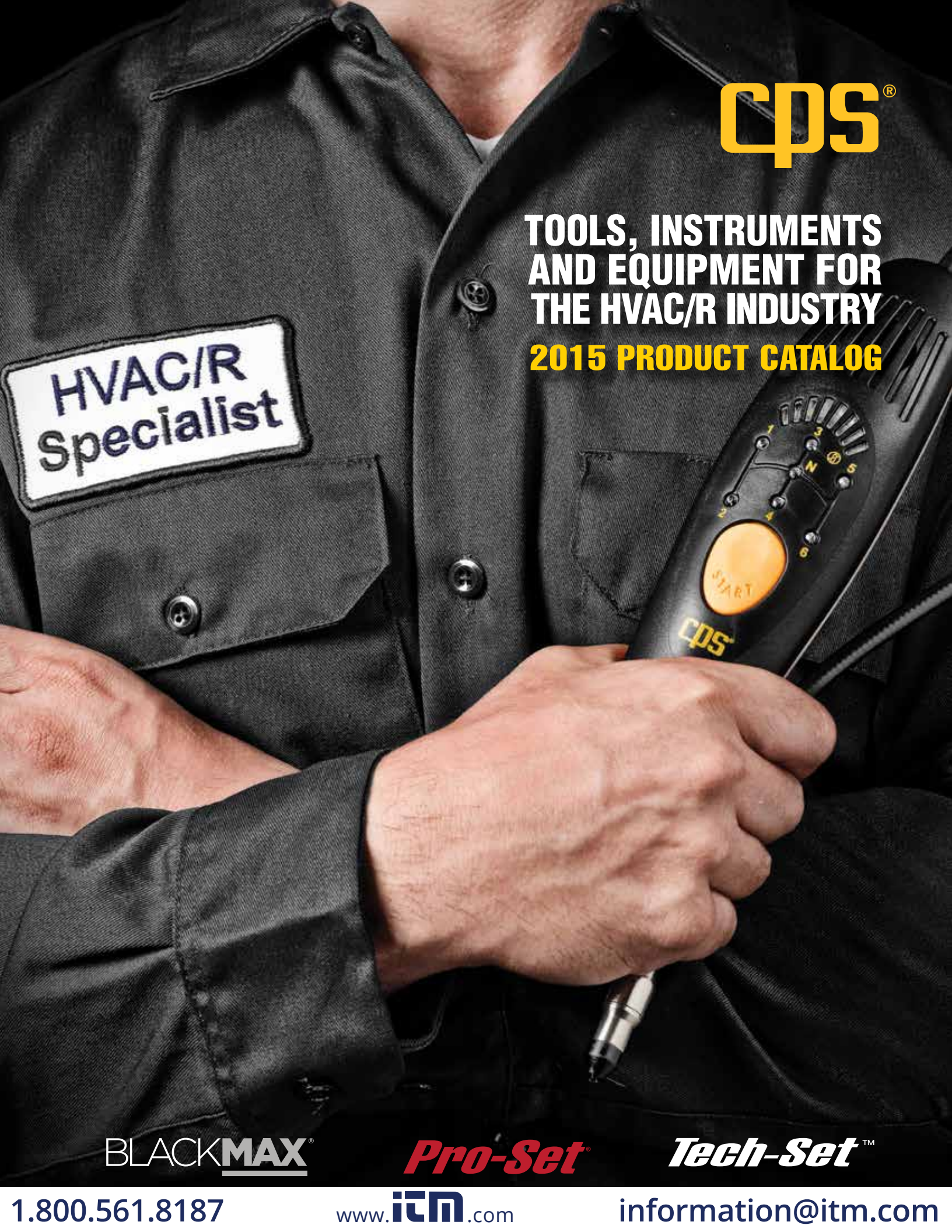


A close-up photograph of an HVAC/R specialist. The person is wearing a black button-down uniform shirt with a white patch on the left chest that reads "HVAC/R Specialist". They are holding a black CPS manifold gauge with a yellow "START" button and a yellow "CPS" logo. The background is dark and out of focus.

**cps®**

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

**2015 PRODUCT CATALOG**

**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



# LEAK-SEEKER® ELECTRONIC REFRIGERANT LEAK DETECTORS

with  
**EMOS**  
Technology

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

- **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.

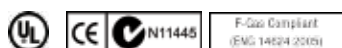
## LEAK-SEEKER® II

### 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          | <b>In Progressive Mode:</b><br>Extended tone range<br><b>In Threshold Mode:</b><br>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 combustible 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 combustible 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<br>(Control Module & Sensor)  | 14 to 150°F (-10 to 65°C)           |
| Relative Humidity Range<br>(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<br>(replaces LSXVF)              | ✓       | ✓       | ✓      | ✓       | ✓      |         |          |     |     |      |
| LSXBMK | Maintenance Kit: (1) LSXS + (1)<br>LSXSF (replaces LSXMK) | ✓       | ✓       | ✓      | ✓       | ✓      |         |          |     |     |      |
| LSXS   | Ion-Pump Sensor                                           | ✓       | ✓       | ✓      | ✓       | ✓      |         |          |     |     |      |
| LSXBC  | Battery Compartment Cover<br>(Yellow)                     | ✓       | ✓       | ✓      | ✓       | ✓      |         |          |     |     |      |
| LSXC   | Carrying Case (Fabric)                                    | ✓       | ✓       | ✓      | ✓       | ✓      |         |          |     |     | ✓    |
| LSXE   | Earphone                                                  | ✓       | ✓       | ✓      | ✓       | ✓      |         |          |     |     | ✓    |
| EMOS2  | E_MOS Technology Sensor                                   |         |         |        |         |        |         |          | ✓   | ✓   |      |
| LS2XF  | E_MOS Technology Sensor<br>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

# MOONLIGHT™

### 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)

### MOONSHINE™ UNIVERSAL DYE AND CLEANER

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



UVUD6

UVUDS

UVCLNR

## 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)                                               |
|------------------------------------------------------------------------------|--------------------------------|----------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>SMALL</b><br>Ice machines, window AC units, autos, refrigerators          | Up to 2.9 lbs. (1.3 kg)        | Up to 15 oz (.44 L)              | <br>UV101 | <br>UVS101 (Gold) |
| <b>MEDIUM</b><br>Residential systems                                         | 3 to 4.9 lbs. (1.4 to 2.2 kg)  | 16 oz to 1.6 qt. (.45 to 1.8 L)  | <br>UV1   | <br>UVS1 (Purple) |
| <b>MEDIUM-LARGE</b><br>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) | <br>UV2   | <br>UVS2 (Orange) |
| <b>LARGE</b><br>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) | <br>UV3   | <br>UVS3 (Green)  |

## 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)



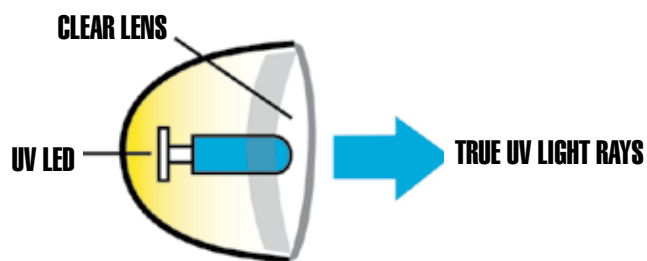
**TLJ2**  
R-12 1/4" SAE oil dye injector

## TECH-SET™ DYE BASED REFRIGERANT LEAK DETECTION KIT

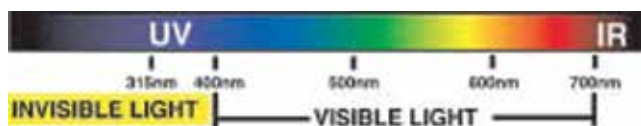
Refrigerant leaks are the number one cause of poor A/C cooling. Having the correct amount of refrigerant in an A/C system is critical to achieve proper cooling. Any loss of refrigerant will reduce a system's ability to transfer heat, causing the compressor to work harder and the system to cool less efficiently. 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:  $\pm 0.25$  oz

