

# PROFESSIONAL DISTRIBUTOR

DECEMBER 2023  
VOL. 31 NO. 10

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ENDEAVOR  
BUSINESS MEDIA

## HIT THE LIGHTS

Lighting isn't as easy as flipping a switch, help your customers understanding what type of lighting they need to get the job done.

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Most Wanted Page 10

Show Me Your Truck Page 36

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SP Tools USA distributor Darius Anderson

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SERVICE  
PROS**.COM

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PROFESSIONAL DISTRIBUTOR



### IN FOCUS:

The GEDORE Thread Reset Tool, No. KL-0173-602 KA, repairs damaged threads without compromising the wheel stud's strength.

[VEHICLESERVICEPROS.COM/53078335](http://VEHICLESERVICEPROS.COM/53078335)



### EVENT WRAP-UP:

MEDCO CEO Kevin Short discusses new opportunities for mobile tool distributors if they're willing to take the leap.

[VEHICLESERVICEPROS.COM/53076044](http://VEHICLESERVICEPROS.COM/53076044)



### PHOTO GALLERY:

In case you missed it, check out the sights and scenes from the 2023 SEMA Show.

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**EMILY MARKHAM**  
EDITOR  
*Emily@*  
*VehicleServicePros.com*

## Out with the old...

... and in with all the new opportunities 2024 has to offer!

It's just about a wrap on 2023, but what a wonderful year it's been! I know I'm grateful for all the opportunities and growth this year has afforded me, and I hope 2023 has been just as kind to all of you.

I've learned a lot this year. Becoming the editor for *Professional Distributor* and *P TEN*, I learned how to be a manager – looking after not only myself but my team as well. I found I really had to hone in on my time management skills, become better at delegating tasks where I could, and put in extra work on nights and weekends.

Whether you're a new tool distributor or have been at this for years, whether you're a team of one or a team of many, I know all of you have been doing much the same as I have throughout this year. I know it's not easy being a small business owner and fighting battles you often have no control over – the pandemic, the supply chain, online retailers, etc. But I'm always so impressed by the passion and resilience of this industry, and I'm so proud to be able to feature many of you within the pages of *PD*.

Though we won't be ringing in the new year together, I'd like to raise a glass to all of you for all the hard work you've put in this year. The *PD* team wishes you all a happy and prosperous new year. Cheers!

### UPDATES FOR 2024

Looking forward, I have a few updates to share. The first being that *VehicleServicePros.com* is

getting an update. As you may know, back in June of 2022 Endeavor Business Media joined forces with 10 Missions Media creating a stronger-than-ever Vehicle Repair Group. (Learn more about the acquisition here: [VehicleServicePros.com/21269661](http://VehicleServicePros.com/21269661).)

So, after adding five new publications to the group, we've spent the last year and a half learning about each other's publications and figuring out the best ways to serve you, our readers. Long story short, in 2024, *VehicleServicePros.com* will be merging *Auto Service Professional* with *Motor Age* to continue providing technical content on the website. Additionally, *ABRN* will no longer be a part of *VehicleServicePros.com* as it will be integrated with the *FenderBender* website.

We believe this transition will provide readers with a more satisfying website experience, as content geared toward the same parts of the industry will be grouped together.

The website update is set to launch in early 2024 and will continue to provide information, insight, and intelligence on industry trends and technology so you can stay engaged and well-informed.

In other news, starting in 2024, *Professional Distributor* will be running eight print issues a year instead of 10. The February and August issues are being dropped, but don't worry! We've been cooking up lots of new ideas to up our digital content game and provide you with more articles, sales tips, and videos than ever. See you in the new year! **PD**

# PROFESSIONAL DISTRIBUTOR

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**EXECUTIVE VICE PRESIDENT – TRANSPORTATION**

Kylie Hirko 630-253-4034 [Kylie@VehicleServicePros.com](mailto:Kylie@VehicleServicePros.com)

**VP/GROUP PUBLISHER, ENDEAVOR VEHICLE REPAIR GROUP**

Chris Messer 651-206-3168 [CMesser@EndeavorB2B.com](mailto:CMesser@EndeavorB2B.com)

**EDITORIAL DIRECTOR** Matt Hudson

651-846-9478 [MHudson@EndeavorB2B.com](mailto:MHudson@EndeavorB2B.com)

**EDITOR** Emily Markham

920-234-6359 [Emily@VehicleServicePros.com](mailto:Emily@VehicleServicePros.com)

**ASSOCIATE EDITOR** Kayla Nadler

920-563-1764 [Kayla@VehicleServicePros.com](mailto:Kayla@VehicleServicePros.com)

**ASSISTANT EDITOR** Elli Carder

224-324-8514 [Elli@VehicleServicePros.com](mailto:Elli@VehicleServicePros.com)

**ASSOCIATE SALES DIRECTOR** Mattie Gorman-Greuel

920-563-1636 [MGorman@EndeavorB2B.com](mailto:MGorman@EndeavorB2B.com)

**DIRECTOR OF BUSINESS DEVELOPMENT** Cortni Jones

920-568-8391 [CJones@EndeavorB2B.com](mailto:CJones@EndeavorB2B.com)

**ACCOUNT EXECUTIVE** Diane Braden

920-568-8364 [DBraden@EndeavorB2B.com](mailto:DBraden@EndeavorB2B.com)

**ACCOUNT EXECUTIVE** Lisa Mend

949-259-5654 [LMend@EndeavorB2B.com](mailto:LMend@EndeavorB2B.com)

**ACCOUNT EXECUTIVE** Michael Parra

925-307-8779 [MParra@EndeavorB2B.com](mailto:MParra@EndeavorB2B.com)

**PRODUCTION MANAGER** Jane Pothlanski

224-324-8507 [JPothlanski@EndeavorB2B.com](mailto:JPothlanski@EndeavorB2B.com)

**AD SERVICES MANAGER** Carmen Seeber

920-568-8373 [CSeeber@EndeavorB2B.com](mailto:CSeeber@EndeavorB2B.com)

**ART DIRECTOR** Tim Schafer

**LIST RENTAL REP** Michael Costantino

402-836-6266 [Michael.Costantino@infogroup.com](mailto:Michael.Costantino@infogroup.com)

**LIST RENTAL REP** Kevin Collopy

402-836-6265 [Kevin.Collopy@infogroup.com](mailto: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

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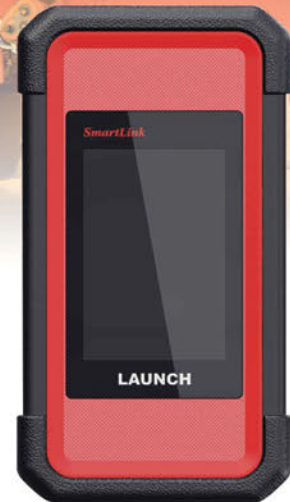
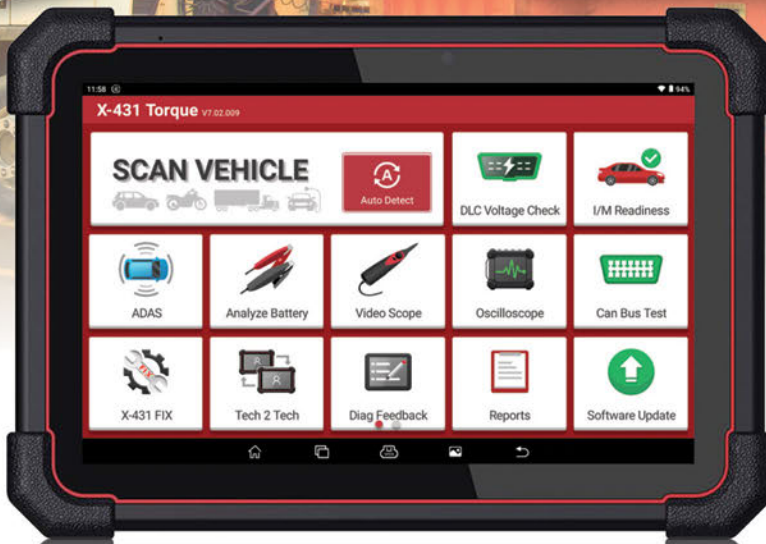
# X-431 Torque AutoHD Pro

A COMPREHENSIVE AUTOMOTIVE AND

# HEAVY DUTY

DIAGNOSTIC TOOL

**NEW!**



## FEATURES:

- Integrated with new powerful hardware X-431 Torque Link tablet, maximizing the ability to faster diagnosis.
- OE-level U.S. vehicle coverage as well as Asian, European coverage from 1996 and newer.
- Read and erase DTCs of light, medium and heavy-duty vehicles (Class 4 through 8).
- Wireless and wired communications via Bluetooth and USB
- Works on various systems, including Engine, Transmissions, ABS and Auxiliary from manufacturers such as Wabco, Bendix, and Allison.
- Support Cummins, Detroit, Freightliner, Fuso, Hino, International, Isuzu, KW, Peterbilt, Sterling and Volvo.
- Multilingual menu and date display: English, Spanish and French.

## SPECIFICATIONS:

- Operation System: Android 10.0
- Processor: 2.0GHz 4-core
- RAM: 4G
- Storage: 128G
- Screen: 10.1-inch 1280\*800
- Camera: Front 5 MP + Rear 8 MP
- Battery: 47880mWh(7.6 V,6300mAh)
- Connectivity: Wi-Fi 2.4GHz/5GHz (dual frequency)
- Interface: Type A \*1 & Type C\*1
- Working temperature: 0 to 50°C
- Size: 274\*190.5\*40.5mm

## ALL BASES COVERED



## Welcome to Sneak Peek!

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



### NEW INTUITIVE USER INTERFACE

The **Matco Tools Maximus 5.0** diagnostic scan tool is ideal for master technicians. Engineered with advanced technology, the Maximus 5.0 is designed to deliver a combination of automotive intelligence, quick navigation, and ergonomic handling for optimal efficiency. Offering a new intuitive user interface, a larger touchscreen, increased memory, and extended battery life, the Maximus 5.0 comes fully equipped and is available with carline (No. MDMAX5CL) or carline and heavy duty software (No. MDMAX5CLHD). ■

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### PREVENTS ROUNDING OF HEX FASTENERS

The **GripEdge Tools RPT Hex Bit Sockets** are designed to prevent the rounding of good hex fasteners while being able to remove damaged ones. Featuring patented RPT (rounding prevention technology), the sockets deliver up to 50 percent more torque on good hex fasteners, and up to 400 percent more on damaged ones, according to the company. Available in sizes ranging from 1.5mm to 10mm and 1/16” to 3/8”. ■

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### FEATURES RUBBER O-RING

The **Mayhew Tools Spark Plug Thread Chaser**, No. 37900, is designed to clean and restore damaged spark plug holes, either 18mm by 1.50mm or 14mm by 1.25mm. By placing the spark plug thread chaser into the impacted area and using a 3/16” ratchet or deep socket, users can effectively engage with the threads to clean and restore them. Additionally, the Spark Plug Thread Chaser features a rubber O-ring, preventing unnecessary slippage and ensuring correct alignment while in use. A black nitride finish helps prevent rust and provides corrosion and abrasion resistance. Made in the U.S.A. ■

**For more information, click on “PD e-inquiry” on VehicleServicePros.com**



### RUBBERIZED BASE TO PREVENT SCRATCHING

The **3-pc Magnetic Socket Organizers** from **Dynamic** come equipped with a strong magnetic base, making them ideal for mounting on the side of a toolbox or any other steel surface. Each set includes three different drive sizes - 1/4”, 3/8”, and 1/2” - and is available in both SAE and metric socket sizes. The SAE set comes in red and can hold up to 68 sockets ranging from 1/8” to 1-1/4”, while the blue metric set can hold up to 75 sockets from 4mm to 27mm. These organizers accommodate regular and deep chrome sockets, as well as impact sockets, and are clearly labeled. They also feature a rubberized base and meet ANSI standards. ■

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### FEATURES A CURVED AND STRAIGHT END

The **CTA Tools HD Metal Trim Tool**, No. 1452, is designed for the safe prying and removal of interior and exterior trim components. This double-ended tool features a slim, tapered tip made from high strength steel to prevent bending and damage. One end has a curved tip and the other end has a straight tip, allowing users to match the angle required for prying in tight spaces. With its tapered and curved tips, the HD Metal Trim Tool allows technicians to quickly and safely release stuck trim pieces, light fixtures, panels, and more without damaging vehicle surfaces. ■

