# CPS®

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

### 2015 PRODUCT CATALOG
### 2ND EDITION

BLACKMAX®  Pro-Set®  Tech-Set™  5-2-1® COMPRESSOR SAVER®

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

# 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

Visit us online at **www.cpsproducts.com**

Sensor inside
protective
metal housing
with filter

Flexible metal
probe

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

High output
alarm
speaker

Six
sensitivity
levels,
automatically
selected by
instrument

Bar graph
displays
relative
leak size

One button
operation for
reset,changing
of audible
alarm range,
and power off

**LS1**
LEAK-SEEKER® I

**LS2**
LEAK-SEEKER® II

N11445   F-Gas Compliant
(ENG 14624:2005)

# 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.

F-Gas Compliant
(ENG 14624:2005)

LS780C

LS790B

Proprietary Ion-Pump® sensor

Visual alarm indicators
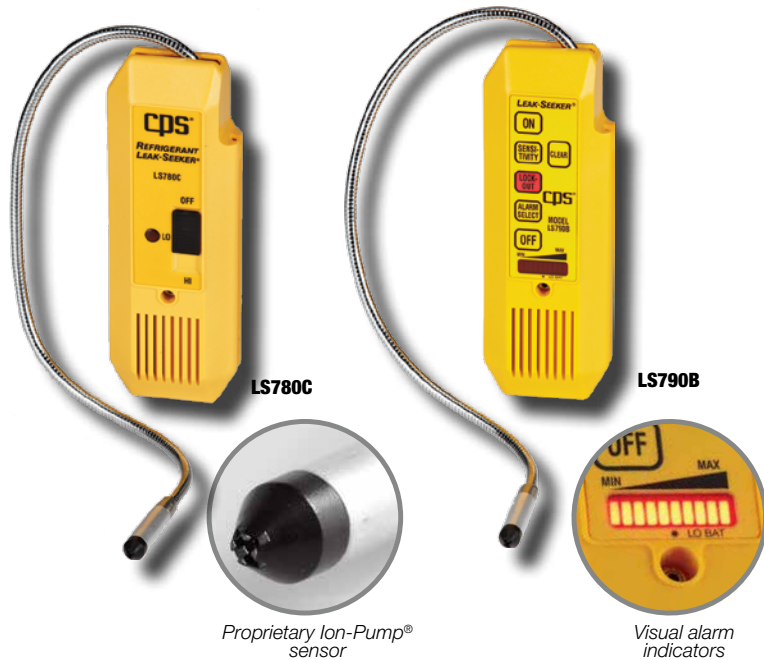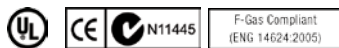
| Specifications | Leak-Seeker® I | Leak-Seeker® II | Tech-Set™ LS780C | Leak-Seeker® LS790B |
|---|---|---|---|---|
| Detector Type | Patented E_Mos Detection Technology | | Proprietary Ion-Pump sensor with built-in selective filter housing | |
| Sensitivity | Better than 0.1 oz (3g) / year | | Better 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 140ºF (-18 to 60ºC) | | | |
| Controls | One button controls on/off and all functions | | OFF, LO & HI sensitivity modes | 6 button keypad |
| Power (Battery Life) | 3 "C" batteries (>50 hr continuous use) | | 4 "AA" alkaline batteries (>40 hr continuous use) | |
| Weight | 18 oz (500g) | | | |
| Audible Alarms | In Progressive Mode: Extended tone range In Threshold Mode: Single high pitch tone | 2 user selectable alarm ranges | 128 computer generated tones to precisely guide user to the source of the leak | |
| Lock-Out Mode | N/A | | N/A | Yes |
| Low Battery Indication | Green (middle) LED turns off when batteries at 10% capacity | Rightmost (No Battery) LED stays on when batteries at 10% capacity | Center LED above "∗" lights during operation | |
| Auto-Off | Yes, after 10 minutes of inactivity | | No | Yes, after 15 minutes of inactivity |
| Sensor Life | >500 hr continuous use | | Replace seasonally | |
| Warranty | 1 year | 2 years | 1 year | 2 years |

Visit us online at **www.cpsproducts.com**

# 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.

| 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 0.71in (183 x 18 mm) |
| Weight | 18 oz (500g) including battery |

**GS40**

# REFRIGERANT MONITORS

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

**RM**
*Refrigerant Monitor
Control Box and
Sensor Housing*

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

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

LSXSF

LSXBMK

LSXS

EMOS2

LS2XVF

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

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

* Discontinued model

Visit us online at **www.cpsproducts.com**

# OPTIMA™
# AC/R CHEMICAL TOOLS
## DETECT, PROTECT, REPAIR AND ENHANCE

## eBOOST™ AC/R Performance Enhancer

Contains concentrated synthetic catalysts and high quality lubricating agents to allow AC/R systems to operate at maximum efficiency. eBOOST™ AC/R Performance Enhancer also enables refrigerants to evaporate at lower temperatures, which allows systems to draw more heat from the air. This lowers the coil temperature which delivers colder vent air. Also, the added lubricating agents increase compressor oil effectiveness, which reduces friction and allows compressors to run cooler, quieter, longer.

**ADDITIONAL BENEFITS**
- Restores older AC/R systems to original efficiencies
- Improves coil heat transfer
- Increases cooling capacity
- Increases lubricity of compressor oil
- Reduces compressor friction, vibration and noise
- Extends compressor oil and system life
- Reduces energy and maintenance costs

**OPEB6S**

## eBOOST™ AC/R De-Icer

eBOOST AC/R De-Icer is a professional chemical tool to quickly resolve frozen AC/R or refrigeration systems. Its advanced chemistry instantly binds to moisture molecules trapped in refrigerant gases preventing the molecules from entering or remaining in a frozen state. eBOOST AC/R De-Icer also neutralizes acids and stabilizes compressor lubricants.

**ADDITIONAL BENEFITS**
- Compatible with all refrigerant gases (including CFC, HFC and HCFC)
- Won't affect performance of refrigerant gas
- Neutralizes and prevents formation of acids
- Effective in all sizes of systems

**OPEBF6S**

## eBOOST™ AC/R Moisture Remover

eBOOST™ AC/R Moisture Remover is a dehyrading additive that eliminates moisture and prevents water molecules from forming in AC/R systems. Safe for all systems, compatible with all AB, mineral, POE and PAG oils used in refrigeration systems. Will not break down or leave behind any type of particulate matter, acids, gels or polymers.

**OPEBM6S**

OPEBA6S

## eBOOST™ AC/R Acid Neutralizer

eBOOST™ AC/R Acid Neutralizer actively locates and neutralizes acids in AC/R systems caused by moisture, compressor burnout and lubricant/refrigerant gas breakdown.

**ADDITIONAL BENEFITS**
- Prevents acids from forming
- Neutralizes acids caused by compressor burnout
- Neutralizes acids introduced by A/C recovery units
- Safe with all system components
- Ideal for preventive maintenance
- Fast and immediate results


OPEBAK

## eBOOST™ AC/R Acid Test Kit

eBOOST™ AC/R Acid Detection Kit is a fast, easy and reliable way to determine the relative pH of any lubricant used in air-conditioning or refrigeration compressors. For all air-conditioning and refrigeration system lubricants. Enough for 4 tests.

**Kit Contents :**
- 4 Vials (blue liquid) Lubricant pH Detect
- 4 Pipettes
- 1 Plastic Carrying Case

# 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



UVPRO

# MOONLIGHT™

# 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.

## 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 Refrigerant Dye | 8 oz (237 ml) |
| UVUDS | | 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 refigerant to inject dye
- 4 sizes to match capacity of system
- Eliminate air entering system
- Eliminates over-injection of dye
- All dyes include I.D. labels
- All MoonShine™ dye meets SAE J2297 standard.

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

## 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

**UV55**

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**CLEAR LENS**

**UV LED**

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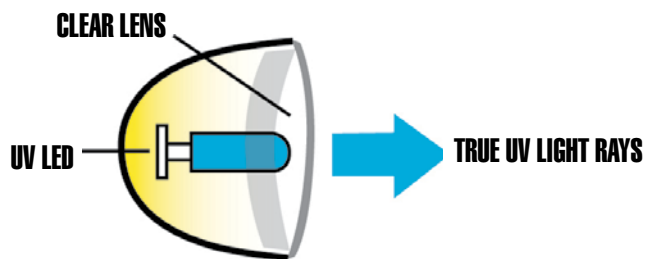
UV LEDs produce only true and efficient UV light. The CPS **UVPRO** provides UV-A (Long wave UV) 325-375nm. Instant on LED provides the fastest leak inspection of any light available.

UV — IR
315nm  400nm  500nm  600nm  700nm
**INVISIBLE LIGHT** — **VISIBLE LIGHT**
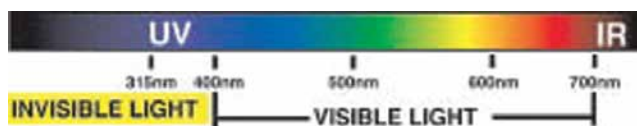
*Light spectrum wavelengths in nanometers

# 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 todays 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 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
- Declaration of Conformity available at cpsproducts.com CPS scales are in conformity with the following standards or other normative documents:
  - **EN 61326:2006** (Electrical equipment for measurement, control and laboratory use – EMC Requirements)
  - **IEC 61000-4-2:2001** (Electrostatic Discharge Immunity Test)
  - **IEC 61000-4-3:2008** (Radiated , radio-frequency, electromagnetic field immunity test
- Designed and manufactured in the U.S.A. with U.S. and globally sourced components
- RF controlled unit, featuring "set it and forget it" software (**CC240RF** is non-programmable)
- **CC840RF** features 4 operating modes: Weigh, Set, Handle, Hold
- **CC840RF** is fully programmable in charging/recovery mode using the hand-held remote
- Weight Resolution: ±0.25 oz

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## WIRELESS HIGH CAPACITY CHARGING/RECOVERY SCALES
*Full specifications listed on page 18*



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

CE N11445

### 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



*Inlet port*
*Outlet port*

**CC840RF**
*with Wireless Remote Hand-Held Controler*

CE N11445

### 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

## CHARGING/RECOVERY SCALES

### 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

### CC800A HIGH CAPACITY SCALE
- 220lb (100kg) capacity / 0.25oz (1g) resolution
- Programmable for automatic charging or recovery via built-in solenoid valve
- Accommodates 30, 50, 90 & 125 lb cylinders
- Easy to read, fast response measurement
- Visual and mechanical overload protection

**CHARGING**

**EXTRA LARGE CAPACITY**
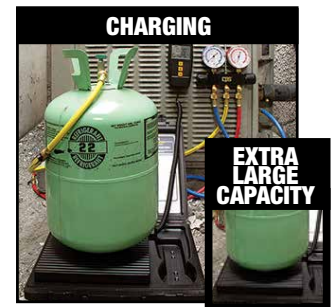
*Scale operable inside or outside of case*

*Rugged carrying case (included with all models)*

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

| | |
|---|---|
| CCXC | Protective carrying case for CC50, CC110, CC220 |
| CCXC1 | Protective carrying case for CC240RF, CC840RF |
| CCX220BC | Battery door with magnet for CC50, CC110, CC220, CC800A, CC240RF, CC840RF |

# CHARGING/RECOVERY SCALE SPECIFICATIONS

| Specifications | CC840RF | CC800A | CC240RF | CC220 | CC110 | CC50 |
|---|---|---|---|---|---|---|
| Programmable Recovery Mode | Yes | | No | | | |
| Display (Maximum Load) | 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) |
| 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 | Wireless (RF) | Flexcord | Wireless (RF) | Flexcord | | |
| Auto-Off | Automatic shut-off after 10 minutes of inactivity | | | | | |
| Smart Awake | Scale displays last weight present at time of Auto-Off | | | | | |
| RF Transmission Range | 30' (9.1 m) | n/a | 30' (9.1m) | n/a | | |
| RF Frequency Range | 2.4 GHz, ISM Band (Worldwide) | n/a | 2.4 GHz, ISM Band (Worldwide) | n/a | | |
| Power Source | **Remote:** (1) 9V Alkaline, (Included); **Scale Platform:** (4) AA Alkaline (Included) | **Remote:** (2) 9V Alkaline (Included) | **Remote:** (1) 9V Alkaline, (Included); **Scale Platform:** (4) AA Alkaline (Included) | **Remote:** (2) 9V Alkaline (Included) | | |
| Continuous Battery Life | 32 hr | 30 hr | 32 hr | 60 hr | | |
| Display Resolution, oz (Gm) Increments | .25 oz /10 Gm | | | | .20 oz /5 Gm | .05 oz /1 Gm |
| Weight Accuracy | 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) |
| Unit Weight | 9.8 lbs (4.4 kg) | 8.5 lbs (3.9 kg) | 8.9 lbs (4 kg) | 6.0 lbs (2.72 kg) | | |
| Display Flex Cord Length | n/a | 6' Extended | n/a | 6' Extended | | |
| Maximum Working Pressure | 500 Psig | 500 Psig | n/a | n/a | | |
| Maximum Operating Differential | 485 Psig | 485 Psig | n/a | n/a | | |
| Rubber Platform Cover | | No | Yes | No | | |
| Weight Readout | lbs & ozs, or kgs & gms | | | | | |
| 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) | | | | | |
| Approvals | CE, C-Tick | | | | | |

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# CHARGING STATIONS
## COMPACT, FULLY EQUIPPED AND READY-TO-GO

# 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 ± 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

CS16DMV5D2P5E

Hard mounted manifolds

All components store easily on cart

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

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# RECOVERY EQUIPMENT

## RECOVER REFRIGERANTS QUICKLY and EFFICIENTLY

# BLACK**MAX**®

PREMIUM RECOVERY MACHINES

## TR700 SERIES REFRIGERANT RECOVERY MACHINES

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

**Selectable Manual OR Automatic Shut-Off Mode Settings**

**Suction and Discharge Shut-Off Valves**

**Large 2-1/4" Diameter Suction and Discharge Gauges**

**Indicator Lights for High Pressure or Low Pressure Status**

**Twin fans, High Airflow, High Efficiency Condensing**

**High Density Polyethylene Case**

**4 Skid Resistant Rubber Feet**

## KEY FEATURES
- Powerful 2 cylinder, 2/3 HP oil-less reciprocating 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 complete
- Rugged high density, double-wall, 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)
- Built-in, removable, replaceable suction filter located under suction port
- Compact design with easy 4 bolt access

- Externally serviceable valves and gauges
- Integrated component mounts for quiet operation
- Less parts provide greater reliability
- Designed and assembled in U.S.A. with U.S. and globally sourced components
- Worldwide patents pending

| * CERTIFIED REFRIGERANT RECOVERY RATES (LBS/MIN.) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Competing Brands** | **REFCO** Powermax* | **Robinair** RG3* | **Yellow Jacket** YJ-LTE* | **Bacharach** ECO-2020** | **Inficon** Vortex Dual** | **Appion** G5 Twin* | **CPS** ProSet TR700* |
| **R410A** | | | | | | | |
| Vapor Rate | 0.53 | 0.14 | 0.35 | 0.55 | 0.55 | 0.55 | **0.70** |
| Liquid Rate | 4.99 | 3.57 | 9.25 | 5.71 | 3.55 | 3.48 | **11.94** |
| Liquid Push-Pull | 17.56 | 12.69 | 10.91 | 15.85 | 16.82 | 10.20 | **31.7** |
| **R22** | | | | | | | |
| Vapor Rate | 0.50 | 0.20 | 0.37 | 0.55 | 0.53 | 0.61 | **0.59** |
| High Temp Vapor Rate | Not Mentioned | 0.22 | Not Mentioned | 0.60 | 0.57 | 0.41 | **0.39** |
| Liquid Rate | 4.50 | 6.39 | 6.83 | 6.35 | 5.97 | 6.21 | **8.86** |
| Liquid Push-Pull | 11.81 | 11.83 | 9.17 | 11.40 | 11.0 | 16.62 | **31.52** |
| **R134A** | | | | | | | |
| Vapor Rate | 0.50 | 0.18 | 0.35 | 0.46 | 0.42 | 0.41 | **0.49** |
| Liquid Rate | 4.25 | 5.48 | 5.35 | 4.52 | 4.03 | 4.34 | **7.80** |
| Liquid Push-Pull | 12.06 | 8.86 | 6.94 | 10.89 | 11.64 | 11.08 | **25.66** |
| **R407C** | | | | | | | |
| Vapor Rate | Not Mentioned | 0.18 | 0.30 | Not Mentioned | 0.55 | 0.55 | **0.53** |
| Liquid Rate | Not Mentioned | 5.48 | 7.53 | Not Mentioned | 5.49 | 7.01 | **9.50** |
| Liquid Push-Pull | Not Mentioned | 11.68 | 10.05 | Not Mentioned | 14.0 | 17.61 | **29.14** |

