PROFESSIONAL ^{OCTOBER 202} VOL. 30 NO. 9 S15.00 RESERVEN **OCTOBER 2022** VOL. 30 NO. 9 THE INS & OUTS OF LEAK DETECTION Help technicians take the

guesswork out of finding leaks.

Page 12

Wanted Page 10 Most Show Me Your Truck Pag

More exclusive content at VehicleServicePros.com/Distributors



Page 20





MAKING RATE IADE EASIER

INTRODUCING THE ALL NEW 1211MAX Series High Speed Ratchet. Available models include: ³/₈" **1211MAX-D3** and ¹/₂" **1211MAX-D4**

- **Speed:** At 625 RPMs, the 1211MAX is up to 2X faster than other powered ratchets or hand tools
- **Torque:** Innovative twin hammer mechanism that delivers a ferocious 80 ft-lbs of nut-busting torque
- Comfort and Safety: Reactionless impact mechanism eliminates kick back protecting operator's knuckles

When time is of the essence, no tool is more essential than the new **1211MAX Series High Speed Ratchet**. The 1211MAX redlines at a free speed of 625 RPMs while unloading 80ft-lb of nut busting torque from a reactionless impact mechanism. The high speed ratchet features a composite handle, contoured trigger activator, and an easy access design that allows you to tighten even in the tightest spots.

For more information, click on "PD e-inquiry" at VehicleServicePros.com

Learn More at IRTOOLS.COM/1211MAX

southing with hard thing



Casey Cox, Cornwell Quality Tools distributor

COVER STORY

12 Ins and outs of leak detection tools Help technicians take the guesswork out of finding leaks.

FXCLUSIVE

20 2022 PTEN People's Choice Award Winners See which products caught readers' eyes for this year's People's Choice Awards.

PRODUCTS

6 Sneak Peek

Brand new products from Ingersoll Rand, OEMTOOLS, Flo-Dynamics, Titan Professional Tools, and more.

10 Most Wanted

The top requested products from technicians and shop owners, based on inquiries from PTEN magazine.

30 In Focus

Taking a closer look at products from Sellars, Milwaukee Tool, Power Probe, and KNIPEX.

OCTOBER 2022 CONTENTS

10







DEPARTMENTS

4 Editor's Note The 'New Guy' syndrome.

34 Diagnostic Tech

Scott Brown discusses how electronic controls are overtaking many of the mechanical systems we once saw on vehicles in years past.

49 Tales from the Road

Independent mobile tool dealer, Lindsay Coyle always puts his customers' priorities first.

SALES

40 Show Me Your Truck

Jared Charlesworth. Independent distributor

- 42 Go Sell Something Alan Sipe talks about how to be an industry expert and bring that expertise to your customers.
- 44 **Driving Sales**

Products that will help your bottom line.

WEB EXCLUSIVES



OFFICIAL WEBSITE OF

PROFESSIONAL DISTRIBUTOR

VIDEO: Independent mobile tool dealer.

John Andrews, chats with Professional Distributor about the benefits of being an independent. VEHICLESERVICEPROS.COM/21277180



GUEST BLOG: Learn the 12 habits of successful entrepreneurs. VEHICLESERVICEPROS.COM/ 21277450



Check out this up-close look at **Electronic Specialties' Relay Fuse Buddy. VEHICLESERVICEPROS.COM/** 21268074





LINKEDIN linkedin.com/company/

ProfessionalDistributor



INSTAGRAM @PTENMagazine



PTEN (Professional Tool & Equipment News)

EDITOR'S NOTE



BRENDAN BAKER EDITOR BBaker@ endeavorb2b.com

Meet the New Guy

It's difficult to be the new guy, even if you've worked in your field of expertise for years.

ou may have noticed that there's a different headshot in this section. That is because I am the new editor. I'm the "New Guy!"

It's difficult to be the new guy, even if you've worked in your field of expertise for years. I'm sure Tom Brady had his share of new guy syndrome going to Tampa Bay his first year. I'm no Tom Brady, though. I'm just a regular Joe who loves cars and tools. And you can't have too many of either!

I've worked in the automotive aftermarket and racing industry for as long as I can remember. When I was growing up, my father owned a jobber auto parts store in Akron, Ohio, and he also raced cars. I started sweeping floors, like many business owners' kids, and then graduated to stocking shelves. I was working behind the counter and running the store on Saturdays by my late teens (because no one else wanted to get up early on the weekend-especially my dad).

I left the family business to pursue a racing career, working at racing schools and wrenching on race cars to pay my way through. I had my first experience with a mobile tool truck during this time. The Snap-on truck pulled up to our shop on Wednesdays, and I was amazed by all the "tool jewelry." I walked out with a set of anniversary edition wrenches and some other goodies, including a bonus pocket knife with the anniversary inscribed on the handle. I wish I still had that knife. Most of my Snap-on tools were stolen in the mid-'90s from our race shop, and while I got some nice replacements, they were not the anniversary edition.

My tool dealer helped me when I was a new guy on the job, ensuring I had what I needed (and could afford). I made very little money then, but I was passionate about the job. We wrenched at the track and sometimes at the hotel. Our tools were our lifeblood then, as they are today for technicians and shops across the country.

For the past 25 years, my career has been in the publishing industry and automotive journalism. Trading tools for a pen may sound good some days. But working on cars, and solving problems for people who need their vehicle to get to work, take their kids to soccer practice and school, are what brings the most joy in doing the job. That drive to do it better, is what keeps this industry going from generation to generation. My dad passed on his passion for cars to me and my brother. I'm doing my part to pay it forward.

While I'm a new guy at this magazine and unknown to many of you, I'm not so new to the industry. I've attended SEMA/ AAPEX for the past 20 years, along with countless other shows, but never a tool show. That's about to change this month.

We may not have crossed paths before, but I hope to meet as many of you as I can this year in Vegas at our AAPEX booth (#A3626). Or perhaps Wednesday on your tool truck. 📵

P R O F E S S I O N A L STRIBI The Mobile Distribution Network Connection

Published by Endeavor Business Media, LLC

ENDEAVOR

Nashville, TN 37215 800-547-7377 Printed in the U.S. Volume 30, Number 9; October 2022

30 Burton Hills Blvd. Ste 185

EXECUTIVE VICE PRESIDENT – TRANSPORTATION Reggie Lawrence RLawrence@EndeavorB2B.com

VP/GROUP PUBLISHER, ENDEAVOR VEHICLE REPAIR GROUP Kylie Hirko 630-253-4034 Kylie@VehicleServicePros.com

EDITOR Brendan Baker BBaker@EndeavorB2B.com

ASSOCIATE EDITOR Emily Markham 920-234-6359 Emily@VehicleServicePros.com

ASSOCIATE EDITOR Kayla Oschmann 920-563-1764 Kayla@VehicleServicePros.com

ASSOCIATE SALES DIRECTOR Mattie Gorman-Greuel 920-563-1636 MGorman@EndeavorB2B.com

DIRECTOR OF BUSINESS DEVELOPMENT Cortni Jones 920-568-8391 CJones@EndeavorB2B.com

MULTIMEDIA ACCOUNT EXECUTIVE Diane Braden 920-568-8364 DBraden@EndeavorB2B.com

MULTIMEDIA ACCOUNT EXECUTIVE Lisa Mend 949-259-5654 LMend@EndeavorB2B.com

MULTIMEDIA ACCOUNT EXECUTIVE Michael Parra 925-307-8779 MParra@EndeavorB2B.com

MULTIMEDIA ACCOUNT EXECUTIVE Paul Ropski 815-255-4118 PRopski@EndeavorB2B.com

INSIDE SALES James Hwang 801-823-1704 JHwang@EndeavorB2B.com

PRODUCTION MANAGER Jane Pothlanski 224-324-8507 JPothlanski@EndeavorB2B.com

AD SERVICES MANAGER Carmen Seeber 920-568-8373 CSeeber@EndeavorB2B.com

ART DIRECTOR Tim Schafer

LIST RENTAL REP Michael Costantino 402-836-6266 Michael.Costantino@infogroup.com

LIST RENTAL REP Kevin Collopy 402-836-6265 Kevin.Collopy@infogroup.com

AUDIENCE DEVELOPMENT MANAGER Debbie Dumke

ENDEAVOR BUSINESS MEDIA, LLC

CEO – Chris Ferrell President - June Griffin CFO - Mark Zadell COO - Patrick Rains Chief Administrative and Legal Officer - Tracy Kane EVP/Group Publisher - Transportation - Reggie Lawrence EVP Marketing Solutions & Data - Jacquie Niemiec

FOUNDER RUDY WOLF

Subscription Customer Service 877-382-9187; 847-559-7598 • Circ.ProfDistmag@omeda.com PO Box 3257 • Northbrook IL 60065-3257 Article reprints reprints@endeavorb2b.com



Professional Distributor (USPS 017-300), (ISSN 1553-6211 print; ISSN 2150-2080 online) is published ten times a year in Feb., March, April, May, June, July, Aug., Sept., Oct. and Dec. by Endeavor Business Media, LLC, 1233 Janesville Avenue, Fort Atkinson, WI 53538. Periodical SP ostage paid at Fort Atkinson, WI 55538 and additional mailing offices. POSTMASTER: Send address changes to Professional Distributor, PO Box 3257, Northbrook, IL 60065-3257. Canada Post PM40612608. Return undelliverable Canadian addresses to: Professional Distributor, PO Box 25542, London, ON N6C 6B2.

Subscriptions: Individual subscriptions are available without charge in the U.S. Subscriptions: individual subscriptions are available without charge in the U.S. to qualified subscripters. Publisher reserves the right to reject non-qualified subscriptions. Subscription prices: U.S. \$50 per year, \$93 two year, Canada/ Mexico \$72 per year, \$131 two year, All other countries \$105 per year, \$195 two year. All subscriptions payable in U.S. funds, drawn on U.S. bank. Canadian GST#642773848. Back issue \$10 prepaid, if available. Printed in the USA. Copyright 2022 Endeavor Business Media, LLC.

All rights reserved. No part of this publication may be reproduced or ransmitted in any form or by any means, electronic or mechanical, including photocopy, recordings or any information storage or retrieval system, without permission from the publisher.

Endeavor Business Media, LLC does not assume and hereby disclaims any liability to any person or company for any loss or damage caused by error omissions in the material herein, regardless of whether such errors result from negligence, accident or any other cause whatsoever. The views and opinions i the articles herein are not to be taken as official expressions of the publishers, unless so stated. The publishers do not warrant, either expressly or by implication, the factual accuracy of the articles herein, nor do they so warrant any views or opinions offered by the authors of said articles. AUTEL MAXISYS" EV DIAGNOSTICS





 New Every
 Barley Park Test
 Cugatolitic

 JADAS
 Image
 Image

 Maximum
 Image
 Image

 MAXISYS ULTRA
 Image

DETAILED BATTERY PACK DIAGNOSTICS STATE OF CHARGE & STATE OF HEALTH ANALYSIS

SPECIALIZED BATTERY ANALYSIS VIA BMS Detailed Cable Connection Diagrams

POWERFUL HARDWARE

- 12.9' Touchscreen (Ultra)
- Octa-core Processor
- Android 7.0 System
- 4G+256G Storage

INTELLIGENT SOFTWARE

- EV High-Voltage System Diagnostics
- Covers All Functions Of Ultra
- Topology Module Mapping
- Repair Guided Procedures
- Related TSBs / DTC Analysis



EV DIAGNOSTICS UPGRADE KIT

KIT INCLUDES

EVDiag Box & Adapters for Specific Electric Vehicles to Perform Battery Pack Analysis.

COMPATIBLE TABLETS

- MaxiSYS Ultra
- MaxiSYS Ultra ADAS
- MaxiSYS MS919

• MaxiSYS MS909

(Connects to MaxiFlash VCI or VCMI)

SUPPORT: 1.855.288.3587 EMAIL: USSUPPORT@AUTEL.COM | WEB: AUTEL.COM VIEW MARKETING MATERIAL: ISSUU.COM/AUTEL2 FOLLOW US @AUTELTOOLS







SNEAK PEEK

Take a Sneak Peek!

This section features recently introduced automotive tools and equipment. See new products even before automotive technicians read about them in *PTEN* magazine.



OFFERS A SMART CHARGING MODE REACTIONLESS RATCHET ELIMINATES KICK BACK

The **1211MAX Series High Speed Ratchet** from **Ingersoll Rand** features 80 lb-ft of nutbusting torque and produces 625 rpm of free speed—speeds three times faster than its previous generation. The twin hammer reactionless impact mechanism protects the operator's knuckles and fingers from kick back while completing the job. Once it has reached its torque limit, the operator can add a last touch of torque manually using the tool's true ratcheting mechanism. It weighs just over 3 lb. An ergonomic design with a compact, straight-line composite handle and contoured trigger maximizes comfort, control, and accessibility. Available

in 3/8" or 1/2" drive models. ■ For more information, click on "PD e-inquiry" on VehicleServicePros.com



POWERED BY TRITON PLUS KEY CUTTING MACHINE

The XToolUSA Nitrous Key Making **System** contains everything a shop needs to immediately begin making car keys. The system is powered by the Triton PLUS key cutting machine and the AutoProPAD G2 car key programmer, both ensuring dependability and reliability. In addition to the hardware, the system includes all of the keys and remotes for the most common vehicle types shops are likely to encounter on the road, in a compact and convenient package. With free online trainings, year/make/model lookup at nitrouskeys.com, and U.S.-based technical and warranty support, the Nitrous Key Making System may introduce a new and highly-profitable revenue stream to a shop's bottom line.

For more information, click on "PD e-inquiry" on VehicleServicePros.com

STRETCHES UP TO 12.8"

The Titan Professional Tools 3/8" Drive Extendable Ratchet, No. 12069, stretches up to

12.8" for added leverage and collapses to a compact 8.5" for work in confined spaces. The spring-loaded ring locks the handle into four positions, and the low profile flat head keeps dirt out. Features a knurled handle for a sure grip. The ratchet is made out of forged chrome vanadium alloy steel construction and has been heat-treated for durability and strength. The 72-tooth, reversible ratchet provides 5 degrees of handle swing. With a fully polished chrome finish, the ratchet easily wipes clean of oil and dirt.

For more information, click on "PD e-inquiry" on VehicleServicePros.com

FOR PRYING CAR INTERIOR PANELS

The Lisle Corporation Double-Ended Trim Remover, No. 35470, is ideal for prying car interior panels. The heat-treated, alloy steel tool features hardened tips to provide strength and access to panels in tight areas. Double-ended tool with radius on one end and narrow square tip on the other end. For more information, click on "PD e-inquiry" on VehicleServicePros.com



CAPTURES MATERIALS DOWN TO 0.3 MICRONS

The Dynabrade Mega-Raptor Vac is a multi-industry clean air solution with fully integrated features designed to improve an operator's working conditions as well as extend vacuum longevity. Its large 20-gal collection capacity extends time between bag changes, enhancing overall operator productivity and is optimal for a two-operator workstation. Single and dual operator settings assure ample lift and flow performance per operator. Designed only for dry operation, the vacuums offer twostage filtration that captures materials down to 0.3 microns. It also features built-in overload protection that will shut down the system and a reduced air flow indicator that prompts filter, hose, or bag maintenance. For more information, click on "PD e-inquirv"

on VehicleServicePros.com



ASSURES PROPER PISTON INSTALLATION

The **OTC Piston Ring Compressor**, No. 5852, is designed to assure proper piston installation while reducing the possibility of broken rings. The ring compressor has a diameter of 4.589" and works on select Navistar MaxxForce, N9, N10, and 9000 engines. The product dimensions are 13.4" width by 10.6" depth by 7.5" height, and it weighs 8.9lbs. The ring compressor is made in the U.S.A. ■



FOR MORE INFORMATION ABOUT ANY OF THESE PRODUCTS, CLICK ON "PD E-INQUIRY" at VehicleServicePros.com.



FEATURES A WOOD WORKTOP AND 10 DRAWERS

The **Beta Tools RSC28 SuperTank Tool Trolley** features a wood worktop and 10 drawers with ball bearing slides. It has a quick, safe system for opening and closing drawers, and the drawer bases are protected by foamed rubber mats. Other notable features include two centralized safety locks, four high-capacity castors (two fixed and two steering with brakes), four bottle holders (two front and two rear), six side tote trays, a side compartment with foldaway door with lock, and a 5.3" high storage compartment with a plastic-covered base. It has a static load capacity of 2,646 lbs, and is available in three colors.