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### CONCAVE CENTER HELPS PREVENT WHEEL SLIP OFF

The **Tool Aid 10-pc Wheel Stud Pin Hanger Set**, No. 65180, is designed to thread into the wheel hub of many European vehicles, assisting in safe removal and installation. The set helps align and stabilize brake discs to the hub during service. The pins are color coded, have laser etched sizes for easy identification, and are packaged in an EVA foam tray with their sizes etched into the tray as well. Their concave center also helps prevent wheel slip off. The set includes two of each size: M12 by 1.25, M12 by 1.5, M14 by 1.25, M14 by 1.5, and M16 by 1.5. All sizes are also available individually. ■

**For more information, click on “PD e-inquiry” on VehicleServicePros.com**





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### OFFERS TOUCHSCREEN COMPATIBILITY

The **Magid 21G ANSI A4 Work Glove** is engineered specifically for dexterity and comfort. The glove's 21-gauge ultra-thin specialty fiber blend shell allows for a bare-hand feel and its polyurethane palm coating gives users increased grip and touchscreen compatibility. These gloves are intended for jobs that require the handling of small parts. ■

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### LASER ENGRAVED WITH SIZES

The **ARES 23-pc Master Impact Socket Accessories Set**, No. 27079, includes nine wobble extensions, three impact power adapters, three power hex couplers, and three universal joints, each with 1/4", 3/8", and 1/2" drive sizes, as well as five socket adapters. The accessories are made of premium chrome-moly steel with a black manganese phosphate finish that resists corrosion, and each component is laser engraved with size and tool information. The universal joints feature a swivel design that adds leverage for fasteners at any angle, while the wobble design of the extensions offers articulation for greater access. The adapters and hex bit couplers offer further versatility, with five common step-up and step-down sizes and three hex sizes. ■

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### AVAILABLE IN 110V AND 220V

The **MAXI EX** from **Dent Fix Equipment** is designed to efficiently repair light to moderate collision damage on automotive steel panels. Available in 110V (No. DF-505EX110) and 220V (No. DF-505EX220) configurations, the single-phase steel dent pulling station provides the technician with the power they need to shrink, pull rocker panels, repair hail damage, creases, dents in hard-to-access areas, and all types of metal damage. It features an extended handle to organize the cables and to enable safe movement of the unit, a padded seat to bring the technician to eye level with the repair area, and accessory trays for consumables and tools. ■

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### FEATURES NEODYMIUM MAGNETS FOR HOLDING POWER

The **Mac Tools Vinyl Magnetic Mat** measures 8" by 10" and is made with neodymium magnets which are designed to provide holding power for ferrous tools and parts. The mat can be bent to fit curved surfaces and can be used either vertically or horizontally to hold tools and parts nearby. Its PVC outer material withstands common shop fluids and resists puncture. ■

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### QUICKLY CHECKS TORQUE WRENCHES

The **Hazet Torque Testers**, Nos. 7901E, 7902E, and 7903E, are designed to offer a reliable control aid for torque wrenches. The 7901E has a fixed internal 1/2" square socket and can measure torques between 7.37 to 258.15 ft-lbs. The 7902E has a fixed 27mm hexagon socket and measures from 36.88 up to 811.30 ft-lbs. The 7903E has a fixed 10mm external hexagon socket for smaller torque wrenches and comes with additional 1/4" and 3/8" adapters. It can measure 1.10 to 22.18 ft-lbs with a maximum tolerance of +/- 1 percent. The torque testers feature a large, easy-to-read LCD display with backlighting, a quick test function, an IP40 protection rating, and three measurement readouts. ■

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### FEATURES DUAL WI-FI MODULES

The **Xtooltech USA XT80W Smart Diagnostic System** features dual Wi-Fi modules for stable data transfer between the tablet and VCI. It offers full OBD-II functionality and comprehensive automotive diagnostics including ECU version information, fault codes, live data streams, and freeze frames. The XT80W also supports 38 common functions such as throttle adaptation, ABS bleed, maintenance light reset, EPB test, SAS calibration, BMS reset, injector coding, DPF regeneration, TPMS reset, and ADAS calibration capabilities. ■

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## FEATURES SMART DEVICE CONNECTIVITY

The **Teledyne FLIR ONE Edge** is a wireless dual thermal and visible camera for mobile devices. It offers the same detachable form factor as the FLIR ONE Edge Pro with Bluetooth and wireless connectivity but with features tailored to the needs of consumers and small businesses. Smart devices can be connected through the FLIR ONE app, allowing users to identify thermal hot or cold spots that could indicate faults and developing issues. Additionally, the ONE Edge provides ideal context and clarity for everyday decision support through Multi-Spectral Dynamic Imaging (MSX), a patented image enhancement feature that overlays visible edge detail on the thermal image without sacrificing any thermal details. ■

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## PATENTED MICRO DIAMOND GRIP

The **EPPCO Grease Bully MDT Nitrile Gloves** are chemical-resistant disposable gloves with a patented micro diamond grip textured surface that is designed to provide a better grip. The gloves are commercial grade, 7-mil thickness, powder-free, and latex-free. The Grease Bully MDT Nitrile Gloves come in safety red and are available in sizes medium through XXL. ■

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## SUPPORTS 35 SERVICE FUNCTIONS

The **Foxwell i70TSII Premium Diagnostic and TPMS Scanner** is built on the Android 9.0 operating system and offers vehicle fault diagnostic technology as well as integrates with TPMS service functions, including TPMS health check, sensor activation and programming, and TPMS relearn. The unit delivers OE-level diagnosis for more than 130 makes, supports 35 service functions (such as brake deactivation, service reset, and injector coding), runs bidirectional tests, offers automatic VIN readings, triggers all known TPMS sensors, programs Foxwell sensors, and supports CAN FD/DoIP. It operates wirelessly and offers a one-touch update via Wi-Fi. ■

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## BEVEL GEARS PREVENT STALLS

The **AIRCAT 1/4" Mini Angle Die Grinder**, No. 6250, features a .3hp motor that produces 18,000 rpm free speed. Weighing just 1lb and measuring 5" in length, the 6250 provides added control and maneuverability while allowing access into tight spaces. It also offers heavy duty bevel gears that prevent stalls, a variable speed trigger that allows users to control the tool speed, an over-mold grip for added user comfort, safety lock-off throttle levers to prevent accidental start-ups, and a rear exhaust with AIRCAT's silencing system to reduce noise levels to 81.5 dBA without reducing the tool performance. ■

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## FEATURES A LONG BURP FUNNEL

The **No-Spill Coolant Filling Funnel Kit**, No. 87007, from **OEMTOOLS** funnels automotive fluids, such as radiator coolant and oil, into any vehicle. The long burp funnel is designed to prevent spills and trapped air during refills after a coolant flush. This kit includes five adapters, two 45-degree elbow adapters, two 5" extensions, and four radiator cap adapters to fit most passenger vehicles and light trucks. Additionally, the kit features a rotary switch to prevent drips and spills and stop overflow. ■

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## MODULAR DESIGN FOR OPTIMAL ORGANIZATION

The **Ascot Supply 32-Bin Metal Storage Cabinet** features a modular design for optimal organization, mounting holes located at the top and bottom, and hemmed bin fronts for retaining parts. Additionally, the cabinet is constructed with heavy duty steel that provides strength and stability. The cabinet comes fully assembled and ready to use. The cabinet is 33-3/4" wide by 8-1/2" deep by 19-1/4" high. The bin sizes are 4" wide by 8-3/8" deep by 4-1/2" high. ■

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# KEEP 'EM ORGANIZED, LIKE THE PROS.



## SERVICE CARTS.

 DURABLE POWDER COAT FINISH

**4**  
DRAWER

**35**  
INCH

35.1 x 23.2 x 45.8 in. **SIZE**

**INTEGRATED POWER STATION**

 **4X** 110V OUTLET POWER STRIP

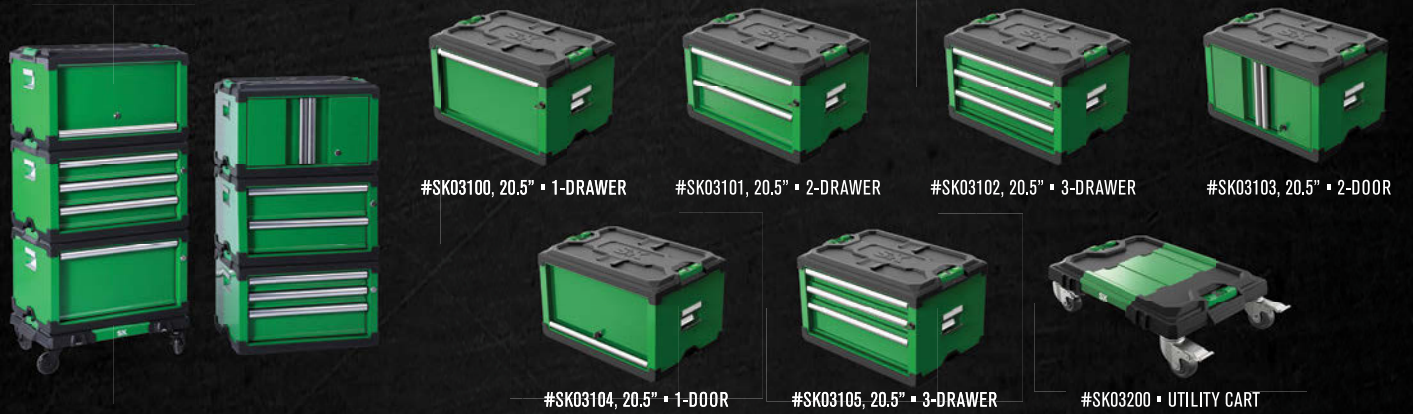
 **2X** 110V USB PORTS

**6**  
DRAWER

**35**  
INCH

35.1 x 23.2 x 45 in. **SIZE**

## NEW SK MODULAR/STACKABLE STORAGE TOOLBOXES



#SK03100, 20.5" • 1-DRAWER    #SK03101, 20.5" • 2-DRAWER    #SK03102, 20.5" • 3-DRAWER    #SK03103, 20.5" • 2-DOOR

#SK03104, 20.5" • 1-DOOR    #SK03105, 20.5" • 3-DRAWER    #SK03200 • UTILITY CART

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[www.sktools.com](http://www.sktools.com)

# 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 Up to 1,000 lm

The **DeWalt Rechargeable LED Task Light**, No. DCL182, features a pivoting light head, strong magnets for mounting, and a carabiner for transport and storage. As well as these things, the light has an LED output of up to 1,000 lumens of brightness on high mode and a runtime of up to 12 hours. Charging this light takes around 85 minutes using 5VDC 3A power supply/brick. The USB charging cable is included.

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### B Remove and install wheel bearing locknuts on SUVs and trucks

The **OEMTOOLS 7-pc Wheel Bearing Locknut Set**, No. 37385 can be used to remove and install the wheel bearing locknuts found on many Dodge, Ford, and Toyota SUVs and trucks. The removal set comes with popular metric sizes for front and rear wheels of imported trucks, and includes an SAE socket for American-made trucks with dual rear wheels. This set can be used with a 1/2" square drive ratchet, breaker bar, or torque wrench. Included in the set are standard hex and rounded hex sockets for universal appeal.

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### C Constructed from aircraft-grade aluminum

The **NEBO Big Larry 3 Work Light** is a worklight, a flashlight, and a red task light in one. Offering seven light modes, it emits up to 600 lm as a worklight, 220 lm as a flashlight, and 40 lm as a red task light. With useful features like variable dimming, direct-to-red, power memory recall, and a strong magnetic base the light offers versatility for all lighting needs. The Big Larry 3 is constructed from aircraft-grade aluminum and has a rubber grip for impact-resistant drop protection. Carry it in a pocket or on a belt with the sturdy steel belt clip. Battery powered with three AA batteries (included).

For more information, click on "PD e-inquiry" on [VehicleServicePros.com](https://www.vehicleservicepros.com)



### D Hooked tip for leverage

The **Klein Tools Locknut Wrench Set**, No. 50900R, features opposing offset bends for access to difficult-to-reach locknuts. Three wrenches are included in this set: 1/2", 3/4", and 1". Two internal magnets on each wrench hold the set together for easy storage. The alloyed steel design allows for access when space is limited. For size identification, each wrench is a different color. The hooked tip latches on the locknut for additional turn leverage. Its steel design is corrosive resistant.