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## BLACKMAX® TR700 SERIES SPECIFICATIONS

| Model # | TR700 | TR710 | TR700C | TR710C | TR700JUK | TR700J | TR700S | TR710S | TR700E |
|---|---|---|---|---|---|---|---|---|---|
| Voltage (Hz) | 115V (60 Hz) | | | | 115V (50 Hz) | 100V (50/60 Hz) | 220-240V (50 Hz) | | |
| Motor Size | 2/3 HP | | | | | | | | |
| Motor Thermally Protected | ✓ | | | | | | | | |
| Compressor Type | Two cylinder, oilless | | | | | | | | |
| Overload Protection | 15 Amp | | 13 Amp | | 15 Amp | | 10 Amp | | |
| Power Consumption | 1000 Watts | | | | | | | | |
| Tank Overfill Sensor Cord | ✗ | ✓ | ✗ | ✓ | ✗ | | | ✓ | ✗ |
| High Pressure Reset Button | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |

| Suction Pressure Gauge | Outer Scale | -30" hg to 500 psig | | | | -1 to 20 bar | -0.1 To 3.5 MPA | -30" hg to 500 psig | | -1 to 20 bar |
|---|---|---|---|---|---|---|---|---|---|---|
| | Inner Scale | -76 cm hg to 35 kg/cm | | | | -100 to 2000 kPa | | -76 cm hg to 35 kg/cm | | -100 to 2000 kPa |
| Discharge Pressure Gauge | Outer Scale | 0 to 1000 psig | | | | 0 to 70 bar | 0 To 5.5 Mpa | 0 to 1000 psig | | 0 to 70 bar |
| | Inner Scale | 0 to 70 kg/cm | | | | 0 to 7000 kPa | | 0 to 70 kg/cm | | 0 to 7000 kPa |

| High Pressure Shut Off | 550 psig / 38 kg/cm | | 450 psig / 31 bar | | 38 bar | 3.8Mpa | 550 psig / 38 kg/cm | | 38 bar |
|---|---|---|---|---|---|---|---|---|---|

| AHRI 740 Class Refrigerants | Class III | R-12, R-134A, R-401C, R-406A, R-500 | R-12, R-134A, R-22, R-32, R-401A/B/C, R-402A/B, R-404A, R-407C/D/E/F, R-408A, R-410A/B, R-500, R-502, R-507A, R-509A |
|---|---|---|---|
| | Class IV | R-22, R-401A/B, R-402B, R-407/C/D/E/F, R-408A, R-409A, R-411A/B, R-412A, R-502, R-509A | |
| | Class V | R-402A, R-404A, R-407A/B, R-410A/B, R-507A | |

| Operating Temperature Range | 32°F to 120° (0°C to 49° C) |
|---|---|
| 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 | 32 Lbs (14.5 kg) |
| Approvals | UL, CE, CSA, TUV |
| Warranty (Years) | 1 |

## 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 | |

# Pro-Set®

## 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!

## 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
- R-410a ready (fastest R-410A flow rates in its class!)
- 550 psi high pressure shut-off switch
- Durable inlet and outlet ball valve construction with 1/4 turn gauges
- Integrated component moorings for quiet operation
- Rugged high density, double walled, contemporary, compact housing with easy view top mounted controls

FASTEST R-410A
#1
RECOVERY

Molded rubber grip handle
Durable Housing
IN Gauge
OUT Gauge
Lighted ON/ OFF Power Switch
OUT Shut-Off Valve
Rubber Feet
IN Shut-Off Valve
OUT Port (with protective cap)
Air Exhaust Vents
IN Port with Cleanable 100 Mesh Filter (with protective cap)

- Ergonomic well balanced design for easy transport
- No tool access suction housing for easy filter clean/ change
- Less parts provides greater reliability
- Designed and manufactured in USA with US and globally sourced components
- Worldwide patents pending

| * CERTIFIED REFRIGERANT RECOVERY RATES (LBS/MIN.) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Competing Brands | REFCO Powermax* | Robinair RG3* | Yellow Jacket YJ-LTE* | Bacharach ECO-2020** | Inficon Vortex Dual** | Appion G5 Twin* | CPS ProSet TR600* |
| **R410A** | | | | | | | |
| Vapor Rate | 0.53 | 0.14 | 0.35 | 0.55 | 0.55 | 0.55 | 0.70 |
| Liquid Rate | 4.99 | 3.57 | 9.25 | 5.71 | 3.55 | 3.48 | 11.94 |
| Liquid Push-Pull | 17.56 | 12.69 | 10.91 | 15.85 | 16.82 | 10.20 | 31.7 |
| **R22** | | | | | | | |
| Vapor Rate | 0.50 | 0.20 | 0.37 | 0.55 | 0.53 | 0.61 | 0.59 |
| High Temp Vapor Rate | Not Mentioned | 0.22 | Not Mentioned | 0.60 | 0.57 | 0.41 | 0.39 |
| Liquid Rate | 4.50 | 6.39 | 6.83 | 6.35 | 5.97 | 6.21 | 8.86 |
| Liquid Push-Pull | 11.81 | 11.83 | 9.17 | 11.40 | 11.0 | 16.62 | 31.52 |
| **R134A** | | | | | | | |
| Vapor Rate | 0.50 | 0.18 | 0.35 | 0.46 | 0.42 | 0.41 | 0.49 |
| Liquid Rate | 4.25 | 5.48 | 5.35 | 4.52 | 4.03 | 4.34 | 7.80 |
| Liquid Push-Pull | 12.06 | 8.86 | 6.94 | 10.89 | 11.64 | 11.08 | 25.66 |
| **R407C** | | | | | | | |
| Vapor Rate | Not Mentioned | 0.18 | 0.30 | Not Mentioned | 0.55 | 0.55 | 0.53 |
| Liquid Rate | Not Mentioned | 5.48 | 7.53 | Not Mentioned | 5.49 | 7.01 | 9.50 |
| Liquid Push-Pull | Not Mentioned | 11.68 | 10.05 | Not Mentioned | 14.0 | 17.61 | 29.14 |

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## PRO-SET TR600 SERIES SPECIFICATIONS

| Model # | TR600 | TR610 | TR600C | TR610C | TR600S | TR600A | TR600E |
|---|---|---|---|---|---|---|---|
| Voltage (Hz) | 115V (60 Hz) | | | | 220-240V (50 Hz) | 240V (50 Hz) | 220-240V (50 Hz) |
| Motor Size | 2/3 HP | | | | | | |
| Motor Thermally Protected | ✓ | | | | | | |
| Compressor Type | Two cylinder, oilless | | | | | | |
| Overload Protection | 15 Amp | | 13 Amp | | 10 Amp | | |
| Power Consumption | 1000 W | | | | | | |
| Tank Overfill Sensor Cord | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ |
| Suction Pressure Gauge — Outer Scale | -30" hg to 500 psig | | | | | 3500 kPa | |
| Suction Pressure Gauge — Inner Scale | | | | | | 35 bar | |
| Discharge Pressure Gauge — Outer Scale | 0-550 psig | | | | | 3800 kPa | |
| Discharge Pressure Gauge — Inner Scale | | | | | | 38 bar | |
| High Pressure Shut-Off | 550 psig (38 bar) | | 450 psig (31 bar) | | 550 psig (38 bar) | 525 psig (36 bar) | |
| AHRI 740 Class Refrigerants — Class III | R-12, R-134A, R-401C, R-406A, R-500 | | | | | R-12, R-134A, R-22, R-32, R-401A/B/C, R-402A/B, R-404A, R-407C/D/E/F, R-408A, R-410A/B, R-500, R-502, R-507A, R-509A | |
| AHRI 740 Class Refrigerants — Class IV | R-22, R-401A/B, R-402B, R-407/C/D/E/F, R-408A, R-409A, R-411A/B, R-412A, R-502, R-509A | | | | | | |
| AHRI 740 Class Refrigerants — Class V | R-402A, R-404A, R-407A/B, R-410A/B, R-507A | | | | | | |
| Operating Temperature Range | 32°F to 120°F (0°C to 49°C) | | | | | | |
| Power Cord Length | 3.5 Ft. (1.06 m) | | | | | | |
| Dimensions | Inch: 8.5" x 16.7" x 12.3" (cm: 21.6 x 42.4 x 31.2) | | | | | | |
| Weight | 28 Lbs (12.7 Kg) | | | | | | |
| Approvals | UL, CE, CSA, TUV | | | | | | |
| Warranty (Years) | 1 | | | | | | |

## TR600 SERIES SERVICE PARTS

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

# Pro-Set®

## TR500 SERIES REFRIGERANT RECOVERY MACHINES

No need to watch for liquid refrigerant, the TR500 automatically handles it. Utilizing a 1/2 hp (0.75kW) oilless compressor, nonrestrictive diaphragm manifold valves, and a liquid regulating valve, the TR500 is the perfect entry level enclosed recovery machine for years of troublefree recovery.

## KEY FEATURES

- "On the Run" self-clearing valve. No need to turn off the unit when switching from recovery to self-clearing.
- On board suction and discharge gauges.
- 800 psig (0 to 55 bar) discharge gauge to handle R-410A.
- Lightweigh and compact. Weighs only 29 lbs. (13.1 kg)
- Integrated easy to use carrying handle
- High pressure manual reset button set at 38 bar.
- Easy and secure filter accesses. No dangling filters to be damaged.
- Heavy-duty powder coated aluminum chassis surrounded by a tough high-density polyethylene case.
- Maintenance-free oilless compressor

| PRO-SET TR500 SERIES SPECIFICATIONS | | |
|---|---|---|
| Model # | TR500 | TR500E |
| Voltage (Hz) | 115V (60 Hz) | 220-240V (50 Hz) |
| Motor Size | 2/3 HP | |
| Motor Thermally Protected | P | |
| Compressor Type | 1/2 HP Oil-less Reciprocating Compressor | |
| Overload Protection | 6A thermal circuit breaker | |
| Power Consumption | 750 W | |
| Tank Overfill Switch | ??? | |
| High Pressure Reset Button | ??? | ??? |
| Suction Pressure Gauge | -1 to 35 bar | |
| Discharge Pressure Gauge | 0 to 55 bar | |
| High Pressure Shut Off | 38 bar 550 psig | |
| AHRI 740 Class Refrigerants — Class III | R-12, R-134A, R-401C, R-406A, R-500 | R-12, R-134A, R-22, R-32, R-401A/B/C, R-402A/B, R-404A, R-407C/D/E/F, R-408A, R-410A/B, R-500, R-502, R-507A, R-509A |
| AHRI 740 Class Refrigerants — Class IV | R-22, R-401A/B, R-402B, R-407/C/D/E/F, R-408A, R-409A, R-411A/B, R-412A, R-502, R-509A | |
| AHRI 740 Class Refrigerants — Class V | R-402A, R-404A, R-407A/B, R-410A/B, R-507A | |
| Operating Temperature Range | 32°F to 120° (0°C to 49° C) | |
| Power Cord Length, Type | 6' (1.82 m) | |
| Dimensions (W x L x H) | Inch: 8" x 14.5" x 12 (Cm: 20cm x 37cm x 30.5cm) | |
| Weight | 29 lbs. (13.1 kg) | |
| Approvals | UL, CE, CSA, TUV | |
| Warranty (Years) | 1 | |

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# TRANSFORM YOUR BOTTOM LINE WITH THE MT69 MOLECULAR TRANSFORMATOR. **IT DRAMATICALLY INCREASES THE SPEED OF <u>ANY</u> RECOVERY MACHINE.**

## CUT YOUR RECOVERY TIME IN HALF.

The MT69 is the <u>*only*</u> 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 <u>any recovery machine</u> 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
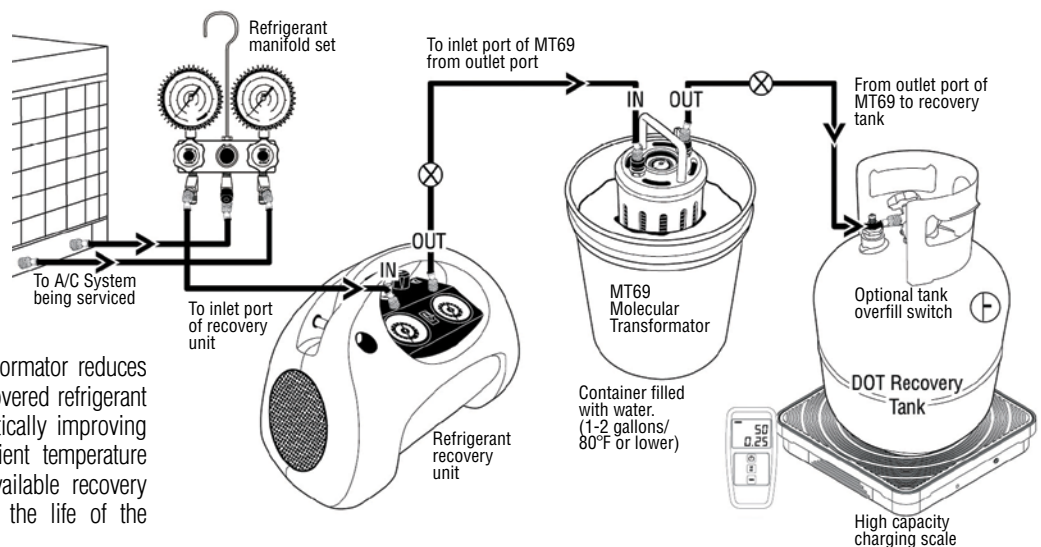- Designed and manufactured in U.S.A. with U.S. and globally source components

**MT69**

| MT69 SPECIFICATIONS | |
|---|---|
| Dimensions | 4.25" x 9" (10.9 cm x 22.9 cm) |
| Weight | 3.6 Lb (1.6 kg) |
| Maximum Operation Pressure | 500 Psig |
| Discharge Pressure Gauge | 0 to 600 Psig |
| Inlet/Outlet Connections | ¼" SAE male |
| Refrigerant Compatability | All |

| COMPARATIVE DATA | | |
|---|---|---|
| Time needed to recover 15 lbs of R22 at 120° F: | WITH MT69 | WITHOUT 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 manifold set

To inlet port of MT69 from outlet port

To A/C System being serviced

To inlet port of recovery unit

IN OUT

From outlet port of MT69 to recovery tank

OUT

IN

MT69 Molecular Transformator

Optional tank overfill switch

Container filled with water. (1-2 gallons/ 80°F or lower)

DOT Recovery Tank

Refrigerant recovery unit

High capacity charging scale

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

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

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


TR21

## FEATURES & BENEFITS:

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

| TR19, TR21, TR22 SERIES SERVICE KITS | | |
|---|---|---|
| **Item** | **Description** | **Where Used (Series)** |
| TR21X1 | Valve Rebuild Kit | All TR Recovery Machines |
| TR21X3 | TR21 Piston/Connecting Rod Replacement | |
| TR19X1 | TR19 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*

**\*Verified UL Flow Rate @ 60Hz**  (Reduce 15% for all 50Hz models)

| TR21 SERIES REFRIGERANT RECOVERY RATES | | | | |
|---|---|---|---|---|
| **Refrigerant** | **Direct Vapor** | **Direct Liquid** | **Push - Pull Liquid** | **High Temp Vapor Rate** |
| R410a | .70 lb/min (0.32 kg/min) | 11.94 lb/min (5.41 kg/min) | 31.7 lb/min (14.3 kg/min) | n/a |
| R22 | .59 lb/min (0.27 kg/min) | 8.86 lb/min (4.02 kg/min) | 31.52 lb/min (14.3 kg/min) | 0.39 lb/min (17 kg/min) |
| R134a | .49 lb/min (0.22 kg/min) | 7.8 lb/min (3.54 kg/min) | 25.66 lb/min (11.64 kg/min) | n/a |
| R407c | .53 lb/min (0.24 kg/min) | 9.50 lb/min (4.31 kg/min) | 29.14 lb/min (13.22 kg/min) | n/a |

\*Evaluated for performance in accordance with Sec. 608 of the Clean Air Act (Feb 29, 1996) using AHRI-740-98 test methods. Results shown available at database.ul.com.