For more information, click on "PD e-inquiry" on VehicleServicePros.com





BREAKS LOOSE STUBBORN CRANK BOLTS

The **OEMTOOLS Heavy Duty 9mm Crank Bolt Socket**, No. 25290, is designed to easily break loose stubborn crank bolts. Constructed with heat-treated, durable chrome molybdenum steel, the heavy duty impact sockets have more mass for high-torque applications. The socket has a 1/2" drive.

For more information, click on "PD e-inquiry" on VehicleServicePros.com

REPAIRS HEADLIGHT TABS AND OTHER PLASTIC PARTS

The **Polyvance Blockhead Welding Tip**, No. 6032, is designed to work with the company's airless plastic welders to aid in the repair of headlight tabs and other plastic parts. The Blockhead tip is small and narrow, with sharp edges ground into each face to allow the technician to reach into tight spaces and sharp corners. The tip can also be used to repair the "boss tabs" that hold mounting clips on the backside of bumper covers and trim pieces. Made in the U.S.A. with lead-free bronze for high temperature strength and long-lasting use. Its 12-24 NPT thread fits all Polyvance airless heating elements.

For more information, click on "PD e-inquiry" on VehicleServicePros.com



FEATURES A DOUBLE PUMP DESIGN

The **Ascot Supply 3.5-Ton Floor Jack** features a double pump design that allows for quick lifting and improved efficiency. The floor jack is low profile, enabling it to fit in narrow spaces. Its heavy steel construction provides maximum durability. The 3.5-Ton Floor Jack is also equipped with a foot pedal for handsfree positioning. The floor jack has a lift range of 3-3/4" to 21-3/4" and includes a one-year limited warranty.

For more information, click on "PD e-inquiry" on VehicleServicePros.com



BUILT FOR LIGHTWEIGHT DURABILITY

The M12 Heated AXIS Jackets and Vests from Milwaukee Tool are designed to deliver heat built for lightweight durability. Redesigned to reach three times faster heat, these heated products utilize lightweight and durable carbon fiber heating elements to bring comfort and warmth to the jobsite. A hidden battery pass-thru pocket construction allows for front or back battery placement, increasing comfort and flexibility depending on the task. With reengineered AXIS Ripstop polyester fabric and reinforced high-wear zones, the heated AXIS program protects wearers from abrasion and prevents tears from spreading in harsh jobsite conditions.

For more information, click on "PD e-inquiry" on VehicleServicePros.com



ADVANCED NITRILE COATED PALM FOR BETTER GRIP

The Makita Advanced FitKnit Cut Level 7 Nitrile Coated Dipped Gloves are ideal for automotive work. The 10-gauge FitKnit material gives users optimal fit and flexibility as well as increased cut protection. The Nitrile coating on palm and fingers is oil and fluid resistant, with advanced coating on the palm for improved grip. The gloves are ANSI-rated cut level A7, puncture level 4, and abrasion level 3 for added durability and protection. The gloves are also touchscreen compatible and machine washable. ■ For more information, click on "PD e-inquiry"

on VehicleServicePros.com

SNEAK PEEK



IMPROVES USER EXPERIENCE

The Bosch ADS and ADS X 5.0 Software **Update** further improves user experience by granting technicians the ability to access module-specific data stream items and special tests directly from the DTC results screen. The update also allows technicians to sort and search saved reports using filters including year, make, model, and other factors. Additionally, users will be able to increase reporting efficiency by accessing more options when conducting a report. Bosch ADS users with a current subscription can install the updates after automatically receiving the download.

For more information, click on "PD e-inquiry" on VehicleServicePros.com

HAS A TEST RANGE OF 1MA TO 60A DC/AC

The High Accuracy Low Current Clamp Meter, No. 683, from **Electronic Specialties** was developed with new circuitry designed to maximize low current accuracy and zero stability. The clamp is able to measure parasitic drains accurately, efficiently, and with dependable/

repeatable readings. It features a 1mA low reading resolution and can read up to 60A. The 16mm x 18mm clamp opening is large enough to clamp over most negative battery cables. The 683 reads both DC and AC currents, and it detects the current automatically. The clamp can also record up to 99 records for recall later. Unit comes with zippered storage case, manual, and 9V battery.

For more information, click on "PD e-inquiry" on VehicleServicePros.com



OF THESE PRODUCTS, CLICK ON "PD E-INQUIRY" at VehicleServicePros.com.



IS SMOKELESS AND VAPORLESS

The Flo-Dynamics EV Battery Pack Leak Tester, No. LPLT-100, is a multi-purpose, low-pressure leak tester designed to offer rapid and efficient testing for EV battery pack compartments. The smokeless, vaporless unit provides clean, dry, contaminationfree air for testing. The LPLT-100 allows for a technician to connect, test, and provide an accurate leak flow rate on the flow meter. Simply switch the control knob to decay/ off to perform pressure decay testing. It uses shop air, is Ford approved, and offers an optional, high-voltage glove adapter for quick and accurate glove testing. For more information, click on "PD e-inquiry" on VehicleServicePros.com

AVAILABLE IN 110V AND 220V

The Killer Tools Deluxe Steel Dent Puller with Ergonomically Designed Seated Cart, Nos. ART38Special-110DX and ART38Special-220DX, are designed to put the technician in the ideal position to repair the majority of dents. The deluxe unit adds two seat level storage trays, lever pulling, and weld key pulling capabilities to the company's original steel dent pullers. The deluxe dent pullers are available in 110V and 220V, and come with a voltage conversion kit to fit the requirements of the user. Complete with steel electrode dent puller, seated cart, two storage trays, lever puller + electrodes, slide hammer + electrodes, shrinking/wiggle wire electrode, wiggle wire, key weld electrode, weld keys and key bar, and pulling claw. Made in the U.S.A. For more information, click on "PD e-inquiry" on VehicleServicePros.com

COLLAPSIBLE AND EXPANDABLE FOR EASY STORAGE

The Matco Tools 9" Magnetic Collapsible Cup, No. MM9HCUP1, is designed to hold screws, washers, nuts, and bolts. Features a soft magnet bottom base that holds parts inside the

tray as well as holds the tray to ferrous surfaces. The modular clips allow trays to be connected together in order to create sets for larger projects. The cup is collapsible and expandable for easy storage, dishwasher safe, and comes in a green, red, or orange color. For more information, click on "PD e-inquiry" on VehicleServicePros.com



ALLOWS FOR A QUICK, LEAK-FREE REPAIR

The ProMAXX Tool Cylinder Head Repair Kit allows technicians to rescue a botched repair where an attempt to drill out a broken exhaust manifold bolt has penetrated the cylinder head. The kit comes packaged in a convenient case with a precision drill bit, tap, locking fluid, Blind ProSert, and insert tool. The Blind ProSert fits into any 8mm bolt hole, used by most automotive manufacturers, including Ford, BMW, GM, Mercedes-Benz, CDJR, Audi, and many others. The Blind ProSert is hardened steel and black-oxide coated for corrosion resistance. Kit is made in the U.S.A.

For more information, click on "PD e-inquirv" on VehicleServicePros.com

Watch this product in action here: VehicleServicePros.com/21278607

Kokens ratchets and sockets went from the new hot item on my route, to a tool I hand my customers first. The quality and consistency is second to none, and can be trusted by any mobile tool dealer

Ohio USA Mobile Tool Dealer

Now Available **To Mobile Tool Dealers Thru**

MOBIL TOOL NETWORK

COME SEE US MOBILE

Koken Booth #

outh Upper Hall

www.kokenusa.com

South Upper Hall www.mobiletoolnetwork.com

NETWORK Booth #

MOST WANTED

Do YOU stock it?

The following products are among the most requested tools and equipment from recent issues of *PD*'s sister publication, *PTEN*. Perhaps you've already received requests about some of these items. Take a closer look at stocking them.

A Offers two hex sizes in one socket

The **CTA Manufacturing 7-pc Flip Socket Set**, No. 7307, offers two hex sizes in one socket. The half metric sizes are used for the removal of inflated, warped, and mangled chrome-cap style lug nuts found on many GM, Ford, Chrysler, Toyota, Honda, Jaguar, Range Rover, and more. The set includes 17mm x 17.5mm, 18.5mm x 19.5mm, 19mm x 21mm, 21mm x 21.5mm, 22mm x 22.5mm, 22mm x 22.5mm, 27mm x 27.5mm, and 1/2" drive extension.

For more information, click on "PD e-inquiry" at VehicleServicePros.com

Α

C Capable of 45 jump starts on a single charge

The **TOPDON JumpSurge3000** is a 3,000 peak amp jumpstarting tool and power bank for vehicles on and off the road. The device supports vehicles with 12V batteries on up to 9.0L gas engines and 7.0L diesel engines. Capable of 45 jump starts on a single charge, the JS3000 also has a boost function for difficult jumps and provides fast charging for devices such as laptops, cell phones, and more. Additionally, it features a 400 lm LED flashlight, sturdy outer housing that resists water, dust, and wear as well as a Stop Spark Sensor that suspends its use after too many jumps in a 10 minute period.

For more information, click on "PD e-inquiry" at VehicleServicePros.com



B Self-centering nose for accurate assembly

The **Platinum Tech 5-pc Long Taper Punch Set**, No. 99800, has a self-centering nose that aligns holes for accurate assembly. All punches are forged from high-carbon molybdenum tool steel, individually heat-treated, and hardened the entire length with a tempered striking end for durability. The set includes five sizes, including 1/8" point size, 8" overall length; 5/32" point size, 8-1/2" overall length; 3/16" point size, 9" overall length; 7/32" point size, 9-1/2" overall length; and 1/4" point size, 11" overall length. **For more information, click on "PD e-inquiry" at VehicleServicePros.com**



D Securely attaches to ferrous metal surfaces

The Lisle Corporation Spray Gun Holder, No. 49600, securely attaches to ferrous metal surfaces, including spray booth walls, mixing room walls, and workstation cabinets. A magnet keeps the holder from sliding when loaded. The product comes with holes, so it can be mounted to a wall and can also be used to hold other tools. For more information, click on "PD e-inquiry" at VehicleServicePros.com

E Up to 60 ft-lb maximum torque

The **DeWalt XTREME 12V Max Cordless Ratchets** are designed with a glass-filled nylon tool housing that provides resistance to automotive fluids and solvents for use in automotive and other demanding applications. The ratchets are available with 1/4" (No. DCF504), 3/8" (No. DCF503), and 3/8" extended reach (No. DCF503E) square drive configurations, with the 3/8" extended reach model delivering 3.9" greater neck reach versus the DCF503. The 1/4" 12V Max XTREME Ratchets feature a 40 ft-lb maximum torque brushless motor, while the 3/8" Extended Reach Ratchets have a 60 ft-lb maximum torque brushless motor.

F Available in 10 sizes and configurations

The **GEARWRENCH Modular Tool Sets** consist of multi-piece assortments of GEARWRENCH tools, each organized in a sturdy EVA foam tray with high-visibility size markings. The chemicaland solvent-resistant trays are designed in modular sizes to work with the company's GSX cabinets and chests, allowing users to customize their own toolkit and storage system. The sets feature components selected to provide a complete range of specific tools, each nested in a custom laser-formed cutout that protects while keeping tools organized and accessible. The Modular Tool Sets are toolbox ready and come in 10 sizes and configurations from 18-pc sets to 83-pc sets.

For more information, click on "PD e-inquiry" at VehicleServicePros.com

Removable internal compartments

Compartment Inserts contains 15 small containers and five large containers inside to store bits, fasteners, repair kits, and many other things that need organizing. Internal compartments seal to inside of lid, so everything stays in its designated spot, even if the container is flipped upside down, the company says. With a ridged lid and bottom, multiple cases can be stored on top of each other and stay in place. Additionally, the internal compartments are removable, and the case is made of heavy duty polymer.

For more information, click on "PD e-inquiry" at VehicleServicePros.com

G Removes irregularities in flared tubing

The **Koul Tools Surseat P51B Flare Lapping Tool** is designed to remove irregularities in flared tubing, leaving an ideal sealing surface. The tool features an easy-to-use clip mechanism for the interchangeable 37-degrees and 45-degree lap heads to polish steel, stainless steel, and copper tubing. The shape and size of the tool make it easier to work in tight spaces, and the lock-spring system secures the tube seamlessly in the tool's cavity.

For more information, click on "PD e-inquiry" at VehicleServicePros.com

H Able to drill out broken bolts

The **Mueller-Kueps Carbide Milling and Grinding Burrs Set**, No. 297 001/KIT5, is ideal to use with the company's Micro Die Grinder, No. 297 001. The burrs can be used for any steel application, making it easier to drill out hard metals such as broken taps or drill bits. Users can also use them to drill out broken bolts, cut through the outer race of a bearing, grind bumpers, dashboards, and more. **For more information, click on "PD e-inquiry" at VehicleServicePros.com**

J Includes six locking pliers and clamps

The **Malco Products Eagle Grip Locking Tools** are forged from premium American steel to deliver strong and reliable performance. Made in the U.S.A., the tools were designed to meet the rigorous demands of professional users. The line currently consists of six locking pliers and clamps for use in sheet metal, automotive, welding, and agriculture applications. The locking pliers include 7" and 10" straight jaw locking pliers and 7" and 10" curved jaw locking pliers with wire cutter. The clamps include 11" locking C-clamps and 11" locking C-clamps with swivel pads.

Cornwell Quality Tools dealer Casey Cox uses his previous experience as a technician to help his customers find the tools they need. Photo courtesy of Todd Keefover

.

.

RURRIND ANEALS

The Choice of

INS AND OUTS of leak detection tools

Help technicians take the guesswork out of finding leaks.

By Kayla Oschmann , Associate Editor

inding a leak on a vehicle can often leave technicians feeling like they are looking for a needle in a haystack. Leaks are inevitable and can occur anywhere on a vehicle. Having the right tools and knowledge of different leak detection methods will help technicians get the repair done faster, saving them hours of frustration.

Before becoming a mobile tool dealer, Casey Cox worked as a technician and can relate to the pain points of finding leaks.

"From refrigerant leaks to engine oil leaks to emissions leaks, technicians see most of them on a day-today basis," Cox says.

He notes that leak detection tools save a lot of time, keep the cost of the repair down, and take the guesswork out of locating the leak.

"Otherwise, you're just kind of guessing," he says.

Now as a Cornwell Quality Tools distributor for the past four and a half years with a route in the south part of Wichita, Kan., Cox says he has a better understanding of leak detection tools now than when he was a tech.

As a tool dealer, he started messing around with the tools more. It not only makes selling the tools easier but more importantly, it enables him to steer his customers in the right direction to get the right tool for the job.

SMOKE MACHINES

Smoke machines are used to visibly indicate vacuum leaks and smoke leaks in a vehicle. There are two different styles: Low pressure and high pressure.

Low pressure, or EVAP, smoke machines are used in sensitive areas that only see pressures under 1 psi such as EVAP, intake, crankcase, and exhaust systems. These machines are regulated to .5 psi and are designed for naturally aspirated engines. They can also be used to locate vacuum leaks as well as wind and water leaks inside vehicles like around windows, doors, and the dash.

High pressure, or turbo, smoke machines are used in areas that see pressures upwards of 30 psi. They are designed for testing turbo, diesel, and supercharged engines. They allow technicians to simulate boost conditions of a running engine for testing with the engine safely off.

"Technicians cannot see air," says Mark Hawkins, manager of technical solutions, Redline Detection. "On occasion he can hear an air leak, but he can't visualize it."

With all the hoses and plastic protective coverings under the hood, it can be difficult to hunt down a leak in a reasonable amount of time unless you have some kind of visual aid such as a smoke machine, Hawkins says.

A smoke machine works by heating the smoke producing fluid (such as mineral oil) to create steam, or visible vapor.

Once the correct amount of fluid is added to the smoke machine, it is connected to the vehicle to fill the entire system being tested. The technician can then look for any vapors escaping.

One feature that Cox says is popular with his customers is a smoke machine with a built–in air compressor.

"A lot of my guys do side jobs at home and many of them have moved to cordless tools, so they don't have \bigcirc

COVER STORY

an air compressor," he says. "Having a built-in compressor enables them to take it home, or out on a service call. They can also put it on top of the vehicle with its hooked up and raise up the vehicle and not worry about an air hose dragging around."

