Head Accessory for BRHTPKIT
BRXHTS1		Replacement Torch Burner Tube Assembly for BRHTS1
BRXHTST1		Replacement Torch Tip for BRHT1 and BRHTS1A

Be Brazen, with our new Pro-Set[®] Workingman's Choice Torch...

PRO-SET[®] PREMIUM HAND TORCH WITH INTERCHANGEABLE TIPS

Auto-Ignite Hand Torch for MAPP, propane or propylene and 3 changeable tips with plastic case.



BRAZING AND SOLDERING TORCHES

Specifications	Pro-Set					Tech-Set	Pro-Set
	BRHT1	BRHT2	BRHT5	BRHTS1A	BRHTPKIT	BRHTS1	BRHVACR1
Torch Type	Auto-Ignite Hand Torch	Auto-Ignite Power Torch	Auto-Ignite Hand Torch w/5' hose & valve	Auto-Ignite Swivel Hand Torch	Pencil Flame Hand Torch (Manual Ignition)	Swivel Hand Torch (Manual Ignition)	Oxy-Acetylene Brazing Kit
Flame Control	Adjustable						
For Use With	Propylene (MAPPRO), MAPP and Propane						Oxy-Acetylene
Inlet Connection	CGA600 Inlet Connection						CGA540/CGA200
Construction	Cast Aluminum & stainless steel burn tube	Reinforced Plastic & stainless steel burn tube	Brass regulator, composite handle & stainless steel burn tube	Brass regulator & stainless steel burn tube	All brass construction	All brass and stainless steel	Brass components
Other	Flame lock button, precise flame adjustment	Tips & storage case with space for 2 cylinders	New brass regulator and 5' hose length	Torch tube swivels 360 degrees, operates in any position	Pencil flame torch, general heating and round tip included	High output swirl flame	Includes complete kit for brazing, welding, soldering

HAND TORCH

Auto-ignite hand torch (cast aluminum) for disposable 1lbs bottles) for MAPP, propane or propylene