## WIRELESS HIGH CAPACITY CHARGING/RECOVERY SCALES

Full specifications listed on page 16



**CC240RF**  
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**  
with Wireless Remote Hand-Held Controller



### 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



CCXHB - 110 VAC / 340W / 150°F  
CCXHBV - 220 VAC / 340W / 65°C



### REPLACEMENT PARTS FOR COMPUTE-A-CHARGE SCALES

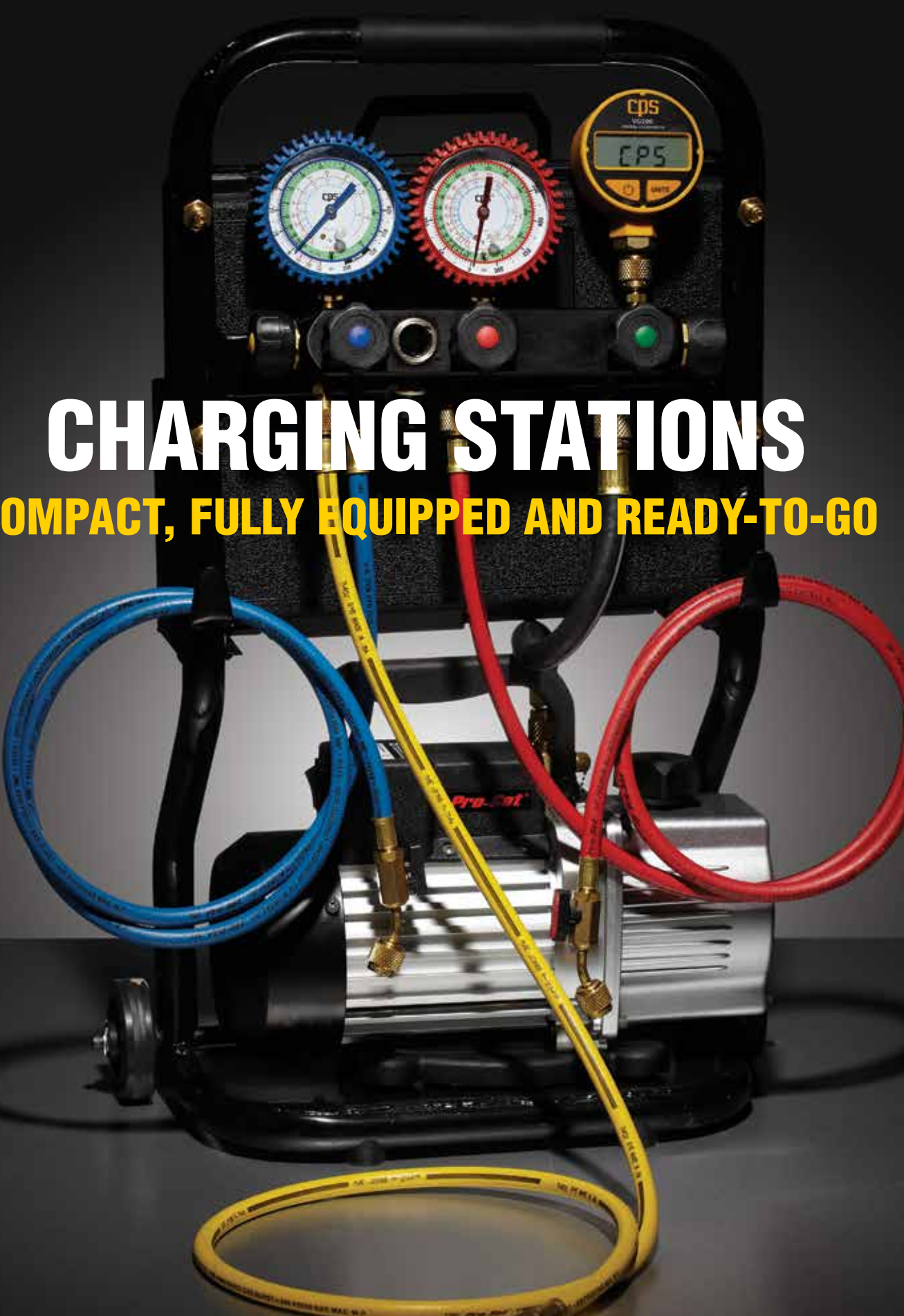
|          |                                                                           |
|----------|---------------------------------------------------------------------------|
| CCXC     | Protective carrying case for CC50, CC110, CC110, CC220                    |
| CCXC1    | Protective carrying case 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" (22.3 x 22.3 cm)               | 10" x 10" (25.4 cm x 25.4 cm)                                                                          | 8.75" x 8.75" (22.3 x 22.3 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                           | <b>Remote:</b><br>(2) 9V Alkaline (Included)            | <b>Remote:</b><br>(1) 9V Alkaline, (Included);<br><b>Scale Platform:</b><br>(4) AA Alkaline (Included) | <b>Remote:</b><br>(2) 9V Alkaline (Included) | <b>Remote:</b><br>(1) 9V Alkaline, (Included);<br><b>Scale Platform:</b><br>(4) AA Alkaline (Included) | <b>Remote:</b><br>(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**



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<br>SMBDS5E                                           | CS12<br>SMBHP5E   | CS12<br>DMV4TP6Q                                 | CS14<br>CMBHP5E                                 | CS16<br>SMV4H2P5E                    | CS16<br>DMV4D2P5E                    | CS16<br>DMV5H2P5E      | CS16<br>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<sup>®</sup> 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



TR700



## COMPETITOR COMPARISON

| Refrigerant | TEST CONDITIONS (kg/s) |                 | CPS<br>TR700      | Appion<br>G5      | Yellow Jkt<br>95760 | Promax<br>RG5410EX | Promax<br>RG5410A | Inficon<br>Vortex AC | Stinger<br>2000-3300 |
|-------------|------------------------|-----------------|-------------------|-------------------|---------------------|--------------------|-------------------|----------------------|----------------------|
| R410a       | @ 75°F                 | Liquid          | 5.42              | 1.58              | 0.76                | 2.33               | 1.85              | 1.66                 | 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) RRRE-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                   | TR700                    |
| TR21X5  | Eccentric Crank Set                    |                          |
| 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                   |                          |
| TR21X5  | TR19/TR21 Eccentric Set                | TR600                    |
| 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!**

## 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



TR21

Recovery Equipment

### 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 SPECIFICATIONS

| Attribute                                                       |                     | TECH-SET®                                                                                                                                                                                                               |                      |                      | PRO-SET®                                                                                                                                                                                     |                         |                         |                            |                      |                      |
|-----------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|----------------------------|----------------------|----------------------|
|                                                                 |                     | TR19                                                                                                                                                                                                                    | TR19C                | TR19S                | TR21                                                                                                                                                                                         | TR21C                   | TR21S                   | TRS21<br>Ignition<br>Proof | TR22                 | TR22C                |
| Voltage                                                         |                     | 115V (60Hz)                                                                                                                                                                                                             |                      | 220-240V<br>(50 Hz)  | 115V (60 Hz)                                                                                                                                                                                 |                         | 220-<br>240V<br>(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<br>Reciprocating Compressor              |                     | ✓                                                                                                                                                                                                                       |                      |                      |                                                                                                                                                                                              |                         |                         |                            |                      |                      |
| ON-Off Power Switch                                             |                     | ✓                                                                                                                                                                                                                       |                      |                      |                                                                                                                                                                                              |                         |                         |                            |                      |                      |
| Spark Proof Starting<br>Components                              |                     | No                                                                                                                                                                                                                      |                      |                      |                                                                                                                                                                                              |                         |                         | ✓                          | No                   |                      |
| High Pressure Shut-Off<br>(Psig/bar)                            |                     | 550 Psig<br>(38 bar)                                                                                                                                                                                                    | 450 Psig<br>(31 Bar) | 550 Psig<br>(38 bar) | 550 Psig<br>(38 bar)                                                                                                                                                                         | 450<br>Psig (31<br>Bar) | 550 Psig<br>(38 bar)    | 550 Psig<br>(38 bar)       | 550 Psig<br>(38 bar) | 450 Psig<br>(31 Bar) |
| Selectable Manual OR<br>Automatic Shut-Off Mode<br>Settings     |                     | Auto Reset High Pressure Switch                                                                                                                                                                                         |                      |                      |                                                                                                                                                                                              |                         |                         |                            |                      |                      |
| Tank Overfill Switch Kit                                        |                     | No                                                                                                                                                                                                                      |                      |                      |                                                                                                                                                                                              |                         |                         |                            | ✓                    |                      |
| Maximum<br>Flow Rate<br>@ 60 Hz<br>(Reduce<br>15% for 50<br>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<br>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,<br>R-401B, R-401C, R-402A, R-402B,<br>R-404A, R-406A, R-407A, R-407B,<br>R-407C, R-407D, R-407E, R-407F,<br>R-408A, R-409A, R-410A R-411A,<br>R-411B, R-412A, R-500, R-502,<br>R-507, R-509 |                      |                      | R-12, R-134a, R-401C, R-406A, R-500, R-401A, R-409A, R-401B,<br>R-412A, R-411A, R-407D, R-22, R-411B, R-502, R-407C, R-402B,<br>R-408A, R-509, R-407A, R-404A, R-402A, R-507, R-407B, R-410A |                         |                         |                            |                      |                      |
| Operating Temperature<br>Range                                  |                     | 32° to 120°F (0° to 49°C)                                                                                                                                                                                               |                      |                      |                                                                                                                                                                                              |                         |                         |                            |                      |                      |
| Cleanable, 100-Mesh Screen<br>Filtration (Into Suction Port)    |                     | ✓                                                                                                                                                                                                                       |                      |                      |                                                                                                                                                                                              |                         |                         |                            |                      |                      |
| High Pressure Cutout LED                                        |                     | ✓                                                                                                                                                                                                                       |                      |                      |                                                                                                                                                                                              |                         |                         |                            |                      |                      |
| Heavy Gauge Aluminum<br>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.<br>(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   | 1/4" SAE male                                   |
| Refrigerant Compatability  | All                                             |