More recently, manufacturers began offering both low and high pressure testing in one machine.

Redline Detection's SpeedSmoke is one example. It was based off OEM mandated technology used by General Motors, Mazda, Nissan, Jaguar Land Rover, and others. The company decided to take the same technology and develop a version for independent repair shops. In addition to providing dual pressure testing, it also features an onboard air compressor for portability.

In electric and hybrid vehicles, it's important to note that smoke machines cannot be used. The visible vapor produced is a contaminate in these systems. That's why Redline Detection introduced the EV Battery + Coolant Leak Detector.

It's designed to connect to the battery enclosure on or off the vehicle and ensures that battery enclosures and coolant systems are sealed under precise pressures, specific to the battery and vehicle type.

It also provides audible and visual progress cues and pass/fail indication when testing is complete.

Selling tips

Smoke machines are one of those items that if customers don't see it on the truck, they won't buy it, Cox says.

"Smoke machines are a bigger purchase," he adds. "It's easier for them to commit to it when it's on the truck."

Generally, a technician will come to him looking for one. If they're unsure about which style of smoke machine to get, Cox will first inquire about the leaks they're dealing with – whether more EVAP leaks, intake leaks, engine leaks, or something bigger – and then



Redline Detection's SpeedSmoke features an onboard air compressor and can handle both low and high pressure testing. Photo courtesy of Redline Detection



Technicians testing an intake manifold leak using a smoke machine. Photo courtesy of Redline Detection

figure out which unit is best for them.

When purchasing a smoke machine, technicians should consider the quality of the tool, its warranty, availability of replacements parts, and whether it offers service support in case they have questions, Hawkins says.

Additionally, smoke machines often don't come with all the adapters needed,

which can be frustrating for technicians in the middle of a repair. For a mobile tool dealer, this can be a great opportunity for an easy add-on sale.

FLUORESCENT DYES

Fluorescent dyes, or UV dyes, detect leaks in fluid-based systems such as A/C systems with compressor oil,



Smarter Diagnostics Extended Capability





- 13.3" Full Touch Screen
- 8GB+256GB Storage Memory
- Pre/Post Scan & ADAS Calibration
- 8 Expanded Modules Diagnostic
- Passenger Cars & Heavy-Duty Vehicles Repairs



X-431Throttle III

- Anti-Theft/Keyless Entry Procedures
- Battery Replacement Procedures
- Computer Relearn Procedures
- Diagnostic Trouble Codes
 AND MORE

2

Smartlink

🕨 f in @LaunchTechUSA



Fix Complex Electrical Faults on OE Level Diagnostics

02-1 Scopebox

-AUNCH

For more information, click on "PD e-inquiry" at VehicleServicePros.com

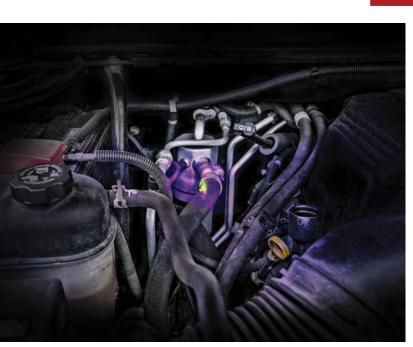


www.launchtechusa.com

INCLUDED

🔇 1-877-528-6249

COVER STORY



There are three major fluorescent dyes: Coolant dyes, oil-based dyes, and A/C dyes. Photo courtesy of Tracer Products



FOR MORE INFORMATION ABOUT ANY OF THESE PRODUCTS, CLICK ON "PD E-INQUIRY" at VehicleServicePros.com.

coolant systems, radiator systems with coolant, and in engine–based oil fluids (engine oil, transmission oil, fuel, and power steering fluid).

Like smoke machines, adding fluorescent dyes to a system enables technicians to visually see a leak.

"It's very easily distinguishable," says Jack Kelly, vertical marketing strategist, automotive, Tracer Products. "And you don't need a lot of training."

There are three major fluorescent dyes: Coolant dyes, oil–based dyes, and A/C dyes.

When using a coolant dye, which are now available in various colors, it's important to make sure that it doesn't affect the color of the original coolant, Kelly notes.

"When technicians look under the hood and at the coolant reservoir, one

PRODUCTS TO STOCK



16 Professional Distributor | October 2022 | VehicleServicePros.com

of the first things they do is look at the color or clarity of the coolant," he says.

For oil-based dyes, since a leak could spread across different systems technicians can use multi-colored dyes to pinpoint the exact source of the leak.

As for A/C dyes, there are three types: R-1234yf/PAG, R-134a/PAG, and universal/ESTER.

If a vehicle is within warranty and is being serviced by a dealer– ship, Kelly says they will typically go with the R–1234yf or R–134a for the specific system. However, there are some shops that will only want the universal A/C dye on hand and not deal with the others.

Once a dye is added to a system, it stays within the system until the host fluid is replaced.

When adding fluorescent dyes to a system, it's important to make sure it's up to SAE standards and it's fully compatible with the system, Kelly advises.

"A well-trained technician will first want to make sure it adheres to industry standards," he says. "[And] that it's not going to have any ill effect on the components being serviced."

Selling tips

Since most vehicles today come with dyes already in various systems, Cox tends to sell more UV lights and glasses than he does kits. He always likes to keep a few different options on the truck even though he sells more in the summer months.

"It's critical for technicians to use a light that has an even and broadly distributed intensity profile," Kelly notes. "UV leak detection is very popular but if you're not using the right wavelength or it doesn't have a great area of focus, then the method itself is going to be less than optimal."

The Opti–Pro UV Max Series from Tracer Products feature Spot Power, a metric to gauge lamp performance.



The AST300PPM from INFICON can detect both R-1234yf and R-134a refrigerants. Photo courtesy of INFICON

Spot Power is the area within the beam profile that is optimal for activating fluorescent dye. The flashlights also have an adjustable focus lens, a strobe light mode, and a 30' to 35' range.

Kelly recommends mobile tool dealers to dab a little LeakFinder oil dye on a piece of paper and place it at the other end of the truck. Then use the Opti-Pro UV Max to show the customer the fluorescents.

It's also important to make sure your customer has the right adapter to service R-1234yf A/C systems. It's usually included in a kit but can be sold separately.

ELECTRONIC LEAK DETECTORS

There are two categories for electronic detectors: Refrigerant and ultrasonic leak detectors.

Electronic refrigerant leak detectors

are very specific for finding A/C leaks. Unlike the other methods mentioned so far in the article, technicians will hear a beep or noise when a leak has been detected.

"An A/C system leak is very different than say an EVAP leak that a smoke machine would use," says Matt Farel, worldwide sales manager, automotive aftermarket, INFICON. "[An A/C] leak is a leak under pressure that's going to leak about 1 or 2 oz. a month. It's a very minuscule leak but will create a huge problem."

With no prep work involved, an electronic refrigerant leak detector is easy to use. Simply turn the tool on, wait for it to warm up, and then run the tool along the components, following the noise.

It works by pulling an air sample into and across a sensor. If the sensor reacts with refrigerant, it'll create a sound.

COVER STORY



Cox enjoys helping customers take the guesswork out of finding leaks by showing them their options.

The tool has a probe that can fit into a tight engine cavity. Because it creates an air flow, it can pull an air sample from an area allowing technicians to "see" the backside of a component compared to visual methods like dyes, Farel notes.

There are two primary sensor types in electronic refrigerant leak detectors: Chemical reaction/CMOS sensors and infrared sensors.

Infrared sensors tend to last longer, are less prone to cross-contamination, and are more sensitive, Farel says.

The AST300PPM from INFICON is an example of one that utilizes an infrared sensor. It's able to detect both R-1234yf and R-134a refrigerants and features a large, full-color LCD display. It also offers a leak seeking mode (beeps louder/lights flash as you get closer to the leak) and can tell you the size of the leak in parts per million (PPM).

When it comes to a really hard-tofind refrigerant leak, Cox says electronic refrigerant leak detectors work very well.

The only downside is the chance of getting the tip of the probe contaminated such as if it brushes up against a hose that has oil on it, he notes.

Cox makes sure to always stock at least one on the truck. It's not a high moving item, but it's one of those that when a technician needs it, he needs it now, he says.

Ultrasonic leak detectors can be used to find air brake leaks, intake leaks, exhaust leaks, vacuum leaks, air leaks (including tire leaks), and electronic leaks.

The tool emits an ultrasonic sound and then converts it into a natural

sound that the technician can hear, Tracer Products' Kelly says.

"Depending on the application, there's a variety of different sounds," he says. "For electronics, you might hear static and for a compressed air leak you would hear a hissing sound."

It could also be used for A/C leaks if there was refrigerant leaking from the system and there wasn't UV dye.

Selling tips

Most electronic refrigerant leak detectors over the years have been converted to work with both R-1234yf and R-134a. However, Cox says that is something customers need to be aware of – that the tool can do both, especially as more and more shops are adapting to R-1234yf.

Farel agrees. Making sure the tool is SAE 2791 (R–134a) and SAE J2913 (R–1234yf) certified is important. That means it has been tested for automotive use.

A feature hitting the market to be aware of is the integration of UV lights. Since most new vehicles come with dye pre-loaded in the A/C system, some electronic refrigerant leak detectors now have built-in UV lights, Farel adds.

CONCLUSION

As Cox previously stated, leaks are a common occurrence technicians face every day. If not done properly, the shop not only risks comebacks but also loss in revenue and an unhappy customer.

Since there's not one universal leak detection tool to find every type of leak, oftentimes more than one method may be needed for the repair, depending on the application.

Product knowledge is one thing, but it's also about helping your customers however you can.

"I always like knowing what my customers are looking for," Cox says. "I don't want to push them in a direction that they don't need to go in." AUTEL MAXITPMS

F*9*NN

LASER MEASUREMENT & TIRE TREAD DEPTH ANALYSIS ON TOOL

5/2

21/7

E De

TBE200 INTELLIGENT LASE

6

 \oplus

TIRE TREAD DEPTH MEASUREMENT

BRAKE DISC WEAR Measurement

0.1MM LASER ACCURACY

TOUCHSCREEN DISPLAY >

WHEEL REMOVAL FOR MEASUREMENT NOT NEEDED!

ITSGOO DIAGNOSTICS B SERVICE

- THE ONLY TPMS MANUFACTURER TO OFFER A-

- 5.5" Touchscreen Tablet with Android 9.0 OS
 - Optical Scanner Identifies VIN / MMY

RVICF

RF inch

10/32

> 138ft

4/32

4/32"

171ft

Braking distance (80km/h-Wet road)

- Four Service Resets OLS, BMS, SAS and EPB
- On-Tool DOT Tire Registratrion
- FREE Wi-Fi Software Updates for Life Of Tool

-SENSOR DUAL FREQUENCY

- Programmable Universal TPMS
 99% Vehicle Coverage
- 99% venicle Coverage
 Exclusive Press Release Button

✓Tire tread

inch

10/32

10/32

9/32

10/32

10/32

9/32

701

4/32

4/32

4/32

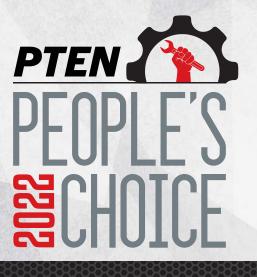
- Interchangeable Valve Stems

SUPPORT: 1.855.288.3587 EMAIL: USSUPPORT@AUTEL.COM | WEB: AUTEL.COM VIEW MARKETING MATERIAL: ISSUU.COM/AUTEL2 FOLLOW US @AUTELTOOLS









ow for the eighth year, we asked our readers to weigh in on the *PTEN* Innovation Awards. Named the 2022 *PTEN* People's Choice, the following pages feature the top 24 products selected by our readers, per product category, that were originally nominated for the 2022 *PTEN* Innovation Awards.

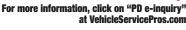
Hunter Engineering

Quick Check Commercial Autonomous Inspection System The Hunter Engineering Quick Check Commercial Autonomous Inspection System is an unmanned alignment and tire tread inspection system designed to measure camber, total toe, and tandem axle scrub for commercial vehicles. The system provides instant and automatic touchless alignment and tread depth results on all axles for all trucks, using 40 optical and laser sensors to provide easily comprehensible 3D tread depth models that can be displayed on a large video monitor. Since the unmanned system requires only driving the vehicle between the towers, trucks can be cycled through continuously without operator time or labor, providing actionable data affecting fuel economy and tire life. Quick Check Commercial supports multi-trailer configurations, dual axles and super-single tires, as well as full size and medium duty trucks.

CATEGORY: Inspection Tools & Lab Scopes For more information, click on "PD e-inquiry" at VehicleServicePros.com

Mechanic's Time Savers Switch Cart

The **Mechanic's Time Savers Switch Cart** can be opened by sliding or flipping open, allowing users to utilize the top as a work surface while still being able to access their tools by sliding open. The cart measures 36" in width by 26" in depth by 45" in height. The top lid has 175-lb slides, the three drawers have 125-lb slides, and the lift-latch drawer pulls. The cart has 6" casters, heavy duty construction, and a power strip. It's available in three trim colors: black, red, and yellow. *CATEGORY: Tool Storage*







Snap-on

EEAC334B Polartek Dual AC Machine

> The **Snap-on Polartek Dual AC Machine**, No. EEAC334B, is able to measure both R-134a and R-1234yf refrigerants with a simple push of a button. The unit handles both refrigerants with dedicated 30-lb tanks, removing the risk of cross-contamination and making it easy to get repeatable and accurate results without doubling work or cost. The machine's built-in Wi-Fi capabilities and

graphic touchscreen enable technicians to efficiently maneuver through selections and a large status light helps monitor progress from afar while completing other tasks.

CATEGORY: Air Conditioning Service For more information, click on "PD e-inquiry" at VehicleServicePros.com





Autel

MaxiSYS MS909CV Commercial Vehicle Diagnostics Tablet The Autel MaxiSYS MS909CV Commercial Vehicle Diagnostics Tablet is compatible with more than 80 models of light, medium, and heavy duty vehicles. With a 9.7" wireless, Android-based touchscreen, it performs extensive diagnostics, including the ability to read/erase codes, view and graph live data, and perform active tests. The tablet includes a Bluetooth-enabled VCI/J2534 Pass-Thru programmer, MaxiBAS B200 battery starting/charging system test device, and a multimeter. The tablet also includes ADAS calibration software for Class 3 to 5 vehicles and Class 6 to 8 vehicles with dynamically calibrated systems. The MS909CV includes one year of free software updates.

CATEGORY: Heavy Duty Scan Tools

For more information, click on "PD e-inquiry" at VehicleServicePros.com



Ingersoll Rand

1" Cordless Impact Wrench, No. W9691

The **Ingersoll Rand 1**" **Cordless Impact Wrench**, No. W9691, is designed to increase safety and productivity with cordless mobility eliminating hoses and tripping hazards. It features a brushless motor, 3,000 lbs of torque and an IP56 rating. The IQV20 batteries perform up to 250 bolt removals and installations in a single charge. An ergonomic D-handle with a 360-degree auxiliary rotates fully around the tool as the job demands. It also features a 6" anvil to provide additional flexibility. Full-power reverse, and three additional power modes allow for greater control, preventing over-tightening and stripping.

CATEGORY: Power Tools

For more information, click on "PD e-inquiry" at VehicleServicePros.com



Carlyle Tools by NAPA

Dual Charging Wireless Lighting System

The **Carlyle Tools Dual Charging Wireless Lighting System**, No. MWCP2, is designed to charge up to two wireless charging-capable accessories at once. The charging pad is equipped with an advanced QC3.0 Power+ charging system and 5V2A max output 10W charger and is intended for use with optional QC 3.0 max output 18W smart charger for faster charging. It includes a retractable phone holder for use with most wireless charging compatible phones. Strong magnets are also included to enable mounting to most clean, flat, metal surfaces, and screw holes have been incorporated if wall mounting is preferred.

CATEGORY: Lighting For more information, click on "PD e-inquiry" at VehicleServicePros.com



ESAB

EMP 210 MIG/Stick/TIG Welder

The **ESAB EMP 210 MIG/Stick/TIG Welder** is lightweight and offers dual-voltage input power flexibility, offering ideal portability for around the shop. The multi-process MIG/flux cored/stick/lift TIG welding system has a 10-200A output, a stable Lift TIG arc at low amperage for finesse welds, and the power to run Stick electrodes up to 5/32", including 7018. Additionally, it features a large easy-to-read LED display with digital controls for fast and accurate operation and can run off a generator with a 10 kVA output.