# RECOVERY EQUIPMENT SPECIFICATIONS

| | TECH-SET® | | | PRO-SET® | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Model #** | TR19 | TR19C | TR19S | TR21 | TR21C | TR21S | TR21E | TRS21 Ignition Proof | TR22 | TR22C |
| **Voltage** | 115V (60Hz) | 115V (60Hz) | 220-240V (50 Hz) | 115V (60Hz) | 115V (60Hz) | 230 V 50 Hz 1PH | 220-240 V 50 Hz 1PH | 115V (60Hz) | 115V (60Hz) | 115V (60Hz) |
| **Motor Size (Horsepower)** | 1 HP | | | | | | | | | |
| **Overload Protection** | 15 Amp | 10 Amp | 10 Amp | NA | NA | NA | 10 Amp | 15 Amp | 15 Amp | 15 Amp |
| **Power Consumption** | 550W | 550W | 550W | 1000W | 1000W | 1000W | 1000W | 850W | 850W | 850W |
| **Two Cylinder, Oil-less Reciprocating Compressor** | ✓ | | | | | | | | | |
| **ON-Off Power Switch** | ✓ | | | | | | | | | |
| **Spark Proof Starting Components** | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ |
| **High Pressure Shut-Off (Psig/bar)** | 550 Psig (38 bar) | 450 Psig (31 Bar) | 550 Psig (38 bar) | 550 psig | 450 psig | 550 psig | 525 psig (38 bar) | 550 Psig (38 bar) | 550 Psig (38 bar) | 450 Psig (31 Bar) |
| **Selectable Manual OR Automatic Shut-Off Mode Settings** | Auto Reset High Pressure Switch | | | Auto Reset High Pressure Switch | | | Manual Reset | Auto Reset High Pressure Switch | | |
| **Tank Overfill Switch Kit** | ✗ | ✗ | ✗ | Optional | Optional | Optional | ✗ | ✗ | ✓ | ✗ |
| **Maximum Flow Rate @ 60 Hz (Reduce 15% for 50 Hz) — Direct Vapor** | Up to 1.2 lb/min (33 kg/hr) | | | Up to 2.5 lb/min (67 kg/hr) | | | | | | |
| **Direct Liquid** | Up to 9.5 lb/min (260 kg/hr) | | | Up to 12 lb/min (271 kg/hr) | | | | | | |
| **Push-Pull Liquid** | Up to 20.3 lb/min (550 kg/hr) | | | Up to 34 lb/min (922 kg/hr) | | | | | | |
| **AHRI 740 Class Refrigerants — Class III** | R-12, R-134a, R-22, R-401A, R-401B, R-401C, R-402A, R-402B, R-404A, R-406A, R-407A, R-407B, R-407C, R-407D, R-407E, R-407F, R408A, R-409A, R-410A R-411A, R-411B, R-412A, R-500, R-502, R-507A, R-509A | | | R-12, R-134A, R-401C, R-406A, R-500 | | | R-12, R-134a, R-401C, R-406A, R-500, R-1234yf/ze, R-22, R-401A/B, R-402B, R-407C/D/E/F, R408A, R-409A, R-411A/B, R-412A, R-502, R-509A, R-402A, R-404A, R-407A/B, R-410A/B, R-507A, R-32 | | R-12, R-134A, R-401C, R-406A, R-500 | |
| **Class IV** | | | | R-22, R-401A/B, R-402B, R-407/C/D/E/F, R-408A, R-409A, R-411A/B, R-412A, R-502, R-509A | | | | | R-22, R-401A/B, R-402B, R-407/C/D/E/F, R-408A, R-409A, R-411A/B, R-412A, R-502, R-509A | |
| **Class V** | | | | R-402A, R-404A, R-407A/B, R-410A/B, R-507A | | | | | R-402A, R-404A, R-407A/B, R-410A/B, R-507A | |
| **ASHRAE/ISO Class A2, A2L and A3** | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | R1234yf, R32, R290, R600, R601, R1276 | ✗ | ✗ |
| **Operating Temperature Range** | 32°F to 120°F (0°C to 49°C) | | | | | | | | | |
| **Cleanable, 100-Mesh Screen Filtration (Into Suction Port)** | ✓ | | | | | | | | | |
| **High Pressure Cutout LED** | ✓ | | | | | | | | | |
| **Heavy Gauge Aluminum Chassis** | ✓ | | | | | | | | | |
| **Skid Resistant Rubber Feet** | ✓ | | | | | | | | | |
| **Power Cord Length, Type** | 6 Ft. | | | | | | | | | |
| **Dimensions (W x L x H)** | 6" x 12" x 9" (15cm x 30cm x 23cm) | | | | | | | | | |
| **Weight** | 18.7 lbs (8.5 kg) | | | 24.3 lbs (11.0 kg ) | | | | | | |
| **Approvals** | UL, CE, CSA, TUV | | | | | | | | | |
| **Warranty (Years)** | 1 | | | | | | | | | |

**Call and speak to a specialist.** | Toll Free: **(800) 277-3808** | Customers outside the USA: **(305) 687-4121**

# REFRIGERANT RECOVERY TANKS

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

**30lb tank with 1/4" SAE M**

**Automotive 50lb tank w/ ACME fitting**

**50lb tank with 1/4" SAE M fitting**

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

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

| RECOVERY TANK ACCESSORIES | |
|---------------------------|--|
| CCXHB | Refrigerant Cylinder Heater/Strap (110V) |
| CCXHBV | Refrigerant Cylinder Heater/Strap (220V/240V) |
| CCXHB | 110V heater blanket for refrigerant cylinders |
| CCXHBV | 220V heater blanket for refrigerant cylinders |

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Heater Blanket

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# 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.

CE  N11445

**SMALL SIZE,**
# BIG
**PERFORMANCE**

## Pro-Set®
### DUAL OR SINGLE STAGE COMPACT VACUUM PUMPS

## Pro-Set®
### SINGLE STAGE 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 the smallest, lightest and most compact aluminum housings in the industry.

**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 (48 l/m @ 50Hz) | | 4 CFM @ 60Hz (96 l/m @ 50Hz) | | 6 CFM @ 60 Hz (144 l/m @ 50 Hz) | | | |
| Motor Size (HP), RPM @ 50/60Hz | $1/3$ HP (1440, 1720 RPM) | | $1/2$ HP (2880, 3440 RPM) | | | | | |
| Voltage | 110-120V Or 220-240V @ 50/60Hz | 220-240V, 50 Hz | 110-120V Or 220-240V @ 50/60Hz | 220-240V, 50 Hz | 110-120V Or 220-240V @ 50/60Hz | 220-240V, 50 Hz | 220-240V, 50Hz | 115V 60Hz |
| Power Cord Connection to Pump | Universal IEC Socket & Voltage Selector Switch | Universal IEC Socket | Universal IEC Socket & Voltage Selector Switch | Universal IEC Socket | Universal IEC Socket & Voltage Selector Switch | Universal IEC Socket | Hard Wired Schuko Plug | Hard Wired |
| On/Off Power Switch | Yes | | | | | | Yes (Ignition-proof sealed starting components) | |
| Operating Temperature Range | 32°F to 125°F (0°C to 52°C) | | | | | | | |
| Pro-Set® Vacuum Pump Oil Capacity | 11.5 oz (330 ml) | | 15.5 oz (450 ml) | | 16 oz (470 ml) | | | |
| Gas Ballast Valve | Yes | | | | | | | |
| Intake Fittings | SAE: $1/4$", $3/8$", ACME: $1/2$" | | | | | | SAE $1/4$", $3/8$", $1/2$" | |
| Warranty (Years) | 2 | 1 | 2 | 1 | 2 | 1 | | |

**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)

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## 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.

VPOP12      VPOQ12      VPOG6

| Model | VP8D | VP8DE | VP10D | VP10DE | VP12D | VP12DE | VPS12DE | VPS12DU |
|---|---|---|---|---|---|---|---|---|
| Stage | 2 | | | | | | | |
| Ultimate Vacuum | 25 Microns | | | | | | | |
| Refrigerant Class | A1, A2 | | | | | | | |
| Dimensions (Inches) | 14.9" x 5.7" x 10.6" | | | | | | | |
| Weight | 29.8 lb (13.5 kg) | | 30.3 lb (13.7 kg) | | 30.9 lb (14.0 kg) | | | |
| Free Air Displacement | 8 CFM @ 60 Hz (192 l/m @ 50 Hz) | | 10 CFM @ 60Hz (240 l/m @ 50Hz) | | 12 CFM @ 60Hz (288 l/m @ 50Hz) | | | |
| Motor Size (HP), RPM @ 50/60Hz | $^2/_3$ HP (2880, 3440 RPM) | | $^3/_4$ HP (2880, 3440 RPM) | | 1 HP (2880, 3440 RPM) | | | |
| Voltage | 110-120V Or 220-240V @ 50/60Hz | 220-240V, 50 Hz | 110-120V Or 220-240V @ 50/60Hz | 220-240V, 50 Hz | 110-120V Or 220-240V @ 50/60Hz | 220-240V, 50 Hz | | 115V 60Hz |
| Power Cord Connection to Pump | Universal IEC Socket, Voltage Selector Switch | Universal IEC Socket | Universal IEC Socket, Voltage Selector Switch | Universal IEC Socket | Universal IEC Socket, Voltage Selector Switch | Universal IEC Socket | Hard Wired Schuko Plug | Hard wired |
| On/Off Power Switch | Yes | | | | | | Yes (Ignition-proof sealed starting components) | |
| Operating Temperature Range | 32°F to 125°F (0°C to 52°C) | | | | | | | |
| Pro-Set® Vacuum Pump Oil Capacity | 29 oz (860 ml) | | 28 oz (830 ml) | | 27 oz (800 ml) | | | |
| Gas Ballast Valve | Yes | | | | | | | |
| Intake Fittings | SAE $^1/_4$", $^3/_8$", $^1/_2$" | | | | | | | |
| Warranty (Years) | 2 | 1 | 2 | 1 | 2 | 1 | | |

CE  N11445

# Pro-Set®
## DUAL OR SINGLE STAGE COMPACT VACUUM PUMPS

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

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

**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)

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## 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 | $\frac{1}{4}$ HP (1440 1720 RPM) | $\frac{1}{3}$ (HP) 2880/3440 | $\frac{1}{2}$ 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: $\frac{1}{4}$" & $\frac{3}{8}$", ACME: $\frac{1}{2}$" | | |
| Warranty (Years) | 2 | | |

**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)

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VPAS8

VPASU

## VACUUM PUMP CAP KIT
Vacuum pump cap kit with chains on one common ring

AVCVAC

1/2" ACME

1/4" SAE

1/2" SAE

3/8" SAE

Vacuum Pumps

# 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 | TAVP144SU | TAVP144SE |
|---|---|---|---|---|---|---|
| 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 (Years) | 1 | | | | | |

**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)
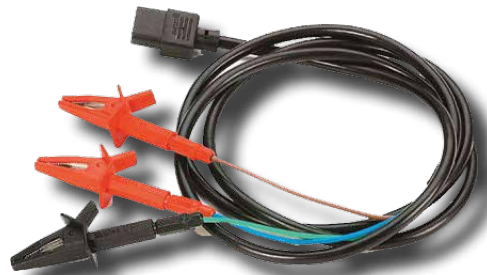
## PORT CAPS
Oil mist preventer exhaust port.

**VPX0MP**  for 2-6 CFM Models
**VPX0MP2**  for 8-12 CFM Models

## JUMPER CORD KIT
220 VAC jumper power cord for locations where 110 voltage is not available.

VPXJ220

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# DIGITAL VACUUM GAUGES
## PERFORMANCE THAT CAN BE MEASURED

## VG100A & VG200 VACROMETER DIGITAL VACUUM GAUGES

**VG100A & VG200:**
- 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 (AVT45), hanging hook (VGXH) and carrying case (VGXC) included with VG200, VG100A
- Calibrated to strict NIST standards for best-in-class accuracy and reliability
- Designed and manufactured in the U.S.A. with U.S. and globally sourced components

**VG200, VG201:**
- Continual digital readout of evacuation process on large, easy to read 5 digit LCD display
- User selectable units: Microns, Torr, in/hg or mBar

**VG100A, VG101:**
- Vacuum level indication at Atm (Atmosphere), 5000, 2000, 1000, 500, 250, 100, 50 & 25 microns

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

## GAUGE ADAPTERS

The **AVT45/48/87** are premium built brass adapters. The **AVT45** is included for use with the **VG100A** & **VG200** (purchased separately for **VG201** & **VG101**) and has a ¼" SAE male to ¼" SAE male to ¼" SAE swivel female tee.

AVT45        AVT48        AVT87

| VACUUM GAUGE ACCESSORIES & SPARE PARTS FOR VG200, VG201, 100A, VG101 | |
|---|---|
| AVT44 | ¼" SAE female hex nut x ¼" SAE male x ¼" SAE male w/cap & core |
| AVT45 | ¼" SAE female knurl nut x ¼" SAE male x ¼" SAE male w/cap & core |
| AV87 | ¼" SAE male x ½-20" SAE female x ½-20" SAE male tee adapter |
| VGXC | Carrying case for VG Series (Included with VG100A & VG200) |
| VGXH | Hanging hook for VG Series (Included with VG100A & VG200) |

VGXH        VGXC

# ELECTRICAL & SPECIALTY METERS

## MEASURE WITH CONFIDENCE
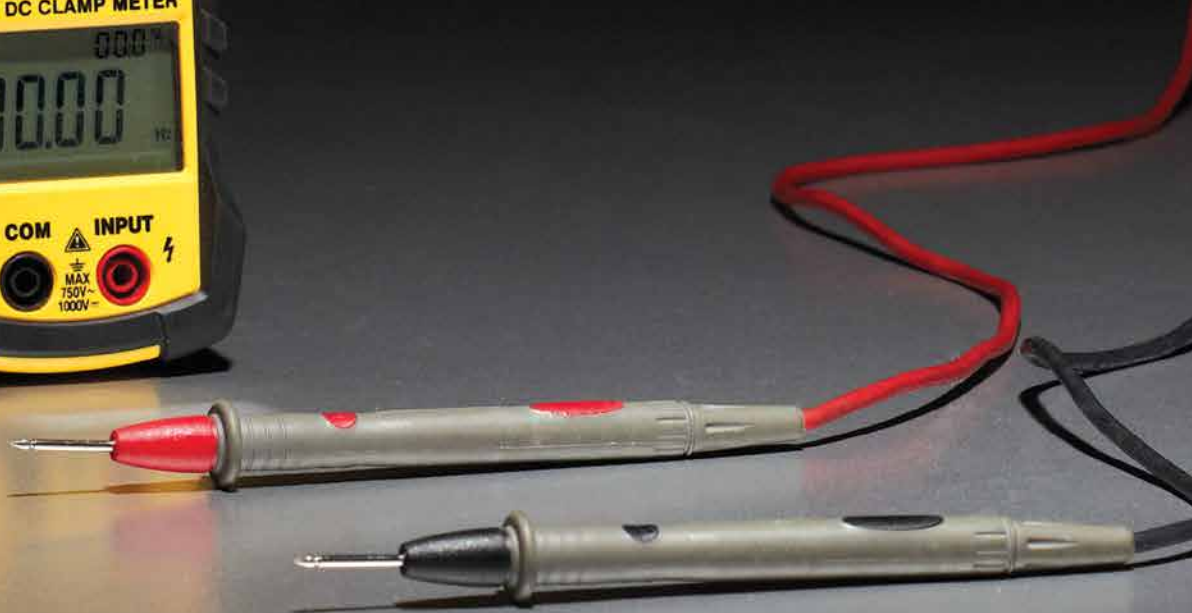
# DIGITAL CLAMP METER

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" (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

## 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<br>Meters/Second ~0.6<br>Knots ~1.2<br>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% |

DM350

**SM150**

# SOUND LEVEL METER

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

## TECH-SET™ DIGITAL CLAMP METER

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



**AC400**

| SM150 SOUND LEVEL METER SPECIFICATIONS | |
| --- | --- |
| Frequency Range | 20 Hz ~ 8KHz |
| Measuring Level Range | 35~ 130 dB |
| Frequency Weighting | A/C |
| Time Weighting | Fast (125 mS), Slow (1 sec.) Impulse (35 mS) |
| Microphone | ½" Electret Condenser |
| Display | LCD (4 Digits) |
| Resolution | 0.1 dB |
| Display Period | 0.5 sec. |
| Level Ranges | Lo (35-95dB); Hi (65~130dB) |
| Accuracy | ±1.4dB (Under Reference Conditions) |
| Dynamic Range | 65 dB |
| Alarm Function | "OVER" displays when input out of range |
| Weight | 12.3 oz (350 g) |
| Mounting Nut | ¼" x 20 |
| Dimensions (LxWxH) | Inch: 6.6" x 3.5" x 1"; mm: 168 x 88 x 26 |
| Maximum Hold | Hold readings, with decay , 1 dB/3 minutes |
| Calibration | Electrical calibration via internal oscillator (1 KHz) sine wave |
| AC Output | 0.6 Vrms at FS (full scale), output impedance approx. 5KΩ |
| DC Output | 10mV/dB, output impedance approx. 5KΩ |
| Power Supply | One 9V battery |
| Power Life | Approx 50 hr (alkaline) |
| Operating Temperature Range | 32° F to 104°F (0°C to 40°C) |
| Operating Humidity Range | 25% to 90% RH |
| Storage Temperature | 14°F to 140°F (-10°C to 60°C) |
| Storage Humidity | 10% to 70% RH |
| Dimensions (L x W x H) | Inch: 9.4" x 2.7" x 0.98" mm: 240 x 68 x 25 |
| Weight | 7.5 oz (215 g) |

Electrical & Specialty Meters

# ELECTRONIC TEMPERATURE & SYSTEM MEASUREMENT

## INNOVATIVE SYSTEM ANALYSIS INSTRUMENTATION

# SH450 MULTI-FUNCTION SUPERHEAT THERMOMETER & SYSTEM ANALYZER

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

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



SH450

## SH450 SUPERHEAT/SUBCOOL SPECIFICATIONS

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

## SH450 TEMPERATURE & HUMIDITY SPECIFICATIONS

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

## SH450 GENERAL SPECIFICATIONS

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

## SH450 KEY FEATURES:

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



*Premium build pressure port*

# TM360 SERIES, 4 STATION THERMO-PSYCHROMETER

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

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

**TM360 & TM360C**

## TM360 SERIES THERMO-PSYCHROMETER SPECIFICATIONS

| | |
|---|---|
| Temperature Resolution | ±0.1˚F or ˚C |
| Temperature | ±0.4˚F / ±0.2˚C from 14.0 to 158˚F<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 |
|------|-------------|-------------|-----|-----------------------------|--------|--------|-------|
| TMX2A | Moving Air Probe, 15' (4.5 m) Lead | Air: Ducting, registers, aire movement across concensers, am bient air. | 1 | -40˚F to 221˚F (-40C to +105˚C) | Yes* | Yes* | Yes |
| TMX2G | General Purpose Probe, 15' (4.5 m) Lead | Surface, Air, Liquids: Copper pipe, ambient air, RH wet sock method. | 1 | -40˚F to 257˚F (-40C to +125˚C) | Yes* | n/a | Yes* |
| TMX2GA | General Purpose Air Probe, 15' (4.5 m) Lead | Air, Surface, Liquids: Ambient air, ducting, registers, air movement across condensers. | 1 | -40˚F to 257˚F (-40C to +125˚C) | n/a | n/a | Yes |
| TMX2P | Puncture Probe , 15' (4.5 m) Lead | Surface, Liquids (Shaft Only): Internal temperatures of frozen materials, air ducts. | 1 | -40˚F to 257˚F (-40C to +125˚C) | Yes | n/a | Yes |
| TMX2S | Velcro Strap Pipe Probe, 15' (4.5 m) Lead | Surface: Surface temperatures of copper tubing | 1 | -40˚F to 257˚F / -40˚C to +125˚C | Yes* | Yes* | Yes |
| TMX3C | Clamp-On Surface Probe, 15' (4.5 m) Lead | Surface: Surface temperatures of copper tubing | 1 | -40˚F to 221˚F (-40C to +105˚C) | Yes | Yes* | Yes* |
| TMX2RH | Relative Humidity / Dewpoint Probe | Specialty RH Probe: Measure indoor air quality, set/ troubleshoot humidity devices | 1 | -40˚F to 194˚F (-40C to +90˚C) | Yes | Yes | No |
| TMX3RH | Relative Humidity / Dry Bulb / Wet Bulb / Dew Point Probe | Specialty RH Probe: Measure indoor air quality, set/ troubleshoot humidity devices | 1 | -40˚F to 194˚F (-40C to +90˚C) | Yes | Yes | Yes |
| TMX3WB | Wet Bulb Socks | for Use With TM360 | 6 | -40˚F to 194˚F (-40C to +90˚C) | Yes | Yes | n/a |
| TMX3PS | AC Adapter for 100 to 240V (40-60 Hz)- USA Plug | for TM360, SH450 | 1 | 32˚F to 140˚F (0 C to +60˚C) | Yes | Yes | Yes |

*Indicates accessory is included with the model

Visit us online at **www.cpsproducts.com**

# 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 ±2ºC (±4ºF) or ±2% of reading |
| Display | Display Digital Backlit LCD |
| Resolution | Resolution 1ºC/Fº |
| 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
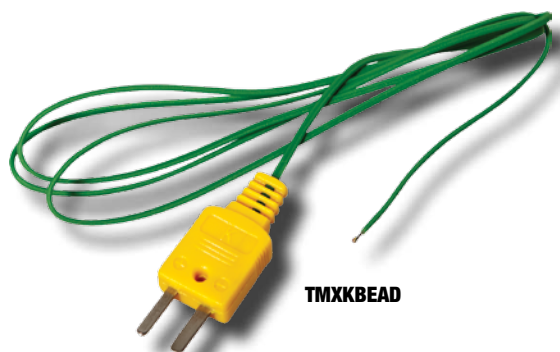
## TMXKBEAD TEMPERATURE PROBE

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.