For more information, click on "PD e-inquiry" on [VehicleServicePros.com](https://www.vehicleservicepros.com)

### E Provides leverage to 3/8" tools

The **Assenmacher Specialty Tools 10mm Bypass Wrench**, No. BY10, is designed to access bolts and nuts by going around obstructions that would normally be in the way. The BY10 is able to access hard-to-reach places and provides leverage to 3/8" tools. It is ideal for various CASE Construction Equipment and Chelsea-Allison PTOs as well as any other applications requiring a 10mm. Made from forged steel. Also available in 13mm (No. BY13) and 14mm (No. BY14).

For more information, click on "PD e-inquiry" on [VehicleServicePros.com](https://www.vehicleservicepros.com)



## F Head flexes through 180 degrees

### The 90-Tooth 12-Point GearBox Double Flex Ratcheting

**Wrenches** from **GEARWRENCH** deliver a 4-degree swing arch for improved access. With a longer, wider beam, the wrenches offer improved reach, leverage, and comfort. The head flexes through 180 degrees for adjustable access angles. Additionally, the ratcheting wrenches feature off-corner loading that reduces fastener rounding, large color markings for easy size identification, and full polish chrome. Available in two sets: 6-pc metric and 4-pc SAE.

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



F

## I Handsfree motion detection

The **Lumileds Philips Xperion 6000 Headlamp** is a headband-mounted worklight that allows service professionals to shine LED illumination exactly on the task at hand. Powered by the Philips Xperion LED chips, the headlamp uses two light sources. Across the front of the headband, an LED light strip provides a broad beam of light up to 300 lm in boost mode and up to 150 lm in eco mode. On the side of the headband a spotlight provides a narrow beam of up to 120 lm. To ensure ease of use, the headlamp is equipped with a handsfree motion detection feature that allows the user to turn the light on and off without touching it.

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



I

G



## G Convert R-12 or R-134a manifold gauge sets

The **FJC R-1234yf Conversion Kit with Manual Couplers**, No. 6820, can be used to convert R-12 or R-134a manifold gauge sets to connect to R-1234yf mobile A/C systems. Features a brass high-side manual coupler with M12 fitting and a brass low-side manual coupler with M12 fitting. In addition there are two fittings (M12 by 1/4" SAE) to connect high- and low-side manual couplers to 1/4" R-12 hoses; and two fittings (M12 by M14) to connect the high- and low-side manual couplers to M14 R-134a hoses.

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

## H Removes seals, plastic clips, O-rings, and more

The **Lisle Corporation 2-pc Pocket Pry Bars**, No. 35170, are ideal for use when removing seals, electrical connectors, plastic clips, O-rings, plastic caps, interior trim pieces, and metal and plastic retainers. The 1/8" and 3/16" square shaft pry bars each have a pocket clip and measure 4.5" in length. The 1/8" pry bar features a magnet in the top of the handle that can lift 1 lb.

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



H

## J Removes damaged and corroded lugs

The **CTA Tools Emergency Twist Flip Socket Set**, No. 5700, comes with six sockets that cover commonly used sizes for lug nuts and lug bolts. Made from high-quality steel for durability and strength, this socket set is designed to remove damaged and corroded lug nuts. It features a twist-flip design which allows users to switch between standard hex sockets and twist sockets with just one hand. The set includes 17mm, 19mm, 21mm, 13/16", and 7/8" sockets. It also includes a matching emergency twist size on the opposite end of each socket and a 3" long 1/2" drive extension for use on all sockets.

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J



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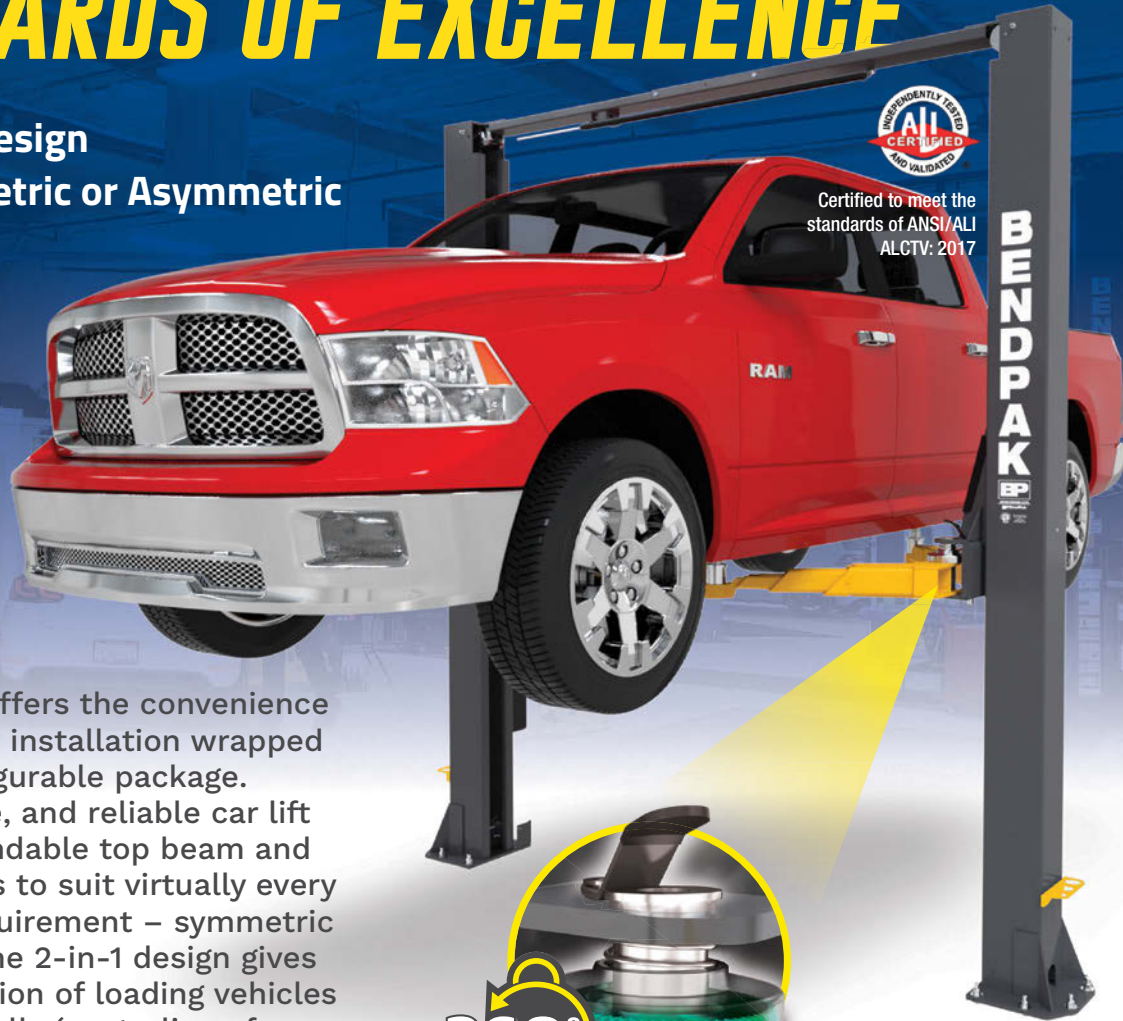
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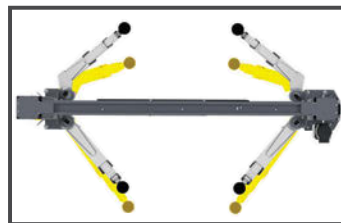


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**W**e saw a number of products introduced at the AAPEX and SEMA shows again this year. Here are some new tools and equipment selected by our editorial staff that piqued our interest.



### Hofmann Armored Series 2400P Wheel Balancer

The **Hofmann Armored Series 2400P Wheel Balancer** is designed for high-volume shops. Developed using forged steel, the wheel balancer offers resilience, even in tough environments. It features a large, high-resolution touchscreen display with easy-to-read large digits, a compact framework, a laser scanner that automatically detects the number and position of rim spokes, and it incorporates a power clamping device that secures the wheel with a constant force. The unit also automatically detects wheel dimensions and selects the appropriate balancing mode, weight type, and weight position, and automatically detects the rim width by utilizing sonar sensors.

*Editor's Note: The Hofmann 2400P is ideal for both standard and EV wheels. It not only automatically detects wheel dimensions but also automatically detects the rim width by utilizing sonar sensors. Both features eliminate the need for manual input, reducing the possibility of errors.*

For more information, click on "PD e-inquiry" at [VehicleServicePros.com](http://VehicleServicePros.com)

### JohnDow Industries Vehicle Fire Blanket, No. JDI-VFB1

The **JohnDow Industries Vehicle Fire Blanket**, No. JDI-VFB1, is designed to suppress EV, hybrid, and internal combustion engine vehicle fire flames and fumes. The high temperature-resistant material prevents the fire from spreading and damaging surrounding vehicles and property in the shop. It also deprives vehicle fires of oxygen and minimizes the potential combustion reducing the fire temperature. The blanket measures 19.5" by 29.5" (575 sq. ft.) and weighs 61.7 lbs. It's made from fiberglass with flame-resistant coating material and includes large deployment handle straps and a storage bag for easy portability. An optional wall rack is available (No. JDI-WRFB).



*Editor's Note: This fire blanket enables techs to isolate a Li-ion battery fire, preventing it from spreading and ultimately keeping it from damaging surrounding vehicles and the shop. Although it may not put out the fire, it will contain it until the fire department arrives. Safety is always a No. 1 priority.*

For more information, click on "PD e-inquiry" at [VehicleServicePros.com](http://VehicleServicePros.com)

### KNIPEX 9" Crimping Pliers - Four-Mandrel DT Contacts

The **KNIPEX 9" Crimping Pliers - Four-Mandrel DT Contacts**, No. 97 52 67 DT, are



designed to crimp all turned male and female contacts for the DT, DTM, and DTP series (Deutsch series). The pliers have a crimping capacity from 22-12 AWG and their synchronous feed of the four mandrels achieves ideal crimping results with eight indentations (4/8-indent). Additionally, the tool features a crimp depth selector wheel with eight locking positions, a non-locking ratchet mechanism, comfortable multi-component grips, and the position settings for the crimp depth can be clearly read on the pliers.

*Editor's Note: This crimper offers repetitive, high crimping quality thanks to its ratchet (unlockable) mechanism and features a universal positioning locator for flexible adjustment of all contact lengths.*

For more information, click on "PD e-inquiry" at [VehicleServicePros.com](http://VehicleServicePros.com)

### GEDORE Thread Reset Tool, No. KL-0173-602 KA

The **GEDORE Thread Reset Tool**, No. KL-0173-602 KA, repairs damaged threads



without compromising the wheel stud's strength. The tool offers chipless repair, uses roll-forming technology, and can service the wheel stud in just 30 seconds, says the company. All the user needs to do is attach the tool to the wheel stud, use their 41mm socket wrench, remove it, and the repair is finished. This kit covers all makes and models on the road.

*Editor's Note: Updated from its predecessor, the Thread Reset Tool is able to repair damaged threads and retain the wheel stud's integrity. This kit covers all passenger vehicles in North America, making it a great addition to any toolbox.*

For more information, click on "PD e-inquiry" at [VehicleServicePros.com](http://VehicleServicePros.com)



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[VehicleServicePros.com/53077686](https://VehicleServicePros.com/53077686) and [VehicleServicePros.com/53077134](https://VehicleServicePros.com/53077134)

## Portacool Apex Series

The **Portacool Apex Series** comprises six different models that cool areas from 500 to over 6,500 sq. ft., cooling with amplified air velocity across the entire line. The cooler's design features optimized airflow patterns that are intended to enhance the evaporative cooling experience. Additionally, this series includes the CoolSync technology platform which allows control over the fan's speed, the water distribution system, and more via the Portacool app.

*Editor's Note: This updated line from Portacool offers so much with the touch of a button in the new CoolSync app; not only can users control fan speed, they can also direct the air flow and monitor the water-level while receiving real-time updates. The redesign also offers reduced noise levels.*

For more information, click on "PD e-inquiry" at [VehicleServicePros.com](https://VehicleServicePros.com)



## Hunter Engineering Ultimate ADAS

Hunter Engineering's Ultimate ADAS system is designed to eliminate error-prone manual layouts common to static ADAS calibrations. Ultimate ADAS combines Hunter's standard-setting alignment technology with a guided target placement system for around-the-vehicle coverage. Gimbal-mounted lasers are the key component, replacing the inexact guesswork for strings, plumb bobs, and tape measures to cut setup time by 70 percent for certain procedures. The gimbals' onscreen guidance provided by Hunter's WinAlign software increases target placement precision by automatically compensating for non-level floors, monitoring for placement errors, and confirming accuracy with laser measurements each step of the way. Ultimate ADAS is currently exclusively available to Honda and Acura dealers, with availability set to expand in 2024.