### COMPARATIVE DATA

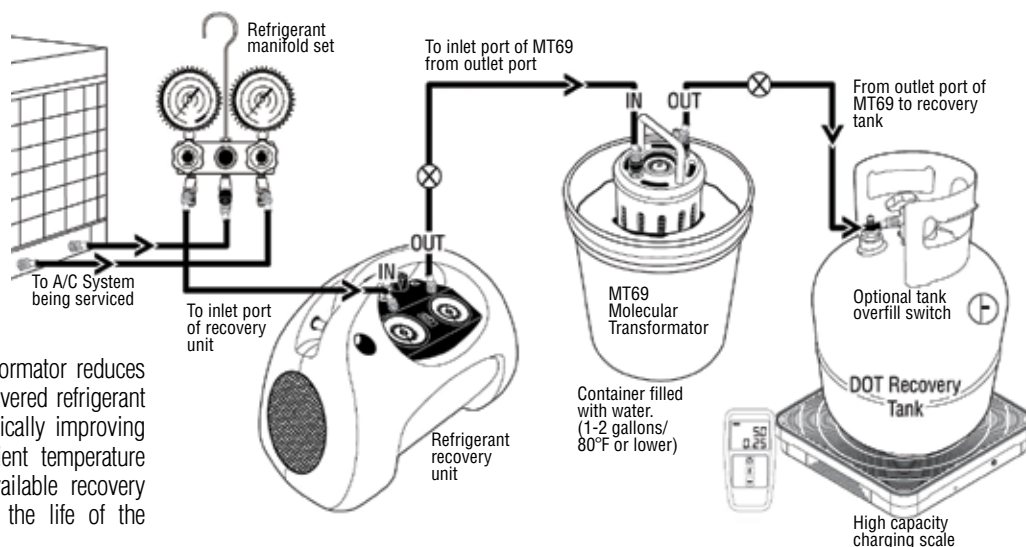
| Time needed to recover 15 lbs of R22 at 120° F: | WITH CPS MT69 | WITHOUT CPS MT69 |
|-------------------------------------------------|---------------|------------------|
|                                                 | 17 minutes    | 32 minutes       |

| 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



| ITEM     | DESCRIPTION                                                                                                                     | WATER CAPACITY       | DOT SPECIFICATION | SERVICE PRESSURE |
|----------|---------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------|------------------|
| ARX134T  | Automotive 50 lb tank with 1/2" ACME male fitting                                                                               | 47.7 lb<br>(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.<br>1/4" SAE female x 1/2" ACME male adapter fitting included                     | 92 lb<br>(41.7 kg)   | DOT04BW-400       |                  |
| CRX390TS | 90 lb tank with 1/4" SAE male fitting on tank and overfill sensor.<br>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<br>(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<br>(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.

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |
| 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<br>(48 l/m @ 50Hz)                                                   |                                                                                   | 4 CFM @ 60Hz<br>(96 l/m @ 50Hz)                                                   |                                                                                   | 6 CFM @ 60 Hz<br>(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.

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |
| 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<br>(192 l/m @ 50 Hz)                                                |                                                                                   | 10 CFM @ 60Hz<br>(240 l/m @ 50Hz)                                                 |                                                                                   | 12 CFM @ 60Hz<br>(288 l/m @ 50Hz)                                                  |                                                                                     |                                                                                     |                                                                                     |
| Motor Size (HP), RPM @ 50/60Hz    | 2⅓ HP (2880, 3440 RPM)                                                            |                                                                                   | ¾ 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 ¼", ⅜", ½"                                                                    |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 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                                       |  |  |  |  |  |  |
|---------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 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 = lpm; **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)<br>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.

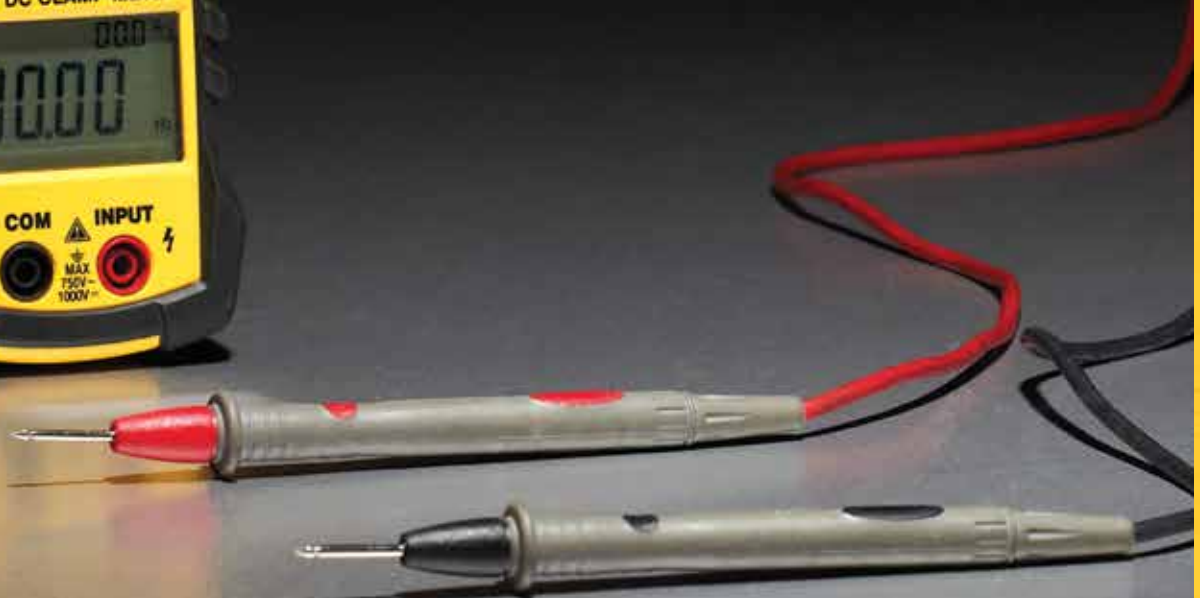


### VACUUM GAUGE ACCESSORIES & SPARE PARTS FOR VG200, VG201, 100A, VG101

|       |                                                                        |
|-------|------------------------------------------------------------------------|
| 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)



USB data connection



Extra strength grip clamp



Built-in flashlight



Back view



AC750

### 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"<br>(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



**SM150**  
CE N11445

### 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

### 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.

#### 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.)<br>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),<br>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"<br>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<br>(-100 kPa to 5000 kPa) |
| Pressure Accuracy                    | ±1% of reading or ± 0.5 Psig<br>(± 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)<br>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 /<br>-10.0°F to 70°C; 0.6°F / 0.3°C elsewhere<br>in the range |
| RH Range                      | 0 to 100%RH                                                                                        |
| RH Accuracy (TMX3RH)          | ±1.8%RH from 10 to 90%RH; ± 3%<br>elsewhere in the range                                           |
| DB Accuracy (TMX3RH)          | ±1.2% of reading ± 1.0°F from -40°F to<br>200°F (± 1.2% of reading ± 0.5°C from<br>-40°C to 90°C)  |

### SH450 GENERAL SPECIFICATIONS

|                     |                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------|
| Power Source        | 9V alkaline battery or optional TMX3PS<br>AC adapter for 100 to 240VAC<br>(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<br>-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;<br>± 3% elsewhere in the range                                      |
| DB Accuracy (TMX3RH)   | ±1.2% of reading ± 1.0°F from -40°F to 200°F<br>(± 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**


**TMX2A**

**TMX2G**

**TMX2GA**

**TMX2P**

**TMX2S**

**TMX3C**

**TMX2RH**

**TMX3RH**

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

| Item          | Description                                               | Common Uses                                                                             | Qty | Operating Temperature Range      | for Use With |        |       |
|---------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------|-----|----------------------------------|--------------|--------|-------|
|               |                                                           |                                                                                         |     |                                  | TM360        | TM360C | SH450 |
| <b>TMX2A</b>  | 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   |
| <b>TMX2G</b>  | 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*  |
| <b>TMX2GA</b> | 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   |
| <b>TMX2P</b>  | 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   |
| <b>TMX2S</b>  | 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   |
| <b>TMX3C</b>  | 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*  |
| <b>TMX2RH</b> | 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    |
| <b>TMX3RH</b> | 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   |
| <b>TMX3WB</b> | Wet Bulb Socks                                            | for Use With TM360                                                                      | 6   | -40°F to 194°F (-40C to +90°C)   | Yes          | Yes    | n/a   |
| <b>TMX3PS</b> | 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