TMXKBEAD

### 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.*

Visit us online at **www.cpsproducts.com**

# BLACK**MAX**®

# DIGITAL MANIFOLDS
## INDUSTRY LEADING ACCURACY

## BLACKMAX® WIRELESS DIGITAL MANIFOLDS WITH CPS LINK™ APP

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 backlighted LCD display. Two and four valve manifolds are designed and manufactured in the U.S.A. with U.S. and globally sourced components.

CPS is pleased to announce the introduction of CPS Link™, an iOS or Android based mobile application (APP), designed to communicate with and control select functions of BLACKMAX® Digital Wireless Manifolds.



Connections For Thermistor Sensors

High Impact LCD Window

Mode (Programming)

Refrigerants

Clear

Set (Enter Values)

On/Off

Superheat/ Subcool

Test (Pressure Hold, Vacuum Hold)

Backlight

Low Side Valve

High Side Valve

Vacuum Valve

Sightglass

Refrigerant Valve

MD100W

wireless
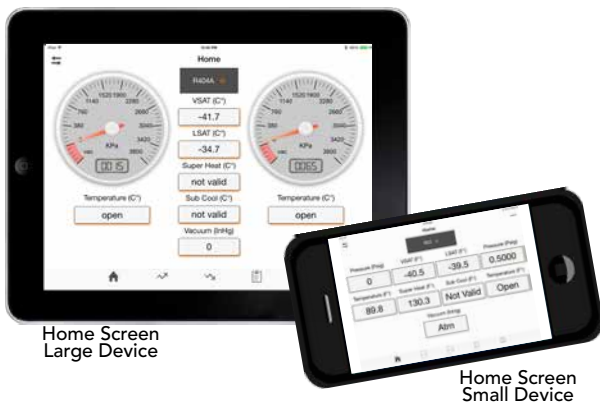


Home Screen Large Device

Home Screen Small Device

## CPS LINK™ APP

CPS Link allows HVAC/R technicians the convenience of running and monitoring a BLACKMAX digital manifold (from up to 300 feet away), while also providing additional capabilities not found in non-wireless versions.

- Fast, convenient touch screen control
- Comprehensive views of system measurements
- Graphical depictions of test functions
- Data logging
- Geolocation data and more
- If your mobile device is not available, your wireless manifold may be operated as a stand alone device using the yellow keypad.



GET IT ON Google play

Available on the App Store

- Perform and monitor system measurements—in real time without the need to physically touch the manifold
- Alternate views for smaller mobile devices
- Color scheme change according to refrigerant
- Pressure hold or vacuum hold tests can be viewed, saved, stored or emailed as a graph
- Supports over 90 common refrigerants, with quick access to your favorite five
- APP updates for new refrigerants
- Change manifold units; (Pressure, Temperature, Vacuum)
- Multi-language



Access Favorite Five Refrigerants
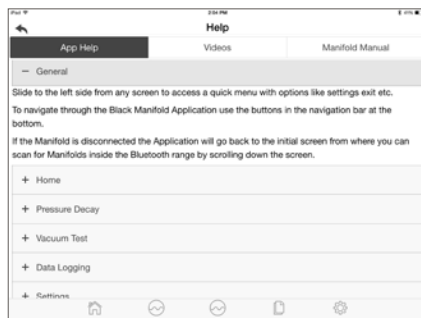
Help Screen

Vacuum Hold Test

Service Manifolds and Guages

Visit us online at **www.cpsproducts.com**
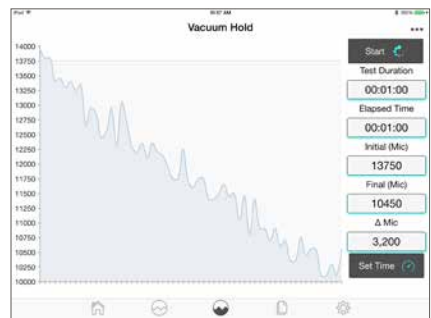
**BLACKMAX® LIMITED EDITION CAMO FINISH WIRELESS DIGITAL MANIFOLD**

*wireless*

## BLACKMAX® DIGITAL MANIFOLDS 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 93 refrigerants
- Compatible with R744 subcritical $CO_2$ refrigerants
- One-touch access to your favorite five 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**
Non-wireless 4 valve series

**MD50**
Non-wireless 2 valve series

| BLACKMAX® Digital Manifolds | Number Of Valves | 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 and Universal Plug Kit** (MDXBK) | Soft Case For All MD Series (MDXSC) |
|---|---|---|---|---|---|---|---|
| MD50 | 2 | | | ✓ | Optional | Optional | Optional |
| MD50W Wireless | | | | ✓ | Optional | Optional | Optional |
| MD50HE | | ✓ | | ✓ | Optional | Optional | Optional |
| MD50WHE Wireless | | ✓ | | ✓ | Optional | Optional | Optional |
| MD50VHE | | ✓ | | ✓ | ✓ | Optional | Optional |
| MD50WVHE Wireless | | ✓ | | ✓ | ✓ | Optional | Optional |
| MD100 | 4 | Optional | | ✓ | Optional | Optional | Optional |
| MD100W Wireless | | | | ✓ | Optional | Optional | Optional |
| MD100HE | | ✓ | ✓ | ✓ | Optional | Optional | Optional |
| MD100WHE Wireless | | ✓ | ✓ | ✓ | Optional | Optional | Optional |
| MD100VHE | | ✓ | ✓ | ✓ | ✓ | Optional | Optional |
| MD100WVHE Wireless | | ✓ | ✓ | ✓ | ✓ | Optional | Optional |
| MD100WVHEC Wireless NEW! CAMO Limited Edition | | ✓ | ✓ | ✓ | ✓ | Optional | Optional |

*Includes Vacuum Accessory & 1 AVT45 ¼" 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 Zeeland/China Plug, 1 UK/Ireland/Singapore/Hong Kong Plug.
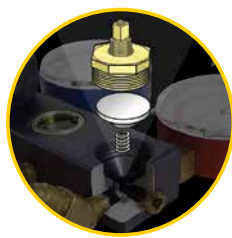
Visit us online at **www.cpsproducts.com**

# BLACKMAX®

# BLACK & CHROME MANIFOLDS

## ENGINEERED FOR PERFORMANCE AND RELIABILITY
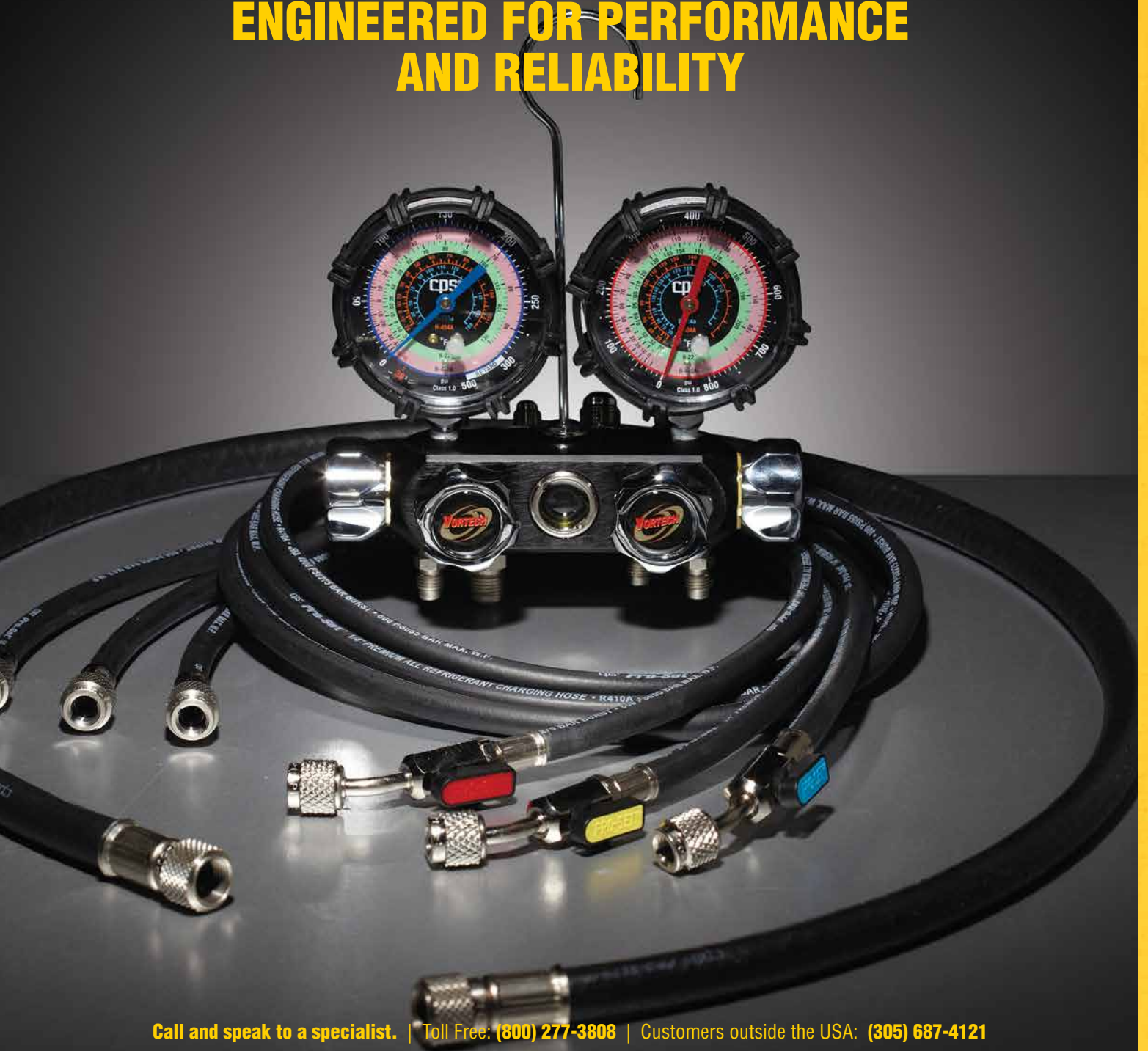
## BLACKMAX® BLACK & CHROME MANIFOLDS WITH VORTECH™ VALVES

- 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

| Specifications | | 3 ¹/₈" (80 mm) | |
|---|---|---|---|
| | | **North America** | **South America** |
| **Gauge Description** | Refrigerant Scales | R134a, R22, R404a, R410a | R410a, R22, R407c |
| | Gauge Size / Type | Class 1.0 accuracy | |
| | | * Gauges built with internal silicon dampening cup for flutter-free operation | |
| | Pressure Scales | Psi | bar / Psi |
| | Temperature Scales | °F | °C |
| **Fittings** | Manifold & Hose fittings | ¹/₄" SAE 45° fittings | |
| **Two Valve Manifolds** | 3 Premium 5' Pro-Set® Black & Chrome Hoses | MV2H4P5Z | MV2O4P5Z |
| | 3 Premium 5' Pro-Set® Black & Chrome BV Hoses | MV2H4P5EZ | MV2O4P5EZ |
| **Four Valve Manifolds** | 3 Premium 5' Pro-Set® Black & Chrome Hoses | MV4H4P5Z | MV4O4P5Z |
| | 3 Premium 5' Pro-Set® Black & Chrome BV Hoses | MV4H4P5EZ | MV4O4P5EZ |
| **Replacement Gauges** | Low Side Gauge | RGH4L | RGO4L |
| | High Side Gauge | RGH4H | RGO4H |
| | Gauge Boot | RGX80B | RGX80B |

RGH4L

RGH4H

MV4H4Z

## BLACKMAX® BLACK & CHROME BARRIER CHARGING HOSES

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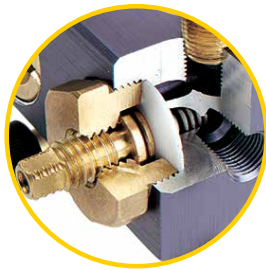*5' premium barrier ball valve chrome charging hoses (black)*

**HP5BKZ**
*5' premium Black & Chrome™ charging hose*

**HV5Z**
*5' premium Black & Chrome™ 3/8" charging hose*

Service Manifolds and Guages

# 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 / South America / Australia | North America |
| **Gauge Description** | Refrigerant Scales | R134a, R22, R404a, R410a | R410A, R22, R407C | R410a | R134a, R22, R404a, R410a |
| | Gauge Size / Type | Class 1.0 accuracy | | Class 1.6 accuracy | |
| | | * 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 | RGO4L | RGB5L | RGH5L |
| | High Side Gauge | RGH4H | RGO4H | RGB5H | RGH5H |
| | Gauge Boot | RGX801B Ribbed | RGX801B Ribbed | RGX681B Spider | RGX68SB Spider |

**Call and speak to a specialist.** | Toll Free: **(800) 277-3808** | Customers outside the USA: **(305) 687-4121**

# Pro-Set ®
# 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.

**MT2H7P5E**

### 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

*Durable, protective gauge boots*

**RGH7L**         **RGH7H**

| PRO-SET® WORKINGMAN'S CHOICE 2 VALVE MANIFOLDS | | | |
|---|---|---|---|
| **Specifications** | | 3¹/₈" (80 mm) | |
| | | **North America** | **South America** |
| **Gauge Description** | Refrigerant Scales | R134a, R22, R404a, R410a | R410a, R22, R407c |
| | Gauge Size / Type | Class 1.0 accuracy | |
| | | * Gauges built with internal silicon dampening cup for flutter-free operation | |
| | Pressure Scales | Psi | bar / Psi |
| | Temperature Scales | °F | °C |
| **Fittings** | Manifold and Hose fittings | ¹/₄" SAE 45° fittings | |
| **Two Valve Manifolds** | Manifold & Gauges Only | MT2H7 | MT2O7 |
| | 3 Premium 5' Pro-Set® Hoses | MT2H7P5 | MT2O7P5 |
| | 3 Premium 5' Pro-Set® AB Hoses | MT2H7P5A | MT2O7P5A |
| | 3 Premium 5' Pro-Set® BV Hoses | MT2H7P5E | MT2O7P5E |
| **Replacement Gauges** | Low Side Gauge | RGH7L | RGO7L |
| | High Side Gauge | RGH7H | RGO7H |
| | Replacement Gauge Boot | RGXBW | RGXBW |

Service Manifolds and Gauges

# TRIPLE SEAL™ PISTON 2 VALVE BLACK BODY SERIES

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

## 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

MBH          MBC          MBD

| TRIPLE SEAL™ PISTON 2 VALVE BLACK BODY MANIFOLDS | | | | | | |
|---|---|---|---|---|---|---|
| **Specifications** | | 2 ½" (68 mm) | | | | |
| | | **North America** | | | **South America** | **South America** | **South America** |
| | | | | | **Asia** | **Australia** | |
| 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 |

## PISTON PINK BODY MANIFOLD SERIES

Piston series 2 valve anodized aluminum block body with ¼" SAE 45° fittings, Triple Seal piston valves, 2½" (68 mm) Class 1.6 accuracy gauges, extra access port in center with Schrader valve and hanging hook.