*Editor's Note: After watching a live demo of this system, it's safe to say that the claim of cutting setup time by 70 percent is no exaggeration. A normally 15-minute, 21-step OEM procedure was done in less than two minutes.*

For more information, click on "PD e-inquiry" at [VehicleServicePros.com](https://VehicleServicePros.com)



## Philips Xperion 3000 Pocket LED Lamp

The Lumileds Philips Pocket LED Lamp delivers a 300 lm white beam and has a battery life of three hours regularly or 10 hours in eco mode. The 180-degree pivoting base allows users to direct the light exactly where they need it to go. If users need to work handsfree, the Pocket Lamp has a 360-degree retractable rotating hook, as well as a magnet built into the base. With its robust housing, the light is able to withstand some rough treatment. Comes with a USB-C charging cable.

*Editor's Note: The professional-quality and affordably priced Xperion 3000 Pocket Lamp is part of Philips' new line of work lights. The Pocket Lamp has all the bells and whistles a tech could ask for — magnet-pivoting base, rotating hook, water-, impact-, and solvent-resistance, and rechargeable lithium batteries.*

For more information, click on "PD e-inquiry" at [VehicleServicePros.com](https://VehicleServicePros.com)



## Rotary All-Vehicle Lift Arms

The Rotary All-Vehicle (AV) Lift Arms are designed to allow for maximum reach and retraction to properly lift all vehicles within the rated lift capacity using OEM-recommended pickup points. Whether utilizing the AV Lift Arms on an existing Rotary SPOA10 series lift or installing a next-generation lift system, shops of all sizes can easily lift nearly any vehicle make and model, including EVs, imports, and luxury vehicles, using a single lift. Notable key features include full clearance on EVs for easy battery removal and service, a larger pickup range for easier vehicle spotting, low-profile arms, and a shorter arm retraction.

*Editor's Note: The AV lift arms make it easier for techs to pick up nearly any vehicle make and model, including EVs and very low-profile sports cars, using a single lift. The design eliminates the need to re-spot vehicles, maximizing labor time.*

For more information, click on "PD e-inquiry" at [VehicleServicePros.com](https://VehicleServicePros.com)

# VIM TOOLS

## Telescopic Wrench Extender 18"-26"

The extender is meant to be used in any application where a wrench is needed and extra leverage is required to remove stubborn or seized bolts.



### APPLICATION

The VIM Tools Telescopic Wrench Extender 18"-26", No. TWE26, is meant to be used in any application where a wrench is needed and extra leverage is required to remove stubborn or seized bolts.

### FEATURES AND BENEFITS

The extender locks any wrench (8-32mm) in place to give the user plenty of leverage to safely remove stubborn bolts as opposed to using a pipe or double wrenching which can end in busted/bruised knuckles.

### SELLING POINTS

- The TWE26 consists of the TH21 21" telescoping handle that locks in three different lengths and works with a variety of head attachments offered by VIM Tools.
- **The bottom of the handle conveniently pops out and has a pin to release the locking mechanism in the head of the tool.**
- The tool's knurled grip helps prevent slipping.
- Additional attachments available:
  - 1/2" Dr. Breaker Bar Attachment, No. BB24A
  - 1/2" Dr. 90T Flex Ratchet Head Attachment, No. FR25A
  - 13/16" - 1-7/8" Spring-Loaded Crowfoot Attachment, No. SCF25A

### STORAGE AND DISPLAY

There is one unit per package, packaged in a cardboard box.

### MANUFACTURING SPECS

The tool has a chrome finish and is made in Taiwan.

**\$ SUGGESTED RETAIL PRICE**  
\$116

**i FOR MORE INFORMATION**  
Contact [sales@vimtools.com](mailto:sales@vimtools.com).





FOR MORE INFORMATION ABOUT ANY OF THESE PRODUCTS, CLICK ON "PD E-INQUIRY" at [VehicleServicePros.com](https://www.VehicleServicePros.com).

# K-TOOL INTERNATIONAL

## Dual Mode Air Operated Grease Gun

The Dual Mode Air Operated Grease Gun, No. KTIXD73901, is typically used when replacing ball joints, tie rod ends, sway bar links, and spacer joints.



### APPLICATION

The K-Tool International Dual Mode Air Operated Grease Gun, No. KTIXD73901, is typically used when replacing ball joints, tie rod ends, sway bar links, and spacer joints.

### MANUFACTURING SPECS

- Product is manufactured in India.
- Made from aluminum.
- Weighs 5.75 lbs.
- Volume – 14 oz. grease cartridge or 500 cc bulk fill.

### SELLING POINTS

- Dual mode eliminates the need for two separate grease guns.
- **Quick and easy switch from single shot to automatic in "one gun"**.
- Eliminates duplicate inventory of stocking multiple options.

### FEATURES AND BENEFITS

- Grease gun head fitted with bulk loader that doubles as an air bleeder.
- Ergonomic pistol grip and acute angle design for higher balance and ease of use, especially in narrow workspaces.
- Includes 30" flexible grease hose and coupler.
- For use with 14 oz. grease cartridge or 500 cc bulk fill.

### ORIGIN

The grease gun was developed to give the user two grease guns in one applicator.

### STORAGE AND DISPLAY

- Item is shipped in its own KTI box.
- One unit per box.
- Able to be hung from the hand tool display.

**\$ SUGGESTED RETAIL PRICE**  
\$75.99

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# HIT the lights

Lighting products are a must for every technician, and with the wide assortment available, it's important to understand the different types of lighting and which ones are best for specific repairs.

By Emily Markham, *Editor*





*Anderson knows the importance of demoing all his products so his customers know just what they can do.*

Photo courtesy of SP Tools USA

**T**hough often overlooked and taken for granted, lighting is an essential part of any technician's tool repertoire. Overhead lighting isn't always enough, especially when technicians are trying to look in at a vehicle's engine or peer up from underneath a car at its inner workings. Good lighting provides the ability to get a job done more quickly, efficiently, and safely.

While some may believe a light is a light is a light, mobile tool distributors like SP Tools USA's Darius Anderson know better.

The Robertsdale, Alabama-based distributor keeps an assortment of lighting products on his tool truck to keep his variety of customers stocked up. From servicing independent shops to dealerships to heavy duty and tractor stores, Anderson makes sure to have a little something for everybody. And with his supply of COB lights, worklights, torch lights, and much more from SP Tools USA, AceBeam, and

Maxxeon, he has plenty of options available.

This suits the distributor very well as he notes that he sells about one lighting product a day.

"Everybody needs lighting," he says. "If you don't have the right lighting, you can't do the job properly. I mean, that's just how it is."

### **A SHIFT IN LIGHTING**

With everyone having a need for lighting, and different needs at that, it makes sense that lighting has had to adapt

over the last decade or so to better fill those needs.

“A lot of changes have been made,” explains Mike Schira, sales manager for Maxxeon. “Like any category in the tool industry, it’s taking what you currently have and improving what exists in terms of specifications and durability.”

In the past, durability with lighting was a major issue. Between the halogen and incandescent bulbs in previous lighting products, any dropping of the light was likely to lead to a broken bulb, and the short lifespan of the bulbs meant frequent replacing. These bulbs were also quite the safety hazard. Even just brushing up against the light could be dangerous, as the bulbs would get hot enough to burn any unlucky individuals who got too close.

Nowadays, LEDs dominate the lighting scene, providing a longer-lasting, more durable, and cool-to-the-touch alternative. Not only that, but LEDs are far more energy efficient.

Marcus Burzynski, vice president of sales and marketing for NextLED, explains that in LED technology, it’s roughly 80 to 100 lumens per watt, whereas incandescent bulbs are somewhere around 16 to 20 lumens per watt.

In addition to the switch to LED, the batteries and rechargeability of lighting products have also advanced. Many lighting products now house a rechargeable Li-ion battery paired with a USB-C charging cable. With the USB-C cable being seen as the universal charging cord, this offers shops and technicians versatility with charging as lighting products from different brands can all be charged using the same cord.

## PICKING THE RIGHT LIGHT

When it comes to selling lighting products, Anderson makes sure his customers buy what they need for the job they’re doing. While some customers



*Technicians need a variety of lighting products, like this underhood light from NextLED, to accomplish their repairs each day.*

Photo courtesy of NextLED

come more prepared, having done their own research, others rely more on the distributor’s expertise.

“I’m not going to give a lube tech the most expensive [light] because that’s not what [they] need,” Anderson says, “but I’m not also gonna sell [them] something that is not up to par to what [they] need.”

There are a few different lights every technician should consider having in their arsenal – handheld lights, worklights, wearable lights, and pocket lights.

Streamlight’s Eric Pike, director of automotive, hardware, and ecommerce, describes the different functions of each category.

- Handheld lights – general purpose use
- Worklights – illuminate a specific space
- Wearable lights (like headlamps or neck lights) – allow for handsfree use
- Pocket lights – a quick access light for repairs or inspections

In addition to those four categories, there are a few specialized lighting categories – color-matching lights and leak-detection lights. A light like Streamlight’s Stinger Color-Rite light would aid technicians with color-matching, as the light uses a high-color

rendering index LED which allows technicians to see the color spectrum as they would in natural light. For leak-detection, Maxxeon’s LumaStik Combo UV and White Beam Inspection Light is designed to assist with detecting leaks as well as vehicle cracks and defects.

Moving outside of what a technician may keep in their own toolset, there are a few lights that shop owners may keep on hand for use as needed, particularly tripods, flood lights, and/or scene lights. These lights all work well to illuminate larger areas when overhead lighting just isn’t cutting it. For example, NextLED’s Cordless Tripod Work Light offers six lighting modes and features a magnetic detachable lamp head to ensure optimum positioning.

Regardless of the many options for lighting products available, keep in mind that just as a technician chooses which impact wrench they like best, lighting can also be a more personal choice.

“The funny thing about lighting is it’s unique,” NextLED’s Burzynski notes. “There are a lot of different solutions and finding what works best. Sometimes it’s that personal choice from the technician – what they get most comfortable ➔



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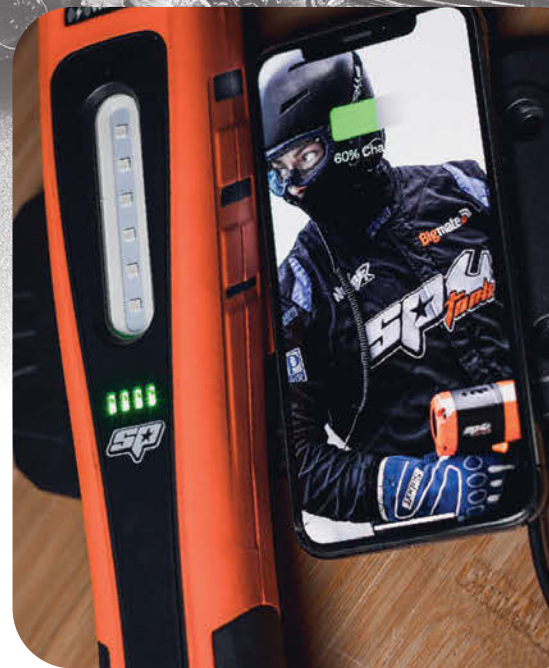
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*Pocket lights, like Streamlight's Wedge XT, can be a great resource for technicians to easily access during vehicle inspections.*  
Photo courtesy of Streamlight

using for that specific application. It's interesting how lighting really becomes a little bit more personal."

## ALL IN THE DETAILS

Step one may be helping your customers figure out the type of lighting product they need, but step two focuses more on the nitty-gritty details. With a multitude of pocket lights, wearable lights, etc. to choose from, you'll want to break their options down further by asking some questions about what exactly they want from this tool.

### Shop environment

To start, have your customer consider their shop's environment. How large is the shop? One bay? Two? 10? Depending on what they need the light for the size of the shop could matter. Same goes for the type of vehicles they are working on. The lighting needs for working on a light duty vehicle versus a heavy duty vehicle could be much different. The overhead lighting in the shop should also

be factored in. Poor overhead lighting would likely need to be countered with a higher lumen count. Lastly, how many electrical outlets are around the shop?

Burzynski notes that many shops don't have outlets everywhere, so "if chargeability is something that you're looking for...that's definitely something to take into consideration."

### Performance

When it comes to the performance of lighting products, lumen count and runtime are two major considerations, especially since the two are somewhat hand-in-hand.