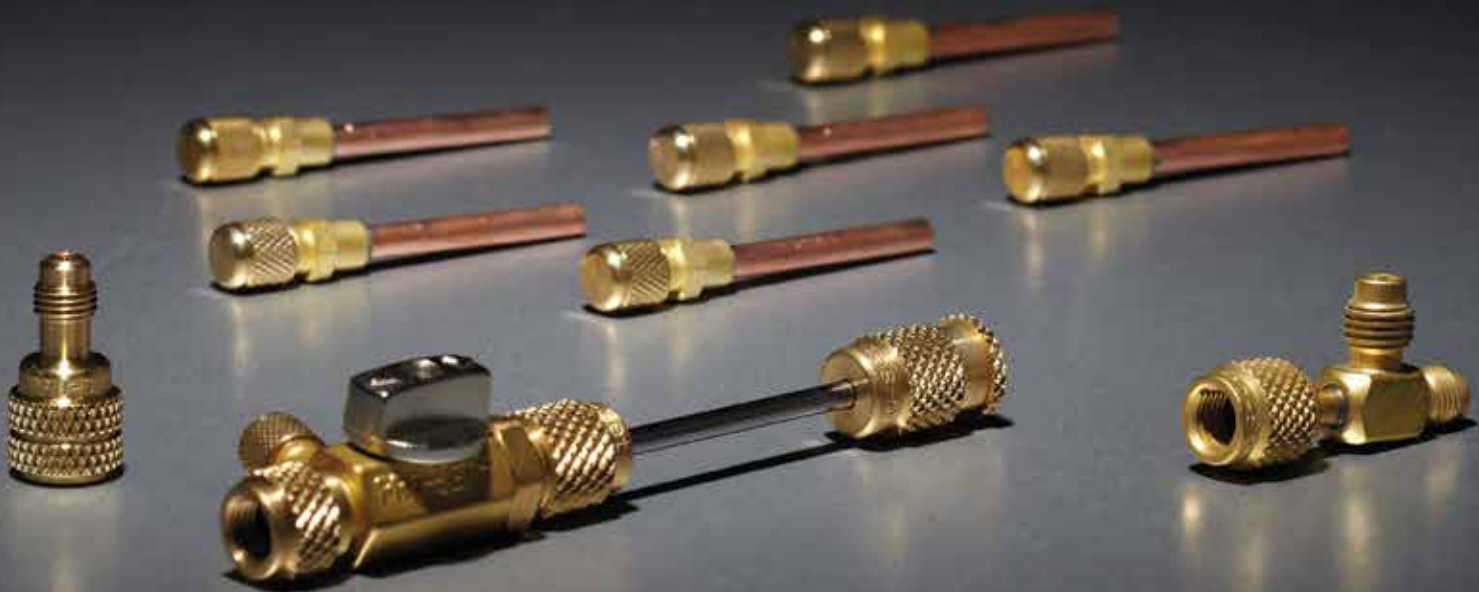
HAND TORCH

Auto-ignite hand torch kit with 5' hose and valve for MAPP, propane or propylene



BRASS ADAPTERS, FITTINGS & VALVE CORE TOOLS

MANUFACTURED TO STRINGENT
INDUSTRY STANDARDS





BRASS ADAPTERS

ITEM	Female	Male	Other	Male	Qty / Pk
AD12	1/2" ACME	LO-side R-134a	-	R-134a automotive tanks	1
AD14	-	14 mm x 1/4" SAE	-	R-134a automotive couplers	1
AD18C	1/4" SAE	1/8" SAE	w/ valve core	Manifolds, compressors	1
AD24	-	1/4" SAE x 1/8" MNPT	w/ valve core	Manifolds, compressors	6
AD24B	-	1/4" SAE x 1/8" MNPT	Bulk	1/4" service manifolds	100
AD36	3/16" SAE	1/4" SAE	no valve core	TLVC Valve Core Tool for R-12 Auto. HI-side	1
AD36C	3/16" SAE	1/4" SAE	w/ valve core	Automotive adapter	1
AD41	3/4" -14	1/4" SAE	w/ gasket	Large 125 lb cylinders	1
AD41B	3/4" -14	1/4" SAE	Bulk	Large 125 lb cylinders	100
AD61	3/4" -14	3/8" SAE	w/ gasket	Large 125 lb cylinders	1
AD44	-	1/4" SAE x 1/4" MNPT	w/ valve core & cap	Vacuum Pumps, compressors	6
AD44B	-	1/4" SAE x 1/4" MNPT	Bulk	Vacuum Pumps, compressors	100
AD47	-	1/4" SAE x 1/4" SAE	-	1/4" Hose union	1
AD47B	-	1/4" SAE x 1/4" SAE	Bulk	1/4" Hose union	100
AD48	1/4" SAE	1/2" ACME	w/ valve core	Vacuum pumps/manifolds/recovery/tanks	3
AD48B	1/4" SAE	1/2" ACME	w/ valve core	Vacuum pumps/manifolds/recovery/tanks	50
AD68	1/4" SAE	3/8" SAE	w/core & Depressor	Vacuum pumps	3
AD68V	1/2" ACME	3/8" SAE	w/core & Depressor Bulk	Vacuum pumps	1
AD71	3/4" -14	1/2"-20 UNF	w/gasket	Large 125 lb cylinder	1
AD78	1/4" SAE	1/2"-20 UNF	w/ valve core	R-410A International	1
AD78B	1/4" SAE	1/2"-20 UNF	Bulk	R-410A International	100
AD81	3/4" -14	1/2" ACME	w/ gasket	Large 125 lb cylinder	1
AD81B	3/4" -14	1/2" ACME	Bulk	Large 125 lb cylinder	100
AD84	1/2" ACME	1/4" SAE	no valve core	Vacuum pumps/manifolds/recovery/tanks	3
AD84B	1/2" ACME	1/4" SAE	Bulk	Vacuum pumps/manifolds/recovery/tanks	100
AD84C	1/2" ACME	1/4" SAE	w/ valve core	Vacuum pumps/manifolds/recovery/tanks	3
AD849C	1/2" ACME	1/4" SAE	90 Degree w/valve core	Automotive adapter	1
AD87	1/2"-20 UNF	1/4" SAE	w/ valve core	R-410A International	1
AD87S	1/2"-20 UNF SWVL	1/4" SAE 55D	w/ valve core	R-410A International	1
AD149C	1/4" SAE	1/4" SAE 90D	w/ valve core	Automotive adapter	1
AD369C	3/16" SAE	1/4" SAE 90D	w/ valve core	Automotive adapter	1
AD849C	1/2" ACME 90°	1/4" SAE 90D	w/ valve core	Automotive adapter	3
AD91	21.8 Whitworth	3/8" SAE	w/ gasket	Large cylinder adapter	1
AD91B	21.8 Whitworth	1/4" SAE	Bulk	Large cylinder adapter	100
ADXFW	TBD	TBD	TBD	TBD	6