CATEGORY: Welding





Bosch

SMT 500 Leak Tester

The **Bosch SMT 500 Leak Tester** is designed to find all kinds of leaks in automotive applications including vacuum, EVAP exhaust, oil, manifolds, EGR valves, seals, gaskets, brake vacuum hoses, cooling systems, wind and water leaks, and more. Utilizing an on-board micro air compressor, the SMT 500 eliminates the need for an external compressed shop air source so technicians can quickly diagnose, locate and repair leaks whether the repair job is across the service bay or across town. The variable flow control and OEM-approved smoke agent can help detect leaks as small as 0.01" in low pressure sealed systems.

CATEGORY: Diagnostic Equipment

For more information, click on "PD e-inquiry" at VehicleServicePros.com



Autel

MaxiSYS MS906PRO and MaxiBAS BT506

The **Autel MaxiSYS MS906PRO and MaxiBAS BT506** together offer diagnostics and battery analyzation functionality. The MS906PRO is an advanced tablet that performs extensive vehicle diagnostics including an all system AutoSCAN with ADAS identification, read/ erase codes, view freeze frame, and live data. Bidirectional controls including active testing, coding, and adaptations are also included. The BT506 is a battery and electrical system analysis tool that uses adaptive conductance to produce a more accurate examination of a battery's cold cranking ability and reserve capacity. Users can view the battery's and electrical system's health status using the free mobile app.

CATEGORY: Automotive Scan Tools

For more information, click on "PD e-inquiry" at VehicleServicePros.com

Hunter Engineering

Collision Alignment System The Collision Alignment System from Hunter Engineering Company features a diagnostic workflow designed specifically for collision shops. At the heart of the Collision Alignment System is Hunter's

CATEGORY: Body Shop



WinAlign17 software. Collision Alignment automatically guides the technician through a workflow of five essential diagnostic measurements, blueprinting the full alignment before work begins. The five measurements are toe out on turn, maximum steer, ride height, suspension body dimension audit, and steering axis inclination.

For more information, click on "PD e-inquiry" at VehicleServicePros.com



Snap-on

40" SubStation Four-Drawer Power Cart, No. KHP415

The **Snap-on 40" SubStation Four-Drawer Power Cart**, No. KHP415, is designed to be a charging substation for any rechargeable tool, providing quick access and easy maneuverability. The lockable top compartment measures 40" width by 20" depth by 11" height. With a slight push, the lid opens revealing its 120V power strip and organization space for 10 power tools and five battery packs. Techs can organize accessories in its 4" SpeeDrawer with customizable dividers. A 15' cord and custom-mounted cord-wrap provides power access. An 8" bottom drawer holds large power tools and the 6" vibration absorbing casters stabilize the cart. *CATEGORY: Tool Organization*





KNIPEX

TwinGrip Pliers

The **KNIPEX Tools TwinGrip Pliers**, No. 82 01 200, are a five-adjustment push-button slip joint pliers. The pliers offer a gripping capacity for diameters and widths across the flats from 5/32" to 7/8" with just the push of a button as well as front and side gripping areas. The front gripping area is ideal for gripping stripped screws and bolts while the jaws of the side gripping area feature opposing teeth that allow the TwinGrip to grip round, square and hex materials with maximum force.

CATEGORY: Hand Tools

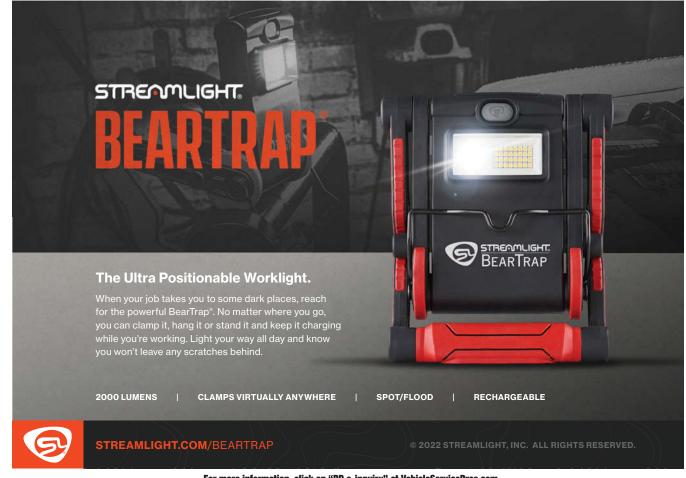
For more information, click on "PD e-inquiry" at VehicleServicePros.com

Snap-on

14.4V Mini Right Angle Cordless Drill, No. CDRR2005 The **Snap-on 14.4V Mini Right Angle Cordless Drill**, No. CDRR2005, weighs just 2 lbs and features a small surface head for maximum accuracy when working in tight spaces. Its cushion-grip handle and LED makes it easy to navigate while the onboard battery gauge indicates the need for a charge. The mini right angle accepts 1/4"-28 threaded bits and accessories. Its technology includes low runout for smooth and precise drilling, plus is has improved torque to weight ratio and motor life.

CATEGORY: Specialty Tools

For more information, click on "PD e-inquiry" at VehicleServicePros.com







Hunter Engineering

ADASLink Diagnostic Scan Tool

The **ADASLink Diagnostic Scan Tool** from **Hunter Engineering** features ADAS calibration and secure FCA gateway capabilities. This complete solution integrates with Hunter's WinAlign software, providing the technician with quick access to specific calibration procedures for more than 25 million vehicles. ADASLink guides the technician with step-by-step onscreen instruction, ensuring the calibration is completed accurately and according to OE requirements. The tool also provides thorough pre- and post-scan insurance documentation through HunterNet 2. Dynamic calibrations are supported by ADASLink alone, while ADASLink combines with the DAS3000 for static calibrations, using built-in cameras and rear wheel-mounted targets to remove the need for string, plumb bobs and tape measures.

For more information, click on "PD e-inquiry" at VehicleServicePros.com

Lawson Products

Torrent Parts Washer

The Lawson Products Torrent Parts Washer combines the tripleaction cleaning power of heat, chemistry, and pressure. It uses a



water-based, solvent-free surfactant blend, reducing employee risk while cleaning 90 percent of parts within one minute, according to the company. The aqueous cleaning solution is heated to 131 degrees F, activating the aqueous cleaners and loosening oils and greases. The cleaning chemistry produces zero VOCs and leaves behind a rust inhibitor for maximum protection of parts. Then, tough deposits are blasted away by pressure. A notable feature is that the pressure and solution can be directed by the user where needed. CATEGORY: Shop Equipment For more information, click on "PD e-inquiry" at VehicleServicePros.com



Snap-on

Phantom Auto-Darkening Welding Helmet with Light, No. WELDIGNPHNTM

The **Snap-on Phantom Auto-Darkening Welding Helmet with Light**, No. WELDIGNPHNTM, features a compact design to fit into tighter workspaces and offers a 180-degree viewing area with 10 peripheral-vision enhancing side lenses. The helmet's true color technology is brightened with a multi-function, pivoting, flip-out light that can be used when the helmet is raised or lowered and fully integrates into the contour of the helmet when not in use. Extralarge, four-sensor ADF is solar-powered with a lithium battery backup and a patented user-friendly, quick-adjust push button ensures welders have a comfortable fit.

CATEGORY: Safety & Personal Gear

For more information, click on "PD e-inquiry" at VehicleServicePros.com



Hunter Engineering

BL Brake Lathe Tablet

The **Hunter Engineering BL Series Bench Lathe Tablet** enables operators to look up the vehicle and access the specifications immediately. The tablet then calculates the distance between the cutting bits on the lathe and compares it live to the specifications, signaling the operator if the rotor or drum is safe to resurface. With a user-friendly display and multilingual interface, the tablet provides information on the depth of cuts, speeds and settings, as well as data such as bore size, lug nut torque and stud type, onboard training videos, text, and animations. After a certain number of cuts, the BitMinder function reminds the user when it's time to rotate the bits. *CATEGORY: Brake Service*



EXAIR Corporation

VariBlast Precision Safety Air Gun The Exair VariBlast Precision Safety Air Gun with Nano Super Air Nozzle is a CE compliant lightweight air gun with an engineered variable flow trigger able to produce variable force upon a target simply by pulling the trigger. The air gun has a builtin full finger trigger, convenient hanger loop, and its body is made of high impact, glass reinforced nylon. It's available with a standard 12" or 20" extension, which can also be outfitted with an impact resistant polycarbonate chip shield. The 1/4 NPT air gun produces 75 dBA noise level and the Nano Super Air Nozzle requires only 8.3 SCFM, and is made of Type 316SS or PEEK thermoplastic.

CATEGORY: Air Tools

For more information, click on "PD e-inquiry" at VehicleServicePros.com

Snap-on

SODC1 Soldering Clamp The Snap-on Soldering Clamp, No.

SODC1, features a small design, allowing it to fit into tight spaces so technicians can use both hands to solder without the worry of

misaligned and shaky wires. The lightweight aluminum tool won't tug on wires and two spring-loaded clamps offer a wide range wire capacity from 22 to 8 gauge, says the company. The convenient, nearby thumbwheel offers quick loading, unloading, and adjustments while precisely bringing wire ends together.

Snap-on

SODC1

CATEGORY: Tool Accessories

For more information, click on "PD e-inquiry" at VehicleServicePros.com

ASSOCIATED The Battery Chargers Professional Technicians TRUST





IBC6008MSK

- Safely charges ALL 12V EFB (Start-Stop), AGM, Lithium, Gel and SLA battery types
- Customize battery charging profiles with adjustable voltage and adjustable amperage by type
- Built-in reflash power supply and memory saver port with 12 ft. OBDII cord
- Patented Intellamatic[®] smart charger analyzer technology with battery rejuvenation
- Partial Charge mode for busy shops
- Energy efficient and OE manufacturer approved
- Legendary power and generational quality
- "Safe in any weather" operation



6006AGM/6009AGM/6012AGM

- Upgraded "tried and true" heavy duty chargers with setting for AGM batteries
- Improved energy efficiency
- · Legendary power and quality

AMERICAN MADE, FAMILY OWNED | #IWANTTHEBLUEONE

5043 Farlin Ave., St. Louis, MO 63115, 800-949-1472, www.associatedequip.com Visit us at AAPEX Booth 4826



<text><text><section-header><text>

ALLDATA Instructor Toolkit

The **ALLDATA Instructor Toolkit** is a resource for automotive and collision career and technical education (CTE) programs. The Instructor Toolkit was developed in partnership with the ASE Education Foundation and aligns 100 percent with ASE standards. The toolkit includes clear, step-by-step instructions, goals, and objec-

tives; tasks for students that mirror the Task List at the end of the ASE Standards guide; and vehicle examples (specific to year/make/ model/engine) and navigation path to the required information. CATEGORY: Training

For more information, click on "PD e-inquiry" at VehicleServicePros.com



For more information, click on "PD e-inquiry" at VehicleServicePros.com



SmartWeight Elite Wheel Balancer

The **Hunter Engineering SmartWeight Elite Wheel Balancer** is designed for maximum speed, efficiency and accuracy. The SmartWeight Elite replaces typical dataset arms with diagnostic lasers that automatically scan the entire inner rim, providing precise locations for weight placement, including anywhere along the wheel, rather than only the left or right planes. The balancer's automatic functions include measurement and dimension entry; inside rim runout to identify bent wheels; spoke locations to conceal weights; and CenteringCheck to ensure the wheel is properly centered on the shaft. SmartWeight offers single-weight solutions more often than any other balancer, reducing weight usage and increasing ride quality.

CATEGORY: Tire & Wheel Service

For more information, click on "PD e-inquiry" at VehicleServicePros.com

Snap-on

12V Engine Starter Plus with AGM, No. EEJP700

The **Snap-on 12V Engine Starter Plus with AGM**, No. EEJP700, is a rotary switch engine starter designed to make jobs easier for any automotive technician by connecting and starting 12V vehicles with no sequencing required. For added safety, it can

also detect reverse polarity. The case features convenient magnetic holders for clamps that have crank assist of 550A from a high output sealed 33 Ah AGM internal battery. It also features a USB charging port, an easy-to-use interface, field replaceable battery, and long reach 65" high flow 2-gauge welding wire cables.

CATEGORY: Battery Starting & Charging For more information, click on "PD e-inquiry" at VehicleServicePros.com







Rislone

Cat Complete Fuel, Exhaust, and Emissions System Cleaner, No. 4720

The **Rislone Cat Complete Fuel, Exhaust and Emissions System Cleaner**, No. 4720, is an easy-toinstall, cost-effective chemical solution to help customers pass emissions smog tests, turn off check engine lights, clear OBD codes, improve vehicle performance, and save gas. Simply add to half a tank of gas to clean the

vehicle's entire fuel, exhaust and emissions system. Cat Complete uses a proprietary blend of heavy duty detergents and solvents to remove contaminants, soot, carbon build-up, and oily residue from the fuel injectors, combustion chambers, turbo, catalytic converters, oxygen sensors, and exhaust.

CATEGORY: Chemicals

For more information, click on "PD e-inquiry" at VehicleServicePros.com

TOOLS

Hunter Engineering

HunterNet 2 Multi-Store View The HunterNet 2 Multi-Store View from Hunter Engineering is designed for undercar service operators with multiple rooftops. It



811

AIRTAR

allows operators to access actionable performance data for all their Hunter-connected equipment from across the entire organization, in one place, from anywhere, at any time. Managers can analyze trends and rank all the stores in their network by individual activities such as alignments or number of tires changed, as well as track equipment ROI in real-time. Shops can also view all Hunter assets by age, and thereby plan for capital investments across the network. Additionally, organizations may also easily compare opportunities from inspections verse actual services performed, such as alignments, tire changes, balances, and brake work.

CATEGORY: Automotive Software

For more information, click on "PD e-inquiry" at VehicleServicePros.com



1/4" 30° Flex Head Ratchet

- 🎲 35 ft-lb Maximum torque
- 🕐 240 RPM Free Speed
- 🐮 Ergonomically designed housing
- Feather trigger for control
- 🕆 Patented quiet tuned exhaust (76 dBA)

AIRCAT.com | (888) 4-AIRCAT

FOR

Cergochair





ROLLING CREEPER SEAT CONVERTS FROM HIGH TO LOW

The **ergochair**[™] is the adjustable height rolling work seat which will make performing awkward work tasks ergonomically easier and safer. This comfortable creeper seat offers a full range of mobility, increased productivity, and reduced fatigue. To Learn more visit bendpak.com/ergochair



ergochair



TRANSFORMS COMFORTABLY FROM CREEPER TO **UPRIGHT SEAT**



Cergochair®

í De

ALL THE TOOLS YOU NEED IN ONE PLACE!





or visit www.wrenchers.com

Shop Equipment | Automotive Tools | Car Lifts | Wheel Service Ask about our price promise guarantee.



For more information, click on "PD e-inquiry" at VehicleServicePros.com

1-800-261-7729 © 2022 Wrenchers LLC. All Rights Reserved.

PRODUCT IN FOCUS

SELLARS TOOLBOX Z400 Big Grip Dispenser of Shop Towels

The TOOLBOX Z400 Big Grip Dispenser of Shop Towels is ideal for work sites, mobile operations, and shops.

APPLICATION

The Sellars TOOLBOX Z400 Big Grip Dispenser of Shop Towels is ideal for cleaning up grease, grime, dirt, oils, and spills. The multi-purpose towels are durable enough for the toughest jobs, yet soft enough for user's hands or face.

MANUFACTURING SPECS

The dispenser is made in the U.S.A. The blue shop towels are made with 40 percent postconsumer recycled fibers (based only on the product's fiber content, which represents a minimum of 85 percent of the total product weight), meeting the EPA comprehensive procurement guidelines for minimum postconsumer waste.

FEATURES AND BENEFITS

- Have become the go-to option for tough messes in the garage, shop, or home.
- Ideal for cleaning up grease, dirt, oils, and spills.
- Unique dispenser can be carried to anywhere it's needed.
- Big Grip refills available.

ORIGIN

The mountable and portable TOOLBOX Z400 Big Grip Dispenser of Shop Towels was designed to keep towels clean and dry indoors and out. The company wanted to offer users a new level of convenience of shop towels at any job, anywhere.