"If you have a higher lumens output," Maxxeon's Schira explains, "you're typically going to run through your battery faster."

Thinking about what the technician plans to use this light for, if they need something that will run for a full 8-hour work day, then concentrating on the runtime may be more important than having the highest lumen count.

Another performance point to consider is durability. How robust is the casing on the light? Has the product been drop-tested? Is it water- and dust-resistant? A shop can be a rough environment, so the tool's must be able to keep up with the technician.

### Additional features

While sometimes a technician may just need a simple flashlight, other times having a more versatile piece of equipment is necessary. Lighting products that come with magnetic bases or retractable hooks, provide technicians with handsfree options. Streamlight's Pike also mentions rechargeability as another feature, meaning the light is ready to go when the technician is.

## SALES TIPS

Though Anderson has only been a distributor for a little over a year, he understands the steps it takes to make a sale.

### 1. Utilize your resources

In order to stay up to date with the newest lighting products and trends within the industry, Anderson notes he reads industry publications such as Professional Distributor, as well as takes advantage of the training offered by SP Tools USA.

"They give us great material," Anderson says. "Every two weeks, we have a call that we get on and then they have training classes and different things we try to do every other month, so we trying to stay up-to-date on products and changes in the industry."

### 2. Perform demos


Though it may sound a bit silly to demo something like a flashlight, do it anyway. Your customers want to know how the product works and how well it works before they even consider purchasing it.

Anderson likes to remove his lighting products from their packages, so he's able to get the product in his customers' hands. He'll stick them to the side of a toolbox to show off the magnet strength, and he even has an underhood light over his register where he can demonstrate its brightness versus other lighting products.

"If you don't put it in their hands," he says, "they don't physically know what they're looking at."

### 3. Know what you're selling

With an assortment of lighting products to sell, it's a good idea to have at least some idea of how they all work and which are better for what repairs.

"You want to be able to have a conversation because you are the quote-unquote expert to the techs," Anderson says. "They come to you. They get on your truck. Therefore, you've got to be knowledgeable about what you're selling. If you're not confident in what you're selling, you're not gonna be able to sell it." 



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## I WANT THE BLUE ONE

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**PTEN**

# Unlock the power of your diagnostic tools: A guide to performance and driveability analysis

In this article, we'll discuss using PIDs to quickly assess engine performance operation and how to effectively gather data during a road test.

By **Scott Brown**, *Technical Editor*



Figure 5 — Adjusting y-axes to reveal TCC slip  
Photo courtesy of Scott Brown

Today's powertrain systems have grown quite complex and demand a certain skill set when it comes to addressing engine performance and driveability challenges. In fact, many of the skills needed to successfully resolve the wide range of issues presenting operational problems on these vehicles demand similar skills one is required to obtain in pursuit of an electrical engineering (EE) degree. Now of course the EE degree is great for the design side and most certainly dives much deeper into various subjects. However, we as diagnosticians are dealing with the real-world results of these systems and as we all know, things don't always work out as planned. This is why we need to possess an eclectic skill set to help us better understand and conquer vehicle performance problems.

For review, here's a list of the core areas of study for an EE:

- Circuit theory
- Digital logic
- Signal processing
- Control systems
- Electronics
- Electromagnetics
- Power systems
- Statistics and probabilities
- Microcontrollers
- Communication systems
- Calculus and differential equations
- Physics
- Programming languages





While that list is quite extensive, in my opinion, many of these areas align with the competencies today's diagnostician needs to possess. So, the next time you hear someone refer to diagnostics as just connecting it to the "machine" feel free to remind them of the knowledge and skills needed to properly address today's automobiles.

My recommendations are that when you're seeking training to better yourself as a diagnostician, review the areas listed above to better understand your strengths and weaknesses. Overcoming deficiencies in certain areas can aid in performing diagnostics well into the future! Now, let's dive in and have a look at modern vehicle performance and analysis troubleshooting.

Modern internal combustion engine (ICE) vehicles are equipped with sensor data that quite simply has made the driveability technician's life a lot better. In fact, due to the evolution of OBD-II Parameter Identifiers (PIDs), we are blessed to have access to some very valuable information we can leverage. In this article, we'll discuss using these PIDs to help us quickly assess engine performance operation and how to effectively gather data during a road test. We'll also discuss how to leverage some of the OEM's diagnostic routines that can be called up in the scan tool as well.

## TOOLING – SCAN TOOLS

Having a good understanding of the tool's strengths and weaknesses is a priority. I use a variety of scan tools and my selection is dependent on the tasks ahead.

Here are a few areas of focus:

### Documentation

Initially, I usually like to gather all the evidence and document it before carrying out any testing. I'm sure by now you've heard the term "pre-scan" and it's a great best practice. In fact, we have a tool we use that streamlines this process by performing a full vehicle scan that will then insert the results right into the work order within our SMS (**Figure 1**). From there, the technician may want to gather the freeze-frame data from DTCs and record them as this may provide further guidance. Secondly, it might make sense to gather module part numbers along with their software versions. The Ford IDS does a great job of logging all this information during a diagnostic session and we'll talk more about this later in this article.

### Sample rate

When monitoring/recording vehicle performance data, you need to be aware of the update rate of the scan tool which is also dependent on the vehicle under test. Some

### \* Scan Tool Results \*

- ENGINE
  - CURRENT|Fail Since Clear:
    - **P0016-00** - Crankshaft Position - Intake Camshaft Position Not Plausible
  - Fail Since Clear:
    - **P0017-00** - Crankshaft Position - Exhaust Camshaft Position Not Plausible
    - **P0300-00** - Engine Misfire Detected
  - Fail Since Clear|HISTORY:
    - **P0128-00** - Engine Coolant Temperature (ECT) Below Thermostat Regulating Temperature
- BODY CONTROL (TPMS)
  - Fail Since Clear|HISTORY:
    - **B1517-5A** - Battery Voltage
    - **B2699-01** - Right Headlamp Control Circuit
    - **B2699-04** - Right Headlamp Control Circuit
    - **B3806-00** - High Beam And Headlamp Flash Select Circuit
    - **U0151-00** - Lost Communication With Inflatable Restraint Sensing And Diagnostic Module
    - **U0164-00** - Lost Communication With HVAC Control Module
  - CURRENT|Fail Since Clear|HISTORY:
    - **B2575-01** - Headlamps Control Circuit
    - **B2575-04** - Headlamps Control Circuit
- AIRBAG
  - HISTORY:
    - **B1325-03** - Control Module Power Circuit
- INSTRUMENT PANEL
  - Fail Since Clear:
    - **B1325-03** - Control Module Power Circuit
- TRANSMISSION
  - Scanned No Errors
- ELECTRONIC BRAKE CONTROL
  - Scanned No Errors

Figure 1 — Bosch Scan Shop Ware  
Photo courtesy of Scott Brown

PIDs are being broadcasted from a module at a fixed rate and some PIDs may be polled (requested) by the scan tool at a selectable rate.

### PID reliability

Keep in mind that the data you see has been converted from binary serial data which is highly dependent on the accuracy of the tool's CAN database libraries and its ability to properly translate. Additionally, OBD-II regulations require that the data reported must be accurate and reflect real-time

conditions of the vehicle. However, there are exceptions where there is an allowance for some modules to substitute data under specific fault conditions to prevent damage due to other systems relying on this data to perform functions and or allow limp-home modes.

### Data presentation

Possessing the power to display the data in certain ways

can be highly beneficial to the diagnostician in navigating this complicated matrix. For example, having the ability to overlay data on one timeline with controllable Y-axes in my opinion is extremely powerful as I will demonstrate later in this article in some real-world examples. In other cases, one might benefit from being able to display a 3-D graph of data when addressing certain problems as shown in **Figure 2**.

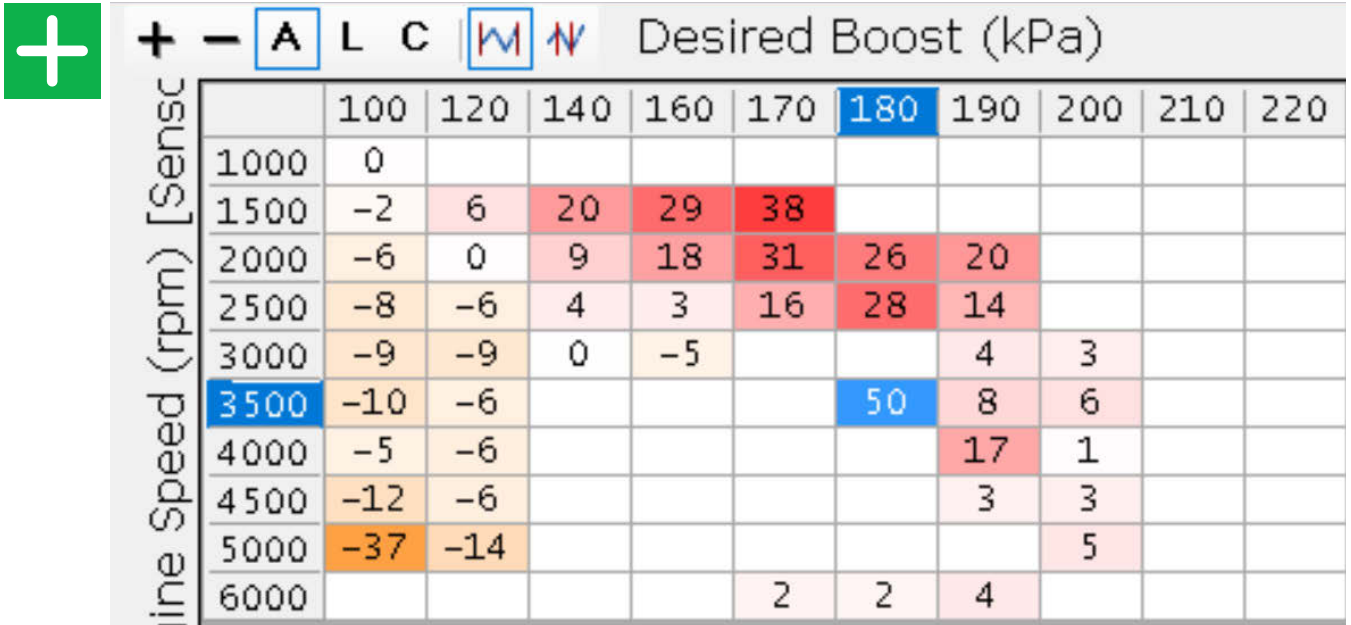


Figure 2 — Turbo boost error graph  
Photo courtesy of Scott Brown

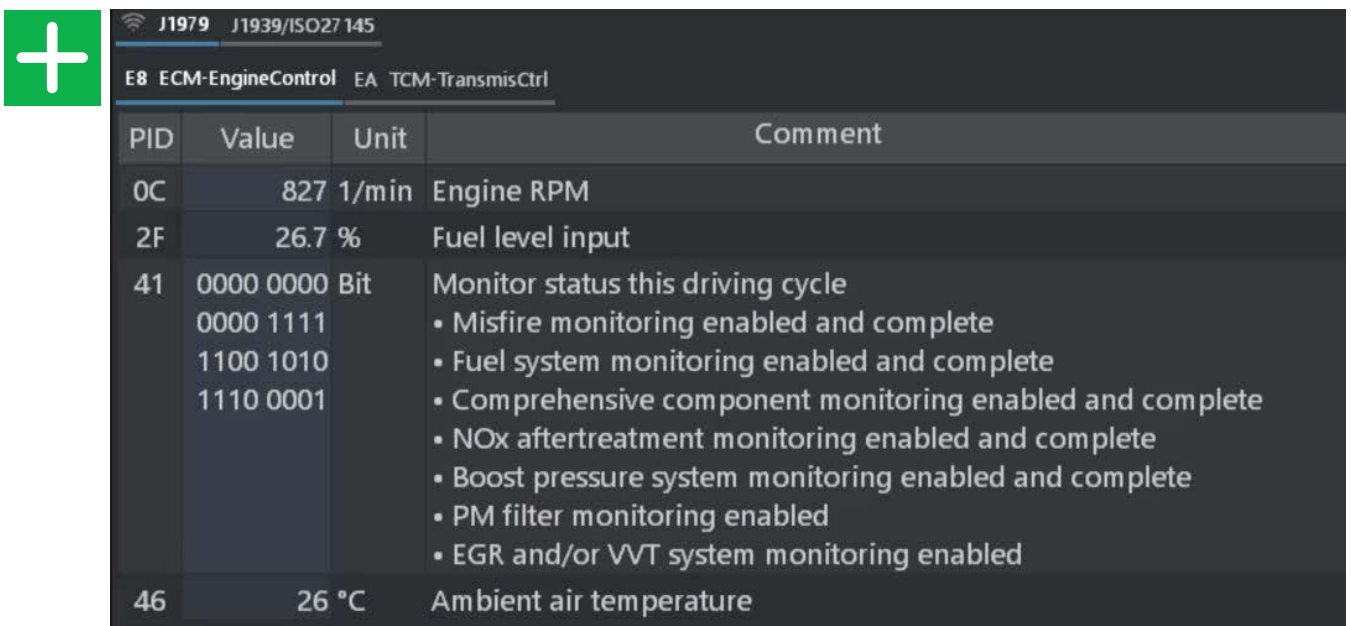


Figure 3 — Silver scan tool PID \$41 monitor data  
Photo courtesy of Scott Brown