**MEBP5E**

### 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
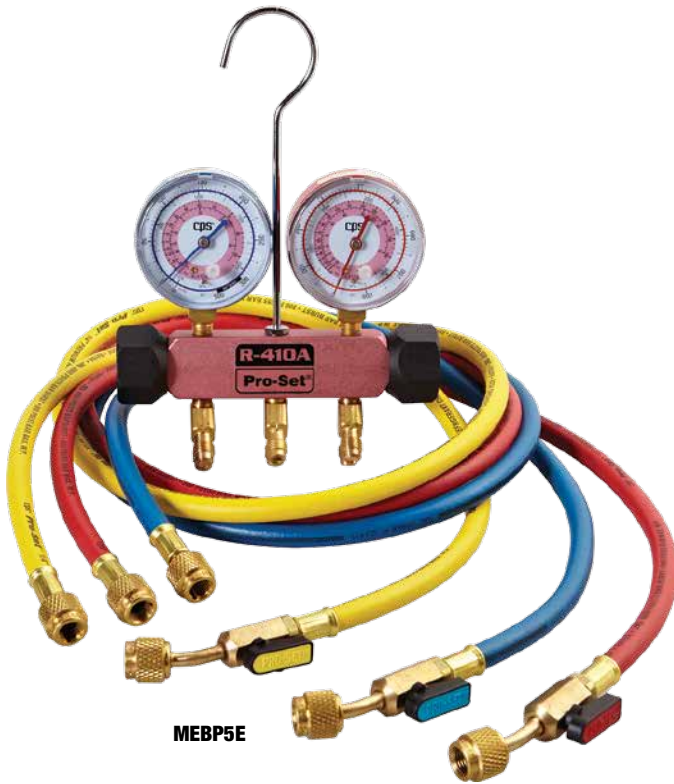• Mirror-like port finish for smooth valve movement

**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 | | |
| | | *Gauges built with internal silicon dampening cup for flutter-free operation | | |
| | Pressure Scales | Psi / kPa | Psi | Psi / kPa |
| | Temperature Scales | °F / °C | °F | °F / °C |
| **Fittings** | Manifold & Gauges Only | ¼" 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 |

Service Manifolds and Gauges

# VORTECH™ DEEP VACUUM MANIFOLD SERIES

- Two-valve, r410A pink anodized aluminum block body
- ¼" 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
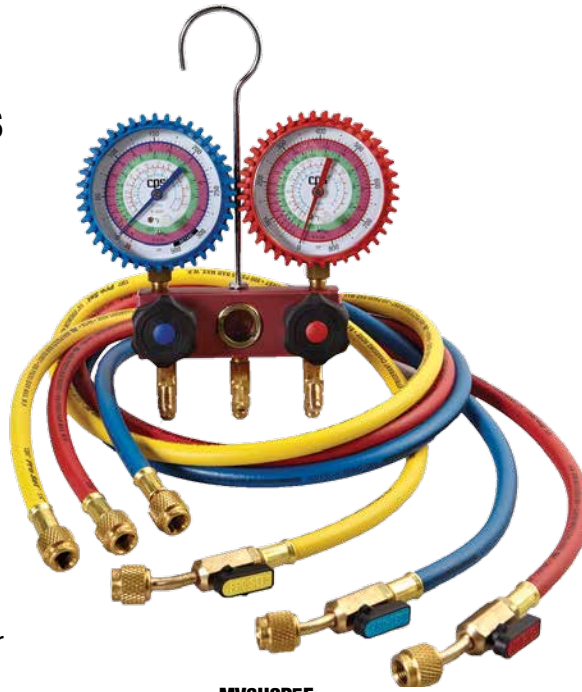


MV3H2P5E



MV3H2



MV3H3



MV13H2



MV13H3

| VORTECH™ DEEP VACUUM VALVE MANIFOLDS | | | | |
|---|---|---|---|---|
| **Specifications** | | 3-1/8" (80 mm) | | |
| | | **North America** | **South America** | **South America** / **Australia** |
| **Gauge Description** | Refrigerant Scales | R410a, R22, R404a, R134a | 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 | ¼" SAE 45° fittings | | |
| **Two Valve Manifolds** | Manifold & Gauges Only | MV3H2 | MV3H3 | MV3O2 | MV3B3 |
| | 3 Premium 5' Pro-Set® Hoses | MV3H2P5 | MV3H3P5 | MV3O2P5 | MV3B3P5 |
| | 3 Premium 5' Pro-Set® AB Hoses | MV3H2P5A | MV3H3P5A | MV3O2P5A | MV3B3P5A |
| | 3 Premium 5' Pro-Set® BV Hoses | MV3H2P5E | MV3H3P5E | MV3O2P5E | MV3B3P5E |
| **Four Valve Manifolds** | Manifold & Gauges Only | MV13H2 | MV13H3 | MV13O2 | MV13B3 |
| | 3 Premium 5' Pro-Set® Hoses | MV13H2P5 | MV13H3P5 | MV13O2P5 | MV13B3P5 |
| | 3 Premium 5' Pro-Set® AB Hoses | MV13H2P5A | MV13H3P5A | MV13O2P5A | MV13B3P5A |
| | 3 Premium 5' Pro-Set® BV Hoses | MV13H2P5E | MV13H3P5E | MV13O2P5E | MV13B3P5E |
| **Replacement Gauges** | Low Side Gauge | RGH2LB | RGH3L | RGO2LB | RGB3L |
| | High Side Gauge | RGH2HB | RGH3H | RGO2HB | RGB3H |

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# BALL VALVE BODY MANIFOLD SERIES

Ball Valve series 2 valve anodized aluminum block body with
¼" SAE fittings, full flow ball valve design, 2½" (68 mm) Class
1.6 accuracy gauges and hanging hook.

MGO

MGH

MGHP5E

| Specifications | | 2 ½" (68 mm) | |
| --- | --- | --- | --- |
| | | **North America** | **South America** |
| **Gauge Description** | Refrigerant Scales | R410a, 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 | bar / Psi |
| | Temperature Scales | °F | °C |
| **Fittings** | Manifold and Hose Fittings | ¼" 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 |

**BALL VALVE BODY MANIFOLD SERIES**

Service Manifolds
and Guages

**Call and speak to a specialist.** | Toll Free: **(800) 277-3808** | Customers outside the USA: **(305) 687-4121**

# *Tech-Set*™
# BRASS BODY SERIES
## THE ORIGINAL MANIFOLD DESIGN

## TECH-SET™ BRASS BODY MANIFOLD SERIES

2 valve forged brass body with ¼" 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

3 TripleSeal™ super Neoprene o-ring design
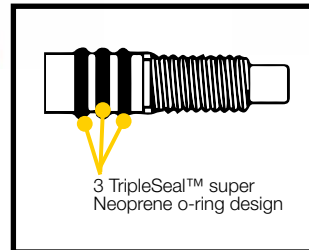
| TECH-SET™ BRASS BODY 2 VALVE MANIFOLDS & HOSE SETS | | | | | |
|---|---|---|---|---|---|
| | SPECIFICATIONS | N. America | S. America | N. America | S. America |
| **Gauge Description** | Refrigerant Scales | R410a, R22, R404a, R134a | | R22, R134a, R404a, R507A | |
| | Gauge Size / Type Gauges built with internal silicon dampening cup for flutter-free operation | 3-1/8" (80 mm) Class 1.6 accuracy | | 2-5/8" (68 mm) Class 1.6 accuracy | |
| | Pressure Scales | Psi/bar | bar/Psi | Psi/bar | bar/Psi |
| | Temperature Scales | °F | °C | °F | °C |
| **Fittings** | Manifold and Hose fittings | 1/4" SAE 45° fittings | | | |
| **Two Valve Manifolds** | 3 Standard 3' Hoses | NA | NA | M64G3 | M63G3 |
| | 3 Prem-Flex 5' (1.52 m) Hoses | M62PF5 | M61PF5 | NA | NA |
| **Replacement Hoses** | 3 Prem-Flex 3' (0.91 m) Hoses | HPF3 | | | |
| | 3 Prem-Flex 5' (1.52 m) Hoses | HPF5 | | | |
| | 3 Standard 3' (0.91 m) Hoses | HG3 | | | |
| | 3 Standard 5' (1.52 m) Hoses | HG5 | | | |

# MANIFOLD/GAUGE ACCESSORIES AND REPLACEMENT PARTS

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

MXC2

| ITEM | DESCRIPTION |
|---|---|
| M2XHA | 2-way hose anchor bracket for Vortech™ & diaphragm |
| M2XRK | Diaphragm valve repair kit: sevices 2 valves |
| M4XHA | 4-way hose anchor bracket for Vortech™ & diaphragm |
| M4XRK | Diaphragm valve repair kit: sevices 4 valves |
| M5XRK | Diaphragm valve repair kit: sevices 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 |

M2XHA

MXPV

MXMH

MVXK

MVXKC

MXPK

M2XRK

MXC

MXPVO

MXPVO

Visit us online at **www.cpsproducts.com**

GT1       GT2       GT4

## 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 3½" 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) | ¾" FPT | ✓ |
| GT2 | ✓ | 0-100 Psi (0-7 bar) | 2 Psi (0.20 bar) | ¾" 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



GT3

Service Manifolds and Gauges

# 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 | 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.

**Call and speak to a specialist.** | Toll Free: **(800) 277-3808** | Customers outside the USA: **(305) 687-4121**

# 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.

HHC2S

## 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 Brass Fittings |
|--------|--------------------|-------------------------|--------------------------|--------------------------|------------------|----------------|---------------------------|
| 3' (90 cm) | HV3* | na | | | | | |
| 5' (150 cm) | HV5 | HV5E | Yes | 3/8" SAE | 460 Psi | 2300 Psi | Yes |
| 6' (180 cm) | HV6* | na | | | | | |
| 8' (240 cm) | HV8* | na | | | | | |

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

HV3

Visit us online at **www.cpsproducts.com**

# TECH-SET™ CHARGING HOSES

Tech-Set™ charging hoses are available in Standard or Prem-Flex grades and in 3ft. and 5ft. lengths for each.

- All-weather resistant
- Rugged flexiblity and durabliity
- Extra deep knurling on nuts for easy grip

## TECH-SET™ ¼" CHARGING HOSES SETS

| Length | 3 Pack (Red, Yellow, Blue) | Hose Type | Working Pressure | Burst Pressure | Ajustable Valve Core Depressor | Leak-Proof 8 Sided Crimp | Blow Off Grooves (Prevents Spray Back) | Refrigerant Compatibility |
|---|---|---|---|---|---|---|---|---|
| 3 Ft. (90 cm) | **HG3** | Standard | 750 PSI (51 bar) | 3000 PSI (206 bar) | ✓ | ✓ | ✓ | Compatible With CFC, HCFC, HFC refrigerants and blends |
| 5 Ft (150 cm) | **HG5** | | | | | | | |
| 3 Ft. (90 cm) | **HPF3** | Prem-Flex | 800 PSI (55 bar) | 4000 PSI (275 bar) | | | | |
| 5 Ft (150 cm) | **HPF5** | | | | | | | |

# REPLACEMENT HOSE GASKETS, DEPRESSORS & O-RINGS

## REPLACEMENT PARTS FOR ALL PRO-SET® HOSES

| Item | Description | Qty |
|---|---|---|
| HXG | Hose Gaskets, ¼" SAE Neoprene | 10 |
| HXGD | Hose Gasket & Core Depressor ¼" SAE Neoprene | 10+10 |
| HX38G | Hose Gaskets, ⅜" SAE Neoprene | 10 |
| HXGD2 | Hose Gaskets, ½"-20 UNF | 6,6 |
| HXG2 | Hose Gaskets, Core Depressors, ½" UNF | 10+10 |
| HXGA | Hose Gaskets, ¼" SAE Microseal Antiblowback | 10 |
| HXGA410 | Hose Gaskets, ½"-20 UNF Microseal Antiblowback | 10 |
| HXTG | Hose Gaskets, 1/4" SAE Teflon | 10 |
| HXTG2 | Hose Gaskets, ½"-20 UNF & ½" ACME Teflon | 10 |

HXGD2

HXTG2

HXG2

**Call and speak to a specialist.** | Toll Free: **(800) 277-3808** | Customers outside the USA: **(305) 687-4121**

# CHARGING
# HOSE VALVES
## PRECISION MACHINED, SOLID BRASS

BV


BV45


BV90


BVM
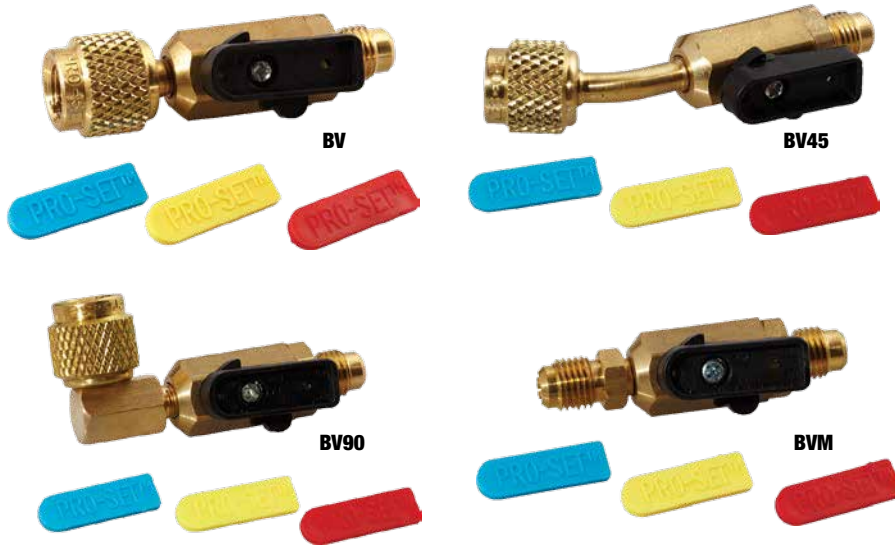
## PRO-SET® PREMIUM BALL VALVES

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 |


AB12


ABG18


AB3
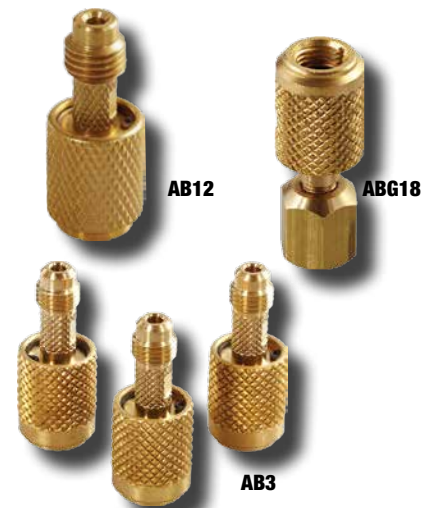
# TUBING TOOLS
## ERGONOMIC TOOLS FOR CUTTING, FORMING and BENDING

BLACK**MAX**

BLACK**MAX**

BLACK**MAX**

## 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, deburing, 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!

Durable aluminum and rubber knob

For soft/hard copper, aluminum tube

Quick-change chromed hardened cutting wheel

BTC200R

Patented SetNCut™ spring-loaded center groove rollers for fast, automatic cuts

BTC200

### Set N Cut™
### BLACKMAX® MINI RATCHET TUBE CUTTER

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

### Set N Cut™
### BLACKMAX® MINI TUBE CUTTER

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

BTC300

### Set N Cut™
### BLACKMAX® TUBE CUTTER

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

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

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

*Soft or hard setting for copper or aluminum tube*

*Quick release pin for fast replacement of cutting wheels*

# Set N Cut™

## BLACKMAX® HEAVY DUTY TUBE CUTTER

- For brass, copper, aluminum, stainless tube and electrical conduit
- Patented SetNCut™ technology for the perfect cut every time
- Spring-loaded rollers for easy, precision cut
- Heavy duty performace from lightweight aluminum forged body
- Quick change cutting wheel
- Titanium finish cutting wheel included
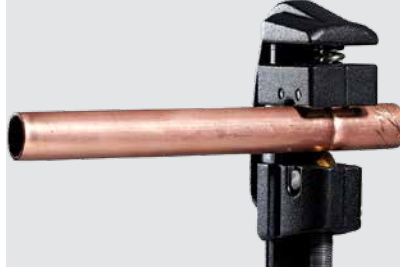
**BTC400**

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

**BTC500**

# 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) |

Visit us online at **www.cpsproducts.com**

# BLACKMAX®
## TUBE EXPANDERS

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

**BTLE9 TUBE EXPANDER KIT**

**BTLE9M TUBE EXPANDER KIT**

| BLACKMAX® TUBE EXPANDERS (IMPERIAL) | |
|---|---|
| Description | Item |
| Tube Expander Set (9 Heads) | BTLE9 |
| Tube Expander (Replacement Tool) | BTLEXH |

| Size | Replacement Heads | |
|---|---|---|
| | Item | Color |
| 1/4" | BTLEX14 | Chrome |
| 5/16" | BTLEX516 | Copper |
| 3/8" | BTLEX38 | Red |
| 1/2" | BTLEX12 | Yellow-Orange |
| 5/8" | BTLEX58 | Blue |
| 3/4" | BTLEX34 | Green |
| 7/8" | BTLEX78 | Red-Violet |
| 1" | BTLEX1 | Black |
| 11/8" | BTLEX118 | Pink |

| BLACKMAX® TUBE EXPANDERS (METRIC) | |
|---|---|
| Description | Item |
| Tube Expander Set (9 Heads) | BTLE9M |
| Tube Expander (Replacement Tool) | BTLEXH |

| Size | Replacement Heads | |
|---|---|---|
| | Item | Color |
| 6 mm | BTLEX6M | Chrome |
| 8 mm | BTLEX8M | Copper |
| 10 mm | BTLEX10M | Red |
| 12 mm | BTLEX12M | Yellow-Orange |
| 15 mm | BTLEX15M | Yellow-Green |
| 18 mm | BTLEX18M | Titanium |
| 22 mm | BTLEX22M | Red-Violet |
| 28 mm | BTLEX28M | Red-Orange |
| 32 mm | BTLEX32M | Black and Chrome |

**BTB300
TUBE BENDER KIT**

## BLACKMAX®
## PREMIUM TUBE BENDERS

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

*Forward bend configuration*
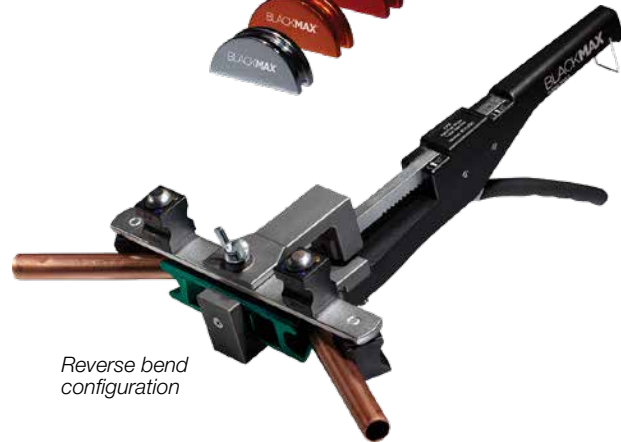
*Reverse bend configuration*