To watch a video demonstration of this product, visit: VehicleServicePros.com/21271789

VEHICLESERVICEPROS



SELLING POINTS

- Dispenser is water resistant, durable, and refillable.
- Offers versatility: Carry along or store on the mount.
- Ideal for work sites, mobile operations, and shops.
- TOOLBOX Shop Towels are designed for cleaning up grease, grime, dirt, oils, and spills.
- The multi-purpose towels work like cloth at a fraction of the cost of bulk shop rags.

STORAGE AND DISPLAY

The TOOLBOX Z400 Big Grip Dispenser of Shop Towels is shipped in a box with two dispensers per package. The dispenser comes with a mounting bracket so it can be placed on the wall for both local usage and storage. It can then be easily removed and carried to jobsites for remote use.



Contact Sellars at 1-800-237-8454 or customerservice@sellars.com.



MILWAUKEE TOOL M12 Underbody Light, No. 2126-20

The M12 Underbody Light provides handsfree lighting where light sources are difficult to reach, such as underhood or underbody applications.



APPLICATION

The M12 Underbody Light is designed to deliver handsfree lighting to automotive applications where light sources are difficult to reach, such as underhood or underbody applications. The extended reach arm and degrees of articulation allows the tool to be mounted behind and out of the way to decrease shadows cast between the tech and his work.

FEATURES AND BENEFITS

- Saves technicians time by providing maneuverability and handsfree lighting.
- Can be mounted to any magnetic metal and articulated to any position to mitigate shadows that may come between the tech and his work.
- The 12" magnetic storage tray holds nuts and bolts, allowing technicians to securely put down loose hardware and avoid time spent looking for missing parts.
- When paired with a M12 REDLITHIUM XC4.0 battery, the tool can deliver up to 15 hours of lighting on low or five hours on high to provide all-day runtime on a single charge.

ORIGIN

Milwaukee Tool is dedicated to understanding issues and frustrations for automotive professionals. While observing technicians working under vehicles, they noticed the techs would commonly hold a flashlight in their mouth or spend time propping up a flashlight to illuminate their workspace, all to keep both hands free to do the determined repair. They also noted them making multiple trips back and forth from their toolbox to grab a different tool or spending valuable time searching where they placed a nut or bolt in the repair process. The company took these observations and worked with their design team to develop a solution, the M12 Underbody Light.

MANUFACTURING SPECS

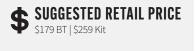
- Tool is researched, developed, and engineered in the U.S.A. Made in China.
- Lumens: 1,200/800/600
- Run-time: 5 hr/8 hr/15 hr
- IP54 rated
- 6' drop rated
- Chemical resistant to most chemicals found in a shop
- Weight: 2.95 lbs

SELLING POINTS

- Has a magnetic base for mounting to lift or metal frame on vehicle.
- Swivels 300 degrees horizontally and up to 180 degrees vertically.
- Includes 12" magnetic storage tray to hold nuts and bolts.
- Offers 1,200 lm of TRUEVIEW
 high-definition output.

STORAGE AND DISPLAY

Item ships individually in boxes; one unit per box. Stacking the boxes on the truck is recommended.





POWER PROBE DM500MAX

The DM500MAX is particularly suited to the wide variety of electrical systems found on modern vehicles – low voltage circuits, high voltage circuits, sensor and data circuits, and more.

APPLICATION

The DM500MAX is particularly suited to the wide variety of electrical systems found on modern vehicles – low voltage circuits, high voltage circuits, sensor and data circuits, and more. The DM500MAX has the test functions and ranges to cover any test situation with safety in mind.

FEATURES AND BENEFITS

- LoZ voltage readings: prevents false reading from ghost voltage
- High frequency rejection (LPF): Accurate readings of noisy/dirty waveforms.
- dBm/dB measurement: Useful for audio system settings.
- Probe alarm: Alerts user for proper probe connections.
- Temperature readings: Celsius or Fahrenheit displayed (probe included).

To watch a video demonstration

VehicleServicePros.com/21274022

/EHICLESERVICEPROS

of this product, visit:



SELLING POINTS

- High-functioning multimeter with 0.03 percent accuracy at a value price.
- 1000V CAT III rating safe for EV, hybrid, and high voltage testing.
- Dual reading display with analog bargraph display.
- Stores and recalls readings plus data logging via PC connection allowing data graphing.
- Included accessories 5' leads, alligator clip adapters, hanging strap, temp probe, and USB cable.

MANUFACTURING SPECS

The product is produced in Taiwan in MGL's Manufacturing facilities and offers a two-year warranty. The multimeter is 8.75" tall by 2.5" wide by 7.13" long and weighs 2.8 lbs.

ORIGIN

With hybrid and EV battery voltages steadily increasing (now approaching 800VDC,) along with the growing complexity of vehicle computer controls and sensors, Power Probe found the need for a professional-level multimeter that can safely handle both high voltage circuit testing as well as test and measure low voltages and complex waveforms with reliable, repeatable reading accuracy.

STORAGE AND DISPLAY

The multimeter is shipped in a cardboard package.







KNIPEX CutiX Universal Snap Knife

The CutiX Universal Snap Knife, No. 90 10 165 BKA, features an extendable stabilization bar that keeps the blade from bending for quicker cutting.

> With stabilization bar

APPLICATION

The KNIPEX CutiX Universal Snap Knife can be used in just about any cutting application where a utility knife can be used, including box cutting, plastic band cutting, and more.

FEATURES AND BENEFITS

- Two separate sliders one for blade and one for stabilization bar.
- Uses standard 18mm snap-off blades.
- Blades can be easily replaced without tools with just a push of the button.
- Lightweight magnesium housing with non-slip gripping surfaces.
- Two spare blades stored in the handle.
- Tether attachment point can be used with the KNIPEX Tethered Tools System.

To watch a video demonstration of this product, visit: VehicleServicePros.com/21275084

VEHICLESERVICEPROS

MANUFACTURING SPECS

The CutiX Universal Snap Knife measures 6-1/2" in length and weighs 0.243 lbs. It's made from magnesium with a serrated gripping surface.

ORIGIN

One of the KNIPEX engineers in Germany noticed when using competitor snap knifes the thin blade easily bent when extended. He thought there had to be a better design to keep the blade from bending and provide more stability. That's when he came up with the idea to add a stabilization bar and the idea grew from there.

SELLING POINTS

- Stabilization bar keeps the extended blade rigid, so it does not bend making cutting easier.
- Easy blade change without using tools.
- Sturdy design.

STORAGE AND DISPLAY

Item ships individually in a clamshell package, one knife in each clamshell. Hanging the package from a hook is recommended.



FOR MORE INFORMATION Contact Peter Grable, senior product manager at KNIPEX Tools: peter.grable@knipex-tools.com

DIAGNOSTIC TECH

Electronic controls: Lateral and longitudinal

Electronic controls have displaced many of the mechanical systems we once saw on vehicles years ago.

by Scott Brown, PTEN Technical Editor

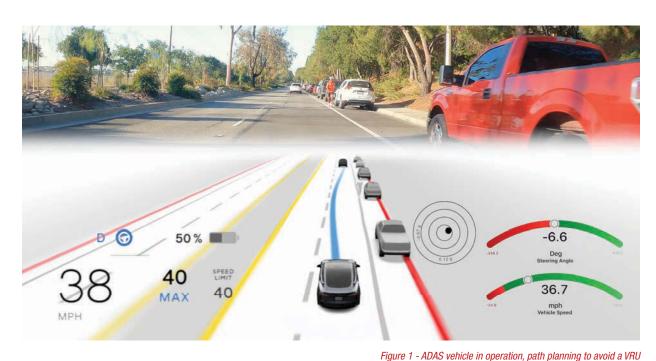
Lectronic controls have displaced many of the mechanical systems we once saw on vehicles years ago. Electronic throttle and steering are popular these days, but we're now seeing vehicles with systems such as electromechanical brake boosters, electric power steering executing lane changes, avoiding vulnerable road users (VRU), and more. This article will discuss service operations diagnostics surrounding these systems.

ADAS

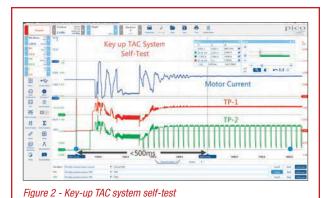
Advanced driver assistance systems (ADAS) have been populating the vehicle beginning as far back as 2010, supporting SAE's J3016 Level 0 vehicles which, for the most part, only offered visual and/or audible warnings to the vehicle operator when an unsafe condition was detected. Moving into higher levels (1 and 2) requires additional support via advanced electronic control systems supported by critical communication channels as shown in **Figure 1**. Technicians looking to stay ahead of the curve know that continuing education is an absolute must to stay service ready. Professional service providers possessing a deeper understanding on these systems will typically result in "less–friction" for the service technician during diagnostics and service.

THROTTLE ACTUATOR CONTROL (TAC)

For more than two decades, electronic throttle bodies have been populating the vehicle market, and I suspect that your customers have seen more than a few with intermittent DTCs related to the throttle actuator. The device usually consists of a DC motor and two throttle position sensors that typically, but not always, output somewhat opposing signals, which are used to validate proper system operation. The DBW system took on a lot of heavy risk assessment study and had to pass through the Automotive Safety Integrity Level (ASIL) steps before standards



Find out what shop owners are reading about in this month's pages of



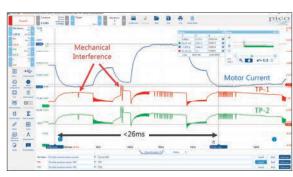
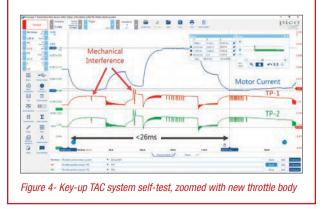


Figure 3 - Key-up TAC system self-test, zoomed



for design and implementation could be approved. Generally, these systems have provided vehicle manufacturers additional tools that can be used to enhance vehicle performance, achieve emission compliance, minimize drivetrain wear, and maintain overall safe vehicle operation.

SCOPING THE PROBLEM

Service technicians dealing with intermittent faults on such systems should be aware that the safety engineers, as per safety requirements, must deploy a series of safety checks on the TAC systems before any propulsion torque commands can be issued to the vehicle. What this means is that upon key up or vehicle wake up, the system will run routines designed to validate the integrity of the system. The state of health checks may include

AUTEĽ

THE FUTURE OF DIAGNOSTICS IS HERE



12.9" SCREEN / ANDROID 7

FIVE-IN-ONE VCMI

OSCILLOSCOPEMULTIMETER

NEW PROTOCOLS

TOPOLOGY MODULE MAP

ALL SYSTEM STATUS SCREEN
 COLOR CODED FAULTS

INTELLIGENT DIAGNOSTICS

REPAIR ASSISTGUIDED DIAGNOSTICS



SUPPORT: 1.855.288.3587 EMAIL: USSUPPORT@AUTEL.COM | WEB: AUTEL.COM VIEW MARKETING MATERIAL: ISSUU.COM/AUTEL2 FOLLOW US @AUTELTOOLS

For more information, click on "PD e-inquiry" at VehicleServicePros.com

Professional Distributor | October 2022 | VehicleServicePros.com 35

RAM/ROM/EEPROM tests, analog-to-digital conversion tests, mechanical performance tests, shutdown tests, and so on. When a technician is dealing with a suspect throttle body, they may consider taking a deeper look at the throttle body using a digital storage oscilloscope (DSO), such as shown in Figure 2.

Techs interested in seeing a self-test in operation can use their DSO to analyze this. Two channels can be used to log both throttle position sensors, and an amp current probe can be used on one of the motor circuits. The image shown in Figure 2 is from a 2004 GM V8 application, which was setting a P0120 (TP1 Circuit) and a P2135 (TP 1-2 Signal Correlation). The time shown between the cursors equals 486ms, which was captured at key up.

Figure 3 zooms in to the first 26ms of activity, where I observed what appeared to likely be a mechanical interference condition of the throttle plate, which was affecting both TP signals. The throttle body was extremely coked up with carbon and since it had over 200,000 miles on it, we recommended replacement over cleaning.

After replacement of the throttle body, I proceeded to collect a comparison DSO trace, so I could see what a new, known-good throttle body would look like during the same key-up self-test. Figure 4 shows a properly operating system.

I have collected dozens of images like this and have seen some that helped me to identify high commutator resistance on a brushed DC motor that I could not get to exhibit the symptoms described by the vehicle owner to appear while it was in the shop. However, the scope was able to provide me with some additional data points I then used to reinforce my recommendations for component replacement.

BRAKING SYSTEMS

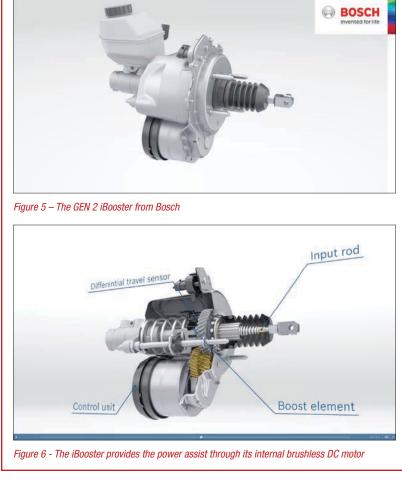
With the introduction of anti-lock braking (ABS), we've seen quite a few new pieces of hardware occupy the vehicle. Today, we're seeing more and more alternative propulsion systems, such as hybrids and battery electric vehicles (BEVs) populating the fleet. With this new technology comes significant changes

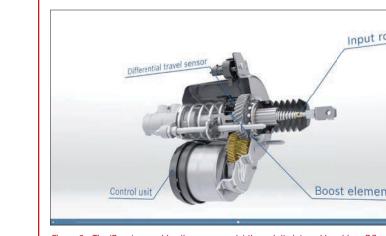
> with the operational characteristics of the vehicle, often demanding other vehicle control methods.

> Since hybrid and battery electric vehicles can take advantage of converting vehicle kinetic energy into electrical energy, additional engineering produced methods to reduce speed without much expense in brake wear. Therefore, you tend to see less brake wear on such vehicles if the vehicle is being operated properly.

> On the internal combustion engine (ICE) side of the propulsion systems found on hybrids and extended range vehicles, engine vacuum was no longer abundantly available to supply the traditional power brake booster. This required either the addition of an electric vacuum pump or a complete redesign of the braking system. Looking back at the Toyota Prius, they relied on an electric pump to multiply the braking force applied to the brake pedal using a hydraulic pump and accumulator and in-turn, had to deploy a stroke simulator to provide the proper pedal feedback to the driver.

> As the driver increases pedal force, elevated pressurized brake fluid is applied to all four-wheels programmatically (other manufacturers may deploy different methods for brake assist). When working on these systems, one should







CRELATED PRODUCTS



always follow the manufacture's recommendations, so these electronically controlled systems are always ready to work at their full potential. Look for notices within the service information to execute the proper relearning/recalibration steps prior to returning the vehicle back into operational status.

The following is a notification found within Toyota's factory service information braking section after replacing the brake booster/master cylinder on a 2020 Prius:

NOTICE: After replacing the skid control ECU (brake booster with master cylinder assembly), perform linear solenoid valve offset learning, ABS holding solenoid valve learning, yaw rate, and acceleration sensor, zero-point calibration and system information memorization after performing "Reset Memory".

The Bosch iBooster (Figure 5) is a vacuum independent, electromechanical brake booster. Currently, there are two generations of the iBooster and is being used by multiple manufactures, including GM, Honda, Jaguar, Porsche, Tesla, and VAG vehicles. The unit can deliver varying brake pedal feel (selectable by the driver) and can greatly enhance the operational characteristics of hybrid/BEVs and offer even more assistance for vehicles equipped with certain ADAS features, such as adaptive cruise control (ACC) with stop-n-go support. The iBooster has an integrated control module and provides the power assist through its internal brushless DC motor, as shown in Figure 6.

