\$15.00 • March 2017 Volume 28, Number 2



Tool Reviews:

Page 36

Technician feedback on products

from Radcap, Mastercool, Gray Manufacturing and Autel

Professional Tool & Equipment News The Independent Tool Authority

Save Phace
Ripped RFP E Series

WELDING HELMET

By SFA Companies

Details on the cover products, and other new tools page 10

▼ Supports all programmable TPMS sensors













EXCLUSIVE!

2017 Aftermarket Profile:

A statistical snapshot of shop expectations and purchase plans in the coming year page 42

INNOVATION IS WHAT FUELS

OEM TOOLS





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INFORMATION

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COVERAGE







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MARCH Contents



42017 AFTERMARKET PROFILE

The second annual Aftermarket Profile provides feedback from shop owners and technicians, on purchase plans and industry expectations for the coming year.



FEATURED NEW PRODUCTS

Check out new tools from SFA Companies, Launch Tech USA, Rotary Lift and Matco Tools. Then, read about all the other new products, beginning on page 11.

TOOL REVIEWS
Our review panel gives feedback on the following tools:

- Radcap Radiator Cap Wrench
- Mastercool Arctic Commander Line of RRR machines
- Gray Manufacturing Wireless Portable Lifts

DIAGNOSTIC TOOL REVIEW

Technicians give their takes on diagnostic tools. This month:

 Autel MaxiSYS commercial vehicle diagnostics scan tool

2017 AFTERMARKET PROFILE

A statistical snapshot of purchasing plans and top revenue opportunities for shops in the coming year.

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54 CATEGORY SPOTLIGHT

This month's section features product information and user tips on air conditioning service tools and equipment. In addition to product details, this section features links to product video demos, tech tips and more.

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Owner: Danny White Shop: Perry Subaru Location: Norfolk, Va.



Save Phace RFP E Series Ripped Welding Helmet by SFA Companies





Tool Briefing head-to-head: contributing editor Barry Hoyland compares a scan tool and lab scope for mass air flow fault diagnosis.

WE'VE GONE

LIGHT DUTY MEDIUM DUTY **HEAVY DUTY**

- AGRALE
- AISIN
- ALLISON
- AUTOCAR
- BENDIX
- BOSCHAUTO
- CAPACITY
- CATERPILLAR
 CUMMINS

- DETROIT DODGE
- EATON
- FIAT
- FORD
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- FREIGHTLINER
- GMC
- GREAT WALL
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- MTU
- MWM
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 • STERLING • TOYOTA

VOLKSWAGEN

• UD

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- WABCO
 WESTERN STAR
 - WORKHORSE
 - ZF MERITOR



The complete MaxiSYS CV tool kit comes with the latest compact size J2534 MaxiFlash Elite. Features a built-in bluetooth VCI and performs pass-thru programming functions. The software is updateable and SAE J2534 and J2534-2 compatible.

> **FIND OUR CV TOOL EDITORIAL ON PAGE 41**

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MaxiSys **cv**

AUTO SCAN DIAGNOSTICS



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Article

Are you ready for Pass-Thru? The Right to Repair Act will be an industry game-changer as manufacturers move towards web-based delivery of programming via Pass-Thru. To read the full article, visit VehicleServicePros.com/20847075

Ask the Expert



What do you look for when selecting a heavy duty diagnostic tool? Look for something that assists with both diagnosis and repairs. To read the full article, visit:

VehicleServicePros.com/20850565

Tool Review



The ProMaxx Nino Exhaust Manifold Repair Tool mounts directly into the exhaust passage of the EGR side of the exhaust manifold on the Ford 6.7L diesel. To read the full review, visit: VehicleServicePros.com/20848453



Designed to illuminate confined spaces, users can use the Mac Tools Pro Stick+ Light anywhere on the vehicle. To watch a video about this product, visit: VehicleServicePros.com/20846868











TPG100 Tread Depth and Pressure Gauge Bartec USA, LLC

VehicleServicePros.com/ 20843912



Otterback 3/4 Nitrile Coated Knit Gloves. No. 12829

Galeton

VehicleServicePros.com/ 20846518



Mega Macs 56 Diagnostic Tool

Hella Gutmann Solutions VehicleServicePros.com/ 20847064



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Professional Tool 6 Equipment News

The Independent Tool Authority

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Editor's Note



Stay in the scan tool game

Arguably the most important tool in the shop, a scan tool can go underutilized because of its seemingly intimidating learning curve. It's time to break that cycle.

By Erica Schueller, Editor Erica@VehicleServicePros.com

f the products featured in the pages of PTEN, diagnostic scan tools rank among the top products we receive requests on for more information. And, diagnostic tools have traditionally been the product category that sees the most development and change year-over-year as tools in this category become m ore c omprehensive, p rovide more v ehicle c overage, g et f aster a nd, seemingly, become more intuitive to use.

But just like consumers in the 1980s fretting over the "user friendly" nature of personal computers as they became more mainstream, or the trepidation of texting on your smartphone even today, there can be a lag behind the introduction and actual adoption of new technologies.

Believe it or not, there are some shops out there who don't complete a lot of – if any-diagnostic work. I talked with a shop owner recently outside of State College, Pa. He confirmed they don't regularly use a scan tool in the shop, instead outsourcing this work and focusing on mechanical repairs. While this approach has increasingly become the exception versus the rule, he's certainly not the only one.

When something is seemingly complicated, it can be intimidating. The first step to understanding your scan tool is to acknowledge the complexity of this tool.

According to the 2016 *PTEN* Purchasing Study, 89 percent of shops and technicians own a scan tool. Rather than using it as a really expensive code reader, techs need to understand the full functionality of that tool, and how it can provide freeze frame data, bidirectional controls and information on numerous control modules of the vehicle for the right repair and diagnosis.

Get training from tool manufacturers. Don't be afraid to ask other colleagues about their familiarity with a tool. That scan tool should be used for every vehicle that enters the shop.

I don't want to downplay the necessity of having a mechanical background – and I've heard from a number of shops that young techs fresh out of school sometimes lack the skills to test general mechanics of the vehicle – but the advancements on today's vehicles require a scan tool just to replace a vehicle's battery or after replacing any of the vast array of sensors on a vehicle.

Diagnostic tools will continue to become more prevalent in aftermarket shops, especially with the next phase of the Right to Repair mandate taking effect.

Beginning with 2018 vehicle makes, OEs must make accessible vehicle diagnostic and repair information to consumers and the automotive aftermarket. While a standardized format among all vehicle manufacturers remains to be seen, this mandate should, in theory, make it easier to diagnose a vehicle issue by having all the necessary information.

You're not likely to see these vehicles in your shop anytime soon (unless you complete collision repair too), but this means they'll be on the road by the end of this year.

Not to mention, some OEs have agreed to provide retroactive information for model years as early as 2007.

With this information at your fingertips, it's more important than ever to understand how to get the most out of your aftermarket scan tool. From a competitive standpoint, you'll be able to offer more thorough service and repairs to customers. The question is, will you? PTEN



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Uses a patent-pending remote control

Rotary Lift's Mach Flex powered by RedFire offers technicians the ability to lift 18,800 lbs per column on a mobile column lift, with a patent-pending remote control. This allows technicians to move around the vehicle while operating the lift from anywhere in the bay. Mach Flex lifting systems are available in two, four, six or eight columns. The Mach Flex also features LockLight technology which illuminates a built-in green light on top of the columns if a vehicle is in the air and the lift locks are engaged, indicating that it is safe to work on the vehicle. The lift is manufactured in Madison, Indiana.

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Supports all programmable TPMS sensors

The Matco TPMS Activation/Program Tool, No. MDMAXTPMS, is a TPMS programming tool with built-in manual procedures. The tool's color interface guides users when replacing and servicing TPMS sensors. The MDMAXTPMS supports all known programmable TPMS sensors, according to the company, and is frequently updated with new vehicle and sensor coverage. The tool is compatible with the company's existing Maximus scan tools.

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Turns Pad II into a heavy duty truck scan tool

The Launch X-431 Heavy Duty Truck Add-On Module turns the Pad II into a full-function heavy duty truck scan tool. The module communicates via Bluetooth, or can be hardwired to the vehicle. Users can download the HD Truck app to work on 12V or 24V systems. The module offers extensive model coverage and special functions. It works on CAT, Cummins, Detroit, Freightliner, International, KW, Peterbilt, Sterling and Volvo.

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icking off the New Products section each month, our **Featured New Products** page includes brand new products showcased on the cover that are available to the automotive market.



Externally adjustable shade

The Save Phace RFP E Series Ripped Welding Helmet, No. 3012442, from SFA Companies, features an externally adjustable shade 4/9-13 ADF welding lens with a 180-degree viewing area. The helmet offers easy on and off, grind mode, and sensitivity and delay control adjustments for most welding applications. The helmet has ultra sensitive, low amperage ADF triggering to switch to weld mold, and includes a replaceable ADF battery.

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Micro-USB rechargeable

The E-Z Red Rechargeable Slim Series Lights, No. PL175, generate 175 lm of flood light and 100 lm of beam light. The light is micro-USB rechargeable (cord included), and its slim design ensures trouble-free storage, according to the company. Run-time is three hours on flood and four hours on beam. An included magnetic pocket clip is designed to offer hands-free use.

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Quick and easy wheel installation

Ascot Supply Corporation's Wheel Bolt Pattern Gauge makes for quick and easy wheel installations. The wheel bolt pattern gauge includes many different bolt circle guides in millimeters and inches that measure both metric and standard sizes. It also includes lug centering adapters and a wheel stud gauge.

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Includes one bent tool and one straight tool for versatility

The SP Tools Cummins Fuel Line Disconnect Set, No. 13260, is a tool set designed to release fuel line connectors on the Cummins ISB and ISX engine family. It works on low-pressure lines around the engine and chassis, and it measures 0.250" thickness and includes one bent tool and one straight tool for verestility when servicing the

one straight tool for versatility when servicing these engines.

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BAYCO

Dual light fixtures

The Bayco SL-1530 LED Work Light has dual light fixtures that can be directed independently of each other, allowing users to position each fixture exactly where light is needed. The base unit can be removed easily from the 8' extendable tripod stand for low angle illumination. Each fixture has a durable, powdercoated tempered glass lens with a multi-fin heat sink design, keeping each fixture cool to the touch. The light has a 12' 18/3 SJTW cord for all-weather use and includes a one-year limited warranty.