### BLACKMAX® TUBE BENDERS (IMPERIAL)

| Item | Description | |
|------|-------------|---|
| BTB300 | Tube Bender Set (7 Benders) includes all parts listed below: | |

| **REPLACEMENT PARTS** | | |
|------|------|------|
| Item | Tube I.D. | Mandrel Color |
| BTBX14 | $1/4$" O.D. | Chrome |
| BTBX516 | $5/16$" O.D. | Copper |
| BTBX38 | $3/8$" O.D. | Red |
| BTBX12 | $1/2$" O.D. | Yellow-Orange |
| BTBX58 | $5/8$" O.D. | Blue |
| BTBX34 | $3/4$" O.D. | Green |
| BTBX78 | $7/8$" O.D. | Red-Violet |
| BTBXH | Ratchet Tool | |
| BTBXA1 | $1/4$"-$3/8$" Shoe Arm | |
| BTBXA2 | $1/2$"-$7/8$" Shoe Arm | |
| BTBXR1 | Reverse Bender Mandrel Arm | |
| BTBXR2 | Reverse Bender Shoe Arm | |

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

### BLACKMAX® TUBE BENDERS (METRIC)

| Item | Description | |
|------|-------------|---|
| BTB300M | Tube Bender Set (7 Benders) includes all parts indicated below. (excluding BTBX16M) | |

| **REPLACEMENT PARTS** | | |
|------|------|------|
| Item | Tube I.D. | Mandrel Color |
| BTBX6M | 6 mm O.D. | Chrome |
| BTBX8M | 8 mm O.D. | Copper |
| BTBX10M | 10 mm O.D. | Red |
| BTBX12M | 12 mm O.D. | Yellow-Orange |
| BTBX15M | 15 mm O.D. | Yellow-Green |
| BTBX16M | 16 mm O.D. (Optional for BTB300M) | Blue |
| BTBX18M | 18 mm O.D. | Titanium |
| BTBX22M | 22 mm O.D. | Red-Violet |
| 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)

**BFT850**

# 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 before flaring*



*Eccentric flaring cone for precision flares*

## BLACKMAX® TUBE FLARING TOOLS

| | Item | Description |
|---|---|---|
| **Imperial** | BFT850 | Tube Flaring Tool, Imperial Eccentric (7 Position for: $3/16$", $1/4$" $5/16$", $3/8$", $1/2$", $5/8$", $3/4$" O.D. Tube) |
| **Metric** | BFT850M | Tube Flaring Tool, Metric Eccentric (7 Position for: 6, 8, 10, 12, 15, 16, 18 mm O.D. Tube) |

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



*Rugged carrying case*



# BLACKMAX®
# Premium Deburring Tool

Thick aluminum construction. For soft copper and aluminum tube. Includes 2 blades (spare in handle)
**BTLDB3**

Replacement Blade (high speed steel) for BTLDB3
**TLDB2X**

# 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.

*Quick release arms*

| BLACKMAX® GEAR & PULLEY REMOVERS ||
|---|---|
| Item | Description |
| BTLGP4 | Gear Pulley Remover, 4" (10.1 cm) |
| BTLGP7 | Gear Pulley Remover, 7" (17,8 cm) |

**BTLGP4**

**BTLGP7**

# 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°

**BTB12**

| LEVER TUBE BENDERS (IMPERIAL) |||
|---|---|---|
| | Item | Description |
| Imperial | BTB06 | Lever Tube Bender, for $3/8$" O.D. Tube |
| | BTB08 | Lever Tube Bender, for $1/2$" O.D. Tube |
| | BTB10 | Lever Tube Bender, for $5/8$" O.D. Tube |
| | BTB12 | Lever Tube Bender, for $3/4$" O.D. Tube |
| | BTB14 | Lever Tube Bender, for $7/8$" O.D. Tube |

| LEVER TUBE BENDERS (METRIC) |||
|---|---|---|
| | Item | Description |
| Metric | BTB10MM | Lever Tube Bender, for 10 mm O.D. Tube |
| | BTB12MM | Lever Tube Bender, for 12 mm O.D. Tube |
| | BTB15MM | Lever Tube Bender, for 15 mm O.D. Tube |
| | BTB16MM | Lever Tube Bender, for 16 mm O.D. Tube |
| | BTB18MM | Lever Tube Bender, for 18 mm O.D. Tube |

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

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

*Integrated retractable and replaceable reamer tool*

**TCT274**

**TCT174**

**TCT206**

**TCT127**

**TCPVC**

## 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



**TC174**



### 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 TCT/274/312 |
| TCPVC | Ratcheting PVC Tube Cutter up to $^5/_8$" (16 mm) O.D. |

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

## PRO-SET® LEVER TUBE BENDERS

| 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 |

*Imperial*

| | |
|---|---|
| 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 |

*Metric*

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

**TB08** 
**TB10** 
**TB10MM** 
**TB15MM** 
**TB05** 
**TB12MM** 
**TB16MM** 
**TB250** 

## PRO-SET® RATCHET TUBE BENDER

| TB250 | Ratchet Tube Bender Set: includes all parts shown below plus TC274, Reamer (1) |
|---|---|
| **REPLACEMENT PARTS** | |
| TBXM6 | Molded Plastic Mandrel $1/4$" (6 mm) |
| TBXM8 | Molded Plastic Mandrel $5/16$" (8 mm) |
| TBXM10 | Molded Plastic Mandrel $3/8$" (10 mm) |
| TBXM14 | Molded Plastic Mandrel $1/2$" (14 mm) |
| TBXM16 | Molded Plastic Mandrel $5/8$" (16 mm) |
| TBXM19 | Molded Plastic Mandrel $3/4$" (19 mm) |
| TBXM22 | Molded Plastic Mandrel $7/8$" (22 mm) |
| TBXR | Ratchet Mechanism |
| TBXB1 | Small bending bar replacement |
| TBXB2 | Large bending bar replacement |

*Imperial and Metric*

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

**TLDB2**
Pocket Deburring Tool
- Aluminum body
- For soft copper and aluminum tubing
- Remove burrs and surface defects from inner/outer straight and hole edges

**TLDB2X** Replacement Blade For TLDB2
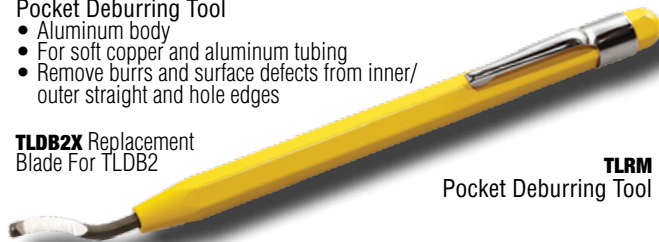
**TLRM** Pocket Deburring Tool

## 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.

**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

| 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 |

**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

**TCX4C**

**TCX4S**

**TCX4R**

**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.

**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**
Hardened steel replacement blade for TLDB

| TECH-SET™ TUBE BENDERS | |
|---|---|
| **ITEM** | **DESCRIPTION** |
| TB368 | Tech-Set Universal Tube Bender ($1/4$", $5/16$", $3/8$") |
| TBS04 | $1/4$" Spring Tube Bender |
| TBS05 | $5/16$" Spring Tube Bender |
| TBS06 | $3/8$" Spring Tube Bender |
| TBS08 | $1/2$" Spring Tube Bender |
| TBS10 | $5/8$" Spring Tube Bender |
| TBS12 | $3/4$" Spring Tube Bender |

**TBS08**

**TBS04**

FT525  FT195

FT203  FT500

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

| | ITEM | DESCRIPTION |
|---|---|---|
| Imperial | FT195 | 45° Flaring Tool ($3/16$", $1/4$", $5/16$", $3/8$", $7/16$", $1/2$", $5/8$") |
| | FTX501 | FT195 Flaring Bar ($5/16$", $3/8$", $7/16$") |
| | FT500 | 45° Flaring/Burnishing Tool ($3/16$" to $5/8$") |
| | FTX514 | FT500 Die Holder Assembly |
| | FT203 | 45° Flaring Tool ($5/8$", $3/4$", $7/8$", 1 $1/18$") O.D. Tube |
| Metric | FT500M | 45°Flaring/Burnishing Tool (6 - 16 mm) |
| | FT525 | Universal Adjustable Flaring Tool $3/16$" to $5/8$" (5 to 16 mm) |
| | FTX515 | FT500M Die Holder Assembly |

## PRO-SET® TUBE EXPANDER/ SWAGING SET

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



TLE6/TLE6M
Metric

## TECH-SET TUBE EXPANDERS (IMPERIAL)

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

## TECH-SET TUBE EXPANDERS (METRIC)

| | ITEM | DESCRIPTION |
|---|---|---|
| | TLE6M | Tube Expander Set With Case includes all parts shown below, plus Debur Tool (1) |
| | **REPLACEMENT PARTS** | |
| Metric | 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

Visit us online at **www.cpsproducts.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;
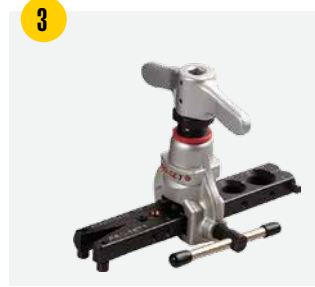
**TLB410A**

**1**

**Two Valve Service Manifold**
(Varies by kit. See chart below)
- R-410A/R-22/R404A gauges
- 1/4" SAE fittings
- Triple seal valve system

**2**

**Premium 3-Pack 5' Hoses**
(Varies by kit. See chart below)
- 1/4" SAE 45° fittings
- 800Psi working pressure
- 4000Psi burst pressure

**3**

**Flaring Tool**
- Clutch driven feed screw
- Eccentrically mounted cone
- Creates perfect, strong flares
- Ratchet drive in yoke
- $^3/_{16}$", $^1/_4$", $^1/_{16}$", $^3/_8$", $^1/_2$" $^1/_8$", $^3/_4$"

**4**

$^3/_{16}$" included in metric set (see chart below)
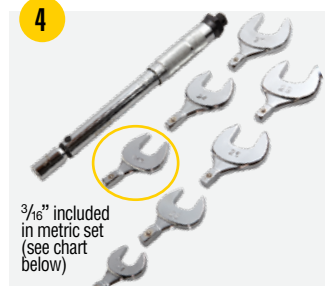
**Torque Wrench Sets;**
- Metric Set: 12, 22, 24, 26, 27, 29 mm and $^{13}/_{16}$" jaw sizes
-or-
- Imperial Set: $^5/_8$", $^{11}/_{16}$", $^{13}/_{16}$", $^{15}/_{16}$", $1^1/_{16}$", $1^5/_{16}$"

**5a**

**5b**
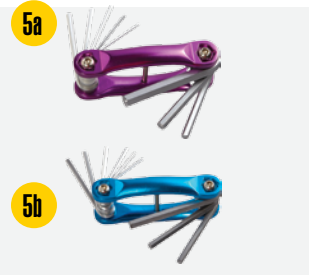
**(1) Imperial and (1) Metric Hex Key Set**
- Metric Set: 1.5, 2, 2.5, 3, 4, 5, 6, 8 mm
- Imperial Set: $^3/_{32}$", $^7/_{64}$", $^1/_8$", $^9/_{64}$", $^5/_{32}$", $^3/_{16}$", $^7/_{32}$", $^1/_4$"

**6**

**Valve Core Tool**
- 5/16" female fitting allows direct connection to mini-split service ports
- $^5/_{16}$" female x $^1/_4$" SAE male

**7**

**Brass Adapters and Caps**
- (10) ½"-20 UNF Caps, (2) Male: 1/4" SAE 55D; female; ½"-20 UNF SWVL, and (2) Male: 1/4" SAE female; ½"-20 UNF

**8**

**13" Large Square Tool Bag**
- 24 separate compartments for quick, easy-access
- Molded handle for durability and comfort

## UNIVERSAL SERVICE TOOL KITS

| Kit Contents | | Qty | TLB410A | TLB410SAE | TLB410KIT | TLB410AC | TLB410ACE | TLB410M |
|---|---|---|---|---|---|---|---|---|
| **1** | 2 Valve Manifold | 1 | Pro-Set® Piston Pink Body $^1/_4$" SAE 45° fittings "H" Gauge (MEHP5E) | | Pro-Set® Premium Piston Series Manifold (#MT2HP) | BLACKMAX® Black & Chrome $^1/_4$" SAE 45° fittings "H5" Gauge (MBH5P5Z) | BLACKMAX® Black & Chrome $^1/_4$" SAE 45° fittings "H5" Gauge (MBH5P5EZ) | No Manifold |
| **2** | Hoses | 1 | Pro-Set® Premium (3) 5' red/blue/yellow ball valve hoses | | | Pro-Set® Premium (3) 5' Black & Chrome hoses | Pro-Set® Premium (3) 5' Black & Chrome ball valve hoses | No Hoses |
| **3** | Flaring Tool | 1 | FT800N | | BFT850 | FT800N | | |
| **4** | Torque Wrench Set | 1 | Metric TLTWSM | SAE/Imperial TLTWSAE | Universal Handle with SAE/Imperial & Metric Heads | Metric TLTWSM | | |
| **5a** | Hex Wrench Set (Metric) | 1 | TLSWHM | | | | | |
| **5b** | Hex Wrench Set (Imperial) | 1 | TLSWH | | | | | |
| **6** | Valve Core Tool | 1 | TLVC410A | | | | | |
| **7** | Brass Adapters and Brass Caps | 14 | Includes; **(10) AVC410** ½"-20 UNF SAE Brass Caps, **(2) AD87** Brass Adapter Male: 1/4" SAE 55D; female; ½"-20 UNF SWVL w/ Valve Core Tool, and **(2) AD87S** Brass Adapter (Male: 1/4" SAE; female; ½"-20 UNF) w/Valve Core Tool | | | | | |
| **8** | Tool Bag | 1 | TLBAG1 | | TLBAG1 | TLBAG1 | | |

TLB410KIT

# R410A SERVICE TOOL KIT
## Tool kit includes:
- Pro-Set® Premium Piston Series Manifold
- 5' Premium Pro-Set® Charging Hoses
- Imperial and Metric Hex Key Sets
- Valve Core Tool
- Brass Adapters and Caps
- Large, 16" Rubber Bottom Tool Organizer
- Imperial and Metric Torque Wrench Set and Instructions
- BLACKMAX® Tube Cutter 1/8" to 1-1/4"
- BLACKMAX® Tube Flaring Tool
- BLACKMAX® Deburring Tool with extra blade
- R410A Flare Size Gauge

**1**



**Pro-Set® Premium Piston Series Manifold** #MT2HP
- 2 valve anodized aluminum block body
- 1/4" SAE 45° fittings
- Triple Seal piston valves
- Sure grip rubber over metal valve handles
- 3 1/8" (80 mm) Class 1.0 accuracy gauges
- Protective gauge boots
- Extra access port in center with Schrader valve and hanging hook

**2**
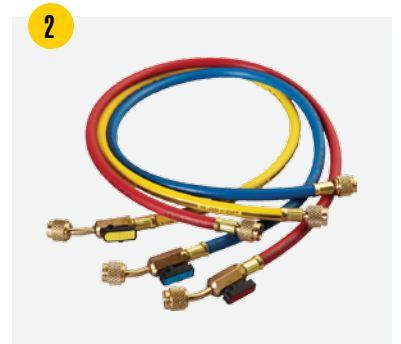


**5' Premium Charging Hoses**
*#HP5BE-Blue, HP5RE-Red, HP5YE-Yellow*
- 1/4" hoses with SAE fittings, 45° ball valve on one end
- 800PSI working pressure
- 4000PSI burst pressure
- Leak-proof 8-sided crimp
- Extra deep knurling
- Adjustable valve core depressor
- Blow off grooves preventing spray back

Visit us online at **www.cpsproducts.com**

**3**
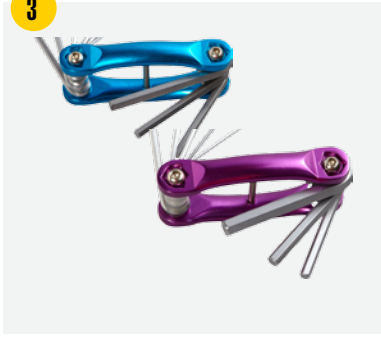


**Hex Key Sets**
**(1) Imperial** *#TLSWH*
⁵⁄₆₄", ³⁄₃₂", ⁷⁄₆₄", ¹⁄₈", ⁹⁄₆₄", ⁵⁄₃₂", ³⁄₁₆", ⁷⁄₃₂", ¹⁄₄"

**(1) Metric** *#TLSWHM*
1.5, 2, 2.5, 3, 4, 5, 6, 8mm

**4**



**Valve Core Tool** *#TLVCS410A*
Unique configuration of tool enables use of standard 1/4" SAE manifold/hose sets with R-410A systems incorporating 5/16" (1/2"-20UNF) service ports.
• Designed to remove and install valve core without losing system charge
• Increases evacuation and charging speed by creating unrestricted access

**5**



**Large, 16" Rubber Bottom Tool Organizer** *#TLBAG2*
• Separate compartments for quick, easy-access
• Molded handle for durability and comfort
• Rubber bottom

**7**



**BlackMAX® Tube Cutter 1/8" to 1-1/4"** *#BTC300*
• Two quick-change, chromed, hardened cutting wheels
• Enclosed feed screw eliminates clogging, jamming
• SetNCut™ spring-loaded cutting wheel for a perfect cut every time