AUTEL

SMARTER DIAGNOSTICS 1 11 11 **FIVE-IN-ONE DEVICE**



- TABLETS FEATURE -

INTELLIGENT DIAGNOSTICS

REPAIR ASSIST **GUIDED DIAGNOSTICS**

TOPOLOGY MODULE ALL SYSTEM STATUS SCREEN

COLOR CODED FAULTS

POWERFUL HARDWARE OCTA-CORE PROCESSOR 128GB MEMORY

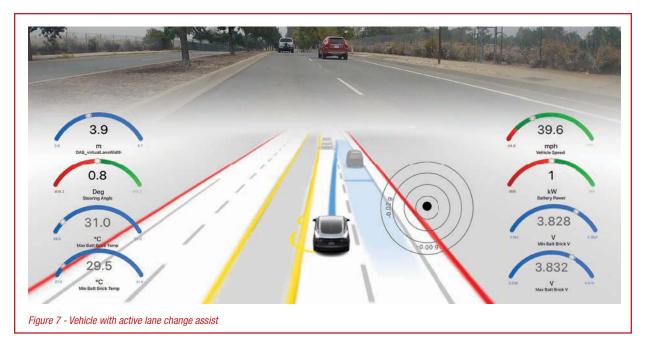
AVAILABLE NOW! CONTACT YOUR LOCAL DISTRIBUTOR FOR DETAILS



SUPPORT: 1.855.288.3587 EMAIL: USSUPPORT@AUTEL.COM | WEB: AUTEL.COM VIEW MARKETING MATERIAL: ISSUU.COM/AUTEL2 FOLLOW US @AUTELTOOLS 🖪 💓 🔘 🛚

For more information, click on "PD e-inquiry" at VehicleServicePros.com

DIAGNOSTIC TECH



ELECTRIC POWER STEERING (EPS)

Although the first implementation of a full-control electric rack and pinion assist surfaced in 1990, this method wasn't widely adopted until the early 2000s. Again, the reason for moving to electric assist is because of the energy efficiency it brings to both ICE and BEVs, but it also allows more options, especially for those offering driver assistance features such as lane tracing/keeping assist (LTA/LKA) and active lane change assist (LCA) (**Figure 7**). EPS on some vehicles will nudge the vehicle back into the center of the lane when it determines that the vehicle is about to drive over clearly defined lane makings.

On some SAE J3016 Level 2 vehicles, automated lane changes can be achieved by the system. If you have driven a vehicle that can execute such a maneuver, I suspect that you admire the technology like I do. It's amazing to see a vehicle pull this off successfully.

SERVICE AND DIAGNOSTICS

Although these systems may appear to be complicated, with the appropriate training, service information, and tooling, the service professional can work through any challenges presented. The key here in my opinion is to make sure that service personnel have an increased situational awareness of the service requirements of vehicles equipped with these systems (and the proper tools for the job). Services such as brake fluid replacement and wheel alignments aren't so basic anymore, as these systems will likely require follow-up procedures to ensure the vehicle is operating to its full potential. Additionally, it's important these vehicles are always operating with a sound electrical system and that starts with the 12V battery. Performing periodic battery inspections can go a long way toward preventing trouble from surfacing in these advanced systems. For the service technician tasked with performing diagnostics on any of these systems, a highly capable scan tool is essential during interrogation.

However, you may find that certain tasks may only be available using the OEM scan tool, and your mileage may vary. In other cases, you'll likely need a DVOM, breakout leads, test probes, current probes, breakout boxes, a DSO, and possibly CAN tools when you're up against something that falls outside of the diagnostic flow chart. See the case study featured in my article titled, "Vehicle network diagnostics: Today and the future" at vehicleservicepros.com/21209167.

The evolution of the automobile is not slowing down, and in fact, has accelerated quite a bit over the past five to eight years. Service professionals that keep up with these technologies are in high demand and will be highly valued for years to come in my professional opinion. \bigotimes



SCOTT BROWN is an ASE Master Certified L1 Technician and has over 37 years of professional service industry experience. He is an independent shop owner in Southern California and is engaged at various levels within the industry. He has a deep understanding of the challenges technicians

experience at the service level and is continuously striving to move the industry forward through education and networking. Brown found Diagnostic Network (diag.net) after 22 years of service at iATN, where he is retired as company president in 2018. *sbrown@vehicleservicepros.com*

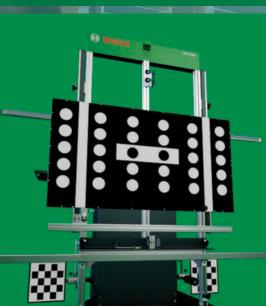


A powerhouse lineup of repair solutions from the global leader in diagnostics



Professional Diagnostics

The next generation of scan tools with the most advanced OE level vehicle coverage supporting scanning, live data access and complete bi-directional functions.





Heavy Duty Diagnostics

Heavy duty solutions to help you get the repair done right and the vehicle back in operation.



Test, Tune and Analyze

Test, analyze and diagnose your vehicle electrical and mechanical systems.

aapex

BOSCH

Visit us at AAPEX Booth #A4409 and Joe's Garage Bay #4

ADAS Recalibration

A seamless, full-system solution that guides you from setup through calibration in half the time.

Solutions for every job.

boschdiagnostics.com

For more information, click on "PD e-inquiry" at VehicleServicePros.com

From running grocery stores to a tool truck

This independent tool dealer attributes his truck's keen organization to his past career experience.

By Kayla Oschmann, Associate Editor

nlike most tool dealers who used to turn wrenches before running a tool truck, Jared Charlesworth ran grocery stores. Although he didn't have much knowledge of tools, he did have a valuable resource in his corner – his father-in-law, who ran a tool truck for a flag for over 30 years.

In fact, his father-in-law was the one who got Charlesworth interested in running his own route in Kalispell, Mont., after getting the opportunity to take on more routes.

Now, 12 years later and going independent after five years with a flag, Charlesworth still loves what he does and enjoys running his own business, A And B Tools.

Earlier this year, the tool dealer upgraded his ride from a 1999 22' Chevy Kodiak C6500 to a 2006 24' Peterbilt 335, and with a bit of elbow grease, made it into the truck that he has always wanted.

Charlesworth replaced all the chrome inside with diamond plate chrome (for the industrial look), ramped up the knife rack, added LED lighting throughout the truck, new chrome wheels, new automatic steps (they pop out every time the door opens), and custom-made shelving as well as a new wrap.

"I made it brand new again," he says.

Aside from the stacks and the 2" ratchet wrench that he turned into a door handle, one of his favorite features is the wrap. There's a reason why it's known as the "green beast".

"It has a very awesome wrap of an American flag with my logos," he says. "It's definitely an eye-catcher while going down the road."

ALL IN THE ORGANIZATION

Charlesworth attributes his truck's keen organization to his previous grocery store experience.

"You've got to have product to sell it," he notes, adding, "If it's nice and clean, people feel comfortable shopping."

He mostly organizes the tools by type but will often mix things up every two weeks to "look fresh" and have his customers walk around more.

Sale items are typically spread throughout the truck, again to have customers walk around, but if there's

something that he really wants to push, he'll put the item next to his desk.

KEEPING CUSTOMERS ENGAGED

Being up against five other franchises in his area, Charlesworth says that it's important to keep your customers engaged. He does so in two ways: A bubblegum machine and contests.

Charlesworth has a well-known bubblegum machine on his desk filled with not only bubblegum but prizes ranging from free shirts, hats, coats, gift cards to his truck, etc.

"It's fun," he says. "Guys come out with a handful of quarters."

He also holds a monthly contest as a way to say thank you to his customers. The more they buy, the more tickets they get to put in the raffle. And these prizes are top-notch. From minibikes and Traxxas Slash RC cars, to grills and guns.

FUTURE PLANS

When Charlesworth bought his latest truck, he didn't sell his other one. Instead, he's keeping it. He'd like to grow his business someday and hire another driver or two.

"I've been very blessed," he says. "I thought with COVID and all, that business would drop off, but it's actually been the best couple of years that I've had. If you have a good customer base and you take care of them, they will take care of you."















Top Left- A And B Tools is outfitted head to toe with racks, shelving and drawers. No nook or cranny goes unused here. **Top Right-** Charlesworth recently upgraded his ride to a 24-ft Peterbilt that he custom renovated specifically for his tool business, and it is as clean as the tools inside. He also had it wrapped with the American flag and his logo so it is highly visible to customers on the road. **Middle Right-** The inside of the truck is decked out with LED lighting everywhere, so customers have good visibility at all of the products. **Bottom Left-** Jared Charlesworth comes from a grocery store background and uses his experience there to keep his truck "fresh" with new product displays that rotate every couple of weeks (as seen on the right).



Show us your truck

Recently upgraded your truck? Have a product display or demonstration area for customers? Share it with us!

Contact us at Editor@VehicleServicePros.com for your chance to be featured.

Becoming an industry expert

A great mobile jobber is not only dependable, honest, has inventory, and knows their products but also is an expert in the vehicle repair and aftermarket industry and brings this expertise to their customers.

By Alan Sipe, Contributing Editor

good mobile jobber is one who is dependable, honest, has inventory, and knows their products. But a GREAT mobile jobber is not only dependable, honest, has inventory, and knows their products, but also is an expert in the vehicle repair and aftermarket industry and brings this expertise to their customers.

There are many good mobile jobbers out there every day helping technicians and shop owners with their tool and equipment needs. The great ones are not only providing the tools of the trade, they are also helping their customer shops build their business revenue and profits. Not simply because a healthy, profitable shop will buy more stuff for their shop, but because being a great industry source makes you the helpful person repair shops and technicians rely on, and yes, in turn they will buy more cool tools from you.

One sure way to become an industry expert is to attend the two major industry knowledge events in November. Sure, your flagship events coming up in early 2023 are important buying events and well worth attending, but nothing will give you more overall industry knowledge than attending AAPEX and SEMA being held in Las Vegas, Nov. 1–4.

SEMA, held at the Las Vegas Convention Center Nov. 1–4 has over 1,700 exhibitors, and AAPEX held at the Venetian Convention Center Nov. 1–3 historically features 2,500 exhibiting companies.

AAPEX stands for Automotive Aftermarket Products Expo. Here is



where you will see and learn about everything possible to keep a vehicle in tip-top working condition. In addition, you will see and learn about the many products and services that will help your customers develop their shops into top notch sales and service producers.

This year at AAPEX a 10-bay garage is being assembled in the convention center. "Joe's Garage," a fully built-out shop on the show floor, will be used to accommodate product and equipment demonstrations. What a great place for you to learn about helping your customer shops grow and potentially finding some new stationary or support supplies for you to sell.

You can also stop at the *Professional Distributor* magazine booth for a bottle of water or a cup of coffee and chat with the editorial staff.

For more information on AAPEX, go to AAPEXSHOW.com

Now, SEMA is a car junkie, truck junkie, off-road and tool junkie's dream. SEMA stands for Specialty Equipment Market Association. Almost any aftermarket product you can think of, and many you haven't thought of to make a vehicle look great, run great, and sound great is on display at SEMA.

The major tool manufacturers are all there demonstrating what's new and love to have mobile jobbers stop in to learn what's new and the best tool demos. Remember not everything manufacturers produce is available through your flagship brand. You will certainly see some new products and brands you will want on your mobile store. Many of the manufacturers will have tradeshow specials or at least samples for you to take home. Remember, if you have the new stuff on your truck, you will not be "just like the other guys."

If you tend to watch some of the car shows on TV, you will likely run into almost all the stars on the show floor, or at one booth or another. They are there for autograph sessions but also for attracting new sponsors for their shows, too. Remember, everybody is selling something.

Many of the television car show builders are there with their latest projects for you to ogle. This is the show they want to show their best work. You might consider picking up a \$200,000 restomod.

For additional show fun, in the SEMA Las Vegas Convention Center front parking lot, you will see additional cool exhibits that are too big for inside and stunt driven cars skidding and screeching everywhere. The monster trucks outside are unbelievable. For more information on SEMA, go to semashow.com.

It might be tight scheduling it this year, but for next year, consider organizing a trip for your customers to SEMA and AAPEX.

No, I am not expecting you to pay for a trip for your customers to Las Vegas, but I would bet if you just organized the trip, some of your customers would sign up to go with you.

Send an email (or text) to all your customers announcing you are looking into organizing a trip. Tell them the departure and return dates. But be sure they understand you are not paying for their trip. Tell them you are not looking for a commitment, but you want to see if anyone is interested. Once you get an idea of how many are interested, contact a local travel agent, and explain you would like them to organize the trip for you. While you cannot guarantee how many will go, a good agent will be happy to help.

Next, you will go back to the interested parties and explain the costs associated (i.e., airfare, hotel, etc.). And, it is probably tax deductible.

I suggest you spring for a dinner one night just to make a good showing.

Even if no one goes, you will look good for offering a cool trip like this.

I used to work for a really clever manager named Bob Z., who told me to call my merchant at Home Depot and invite him to the 1992 Atlanta Braves World Series. But he turned me down, saying he already had several offers. But he thanked me for thinking of him. To this day, when I see this merchant, he thanks me for taking him to the game! If you attend this year, send out a post trip report about some of the cool things you saw and learned about.

Have a great time in Las Vegas, and go sell something.



ALAN W. SIPE has spent the last 42 years in the basic hand tool industry including positions as president of KNIPEX Tools

North America, senior vice president of sales and marketing at Klein Tools, manager of special markets at Stanley Tools, and sales manager at toolbox manufacturer Waterloo Industries. Currently, Sipe is the owner of Toolbox Sales and Consulting, a company specializing in sales strategy, structure, development, and training. *alansipe@gmail.com*



The MOTO Pro is a comprehensive, full-functionality scan tool for motorcycles and recreational vehicles. With today's modern motorcycles having computer systems controlling not only the engine, but brakes, transmissions and much more, it is now imperative to have a scan tool that can access these systems and make diagnostics and repair much faster.

The MOTO Pro covers all major manufacturers from Europe, Asia and North America. Furthermore, PWC, or personal watercraft is also covered, as are recreational vehicles, such as ATVs and Side-by-Sides.



www.candointl.com = 909-CanDo-11(226-3611)

For more information, click on "PD e-inquiry" at VehicleServicePros.com

ULUUUUUU

currents

DRIVING SALES

Tire & Wheel Service

Tire & Wheel Service

Tires are notoriously one of, if not the most, important part of a vehicle. They not only support the overall weight of the vehicle, but also play a vital role in the safety of the vehicle and its passengers. From accurate tire inflation and TPMS servicing to safe wheel removal, tire and wheel maintenance requires the right tooling. Do your customers have the tools necessary to service tires and wheels properly? Here are some products to help.



HEAT-TREATED FOR STRENGTH AND DURABILITY

The **ATD Tools 10-pc 1**" **Drive Truck Wheel Service Set**, No. 7610, is heat-treated for strength and durability. Manufactured using chrome molybdenum alloy steel, the set meets or exceeds ANSI specifications. The set includes: 13/16", 17mm, and 21mm 4-point standard sockets; 33mm, 35mm, and 41mm 6-point deep sockets; 1-1/16", 1-1/8", and 1-1/4" 6-point extra deep sockets; and 1-1/2" wheel socket by 13/16" square. ■ **For more information, click on "PD e-inquiry**"

on VehicleServicePros.com



FEATURES A CONCAVE DESIGN AT THE MIDPOINT

The **CTA Manufacturing 10-pc Wheel Hanger Set**, No. 7435, is used to hang/ guide wheels during removal and installation on the wheel hub. The tool fits virtually all European vehicles. The set holds/guides the wheel for safe removal and installation. With a heavy duty finish and a concave design at the midpoint, the tool is designed to keep the wheel from slipping off. The set is packed in a clear case and comes in five different sizes. ■ **For more information, click on "PD e-inquiry" on VehicleServicePros.com**



COMPACT FOR SHOPS WITH LIMITED SPACE

The Hunter Engineering TC33 Tire Changer is compact for shops with limited space and is designed for mobile service. It features a floating three-point arm and the ergonomic control handle of the PowerOut Bead Loosener is able to break tough beads. The cam plate adjusts to three height positions for operator comfort, allowing a wide range of wheel widths. The cam action also multiplies the clamping force, with no need for flange plates on many reverse wheels. The TC33 series offers ideal wheel protection by clamping to the hub instead of the rim edge and has additional plastic protectors on the side shovel and a polymer mount head. For more information, click on "PD e-inquiry" on VehicleServicePros.com



FEATURES A RECOIL-REDUCING BARREL

The Gaither Tool Company Gen2 Bead Bazooka is designed to work with an extensive range of tire sizes and types ranging from motorcycles to light agricultural vehicles. The next generation bead seater range offers twice the power and is equipped with significantly upgraded trigger-operated rapid air release (RAR) valve technology compared to the original models. The Gen2 Bead Bazooka range features ASME, CE, and TUV approved smaller steel tanks; an anti-corrosion interior tank coating; and a recoil-reducing barrel, which narrows in shape towards the tip. Gen2 Beed Bazookas are available in 3L, 6L, and 10L.