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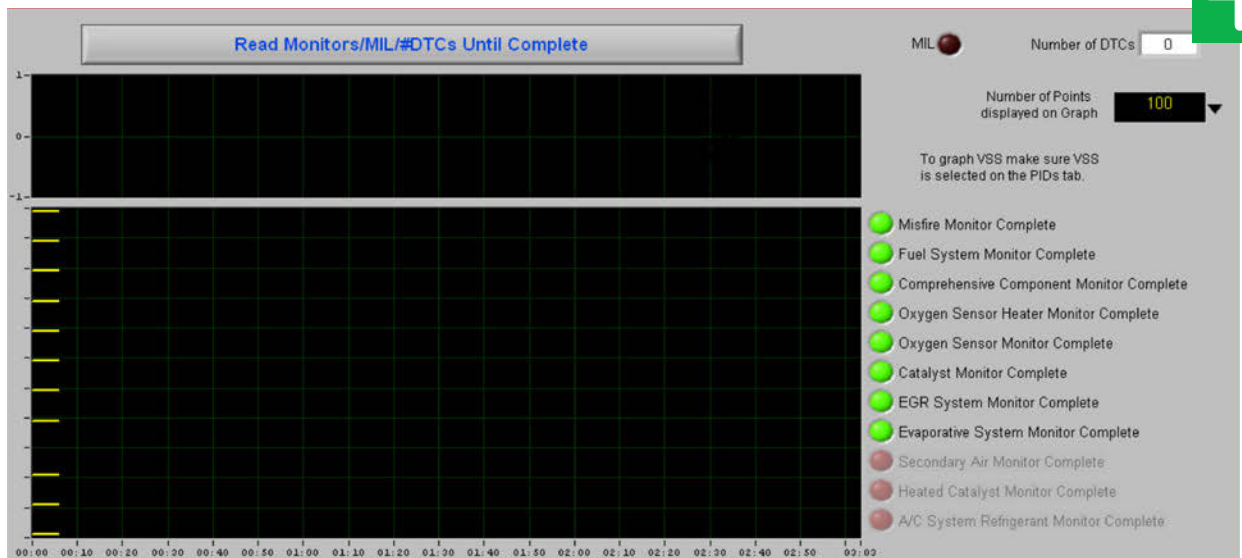


Figure 4 — ATS eScan monitor data  
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## OBD-II monitors

In many states, motor vehicles are subject to periodic inspection and maintenance programs (I&M) which include an OBD-II system interrogation. For the most part, the vehicle shouldn't have any DTCs set or monitors in a non-completed state. However, there are some exceptions. Following a repair and a code clear will result in the monitors being cleared. Usually, the technician will want to execute proper drive cycles so that the vehicle will run and complete the OBD-II. However, there may be conditional prerequisites the vehicle needs to be within for a monitor to be enabled to run. I'm sure that you would agree that it is extremely important to know if the monitor you're trying to run to is currently enabled or not. PID \$41 shown in Figure 3 will let the technician know whether a particular monitor is enabled for the current drive cycle. Knowing where to obtain that information is extremely critical. Some tools also do a good job of displaying monitor status graphically such as the eScan from Automotive Test Solutions (Figure 4).

## Mode \$06

As you're likely aware, the data reported here can be useful if clearly understood. For example, test IDs (TID) will display the MIN/MAX and test results for tests the system performs. Now it's likely that you've heard that test results that are near the maximum are an indication of a pending failure. This is what I was led to believe until I attended the 2022 SAE OBD-II symposium in Anaheim, California. At this event I also attended an

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all-day training session titled “Emissions-Related OBD Systems: A Design Overview.” Now while this session was designed for calibration engineers, I learned a lot and gained a higher level of respect for the operations these on-board systems are running on the very machines we are tasked with diagnosing and maintaining. I learned two significant terms that the engineers focus a great deal of attention on. Best performing unacceptable (BPA) and worst performing acceptable (WPA). These are the two targets (slopes) the engineering teams work with to design their OBD systems which in turn, drive the quality of the parts equipped on the vehicle and the software running these systems. Anyhow, later that week, I attended a General Motors presentation on exhaust gas monitoring which is slated for the future where NOx and other gasses are planned for future direct on-board monitoring. The presentation started off with talking about Mode\$06 and how it has been found to be misused in service. Specifically, the presenter went on to state that technicians were performing service part replacements based on Mode \$06

test results that were landing near the maximum limits. The facts are that if you see certain test results near the maximum limits, it doesn't necessarily mean that there is a failure. However, there are certain Mode \$06 TIDs that can be helpful such as misfire. For a vehicle that arrives with a P0300, the technician can scan the Mode \$06 data and look to see which cylinder is showing the most misfire activity.

### Mode \$09

The data reported in this area is known as in-use performance monitoring (IUPM) and can be very useful for discovering how often monitoring conditions are met and how often they have been completed. This information can be leveraged in cases where you're trying to understand why a monitor is difficult to complete. If you're unfamiliar with this area, you may want to begin gathering data from this area as it can be quite revealing, especially with new propulsion systems since the California Air Resources Board has mandated certain

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Figure 6 — WOT no TCC slip  
Photo courtesy of Scott Brown

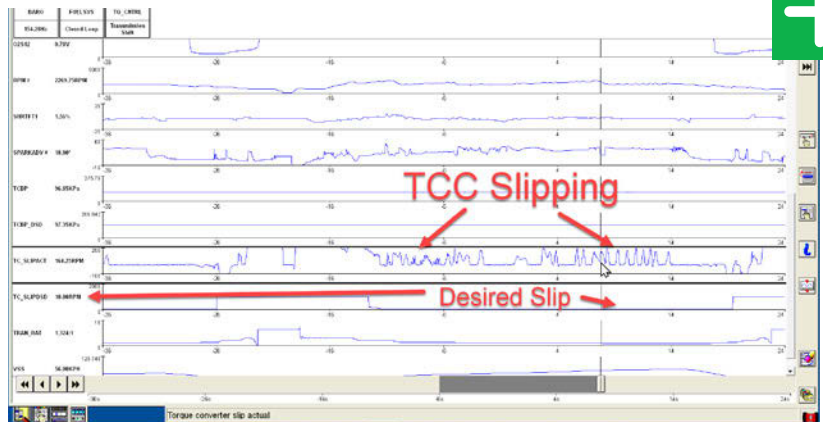


Figure 7 — Ford IDS TCC slip  
Photo courtesy of Scott Brown

propulsion performance statistics be reported here as they pertain to hybrid and battery electric vehicles.

#### Data PIDs

After collecting DTCs, freeze frame, and Mode \$06/\$09 you will likely move to Mode \$01 which of course is live data. Whether you're looking at generic or manufacturer-specific information, as mentioned earlier, you need to know how to leverage such data.

#### CASE STUDIES

##### Case Study #1:

##### Poor Performing Ford Edge

Recently one of my technicians asked me for a second opinion on a 2019

Ford Edge 2.0L he was addressing for a complaint about poor performance. This was a new client and they stated that the vehicle seemed to be misfiring and lacked smooth acceleration. My tech stated that the only DTC stored in the vehicle was related to the front shutters which he didn't think were related to the performance problem. He also stated that there was no misfire history statistical data reported in Mode \$06. So, I decided to grab one of my go-to devices and record some data while performing a road test. Sure enough, I felt the condition and it sure felt as if the engine was misfiring under light load conditions. During the road test and while I was recording,



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I proceeded to perform a wide-open throttle (WOT) sweep up through a shift point. I normally do this for most driveability analysis events so I can gauge the performance of certain systems. What I noticed is that during the WOT event, the vehicle performed properly with great acceleration.

When I returned to the shop, I proceeded to perform a data review. The first thing I noticed was that the normal data metrics such as fuel trim, spark advance, and temperatures, looked very normal and that I could see a distinctive change in engine speed during the light load misfire symptom. While reviewing the recorded data, I decided to match up the vehicle speed sensor (VSS) signal with the engine speed (RPM) by adjusting the MIN/MAX ranges of their respective axes to see if I could visualize what I suspected.

As you can see in **Figure 5**, the RPM trace is unsteady as opposed to the VSS signal which is indicative of torque converter clutch slippage since the RPM signal isn't dropping significantly below the vehicle speed slope.

Looking further, you can see in the recording, that during the first and second gear operation, each RPM slope was smooth. When I entered the third and fourth gear, the vehicle exhibited the symptoms the client was complaining about. Looking at **Figure 6**, you can see in the top row (green and red traces), that I adjusted the RPM and VSS Y-axes so that the WOT segments paralleled each other demonstrating the lack of torque converter slippage.

Since I was preparing for this article, I decided to connect the Ford factory tool (IDS) to have a look at what their scan tool offered

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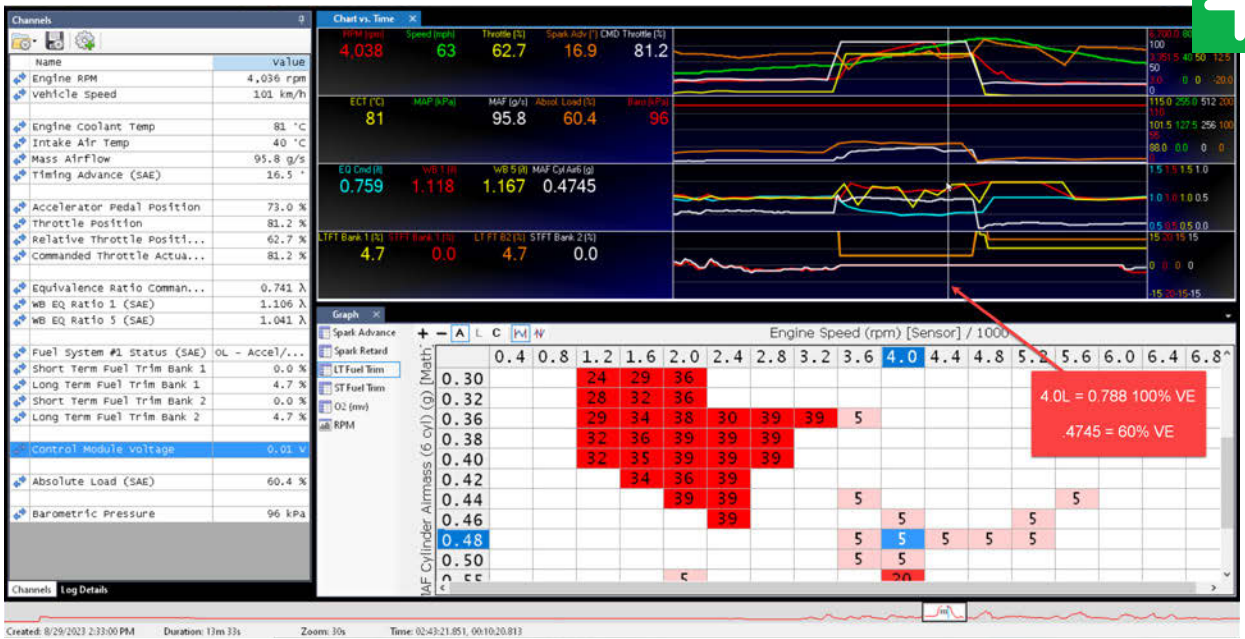


Figure 8 — 2006 Tacoma poor performance: P0171, P0174  
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to confirm my suspicions that the torque converter clutch (TCC) was slipping. **Figure 7** shows us that indeed the TCC is slipping.