**8**



**BlackMAX® Tube Flaring Tool** *#BFT850*
• Aluminum body is 50% lighter than steel designs
• Internal clutch indicates when formed flare is complete
• Eccentric cone forms precise 45° flared ends
• Creates perfect, strong flares
• For 3/16", 1/4" 5/16", 3/8", 1/2", 5/8", 3/4" O.D. soft copper, aluminum tube

**9**



**Torque Wrench Set with (1) Universal Handle** *#TLTWSAE* **and (6) Imperial and (6) Metric wrenches** *(part numbers below)* and instructions

| Heads | | | |
|---|---|---|---|
| Metric | | Imperial | |
| 17mm | *#TLXTWM17* | 5/8" | *#TLXTW58* |
| 22mm | *#TLXTWM22* | 11/16" | *#TLXTW1116* |
| 24mm | *#TLXTWM24* | 13/16" | *#TLXTW1316* |
| 26mm | *#TLXTWM26* | 15/16" | *#TLXTW1516* |
| 27mm | *#TLXTWM27* | 1 1/16" | *#TLXTW1L116* |
| 29mm | *#TLXTWM29* | 1 5/16" | *#TLXTW1L516* |

**10**



**Brass Adapters and Caps**
• (10) ½"-20 UNF Caps *#AVC410*
• (2) Male: 1/4" SAE 55D; Female; ½"-20 UNF SWVL, *#AD87S* and
• (2) Male: 1/4" SAE Female; ½"-20 UNF *#AD87*

**11**



**BlackMAX® Deburring Tool**
with extra blade inside handle
• Quick-change blade
• Solid aluminum body
*#BTLDB3*

**12**



**R410A Flare Size Gauge**
*#FTXSG*
• 6.4 mm, 1/4"
• 9.5 mm, 3/8"
• 12.7 mm, 1/2"
• 15.9 mm, 5/8"
• 19.1 mm, 3/4"

## 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

## 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
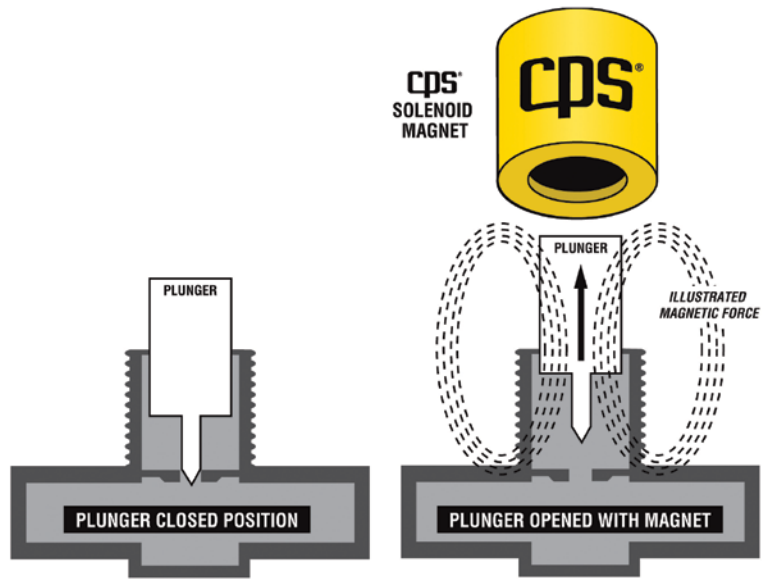


## CPS® COMPACT MAGNETIZER/DEMAGNETIZER

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

# 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
- Packed in clear clamshell
- with printed display card
- One year warranty

**TLWA06**
Size: 6"
Jaw Capacity:
$1^5/_{16}$" / 24 mm

**TLWA08**
Size: 8"
Jaw Capacity:
$1^1/_8$" / 29 mm

**TLWA10**
Size: 10"
Jaw Capacity:
$1^5/_{16}$" / 33 mm

## PRO-SET® HEX KEY WRENCH SETS
Packed in clear clamshell with printed display card

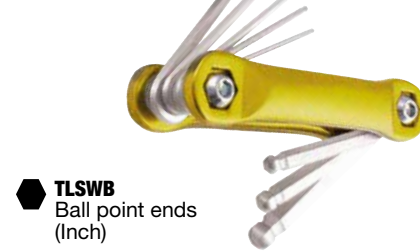| Item | Description |
|------|-------------|
| TLSWH | Inch Hex Key Set Nickel Plated ($5/_{64}$", $7/_{64}$", $1/_8$", $9/_{64}$", $5/_{32}$", $3/_{16}$", $7/_{32}$", $1/_4$") |
| TLSWHM | Metric Hex Wrench Set Nickel Plated (1.5, 2, 2.5, 3, 4, 5, 6, 8 mm) |
| TLSWT | Torx Wrench Set Nickel Plated |
| TLSWB | Inch Ball Point Key Set Nickel plated ($5/_{64}$", $7/_{64}$", $1/_8$", $9/_{64}$", $5/_{32}$", $3/_{16}$", $7/_{32}$", $1/_4$") |
| TLSWHB | Inch Hex Wrench Combo Set: Includes TLSWH (Inch Hex Key) & TLSWB (Inch Ball Point Key Set) |

**TLSWH** Hex ends (Inch)

**TLSWHM** Hex ends (Metric)

**TLSWT** Torx ends

**TLSWB** Ball point ends (Inch)

## PRO-SET® SERVICE WRENCHES

- Metal construction
- Embossed fractions and logo
- Polished chrome finish

| PRO-SET® SERVICE WRENCHES | | |
|------|-------------|------|
| Item | Description | Qty. |
| TLSWL | $3/_{16}$", $1/_4$" Square Drive; $1/_2$", $9/_{16}$" Hex Drive | 1 |
| TLSWLB | $3/_{16}$", $1/_4$" Square Drive; $1/_2$", $9/_{16}$" Hex Drive (bulk pack) | 100 |
| TLSWO | $3/_{16}$", $1/_4$", $5/_{16}$", $3/_8$" Square Drive. Offset ends | 1 |
| TLSWOB | $3/_{16}$", $1/_4$", $5/_{16}$", $3/_8$" Square Drive. Offset ends (bulk pack) | 100 |
| TLSWOA | $3/_{16}$", $1/_4$", $5/_{16}$", $3/_8$" Square Drive. Offset ends. Includes $3/_{16}$" & $5/_{16}$" Hex Driver Bit | 1 |
| TLSWS | $3/_{16}$", $1/_4$", $5/_{16}$", $3/_8$" Square Drive | 1 |
| TLSWSA | $3/_{16}$", $1/_4$", $5/_{16}$", $3/_8$" Square Drive. Includes $3/_{16}$" & $5/_{16}$" Hex Driver Bit | 1 |
| TLSWSB | $3/_{16}$", $1/_4$", $5/_{16}$", $3/_8$" Square Drive (bulk pack) | 100 |

MADE IN THE USA

Visit us online at **www.cpsproducts.com**

TLTWSM

TLTWSAE

## PRO-SET® TORQUE WRENCHES

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

- SAE (Inch) Or Metric Sets: Both include 6 sizes of interchangeable ends
- **Inch Wrench Settings** in Inch-Pounds (60-960) or Foot-Pounds (5-80)
- **Metric Wrench Settings** in Newton-Meters (10-75)
- Polished chrome finish
- Provides consistently accurate readings and rugged, trouble-free performance
- Includes instruction sheet and molded storage case

| PRO-SET® TORQUE WRENCHES | | | |
|---|---|---|---|
| **IMPERIAL** | | **METRIC** | |
| TLTWSAE | SAE Multi-Head Torque Wrench Set with handle, heads and case ($5/8$", $11/16$", $13/16$", $15/16$", $1 1/16$", $1 5/16$") | TLTWSM | Metric Multi-Head Torque Wrench Set with handle, heads and case (17, 22, 24, 26, 27, 29 mm) |
| TLXTWSAE | Set of SAE Wrench Heads $5/8$", $11/16$", $13/16$", $15/16$", $1 1/16$", $1 5/16$" Jaw Sizes | TLXTWM | Set of Metric Wrench Heads: 17, 22, 24, 26, 27, 29mm Jaw Sizes |
| TLXTWSAEW | SAE Torque Wrench Handle | TLXTWMW | Metric Torque Wrench Handle |
| **INDIVIDUAL WRENCH HEADS** | | | |
| TLXTW58 | $5/8$" | TLXTWM17 | 17mm |
| TLXTW1116 | $11/16$" | TLXTWM22 | 22mm |
| TLXTW1316 | $13/16$" | TLXTWM24 | 24mm |
| TLXTW1516 | $15/16$" | TLXTWM26 | 26mm |
| TLXTW1L116 | $1 1/16$" | TLXTWM27 | 27mm |
| TLXTW1L516 | $1 5/16$" | TLXTWM29 | 29mm |



TLPK

## PRO-SET® SWAGE PUNCH SET

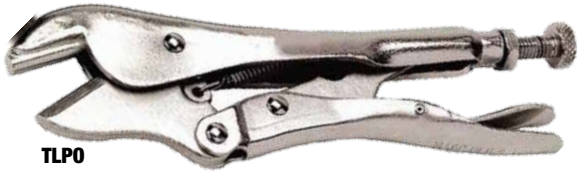5 Punches (1/4", 5/16", 3/8", 1/2", 5/8")



TLPP

## PRO-SET® TUBE PIERCING PLIERS

Tube Piercing Pliers 1/4"



## PRO-SET® HAND OIL PUMP

TLOP



TLPORR
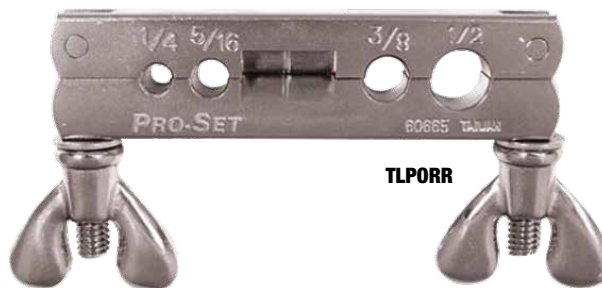
## PRO-SET® PINCH-OFF & RE-ROUND TOOL

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

**Call and speak to a specialist.** | Toll Free: **(800) 277-3808** | Customers outside the USA: **(305) 687-4121**

**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 Metal handles with frosted finish and blister card packaging | |
| --- | --- |
| 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 ¼" diameter

**TLMIR2**
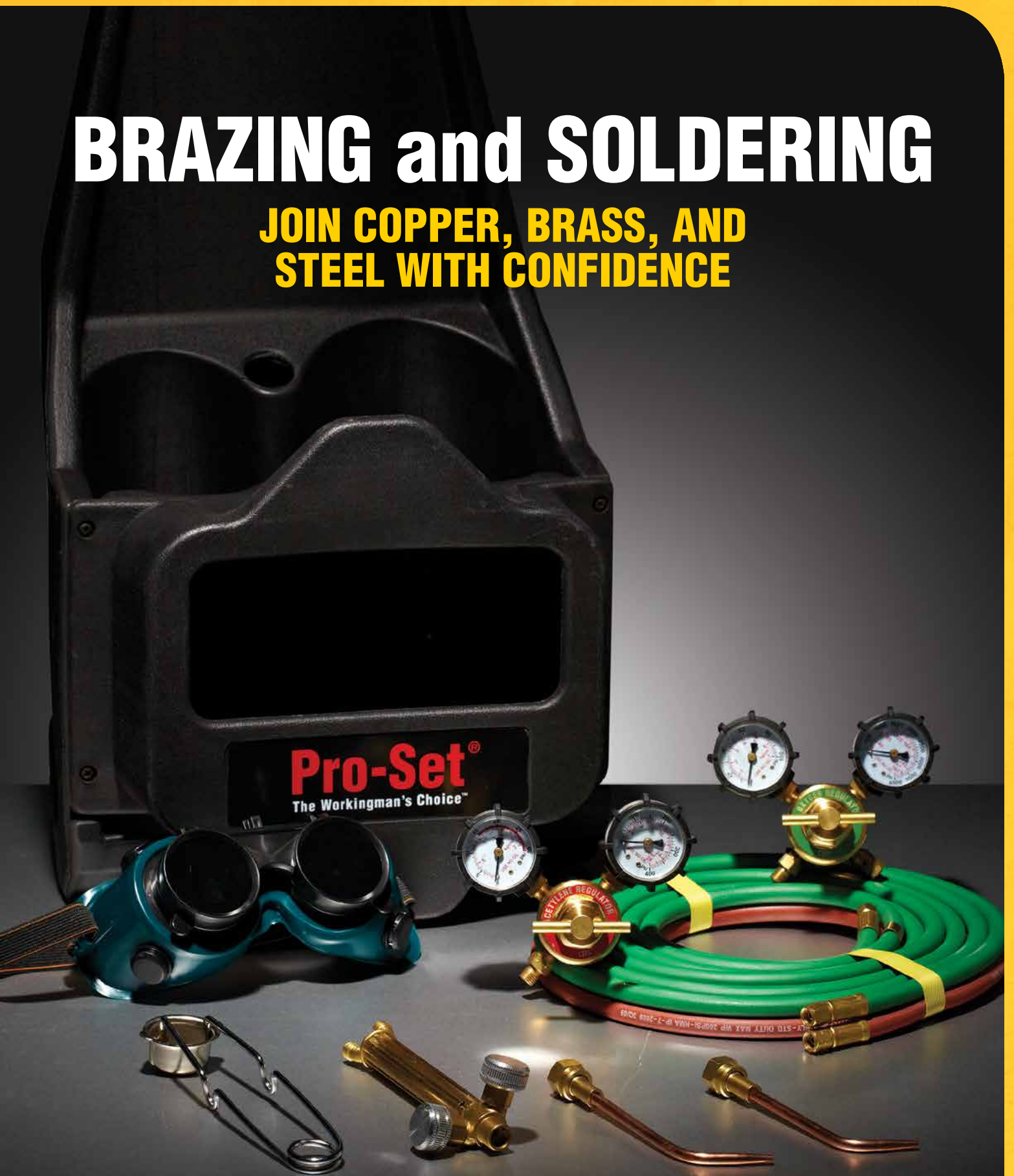Circular
Telescoping
Mirror
2 ¼" diameter

**TLMIR3**
Rectangular
Telescoping
Mirror
3 ½" x 2"

**TLMIR4**
Oval Pocket
Mirror
1" x 2"

# BRAZING and SOLDERING

## JOIN COPPER, BRASS, AND STEEL WITH CONFIDENCE

# 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
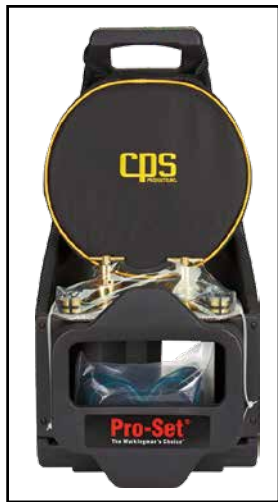
BRHVACR1

\* tanks not included

| PRO-SET® BRAZING & SOLDERING ACCESSORIES OR REPLACEMENT PARTS | | |
|---|---|---|
| Item | Optional Replacement Part | Description |
| BRRA1 | ✓ | Acetylene/Fuel Regulator "A" Ftg. Outlet / CGA 200 Inlet (UL Listed) |
| BRRN1 | | Nitrogen Regulator |
| BRRO1 | ✓ | 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 |

# PRO-SET® PREMIUM HAND TORCH WITH INTERCHANGEABLE TIPS

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

**BRHT2**
*Gas cylinders not included

## 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 |
| Packaging | Clamshell | Molded Case | Clamshell | | | | |
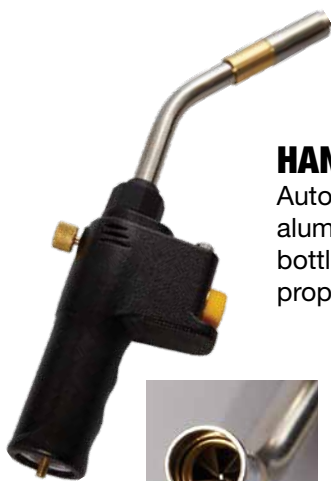
## HAND TORCH

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

**BRHT1**

## HAND TORCH

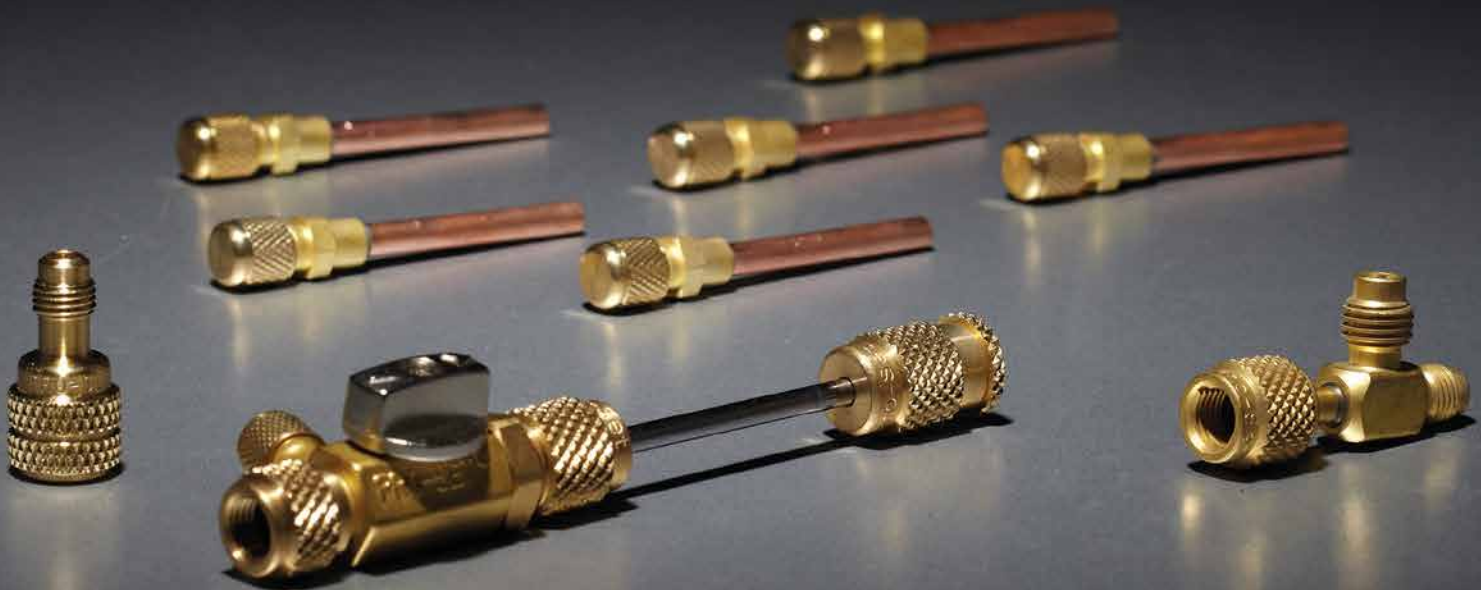Auto-ignite hand torch kit with 5' hose and valve for MAPP, propane or propylene