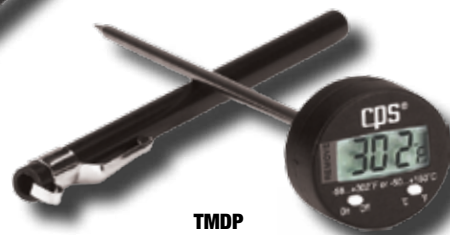
|                             |                                             |
|-----------------------------|---------------------------------------------|
| Temperature Range           | Temperature -76°F to 932°F (-60°C to 500°C) |
| D:S (Distance to Spot Size) | 12:1                                        |
| Emissivity                  | Emmisivity 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



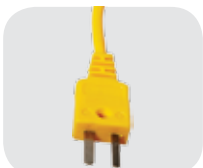
TMXSK90



Coiled lead



Flat-spring ribbons



K-type accessory  
probe



Ribbed handle

## TMXSK90 K-TYPE TEMPERATURE PROBE

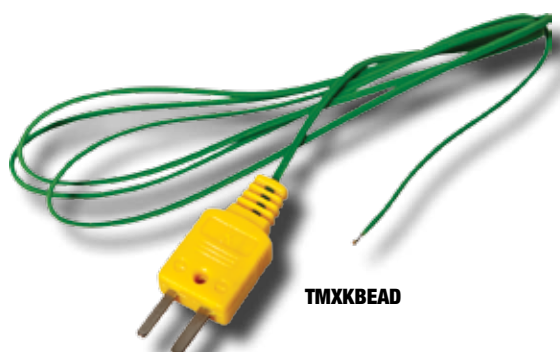
The **TMXSK** is the fastest and most accurate handheld K-type surface probe providing accurate readings in less than 5 seconds. The sensor is made from flat-spring ribbons of thermocouple material for contact on uneven surfaces. A square, ribbed handle for grip and a 3' coiled lead for durability and 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<sup>®</sup>

## 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.

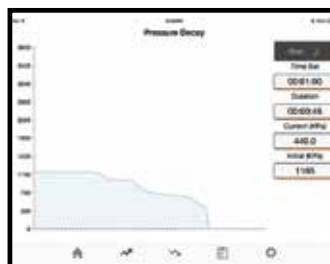
- Perform and monitor full system measurements—in real time
- Fast, convenient touch screen control
- Perform all key manifold functions without the need to physically touch the manifold
- Data logging
- Alternate views for smaller mobile devices
- Color scheme change according to refrigerant
- Real-time 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)



MD100W



Small screen option



Pressure decay test chart

| Time     | Pressure (KPa) | VSAT (C°) | LSAT (C°) | Super Heat (C°) | Sub Cool (C°) | Vacuum (inHg) |
|----------|----------------|-----------|-----------|-----------------|---------------|---------------|
| 00:01:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:01:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:02:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:02:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:03:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:03:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:04:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:04:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:05:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:05:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:06:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:06:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:07:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:07:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:08:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:08:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:09:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:09:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:10:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:10:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:11:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:11:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:12:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:12:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:13:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:13:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:14:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:14:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:15:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:15:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:16:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:16:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:17:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:17:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:18:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:18:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:19:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:19:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:20:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:20:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:21:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:21:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:22:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:22:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:23:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:23:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:24:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:24:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:25:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:25:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:26:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:26:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:27:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:27:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:28:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:28:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:29:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:29:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:30:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:30:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:31:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:31:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:32:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:32:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:33:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:33:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:34:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:34:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:35:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:35:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:36:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:36:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:37:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:37:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:38:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:38:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:39:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:39:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:40:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:40:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:41:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:41:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:42:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:42:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:43:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:43:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:44:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:44:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:45:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:45:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:46:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:46:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:47:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:47:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:48:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:48:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:49:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:49:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:50:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:50:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:51:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:51:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:52:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:52:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:53:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:53:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:54:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:54:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:55:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:55:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:56:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:56:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:57:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:57:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:58:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:58:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:59:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 00:59:30 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |
| 01:00:00 | 315.0          | 10.2      | -10.8     | not valid       | not valid     | 0             |

Data Logging

## 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                        |
| MD50WVHE                    |                  | ✓        | ✓                                                          |                                                     | ✓                                           | ✓                                   | Optional                                                 | Optional                        |
| MD100                       | 4                |          | Optional                                                   |                                                     | ✓                                           | Optional                            | Optional                                                 | Optional                        |
| MD100W                      |                  | ✓        |                                                            |                                                     | ✓                                           | Optional                            | Optional                                                 | Optional                        |
| MD100HE                     |                  |          | ✓                                                          | ✓                                                   | ✓                                           | Optional                            | Optional                                                 | Optional                        |
| MD100WHE                    |                  | ✓        | ✓                                                          | ✓                                                   | ✓                                           | Optional                            | Optional                                                 | Optional                        |
| MD100VHE                    |                  |          | ✓                                                          | ✓                                                   | ✓                                           | ✓                                   | Optional                                                 | Optional                        |
| MD100WVHE                   |                  | ✓        | ✓                                                          | ✓                                                   | ✓                                           | ✓                                   | 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.



# BLACKMAX<sup>®</sup>

## 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<br>* 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



- 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



**MBH4P5EZ**



**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      | North America            |     |
|                     |                                               |                                                                               |                   | South America      |                          |     |
|                     |                                               |                                                                               |                   | Australia          |                          |     |
| 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 |                          |     |
|                     |                                               | * Gauges built with internal silicon dampening cup for flutter-free operation |                   |                    |                          |     |
|                     | 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           |     |

***Pro-Set***<sup>®</sup>

# PREMIUM PISTON SERIES

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



## 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<br>* 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
- 1/4" SAE 45° fittings
- 2 1/2" (68 mm) class 1.6 accuracy gauges
- Extra access port in center with Schrader valve and hanging hook



### TRIPLE SEAL™ VALVES

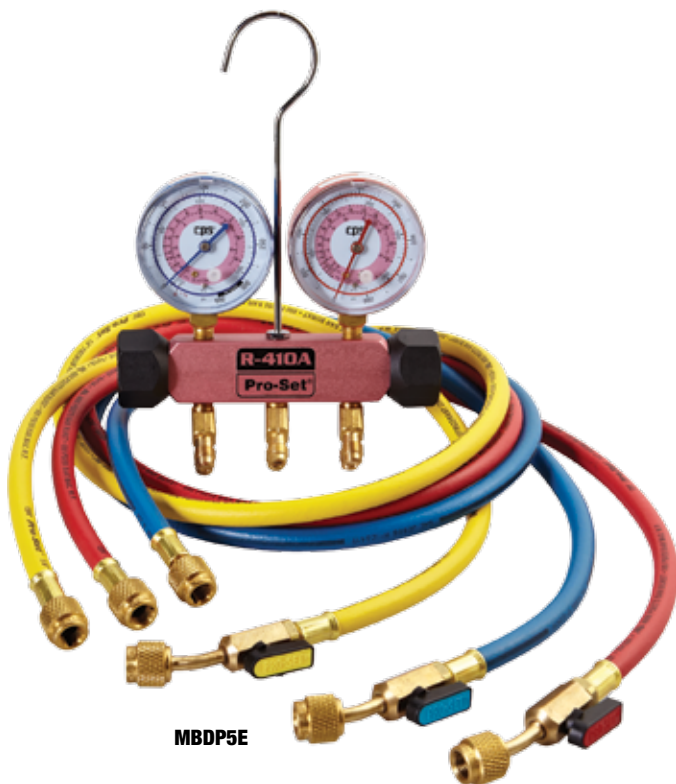
- 3 super Neoprene o-ring design
- Back-seating o-ring seals valve nut when fully open
- Floating nylon sealing disk
- Valve stems retract fully to provide maximum flow
- Mirror-like port finish for smooth valve movement



MBDP5E

## TRIPLE SEAL™ PISTON 2 VALVE BLACK BODY MANIFOLDS

| Specifications      |                            | 2 ½" (68 mm)                                                                  |                   |                    |                 |                   |                   |
|---------------------|----------------------------|-------------------------------------------------------------------------------|-------------------|--------------------|-----------------|-------------------|-------------------|
|                     |                            | North America                                                                 |                   |                    | South America   | South America     | South America     |
|                     |                            |                                                                               |                   |                    | Asia            | Australia         |                   |
| 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                                                            |                   |                    |                 |                   |                   |
|                     |                            | * Gauges built with internal silicon dampening cup for flutter-free operation |                   |                    |                 |                   |                   |
|                     | 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