QUICK SEAL O-RING CAPS & VALVE CORES

ITEM	Qty / Pk	Description
AVC134C	2	1/2" ACME brass caps w/chain
AVC134H	10	R-134a hi side caps
AVC134L	10	R-134a low side caps
AVC134PS	2	1/2" ACME plastic cap w/ straps
AVC410	10	1/2"-20 UNF SAE brass caps
AVC410B	100	1/2"-20 UNF SAE brass caps
AVC410C	2	1/2" -20 UNF SAE brass caps w/ chain
AVC410CB	100	1/2" -20 UNF SAE brass caps w/ chain (bulk)
AVC4	10	1/4" SAE brass caps
AVC425	25	1/4" SAE brass caps
AVC4B	100	1/4" SAE brass caps bulk
AVC4C	2	1/4" SAE brass caps w/ chain
AVC4P	6	1/4" SAE plastic caps
AVC4PB	100	1/4" SAE plastic caps
AVC6C	2	3/8" SAE brass caps w/ chain
AVC8C	2	1/2" SAE brass caps w/ chain
AVC4PS	6	1/4" SAE plastic caps w/ straps
AVC4R	6	1/4" SAE brass caps w/ core remover
AVC4RB	100	1/4" SAE brass caps w/ core remover bulk
AVC6P	3	3/8" SAE plastic caps
AVCVAC	1	Vacuum pump brass cap kit w/chain
AVS1	10	Valve cores
AVS125	25	Valve cores
AVS1B	100	Valve cores bulk
AVS1BC	1000	Valve cores bulk
AVS1V	6	Tech-Set valve cores w/1 cap in vial
AVS44	3	1/4" SAE x 1/4" F swivel

Valve Cores



AVS1

Brass Caps



AVC4

AVC4R

Brass Caps with Chains



AVC6C



VALVE CORE TOOL ACCESSORIES

Item	Description
TLVC	1/4" SAE valve core remover and installer
TLVCS	1/4" SAE valve core remover and installer w/side port
TLVC1	Standard valve core tool w/3 core
TLVC2	Dual valve core standard and large bore tool
TLVC2B	Dual valve core tool (bulk 100pk)
TLVC4	Valve core tool with port rethreader
TLVC6	JRA 6 mm valve core tool
TLVC410	1/2"-20 UNF valve core remover and installer
TLVCS410	1/2"-20 UNF valve core remover and installer w/side port
TLVC810	EATON 8 and 10 mm valve core remover and installer
TLVCD1	1/4" SAE male x 1/4" SAE female swivel valve core depressor tool back seating type
TLVCD2	5/16" SAE male x 5/16" SAE female valve core depressor tool back seating type
TLVCD3	1/4" SAE male x 5/16" SAE female swivel valve core depressor tool back seating type
TLXVCRT	Schrader rethreading tool for TLVC/TLVCS
TLXVCT	Digital thermometer accessory for TLVC/TLVCS
TLXVCBC	Broken Schrader extractor tool for TLVC/TLVCS
TLXVC410BC	Broken Schrader extractor tool for TLVC410/TLVCS410
TLXVC410RT	Schrader rethreading tool for TLVC410/TLVCS410