Circle 28 on card, or enter at "e-inquiry" on VehicleServicePros.com Includes coverage for OBD I GM, Ford, Chrysler and Toyota vehicles

The OTC 3211 OBD I and OBD II scan tool includes coverage for OBD I GM, Ford, Chrysler and Toyota vehicles, as well as all 1996 and newer cars and light trucks. The 3211 is equipped with a CodeConnect database, complete with more than 26 million



fixes for issues that are both vehicle- and code-specific. It also includes OBD I Cables for 1984-95 GM and Ford vehicles, as well as 1989-95 Chrysler and Toyota vehicles; OBD I live engine data for pre-1996 vehicles for faster vehicle diagnosis; and ABS and airbag code coverage for most domestic and Asian vehicles from 1996-2013. Other features include a color screen, oil light reset, dual PID graphing and battery life reset.

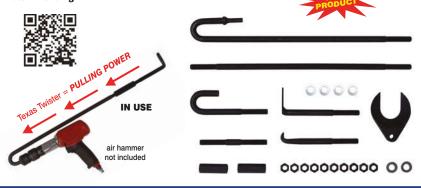
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PRODUCT

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Offers 4.000-count backlit display

The Mac Tools Digital Multimeter, No. EM721, offers a 4,000-count backlit display. The multimeter features electric measure, advanced measure for sensor and actuators, temperature measure, true RMS and performs diode and continuity tests. It has a pulse width of 0.1 to 1,999.9 ms and is auto-ranging. It also has a min/ max/average recording mode, an analog bar-graph, adjustable trigger mode and USB communication.

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Leaves minimal residue on glass metal and fine finishes

The Brass Knuckle SmartCut Gloves, No. BKCR404, offer heavy duty cut protection, slip-resistance and no-smudge surface protection. The gloves are made from a high-quality, ultra-high-molecularweight polyethylene fiber blend that allows dexterity and tactile sensitivity. The gloves provide ANSI cut level 4 protection without bulk and are coated with soft polyurethane over the palms and fingers to enhance grip. The coating on SmartCut gloves leaves minimal residue, even on glass, metal or fine finishes, according to the company.

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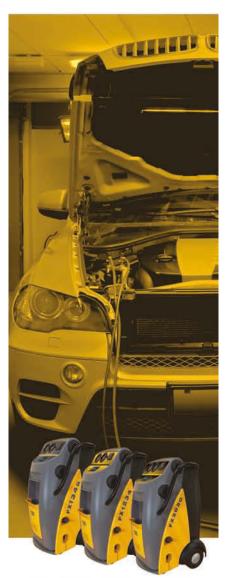
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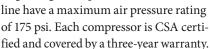
Boost output by 15 percent

The K-Tool International air blow gun combines ambient air with compressed air to boost output by 15 percent. The blow gun has a heavy duty aluminum die cast for durability and conforms to OSHA standards for safety and noise. The air blow gun can be purchased alone or with a 1/2" rubber tip, a soft rubber star tip, a high-flow safety, a 4-pc interchangeable tip kit or an 8-pc interchangeable tip kit. All air blow guns include a one-year warranty.

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Reliable performance in demanding environments

The JET Tools 60- and 80-gal air compres**sors** offer reliable performance in the most demanding shop environments, according to the company. Each compressor has a built-in safety valve, high-pressure switch and a fully enclosed metal belt guard. The JET singlestage 60-gal compressor has a maximum air pressure of 135 psi. The three models in JET's twostage, 80-gal compressor



JET

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Meets new U.S. environmental concerns and regulations

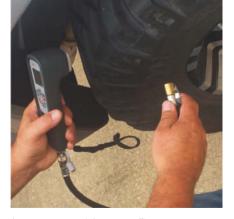
The Goodson Tools Honing Oils and Coolants line now offers Sunnen's Mineral Based Honing Oil (No. MAN-845), Honing Oil Concentrate (No. MAN-C), Mineral Based Multi-Purpose Honing Oil (No. MB-30), Water Based Honing Coolant Concentrate (No. SSC-205) and Vegetable-Based Honing Oil (No. SHO-500). These new coolants will help engine builders meet new U.S. environmental concerns and regulations.

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Integrated TPMS sensor testing and activation

The Bartec USA Tech200Pro offers integrated TPMS sensor testing and activation, with tread depth measurement, as well as tire pressure checking. A standalone device, the Tech200Pro comes with a wallmounted inductive charger, quick-connect air fitting and operates without the need of any other devices. The Tech200Pro has full TPMS sensor capability, which allows the user to test sensor function, status, fitment and pressure. Tread depth measuring is very



accurate at +/- 0.1mm, and can measure tread up to 22mm (almost 7/8").

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Reduces collet marks

The Huth Ben Pearson Dead Stop Swaging Positioning System makes swaging (expanding, reducing, shaping) repeated tube and pipe-based parts quicker and easier. To use, attach the system to the back end of the swage box on a Huth pipe bender or 1673 expanderreducer machine. Then, set the stop location with the positioning pins and use the adjustable screw thread to fine-tune their



setup. It reduces collet marks. The Dead Stop can be purchased with a Huth pipe bender or model 1673 expander reducer, or purchased alone.

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Internal 90-degree bevel gear

The Beta Tools Angular Screwdriver, No. 1439/K7, is mainly intended to adjust carburetors, but the seven interchangeable blades and bits that come in the case allow it to be adaptable to other applications. The 19" lightweight, aluminum screwdriver has an internal 90-degree bevel gear and a 32mm head that allows it to reach idle mixture screws. The 1439/K7 features a side grip handle that fits any position on the shaft and a 1/4" hex drive bevel head with bit retaining spring.

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Pairs with ArcOne Vision welding helmets

The ArcOne X540V auto-darkening filter has a light shade of 4, dark shade of 9-13, grind and delay, TIG rating of 10, four sensors and the company's patented Xtreme viewing area of 12.6". The X540V filter pairs with any of ArcOne's Vision welding helmets.

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Features multiple gripping zones

The Knipex Tools 11" Extra Long Needle Nose Pliers are designed for strong and flexible gripping of small pipes, screws and round parts in hard-to-reach areas. The Extra Long Needle Nose Pliers feature multiple gripping zones for pulling and twisting. Workpieces can be carefully grabbed, held and guided with the four grooves in the jaws of the pliers. Other features include a serrated gripping area for holding onto round

parts or pipes and a slim, extra-long design ideal for use in limited working space. The pliers are forged, oil-hardened and tem-



pered from German tool steel with handles that come with a non-slip plastic coating. The Extra Long Needle Nose Pliers have 2.25" gripping capacity and are available with straight jaws or a 45-degree angled jaw for added versatility.

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TWO POST LIFTS

7,000 through 30,000 lb. capacities with 25 year structural warranty. **Inquiry #10**



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Stick, clamp, hang or carry

The Milwaukee Tool M12 Rover LED Compact Flood Lights' compact size paired with its integrated hanging features allow it to stick, clamp, hang or be carried in multiple orientations, on almost anything. The flood light has integrated magnets for metal studs, I-beams and job boxes, and spring loaded clamps for wood studs, scissor lifts, ladders and job carts. This compact light, with 1,000 lm of light, has a run-time of up to 15 hours and survives 9' drops.

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As quiet as a dishwasher

The **Ingersoll Rand R4-11kW compressor** is a workplace compressor, with a 20 percent reduction in footprint and sound levels as quiet as a dishwasher, according to the company. The compressor features V-Shield technology that reduces leak path and connections by more than 15 percent. The large digital output display supports easy programming and operation. The new R4-11kW compressors are available in 4-11kW (5-15hp) with flows 8.1cfm - 57.5cfm and pressures up to 200psig on fixed speed units and 145psig on variable speed drives.

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Designed to be functional and easy to clean

The Bear Ops Bold Action V offers smooth operation with a recessed button for blade opening, according to the company. The green and black G10 handle is designed to be functional, comfortable and easy to clean. The knife features an ergonomic safety slide and pocket clip. The Bold Action V is available in a bead finish or black finish blade.

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Eliminates need for different size adapters

The Cal-Van Tools **Adjustable Bearing** Seal Driver, No. 506, eliminates the need for a driver and different size adapters.

The durable, aluminum constructed tool comes equipped with a steel-capped striker shaft handle. The three-stepped jaws adjust to accommodate bearing races and and seals from 0.708" to 3.543", while the locking screw holds the adjustable jaws in place for one-handed use.

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Flexible, yet durable, hand protection

The Galeton Resist ANSI Cut Level 5 Seamless Knit **Gloves** offer flexible yet durable hand protection. These heavy duty black gloves are constructed from a blend of polyester entwined with steel wires. The black color will appear clean longer, according to the company. These gloves are available uncoated or with crinkle latex coated palms for enhanced gripping ability.

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Easily remove brake anchor pins and bushings

The Tiger Tool Brake Anchor Pin Press, No. 16002, allows users to easily remove brake

anchor pins and bushings on virtually all 16-1/2" S-cam trailer and tractor "Q" brake systems in minutes. The compact design ensures the job can be completed more efficiently without the removal of the hub assembly, according to the company. Manufactured from high-grade steel for strength and durability, the rigid C-frame can endure up to 10 tons of force.



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Designed to cut through the hardest materials

ProMaxx Tool's SSSC Gold, Platinum and Platinum Plus drill bit line is designed to cut through even the hardest of materials, including stainless steel,

boron, ultra-high-strength steel, titanium and hardened steel. The drill bits are engine turned to close tolerances for precision and challenging applications like those found in exhaust manifold



prevent walking, thin webbed and have high-degree primary and secondary relief cutting edges for speed, accuracy and temperature control.

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Weighs less than 5 lbs

The AllStart Boost Ultra Jump Starter, No. 590, is a light, compact 12V vehicle jump starter and backup charger. The unit weighs less than 5 lbs. The jump starter works on most gas engines - including V10s - and diesel pickups. The Boost Ultra offers 800 cranking amps and 1,800 peak amps.

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Has seven-day and 24-hour timers

The ATEC Trans-Tool Signature Series Stainless Steel Parts Washer offers a high-quality 403 SS cabinet shell, a 43" interior working height and a 30" direct drive turntable. The washer also has an SS Oil Skimmer, a 3HP gusher pump and low float. It has seven-day and 24-hour timers, 9KW heaters and 18 SS high pressure spray nozzles. This parts washer is UL certified.