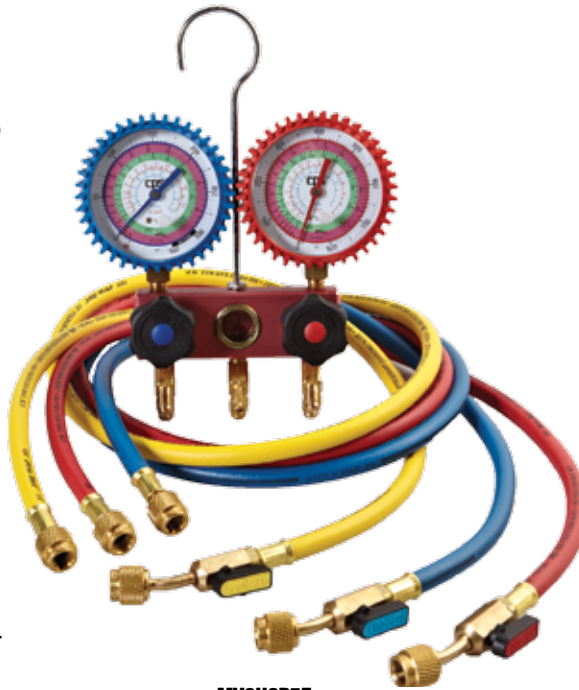
MEH

## 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         |

## 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

| BALL VALVE BODY MANIFOLD SERIES |                                                                               |                       |                   |
|---------------------------------|-------------------------------------------------------------------------------|-----------------------|-------------------|
| 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                |
|                                 | * Gauges built with internal silicon dampening cup for flutter-free operation |                       |                   |
| 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***<sup>TM</sup>  
**BRASS BODY SERIES**  
**THE ORIGINAL MANIFOLD DESIGN**



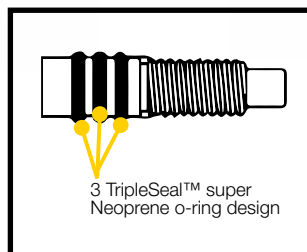
## TECH-SET™ BRASS BODY MANIFOLD SERIES

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<br>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



M2XHA



MXPV



MXMH



MVXK



MVXKC



MXPK



MXPVO



M2XRK



MXPVO

| 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 |



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**



## 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

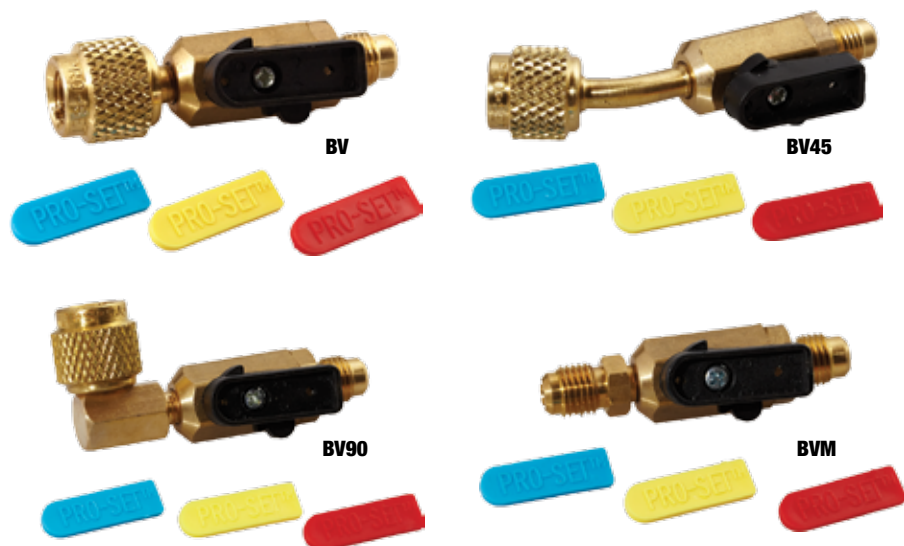
| Item    | Description                                      | Qty   |
|---------|--------------------------------------------------|-------|
| HXG     | Hose Gaskets, 1/4" SAE Neoprene                  | 10    |
| HXGD    | Hose Gasket & Core Depressor 1/4" SAE Neoprene   | 10+10 |
| HX38G   | Hose 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

|          |   |                      |           |                        |
|----------|---|----------------------|-----------|------------------------|
| 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!



### SetNCut™ 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

### SetNCut™ 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



### SetNCut™ 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 ( $\frac{1}{8}$ " - $\frac{7}{8}$ " ) 3-22 mm O.D.                             |
| BTC 200R | Mini Ratchet Tube Cutter ( $\frac{1}{8}$ " - $\frac{7}{8}$ " ), 3-22 mm O.D.                    |
| BTC 300  | Tube Cutter ( $\frac{3}{16}$ " - $1\frac{1}{4}$ " ), 5 - 32 mm O.D.                             |
| BTC 400  | Heavy Duty Tube Cutter ( $\frac{1}{4}$ " - $1\frac{1}{4}$ " ), 6 - 32 mm O.D. (shown next page) |
| BTC 500  | Large Tube Cutter ( $\frac{3}{8}$ " - $2\frac{5}{8}$ " ), 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

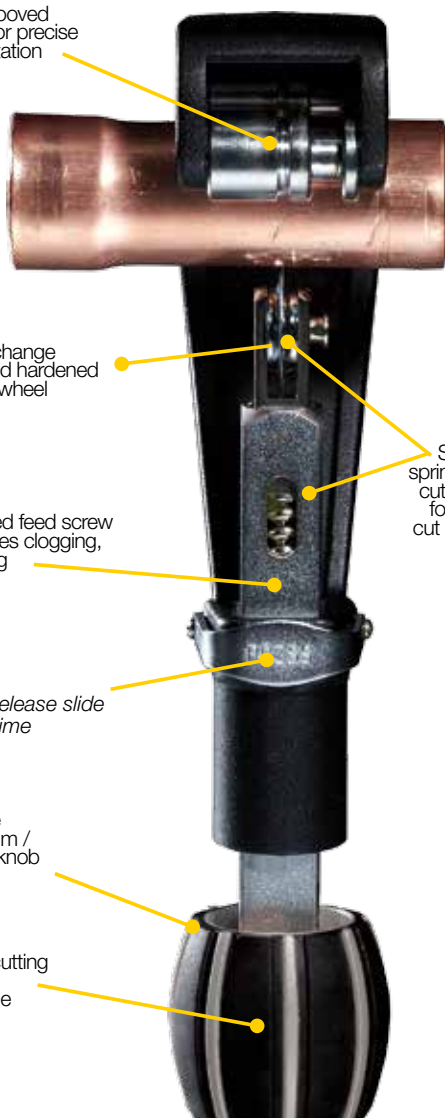
Quick-change chromed hardened cutting wheel

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) |                   |                                                              |
|-------------------------------------|-------------------|--------------------------------------------------------------|
| 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) |                   |                                                              |
|-----------------------------------|-------------------|--------------------------------------------------------------|
| 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                                              |



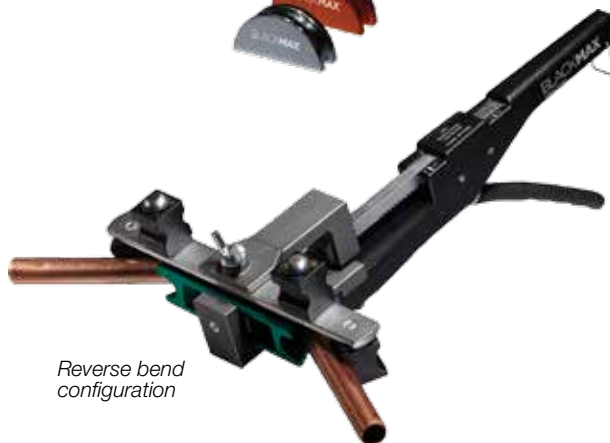
**BTB300  
TUBE BENDER KIT**

## 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                                                  |
|----------|-------------------|---------|--------------------------------------------------------------|
| Imperial | BTB300            |         | Tube Bender Set (7 Benders) includes all parts listed below: |
|          | REPLACEMENT PARTS |         |                                                              |
|          | 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                                                                   |
|--------|-------------------|---------|-------------------------------------------------------------------------------|
| Metric | BTB300M           |         | Tube Bender Set (7 Benders) includes all parts indicated below. (not BTBX16M) |
|        | REPLACEMENT PARTS |         |                                                                               |
|        | 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



Seven quick change positions



Slide gauge for perfect tube alignment



Eccentric flaring cone for precision flares

### BLACKMAX® TUBE FLARING TOOLS

| Item                | Description                                                                                                     |
|---------------------|-----------------------------------------------------------------------------------------------------------------|
| Imperial<br>BFT 850 | Tube Flaring Tool, Imperial Eccentric<br>(7 Position for: 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" O.D. Tube) |
| Metric<br>BFT 850M  | Tube Flaring Tool, Metric Eccentric<br>(7 Position for: 6, 8, 10, 12, 15, 16, 18 mm O.D. Tube)                  |

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



**BTLD83** BLACKMAX® Premium Deburring Tool  
**TLDB2X** Replacement Blade for BTLD83



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.