In conclusion, the Ford Edge with only 44,000 miles will be visiting the dealer for warranty work. The scan tool provided us enough information with generic data to conclude that the engine performance was nominal, and the symptoms were caused by a slipping torque converter clutch. Additionally, if you look at the middle traces in **Figure 6**, you can see the wide band sensor is reporting lambda (Wide Band Bank 1) closely following the equivalence ratio command (EQ) during a WOT event in power enrichment (PE) mode. These numbers are indicative of a healthy system and validate that several systems are operating properly such as:

- Low-pressure fuel delivery
- High-pressure gasoline direct injection
- Turbo operation
- Proper cylinder air flow estimation (airmass)



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## DIAGNOSTIC TECH



Figure 9 — 2006 Tacoma after MAF sensor cleaning  
Photo courtesy of Scott Brown

### Case Study #2: Comeback - 2006 Toyota Tacoma V6 – P0171 P0174

We recently had a vehicle come in for multiple misfire DTC which ended up needing coils and plugs to rectify. The technician performed a road test and found that the vehicle's performance was nominal. The problem is that a proper road test with data analysis was not performed. The vehicle returned a week or so later with a complaint that the MIL was on and that there was some "pinging" that could be heard coming from the engine under light load operation. However, the client did state that the vehicle was no longer misfiring.

I proceeded to acquire some of the key performance data parameters I typically record during a road test after seeing that DTCs P0171 and P0174 were set. During my road test, I observed light detonation occurring while driving. Then as part of my normal road test procedure, I performed a WOT pull making sure that I was able to sweep from 3,000 to 5,000 RPM noting that this engine produces maximum torque at approximately 4,000 RPM. The significance of this RPM point is that this is where the engine will achieve maximum volumetric efficiency.

After returning to the shop, it was time again to analyze the data. The data

displayed in **Figure 8** is very telling.

At 4,038 RPM, you can see the absolute load is at 60.4 percent which isn't good in my book. Additionally, since this engine is equipped with two wide-band sensors, they are reporting a lean condition across the entire WOT pull. Looking at the MAF data along with my MAF Cyl Air6 math PID, I can conclude that the air mass numbers are underreporting. See my article titled "Solve driveability issues, emissions-related failures with fuel trim diagnostics" from 2021 for more information (VehicleServicePros.com/21241453).

The next step was to inspect the air flow tract to see if there was anything that could be upsetting the MAF signal. Seeing that there was none, we removed the sensor for inspection. We could see clearly that the sensor was quite dirty, so we attempted to clean it which on this vehicle isn't very feasible. After our attempt, we took the vehicle back out on the road for a repeat test and **Figure 9** shows our results.

As you can see, the numbers have greatly improved. The absolute load is now at 77.2 percent which aligns with our quick math on the cylinder air equation. We sold a new MAF sensor, cleared all adaptive memory, and

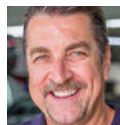


placed the vehicle back into service where it is currently operating properly. What we learned here is that although you may have a gross error (multiple defective coils), a diagnostic technician should always remain curious and perform a final road test evaluation while recording the proper key performance indicators. Now if we had good airflow numbers with a lean exhaust, then we would proceed to investigate the fuel supply side of the vehicle.

Looking back on my two images (Figures 8 & 9) you can see the 3-dimensional graph in the lower right of the screen. This graph is configured to show an averaged value of long-term fuel trim (LTFT) over an RPM/cylinder airmass table. Some scan tools allow you to configure tables like this which can be useful for visualizing data. In fact, looking back on Figure 2, this table was used to monitor boost on a turbocharged vehicle that was suspected of having an intermittent leaking wastegate valve. This chart takes advantage of a math PID that automatically finds the difference between actual and desired boost.

## CONCLUSION

Modern driveability diagnosticians not only rely heavily on scan tools and OBD-II data to troubleshoot performance issues effectively, but they must also possess the inquisitiveness necessary to properly analyze and diagnose these systems. They also need to have a heightened level of situational awareness of the tools and equipment available to take on these demanding tasks. ❌



**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 founded Diagnostic Network after 22 years of service at iATN, where he retired as company president in 2018.

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## Getting it done

Carpeted walls in this Mac Tools truck allow customers to interact more with the products as the Velcro attachment makes for easy removal.

By **Elli Carder**, *Assistant Editor*

**S**hawn Stahle, a Mac Tools distributor since 2008, purchased his 2017 Kenworth T300 from Herr Display Vans at the end of 2016. Stahle runs his route out of Yukon, Oklahoma on the west side of Oklahoma City. He focuses more on heavier equipment with the majority of his route consisting of fleets, trucking transportation, and some construction.

With no significant customizations put into the truck, Stahle took care in deciding how he would utilize the space to improve his customers' experience. The most important thing he took into consideration when building out and buying his truck was the layout that he felt worked best for his route.

Stahle knew he wanted to display a lot of cordless tools since it's one of the areas he's seen grow the most in his career. Building your truck around an area you specialize in, or an area you know your customers are interested in, can help your business flourish and land you more sales down the road.

While Stahle is pleased with his truck and his tool distribution career, he recognizes that there's some decisions he could have made differently. For instance, when building his truck he added a roll cart hole, thinking it would be something he would utilize, but looking back on it he sees it as a mistake.

"You go online, and you look at all these different trucks and you kind of get an idea on what would work for you," Stahle says. "Sometimes we get it right, sometimes we don't."

One feature of his truck that he doesn't regret is the carpeted walls and Velcro he added where he can put products up, as an alternative to permanently fixing them to the wall. This display setup allows Stahle to more efficiently change the tools he keeps in rotation, making sure the newest or most popular items get their time in the spotlight. Additionally, the Velcro gives customers the opportunity to take the products down and interact with them hands-on. "[It's] another easy way for [customers] to constantly look at products," Stahle explains.

### GETTING IT DONE

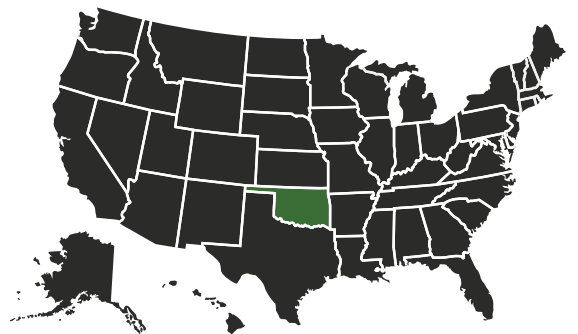
When talking to people who are entering into the tool distribution industry, or who might be considering a career in it, Stahle consistently emphasizes the importance of getting things done on time. When he's faced with a task, he knows that putting it off or delaying its completion will only cause problems down the road. Procrastination can be the biggest hurdle between you and a lucrative career. Stahle gives his son, who started his own route two years ago, the same advice.

"The more you put [a task] off, the more you're just [going to] dig yourself in a hole," Stahle says. "That's honestly the biggest advice I give."

### A TRUCK COMPANION

Last year, Stahle's family gifted him with a French bulldog for his birthday he calls Tuck. Now, Tuck rides alongside Stahle as his companion on the road, getting all the love and affection from the customers along their route.

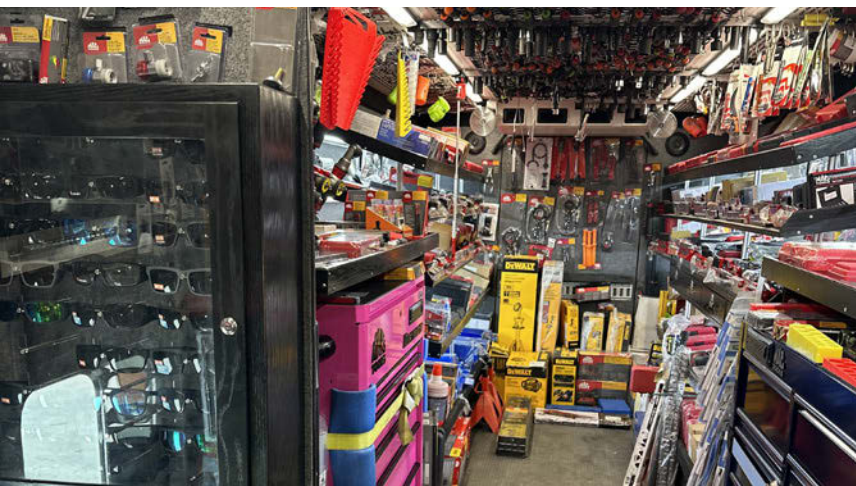
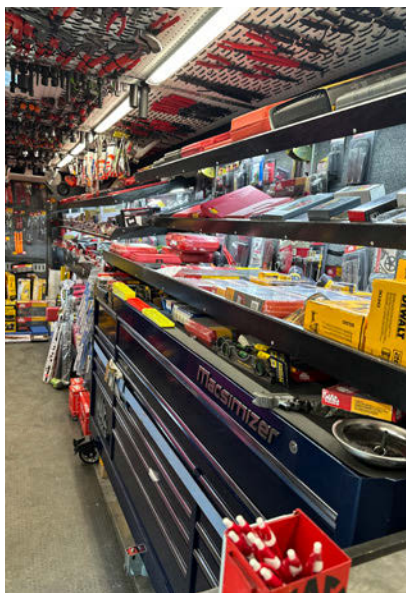
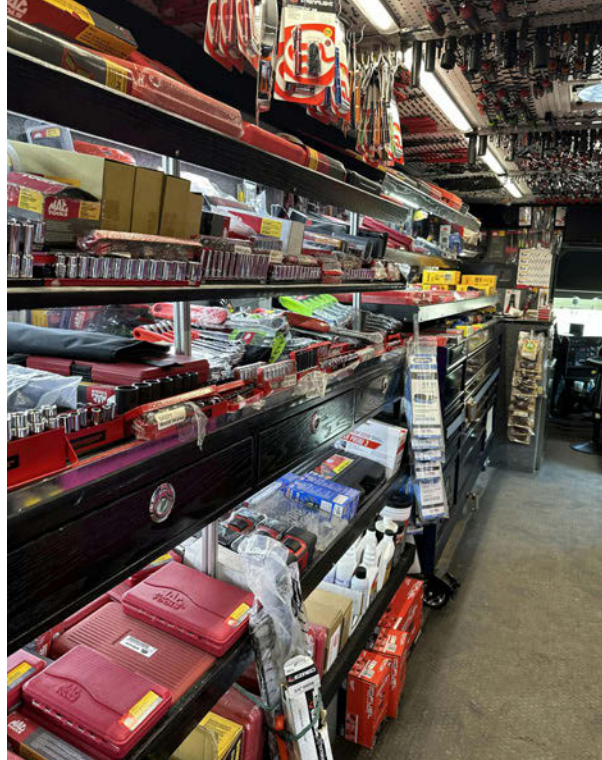
"He lives the high life," Stahle says. "He gets petted on and [gets] treats all day." 



**Shawn Stahle**  
Yukon, Oklahoma







**Top Left-** The outside of Stahle's truck. He started his route with Mac Tools in 2008. **Top Right-** Stahle keeps the aisle of his truck clean and open so customers can move about freely. **Middle Left-** Stahle takes pride in his truck and his business. **Middle Right-** Stahle finds that putting tools out in the open allows customers to interact more with his products. **Bottom Left-** With his carpeted walls/ceilings and Velcro, Stahle can rotate what tools he wants to have on display. **Bottom Right-** Tuck, the French bulldog, gets to feel all the love from Stahle's customers.



**Show us your truck**

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

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## In it to win it

You've got to get in the game to win — make yourself known to all the decision-makers at your stops, so it's you they call first when they need to make a capital equipment purchase.

By **Alan Sipe**, *Contributing Editor*

**W**hen I began selling, my first regional sales manager was Mike DeCoursey. Although I didn't really interact with Mike very often I have always remembered something he told me about career advancement.

Always be sure your company knows if you are interested in advancement or getting some specific position in the company. Remind them often and prepare yourself so you are their most logical choice for the position you want.

So, what does this have to do with you, an independent businessperson whose main objective is to sell more of your tools and equipment?

I know that on all of your stops, you call on and speak to as many of the technicians as you possibly can. And hopefully, you are prepared to discuss not only what your latest promos are but also the specific individual needs of each and every technician. These are certainly some of the correct steps to sales success.

Are you additionally prepared to get yourself in front of the decision maker at each location for the large asset or capital equipment sales such as lifts, compressors, hose reel systems, and large tech equipment?

At a small shop, the owner or decision maker is likely to also be one of the technicians you're calling on each week but at your major dealerships and multi-brand dealerships, the decision maker is more than likely in some office totally removed from the day-to-day shop floor hubbub. In a midsized

operation, the owner or general manager could easily be your target. These corporate corridor individuals make their major decisions at a much different level than a technician deciding between an impact wrench from you or the other guy.