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Measures surface temperatures without contact

The Beta Tools Digital Infrared Thermometer with Laser Aiming System, No. 1760/IR800, offers infrared measurements at the touch of a button. The built-in laser pointer increases target accuracy, and the backlight LCD and push-buttons allow for convenient operation. The thermometer can be used to measure the surface temperature of objects that cannot be measured by contact thermometers. It features automatic data hold, digitally adjustable emissivity and max temperature displays.

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Conveniently mounted hand controls

The Vanair Manufacturing FST3000 Jump Starter offers 3,000A of power and a 240A alternator that is powerful enough to start both 12V and 24V batteries in seconds. The FST3000 is encased in a heavy duty, weather-protected enclosure and features conveniently mounted hand controls on the outside of the unit for easy operation. The unit includes a 30' 3/0 polar grade boost cable.



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Removes rust and debris

The Ken-Tool Rust Hog, No. 20167, is an abrasive tool that removes surface rust and debris on studs and flat mating surfaces of wheels, wheel hubs and brake rotor hats. The Rust Hog features a dense, aluminum oxide infused polypropylene abrasive material attached to a 4" hub used with a 1/2" drive electric or pneumatic impact tool. The body is 4.25" long, the abrasive pads have a 2" diameter and the

center hole is 2.25" deep. The Rust Hog is safe to use on steel, magnesium and alloy wheels.

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Extra-long handles and flexible heads

The Monster 5-pc Reversible Ratcheting Wrench Set, No. MSTDBM10, offers extralong handles and flexible heads. The 90-tooth head and built-in reverse mechanism help remove fasteners in hard-to-reach areas. The set includes 8x10mm, 12x14mm, 13x15mm,



16x18mm and 17x19mm wrenches. Also available in a 2-pc set (No. MSTDBM4) that includes size 21x22mm and 24x25mm wrenches.

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Quick, powerful, and easy to use

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ew Products



Features three adjustable elastic straps for a custom fit

The Cat® Products Multi-Function **Headlamp**, No. CT4120, is lightweight and features three adjustable elastic straps for a custom fit. A touch of the power button provides a 250 lm spotlight, with a beam distance of 40m. The next press of the power button switches the light to a 120 lm COB LED flood light, brightly illuminating the surroundings or work area. A third press of the button switches the light to a red COB LED. The CT4120 also offers a rear flasher for safety. Powered by three AAA batteries that are included, the headlamp provides hours of hands-free lighting.

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Dual purpose hook and tilt design

The Optima Digital 400 12V Performance Maintainer and Battery Charger features Optima's built-in battery mode to maximize battery life and performance. The Digital 400 offers a backlit LED/LCD display for charging, LED indicators for easy selection of charge and a cable wrap body and reusable cord tie for easy storage. It also has a dual purpose hook and tilt design that allows for in-vehicle hanging or angled standard viewing.

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Dyes fluoresce brightly under UV light

The Tracer UV Multi-Colored Fluid Dye Kit, No. TP-8693HD, provides mechanics with a set of dyes that fluoresce brightly when exposed to ultraviolet light. The kit includes three color-coded dyes for petroleum and syntheticbased fluids: white dye, yellow dye and blue dye. The kit also includes a green fluorescent dye for conventional coolant. The TP-8695 has a range of 20' and is capable of detecting leak sites in a large vehicle's system.



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Low-pressure rubber hoses

Reelcraft's High Operating Temperature Hose Reels offer low-pressure rubber hoses for more extreme air temperature applications. All of the reels are rated for air temperatures ranging from -40 degrees F (-40 degrees C) to 212 degrees F (100 degrees C). These spring-driven hose reels are ideal for use with portable compressors that operate at high temperatures and high volumes of continuous air.

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Engineered for high performance, efficiency and reliability, BendPak's Hush-Quiet RS7580H-603 rotary screw air compressor can meet the compressed air demands of high volume tire shops, general maintenance and fleet shops, vehicle body and paint facilities or busy automotive dealerships. Our exclusive Hush-Quiet technology makes it the perfect compressor to install in noise conscious service areas.

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Low maintenance solution with 500-lb load capacity

The Renegade TMB 4000 Manual Parts Washer for heavy duty applications is a lowmaintenance solution for a variety grease-busting operations, according to the company. The washer features an adjustable fountain nozzle, 1/2" polyethylene construction, heavy duty casters, a 20-gal holding tank, an adjustable thermostat and a power gun with splash hood. The washer has a 500-lb load capacity. Made in the U.S.A.

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A size for most projects

The Cornwell 21-pc Angled Wrench Set, No. WAP21S, offers a size for most projects and tight spaces. The sizes include: 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1", 1-1/16", 1-1/8", 1-3/16", 1-1/4", 1-5/16", 1-3/8", 1-7/16", 1-1/2". Each piece is completed with a chrome and polished finish.



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Brand-specific coverage for more than 50 makes

Injectronic's Professional OBDII Scan Tool and Oscilloscope, No. CJ4-R, includes global OBDII and brand-specific coverage for more than 50 popular auto-

motive makes. The CJ4-R is integrated with a two-channel oscilloscope and labscope. It also has a Bluetooth wireless commu-



nication channel that can display diagnostic results on a smartphone or tablet. The CJ4-R is built to withstand extreme temperatures and moderate impacts. This tool includes free updates for two years and a two-year warranty.

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Reduced weight, noise and vibration

The Florida Pneumatic Aircat Lubrication Free Sanders offer reduced weight, noise and vibration along with extended tool life. The smooth design throttle lever and ergonomic grip provide maximum comfort. The line offers



a choice of fifteen models with 3/32" and 3/16" orbit options, along with non-vacuum, central vacuum and self-vacuum

options. The patented double-sealed, lubrication-free motor prevents dust contamination of the air motor, eliminating the need for oiling.

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Easily wick solder into the wires

The TG Products Solder Tool, No. ST101, is a complete soldering clamp. The patent-pending design has two attachments for holding and dispensing solder to the wires prior to soldering. By pre-feeding the solder before clamping the wire, technicians can easily wick the solder into the wires without dripping, according to the company. The solder dispensing attachments will hold a 3/4" spool or a 5/8" tube of solder and can mount on either side of the clamp base.

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Offers one-handed height adjustment

Snap-on's Flat-Oval Adjustable Heavy Duty Creeper, No. JCW77, offers one-handed height adjustment designed to make changing the creeper position quick and easy.

features flat-oval tubing construction that eliminates sharp corners on the frame. The 4" casters on the base offer 1-3/8" ground clearance. JCW77 has a 13" wide deck with a solid plywood core, and is topped with a high-density foam padding and a heavy duty vinyl cover. Available in black or red.





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Re-install tie rods without removing rack and pinion

The OEM Tools Master Inner Tie Rod Tool Set allows users to remove and reinstall tie rods without removing the rack and pinion. The set includes SAE and metric adapters for a variety of make and model vehicles, including larger tie rods found on many trucks and SUVs. The 1/2" drive tube makes removing and re-installing to the proper torque easy. The set includes 12 nickel-plated crowfoot style adapters: 1-3/16", 1-1/4", 1-3/8". 1-7/16", 1-1/2", 29mm, 32.5mm, 33.6mm, 38.4mm, 40mm and 42mm. The set comes in a sturdy blow molded case.

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Features a selection of terminal adapter sets

The Electronic Specialties 14-pc Deutsch Test Connector Kit, No. 148, features a selection of terminal adapter sets specifically fitted for diagnostic testing and connections into Deutsch style connectors. The kit includes size 14, 16 and 20 adapters. Each adapter is fitted with the wire gauge corresponding to the Deutsch connector size and current rating. The adapters connect to DMM's and scopes with included 48" stacking banana plug test leads. The kit has a total of 14 pieces packaged in a clear window storage case.

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Offers versatility to shops

Mohawk Lifts' Turf Kit with Dual Trough Accessory offers versatility to shops and facilities that need to surface cars, trucks and turf equipment without dedicating a service bay and lift to just one type of equipment. The turf kit has a 6,000-lb capacity and can be used on Mohawk 10,000- to 18,000-lb two-post lifts, including lift models with optional three-stage arms.

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Find faulty connections in the electric line

The Mac Tools Automotive Tester, No. EM112, is designed to immediately find faulty connections in the electric line. The tool features a PWM / MLI signal detector that automatically indicates when measuring a square signal used to command idle actuator, turbo wastage, EGR and Canister valve. Users can measure resistance up to 40 megaohms when testing an ignition coil, and the tool's line test detects faulty connections in electric circuits. The tool can measure up to 49V in the DC current range.

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Lightweight, compact, handsfree area light

The Streamlight Bandit USB Headlamp offers a lightweight, compact, hands-free area light that is USB rechargeable. The low-profile headlamp offers 180 lm on high and a run-time of 9.5 hours on low. The large top button allows for easy switching between the light's high, low and flash modes. The Bandit features a polycarbonate body and lens, weighs 1.3 oz with the attached headband, and is 2.7" long. The light is IPX4 rated weather-resistant and impact-resistant to 2m. Available in safety yellow or black.

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Self-healing film

The Llumar Platinum Paint Protection Film from Eastman Chemical Company is a self-healing film that shields the user's vehicle finish against rocks, road debris, winter salt and sand. The clear coat finish with Hydrogard technology offers a water-resistant surface for increased durability. The film is backed by a 10-year limited warranty.

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Provides up to a 270-degree view

When attached to the Actron 7669 video

Actron's Dual Plane Camera Adapter, No. CP3883, provides up to a 270-degree view with an inline and side camera. Views can be changed with a push-button switch. The adapter features a 3' flexible waterproof camera tube with a 9mm 2-D camera.

inspection scope, the adapter's camera is displayed on a 2.4" LCD screen and includes a high-intensity white LED light for dim locations.

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New Products

Fits in limited space applications

The Hennessy Coats RC Series Rim Clamp Tire Changer, No. RC-55, offers a small space footprint, so it easily fits into limited space applications. The easyto-read gauge accurately displays tire pressure and includes a damageresistant Lexan faceplate. The manual swing arm is eas-

ily adjustable, reducing the risk of damage when mounting and demounting the tire.

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10' drop rating

The Klein Tools Inspection Penlight with Laser features a glowing ring tip that charges while the light is on and allows for easy retrieval in the dark. The LED penlight works well for up-close lighting in dim areas, while the laser pointer pinpoints objects that are out of reach. The light is a durable, IP54 dust- and waterresistant tool with a 10' drop rating.