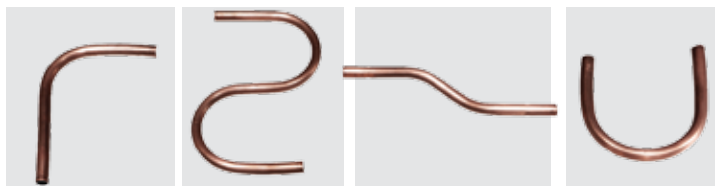
### BLACKMAX® GEAR & PULLEY REMOVERS

| 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)

| Imperial | Item  | Description                           |
|----------|-------|---------------------------------------|
|          | 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)

| Metric | Item    | Description                            |
|--------|---------|----------------------------------------|
|        | 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)



TCT174



## 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 | 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)

TB08



TB10



TB10MM



TB15MM



TB05



TB12MM



TB16MM



TB250



## PRO-SET® RATCHET TUBE BENDER

| Imperial and Metric | 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

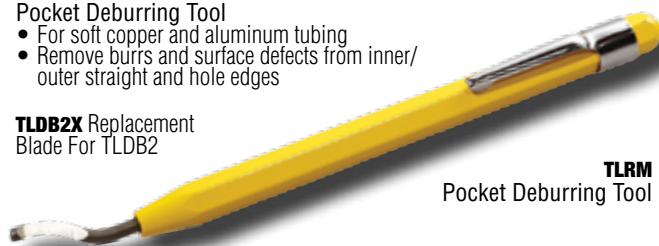
|          | ITEM   | DESCRIPTION                                       |
|----------|--------|---------------------------------------------------|
| Imperial | FS275  | 45° Flaring & Swaging Kit 1/8" - 3/4"             |
|          | FSX501 | FS275 Bar (7/16", 1/4", 1/8", 3/16", 5/16", 3/8") |
|          | 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

#### 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

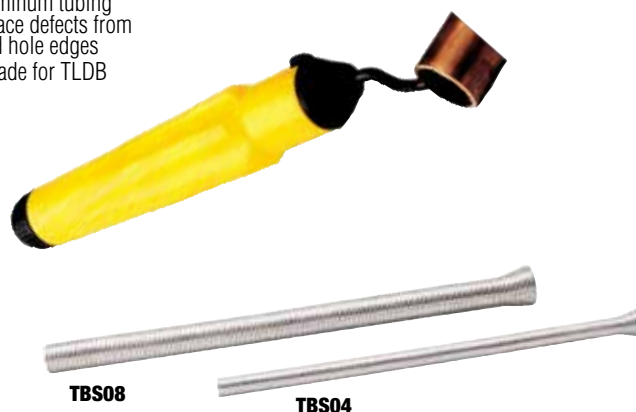
#### TC312

Heavy duty tube cutter  
Capacity: 1/4" to 1-5/8"  
(7 mm to 41 mm)

\* Spare cutting wheel located under retractable locking reamer.

### 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                            |





### TECH-SET™ TUBE FLARING TOOLS AND REPLACEMENT PARTS

| ITEM   | DESCRIPTION                                                                                                                                  |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------|
| FT195  | 45° Flaring Tool ( $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ") |
| FTX501 | FT195 Flaring Bar ( $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ")                                                                     |
| FT500  | 45° Flaring/Burnishing Tool ( $\frac{3}{16}$ " to $\frac{5}{8}$ ")                                                                           |
| FTX514 | FT500 Die Holder Assembly                                                                                                                    |
| FT203  | 45° Flaring Tool ( $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ ", 1 $\frac{1}{8}$ ") O.D. Tube                                           |
| FT500M | 45° Flaring/Burnishing Tool (6 - 16 mm)                                                                                                      |
| FT525  | Universal Adjustable Flaring Tool $\frac{3}{16}$ " to $\frac{5}{8}$ " (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 uniform 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)

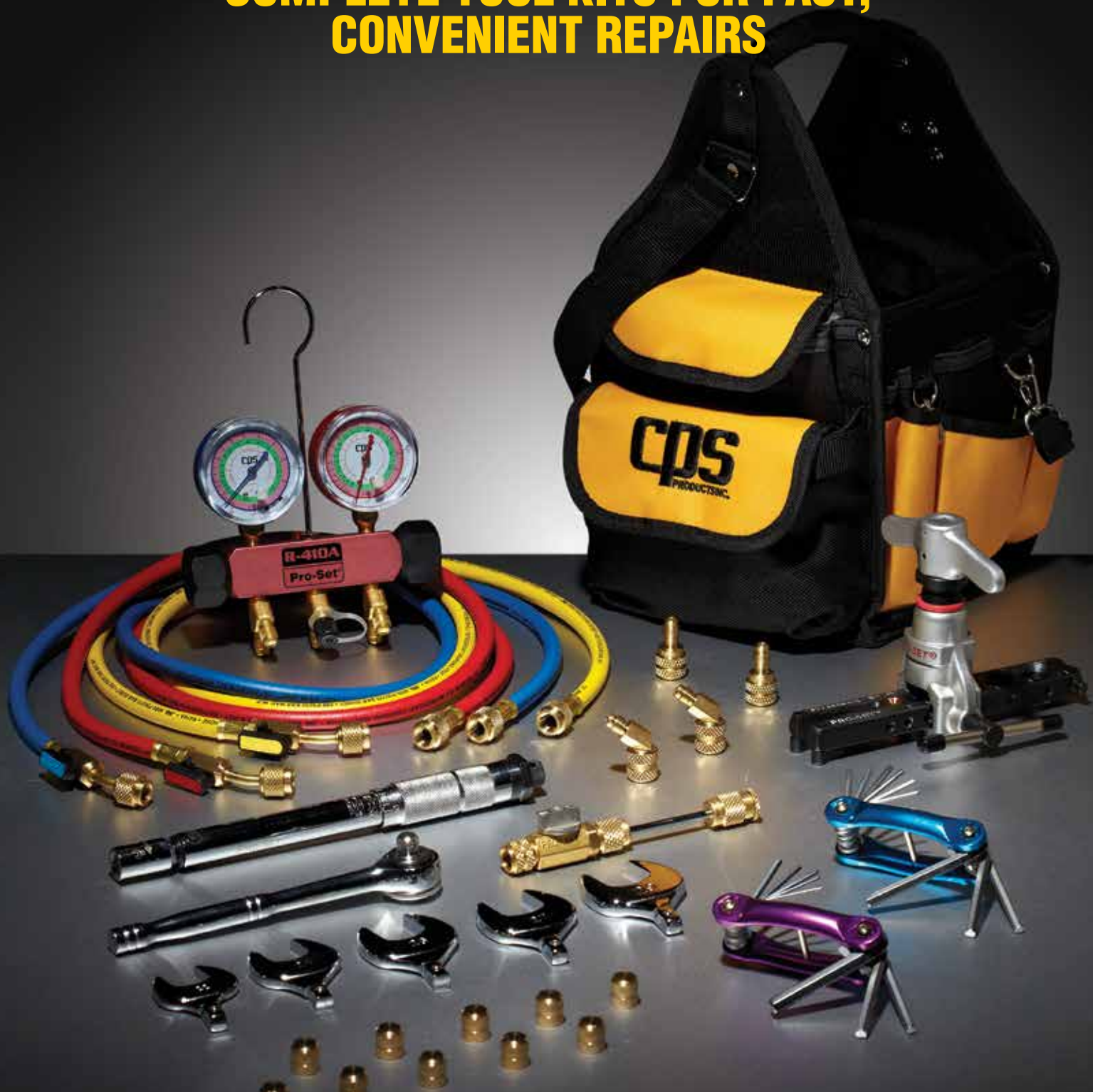
| ITEM                     | DESCRIPTION                                                                               |
|--------------------------|-------------------------------------------------------------------------------------------|
| TLE6                     | Tube Expander Set With Case (6 Heads) includes all parts shown below, plus Debur Tool (1) |
| <b>REPLACEMENT PARTS</b> |                                                                                           |
| TLE601                   | Expander Tool                                                                             |
| TLH06                    | $\frac{3}{8}$ " Expander Head (Standard in TLE6)                                          |
| TLH08                    | $\frac{1}{2}$ " Expander Head (Standard in TLE6)                                          |
| TLH10                    | $\frac{5}{8}$ " Expander Head (Standard in TLE6)                                          |
| TLH12                    | $\frac{3}{4}$ " Expander Head (Standard in TLE6)                                          |
| TLH14                    | $\frac{7}{8}$ " Expander Head (Standard in TLE6)                                          |
| TLH16                    | 1" Expander Head (Optional)                                                               |
| TLH18                    | 1 $\frac{1}{8}$ " Expander Head (Standard in TLE6)                                        |
| TLH22                    | 1 $\frac{3}{8}$ " Expander Head (Optional)                                                |
| TLH26                    | 1 $\frac{5}{8}$ " Expander Head (Optional)                                                |