**BRHT5**

# BRASS ADAPTERS, FITTINGS & VALVE CORE TOOLS

## MANUFACTURED TO STRINGENT INDUSTRY STANDARDS

## BRASS ADAPTERS

| ITEM | Female | Male | Other | Male | Qty / Pk |
|------|--------|------|-------|------|----------|
| AD12 | $\frac{1}{2}$" ACME | LO-side R-134a | - | R-134a automotive tanks | 1 |
| AD14 | - | 14 mm x $\frac{1}{4}$" SAE | - | R-134a automotive couplers | 1 |
| AD18C | $\frac{1}{4}$" SAE | $\frac{1}{8}$" SAE | w/ valve core | Manifolds, compressors | 1 |
| AD24 | - | $\frac{1}{4}$" SAE x $\frac{1}{8}$" MNPT | w/ valve core | Manifolds, compressors | 6 |
| AD24B | - | $\frac{1}{4}$" SAE x $\frac{1}{8}$" MNPT | Bulk | $\frac{1}{4}$" service manifolds | 100 |
| AD36 | $\frac{3}{16}$" SAE | $\frac{1}{4}$" SAE | no valve core | TLVC Valve Core Tool for R-12 Auto. HI-side | 1 |
| AD36C | $\frac{3}{16}$" SAE | $\frac{1}{4}$" SAE | w/ valve core | Automotive adapter | 1 |
| AD41 | $\frac{3}{4}$" -14 | $\frac{1}{4}$" SAE | w/ gasket | Large 125 lb cylinders | 1 |
| AD41B | $\frac{3}{4}$" -14 | $\frac{1}{4}$" SAE | Bulk | Large 125 lb cylinders | 100 |
| AD61 | $\frac{3}{4}$" -14 | $\frac{3}{8}$" SAE | w/ gasket | Large 125 lb cylinders | 1 |
| AD44 | - | $\frac{1}{4}$" SAE x $\frac{1}{4}$" MNPT | w/ valve core & cap | Vacuum Pumps, compressors | 6 |
| AD44B | - | $\frac{1}{4}$" SAE x $\frac{1}{4}$" MNPT | Bulk | Vacuum Pumps, compressors | 100 |
| AD47 | - | $\frac{1}{4}$" SAE x $\frac{1}{4}$" SAE | - | $\frac{1}{4}$" Hose union | 1 |
| AD47B | - | $\frac{1}{4}$" SAE x $\frac{1}{4}$" SAE | Bulk | $\frac{1}{4}$" Hose union | 100 |
| AD48 | $\frac{1}{4}$" SAE | $\frac{1}{2}$" ACME | w/ valve core | Vacuum pumps/manifolds/recovery/tanks | 3 |
| AD48B | $\frac{1}{4}$" SAE | $\frac{1}{2}$" ACME | w/ valve core | Vacuum pumps/manifolds/recovery/tanks | 50 |
| AD64 | $\frac{1}{4}$" SAE | $\frac{3}{8}$" SAE | w/core & Depressor | Vacuum pumps | 1 |
| AD68 | $\frac{1}{4}$" SAE | $\frac{3}{8}$" ACME | w/core & Depressor | Vacuum pumps | 3 |
| AD68V | $\frac{1}{2}$" ACME | $\frac{3}{8}$" SAE | w/core & Depressor Bulk | Vacuum pumps | 1 |
| AD71 | $\frac{3}{4}$" -14 | $\frac{1}{2}$"-20 UNF | w/gasket | Large 125 lb cylinder | 1 |
| AD78 | $\frac{1}{4}$" SAE | $\frac{1}{2}$"-20 UNF | w/ valve core | R-410A International | 1 |
| AD78B | $\frac{1}{4}$" SAE | $\frac{1}{2}$"-20 UNF | Bulk | R-410A International | 100 |
| AD81 | $\frac{3}{4}$" -14 | $\frac{1}{2}$" ACME | w/ gasket | Large 125 lb cylinder | 1 |
| AD81B | $\frac{3}{4}$" -14 | $\frac{1}{2}$" ACME | Bulk | Large 125 lb cylinder | 100 |
| AD84 | $\frac{1}{2}$" ACME | $\frac{1}{4}$" SAE | no valve core | Vacuum pumps/manifolds/recovery/tanks | 3 |
| AD84B | $\frac{1}{2}$" ACME | $\frac{1}{4}$" SAE | Bulk | Vacuum pumps/manifolds/recovery/tanks | 100 |
| AD84C | $\frac{1}{2}$" ACME | $\frac{1}{4}$" SAE | w/ valve core | Vacuum pumps/manifolds/recovery/tanks | 3 |
| AD849C | $\frac{1}{2}$" ACME | $\frac{1}{4}$" SAE | 90 Degree w/valve core | Automotive adapter | 1 |
| AD87 | $\frac{1}{2}$"-20 UNF | $\frac{1}{4}$" SAE | w/ valve core | R-410A International | 1 |
| AD87S | $\frac{1}{2}$"-20 UNF SWVL | $\frac{1}{4}$" SAE 55D | w/ valve core | R-410A International | 1 |
| AD149C | $\frac{1}{4}$" SAE | $\frac{1}{4}$" SAE 90D | w/ valve core | Automotive adapter | 1 |
| AD369C | $\frac{3}{16}$" SAE | $\frac{1}{4}$" SAE 90D | w/ valve core | Automotive adapter | 1 |
| AD849C | $\frac{1}{2}$" ACME 90° | $\frac{1}{4}$" SAE 90D | w/ valve core | Automotive adapter | 3 |
| AD91 | 21.8 Whitworth | $\frac{3}{8}$" SAE | w/ gasket | Large cylinder adapter | 1 |
| AD91B | 21.8 Whitworth | $\frac{1}{4}$" SAE | Bulk | Large cylinder adapter | 100 |
| ADXFW | Replacement Fiber Washer For AD41 /61 /71 /81 Tank Adapters | | | | 1 |

## QUICK SEAL O-RING CAPS & VALVE CORES

| ITEM | Qty / Pk | Description |
|------|----------|-------------|
| AVC134C | 2 | $\frac{1}{2}$" ACME brass caps w/chain |
| AVC134H | 10 | R-134a hI side caps |
| AVC134L | 10 | R-134a low side caps |
| AVC134PS | 2 | $\frac{1}{2}$" ACME plastic cap w/ straps |
| AVC410 | 10 | $\frac{1}{2}$"-20 UNF SAE brass caps |
| AVC410B | 100 | $\frac{1}{2}$"-20 UNF SAE brass caps |
| AVC410C | 2 | $\frac{1}{2}$" -20 UNF SAE brass caps w/ chain |
| AVC410CB | 100 | $\frac{1}{2}$" -20 UNF SAE brass caps w/ chain (bulk) |
| AVC4 | 10 | $\frac{1}{4}$" SAE brass caps |
| AVC425 | 25 | $\frac{1}{4}$" SAE brass caps |
| AVC4B | 100 | $\frac{1}{4}$" SAE brass caps bulk |
| AVC4C | 2 | $\frac{1}{4}$" SAE brass caps w/ chain |
| AVC4P | 6 | $\frac{1}{4}$" SAE plastic caps |
| AVC4PB | 100 | $\frac{1}{4}$" SAE plastic caps |
| AVC6C | 2 | $\frac{3}{8}$" SAE brass caps w/ chain |
| AVC8C | 2 | $\frac{1}{2}$" SAE brass caps w/ chain |
| AVC4PS | 6 | $\frac{1}{4}$" SAE plastic caps w/ straps |
| AVC4R | 6 | $\frac{1}{4}$" SAE brass caps w/ core remover |
| AVC4RB | 100 | $\frac{1}{4}$" SAE brass caps w/ core remover bulk |
| AVC6P | 3 | $\frac{3}{8}$" 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 | $\frac{1}{4}$" SAE x $\frac{1}{4}$" F swivel |

*Valve Cores*

AVS1

*Brass Caps*

AVC4 · AVC4R

*Brass Caps with Chains*

AVC6C

## VALVE CORE TOOL ACCESSORIES

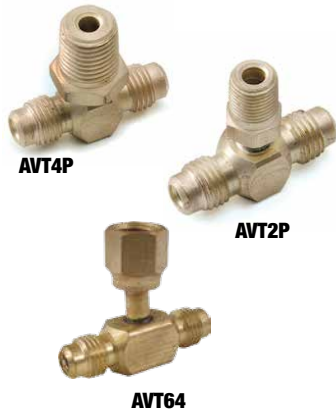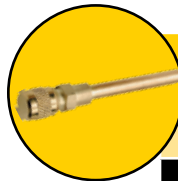| Item | Description |
|------|-------------|
| TLVC | $\frac{1}{4}$" SAE valve core remover and installer |
| TLVCS | $\frac{1}{4}$" SAE valve core remover and installer w/side port |
| TLVC1 | Standard valve core tool w/3 core |
| TLVC2 | Dual valve core standard and large bore tool |
| TLVC2B | Dual valve core tool (bulk 100pk) |
| TLVC4 | Valve core tool with port rethreader |
| TLVC6 | JRA 6 mm valve core tool |
| TLVC410 | $\frac{1}{2}$"-20 UNF valve core remover and installer |
| TLVCS410 | $\frac{1}{2}$"-20 UNF valve core remover and installer w/side port |
| TLVC810 | EATON 8 and 10 mm valve core remover and installer |
| TLVCD1 | $\frac{1}{4}$" SAE male x $\frac{1}{4}$" SAE female swivel valve core depressor tool back seating type |
| TLVCD2 | $\frac{5}{16}$" SAE male x $\frac{5}{16}$" SAE female valve core depressor tool back seating type |
| TLVCD3 | $\frac{1}{4}$" SAE male x $\frac{5}{16}$" 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

Visit us online at **www.cpsproducts.com**

## 1/4"SAE TEE CONNECTORS

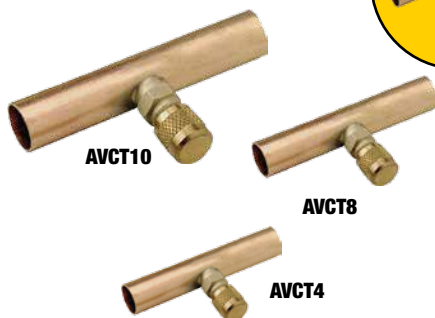| ITEM | Qty / Pk | Description |
|---|---|---|
| AVT2P | 3 | $1/4$" male w/cap and valve core x $1/4$" male x $1/8$" MNPT |
| AVT4 | 3 | $1/4$" male w/cap and valve core x $1/8$" MNPT x $1/4$" male |
| AVT4P | 3 | $1/4$" male w/cap and valve core x $1/4$" male x $1/4$" MNPT |
| AVT44 | 3 | $1/4$" female 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 |

AVT4P
AVT2P
AVT64
AVS44
AV2
AVB34
AVB346
AVB46
AVB456
AVB6
AVCT10
AVCT8
AVCT4

Hose Adapters and Valves

# 5-2-1®
## COMPRESSOR SAVER®

## PROTECT YOUR CUSTOMERS
## WHILE EARNING ADDITIONAL PROFITS

WITHOUT COMPRESSOR SAVER
WITH COMPRESSOR SAVER
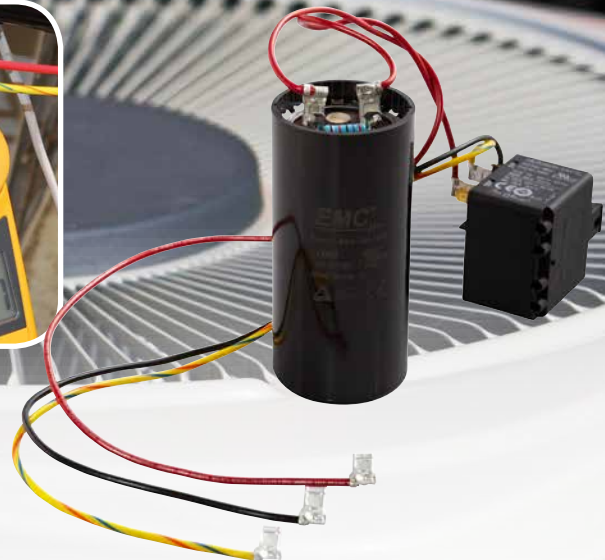
# REDUCES DAMAGING IN-RUSH CURRENT BY UP TO 50%!

## 5-2-1® COMPRESSOR SAVER®

Start-up is the most punishing task for any type of electrical equipment due to the surge of current when power is first applied. A/C compressors can consume up to 45,000 watts!

The 5-2-1 Compressor Saver <u>significantly</u> reduces the time the compressor draws high amperage at start-up by combining a powerful multi-layer starting capacitor with a smart switch to safely give the compressor the burst it needs to start up quickly and reliably, while drawing less power. Less power means lower energy bills, too.

- Perfect add-on service for HVAC technicians—high profit, easy and fast to install, and easy to sell.
- Customers experience immediate results.
- Adds years to the life of your compressor and other electrical components associated with your A/C system.
- Reduce damaging in-rush current by up to 50%.

**5-2-1®**
Remember: 5-2-1 Common-Start-Run
COMMON
START
RUN

*Watch the video by scanning the QR Code.*

**CSRU1**
For 1 to 3 Ton units

**CSRU2**
For 3½ to 5 Ton units

**CSRU3**
For 4 to 5 Ton units

Visit us online at **www.five-two-one.com**

# MAXIMUM SURGE PROTECTION

## 5-2-1® SURGE PROTECTOR

The 5-2-1 Surge Protection device incorporates the latest in patented surge protection technology providing up to **70% MORE PROTECTION** than similar value priced alternatives*. Plus, no other brand has a separate visible alarm that indicates when the unit has suffered significant damage and needs to be replaced.

### Professionally Installed Surge Protection
- Protects against power surges
- Protects against lightning strike surges
- Protects against utility grid "Spikes"
- Protects vital system components

### Dual Visual Indicators
Home owners and contractors alike love our dual indicator lights. No more wasting time or money dealing with a single indicator light. Our products come with two lights - a red light to indicate if power is present and a green light to indicate that the product is providing protection. With two lights on, you can rest assured knowing that the system is properly protected.

### Features:
- Device built with Patented MOY protection parts
- Green LED indicates surge protection is present
- Red LED indicates that power is present *independent* of the surge protection status
- TUV Certified UL 1449 3rd Edition
- Type 4X enclosure
- Easy installation
- Low cost, high performance

### Contractor Benefits:
- Promote additional profits
- Marketing materials available FREE of charge
- Protect your customer's equipment
- Reduce callbacks
- Increase customer referrals

### Single Phase Surge Protection
- Circuit Boards
- Air Conditioners
- Furnaces
- Heat Pumps
- Refrigeration Systems

*Watch the video by scanning the QR Code.*

**SPD60**
Rated up to 60,000 amps

**SPD150**
Rated up to 100,000 amps

*Based on maximun energy dissipation (Joule) rating

Visit us online at **www.five-two-one.com**

# QUICKEST AND EASIEST WAY TO BRING NEW LIFE TO OLD REFRIGERATION SYSTEMS!

## 5-2-1® QUIKSTART® COMPRESSOR START KIT

The 5-2-1 QUIKSTART is an easy-to-install combination starter pre-wired to work with or without a run capacitor. The 5-2-1 QUIKSTART works by administering essential power boosts to the compressor.

The 5-2-1 QUIKSTART is designed to replace all three electrical components on all domestic and commercial refrigerators and freezers using CSIR or CSCR type compressors (relay, overload and start capacitor) and comes prewired, complete installation instructions and extra wiring nuts.

**Features:**
- 3-in-1 product: replaces relay, start capacitor and overload
- Provides a boost for hard start and unbalanced systems
- Start assist in low voltage conditions
- UL recognized



| 5-2-1® QUIKSTART® COMPRESSOR START KITS | | |
|---|---|---|
| ITEM | HP | Maximum Volts |
| QURCO410 / For Systems **With** Run Capacitors | 1/4 - 1/3 | 115V |
| QURCO810 / For Systems **With** Run Capacitors | 1/12 - 1/5 | 115V |
| QRCO410 / For Systems **Without** Run Capacitors | 1/4 - 1/3 | 115V |
| QRCO810 / For Systems **Without** Run Capacitors | 1/12 - 1/5 | 115V |

# CPS®

## 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.