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Removes wheel bearings

The Mueller-Kueps Twin Cone Wheel Bearing Kit, No. 423005, removes wheel bearings. The cone goes through the center of the bearing, then locks in place with a spindle and two nuts. Using a slide hammer, technicians can then remove the wheel bearing. The kit contains two sets of three cones in various sizes.

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NEW TOOLS









<mark>69700 69900 Turbo Air System Test Kits</mark>

Helps locate air leaks in turbo system components by plugging the output side of the turbo and the intake inlet. Air is applied through one adapter to show the presence of leaks within the system. Features a pressure gauge, shut off valve and pressure regulator and includes pairs of stepped adapters to fit most turbo systems on Class 7 and 8 trucks. Can also be used on some cooling system hoses.





32860 Door Handle Spring Retainer Tool for GM

Allows outer door handle replacement without removal of the interior door panel. Designed to prevent damage to the door components and finish. Works on 2014 and newer Yukon, Tahoe, Suburban, Silverado, Sierra, Impala and Escalade.



89900 89910 89920 MECHANICS GLOVES

A mechanics glove with extended life, non-padded, single layer palm and tough expandable top material. Hidden seam design and elastic cuff, with hook and loop fastener, for comfort. Touch screen compatible design for use with many smart phones, tablets and touch screen computers. Sizes: M, L, XL.



89950 89960 89970 HEAVY DUTY IMPACT GLOVES

A heavy duty impact glove with gel palm padding and molded knuckle protection. Gel palm padding to help absorb vibration from impact and power tools. Extra protection molded on glove back and fingers. Hidden seam design and elastic cuff, with hook and loop fastener, for comfort. Touch screen compatible for use with many smart phones. tablets and touch screen computers. Sizes: M, L, XL





52600 ABRASIVE PAD SCRAPER

The 30° angle of the tool provides extra leverage when cleaning gasket surfaces. Pad wraps around the end of the tool to reach into tight corners and can be repositioned on the tool as it wears. Comes with three easily replaceable 1" x 4" medium grit pads.



10990 11000 BRAKE BLEEDER WRENCH (7/9MM & 8/10MM)

For bleeding air from brake cylinders with 7mm & 9mm / 8mm & 10mm bleeder screws. Double ended tools are offset for easy access to hard-to-reach bleeder screws.





68500 MANIFOLD DRILL TEMPLATE FOR FORD 2U & 3U

Designed to help remove broken exhaust manifold studs on 4.6L, 5.4L 2 valve, 5.4L 3 valve and 6.8L V10 Ford engines without damaging the block. Interchangeable plates center drill on the broken stud. Depth gauge for drilling is marked on the template. Extractor is then used to remove the broken stud.





65150 FIFXIBLE BACK PROBES

Flexible silicone probe bends for hard-to-reach areas. Great for harness connectors and sensor wiring. No need to disconnect the terminal and connector. The probes are fully insulated which provide added protection and come with standard 4mm female banana plug connections. For use up to 30 volts.







41080 41090 45° & 90° TRIM CLIP PLIERS

Easily removes trim panel fasteners. Double tapered tips slide under the clip and grip the side of the clip, helping prevent damage. Tips are angled 45° & 90° providing more leverage for easier clip removal. Dual durometer cushioned grips for comfort.





42480 PANEL CLIP PLIERS

Pliers provide extra leverage to remove door clips. Ergonomic spring loaded handles are rotated 90° to provide leverage needed to easily remove push in fasteners. The tapered forked end makes getting under the clips easier and helps prevent damage to the clips or door panel. Works on a wide range of push in clip sizes

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GOT A FROZEN/DAMAGED LUG NUT?

LT1350 LUG RIPPER II

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- 16mm Tungsten steel drill bit with 4 carbide cutters allow for speed and durability
- Available NOW from your local mobile tool dealer/distributor
- · Patent Pending
- Includes 4 drill guides 17mm 11/16"



19mm - 3/4" 21mm - 13/16" 23mm - 7/8"







GOT MERCEDES WHEEL LOCK REMOVAL PROBLEMS?

LT4180 MERCEDES "A" WHEEL LOCK MASTER KEY SET

- · 30 piece set works on 2006-present MERCEDES factory wheel lug nut locks
- · Factory duplicate uses same factory part numbers
- NO WARRANTY CAN'T BE USED WITH AN IMPACT GUN
- NOTE: The MERCEDES "B" set is the same as the LT4165 BMW kit shown below. The two kits together will work on all MERCEDES vehicles

MERCEDES "B" WHEEL LOCK MASTER KEY SET same as LT4165 BMW 2nd GENERATION WHEEL LOCK MASTER KEY SE

- 20 piece factory reproduced master wheel lock key set
- Removes 2nd generation 2011-present BMW factory wheel lug nut locks
- Identical to factory set uses same factory part numbers
- NO WARRANTY CAN'T BE USED WITH AN IMPACT GUN





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Water-resistant leather

The Coastal Boot Sebring Series of Athletic Footwear, available from Snapon, features high-quality, water-resistant full grain leather with Cordura uppers. The boots have removable Smartmaska sock liners for added comfort on concrete floors and a Cambrellea lined interior for abrasion resistance and moisture management. They also have ASTM-rated steel toes and gas-, oil- and grease-resistant outsoles. Available in black/red, E width, sizes 7-13.

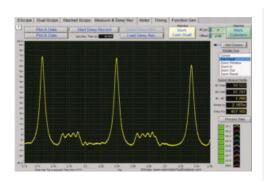
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Allows techs to inspect difficult areas

The OTC Wireless Scope Kit, No. 3881, allows technicians to inspect difficult areas to locate leaks, shorts or any lost parts or pieces. This kit is ideal in situations where an attached screen would prevent usage. The wireless video scope can be used with a technician's smartphone or tablet. The kit includes a 9mm waterproof camera as well as a miniature 5.8mm waterproof camera for checking small lines.

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Covers a variety of topics

The ATG Chrysler Training Seminar is based on the analysis of actual diagnostic issues and the documented shortest diagnostic paths. All OBD II Chrysler, Dodge, Jeep and Fiat gasoline vehicles are covered. Systems covered include extensive cam/crank relationship, air fuel sensor and O2 sensor diagnostics, misfire diagnostic strategies, variable intake and lift timing, and more.

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Quickly locates leaks in cooling systems

The OEM Tools Universal Cooling System Pressure Kit, No. 27068, quickly and easily helps locate and diagnose leaks in automotive cooling systems. The expandable adapters work with both radiators and cooling system reservoirs, and the easy lever style pressure relief valve protects technicians from exposure to coolant. The kit includes small, medium and large adapters designed to prevent damage to plastic reservoir threads, and a pressure pump.

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Bonds to most surfaces

The Boss Products RapidFix UV Fiber Patch is an easy-to-use UV light/sunlight activated self-adhesive repair patch. The patch is moldable to follow the contour of repair, with no shrinkage or expansion during application. The patch is made of fiberglass-reinforced polyester, bonds to most surfaces (does not bond to polypropylene) and cures quickly. The patch can be drilled, sanded and painted and is easy to apply.

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Laser targeting accuracy for temperature readings

The Mastercool Infrared Thermometer with Laser, No. 52224-A, provides laser targeting accuracy for temperature reading, with an enhanced

back-lit LCD display and an expanded temperature range. With a contact temperature range of -58 degrees F to 932 degrees F (-50 degrees C to 500 degrees C), this tool offers a 12:1 field of view and a response time of 0.5 seconds. The unit powers off automatically after 15 seconds. The tool includes two AAA batteries and an instruction manual in a plastic molded carrying case.

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Strong, lightweight and portable

The KTI 2-Ton Aluminum Service Jack XD, No. KTI63098, is strong but lightweight for easy portability. The dual pump system allows for quick lifting, taking seven strokes to reach top height under no load. The heavy duty frame and highquality components provide safe and efficient service. Also available in a 3-ton aluminum service jack (No. KTI3099) that weighs 58.4 lbs. Both jacks are covered by a two-year warranty and comply with ASME PASE/2-14 safety standards.

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Features an adjustable five-point headgear

ESAB's Sentinel A50 High Performance Automatic Welding Helmet offers an adjustable five-point headgear, an externally activated grind button, a color touchscreen control panel and a front-loading convex lens that is available in different color options and changes in 10 seconds. The anti-scratch coating reduces the reflection from high exposure to spatter and sparks.

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EVA foam tray

Mighty-Seven's 19-pc Hex Thru-Hole Socket Set, No. MA52019, includes eight SAE thru-hole sockets, eight metric thru-hole sockets, two adapters and a 3" thru-hole extension bar. The entire set comes in a custom EVA foam try, and each piece is laser etched with the model number and size. All M7 impact sockets are made from high-grade chrome molybdenum alloy steel and are backed by a limited lifetime warranty.

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Offset 15 degrees to allow easy access

The **EZ Red 4S12XL Quarter Stick Ratchet** offers a 1/4" square drive on one end and a magnetic bit drive on the other. The heads are offset 15 degrees to allow easy access in constricted workspaces. This

ratchet is designed for use in tight spaces where regular ratchets won't fit, says the company. Both drives are reversible and feature a low profile knurled thumb wheel. The overall ratchet is 11.75".

knurled thumb wheel. The overall ratchet is 11.75".

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Designed for tight clearance spots

The **S & G Tool Aid Corp. 5-pc Body Forming Punch Set**, No. 89360, is designed for tight clearance spots, crevices and corners. The punch surfaces are polished and hardened to form sheet metal with precision in hard-to-reach areas. They are used to form curves, contours and radiuses and reach far into panels and structural members. The kit includes the five most commonly needed profiles and shapes.

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U.S. Patents 6,634,461 • 7,014,012 • 7,219,770 Canadian Patent 2,406,340



Full bi-directional controls covering over 60

manufacturers

The CanDo HD Pro Tab is an open Android, Bluetooth wireless scan tool for heavy duty truck, agricultural and industrial applications. Users can



perform diesel particulate filter

(DPF) regeneration and NOx resets, injector programming, change and set parameters, along with SCR/DEF coverage and full bi-directional controls covering over 60 manufacturers, including John Deere, Komatsu and Bluebird. Fill transmission and brake system coverage is also part of the package. Featuring an IP65 rating, it is drop-tested and water-resistant. Screen size is 10.1" IPS and a full suite of connectors accompanies the HD Pro Tab, along with a docking station complete with USB ports. The tool comes with two years of free updates.