### TECH-SET TUBE EXPANDERS (METRIC)

| ITEM                     | DESCRIPTION                                                                     |
|--------------------------|---------------------------------------------------------------------------------|
| TLE6M                    | Tube Expander Set With Case includes all parts shown below, plus Debur Tool (1) |
| <b>REPLACEMENT PARTS</b> |                                                                                 |
| 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.itn.com

**information@itm.com**

## UNIVERSAL R-410A SERVICE TOOL KITS

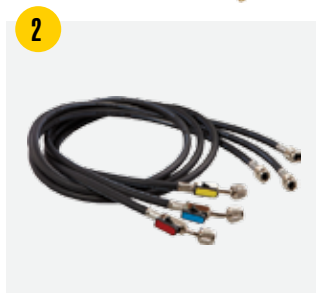
Our tool kits contain everything you need to service ductless mini-split and central A/C systems with 1/4" & 5/16" service ports including the following components;

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



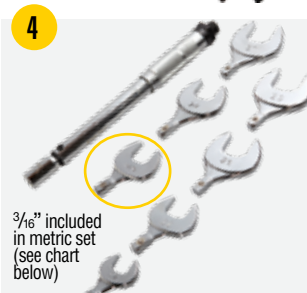
### Premium 3-Pack 5' Hoses

- (Varies by kit. See chart below)
- 1/4" SAE 45° fittings
  - 800Psi working pressure
  - 4000Psi burst pressure



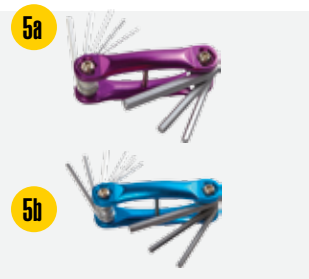
### Flaring Tool

- Clutch driven feed screw
- Eccentrically mounted cone
- Creates perfect, strong flares
- Ratchet drive in yoke
- 3/16", 1/4", 1/6", 3/8", 1/2", 1/8", 3/4"



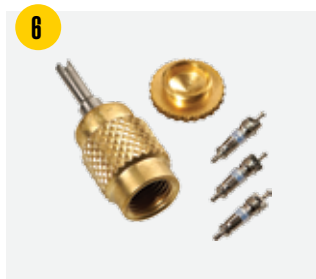
### Torque Wrench Sets;

- Metric Set: 12, 22, 24, 26, 27, 29 mm and 1/8" jaw sizes
- or-
- Imperial Set: 5/8", 11/16", 13/16", 15/16", 1 1/16", 1 5/16"



### (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"



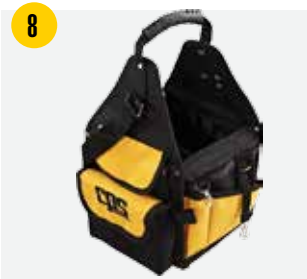
### Valve Core Tool

- 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   |
| 1 2 Valve Manifold              | 1   | Pro-Set® Piston Pink Body<br>1/4" SAE 45° fittings<br>“H” Gauge (MEHP5E)                                                                                                                                                                           |                         | BLACKMAX® Black & Chrome<br>1/4" SAE 45° fittings<br>“H5” Gauge (MBH5P5Z) | BLACKMAX® Black & Chrome<br>1/4" SAE 45° fittings<br>“H5” Gauge (MBH5P5EZ) | No Manifold |
| 2 Hoses                         | 1   | Pro-Set® Premium<br>(3) 5' red/blue/yellow<br>ball valve hoses                                                                                                                                                                                     |                         | Pro-Set® Premium<br>(3) 5' Black & Chrome hoses                           | Pro-Set® Premium<br>(3) 5' Black & Chrome<br>ball valve hoses              | No<br>Hoses |
| 3 Flaring Tool                  | 1   | FT800N                                                                                                                                                                                                                                             |                         |                                                                           |                                                                            |             |
| 4 Torque Wrench Set             | 1   | Metric TLTWSM                                                                                                                                                                                                                                      | SAE/Imperial<br>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) <b>AVC410</b> 1/2"-20 UNF SAE Brass Caps, (2) <b>AD87</b> Brass Adapter Male: 1/4" SAE 55D; female; 1/2"-20 UNF SWVL w/ Valve Core Tool, and (2) <b>AD87S</b> 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**

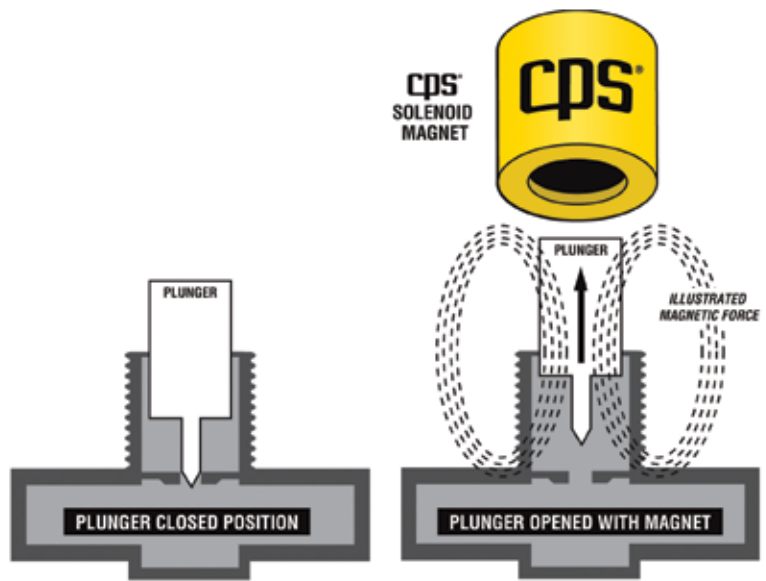


TLMKC18

### 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:  
1<sup>5</sup>/<sub>16</sub>" / 24 mm

**TLWA08**  
Size: 8"  
Jaw Capacity:  
1<sup>1</sup>/<sub>8</sub>" / 29 mm

**TLWA10**  
Size: 10"  
Jaw Capacity:  
1<sup>5</sup>/<sub>16</sub>" / 33 mm

## PRO-SET® HEX KEY WRENCH SETS

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



**TLSWH**



**TLSWHM**



**TLSWT**



**TLSWB**



## PRO-SET® SERVICE WRENCHES

| Item   | Description                                                                                                                                                                                                             |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TLSWL  | <sup>3</sup> / <sub>16</sub> " , <sup>1</sup> / <sub>4</sub> " Square; <sup>1</sup> / <sub>2</sub> " , <sup>9</sup> / <sub>16</sub> " Hex                                                                               |
| TLSWO  | Offset <sup>3</sup> / <sub>16</sub> " , <sup>1</sup> / <sub>4</sub> " , <sup>5</sup> / <sub>16</sub> " , <sup>3</sup> / <sub>8</sub> " Square                                                                           |
| TLSWS  | <sup>3</sup> / <sub>16</sub> " , <sup>1</sup> / <sub>4</sub> " , <sup>5</sup> / <sub>16</sub> " , <sup>3</sup> / <sub>8</sub> " Square                                                                                  |
| TLSWSA | <sup>3</sup> / <sub>16</sub> " , <sup>1</sup> / <sub>4</sub> " , <sup>5</sup> / <sub>16</sub> " , <sup>3</sup> / <sub>8</sub> " Square , <sup>3</sup> / <sub>16</sub> " & <sup>5</sup> / <sub>16</sub> " 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 ( $\frac{1}{4}$ ",  $\frac{5}{16}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ ")



TLPP

## PRO-SET® TUBE PIERCING PLIERS

Tube Piercing Pliers  $\frac{1}{4}$ "

## PRO-SET® HAND OIL PUMP



TLOP



TLPORR

## PRO-SET® PINCH-OFF & RE-ROUND TOOL

Pinch-Off tool & rerounds  $\frac{1}{4}$ ",  $\frac{5}{16}$ ",  $\frac{3}{8}$ ", and  $\frac{1}{2}$ " 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"