For more information, click on "PD e-inquiry" on VehicleServicePros.com

Watch this product in action here: VehicleServicePros.com/21280116



The **Ken-Tool Handheld Automatic Tire Inflator**, No. 26012, allows technicians to auto inflate and deflate with an over pressure setting and underinflation protection. The tire inflator offers a 12' hose with a spring protector, a clip-on chuck, an 8" dual foot chuck, and a 1/4" NPT thread for all air connection. It features an accuracy of 0.3 psi at 25-174 psi, a DC 12V rechargeable Li-ion battery, a black rubber cover, and an operating temperature of -14 to +122 degrees F. The product is self calibrating and has an automatic shut-off, a backlit digital display, audible warning, and two presetable inflation settings.

For more information, click on "PD e-inquiry" on VehicleServicePros.com





USE WITH A DRILL OR IMPACT WRENCH

The **VIM Tools Hub and Stud Cleaning Kit for Trucks**, No. HSC200, includes the HSC1 Hub and Stud cleaning tool with a 1/4" hex to 1/2" square adapter, the HCP23 4-pack of 23mm hub cleaning pad, and SCB22 4-pack of 22mm stud cleaning wire brush. The HCS1 can be used with a drill or impact wrench and has a quick-lock system for switching heads easily. The HCP15 removes rust and grime from wheel hub surface and helps prevent brake rotor warping. The SCB22 also removes rust and grime from wheel studs and can prevent lug nuts from seizing and cross threading. The set can be used on most SUVs and pickup trucks. ■

For more information, click on "PD e-inquiry" on VehicleServicePros.com

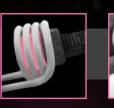
FEATURES EZ-SENSOR PROGRAMMING

The **ST-1 TPMS Tool** from **Schrader TPMS Solutions** features EZ-sensor programming and an ID-Sync function for matching scanned IDs to vehicle ECU IDs. The tool triggers OE sensors for all cars in North America, Europe, and Asia. It displays all sensor data (pressure, battery, temperature, ID, frequency) and indicates OE sensor and service kit part numbers. In addition, it provides TPMS ECU relearn procedures and retrieves and decodes TPMS DTC information. The TPMS tool has a 2.8" LCD screen, protective rubber sleeve, is Wi-Fi capable, and comes with a quick-connect cable and carrying case. ■ **For more information, click on "PD e-inquiry" on VehicleServicePros.com**



Mini-Ductor[®] VENOM[®] HP





Release seized hardware from rust, corrosion and thread lock compounds! The **VENOM HP** is the highest powered Mini-Ductor available at 1800 watts of power. *More precise, safe and reliable than a torch.*



A portion of the proceeds will go to Breast Cancer Research. Only available through TheINDUCTOR.com during the month of October, while supplies last.

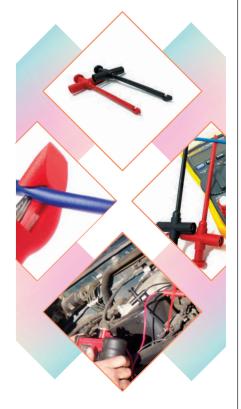






For more information, click on "PD e-inquiry" at VehicleServicePros.com





XEL INSULATION-PIERCING MACRO HOOK CONNECTOR

Piercing needle provides connection that maintains integrity of wire

Chisel tip and v-groove design allows connection in tight spaces







For more information, click on "PD e-inquiry" at VehicleServicePros.com

46 Professional Distributor | October 2022 | VehicleServicePros.com

DRIVING SALES

Tire & Wheel Service

CUSTOMER REVIEW: [The M18 Inflator] is so handy and fast. Just put in a set psi and it shuts off when it gets there. My completely flat 33" tire on my truck pumped up probably less than 5 minutes to 35 psi.



AUTOMATICALLY SHUTS OFF TO PREVENT OVERINFLATION

The **Milwaukee Tool M18 Inflator** is an 18V cordless tire inflator designed to meet the needs for transportation maintenance professionals by providing ideal performance, versatility, and the durability to survive demanding jobsites. With the 150 psi max capability, users can fill tires twice as fast. Additionally, the inflator is equipped with TrueFill auto shut-off technology that has the accuracy to be set at a specific psi which will automatically shut off the tool to prevent overinflation. Coupled with the resistance to auto shop chemicals, the M18 Inflator solves common user frustrations as a durable, versatile solution. ■

For more information, click on "PD e-inquiry" on VehicleServicePros.com

PNEUMATICALLY POWERED WITH FOOT PEDAL CONTROLS

The **Tire Mechanics Resource Air Operated Tire Spreader** is designed to provide a stable platform to complete all types of tire repair work, including tire inspection, cutting, buffing, cleaning, patching, and more. With fully adjustable clamping arms, the tire spreader is built to handle a variety of tires. Pneumatically powered operation with foot pedal controls, the tire spreader will hold the bead and sidewalls during inspection and/or repairs. The Air Operated Tire Spreader is adjustable in five stages with a maximum enlargement 13.8", and includes an adjustable light and attached tool pan. **■ For more information, click on "PD e-inquiry" on VehicleServicePros.com**



SELF-POSITIONING FRAME MOVEMENT

The Autel Intelligent ADAS IA900WA Wheel **Alignment and ADAS Calibration System** integrates wheel alignment and ADAS calibration into an all-in-one, space-saving device. It features a folding crossbar and six in-frame high-resolution tracking cameras that automatically monitor vehicle height on the shop lift, and robotic frame movement for alignment reading accuracy to 0.02 degrees. Alignment coverage is offered for U.S., Asian, and European vehicles, 1996 and newer. The system guides the user through the complete process with illustrated instructions, live readings, and required tools. Alignment readings displayed on a mounted 24" touchscreen monitor mirror those on the MaxiSYS Ultra table enabling the technician to freely manipulate the vehicle and monitor the adjustment effects.

For more information, click on "PD e-inquiry" on VehicleServicePros.com





APPLIES ADDITIONAL FORCE TO THE WHEEL HUB

The **ProMAXX Tommy Rail** is crafted from solid, hard-coated American aluminum and attaches to the outside of the lower push flange, creating a powerful structural link similar to an automotive rear-end fourbar linkage setup. It's designed to work with the company's Tommy Wheel Bearing Puller, allowing technicians to apply even more force to the wheel hub to make any wheel bearing removal quick and easy on select Ford and Subaru Models. The tool is made in the U.S.A.

For more information, click on "PD e-inquiry" on VehicleServicePros.com



PROGRAMS UP TO 16 SENSORS AT A TIME

The Mobiletron PT47 TPMS Servicing Tool from **MOREsensor** is a professional all-inone TPMS tool. The tool activates and reads TPMS sensors on most U.S. and European passenger vehicles, displays all sensor data (ID, tire pressure, tire temperature, battery status, etc.), and provides comprehensive indirect, manual, and auto relearn procedure information. The PT47 programs up to 16 sensors at a time and is capable of relearning new sensors through OBD-II port. It also comes with built-in relearn instructions and OE sensor reference. With PT47, user's can program blank sensors by cloning factory sensor's IDs, assign auto-generated ID, or input ID manually.

For more information, click on "PD e-inquiry" on VehicleServicePros.com

TWENTY-SIX INCH INTERNAL RETAINING RING PLIERS WITH INTERCHANGEABLE TIPS



GIVING YOU THE LEVERAGE YOU NEED

Heavy duty pliers used to remove and install the large internal retaining ring in transmission cases.

26" handles provide the leverage needed to compress large retaining rings.

For use on GM 5L40, 5L50, 6L45, 6L50, 6L80, and 6L90 transmissions.

Straight .120" diameter interchangeable tips.

#1489





WWW.LANGTOOLS.COM

For more information, click on "PD e-inquiry" at VehicleServicePros.com



Tire & Wheel Service



REDUCES TIME SPENT CLEANING RIMS

The Mueller-Kueps Conical Eraser Kit, No. 282 260/KIT, includes six erasers made from high quality rubber. At 60mm in diameter, the erasers are designed to reduce time spent cleaning rims. Use with an electrical drill, cordless drill or with the Air Eraser, No. 297 013, from Mueller-Kueps. It can be used with multiple speeds on the drill from 500 to 1,000 maximum rpms. If used at proper speed, the eraser will not leave any residue on the rim, the company says. The erasers will not damage or scratch aluminum rims. ■ For more information, click on "PD e-inquiry" on VehicleServicePros.com



CAN MANAGE UP TO 22 WHEELS

The **ATEQ VT Truck 2.0** is designed for the maintenance of commercial trucks and buses. It can easily read sensors, even in twin wheels, and can manage up to 22 wheels. The tool is compatible with most truck and bus TPMS sensors and can be frequently updated with new heavy transport vehicles as soon as they are introduced. The VT Truck 2.0 features a built-in vehicle configuration system and has OBD-II capability for on-board diagnostics, aftermarket programmable sensor support, Wi-Fi and real-time updates, and it displays all TPMS information on one screen. ■

For more information, click on "PD e-inquiry" on VehicleServicePros.com



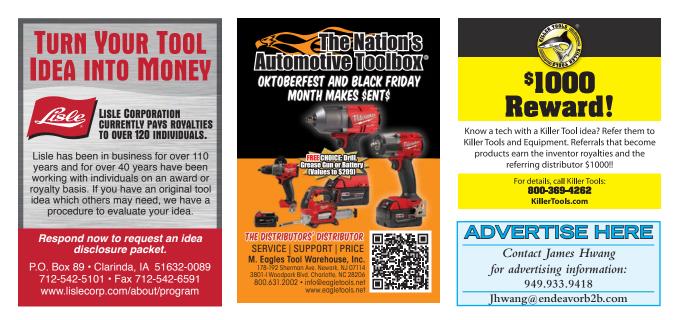
FOR MORE INFORMATION ABOUT ANY OF THESE PRODUCTS, CLICK ON "PD E-INQUIRY"

at VehicleServicePros.com.

DELIVERS UP TO 160 PSI

The Makita 18V LXT High-Pressure Cordless Inflator features a high-volume pump with up to 160 psi, making it ideal for use on larger tires, or those with higher psi requirements. With an auto-stop function, the unit automatically stops inflation when the preset air pressure is obtained. There are three speed settings: high, medium, and low. The inflator also features an air-release button, high visibility pressure gauge display with backlight, built-in LED to illuminate the work area, and a 25-1/2" hose length for a better reach. Its compact and lightweight design allows for easy portability and convenient storage. For more information, click on "PD e-inquiry" on VehicleServicePros.com

CLASSIFIED ADVERTISING



TALES FROM THE ROAD

Satisfying his customers

The owner of Coyle Tools has been on the road for six years, with the priority of putting his customers first.

By Brandon Lewis, Contributing Editor

Tred of the corporate environment after working in IT management, Lindsay Coyle had a friend who was a tool distributor with a flag describe to him what the business was like. Coyle had always liked the idea of being his own boss with the support of a larger company — but still operating on his own. After seeing the limitations of the franchise model. Coyle branched out on his own and started Coyle Tools, in the Austin, Texas area in 2016. Coyle covers a 40-mile radius route in the Austin area. He specializes in fleet diesel and custom shops.

"Those shops tend to have a higher concentration of technicians," Coyle says. "Those technicians tend to get paid better than a lot of the other industries, and they tend to stick around longer, so there's better long-term business there."

Coyle says the best part of the job is being on the road.

"This job is all about building relationships with customers," he says. " I enjoy people, and when I can be a significant part of their professional lives and hopefully brighten their day a little bit, that's what I enjoy the most."

EQUIPMENT AND PRODUCTS

Some of Coyle's most popular tools are the modular light from Power Probe and almost all of the M12 Milwaukee Tools.

What's your story?

Share the ups and downs of life on the road with us at Editor@VehicleServicePros.com and you could be featured in our next Tales from the Road column.



Lindsay Coyle

When adding new products to his truck, he relies on customer feedback.

"It takes me a little while to adopt new tools because I don't know how popular they're going to be," he says. "You don't know the quality. I don't turn wrenches for a living... my customers do, so they know more about the tools."

Coyle also involves his customers to find new products.

"If they're asking me about a product, then I'll give it some serious consideration because clearly there's a desire there," Coyle states. "If I see a product that is compelling, and it's from a manufacturer I trust, and it's something I think my customers might need, I'll start asking around about it. I have even handed tools I'm not sure of to customers and ask them to try it for a week and give me their thoughts."

FINDING THE RIGHT EMPLOYEES

The biggest challenge of running your own business, according to Coyle is the fast pace of the industry.

"The biggest challenge is finding time to keep up with the demand because I

want to keep expanding the business, and doing that while maintaining high standards is tough," he explains. "It's difficult to find good people to build our team. Finding people that do things well that I don't do well (such as accounting) has also been a challenge."

Coyle notes that finding help has been a challenge since the pandemic.

"We've had to pace our growth," he says. "When the pandemic first started, we had fewer problems hiring people. But during the pandemic, many people were questioning their future, and took any job for a start fresh. But for this job in particular, you need a lot of ambition, and not everybody has that."

STANDING OUT

Coyle points to four items he does to stand out from the competition:

- Hold high standards for yourself.
- Service second and third shift shops, eliminating competition.
- Help customers with other tool company's warranty process.
- Run a YouTube channel: "We're giving non-brand specific information for

how the tool industry works, and we're helping guide viewer's tool purchases".

TIPS FOR YOUNG DISTRIBUTORS

When asked about advice he would give young distributors just starting out in the business, Coyle did not hesitate: Your desire to run a business has to be stronger than your desire to sell tools.

"Every business, no matter what industry, has to do the basic necessities. Every business has to establish itself as a legal entity, you've got to make sure you know how to keep your books, you have to pay your taxes, you have to find insurance companies, and you have to find your suppliers. That's the boring stuff. That's the stuff that pulls people away from maybe the original reason they got into a business," he explains. "For example, if someone likes to cook and they're really good at it, they might want to start a restaurant, or they might want to become a chef. Well, be careful because when you start a business, the thing you're going to do least is cook."

FUN FACTS:



Pets on the truck

No way! Coyle has three dogs at home but says it would be chaos if they were on the truck because so many dogs are in shops.



Most random thing sold

CRKT's Eat'n tool. It is a fork that has hex fittings on it, and a flat blade for turning screws, a bottle opener, etc.



Snacks for customers Water, energy drinks, beef jerky, and little bags of trail mix.



Up the New England coast.

FUTURE PLANS

Looking toward the future, Coyle has some immediate goals, including opening a brick-and mortar-store that would cater to professional technicians. It would have a tool truck environment, he adds. He also plans to start doing more online, e-commerce sales.

"That way we can maintain contact with not only our customer base but also expand it," Coyle says. "We can offer the same types of tools of the same quality, so if we don't serve a particular customer in the truck who's outside of our area, then we can help them out in much the same way as we would if we were on the truck."

Coyle realizes at 52-years-old he has more energy than most.

"I spend almost 100 percent of my time on this job," he notes. "If I didn't have the energy, my business wouldn't be a success. If you work hard, you can be successful, and I want to grow this business until I physically can't do it anymore."