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Attaches directly to the air hose

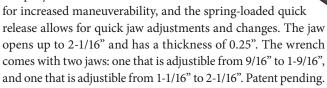
Intercomp's Fill, Bleed and Read Air Gauges make a tedious process into a smooth and easy operation, according to the company. The air gauges attach directly to the air or nitrogen hose. Standard features include a high-quality, digital pressure guage with rubber protective cover, a 22" hose with a high quality swivel nozzle and an industrial grade bleeder valve.

- O

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Short handle increases maneuverability

The V8 Adjustable Wrench, No. 629, offers a thin, sleek design that makes working in tight areas easier, says the company. The wrench has a short handle



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Two channel automotive scope

Matco's Auto Signal Waveform Viewer 2, No. MDAUTOWAVE2, is a handheld, battery operated, two-channel automotive scope. The unit includes a user-friendly Auto-Set feature that automatically sets the voltage/time scales on any signal or voltage for easy waveform viewing. Waveforms are displayed on a 3-1/2" color LCD display and can be saved to 8GB of storage. The saved waveforms can be converted to bitmap files and downloaded to a PC using a USB cable connection.

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Can improve productivity and reduce downtime

Jaltest 17.1, developed by Cojali USA, can improve productivity and reduce downtime by connecting the diagnostic tool with a shop manager, according to the company. The new Jaltest software integrates the most complete technical informa-

tion database with electrical,

operating or fuse and relay diagrams, component information, service data, TSBs and systematic repair guides by symptomatology or fault codes. Jaltest complies with the RP1210 standard.

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Portable yet powerful lighting solution

The Larson Electronics WAL-TP-BS-2XLED-6X portable LED work light provides a portable yet powerful lighting solution. It produces 10,000 lm of bright white light illuminating 15,000 sq. ft. of work space. Each light head contains two 25 watt LEDs housed within a water-proof aluminum housing powdercoated for added durability and corrosion resistance. The heavy duty aluminum tripod is durable, lightweight and adjustable to any length between 3' and 8'. The tripod legs collapse and the light head bracket is removable for simple portability and deployment.

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KT Pro's Line of Heavy Duty Torque

Wrenches are made from industrial grade, high-quality material and meet the highest German DIN and ASME standards. Drive sizes range from 1/4"-1" drive with multiple scale options, including Nm and ft/lbs scales. All torque wrenches come with a certificate of calibration and have a tolerance of torque +/- 3 percent.

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30-degree angle provides extra leverage

Lisle's Abrasive Pad Scraper, No. 52600, offers a 30-degree angle of leverage when cleaning gasket surfaces. The pad wraps around the end of the tool to reach tight corners, and the pad can be re-positioned on the tool as it wears. The pad scraper comes with three easily replaceable 1" by 4" medium grit pads.

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Fool Review

Radcap

Radiator Cap Wrench

This tool saved the reviewer time when removing radiator caps.

By Stefanie Von Rueden, Assistant Editor

aving the right tool for the job saves technicians' valuable time and increases productivity. According to Eric Moore, owner of DeMary Truck in Columbus, Ohio, the Radcap Radiator Cap Wrench saved him a few minutes of work whenever he used it, since it easily removed radiator caps without him needing to use other tools.

"The Radiator Cap Wrench could not be any more straightforward to use," Moore says. "Simply place the correct end over

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PRODUCT **DESCRIPTION:**

The Radcap Radiator Cap Wrench is a lightweight, ABS plastic wrench designed to remove the radiator cap on the Behr cooling package. This tool can remove both the threefinger and four-finger caps associated with these radiators without causing damage to the cap or threads on the plastic header tank.

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the cap and leverage it loose."

He and his technicians used it mainly on Class 8 vehicles coming through the shop, although a few Class 7 trucks had the same radiator cap style.

The wrench came in basic packaging with no accessories. The tool did not require any setup, and was simple enough that it didn't need a manual. Moore notes that it did come with a flyer, but the tool was pretty self-explanatory.

He adds that he has never seen another tool of this design. He found it to be well designed and easy to use, and had no suggestions for improvement.

"This tool doesn't have too many features to mention," Moore says. "It serves a single purpose, which it does brilliantly."

Moore and his technicians work mainly on medium duty trucks, so the Radiator Cap Wrench was not a tool that they needed to use frequently. But, it was their go-to tool for removing radiator caps on heavy duty trucks because it worked well and was efficient.

Moore appreciated that the Radiator Cap Wrench worked without fail every time. It made loosening stuck radiator caps much easier, plus eliminated situations where his technicians would otherwise have to use grooved pliers and brute strength to loosen stubborn caps. It also saved his technicians excessive trips back to the toolbox for other tools that might be able to budge the stuck radiator caps.

Moore notes that the wrench was very durable. There was no give in the wrench even on the toughest stuck caps.

Overall, Moore found that the Radiator Cap Wrench saved him and his technicians time when removing radiator caps.

"It's simple and it works," he concludes. PTEN

STOP CHASING

Large soft-touch controls offer an ideal user-interface



Adjustable display adjusts to suit operator preferences



Features tape-weight holder and feeder





Looking for a one-spin-and-done solution to your wheel vibration problems? Ranger's new DST-30P wheel balancer is a highly accurate, zero-tolerance machine that makes your work faster, easier and more profitable than ever before. Our Eco-balance™ technology precisely calculates the minimum amount of weight needed to achieve an optimal balance, dramatically reducing the weight added per wheel. Warning: this will result in REAL savings. If you're tired of chasing weights instead of your dreams, give us a call.

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R Ranger.



Mastercool Arctic Commander

line of RRR machines

The reviewers appreciate the functionality and ease of use of this RRR machine's graphic user interface.

By Mike Schmidt, Managing Editor

e n eeded (an RRR m achine) that was fast and we could count on to be reliable," says Patrick Davis, lead technician at Smyrna Auto Air. "We're using them every day. And when you need one, you need it to work."

Davis says he and his fellow technicians at the New Smyrna Beach, Fla.-based shop found exactly what they were looking for in a Mastercool Arctic Commander RRR machine.

"We've used it quite a bit and everything works great," he adds.

Smyrna Auto Air conducts quite a bit of automotive air and radiator work, and Davis says he and his technicians often have four RRR machines running simultaneously on a busy summer day. He describes the Mastercool offering as a "level above" its counterparts in the shop, and testing it out left him impressed by both the functionality and ease of use of the machine's graphic user interface. He notes that the screen and the interface offer more features than the other RRR machines the shop uses, but both navigation and the ability to input data are not adversely affected.

"The first thing I really noticed and liked was that it has a built-in database of how much Freon goes in every vehicle," Davis explains. "So instead of having to go over to my computer and type in a whole bunch of stuff and re-input everything, I can do it directly on the machine. Once



(the RRR machine) looks it up, it uses that number. I don't have to punch it in or remember anything."

Another feature Davis appreciates is the speed of the machine's high-efficiency recovery feature, which he notes is three or four times faster than those of the other RRR machines at Smyrna Auto Air. In addition, he states the oil injection feature is simple and easy to use.

"It lets you know how much you are putting in without having to hold a button, leaning over and looking at the bottle, or doing it manually," Davis says.

Being able to employ the Mastercool RRR machine in automatic mode is also advantageous for Davis and his fellow technicians at Smyrna Auto Air.

"I just turn it on, set how much oil I want to put in and how much Freon I want to put in," he explains. "It recovers what was in there, vacuums it, injects the oil and then fills the system."

Like Davis, Marco Espaillat, shop owner at Master Service Auto Repair in West Palm Beach, Fla. also appreciates being able to use the Mastercool RRR machine in automatic mode.

"You just turn the machine on, it gives

you the menu option — automatic or manual — you plug in the car information, you hit 'enter' and basically wait for the machine to do the entire cycle," he says.

Having used a previous Mastercool offering in the past, Espaillat was left impressed by several features of the latest iteration, including its graphic user interface, its multi-language menu and the speed with which it allows him and other technicians diagnose and address A/C issues.

"It's very complete," he says. "I don't know what else (Mastercool) could add to it. I'm very satisfied with this machine." PTEN

PRODUCT DESCRIPTION:

Mastercool's Arctic Commander line of RRR machines feature an 8" color, touchscreen command center, with a graphic user interface (GUI) that will enable navigation through all functions and features with ease, says the company. No need to read external instructions or paper manuals, these machines have internal video instruction. All machines are equipped with Wi-Fi capabilities; allowing for real-time, interactive communication and troubleshooting.

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Gray Manufacturing Wireless Portable Lifts

The reviewer is impressed by how quick and easy it is for the lifts to be set up, moved where they are needed and stored away.

By Mike Schmidt, Managing Editor

here is no overstating the convenience offered by shop equipment that is easy to store, easy to maneuver and provides a level of convenience not found in the vast majority of competitive offerings.

Glenn Collins, shop supervisor, Von Ormy, Texas-based Daimler Trucks dealership Custom Truck Services, found himself in need of a lift with those characteristics, and he found it in the Gray Manufacturing Wireless Portable Lift System, No. WPLS-135.

"This system has not failed me," says Collins, whose shop contains a set of four Gray wireless lifts. "It does everything I need it to do."

Collins's shop employs the Gray offerings to lift Class 8 tractors. He says he is quite impressed by how quick and easy it is for the lifts to be set up, moved where they are needed and stored away when they are not in use. The shop has used wired lifts exclusively in the past, but Collins says he eventually determined he desired a "cleaner look" and wanted to avoid tripping hazards associated with lifts that include wires.

"When I was researching a lift system for the shop, the primary purpose was so we could get quality reviews from customers in the shop," he explains. "(The Gray lifts) are extremely clean, and there are no wires that run between each lift. I've used systems in the past that did, and if you don't mind not having a clean space, then

PRODUCT DESCRIPTION:

The Gray Manufacturing Line of Wireless Mobile Column Lifts features a wireless communication system and touchscreen graphic control system. Capable of lifting a variety of vehicles, these lifts have no external wires or cords, and when used at full operating height, they can provide a lift height of 69". Model No. WPLS-135 is a 13,500-lb capacity, 24V mobile column that can be operated in sets of two, four, six or eight, allowing users a capacity range of 26,500-108,000 lbs. Model No. WPLS-185 is an 18,500-lb capacity, 24V unit, which can be operated in sets for a capacity range of 37,000-148,000 lbs. No. WPLS-185W is an 18,500-lb capacity, 24V model with a wide, adjustable carriage for over-sized tire engagement. The column can be operated in sets for a capacity range of 37.000-148.000 lbs.