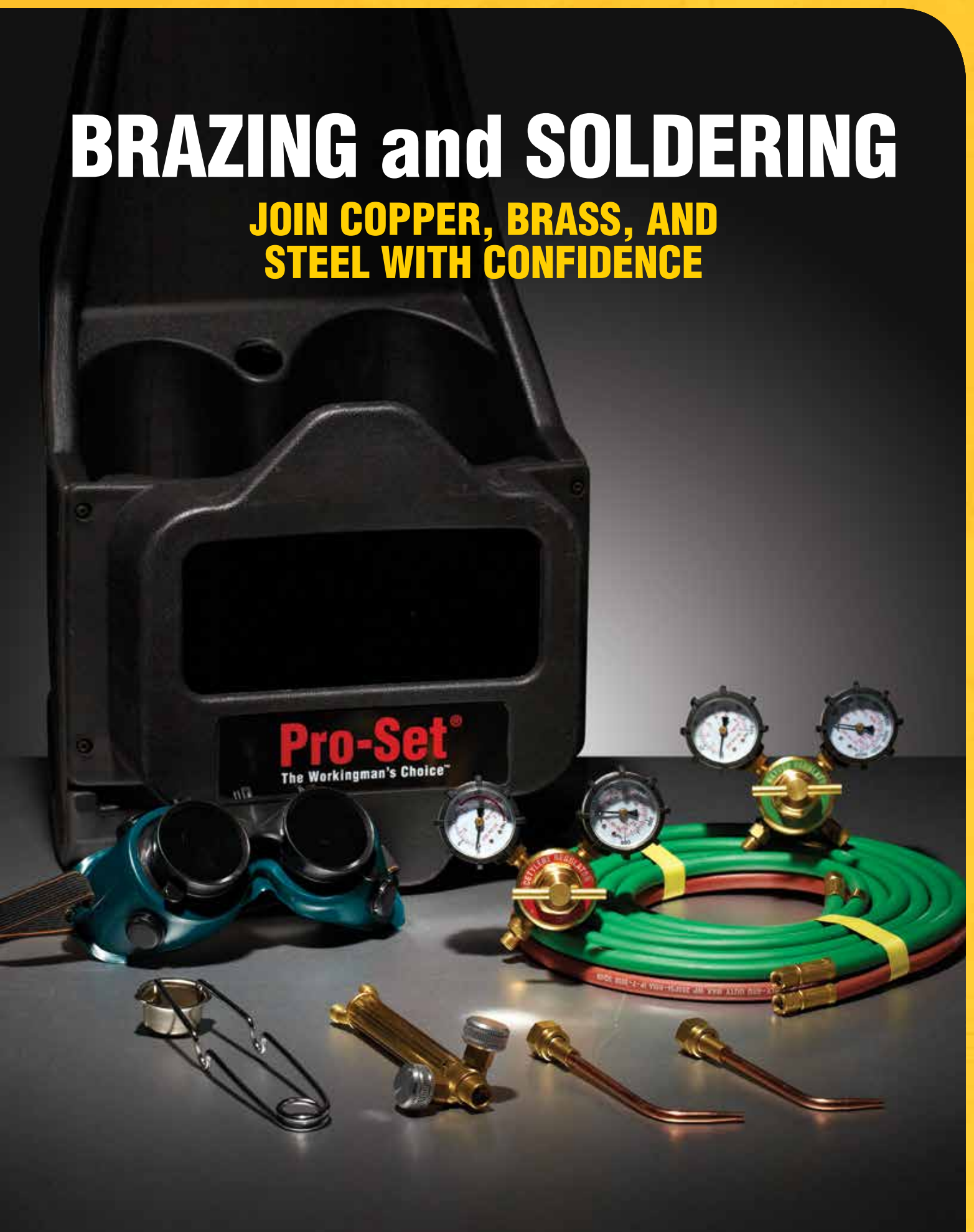


TLMIR4

Oval Pocket Mirror  
1" x 2"

# BRAZING and SOLDERING

**JOIN COPPER, BRASS, AND  
STEEL WITH CONFIDENCE**



1.800.561.8187

www.**itm**.com

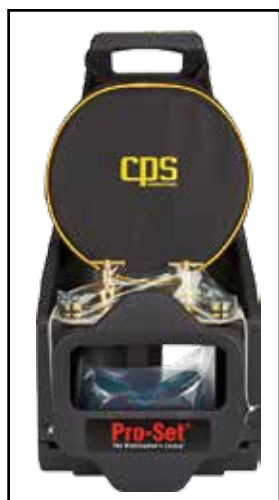
information@itm.com

## 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



**BRHVACR1**

\* tanks not included

### PRO-SET® BRAZING & SOLDERING ACCESSORIES OR REPLACEMENT PARTS

| Item      | Optional Replacement Part | Description                                                          |
|-----------|---------------------------|----------------------------------------------------------------------|
| BBRA1     | ✓                         | 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

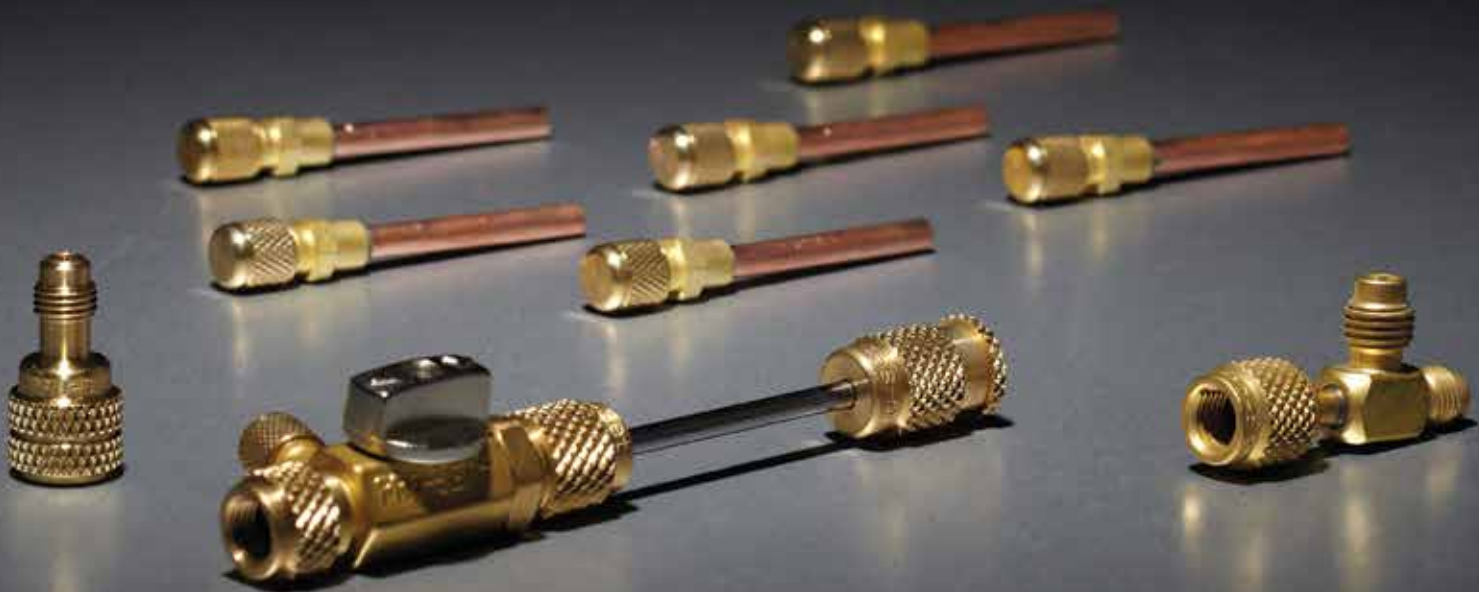
Auto-ignite hand torch kit with 5' hose and valve for MAPP, propane or propylene



BRHT5

# **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 hl 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

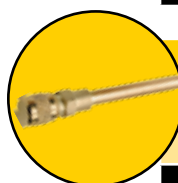


TLXVCBC



### 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

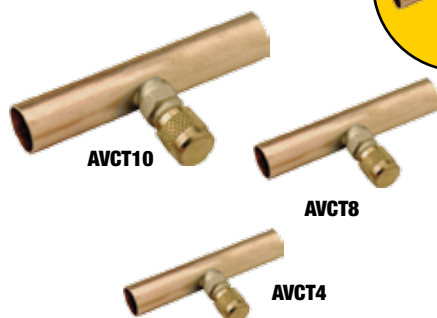
| Standard Cap |         | Wrench Cap |        | Description                            |
|--------------|---------|------------|--------|----------------------------------------|
| 6pk          | 100pk   | 6pk        | 100pk  |                                        |
| AV2          | AV2B    | AV2R       | 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.