1. 2.	nited States Postal Service		
2.	atement of Ownership, Management, and Circulation (Requester P Publication Title: PROFESSIONAL DISTRIBUTOR	ublications Only)	
	Publication Number: 017-300		
3.	Filing Date: 9/13/2022		
4.	Issue of Frequency: February, March, April, May, June, July, August, September, October and Decem	iber	
5.	Number of Issues Published Annually: 10		
6.	Annual Subscription Price: Free to Qualified		
7.	Complete Mailing Address of Known Office of Publication (Not Printer): Endeavor Business Media, LL	С,	Contact Person: Debbie D
	1233 Janesville Ave, Fort Atkinson, WI 53538		Telephone: 920-563-
В.	Complete Mailing Address of Headquarters or General Business Office of Publisher (Not Printer): End	eavor Business Med	dia, LLC,30 Burton Hills
	Blvd., Ste. 185, Nashville, TN 37215	e. 1941. E. 1	D
9.	Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor - Publisher: Ky Janesville Ave, Fort Atkinson, WI 53538 ; Editor: Brendan Baker, Endeavor Business Media, LLC 12:	ylle Hirko, Endeavor 33. Janesville Ave. F	ort Atkinson WI 53538
	Managing Editor: ,	00 0010071107110,1	ore autoon, we boood ,
10.	ner – Full name and complete malling address: Endeavor Media Holdings I, LLC, 905 Tower Place, Nashville, TN 37205; Endeavor, Media Holdings I, DLC, 905 Tower Place, Nashville, TN 37205; Endeavor, Inc, 5 Tower Place, Nashville, TN 37215; Shorsholt Capital Partmers Fund IV, LP, 20 butch Hills Bukh, Suita 420, Nashville, TN 37215; ACP Endeavor, Inc, Ata 245 Hillsboro Plac, Nashville, TN 37215; Stverside Fund II, LP, 155 East 44th, S, Suite 2101 - 10 Grand Central, New York, NY 10017; Everside End Blocker, LLC, 155 East 44th, S, Suite 2101 - 10 Grand Central, New York, NY 10017; Everside Endeavor International Blocker, LLC, 155 East 44th ite 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Bie 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Bie 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Bie 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Bie 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Bie 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Bie 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Bie 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017; Everside Fund, LP, 155 East 44th, Sinter 2101 - 10 Grand Central, New York, NY 10017;		N 37215;RCP Endeavor, Inc, 20 inati, OH 45202;Invergarry Holdii York, NY 10017Everside Endeav Blocker, LLC, 155 East 44th St.
	 Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Securities: None Tax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one 		onds, Mortgages or Other
۷.	I ax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one The purpose, function, and nonprofit status of this organization and the exempt status for federal incom		4
3	 Publication Title: PROFESSIONAL DISTRIBUTOR 	io tax parposos. Ini	
		verage No. Copies	
4	. Issue Date for Circulation Data: September 2022	Each Issue During	No. Copies of Single Issue Publi
15	Extent and Nature of Circulation Pre	aceding 12 Months	Nearest to Filing Date
a. *	Total Number of Copies (Net press run)	13,382	13,198
D.	Legitimate Paid and/or Requested Distribution (By Mail and Outside the Mail)		
	(1) Outside County Paid/Requested Mail Subscriptions stated on PS Form 3541. (Include direct written request from recipient, telemarketing and Internet requests from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.)	10,593	10,404
	(2) In-County Paid/Requested Mail Subscriptions stated on PS Form 3541. (Include direct written requinform recipient, ledemarketing and Internet requests from recipient, pad subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.)		0
	(3) Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid or Requested Distribution Outside USPS®	1	1
	(4) Requested Copies Distributed by Other Mail Classes Through the USPS (e.g. First-Class Mail®)	0	0
з.	Total Paid and/or Requested Distribution (Sum of 15b (1), (2), (3), and (4))	10,594	10,405
ł.	Nonrequested Distribution (By Mail and Outside the Mail)		
	(1) Outside County Nonrequested Copies Stated on PS Form 3541 (include Sample copies, Requests	2,096	2,280
	Over 3 years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources)		
			0
	(2) In-County Nonrequested Copies Stated on PS Form 3541 (include Sample copies, Requests Over years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Numere advised form Reviews Directions, Links and Hone sources).		U
	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Nonrequester Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services		0
	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai		
	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Nonrequester Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services	il, O	
	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequestor Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo	il, O	0
	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Busines Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (4))	il, 0 ms 550 2,646	0 407 2,687
	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Norrequested Distribution (Sum of 15d (1), (2), (3), and (4)) Total Distribution (Sum of 15c and 15e)	il, 0 ms 550 2,646 13,240	0 407 2,687 13,092
	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Norrequested Copies Diatributed Through the USPS by Other Classes of Mall e.g. First-Class Mal Norrequested Copies mailed in excess of 10% Limit mailed at Stlandard Mail® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum ef 15d (1), (2), (3), and (4)) Total Distribution (Sum ef 15c and 15e) Copies not Distributed	il, 0 ms 550 2,646 13,240 143	0 407 13,092 106
	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies Isitributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (4)) Total Distribution (Sum of 15c and 15e) Copies not Distributed	ii, 0 ms 550 2,646 13,240 143 13,382	0 407 2,687 13,092 106 13,198
- .	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Anmes obtained from Buiness Directories, Lists, and other sources) (3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Nonrequested Copies mailed in excess of 10% Limit mailed at Standard Maillo or Package Services Rates) (4) Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 156 (1), (2), (3), and (4)) Total Institution (Sum of 156 and 156) Copies not Distributed Total (Sum of 156 and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100)	il, 0 ms 550 2,646 13,240 143	0 407 13,092 106
- .	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies Isitributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (4)) Total Distribution (Sum of 15c and 15e) Copies not Distributed	ii, 0 ms 550 2,646 13,240 143 13,382	0 407 2,687 13,092 106 13,198
I.	years old, Requests induced by a Premium, Bulk Sales and Requests including Association Requests, Anmes obtained from Buiness Directories, Lists, and other sources) (3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Nonrequested Copies mailed in excess of 10% Limit mailed at Standard Maillo or Package Services Rates) (4) Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 156 (1), (2), (3), and (4)) Total Institution (Sum of 156 and 156) Copies not Distributed Total (Sum of 156 and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100)	ii, 0 ms 550 2,646 13,240 143 13,382	0 407 2,687 13,092 106 13,198
6	years old, Requesti induced by a Premium, Bulk Sales and Requesti inducing Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (4)) Total Distribution (Sum of 15c and 15e) Copies not Distribution Total (Sum of 15f and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Copy Circulation Requested and Paid Electronic Copies	ii, 0 ms 550 2,646 13,240 143 13,382	0 407 2,687 13,092 106 13,198
	years old, Requesti induced by a Premium, Bulk Sales and Requestis including Association Requests, Anmes obtained from Buisness Directories, Lists, and other sources) (3) Norrequested Copies Diatributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo India Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (ii) Total Institution (Sum of 15c and 15e) Copies not Distributed Total Include Requested Circulation (15c divided by 15f times 100) Electornic Copy Circulation Requested and Paid Electronic Copies Total Requested and Paid Electronic Copies (Line 15c)+ Requested/Paid Electronic Copies (Line 16a)	ii, 0 ms 550 13,240 143 13,382 80.02% - 10,594	0 407 13,092 106 13,198 79,48%
6	years old, Requesti induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Buiness Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mall e.g. First-Class Mal Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mall® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (i)) Total Distribution (Sum of 15c and 15e) Copies not Distributed Total (Sum of 15f and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Copy Circulation Requested and Paid Pint Copies (Line 15c)+ Requested/Paid Electronic Copies (Line 16a) Total Requested Copy Distribution Distribution (Line 15f) + Requested/Paid Electronic Copies	ii, 0 ms 550 2,646 13,240 143 13,382 80.02% -	0 407 13,092 106 13,198 79,48%
a. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	years old, Requesti induced by a Premium, Bulk Sales and Requestis including Association Requests, Anmes obtained from Buisness Directories, Lists, and other sources) (3) Norrequested Copies Diatributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo India Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (ii) Total Institution (Sum of 15c and 15e) Copies not Distributed Total Include Requested Circulation (15c divided by 15f times 100) Electornic Copy Circulation Requested and Paid Electronic Copies Total Requested and Paid Electronic Copies (Line 15c)+ Requested/Paid Electronic Copies (Line 16a)	II, 0 ms 550 13,240 13,240 13,382 80,02% - 10,594 13,240	0 407 13,092 13,198 79,48% - 10,405 13,092
. 6 .	years old, Requesti induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Buiness Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mall e.g. First-Class Mal Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mall® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 15d (1), (2), (3), and (i)) Total Distribution (Sum of 15c and 15e) Copies not Distributed Total (Sum of 15f and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Copy Circulation Requested and Paid Pint Copies (Line 15c)+ Requested/Paid Electronic Copies (Line 16a) Total Requested Copy Distribution Distribution (Line 15f) + Requested/Paid Electronic Copies	ii, 0 ms 550 13,240 143 13,382 80.02% - 10,594	0 407 13,092 106 13,198 79,48%
1. 1. 16 1.	years old, Requesti induced by a Premium, Bulk Sales and Requesti inducing Association Requests, Names obtained from Busines Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Norrequested Distribution (Sum of 15d (1), (2), (3), and (4)) Total Distribution (Sum of 15c and 15e) Copies not Distributed Total (Sum of 15f and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Copy Circulation Requested and Paid Electronic Copies Total Requested and Paid Pint Copies (In 15c)+ Requested/Paid Electronic Copies (Line 16a) Total Requested Copy Distribution (Distribution(Line 15f) + Requested/Paid Electronic Copies (Line 16a)	II, 0 ms 550 13,240 13,240 13,382 80,02% - 10,594 13,240	0 407 13,092 13,198 79,48% - 10,405 13,092
. 6 .	years old, Requesti induced by a Premium, Bulk Sales and Requesti including Association Requests, Names obtained from Business Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mall e.g. First-Class Mal Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mall® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Distribution (Sum of 15(1), (2), (3), and (4)) Total Distribution (Sum of 15c and 15e) Copies not Distributed Total (Sum of 15f and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Corpy Circulation Requested and Paid Electronic Copies Total Requested and Paid Print Copies (Line 15c) + Requested/Paid Electronic Copies (Line 16a) Total Requested Corp Distribution Distribution (Line 15f) + Requested/Paid Electronic Copies (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16a)	II, 0 ms 550 2,646 13,240 143 13,382 80.02% - 10,594 13,240 80.02%	0 407 13,092 13,198 79,48% - 10,405 13,092
	years old, Requesti induced by a Premium, Bulk Sales and Requests including Association Requests, (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mai Norrequested Copies malled in excess of 10% Limit mailed at Standard Mail® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 150 (1) (2) (3), and (4)) Total Nonrequested Distribution (Sum of 150 (1) (2), (3), and (4)) Total Nonrequested Copy Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showroo and Other Sources) Total Nonrequested Distribution (Sum of 150 (1) (2), (3), and (4)) Total Nonrequested Copy Distribution (Sum of 150 (1) (2), (3), and (4)) Total Requested and Paid Electronic Copies Total Requested and Paid Electronic Copies (Line 16a) Percent Paid andro: Requested Circulation (Isot Pirit & Electronic Copies (Line 16a) Total Requested Copy Distribution Distribution(Line 150) + Requested/Paid Electronic Copies (Line 16a) Percent Paid andro: Requested Circulation (Soth Print & Electronic Copies) (16b devede by 16c x 100) Copies (Line 16a) Total Totif that 50% of all my distribution copies (electronic and print) are legitimate requests or p	II, 0 ms 550 13,240 13,240 13,340 - 10,594 13,240 80.02% 80.02%	0 407 13,092 13,198 79,48% - 10,405 13,092
6	years old, Requesti induced by a Premium, Bulk Sales and Requesti including Association Requests, Names obtained from Buiness Directories, Lists, and other sources) (3) Norrequested Copies Diatributed Through the USPS by Other Classes of Mall (e.g. First-Class Mal Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mall® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Distribution (Sum of 15d (1),(2),(3), and (4)) Total Distribution (Sum of 15c and 15e) Copies not Distributed Total (Sum of 15f and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Copy Circulation Requested and Paid Electronic Copies (Line 16a) Percent Paid and Paid Pint Copies (Line 15c) + Requested/Paid Electronic Copies (Line 16a) Total Requested Copy Distribution Distribution(Line 15f) + Requested/Paid Electronic Copies (Line 16a) Percent Paid and or Requested Circulation (Both Print & Electronic Copies) (16b divided by 15c x 100) i certify that 50% of all my distribution copies (electronic and print) are legitimate requests or privalizations and will be printed in the	II, 0 ms 550 2,846 13,240 143 13,382 80.02% - 10,594 13,240 80.02% solution	0 407 13,002 106 13,198 9,48%
	years old, Requesti induced by a Premium, Bulk Sales and Requesti including Association Requests, Names obtained from Buiness Directories, Lists, and other sources) (3) Norrequested Copies Diatributed Through the USPS by Other Classes of Mall (e.g. First-Class Mal Norrequested Copies mailed in excess of 10% Limit mailed at Standard Mall® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Distribution (Sum of 15d (1),(2),(3), and (4)) Total Distribution (Sum of 15c and 15e) Copies not Distributed Total (Sum of 15f and g) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Copy Circulation Requested and Paid Electronic Copies (Line 16a) Percent Paid and Paid Pint Copies (Line 15c) + Requested/Paid Electronic Copies (Line 16a) Total Requested Copy Distribution Distribution(Line 15f) + Requested/Paid Electronic Copies (Line 16a) Percent Paid and or Requested Circulation (Both Print & Electronic Copies) (16b divided by 15c x 100) i certify that 50% of all my distribution copies (electronic and print) are legitimate requests or privalizations and will be printed in the	II, 0 ms 550 13,240 13,240 13,340 - 10,594 13,240 80.02% 80.02%	0 407 13,092 13,198 79,48% - 10,405 13,092
	years old, Requesti induced by a Premium, Bulk Sales and Requests inducing Association Requests, Names oblained from Business Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mall e.g. First-Class Mal Norrequested Copies malled in excess of 10% Limit mailed at Standard Mall® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Distribution (Sum of 15(1), (2), (3), and (3) Total Distribution (Sum of 15f and 1) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Copy Circulation Requested and Paid Electronic Copies Total Requested and Paid Pinit Copies (In 15c)+ Requested/Paid Electronic Copies (Line 16a) Total Requested Copy Distribution Distribution (Both Print & Electronic Copies) (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16b) weed by 16c x 100) Contribution of Statement of Ownership for a Requester Publication is required and will be printed in the issue	II, 0 ms 550 2,846 13,240 143 13,382 80.02% - 10,594 13,240 80.02% solution	0 407 13,002 106 13,198 9,48%
	years old, Requesti induced by a Premium, Bulk Sales and Requests inducing Association Requests, Names oblained from Business Directories, Lists, and other sources) (3) Norrequested Copies Distributed Through the USPS by Other Classes of Mall e.g. First-Class Mal Norrequested Copies malled in excess of 10% Limit mailed at Standard Mall® or Package Services Rates) (4) Norrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Copies Distributed Outside the Mall (Include Pickup Stands, Trade Shows, Showro and Other Sources) Total Nonrequested Distribution (Sum of 15(1), (2), (3), and (3) Total Distribution (Sum of 15f and 1) Percent Paid and/or Requested Circulation (15c divided by 15f times 100) Electronic Copy Circulation Requested and Paid Electronic Copies Total Requested and Paid Pinit Copies (In 15c)+ Requested/Paid Electronic Copies (Line 16a) Total Requested Copy Distribution Distribution (Both Print & Electronic Copies) (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16a) Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (Line 16b) weed by 16c x 100) Contribution of Statement of Ownership for a Requester Publication is required and will be printed in the issue	II, 0 ms 550 2,846 13,240 143 13,382 80.02% - 10,594 13,240 80.02% solution	0 407 13,092 109 13,198 79,48% 10,092 79,48%

ĂMEDCO

Let our diagnostics **specialists** make you a diagnostics **expert.**

At MEDCO, we're committed to helping your customers select the right diagnostic platform for their businesses. That's why we've established a **Diagnostics Team** to work with you, work with them, and work to grow your business and theirs.

For more information, call our **Diagnostics Hotline** at 888-646-0100

For more information, click on "PD e-inquiry" at VehicleServicePros.com





MEDCO Toll Free: 800-541-5827 ACE Toll Free: 800-777-5910





The #1 Steel Dent Repair Station PLUS Glue Pulling & MORE!

APPLICATION

Multiple weld-on pulling, no-heat glue pulling, and metal shaping options to repair damage in automotive steel panels and rockers.

FEATURE & BENEFITS

- HD GLUE & TABS Performs heavy duty pulls without any welding or removing of parts, paint, or protective coatings.
- EVERY MAXI PULLER Easily accessible and neatly organized for increased efficiency.
- METAL SHAPING TOOLS Includes six
 hammers, seven dollies, body file, & fender puller.
- 5 YEAR WARRANTY Peace of mind your investment will be working when you need it.

INSIDE THE DRAWERS





MADE IN THE USA

NOW INCLUDES

Bridge Puller works with BOTH Keys & Glue Tabs I EQUIP

DF-505/DXE

CILIZATION OF