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that would work for your environment, However, in our environment, I needed something that looked good because there is a certain aspect of presentation that was involved in the decision-making process."

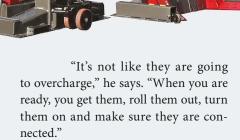
Collins credits Gray Manufacturing for sending a representative to his facility to explain the features of the lift and how to operate it.

"I had several people other than myself that needed to learn about the lift," he says. "It was me, my employees, my boss and another company that's on our same property that was also interested in purchasing a set of lifts, too. Gray was willing to send a guy out and he put on a several-hour presentation."

Collins says programming the lift involves using as a touchscreen that more or less resembles the screen on a mobile tablet.

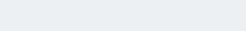
"Once you have each post communicating with each other, you basically only have to push the 'enable' button and then either 'up' or 'down," he explains. "It's really that easy."

The absence of wires make storing the Gray lifts much easier for Collins and others at Daimler Trucks because they don't take up as much space as other offerings. In fact, he says, he and his employees often leave the lifts plugged into 110V outlets and charging until they are required for use.



Overall, Collins says he couldn't be happier with what the Gray Manufacturing Wireless Portable Lift System, No. WPLS-135, offers in terms of both convenience and performance. He also commends the company for being willing to send a representive to ensure he and others at Custom Truck Services could get the most out of the lifts when they were put into use at the Daimler Trucks dealership.

"It's clean, it's professional-looking and it's awesome," he adds. PTEN





Autel

MaxiSYS Commercial Vehicle Diagnostics Scan Tool

The reviewer says the tool provided quick, accurate diagnoses and offered a wide range of make and model coverage.

By Mike Schmidt, Managing Editor

teve Nisenson has long relied on OEM diagnostic software and his laptop computer to diagnose a variety of issues on trucks. However, u pon t esting t he A utel MaxiSYS commercial vehicle diagnostics scan tool, No. MS908CV, the diagnostic technician at West Babylon, NY-based fleet a nd v ehicle a uto r epair s hop DiBear & Sons came away impressed with the tool's performance as a viable alternative.

Nisenson admits employing the manufacturer diagnostic software can be "cumbersome from time to time." Therefore, he was pleased to find the Autel offering provided quick, accurate diagnoses and offered a wide range of make and model coverage.

"It was refreshing because it's not like I needed to get an idea of what I was scanning, look at it and bring out the manufacturer's scan tool out to dig deeper," he explains. "I was able to do it all on the handheld tool. It didn't leave me having to do anything else. It covered everything in one step."

The technicians at DiBear & Sons work most often with Freightliner trucks containing Cummins and Caterpillar engines. The first opportunity Nisenson was afforded to use the MaxiSYS was on a vehicle dealing with a transmission problem.

"Normally, we have to use the Allison

software to reset the shift adapts and relearn the shift parameters," he says. "I plugged the tool in and was able to do that fairly quickly. Right off the bat, it was a huge savings in time as far as that goes."

The amount of coverage the MaxiSYS provides was also immediately

noticed and appreciated by Nisenson.

"For what I've used it for thus far, it has met or even exceeded the manufacturer scan tools," he says.

Nisenson cited the similarities between the setup and layout of the MaxiSYS commercial vehicle diagnostics tool to those of the company's automotive diagnostic offering as a major plus. He also appreciated some of the key features of the tool's menu, including images of the actual vehicle and the manufacturer's logo to help the technician ensure they are on track to get the proper information. Furthermore, the tool walked Nisenson through several processes step by step.

"Say you are doing a 'check engine' light reset and you just fixed something and the code went inactive and you want to clear the code, it'll walk you through

PRODUCT DESCRIPTION:

The Autel MaxiSYS commercial vehicle diagnostics s can tool, No. MS908CV, performs enhanced system diagnostics on more than 60 commercial light duty, medium duty and heavy duty vehicle brands. The MS908CV is built on the MaxiSYS Android-based platform. The complete tool kit comes with the latest compact size J2534 MaxiFlash Elite to perform pass-thru programming function and complete an array of tool-guided maintenance services, then diagnose manufacturer specific systems, including Allison Transmissions, Bendix ABS brake systems, Detroit Diesel Engines and Eaton and Wabash ABS trailer brakes.

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the key cycle," he explains. "You have to shut the key off, wait 10 seconds, turn the key back on and then start the engine. It lets you know all that. It doesn't leave you guessing or give you any issues."

According to Nisenson, the tool has been able to perform all of the functionality tests a technician would conduct using manufacturer software.

Another aspect of the MaxiSYS Nisenson greatly appreciates is the regular updates to the tool.

The updates and coverage additions are almost constant, he says, adding that the tool turned out to be everything he was looking for in an aftermarket offering.

"There is nothing in the market right now that can even come close to the functionality of the Autel tool," he adds. PTEN

2017 AFTERMARKET PROFILE

How does your shop measure up?



97%

of those surveyed say they approve, influence or specify shop tool and equipment purchases



There are a number of factors that impact the tools shops purchase: 76 percent of shops purchase a tool to maintain productivity in the shop and 41 percent of shops purchase a tool to help increase billable hours.

ithout tools and equipment in the independent repairs hop, technicians would be unable to complete vehicle diagnosis and repairs. While educating yourself on the new products available is integral to understanding the changes in the industry, it's only one part of the equation. It's also important to take a look at trending data to understand where our industry is headed.

Our goal at Professional Tool & Equipment News (PTEN), has been and will continue to be, to make sure you have the best and most up-to-date information about the industry, so you can ultimately run a successful vehicle maintenance and/or repair business.

For the second year in a row, we took the results of our annual purchasing study to provide a high-level overview and trending outlook on the tool and equipment segment of the automotive aftermarket, to compile the 2017 Aftermarket Profile. This market overview provides insights not only to your own business, but the

While we aren't able to talk with every technician or shop owner in the market, trending data from this purchasing study provides the foundation to a viable foresight on what we can expect in the coming year.

Some interesting findings from this year's survey:

- » Of the individuals surveyed, more than half of the respondents (54 percent) for our survey advised they were the owner, president or vice president of their facility.
- » The breakdown for facilities surveyed includes the following: **57 percent are** general automotive repair facilities, 15 percent are heavy duty trucking or heavy equipment service facilities, and 10 percent are specialty repair shops.
- » On average, nearly two thirds of shops (63 percent) have five or fewer bays in the shop. By contrast, 13 percent of shops have 10 or more bays. Most shop owners (91 percent) own only one shop.
- » A topical discussion in the industry, with the advent of repair information being made available for all OE makes, more that three quarters of respondents (78 percent) are familiar with Right to Repair.

Again this year, survey results indicated diagnostic equipment plays a key role in shops. While shops already own a number of products in this tool category, 81 percent of techs and shop owners still plan to purchase more diagnostic test equipment over the next 12 months.

Over the next several pages, we provide a general overview of the shops surveyed, insights on shop and technician tool and equipment purchasing plans for the coming year—highlighting data from some key tool categories—as well as technician training trends.

-Erica Schueller, Editor



Only **21%** of shops reimburse their technicians for some or all of their tool and equipment purchases.

79 percent of technicians are responsible for all of their own tool and equipment purchases



[General Overview]

Covering an overview of the respondents for the PTEN Purchasing Study, details below highlight shop size and location, shop revenue, types of repairs and vehicles serviced in the shop, and more.

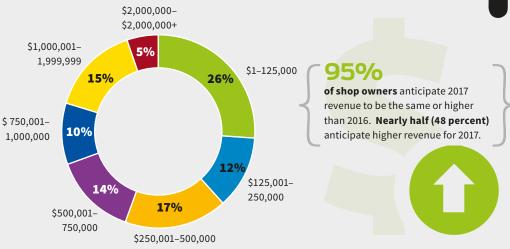
Of the Independent repair shop owners surveyed:

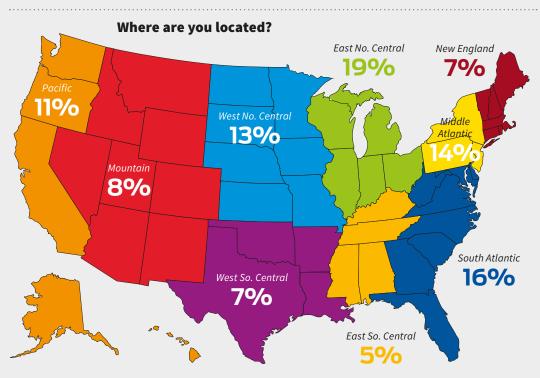
• **30 percent** of responding shops have only one technician working on vehicles in the shop.

• **70 percent** of responding shops have five or fewer technicians.



What is your annual shop revenue?





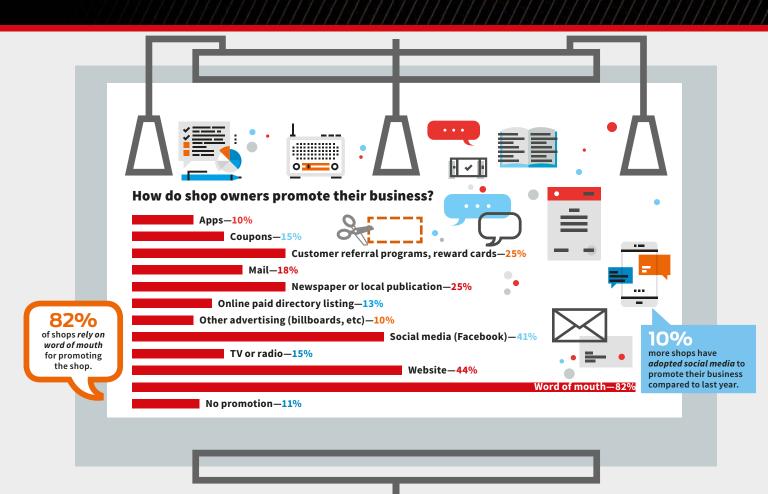
22%
of shop
owners
anticipate
hiring
more

technicians

in 2017.