Don't get me wrong, you will use many of the same selling skills presenting to a corporate decision-maker as you do every day on the shop floor but there are also important differences.

### 1. GET IN THE GAME

Shop Foreman: "Boss, the primary shop compressor just went out again. We patched it up for now, but we really need to get a new one."

The boss relents and now has to decide what to do. Chances are they will go to PTEN magazine and look through some issues at the automotive compressor advertisements, call a major industrial supplier like Grainger, go on Amazon (ugh!), or **MAYBE THEY WILL CALL YOU!**

Just like making sure my boss knew I was ready, willing, and able to step up, you need to be the person in the front of their minds when a disaster or capital equipment selling opportunity presents itself.

I realize you don't have the time to track down a senior manager during every stop and they may not even be in the same building but if you get your face in front of theirs at least every other month or so, you improve your chances of getting the call when this company needs something big.

Making these "stop in" calls should include giving them a business card on each call, looking sharp, and especially having an objective. Simply dropping off a promotional brochure is probably not the ticket.

On each call have at least one capital equipment brochure with your card stapled to it. Compressors one month, fixed storage systems the next, and any other major investment product you can sell them.

If you actually get in to speak with this corporate decision maker be ready to let them know you are their source when they need to make a major equipment purchase. Remind them every single time you're there. I know this constant reminding may sound lame but remember that this person has a lot more than you on their minds. Just keep reminding them you're there for their needs.

The objective is to get your name and your face in front of the decision-makers so when the shop foreman comes with the next major need the boss says, "Let's give YOU a call". You've got to get in the game before you can score a touchdown.

### 2. ACCESS THE SITUATION

So, the call comes in, XYZ dealer needs a new major compressor. Now what? Ascertain if this is an emergency or just a near-term need. If it is an emergency set an appointment immediately. If it is a longer-term need set the appointment during your next scheduled stop at that location.





Ask as many questions as you can about the need. The more you know the better you can prepare. Assemble the appropriate literature and begin to develop your pricing too. Your regular company catalog page will probably not have enough detailed information for a major purchase so contact your company product manager or the manufacturer for what you need. If it's a really quick deal get the information emailed to you and use your laptop for your show, tell, and sell.

If you are not 100 percent sure you have everything you need for the sales call try to get the manufacturer's salesperson on a Zoom call and have them as part of your presentation. This is a great way to look good to your prospect and get all the answers they need quickly. You want to be the first presenter so any supplier who presents after you is in a weaker defensive comparative position.

### 3. MAKE THE DEAL

A big challenge in this scenario is going to be pricing. If you are competing against a major industrial supplier the pricing will be very competitive. Your

normal hand tool gross margins will probably be too high. Your manufacturer partner should be able to advise you on the pricing. Additionally, if this is a very large corporation, they will most likely not use your company financing program.

Before the product presentation, you need to be sure you have the decision maker in the room. A simple question to your contact will answer this, "Is there anyone else in the company who should see the presentation and will be part of the decision-making process?" This gives your contact a gracious way to say that yes his supervisor will actually make this decision.


For the presentation, use your usual professional selling skills – feature, advantage, benefit, and trial close. Asking lots of questions and trial closing will get the prospect to tell you more about their needs and will provide you with their buying signals.

You will absolutely need to provide your purchase pricing, terms, and conditions in writing. This proposal must include all the purchase specifics – product, delivery, freight, installation, etc.

Do not, I repeat do not start the presentation by handing the prospect your proposal for them to review. If you do, they will immediately look at the pricing and for the remainder of your presentation, they will be mulling over the price and not paying close attention to you.

And finally, just because this is a major purchase for the company you still need to ask for the order. If you have been trial closing in order to get a feel for their interest and the time is right, go for the sale.

Remember you have to get in the game to even get the chance to score.

Now....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](mailto:alansipe@gmail.com)

# DRIVING SALES

Battery and Electrical Service Tools

## Battery and Electrical Service Tools

As the cold temperatures creep in, keeping stock of battery and electrical service tools will become more and more essential and profitable. Such tooling ranges from jump starters and chargers to electrical testers to even EV-specific tools. To view more battery and electrical service tools, visit [VehicleServicePros.com/directory](https://VehicleServicePros.com/directory).



### COMES WITH A LOCKABLE CASE

The **Dynamic Tools 28-pc Insulated Tool Set**, No. D113000, includes a 1/2" drive ratchet with a selection of extensions and six-point metric sockets. It also contains open-ended metric wrenches, slotted screwdrivers, Phillips screwdrivers, side-cutting pliers, lineman's pliers, and long-nose pliers. Each tool has been tested to 10,000 AC and is VDE certified to 1,000 VAC in compliance with IEC 60900. For secure storage, the set comes with a lockable case. The case has two foam organizers with labeled cutouts for easy tool identification, compliance with 5S work environments, and added safeguarding against foreign object damage (FOD). ■ **For more information, click on "PD e-inquiry" on [VehicleServicePros.com](https://VehicleServicePros.com)**



### FEATURES THREE BOOST MODES

The **Schumacher Electric 6V/12V 250A Manual Timer-Controlled Battery Charger and Jump Starter**, No. SC1667, is a manual charger that gives users complete control over the battery charging process. Some of the benefits included in this tool are three boost modes for quickly and efficiently adding charge to deeply discharged batteries, a heavy duty metal case with an easy-to-read meter, a 135-minute manual timer, six-gauge booster cables, and a rate selection dial. The battery charger can reach up to 12' with a 6' power cord. ■

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### RATED CAT III 1,000V

The **Electronic Specialties EV Insulation Tester**, No. 550, is designed to check high-voltage circuits on electric and hybrid vehicles for voltage leaks to ground. It can supply 250V, 500V, and 1,000V test voltages for doing complete insulation testing. The 550 also serves as a capable volt/ohm meter with a large, dual-backlit LCD display. Additionally, the 550 is rated CAT III 1,000V for overvoltage protection. Includes six AA batteries, test leads, instruction manual, and blow molded case. ■

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### VERSATILE KNOB CONTROLLED SHOP CHARGER

The **PRO-LOGIX 12V 40/15/5/225A Wheel Charger with PS Mode and Engine Start**, No. PL3740, from **Clore Automotive** is designed to deliver versatile service to today's busy shops, from battery charging and engine starting to power supply support for a variety of applications. With charge rates to 40A, the unit makes quick work of even the largest batteries, with specific settings for flooded and AGM/spiral wound batteries. The PL3740 features a knob control for easy operation, 225A engine start assistance, temperature compensation, a multi-phase charging process, and a Power Supply mode for diagnosis, repair, and maintenance applications. ■

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### FEATURES A HOOK DESIGN

The **Thexton Best Angle Back Probe**, No. 960, is designed to access electrical circuits from the rear of the connector to prevent piercing wires and possibly damaging the circuit. The Best Angle Back Probe allows users to get at tucked away connectors easier with a hook design. The added feature allows for flexibility and assures a good connection with a voltmeter. The product is 100 percent soldered to provide an accurate and dependable reading. Made in the U.S.A. ■

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



### INSULATED TO 1000V

The **Gray Tools 24-pc 3/8" Drive Insulated Socket Set**, No. 25024DH-I, includes 12-point SAE sockets from 3/8" to 7/8" and 12-point metric sockets from 8mm to 19mm. The sockets are stored in a dual-color foam organizer with imprinted size markings on the top layer for quick identification. Each socket is individually insulated to 1000V and tested to 10,000V, in compliance to ASTM F1505 standards. Insulation features an orange top insulation layer (orange), and a second layer (yellow) that also serves as a visual safety indicator: should the yellow layer be visible through the outer orange layer, the tool is no longer safe and should be discarded. Made in the U.S.A. ■

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### FEATURES WI-FI CONNECTIVITY

The **High-Voltage Module Balancer**, No. xMB-9640, from **Midtronics** is designed to assist technicians in performing module-level balancing of EV batteries with speed, efficiency, and safety. The compact balancer features an intuitive user interface, offering a range of functionalities such as module balancing, transportation discharge at the module level, and module diagnostics. With Wi-Fi connectivity, the xMB-9640 is capable of over-the-air software updates and analytical reporting as well as allows users the option of emailing results and capture and review usage data. ■

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## Landing the big sale

This Cornwell tool distributor secured a large toolbox order within his first year on the job.

By Kayla Nadler, Associate Editor

Rich Gardner started working in the automotive industry over 25 years ago. First, working at a shop changing oil while in high school. From then on, he quickly found himself working his way through almost every position possible, including a full-time technician, service advisor, service manager, and store manager to even a multi-location manager.

After the height of COVID-19, Gardner wanted to get away from all the stress of overseeing other workers across several departments and wanted to focus his energy on growing his own business.

So, he made the switch to selling tools as a Cornwell Quality Tools distributor and saying he's doing well would be an understatement.

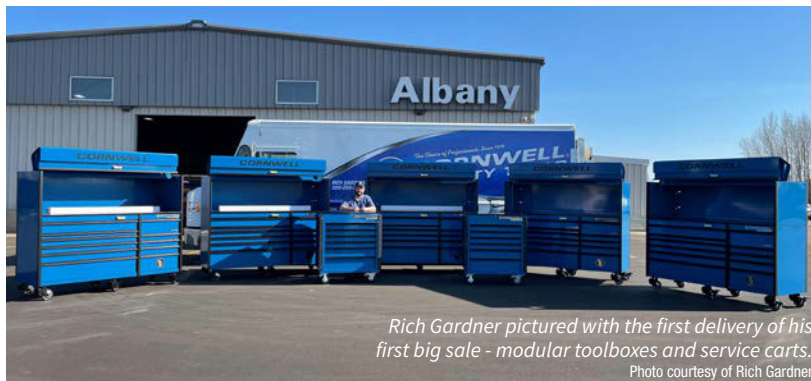
### THE SALE OF THE YEAR

Within his first year, Gardner came across an opportunity that every tool dealer dreams of. He was asked to outfit an entire dealership with modular toolboxes and service carts.

"The owner came to me and asked what kind of deal we could do," Gardner says. Needless to say, he landed the gig.

Gardner ended up selling the shop seven 84" Platinum cabinets, seven 84" Platinum canopies, eight Platinum lockers, and seven service carts, all the same color.

"It was crazy," he said. "It was very



Rich Gardner pictured with the first delivery of his first big sale - modular toolboxes and service carts. Photo courtesy of Rich Gardner

rewarding to have a company put their trust in myself. With all the other options out there, it was surreal they chose me, being the new tool guy and all."

### STANDING OUT

Although his customers may say it's his energy that makes him stand out, Gardner would say it's his work ethic to always stay on schedule – and that he likes to have fun.

"I like to have a joke of the week," he says, noting that he doesn't like when it goes quiet on his truck. "I like to have an edgy joke that I can tell customers that kind of breaks attention and gets them more comfortable to open up."

He also enjoys getting to know his customers and having a one-on-one relationship with them. In fact, it's his favorite thing about the business.

"You can't judge a book by its cover," he says.


When he first started out, he had a customer comment that he's just going to be like all the other tool dealers and not listen to what he wants. After hearing that, he makes sure to not only get

to know every customer personally, but also to ask them additional questions to ensure he understands what exactly they need.

"I always try to ask extra questions and investigate what the customer is really looking for," he notes.

### FUTURE PLANS

For this mobile tool dealer serving Stearns County, Minnesota, his future is fairly simple.

Gardner plans to "keep trucking" and grow his customer base by continuing to "do what I'm doing." 

### What's your story?

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

### FUN FACTS:



#### Favorite road snack

Beef jerky



#### Favorite take-out spot

Definitely sushi



#### Favorite hobbies

Fishing, golfing, and spending time with family



#### Most random thing sold

A stapler





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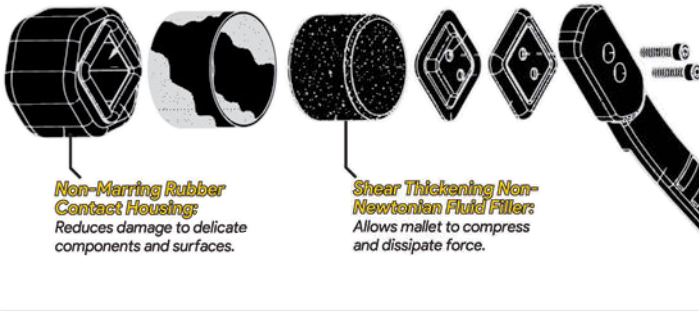
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- Fits DF-SPR70 10 Ton
- Case included



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