TLVC



TLXVCT

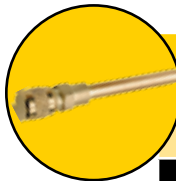


TLXVCBC



1/4" SAE TEE CONNECTORS

ITEM	Qty / Pk	Description
AVT2P	3	1/4" male w/cap and valve core x 1/4" male x 1/8" MNPT
AVT4	3	1/4" male w/cap and valve core x 1/8" MNPT x 1/4" male
AVT4P	3	1/4" male w/cap and valve core x 1/4" male x 1/4" MNPT
AVT44	3	1/4" female hex x 1/4" SAE male x 1/4" male w/cap and valve core
AVT45	3	1/4" male x 1/4" female knurl x 1/4" male
AVT48	1	1/4" male x 1/4" female knurl x 1/2" Acme male
AVT64	3	1/4" male w/cap and valve core x 1/4" male x 1/4" female hex
AVT64B	100	1/4" male w/cap and valve core x 1/4" male 1/4" female Hex
AVT64Z	1	1/4" male w/cap and valve core x 1/4" male x 1/4" female, no depressors
AVT87	1	1/4" male x 1/2"-20 UNF female x 1/2"-20 UNF male (R-410A)



HVAC/R ACCESS FITTINGS

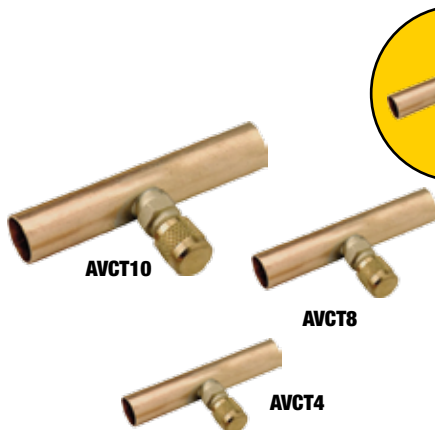
Standard Cap		Wrench Cap		Description
6pk	100pk	6pk	100pk	
AV2	AV2B	AV2R	AV2RB*	1/8" O.D. x 1/16" I.D.
AV3	AV3B	AV3R	AV3RB	3/16" O.D. x 1/8" I.D.
AV4	AV4B	AV4R	AV4RB*	1/4" O.D. x 3/16" I.D.
AV4L	AV4LB*	AV4LR	AV4LRB	1/4" O.D. x 3/16" I.D. W/4" COP-TB EXT
AV5	AV5B*	AV5R	AV5RB*	5/16" O.D. x 1/4" I.D.
AV6	AV6B	AV6R	AV6RB*	3/8" O.D. x 5/16" I.D.
AV6 MM	AV6MB	AV6MR	AV6MRB	6 mm O.D. x 5 mm I.D.
AV4410	AV4410B	N/A	N/A	1/2"-20 ACCES, 1/4" O.D. x 3/16" I.D.

*Non-stock item. Call for availability



MISCELLANEOUS ACCESS FITTINGS

6pk	100pk	Description
AVB34	AVB34B	3/16" ID x 1/4" OD solder
AVB46	AVB46B	3/16" I.D. x 1/4" O.D. x 3/8" solder
AVB346	AVB346B (assembled)	3/16" ID x 1/4" OD x 3/8" OD
	AVB346BU (unassembled)	
	AVB346RB (cap w/core tool)	
	AVB346BO	
AVB456	AVB456B	1/8" ID x 3/16", 1/4", 5/16"
AVB6	AVB6B (w/caps)	6-8-10 mm OD solder
	AVB6BC (w/o caps)	
AVB456	AVB456B	1/8" ID x 3/16", 1/4", 5/16"



1/4" SAE ACCESS VALVE WITH COPPER TUBE ON BRANCH

ITEM	Qty / Pk	Description
AVCT4	3	1/4" SAE x 1/4" O.D.F
AVCT5	3	1/4" SAE x 5/16" O.D.F
AVCT6	3	1/4" SAE x 3/8" O.D.F
AVCT8	3	1/4" SAE x 1/2" O.D.F
AVCT10	1	1/4" SAE x 5/8" O.D.F
AVCT12	1	1/4" SAE x 3/4" O.D.F
AVCT14	1	1/4" SAE x 7/8" O.D.F
AVCT18	1	1/4" SAE x 1 1/8" O.D.F



Product Guarantee

CPS guarantees that all products are free of manufacturing and material defects for one year from the date of purchase. If a product should fail during the guarantee period due to defective material or workmanship, it will be repaired or replaced (at our office) at no charge. This guarantee does not apply to products that have been altered, misused, or are in need of field service maintenance. All repaired products will carry an independent 90 day warranty. The LS3000 and LS790B carry a 2 year warranty and the LS780B has a 1 year warranty.