Compared to maintenance, repairs continue to make up the majority of a shop's revenue: 57 percent of shop owners say repairs make up more than half of their revenue.







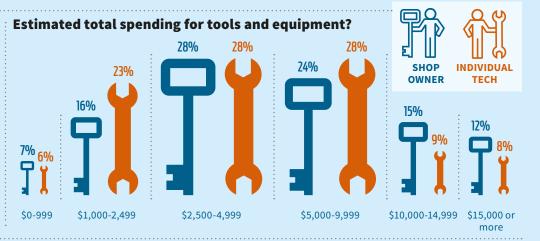


[Purchasing Information]

This section covers estimated tech and shop owner spending and where techs and shop owners buy their tools and equipment, followed by anticipated purchase plans for specific product categories. Shop budgets are up for tool and equipment purchases: 95 percent of shop owners anticipate their tool and equipment budgets to be the same or higher in 2017. Of those respondents, almost half (48 percent) have increased their budget compared to last year (a 15 percent increase year-over-year).



89% of technicians influence or approve tool and equipment purchases for the shop.



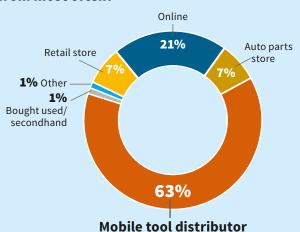
Where do you buy tools?

			2017	2016
	Mobile tool distributors		89%	78%
Techs and shop owners buy tools		Online	72%	56%
from N	APA Auto nore than ther auto s store.	Auto parts stores	60%	50%
any of		Retail stores	48%	37%

Of the 72 percent that purchase tools online:



Where do techs and shops purchase tools from most often?



What is the most important factor when purchasing a tool?

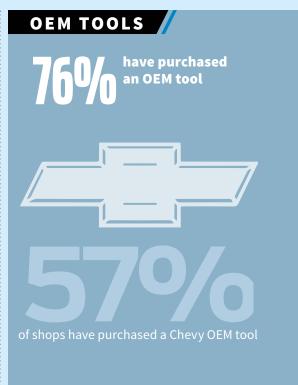




Category Overview

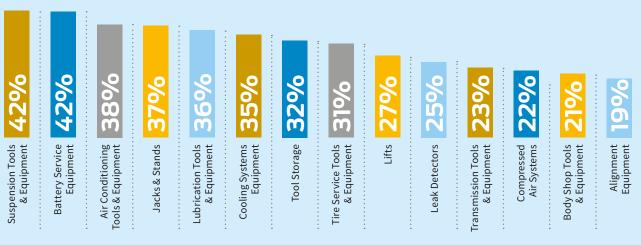


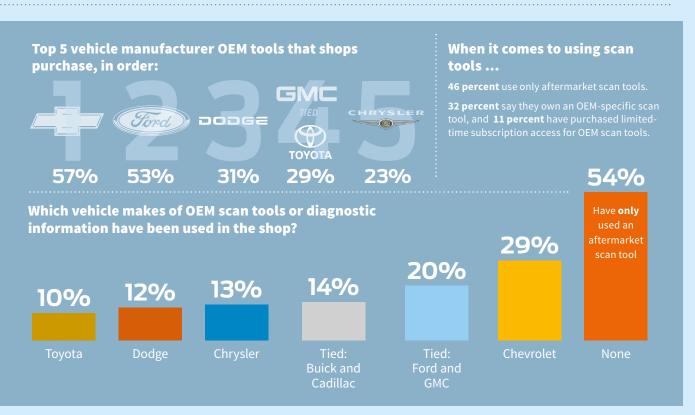






Nearly two thirds of shops plan to purchase these top tool categories in the next 12 months.

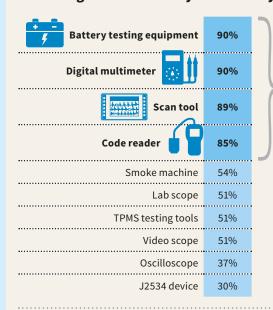






DIAGNOSTICS /

What diagnostic tools do you currently own?



More than 85% of all techs and shop owners own these four products.

Who buys scan tools in the shop?



80 percent of technicians and shops would be interested in using a telematics device to remotely access and service a customer's vehicle.



Technician Purchase 7%

Do you own a smoke machine?



I do not own or use a smoke machine 45%



Nearly **one third** of respondents have used a shop tool that utilizes a smartphone.





What type of battery service equipment do you own?



92%Battery tester







78% Wheeled



78% 72% Portable battery charger charger







55% Memory saver





y Batter

-



19% Reprogramming power supply

Do you own a smart battery charger?





28%



No, but I plan on purchasing a smart battery charger in the next 12 months.

There has been a **19 percent** increase year-over-year of shops who say they own a smart battery charger.

Start/stop technology continues to be more relevant in shops...



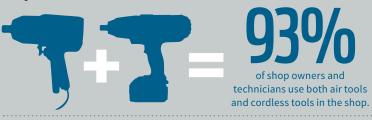
38% of respondents have not yet seen start/stop technology in the shop. (compared to 51% last year)



30% of respondents see start/stop technology vehicles once every few months.

CORDLESS & AIR TOOLS

Do you use air tools or cordless tools?



What voltage of cordless tools have you purchased?



12V 33%





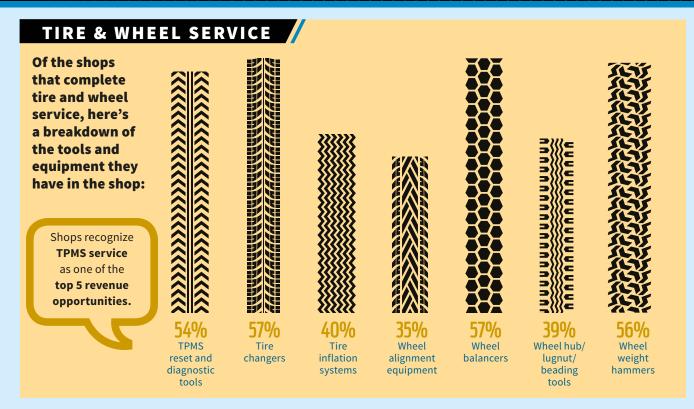


The adoption of the cordless tools technology continues...

More than 40 percent of respondents say they have replaced a pneumatic tool with a cordless power tool.







A/C SERVICE

What type of A/C tools and equipment do you own?

A/C hose or line repair kits 34%

A/C leak detector/UV leak detection devices

68%

R134a RRR machine **62%**

R1234yf RRR machine 5%

Combination RRR machine that works on both refrigerant types 6%

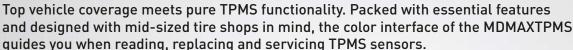
Do not complete A/C services 22%

Shops are still tooling up for R1234yf refrigerant. Only 11 percent currently have RRR machines to service vehicles with this refrigerant.

Of the shops that complete A/C service, the most popular A/C service tools and equipment include A/C hose or line repair kits (68%) and A/C leak detectors/ UV leak detection devices (62%).

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TPMS SENSOR READING & CREATION

Part # MDMAXTPMS





TPMS SYSTEM RESET & DIAGNOSTICS

Part # MDMAX2A



USE THE MDMAXTPMS WITH THE MDMAX2A FOR MAXIMUM FUNCTIONALITY.

MDMAXTPMS

- Easy to operate with icon based interface and a bright color display
- Activates and reads TPMS sensors of all light vehicle brands globally
- Programs all leading universal aftermarket sensors
- Displays all sensor data in seconds: ID, tire pressure, tire temperature, battery status, etc.

MDMAX2A

- One-click commonly used resets, including TPMS reset, brake reset, oil light reset, SAS reset, battery reset, electronic throttle relearn and more
- Ultra-fast graphing with full-color touchscreen
- Immediate bi-directional access to all available controllers for trouble codes, live data, actuations and more

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[Training]

Understanding how to use a tool or piece of equipment, and its relationship to the overall diagnosis and repair of a vehicle, is an integral part of a technician's job. This section shows details on the most popular types of technician training, the optimal time and day for technician training, specific tool categories where more training is needed, and more.

Does training have an effect on which tools you purchase?





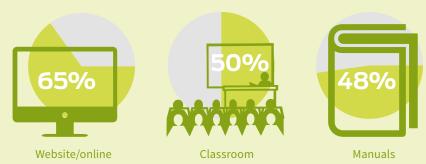
46%

14%



40%

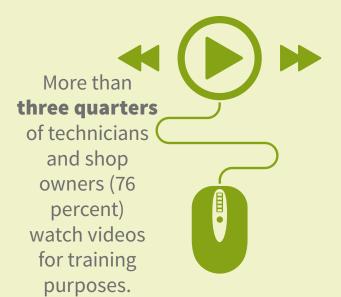
What type of training have you participated in?







How often do you use YouTube or other videos for training or diagnostic/repair information?



What type of repair service information do you use?

ALLDATA	47%
Mitchell 1	40%
Identifix	39%
OEM service information	39%
iATN	27%
Chilton's Car Care	13%
20	





in a classroom





22%

Tategory Spotlight



CAN BE USED WITH ALL REFRIGERANTS

The Mastercool Refrigerant Recovery Machine, No. 69360, offers an oil separation module, filter dryer, sight glass, a double-piston oil-less compressor, safety high-pressure switch, large volume recovery rate and can be used with all refrigerants including R-410a. The injectionmolded, high-density polyethylene case offers maximum durability and the front cover has bumper guards built in to reduce damage to the control knobs. The No. 69360 weighs 28.3 lbs and is 18" long by 10" wide by 14" high.

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LEAK DETECTION FOR HIGH-PRESSURE SYSTEMS

The Motorvac Cool Smoke HP, No. 500-0150, addresses the emer ging ne ed for I eak d etection in forced induction and other h igh-pressure systems. This tool's proprietary technology requires no h eat s ource to

generate dense, UV dye-enhanced vapor from 3 psi to 60 psi. This tool offers a 3.5" color LCD d isplay, full d igital controls and more. The Bluetooth capability and a companion app allow the Cool Smoke HP to be controlled via a mobile device. The Cool Smoke HP also includes a turbo adapter kit and both bright white and true UV leak detection lights for full functionality right out of the box.

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FIND AND PERMANENTLY **STOP A/C LEAKS**

The UView LeakGuard OneShot, No. 480500, is an A/C supplement that leverages the company's LeakGuard technology to find and permanently stop A/C leaks as they form. Includes a dose of A /C ExtenDye fluoresces leaks and an additive package that protects and extends the life of the compressor, its components and the oil. Also, 2 oz of R-134a refrigerant tops off the system with refrigerant lost to leaks. This product will not harm the A/C system or recovery equipment, according to the company.

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MEETS SAE J2843 REOUIREMENTS

The **Robinair 1234YF A/C Service Machine**, No. AC1234-6, meets SAE J2843 requirements for recovering, recycling and recharging vehicle A/C systems that use R-1234vf refrigerant. The fully automatic machine comes with an integrated refrigerant identifier that samples the refrigerant in the vehicle's A/C system prior to recovery. It can service both standard and hybrid vehicle A/C systems. The machine has a 95 percent recovery efficiency, a charge accuracy within +/-0.5 oz, a system leak test to identify gross leaks in a system and a programmable vacuum operation. With a large graphical display, the machine uses an onboard printer to create vehicle service report slips.

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FITS IN POCKETS FOR **ACCESSIBILITY**

The **OEM Automotive Tools Ultra-Violet Light Pen**, No. 24610, is used to help find leaks in A/C systems. The LED produces a high-intensity, ultraviolet light to detect fluorescent dyes. The Ultra-Violet Light Pen fits easily into a user's pocket. It is made of lightweight aluminum with a pocket clip for convenience and accessibility. This light features a high-impact lens to resist breakage, a one-hand push on/off button, 4.5 hours maximum run-time and is water resistant. It comes with two AAA Duralast batteries.

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SERVICES CHRYSLER LH **SERIES AND FORD VEHICLES**

The Lisle Scissor Disc A/C and Fuel Line Spring Lock, No. 63730, releases four sizes of spring lock couplings on A/C and fuel lines on many Chrysler LH Series and Ford vehicles. The tool fits spring lock sizes A-3/4", B-5/8", C-1/2" and D-3/8".

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DUAL-TANK DESIGN PREVENTS CROSS-CONTAMINATION

The AirSept A/C Flush Machine features a dual-tank design that ensures each component in the system receives fresh, contaminant-free solution for its initial flush pass. Each A/C system

component is flushed using only virgin solution from the first tank, s o t here i s n o cross-contamination from t he p reviously flushed c omponent. Technicians can deepclean an y h eavily contaminated components, a nd the c losed-loop flush m eets A/C c omponent warranty require-



standard OE-fit connectors. The machine, capable of a 15-minute flush and 30-minute drying, has an air purge mode that can be used to check for component leaks prior to flushing. Additionally, a built-in two-stage filter removes moisture and particulates from the shop compressed air supply.

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SERVICE R-1234YF REFRIGERANT SAFELY

The **Mahle ArcticPRO ACX1280 machine** is designed to help shops service R-1234yf refrigerant worldwide in a competent, efficient and safe manner. The ACX1280 is certified to meet all applicable performance and safety standards in the stringent SAE J2843 standard. The ACX1280 features fully automatic servicing to ensure easy, time-saving and precise service on R-1234yf air conditioning systems in vehicles. The machine is distinguished from its competitors with the option to purchase it with either an internal or external refrigerant identifier system. With easy access for service and maintenance tasks, the ACX1280 provides technicians with maximum uptime and faster service support.

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READS IN FAHRENHEIT AND CELSIUS

The **Omega A/C Diagnostic Tool**, No. 41-11585, provides accurate temperature differences after any A/C repair, according to the company, and offers fast and accurate temperature readings in difficult-to-reach areas with the flexible direct contact thermocouples. The A/C Diagnostic Tool identifies internal restrictions on condensers and poor air flow across the condenser. It verifies evaporator flooding levels on the orifice tube system, expansion valve performance and receiver drier refrigerant flow. This tool offers a detailed



temperature and diagnostic chart, is battery operated and reads in both Fahrenheit and Celsius.

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FULL 1HP MOTOR

The JB Industries Dual Piston Refrigerant Recovery Unit, No. F6-DP, features a full 1hp motor, dual-piston compressor and high efficiency micro-channel condenser to recover refrigerant quickly. The device offers a micro-channel condenser as well as two-valve operation, and it is self-purging without the need to change hoses. The over-sized cooling fan dissipates heat, and the heavy duty handle provides a comfortable rubber grip. The unit is backed by a three-year OTC warranty.

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WITH AN EZ-JECT A/C DYE INJECTOR

The Tracerline EZ-Ject A/C and Fluid Kit, No. TP-8617, features an OPTI-PRO cordless, "true UV" LED leak detection flashlight; an EZ-Ject universal, co-solvent free, multi-dose A/C dye cartridge (No. TP-9870) that services up to 14 vehicles; a 1-oz bottle of Dye-Lite All-In-One oil dye (No. TP-3405) compatible with all oil-based fluid systems, a 1-oz bottle of Dye-Lite (No. TP-3900) water-based dye for coolant leaks; an EZ-Ject A/C dye injector with hose and coupler; and fluorescence-enhancing glasses. All of the tools come packed in a carrying case.

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THERMOMETER DOUBLES AS A PICKUP TOOL

The Snap-on Multi-Functional Thermometer, No. **TEMP100**, measures temperatures from -58 degrees F to 400 degrees F and features a magnetic tipped protective sleeve that doubles as a pickup tool. The built-in magnetic pocket clip keeps the TEMP100 handy and offers the ability to mount to ferrous surfaces. The easy-to-read LCD screen displays both Fahrenheit and Celsius and has a "data hold" feature to maintain information. The narrow tip shaft provides faster, more accurate readings than thicker shaft units, according to the company, to verify HVAC system temps and check airflow vent temps.

Are you ready for R-1234yf?



We are!



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EFFECTIVELY FIND AND PERMANENTLY STOP A/C **LEAKS**

The CPS Automotive LeakGuard OneShot A/C supplement leverages the company's LeakGuard technology to effectively find and permanently stop A/C leaks as they form. An included dose of A/C ExtenDye fluoresces leaks and includes an enhanced additive package that protects and extends the life of the compressor, its components and the oil. The cartridges work with the company's Spotgun Jr. injection system. In addition, they will not harm the A/C system or recovery equipment, says the company. Available are the LeakGuard OneShot Cartridge (No. 480501), the LeakGuard OneShot Cartridge Winged 1 o z (No. 480501EU), the LeakGuard OneShot Injection Kit (No. 480550) and the LeakGuard OneShot Winged Injection Kit (No. 480550E).

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THREE SIZES OF BOTTLES AVAILABLE

The **Bright Solutions** Stay-Brite Universal A/C Dye, Nos. 117073, 117074 a nd 1 17075, for the company's A/C Detective i njection system, is a vailable in three s izes o f bo ttles for 16, 32 or 64 applications. The dye can be i njected e ven w ith system p ressures u p to 150 psi. The dye is SAE certified and OEM approved. All three sizes come with dye-installed service stickers.



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YELLOW JACKET MANTOOTH WIRELESS DIGITAL P/T GAUGE

The Yellow Jacket Mantooth Wireless Digital P/T Gauge uses a wireless connection to provide actual pressures, temperatures, superheat and subcooling. The gauge is available in either a single package, with one pressure/ temperature module with boot, a temperature probe clamp, a U SB charging cable and the ManTooth app, or a dual package, which offers a second pressure sensor and clamp tethered to the main unit.

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TECH TIP



CONFIRM SAE EQUIPMENT COMPLIANCE WITH A CLICK OR TWO

The arrival of R-1234yf in the automotive world generated several new SAE standards intended to support the use and servicing of this new fluid. To read the full article, visit:

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Information provided by Neutronics Inc.

ASK THE EXPERT



HOW DO YOU PREVENT CONTAMINATION TO A/C

EQUIPMENT? A: Utilizing a refrigerant identification tool is highly recommended and required on some A/C models. The prevention of contamination to your machine is imperative. Refrigerant identification tool options range from external, hand-held units to internal/embedded options included in the A/C equipment. To read the full article, visit:

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ROUD LOOK AT THEIR AWESOME TOOL STORAGE SYSTEMS.

The bolder, the better

Dual side cabinets, statement color and built-in radio draw attention to this box

By Vesna Brajkovic, Assistant Editor

nce Danny White, a senior technician at Perry Subaru in Norfolk, Virginia, had his Mac Tools toolbox put together, he showed his wife who sarcastically said, "Do you think you got a big enough box?"

White thinks it's just enough. Although, he says the pictures barely do it justice compared to seeing it in person.

The black and blue Tech Series is big and bold, with a stainless steel work top, two matching side cabinets and a hutch with built-in radio and speakers.

White has had his toolbox for about two years. He started with the main box, which he purchased from his Mac Tools distributor. He then put in an order with his distributor for the two side cabinets and the hutch a year-and-a-half later.

One of White's favorite features is the built-in radio with speakers. Two speakers are hidden inside the top of the hutch, so they don't take up space but still provide quality sound.

The side cabinets, or lockers, have adjustable shelving, making it ideal for customization, White says. He uses them to store tablets, scopes, meters and other more expensive equipment so he can easily keep them locked away while not in the shop. He also has enough room to hang up hats and jackets.

The bottom drawers of the main box hold tools like pressure testers and other electronics, while the top drawers hold basic hand tools, like pliers. A notable fea-



▲ Two speakers are hidden inside the top of the hutch, so they don't take up space but still provide quality sound for the built-in radio.

ture is one of the bottom drawers which has a strip of power outlets inside it and doubles as a utility box. The toolbox is plugged in, allowing White to keep his equipment charged, and the drawer helps keep the tools plugged in while being stored away.

Keeping the stainless steel worktop, along with his entire box, clutter-free and clean is important to White. The worktop has only some easy-to-reach tools hanging from pegs on the backboard, and occasionally he has his Launch Tech Pad II scan tool out on top.

Danny White keeps his Mac Tools Tech Series toolbox spotless and clutter-free. The side lockers have adjustable shelving making it ideal for customized tool storage.

White says if you saw the box, you might think it's brand new with the way he takes care of it. But, with what he paid for it, he says, he better treat it right.

White completely paid off the toolbox about four months ago, but still has a few updates in mind. He said he may want to install a magnetized light inside the central box to help illuminate the work area on overcast days, and purchase a bookcase for the top of the box to store manuals and other resources. PTEN



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